Underground Storage Tank
Site Assessment Report
Sound Transit
Former Key Bank Site
1000 NE 45th Street
Seattle, Washington

December 19, 2016



Excellence. Innovation. Service. Value. *Since 1954*.

Submitted To: Sound Transit Attn: Mr. Mark Menard 401 South Jackson Street Seattle, Washington 98104

By: Shannon & Wilson, Inc. 400 N 34th Street, Suite 100 Seattle, Washington 98103

TABLE OF CONTENTS

			Page
1.0	INTR	ODUCTION	1
2.0	BACF 2.1 2.2	KGROUNDSite DescriptionReleases	1
3.0	PROP 3.1 3.2	POSED INTERIM REMEDIAL ACTION	2
4.0	SITE 4.1	ASSESSMENT ACTIVITIES UST-1 4.1.1 Tank Removal 4.1.2 Sampling and Analysis UST-2	3 4
	4.3 4.4 4.5	4.2.1 Tank Removal	5 6 6 7
5.0		CLUSIONS	
6.0	LIMIT	TATIONS	9
7.0	REFE	RENCES	10
		TABLES	
	1 2	Analytical Results – Tank Removal Samples Analytical Results – Excavation Sidewall Samples	
		FIGURES	
	1 2 3	Vicinity Map Site Detail Map and Tank Removal Soil Sampling Locations Excavation Limits Soil Sampling Locations	

APPENDICES

A	UST-1 – Analytical Laboratory Report and Site Check/Site Assessment Checklist
В	UST-1 – Contractor-provided Documentation
C	UST-2 – Analytical Laboratory Report and Site Check/Site Assessment Checklist
D	UST-2 – Contractor-provided Documentation
E	Excavation Limits – Analytical Laboratory Reports
F	Important Information About Your Geotechnical/Environmental Report

UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT SOUND TRANSIT FORMER KEY BANK SITE 1000 NE 45th Street SEATTLE, WASHINGTON

1.0 INTRODUCTION

This report includes a summary of the environmental services provided by Shannon & Wilson, Inc. (Shannon & Wilson) during the removal of two unregistered underground storage tanks (USTs) discovered at the Sound Transit property in Seattle, Washington (also known as the Former Key Bank site). This report documents the site activities performed during the UST removal, presents laboratory results, and provides our conclusions. Our scope of services included:

- Observing the removal of one approximately 3,000-gallon UST and one approximately 500-gallon UST, referred to as UST-1 and UST-2, respectively.
- Field screening of soil samples to provide a preliminary assessment of the potential presence or absence of petroleum hydrocarbon contamination in the excavated soil and the soil on the walls and bottom of the UST excavation.
- Collecting soil samples for laboratory analysis to characterize the soils on the walls and bottom of the UST excavations.
- Collecting soil samples for laboratory analysis to characterize the soils on the walls and bottom of the excavation limits corresponding to the former USTs.
- Preparing this report summarizing methods and findings, and providing conclusions based on our observations and the laboratory analytical data.

This work was performed in general accordance with Washington State Department of Ecology (Ecology) UST regulations (Chapter 173-360 Washington Administrative Code) and the Ecology guidance for site checks and site assessments for USTs (Ecology, 2003).

2.0 BACKGROUND

2.1 Site Description

The Sound Transit property is located at 1000 NE 45th Street, in Seattle, Washington (Figure 1). The property encompasses an area of approximately 18,034 square feet and is divided into western and eastern portions by an alley. The site is bordered to the north by the University Mazda Auto dealer and an apartment complex, to the west by Roosevelt Way NE, to the south by NE 45th Street, and to the west by 11th Avenue NE (Figure 2). The subject property is identified

as King County tax parcel 773360-0155 and is owned by Central Puget Sound Regional Transit Authority (Sound Transit). The property slopes gently toward the southeast and ranges in elevation from approximately 177 to 187 feet.

Most recently, the property was developed with a drive-thru bank (Key Bank) and paved parking and driveway areas. The bank building, which was constructed in 1970, was situated on the western portion of the property. Prior to this, the western portion of the site has featured a service station and retail businesses. The eastern portion of the property has previously been occupied by retail businesses and a laundromat, which is believed to have provided dry cleaning services.

2.2 Releases

During a Phase II Environmental Site Assessment (ESA) and subsequent investigations, petroleum and petroleum-related volatile organic compounds (VOCs), including benzene, have been identified on the western portion of the site. The contamination is believed to have originated from former service station operations. Tetrachloroethene (PCE) and other halogenated VOCs (HVOCs), believed to be associated with former dry cleaning operations, have been encountered on the eastern portion of the site (Shannon & Wilson, 2012). The site has been identified on Ecology's Confirmed and Suspected Contaminated Sites List and is identified as Cleanup Site #12019 with Facility-Site ID #8342. A geophysical survey, performed in September 2011 as part of the Phase II ESA, identified anomalies to the west of the former bank building and an anomaly on the eastern portion of the property, potentially indicating USTs.

3.0 PROPOSED INTERIM REMEDIAL ACTION

3.1 Proposed Activities

As part of an interim remedial action, mass soil excavations were completed to address petroleum-impacted soils on the western portion of the site, and soils impacted with HVOCs on the eastern portion of the site. The east excavation is approximately 35 feet by 36 feet in size, extending to between 16 and 20 feet deep. The western excavation is approximately 66 feet by 36 feet in size and between 11 and 20 feet deep. During excavation, USTs, if encountered, would be removed. The former site building was also slated for demolition.

3.2 Responsibilities

Site excavation activities were being conducted by Pellco Construction, Inc. (Pellco). O'Neill Service Group (OSG), on behalf of Pellco, provided notice to Ecology that up to three USTs were to be removed during the site excavation activities. OSG arranged for Galloway Environmental, Inc. (GEI) to oversee tank decommissioning and for Marine Vacuum Services

(MarVac) of Seattle, Washington, to remove encountered USTs. Shannon & Wilson is conducting site assessment sampling and documentation on behalf of Sound Transit.

4.0 SITE ASSESSMENT ACTIVITIES

Two USTs, referred to as UST-1 and UST-2, were encountered within the western excavation. Utilities present within the vicinity of the USTs included both water and sanitary service, located to the west and south of UST-1. Underground power and communications were present to the north and east of the western excavation. Utilities were discontinued, cut, and capped at the limits of the excavation and/or property line prior to excavation activities.

No USTs were found within the eastern excavation. The anomaly identified during the 2011 geophysical survey was apparently building debris, which was found during the excavation of the eastern side of the property.

The analytical results for samples collected during the assessment of UST-1 and the Site Check/Site Assessment Checklist prepared for UST-1 are presented in Appendix A. Submittals provided by the contractor for UST-1 are provided in Appendix B. The analytical results for samples collected during the assessment of UST-2 and the Site Check/Site Assessment Checklist for UST-2 are presented in Appendix C. Submittals provided by the contractor for UST-2 are provided in Appendix D. Analytical results for samples collected from the final excavation limits are presented in Appendix E.

4.1 UST-1

4.1.1 Tank Removal

On September 1, 2016, Pellco explored the area in the vicinity of the western anomalies and uncovered UST-1. OSG contacted the Seattle Fire Department to obtain the tank removal permit and coordinated with MarVac to remove the UST. UST-1 was encountered to the west of the former bank building at a distance of approximately 20 feet from the western property boundary at a depth of approximately 3.5 feet below ground surface (bgs). The tank measured approximately 6 feet in diameter, was 14 feet in length, and had a capacity of approximately 3,000 gallons. On September 2, 2016, MarVac was on site to triple rinse the tank, which had been empty upon discovery.

On September 6, 2016, a Shannon & Wilson representative was on site to complete UST assessment activities. A Marine Chemist from Sound Testing, Inc. used carbon dioxide to inert the tank and certified that it was safe for excavation and transportation. The Seattle Fire Department inspector subsequently approved the permit for tank removal and Pellco pulled and removed the tank. It was placed directly onto the MarVac truck for transportation to its South

Seattle facility for processing. The tank was then delivered to Seattle Iron & Metals Recycling facility.

The tank was observed to be in fair condition, with some visible rusting. No fuel lines, vent pipes, or fill ports were present.

The soils immediately surrounding the tank were visibly stained a blue/gray color. The UST was situated within fill material consisting of brown and gray, silty, gravelly, fine to medium sand. Hydrocarbon odor was apparent. No groundwater was observed. The excavated soils were stockpiled for removal during mass excavation activities.

4.1.2 Sampling and Analysis

Five soil samples were collected from the UST excavation (Figure 2). Samples UD-SW-E, UD-SW-W, UD-SW-N, and UD-SW-S were collected from the east, west, north, and south sidewalls, respectively. Sample UD-B1 was taken from below the tank's former location. Sample UD-SW-N was collected from a depth of approximately 7 feet bgs. Samples UD-SW-E and UD-SW-W were taken from approximately 8 feet bgs. Samples UD-SW-S and UD-B1 were taken from 10 to 11 feet bgs.

Selected analytical methods included gasoline-range petroleum hydrocarbons using Northwest Total Petroleum Hydrocarbons (NWTPH) as gasoline (NWTPH-Gx); diesel- and oil-range petroleum hydrocarbons using NWTPH as Diesel-Extended (NWTPH-Dx); total lead using U.S. Environmental Protection Agency (EPA) Method 6020; and VOCs using EPA Method 8260B.

The results suggested that UST-1 had been used to store gasoline. Analytical results are summarized in Table 1 and the laboratory analytical report is presented in Appendix A. Gasoline-range petroleum hydrocarbons were detected in the five samples at concentrations ranging from 28.4 milligrams per kilogram (mg/kg) (UD-SW-S) to 5,390 mg/kg (UD-B1). Four of the detections exceeded the Model Toxics Control Act (MTCA) Method A cleanup level, which is set at 30 mg/kg when benzene is present (Ecology, 2013). None of the samples contained detectable concentrations of oil- or diesel-range petroleum hydrocarbons. Total lead concentrations ranged from 2.5 to 25.3 mg/kg, well below the MTCA Method A cleanup level of 250 mg/kg.

Benzene and toluene were not detected within any of the samples. Ethylbenzene and xylene were each detected within at least one sample at levels below their respective MTCA Method A cleanup levels. Several other petroleum-related compounds were detected, with the highest concentrations typically measured within the sample taken from below the UST (UD-B1) and within the east sidewall sample (UD-SW-E). One sample (UD-B1) contained naphthalene at

6.66 mg/kg, exceeding the MTCA Method A cleanup level of 5 mg/kg. No other compounds were detected at levels exceeding MTCA Method A cleanup levels.

4.2 UST-2

4.2.1 Tank Removal

The second UST was encountered during excavation activities on September 9, 2016. UST-2 was encountered at a location below the former bank building footprint, approximately 45 feet from the western property boundary at a depth of approximately 3 feet bgs. The tank was 10 feet in length, 3 feet in diameter, and had an approximate capacity of 500 gallons.

Shannon & Wilson was notified of the discovery and visited the site on September 9, 2016, to observe uncovering of the tank. OSG collected a wipe sample from the surface of the tank and soil samples from near the eastern and western ends of the tank. As mass excavation was underway, the soils in the vicinity of the UST were stockpiled temporarily and the tank was left in place, pending results from the sample analyses. The results suggested that the tank had been used to store gasoline. OSG contacted the Seattle Fire Department to obtain the tank removal permit and coordinated with MarVac and GEI to remove the UST.

On September 12, 2016, MarVac was on site to triple rinse the tank, which had been empty (with the exception of a small quantity of water) upon discovery. On September 13, 2016, a Shannon & Wilson representative was on site to complete UST assessment activities. A Marine Chemist from Sound Testing, Inc. had inspected the tank and concluded that it was "free of combustible gas and product residue" and certified that it was safe for excavation and transportation without inertion. The Seattle Fire Department inspector subsequently approved the permit for tank removal and Pellco pulled and removed the tank. The tank was set aside, pending MarVac arrival. It was subsequently placed onto the MarVac truck for transportation and taken to its South Seattle facility for processing. The tank was then delivered to Seattle Iron & Metals Recycling facility.

The tank was observed to be in poor condition, with visible corrosion. A hole was present in the bottom of the north end of the tank. It appeared to have been punctured by soil moving equipment; however, rust was visible within the scrape marks, indicating that the damage had occurred in the past. No fuel lines, vent pipes, or fill ports were present.

The soils immediately surrounding the tank were visibly stained. The UST was situated within fill material consisting of brown and gray, silty, gravelly, fine to medium sand. No groundwater was observed.

4.2.2 Sampling and Analysis

Three soil samples were collected from the UST excavation (Figure 2). Samples UD2-SW-N and UD2-SW-S were collected from the northern and southern sidewalls at depths of 5 and 6 feet, respectively. Sample UD2-B1 was collected from below the tank at a depth of approximately 6 feet bgs.

Analytical results are summarized in Table 1 and the laboratory report is provided in Appendix C. Gasoline-range petroleum hydrocarbons were detected within the sample collected from below UST-2 at a concentration of 23.1 mg/kg and from the southern sidewall at a concentration of 2,780 mg/kg, exceeding the MTCA Method A cleanup level of 30 mg/kg. The sample collected from the southern sidewall also contained oil-range hydrocarbons at a concentration of 169 mg/kg, below the MTCA Method A cleanup level of 2,000 mg/kg. No diesel-range hydrocarbons were detected in the samples. Total lead was detected at concentration ranging from 2.5 to 25.3 mg/kg, below the MTCA Method A cleanup level of 250 mg/kg.

Benzene and toluene were not detected within any of the samples. Ethylbenzene, xylene, and several other petroleum-related compounds were each detected within at least one sample at levels below their respective MTCA Method A cleanup levels. The highest concentrations were typically measured within the sample taken from the southern sidewall sample (UD2-SW-S).

PCE was detected within the northern sidewall sample (UD2-SW-N) and from the sample collected below the tank (UD2-B1) at concentrations of 0.14 and 0.0635 mg/kg, respectively. Both detections exceed the MTCA Method A cleanup level of 0.05 mg/kg. PCE has previously been detected on the western portion of the property at low concentrations. The source of the PCE is unknown.

4.3 Excavation Limits

4.3.1 Additional Excavation

As previously discussed, the USTs were encountered within mass soil excavations being completed as an interim remedial action at the site. The samples collected during tank removal activities (Figure 2) and discussed in Sections 4.1.2 and 4.2.2 were taken from the soils immediately surrounding the former tank locations. The excavation activities continued beyond these locations to a total size of approximately 66 feet by 36 feet and between 11 and 20 feet deep.

4.3.2 Sampling and Analysis

A total of eight additional soil samples were collected from the final excavation limits. The sample locations are shown in Figure 3 and were selected to correspond to the former UST locations. As the tanks were found in a north-south orientation, two samples were collected from each of the northern and southern excavation walls, one sample was collected from each of the eastern and western excavation walls, and two samples was collected from the bottom of the excavation.

Samples UD-W-T1N and UD-W-T2N were taken from the northern wall of the excavation from approximate depths of 7.5 and 5 feet, respectively. Samples UD-W-T1S and UD-W-T2S were collected from the southern wall of the excavation from depths of approximately 10 and 6 feet, respectively. Sample UD-W-T1W was taken from the western wall of the excavation at a depth of approximately 8 feet and sample UD-W-T2E was taken from the eastern wall of the excavation at a depth of 6.5 feet. Sample UD-B2 was taken from an approximate depth of 20 feet below the former location of UST-1. Sample UD2-B2 was taken from below the former location of UST-2 at a depth of approximately 16 feet.

The samples were analyzed for NWTPH-Gx, NWTPH-Dx, total lead, and VOCs. Analytical results are summarized in Table 2 and the laboratory analytical reports are provided in Appendix E. Gasoline-range petroleum hydrocarbons were detected in two of the eight samples. The samples taken from the excavation wall to the north of UST-1 (UD-W-T1N) and from the excavation wall to the south of UST-1 (UD-W-T1S) contained gasoline-range petroleum hydrocarbons at 398 and 1,410 mg/kg, respectively. Both detections exceed the MTCA Method A cleanup level of 30 mg/kg. No other samples contained detectable concentrations of gasoline-range petroleum hydrocarbons. The sample taken from the excavation wall to the south of UST-1 (UD-W-T1S) also contained detectable oil-range petroleum hydrocarbons at 122 mg/kg, below the cleanup level of 2,000 mg/kg. Diesel-range petroleum hydrocarbons were not detected in any of the samples.

Total lead concentrations ranged from 1.07 to 6.11 mg/kg, well below the MTCA Method A cleanup level of 250 mg/kg.

Benzene and toluene were not detected within any of the samples. Ethylbenzene was detected within the southern excavation wall across from UST-1 (UD-W-T1S) and from the bottom of the excavation below UST-1 (UD-B2) at concentrations of 0.279 and 0.0248 mg/kg, below the cleanup level of 6 mg/kg. The sample from the bottom of the excavation below UST-1 also contained m,p-Xylene at 0.0152 mg/kg, well below the cleanup level of 9 mg/kg. Several other petroleum-related compounds were detected at low concentrations, typically occurring at the western end of the excavation near UST-1.

PCE was detected within the northern and southern excavation sidewalls corresponding to UST-2 at concentrations of 0.0559 and 0.0454 mg/kg, respectively. The MTCA Method A cleanup level for PCE is 0.05 mg/kg. As mentioned within Section 4.2.2, PCE has been detected at low concentrations on the western portion of the property. The source of the PCE is not known.

The eight samples collected from the full excavation limit contained fewer compounds at detectable levels and lower concentrations than the samples collected from the soils immediately surrounding the USTs. For example, gasoline-range petroleum hydrocarbons were detected within all except one sample collected from the soils near the USTs, while only two of the eight samples from the excavation limits contained gasoline-range petroleum hydrocarbons. Three of the eight samples each contained one compound at concentrations exceeding MTCA Method A cleanup levels (Table 2). These include the two gasoline-range petroleum hydrocarbon detections and one of the PCE detections. No other cleanup level exceedances were observed.

4.4 Soil Disposal

Soil generated during UST removal activities were disposed of offsite at a Subtitle D facility concurrent with interim action mass excavation. Disposal documentation will be provided in the interim action report.

4.5 Methodology

Site assessment samples were collected using disposable sampling equipment and immediately placed into laboratory-supplied glassware. Each sample was identified with a unique sample name, immediately logged, and placed within an iced cooler. The samples were transported under standard chain of custody procedures to Fremont Analytical (Fremont) of Seattle, Washington.

5.0 CONCLUSIONS

It is our opinion that the UST removals and site assessment were completed in accordance with Ecology guidelines (Ecology, 2003). Field observations and sampling results indicate that contamination present above MTCA Method A cleanup levels was present within the immediate vicinity of the USTs, indicating that a release had occurred. This is consistent with previous site investigations. Concentrations detected within samples collected from the full excavation limits were consistently lower and typically below MTCA Method A cleanup levels, with the exception of the three detections previously discussed.

Additional excavation and site characterization were completed as part of the interim remedial action. These activities and analytical laboratory reports will be summarized in an interim action report.

6.0 LIMITATIONS

Within the limitations of scope, schedule, and budget, Shannon & Wilson has prepared this report in a professional manner, using that level of skill and care normally exercised for similar projects under similar conditions by reputable and competent environmental consultants currently practicing in this area.

The data presented in this report are based on limited research and sampling at the site and should be considered representative at the time of our observations. Shannon & Wilson is not responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. We also note that the facts and conditions referenced in this report may change over time, and that the facts and conditions set forth here are applicable to the facts and conditions as described only at the time of this report. We believe that the conclusions stated here are factual, but no guarantee is made or implied.

This report was prepared for the exclusive use of the Sound Transit and their respective representatives, and in no way guarantees that any agency or its staff will reach the same conclusions as Shannon & Wilson. We have prepared the enclosed Appendix F, "Important Information About Your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of our report.

SHANNON & WILSON, INC.

Agnes C. Tirao, PE Associate

Shoshana Howard, PE Senior Engineer

SKH:ACT:SWG/skh

7.0 REFERENCES

- Shannon & Wilson, Inc. (Shannon & Wilson), 2012, Phase II environmental site assessment, former Key Bank Property, 1000 NE 45th Street, Seattle, Washington: Report prepared by Shannon & Wilson, Inc., Seattle, Wash., project no. 21-1-16604-005, for Sound Transit, Seattle, Wash., January 9.
- Washington State Department of Ecology (Ecology), 2003, Guidance for site checks and site assessments for underground storage tanks, Department of Ecology: Olympia, Wash., Washington State Department of Ecology, publication No. 90-52, revised April.
- Washington State Department of Ecology (Ecology), 2013, Model Toxics Control Act cleanup regulation, chapter 173-340 Washington Administrative Code (WAC): Olympia, Wash., Washington State Department of Ecology, publication No. 94-06, revised 2013.

TABLE 1 ANALYTICAL RESULTS TANK REMOVAL SAMPLES

						Total Petro	oleum Hyd	rocarbons											VOCs ⁽²⁾									
	Sample Number	Location	Sample Depth ⁽¹⁾	Sample Date	Laboratory Report Number	Gasoline-Range	Diesel-Range	Oil-Range	Total Lead	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Chlorotoluene	4-Chlorotoluene	Benzene	Chloroform	Cumene	Ethylbenzene	m, p-Xylene	o-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	Sec-Butylbenzene	Tert-Butylbenzene	Tetrachloroethene	Toluene
	UD-SW-E	Eastern Sidewall	8			4,340 D	<21.3	<53.2	2.83	< 0.0245	0.946	0.600	<0.0245	<0.0245	< 0.0245	< 0.0245	1.16	<0.0368	< 0.0245	< 0.0245	<0.0368	5.87 D	1.37	3.08 D	3.70 D	0.214	< 0.0245	< 0.0245
	UD-SW-W	Western Sidewall	8			50.9	<22.7	<56.8	5.90	<0.0223	0.246	<0.0223	<0.0223	<0.0223	<0.0223	< 0.0223	<0.0892	< 0.0334	0.0223	< 0.0223	0.0368	0.0797	0.0463	0.0407	0.0362	< 0.0223	<0.0223	< 0.0223
E	UD-SW-N	Northern Sidewall	7	9/6/2016	1609081	192	<20.8	<52.1	25.3	< 0.0175	0.584	0.114	< 0.0175	0.0192	< 0.0175	< 0.0175	<0.0699	0.114	0.240	0.0192	< 0.0262	< 0.0175	0.0892	0.0691	< 0.0175	< 0.0175	< 0.0175	< 0.0175
	UD-SW-S	Southern Sidewall	10			28.4	<23.1	<57.7	3.40	<0.0213	0.0304	<0.0213	<0.0213	<0.0213	< 0.0213	< 0.0213	< 0.0852	< 0.0320	<0.0213	<0.0213	<0.0320	0.0309	<0.0213	<0.0213	0.0389	< 0.0213	<0.0213	< 0.0213
	UD-B1	Bottom of tank	11			5,390 D	<23.0	<57.6	2.50	<0.0204	<0.0204	0.980	<0.0204	0.205	<0.0204	< 0.0204	3.98 D	3.03 D	3.52 D	<0.0204	6.66 D	11.2 D	8.73 D	5.14 D	<0.0204	0.251	<0.0204	< 0.0204
	UD2-SW-N	Northern Sidewall	5			<4.78	<23.4	<58.5	19.7	<0.0191	0.0306	0.0191	<0.0191	<0.0191	<0.0191	<0.0191	< 0.0765	< 0.0287	0.0330	<0.0191	< 0.0287	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	0.140	<0.0191
E	UD2-SW-S	Southern Sidewall	6	9/13/2016	1609155	2,780 D	<22.5	169	19.3	0.0445	15.7 D	8.35 D	0.0529	1.12	<0.0210	< 0.0210	1.55	0.700	1.73	< 0.0210	3.29 D	<0.0210	2.14 D	4.01 D	< 0.0210	0.171	<0.0210	< 0.0210
	UD2-B1	Bottom of tank	6			23.1	<23.5	<58.8	19.9	<0.0197	0.313	0.145	<0.0197	<0.0197	<0.0197	< 0.0197	<0.0788	< 0.0296	0.0537	0.0246	0.098	<0.0197	0.0256	0.0502	0.0222	< 0.0197	0.0635	<0.0197
		d A Criteria for ed Land Use		-		30 ⁽³⁾	2,000	2,000	250	**	**	**	**	**	0.03	**	**	6	Ģ)	5	**	**	**	**	**	0.05	7

Notes:

Bold text indicates a detected analyte.

Shaded text indicates concentration exceeds state cleanup criterion.

Results are reported in milligrams per kilogram (mg/kg).

< = analyte not detected above indicated laboratory detection limit.</pre>

D = dilution was required

MTCA = Washington Model Toxics Control Act

⁽¹⁾ Approximate feet below ground surface.

⁽²⁾ VOCs = volatile organic compounds; only compounds that were detected above laboratory detection limits are shown.

⁽³⁾ Criteria is based on benzene being present. Benzene was historically detected onsite.

^{**} No MTCA Method A cleanup criteria is established for this analyte.

TABLE 2 ANALYTICAL RESULTS EXCAVATION SIDEWALL SAMPLES

						Total Petr	oleum Hydr	cocarbons											VOCs ⁽²⁾									
	Sample Number	Location	Sample Depth ⁽¹⁾		Laboratory Report Number	Gasoline-Range	Diesel-Range	Oil-Range	Total Lead	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Chlorotoluene	4-Chlorotoluene	Benzene	Chloroform	Cumene	Ethylbenzene	m, p-Xylene	o-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	Sec-Butylbenzene	Tert-Butylbenzene	Tetrachloroethene	Toluene
	UD-W-T1N	Northern Excavation Sidewall	7.5	10/11/2016	1610176	398	<21.4	<53.4	1.07	<0.0193	0.311	0.229	<0.0193	<0.0193	<0.0193	<0.0193	0.127	< 0.029	<0.0193	<0.0193	<0.0290	<0.0193	0.224	0.279	<0.0193	0.0305	<0.0193	< 0.0193
I-1	UD-W-T1W	Western Excavation Sidewall	8	10/11/2016	1610176	<6.55	<24.1	<60.3	5.08	<0.0262	<0.0262	< 0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<0.105	<0.0393	< 0.0262	< 0.0262	<0.0393	< 0.0262	<0.0262	<0.0262	< 0.0262	< 0.0262	< 0.0262	<0.0262
US	UD-W-TIS	Southern Excavation Sidewall	10	10/14/2016	1610259	1,410 D	<21.0	122	2.24	<0.0183	4.54 D	2.23 D	<0.0183	<0.0183	<0.0183	<0.0183	0.857	0.279	< 0.0183	< 0.0183	<0.0274	<0.0183	1.56	<0.0183	<0.0183	<0.0183	<0.0183	<0.0183
	UD-B2	Bottom of Excavation	20	10/24/2016	1610353	<3.03	<23.4	<58.4	1.68	<0.0121	<0.0121	< 0.0121	<0.0121	<0.0121	<0.0121	0.0179	<0.0486	0.0248	0.0152	< 0.0121	<0.0182	<0.0121	< 0.0121	<0.0121	< 0.0121	<0.0121	< 0.0121	< 0.0121
	UD-W-T2N	Northern Excavation Sidewall	5			<5.14	<22.0	<55.0	5.45	<0.0205	<0.0205	< 0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0822	<0.0308	< 0.0205	< 0.0205	<0.0308	< 0.0205	< 0.0205	<0.0205	<0.0205	<0.0205	0.0559	<0.0205
T-2	UD-W-T2S	Southern Excavation Sidewall	6	10/11/2016	1610176	<5.11	<21.4	<53.5	6.11	<0.0204	< 0.0204	<0.0204	<0.0204	<0.0204	<0.0204	< 0.0204	<0.0817	< 0.0307	< 0.0204	< 0.0204	< 0.0307	< 0.0204	< 0.0204	<0.0204	<0.0204	<0.0204	0.0454	< 0.0204
US	UD-W-T2E	Eastern Excavation Sidewall	6.5			<5.09	<22.5	<56.2	3.74	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0815	< 0.0305	< 0.0204	< 0.0204	<0.0305	< 0.0204	< 0.0204	<0.0204	< 0.0204	<0.0204	< 0.0204	<0.0204
	UD2-B2	Bottom of Excavation	16	10/24/2016	1610353	<5.52	<23.0	<57.4	1.65	<0.0221	<0.0221	< 0.0221	<0.0221	<0.0221	< 0.0221	0.0363 B	< 0.0883	< 0.0331	< 0.0221	< 0.0221	<0.0331	<0.0221	< 0.0221	< 0.0221	< 0.0221	< 0.0221	< 0.0221	< 0.0221
		ood A Criteria for eted Land Use				30 ⁽³⁾	2,000	2,000	250	**	**	**	**	**	0.03	**	**	6	ò)	5	**	**	**	**	**	0.05	7

Notes:

Bold text indicates a detected analyte.

Shaded text indicates concentration exceeds state cleanup criterion.

Results are reported in milligrams per kilogram (mg/kg).

< = analyte not detected above indicated laboratory detection limit.

B = analyte detected in associated method blank

D = dilution was required

MTCA = Washington Model Toxics Control Act

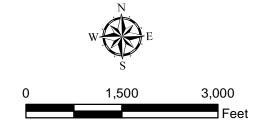
21-1-16700-123-R2f-T1 and T2/wp/lk

⁽¹⁾ Approximate feet below ground surface.

⁽²⁾ VOCs = volatile organic compounds; only compounds that were detected above laboratory detection limits are shown.

⁽³⁾ Criteria is based on benzene being present. Benzene was historically detected onsite.

^{**} No MTCA Method A cleanup criteria is established for this analyte.



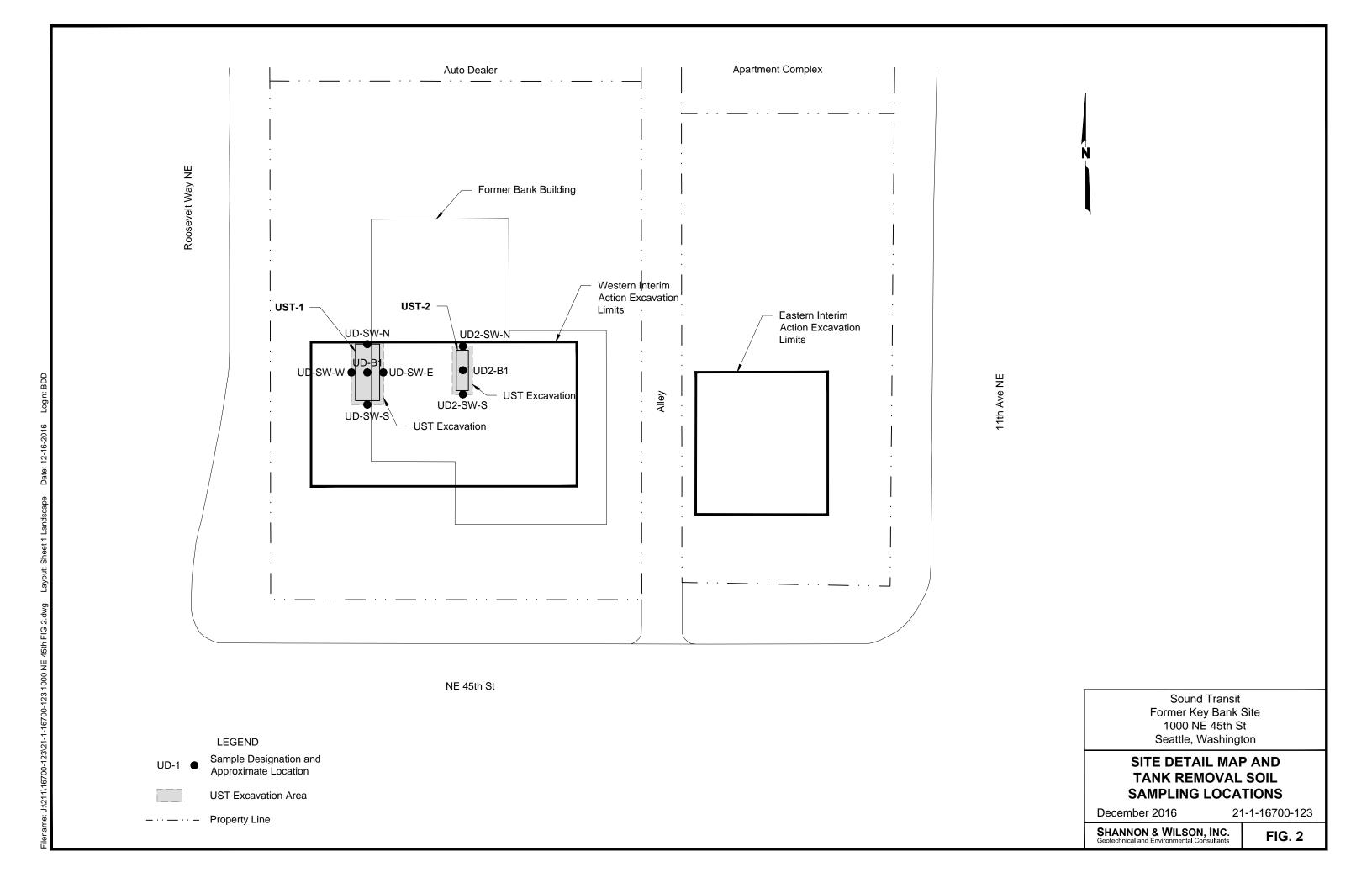
Sound Transit - Former Key Bank Site 1000 NE 45th Street Seattle, Washington

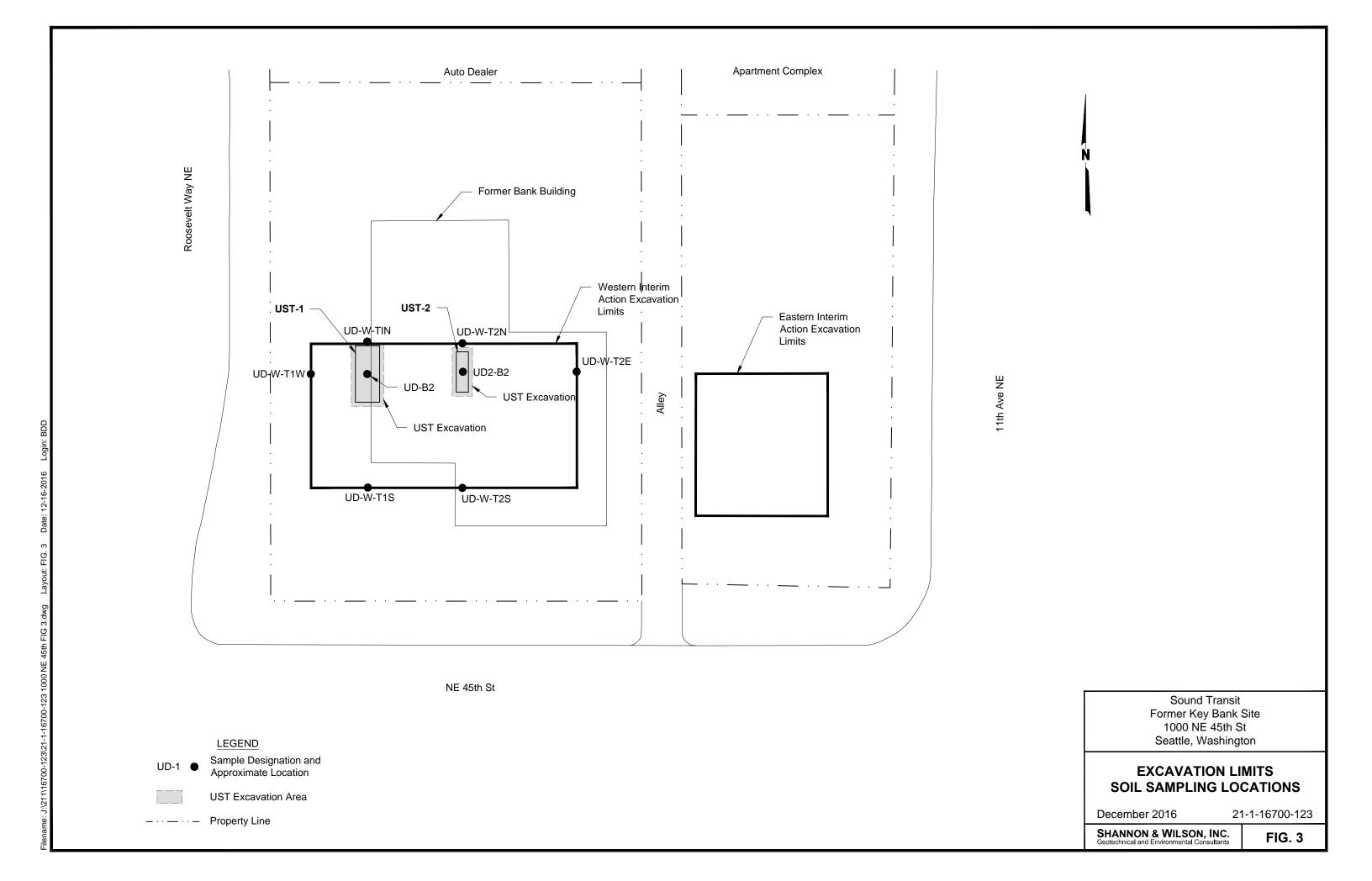
VICINITY MAP

December 2016 21-1-16700-123

SHANNON & WILSON, INC.

FIG. 1





SHANNON & WILSON, INC.

APPENDIX A

UST-1 – ANALYTICAL LABORATORY REPORT AND SITE CHECK/ SITE ASSESSMENT CHECKLIST



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Shannon & Wilson

Agnes Tirao 400 N. 34th Street, Suite 100 Seattle, WA 98103

RE: Sound Transit / Key Bank

Lab ID: 1609081

September 14, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 6 sample(s) on 9/6/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Sample Moisture (Percent Moisture)

Total Metals by EPA Method 6020

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

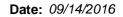
Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway Laboratory Director

Mohl c. Redy

DoD/ELAP Certification #L2371, ISO/ICC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)





CLIENT: Shannon & Wilson Work Order Sample Summary

Project: Sound Transit / Key Bank

Lab Order: 1609081

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609081-001	UD-SW-E	09/06/2016 10:33 AM	09/06/2016 4:30 PM
1609081-002	UD-SW-W	09/06/2016 10:30 AM	09/06/2016 4:30 PM
1609081-003	UD-SW-N	09/06/2016 10:39 AM	09/06/2016 4:30 PM
1609081-004	UD-SW-S	09/06/2016 10:36 AM	09/06/2016 4:30 PM
1609081-005	UD-B1	09/06/2016 10:45 AM	09/06/2016 4:30 PM
1609081-006	Trip Blank	08/29/2016 3:56 PM	09/06/2016 4:30 PM



Case Narrative

WO#: **1609081**Date: **9/14/2016**

CLIENT: Shannon & Wilson

Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: 1609081

Date Reported: 9/14/2016

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



WO#: **1609081**

Date Reported: 9/14/2016

Client: Shannon & Wilson Collection Date: 9/6/2016 10:33:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-001 **Matrix:** Soil

Client Sample ID: UD-SW-E

Diesel (Fuel Oil) Heavy Oil Surr: 2-Fluorobiphenyl Surr: o-Terphenyl Gasoline by NWTPH-Gx ND 21.3 mg/Kg-dry mg/Kg-dry 53.2 mg/Kg-dry 92.7 50-150 %Rec %Rec Batch	ID: 147 1 1 1 1	732 Analyst: WC 9/7/2016 10:08:00 PM 9/7/2016 10:08:00 PM 9/7/2016 10:08:00 PM
Heavy Oil ND 53.2 mg/Kg-dry Surr: 2-Fluorobiphenyl 92.7 50-150 %Rec Surr: o-Terphenyl 91.9 50-150 %Rec Gasoline by NWTPH-Gx Batch	1 1 1	9/7/2016 10:08:00 PM
Heavy Oil ND 53.2 mg/Kg-dry Surr: 2-Fluorobiphenyl 92.7 50-150 %Rec Surr: o-Terphenyl 91.9 50-150 %Rec Gasoline by NWTPH-Gx Batch	1 1 1	9/7/2016 10:08:00 PM
Surr: 2-Fluorobiphenyl 92.7 50-150 %Rec Surr: o-Terphenyl 91.9 50-150 %Rec Gasoline by NWTPH-Gx Batch	1 1	
Surr: o-Terphenyl 91.9 50-150 %Rec Gasoline by NWTPH-Gx Batch	1	3/1/2010 10:00:001 W
Jasomie by Million		9/7/2016 10:08:00 PM
	ID: 147	755 Analyst: NG
Gasoline 4,340 613 D mg/Kg-dry	100	9/13/2016 2:57:04 PM
Surr: Toluene-d8 99.6 65-135 D %Rec	100	9/13/2016 2:57:04 PM
Surr: 4-Bromofluorobenzene 100 65-135 D %Rec	100	9/13/2016 2:57:04 PM
Volatile Organic Compounds by EPA Method 8260C Batch	ID: 147	755 Analyst: NG
Dichlorodifluoromethane (CFC-12) ND 0.0735 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Chloromethane ND 0.0735 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Vinyl chloride ND 0.00245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Bromomethane ND 0.110 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Trichlorofluoromethane (CFC-11) ND 0.0613 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Chloroethane ND 0.0735 mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1-Dichloroethene ND 0.0613 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Methylene chloride ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
trans-1,2-Dichloroethene ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Methyl tert-butyl ether (MTBE) ND 0.0613 mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1-Dichloroethane ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
2,2-Dichloropropane ND 0.0613 Q mg/Kg-dry	1	9/9/2016 5:18:23 PM
cis-1,2-Dichloroethene ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Chloroform ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1,1-Trichloroethane (TCA) ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1-Dichloropropene ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Carbon tetrachloride ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2-Dichloroethane (EDC) ND 0.0368 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Benzene ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Trichloroethene (TCE) ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2-Dichloropropane ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Bromodichloromethane ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Dibromomethane ND 0.0490 mg/Kg-dry	1	9/9/2016 5:18:23 PM
cis-1,3-Dichloropropene ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
Toluene ND 0.0245 mg/Kg-dry	1	9/9/2016 5:18:23 PM
trans-1,3-Dichloropropylene ND 0.0368 mg/Kg-dry	1	9/9/2016 5:18:23 PM



WO#: **1609081**Date Reported: **9/14/2016**

Client: Shannon & Wilson Collection Date: 9/6/2016 10:33:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-001 **Matrix:** Soil

Client Sample ID: UD-SW-E

RL Qual Units DF **Date Analyzed Analyses** Result **Volatile Organic Compounds by EPA Method 8260C** Batch ID: 14755 Analyst: NG ND mg/Kg-dry 1,1,2-Trichloroethane 0.0368 9/9/2016 5:18:23 PM 1 1,3-Dichloropropane ND 0.0613 mg/Kg-dry 1 9/9/2016 5:18:23 PM ND Tetrachloroethene (PCE) 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM Dibromochloromethane ND 0.0368 1 9/9/2016 5:18:23 PM mg/Kg-dry 1,2-Dibromoethane (EDB) ND 0.00613 mg/Kg-dry 1 9/9/2016 5:18:23 PM Chlorobenzene ND 9/9/2016 5:18:23 PM 0.0245 mg/Kg-dry 1 1.1.1.2-Tetrachloroethane ND 0.0368 mg/Kg-dry 1 9/9/2016 5:18:23 PM ND Ethylbenzene 0.0368 mg/Kg-dry 1 9/9/2016 5:18:23 PM m,p-Xylene ND 0.0245 1 9/9/2016 5:18:23 PM mg/Kg-dry o-Xylene ND 9/9/2016 5:18:23 PM 0.0245 1 mg/Kg-dry Styrene ND 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM Isopropylbenzene 1.16 0.0981 9/9/2016 5:18:23 PM mg/Kg-dry 1 **Bromoform** ND 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM 1,1,2,2-Tetrachloroethane ND 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM 1.37 9/9/2016 5:18:23 PM n-Propylbenzene 0.0245 mg/Kg-dry 1 Bromobenzene ND 0.0368 mg/Kg-dry 1 9/9/2016 5:18:23 PM 1,3,5-Trimethylbenzene 0.600 9/9/2016 5:18:23 PM 0.0245 mg/Kg-dry 1 2-Chlorotoluene ND 0.0245 9/9/2016 5:18:23 PM mg/Kg-dry 1 4-Chlorotoluene ND 0.0245 1 9/9/2016 5:18:23 PM mg/Kg-dry tert-Butylbenzene 0.214 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM ND 1,2,3-Trichloropropane 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM 1,2,4-Trichlorobenzene ND 0.0613 mg/Kg-dry 1 9/9/2016 5:18:23 PM 3.70 D sec-Butylbenzene 0.245 mg/Kg-dry 10 9/12/2016 2:08:55 PM 4-Isopropyltoluene 3.08 0.245 10 9/12/2016 2:08:55 PM mg/Kg-dry 1,3-Dichlorobenzene ND 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM 1,4-Dichlorobenzene ND 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM n-Butylbenzene 5.87 0.245 D 9/12/2016 2:08:55 PM mg/Kg-dry 10 ND 0.0245 1,2-Dichlorobenzene mg/Kg-dry 9/9/2016 5:18:23 PM 1 ND 1,2-Dibromo-3-chloropropane 0.613 mg/Kg-dry 1 9/9/2016 5:18:23 PM 0.946 1,2,4-Trimethylbenzene 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM Hexachlorobutadiene ND 0.123 mg/Kg-dry 1 9/9/2016 5:18:23 PM Naphthalene ND 0.0368 mg/Kg-dry 1 9/9/2016 5:18:23 PM 1.2.3-Trichlorobenzene ND 0.0245 mg/Kg-dry 1 9/9/2016 5:18:23 PM Surr: Dibromofluoromethane 94.2 56.5-129 %Rec 1 9/9/2016 5:18:23 PM Surr: Toluene-d8 103 64.3-131 D %Rec 10 9/12/2016 2:08:55 PM Surr: 1-Bromo-4-fluorobenzene 99.5 63.1-141 D %Rec 10 9/12/2016 2:08:55 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



WO#: **1609081**

Date Reported: 9/14/2016

Client: Shannon & Wilson Collection Date: 9/6/2016 10:33:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-001 **Matrix:** Soil

Client Sample ID: UD-SW-E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batch	n ID: 1	14743 Analyst: TN
Lead	2.83	0.188		mg/Kg-dry	1	9/8/2016 1:44:51 PM
Sample Moisture (Percent Moisture	<u>e)</u>			Batch	n ID: F	R31613 Analyst: CG
Percent Moisture	17.7	0.500		wt%	1	9/8/2016 12:55:34 PM



WO#: **1609081**Date Reported: **9/14/2016**

Client: Shannon & Wilson Collection Date: 9/6/2016 10:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-002 **Matrix:** Soil

Client Sample ID: UD-SW-W

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext. Batch ID: 14732 Analyst: WC Diesel (Fuel Oil) ND 22.7 mg/kg-dry 1 9/7/2016 10:39:00 PM Heavy Oil ND 56.8 50-150 %/Rec 1 9/7/2016 10:39:00 PM Surr: 2-Fluorobiphenyl 95.8 50-150 %/Rec 1 9/7/2016 10:39:00 PM Gasoline by NWTPH-Gx Batch ID: 147755 Analyst: NG Gasoline by NWTPH-Gx Batch ID: 147755 Analyst: NG Gasoline by NWTPH-Gx Batch ID: 147755 Analyst: NG Gasoline by Rec 50.9 5.57 mg/kg-dry 1 9/9/2016 3:45:40 AM Surr: Toluene-d8 96.6 65-135 %/Rec 1 9/9/2016 3:45:40 AM Volatile Organic Compounds by EPA Method 8260C Batch ID: 147755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0669 mg/kg-dry 1 9/9/2016 3:45:40 AM Vinyl chloride ND 0.00669 mg/kg-dry 1 9/9/2016 3:45:40 AM Pichlorodifluoromethane (CFC-12) ND 0.00669	Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Heavy Oil	Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	ı ID:	14732 Analyst: WC
Heavy Oil	Diesel (Fuel Oil)	ND	22.7		ma/Ka-drv	1	9/7/2016 10:39:00 PM
Surr: 2-Fluorobipheny 95.8 50-150 %Rec 1 9/7/2016 10:39:00 PM							
Surr: o-Terphenyl 95.8 50-150 %Rec 1 9/7/2016 10:39:00 PM Gasoline by NWTPH-Gx Batch ID: 14755 Analyst: NG Gasoline 50.9 5.57 mg/Kg-dry 1 9/9/2016 3:45:40 AM Surr: Toluene-dB 96.6 65-135 %Rec 1 9/9/2016 3:45:40 AM Surr: 4-Bromofluorobenzene 104 65-135 %Rec 1 9/9/2016 3:45:40 AM Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Vinyl chloride ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.00669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0557 mg/Kg	•						
Gasoline So.9 S.57 mg/Kg-dry 1 9/9/2016 3:45:40 AM Surr: Tolluene-d8 96.6 65-135 %Rec 1 9/9/2016 3:45:40 AM Surr: 4-Bromofluorobenzene 104 65-135 %Rec 1 9/9/2016 3:45:40 AM Surr: 4-Bromofluorobenzene 104 65-135 %Rec 1 9/9/2016 3:45:40 AM Methylice Method Seach Method Seach Method Seach Method Seach Method Methylice Method Methylice Method Methylice Method Methylice Method Methylice M							
Surr: Toluene-d8 96.6 65-135 %Rec 1 9/9/2016 3:45:40 AM Surr: 4-Bromofluorobenzene 104 65-135 %Rec 1 9/9/2016 3:45:40 AM Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloromethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Vinyl chloride ND 0.00223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-burly lether (MTBE) <td>Gasoline by NWTPH-Gx</td> <td></td> <td></td> <td></td> <td>Batch</td> <td>ı ID:</td> <td>14755 Analyst: NG</td>	Gasoline by NWTPH-Gx				Batch	ı ID:	14755 Analyst: NG
Surr: Toluene-d8 Surr: 4-Bromofluorobenzene 96.6 104 65-135 65-135 %Rec %Rec %Rec 1 9/9/2016 3:45:40 AM Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloromethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloromethane ND 0.00223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.00557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyliene chloride ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyliene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyliene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl	Gasoline	50.9	5.57		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloromethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Vinyl chloride ND 0.00223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.100 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 4,1-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloroethane	Surr: Toluene-d8	96.6	65-135			1	9/9/2016 3:45:40 AM
Dichlorodifluoromethane (CFC-12) ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloromethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Vinyl chloride ND 0.00223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.100 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,	Surr: 4-Bromofluorobenzene	104	65-135		%Rec	1	9/9/2016 3:45:40 AM
Chloromethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Vinyl chloride ND 0.00223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.100 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform </td <td>Volatile Organic Compounds by</td> <td>EPA Method 8</td> <td>3260C</td> <td></td> <td>Batch</td> <td>ı ID:</td> <td>14755 Analyst: NG</td>	Volatile Organic Compounds by	EPA Method 8	3260C		Batch	ı ID:	14755 Analyst: NG
Chloromethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM Vinyl chloride ND 0.00223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.100 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform </td <td>Dichlorodifluoromethane (CFC-12)</td> <td>ND</td> <td>0.0669</td> <td></td> <td>ma/Ka-drv</td> <td>1</td> <td>9/9/2016 3:45:40 AM</td>	Dichlorodifluoromethane (CFC-12)	ND	0.0669		ma/Ka-drv	1	9/9/2016 3:45:40 AM
Vinyl chloride ND 0.00223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromomethane ND 0.100 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM trans-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloroethane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM							0,0,=0.000.000.000
Bromomethane ND 0.100 mg/kg-dry 1 9/9/2016 3:45:40 AM Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyler-butyl ether (MTBE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM	Vinvl chloride		0.00223				
Trichlorofluoromethane (CFC-11) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroptopane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroptopane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM <			0.100				
Chloroethane ND 0.0669 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM trans-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethene ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM <td>Trichlorofluoromethane (CFC-11)</td> <td>ND</td> <td>0.0557</td> <td></td> <td></td> <td></td> <td>9/9/2016 3:45:40 AM</td>	Trichlorofluoromethane (CFC-11)	ND	0.0557				9/9/2016 3:45:40 AM
1,1-Dichloroethene ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM trans-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM <td></td> <td>ND</td> <td>0.0669</td> <td></td> <td></td> <td>1</td> <td>9/9/2016 3:45:40 AM</td>		ND	0.0669			1	9/9/2016 3:45:40 AM
Methylene chloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM trans-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM	1,1-Dichloroethene	ND	0.0557			1	9/9/2016 3:45:40 AM
trans-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM	Methylene chloride	ND	0.0223			1	9/9/2016 3:45:40 AM
Methyl tert-butyl ether (MTBE) ND 0.0557 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM <		ND	0.0223			1	9/9/2016 3:45:40 AM
1,1-Dichloroethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 2,2-Dichloropropane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM	Methyl tert-butyl ether (MTBE)	ND	0.0557			1	9/9/2016 3:45:40 AM
2,2-Dichloropropane ND 0.0557 Q mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM		ND	0.0223			1	9/9/2016 3:45:40 AM
cis-1,2-Dichloroethene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloro	2,2-Dichloropropane	ND	0.0557	Q		1	9/9/2016 3:45:40 AM
Chloroform ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene		ND	0.0223			1	9/9/2016 3:45:40 AM
1,1,1-Trichloroethane (TCA) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM	Chloroform	ND	0.0223			1	9/9/2016 3:45:40 AM
1,1-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM	1,1,1-Trichloroethane (TCA)	ND	0.0223			1	9/9/2016 3:45:40 AM
Carbon tetrachloride ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM		ND	0.0223			1	9/9/2016 3:45:40 AM
1,2-Dichloroethane (EDC) ND 0.0334 mg/Kg-dry 1 9/9/2016 3:45:40 AM Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM		ND	0.0223			1	9/9/2016 3:45:40 AM
Benzene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM	1,2-Dichloroethane (EDC)	ND	0.0334			1	9/9/2016 3:45:40 AM
Trichloroethene (TCE) ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM 1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM		ND	0.0223			1	9/9/2016 3:45:40 AM
1,2-Dichloropropane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM	Trichloroethene (TCE)	ND	0.0223			1	9/9/2016 3:45:40 AM
Bromodichloromethane ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM			0.0223			1	9/9/2016 3:45:40 AM
Dibromomethane ND 0.0446 mg/Kg-dry 1 9/9/2016 3:45:40 AM cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM							9/9/2016 3:45:40 AM
cis-1,3-Dichloropropene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM							
Toluene ND 0.0223 mg/Kg-dry 1 9/9/2016 3:45:40 AM							
·							
							9/9/2016 3:45:40 AM



WO#: **1609081**Date Reported: **9/14/2016**

Client: Shannon & Wilson Collection Date: 9/6/2016 10:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-002 **Matrix:** Soil

Client Sample ID: UD-SW-W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	8260C		Batch	n ID: 14	755 Analyst: NG
1,1,2-Trichloroethane	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,3-Dichloropropane	ND	0.0557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Tetrachloroethene (PCE)	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Dibromochloromethane	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dibromoethane (EDB)	ND	0.00557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Chlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1,1,2-Tetrachloroethane	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Ethylbenzene	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
m,p-Xylene	0.0223	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
o-Xylene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Styrene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Isopropylbenzene	ND	0.0892		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Bromoform	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1,2,2-Tetrachloroethane	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
n-Propylbenzene	0.0463	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Bromobenzene	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,3,5-Trimethylbenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
2-Chlorotoluene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
4-Chlorotoluene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
tert-Butylbenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,3-Trichloropropane	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,4-Trichlorobenzene	ND	0.0557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
sec-Butylbenzene	0.0362	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
4-Isopropyltoluene	0.0407	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,3-Dichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,4-Dichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
n-Butylbenzene	0.0797	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dibromo-3-chloropropane	ND	0.557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,4-Trimethylbenzene	0.246	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Hexachlorobutadiene	ND	0.111		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Naphthalene	0.0368	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,3-Trichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Surr: Dibromofluoromethane	94.6	56.5-129		%Rec	1	9/9/2016 3:45:40 AM
Surr: Toluene-d8	98.0	64.3-131		%Rec	1	9/9/2016 3:45:40 AM
Surr: 1-Bromo-4-fluorobenzene	105	63.1-141		%Rec	1	9/9/2016 3:45:40 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



WO#: 1609081

Date Reported: 9/14/2016

Client: Shannon & Wilson Collection Date: 9/6/2016 10:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-002 **Matrix:** Soil

Client Sample ID: UD-SW-W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batcl	n ID: 14	1743 Analyst: TN
Lead	5.90	0.177		mg/Kg-dry	1	9/8/2016 1:48:24 PM
Sample Moisture (Percent Moisture)			Batch	n ID: R	31613 Analyst: CG
Percent Moisture	17.0	0.500		wt%	1	9/8/2016 12:55:34 PM



WO#: **1609081**Date Reported: **9/14/2016**

Client: Shannon & Wilson Collection Date: 9/6/2016 10:39:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-003 **Matrix:** Soil

Client Sample ID: UD-SW-N

Diesel And Heavy Oil by NWTPH-Dx/Dx Ext. Batch ID: 14732 Analyst: WC Diesel (Fuel Oil) ND 20.8 mg/Kg-dry 1 9/7/2016 11:10:00 PM Meavy Oil ND 52.1 mg/Kg-dry 1 9/7/2016 11:10:00 PM Surr: 2-Fluorobiphenyl 87.3 50-150 %Rec 1 9/7/2016 11:10:00 PM Gasoline by NWTPH-Gx Batch ID: 14755 Analyst: NG Batch ID: 14755 Analyst: NG Gasoline by NWTPH-Gx Batch ID: 14755 Analyst: NG Batch ID: 14755 Analyst: NG Gasoline by NWTPH-Gx Batch ID: 14755 Analyst: NG Batch ID: 14755 Analyst: NG Observed Secure Sec	Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Heavy Oil Surr: 2-Fluorobiphenyl 87.3 50-150 %Rec 1 97/2016 11:10:00 PM Surr: 2-Fluorobiphenyl 87.3 50-150 %Rec 1 97/2016 11:10:00 PM Surr: o-Terphenyl 90.7 50-150 %Rec 1 97/2016 11:10:00 PM Gasoline by NWTPH-GX Batch ID: 14755 Analyst: NG Batch ID: 14755 Analyst: NG Gasoline by NWTPH-GX 98.0 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: Toluene-d8 98.0 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Surr: 4-Bromomethane (CFC-12) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Surriyahane (CFC-11) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Surriyahane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Surriyahane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1-1-Dichloroethene ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47	Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	n ID: 14	732 Analyst: WC
Heavy O ND 52.1	Diesel (Fuel Oil)	ND	20.8		mg/Kg-dry	1	9/7/2016 11:10:00 PM
Surr: 2-Fluorobiphenyl 87.3 50-150 %Rec 1 9/7/2016 11:10:00 PM		ND	52.1			1	9/7/2016 11:10:00 PM
Surr: o-Terphenyl 90.7 50-150 %Rec 1 9/7/2016 11:10:00 PM Gasoline by NWTPH-Gx Batch ID: 14755 Analyst: NG Gasoline Surr: Toluene-d8 98.0 65-135 D mg/Kg-dny 10 9/14/2016 1:24:55 PM Surr: A-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Volatile Organic Compounds by EPA Method 8260C Batch ID: 1472016 1:24:55 PM Volatile Organic Compounds by EPA Method 8260C Batch ID: 1472016 1:24:55 PM Volatile Organic Compoun	•	87.3	50-150			1	9/7/2016 11:10:00 PM
Gasoline 192 43.7 D mg/Kg-dry 10 9/14/2016 1:24:55 PM Surr: Toluene-d8 98.0 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloromethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Vinyl chloride ND 0.0787 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45		90.7	50-150		%Rec	1	9/7/2016 11:10:00 PM
Surr: Toluene-d8 98.0 65-135 D %Rec 10 9/14/2016 1:24:55 PM Surr: 4-Bromofluorobenzene 102 65-135 D %Rec 10 9/14/2016 1:24:55 PM Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloromethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.00787 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichlorofluoromethane (CFC-11) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Gasoline by NWTPH-Gx				Batch	n ID: 14	755 Analyst: NG
Surr: Toluene-d8 Surr: 4-Bromofluorobenzene 98.0 102 65-135 65-135 D %Rec MeRec 10 9/14/2016 1:24:55 PM Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloromethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Vinyl chloride ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.00787 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichlorofluoromethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride there (MTBE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl either (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/	Gasoline	192	43.7	D	mg/Kg-dry	10	9/14/2016 1:24:55 PM
Volatile Organic Compounds by EPA Method 8260C Batch ID: 14755 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloromethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Vinyl chloride ND 0.00175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichlorofluoromethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 4 trans-1,2-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 4 (1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 4 (1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 4 (1,1-Dichloroethan	Surr: Toluene-d8	98.0	65-135	D		10	9/14/2016 1:24:55 PM
Dichlorodifluoromethane (CFC-12) ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Surr: 4-Bromofluorobenzene	102	65-135	D	%Rec	10	9/14/2016 1:24:55 PM
Chloromethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Vinyl chloride ND 0.00175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.0787 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichlorofluoromethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethene ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloroptopane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform<	Volatile Organic Compounds by	EPA Method 8	3260C		Batch	n ID: 14	755 Analyst: NG
Chloromethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Vinyl chloride ND 0.00175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.0787 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichlorofluoromethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethene ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloroptopane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform<	Dichlorodifluoromethane (CFC-12)	ND	0.0525		ma/Ka-dry	1	9/9/2016 5·47·45 PM
Vinyl chloride ND 0.00175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromomethane ND 0.0787 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichlorofluoromethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Bromomethane ND 0.0787 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichlorofluoromethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethene ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Itrans-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Trichlorofluoromethane (CFC-11) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethene ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloropropane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Chloroethane ND 0.0525 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethene ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/20							
1,1-Dichloroethene ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM trans-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloropropane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>9/9/2016 5:47:45 PM</td>							9/9/2016 5:47:45 PM
Methylene chloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM trans-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloropropane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM	1,1-Dichloroethene	ND	0.0437			1	9/9/2016 5:47:45 PM
trans-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloropropane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	•	ND	0.0175			1	9/9/2016 5:47:45 PM
Methyl tert-butyl ether (MTBE) ND 0.0437 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloropropane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM <	-	ND	0.0175			1	9/9/2016 5:47:45 PM
1,1-Dichloroethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 2,2-Dichloropropane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Methyl tert-butyl ether (MTBE)	ND	0.0437			1	9/9/2016 5:47:45 PM
2,2-Dichloropropane ND 0.0437 Q mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM		ND				1	9/9/2016 5:47:45 PM
cis-1,2-Dichloroethene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloro	2,2-Dichloropropane	ND	0.0437	Q		1	9/9/2016 5:47:45 PM
Chloroform ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene		ND	0.0175			1	9/9/2016 5:47:45 PM
1,1,1-Trichloroethane (TCA) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,1-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Chloroform	ND	0.0175			1	9/9/2016 5:47:45 PM
Carbon tetrachloride ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	1,1,1-Trichloroethane (TCA)	ND	0.0175			1	9/9/2016 5:47:45 PM
1,2-Dichloroethane (EDC) ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	1,1-Dichloropropene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Benzene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM		ND	0.0175			1	9/9/2016 5:47:45 PM
Trichloroethene (TCE) ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM 1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	1,2-Dichloroethane (EDC)	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dichloropropane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Benzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Trichloroethene (TCE)	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromodichloromethane ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Dibromomethane ND 0.0350 mg/Kg-dry 1 9/9/2016 5:47:45 PM cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	1,2-Dichloropropane	ND	0.0175			1	9/9/2016 5:47:45 PM
cis-1,3-Dichloropropene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Bromodichloromethane	ND	0.0175			1	9/9/2016 5:47:45 PM
Toluene ND 0.0175 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Dibromomethane	ND	0.0350		mg/Kg-dry	1	9/9/2016 5:47:45 PM
to the contract of the contrac	cis-1,3-Dichloropropene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
trans-1,3-Dichloropropylene ND 0.0262 mg/Kg-dry 1 9/9/2016 5:47:45 PM	Toluene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
	trans-1,3-Dichloropropylene	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM



DF

Units

WO#: **1609081**Date Reported: **9/14/2016**

Date Analyzed

Client: Shannon & Wilson Collection Date: 9/6/2016 10:39:00 AM

RL

Qual

Project: Sound Transit / Key Bank

Lab ID: 1609081-003 **Matrix:** Soil

Result

Client Sample ID: UD-SW-N

Analyses

Allalyses	Count		Quui	Oilito	٠.	Date Analyzea
Volatile Organic Compounds by EPA	Method	8260C		Batch	ID:	14755 Analyst: NG
1,1,2-Trichloroethane	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,3-Dichloropropane	ND	0.0437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Tetrachloroethene (PCE)	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Dibromochloromethane	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dibromoethane (EDB)	ND	0.00437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Chlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1,1,2-Tetrachloroethane	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Ethylbenzene	0.114	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
m,p-Xylene	0.240	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
o-Xylene	0.0192	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Styrene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Isopropylbenzene	ND	0.0699		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromoform	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1,2,2-Tetrachloroethane	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
n-Propylbenzene	0.0892	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromobenzene	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,3,5-Trimethylbenzene	0.114	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
2-Chlorotoluene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
4-Chlorotoluene	0.0192	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
tert-Butylbenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,3-Trichloropropane	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,4-Trichlorobenzene	ND	0.0437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
sec-Butylbenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
4-Isopropyltoluene	0.0691	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,3-Dichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,4-Dichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
n-Butylbenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dibromo-3-chloropropane	ND	0.437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,4-Trimethylbenzene	0.584	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Hexachlorobutadiene	ND	0.0874		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Naphthalene	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,3-Trichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Surr: Dibromofluoromethane	92.3	56.5-129		%Rec	1	9/9/2016 5:47:45 PM
Surr: Toluene-d8	103	64.3-131		%Rec	1	9/9/2016 5:47:45 PM
Surr: 1-Bromo-4-fluorobenzene	104	63.1-141		%Rec	1	9/9/2016 5:47:45 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



WO#: 1609081

Date Reported: 9/14/2016

Client: Shannon & Wilson Collection Date: 9/6/2016 10:39:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-003 **Matrix:** Soil

Client Sample ID: UD-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batcl	n ID:	14743 Analyst: TN
Lead	25.3	0.192		mg/Kg-dry	1	9/8/2016 1:51:56 PM
Sample Moisture (Percent Moisture	<u>e)</u>			Batch	n ID:	R31613 Analyst: CG
Percent Moisture	19.2	0.500		wt%	1	9/8/2016 12:55:34 PM



WO#: **1609081**Date Reported: **9/14/2016**

Client: Shannon & Wilson Collection Date: 9/6/2016 10:36:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-004 **Matrix:** Soil

Client Sample ID: UD-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	ı ID:	14732 Analyst: WC
Diesel (Fuel Oil)	ND	23.1		mg/Kg-dry	1	9/8/2016 12:43:00 AM
Heavy Oil	ND	57.7		mg/Kg-dry	1	9/8/2016 12:43:00 AM
Surr: 2-Fluorobiphenyl	113	50-150		%Rec	1	9/8/2016 12:43:00 AM
Surr: o-Terphenyl	110	50-150		%Rec	1	9/8/2016 12:43:00 AM
Gasoline by NWTPH-Gx				Batch	ı ID:	14755 Analyst: NG
Gasoline	28.4	5.33		mg/Kg-dry	1	9/9/2016 4:14:57 AM
Surr: Toluene-d8	95.8	65-135		%Rec	1	9/9/2016 4:14:57 AM
Surr: 4-Bromofluorobenzene	101	65-135		%Rec	1	9/9/2016 4:14:57 AM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	ı ID:	14755 Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	0.0639		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Chloromethane	ND	0.0639		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Vinyl chloride	ND	0.00213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Bromomethane	ND	0.0959		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Trichlorofluoromethane (CFC-11)	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Chloroethane	ND	0.0639		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1-Dichloroethene	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Methylene chloride	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
trans-1,2-Dichloroethene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Methyl tert-butyl ether (MTBE)	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1-Dichloroethane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
2,2-Dichloropropane	ND	0.0533	Q	mg/Kg-dry	1	9/9/2016 3:50:23 PM
cis-1,2-Dichloroethene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Chloroform	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1,1-Trichloroethane (TCA)	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1-Dichloropropene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Carbon tetrachloride	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2-Dichloroethane (EDC)	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Benzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Trichloroethene (TCE)	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2-Dichloropropane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Bromodichloromethane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Dibromomethane	ND	0.0426		mg/Kg-dry	1	9/9/2016 3:50:23 PM
cis-1,3-Dichloropropene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Toluene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
trans-1,3-Dichloropropylene	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM



WO#: **1609081**

Date Reported: 9/14/2016

Client: Shannon & Wilson Collection Date: 9/6/2016 10:36:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-004 **Matrix:** Soil

Client Sample ID: UD-SW-S

RL Qual Units DF **Date Analyzed Analyses** Result **Volatile Organic Compounds by EPA Method 8260C** Batch ID: 14755 Analyst: NG ND mg/Kg-dry 1,1,2-Trichloroethane 0.0320 9/9/2016 3:50:23 PM 1 1,3-Dichloropropane ND 0.0533 mg/Kg-dry 1 9/9/2016 3:50:23 PM ND Tetrachloroethene (PCE) 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM Dibromochloromethane ND 0.0320 1 9/9/2016 3:50:23 PM mg/Kg-dry 1,2-Dibromoethane (EDB) ND 0.00533 mg/Kg-dry 1 9/9/2016 3:50:23 PM Chlorobenzene ND 9/9/2016 3:50:23 PM 0.0213 mg/Kg-dry 1 1.1.1.2-Tetrachloroethane ND 0.0320 mg/Kg-dry 1 9/9/2016 3:50:23 PM ND Ethylbenzene 0.0320 mg/Kg-dry 1 9/9/2016 3:50:23 PM m,p-Xylene ND 0.0213 1 9/9/2016 3:50:23 PM mg/Kg-dry o-Xylene ND 9/9/2016 3:50:23 PM 0.0213 1 mg/Kg-dry Styrene ND 9/9/2016 3:50:23 PM 0.0213 mg/Kg-dry 1 Isopropylbenzene ND 0.0852 9/9/2016 3:50:23 PM mg/Kg-dry 1 **Bromoform** ND 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM 1,1,2,2-Tetrachloroethane ND 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM ND 9/9/2016 3:50:23 PM n-Propylbenzene 0.0213 mg/Kg-dry 1 Bromobenzene ND 0.0320 mg/Kg-dry 1 9/9/2016 3:50:23 PM 1,3,5-Trimethylbenzene ND 9/9/2016 3:50:23 PM 0.0213 mg/Kg-dry 1 2-Chlorotoluene ND 9/9/2016 3:50:23 PM 0.0213 mg/Kg-dry 1 4-Chlorotoluene ND 0.0213 1 9/9/2016 3:50:23 PM mg/Kg-dry tert-Butylbenzene ND 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM ND 1,2,3-Trichloropropane 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM 1,2,4-Trichlorobenzene ND 0.0533 mg/Kg-dry 1 9/9/2016 3:50:23 PM 0.0389 sec-Butylbenzene 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM 4-Isopropyltoluene ND 0.0213 1 9/9/2016 3:50:23 PM mg/Kg-dry 1,3-Dichlorobenzene ND 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM 1,4-Dichlorobenzene ND 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM n-Butylbenzene 0.0309 0.0213 9/9/2016 3:50:23 PM mg/Kg-dry 1 ND 0.0213 1,2-Dichlorobenzene 1 9/9/2016 3:50:23 PM mg/Kg-dry ND 1,2-Dibromo-3-chloropropane 0.533 mg/Kg-dry 1 9/9/2016 3:50:23 PM 0.0304 1,2,4-Trimethylbenzene 0.0213 mg/Kg-dry 1 9/9/2016 3:50:23 PM Hexachlorobutadiene ND 0.107 1 9/9/2016 3:50:23 PM mg/Kg-dry Naphthalene ND 0.0320 mg/Kg-dry 1 9/9/2016 3:50:23 PM 1.2.3-Trichlorobenzene ND 0.0213 1 9/9/2016 3:50:23 PM mg/Kg-dry Surr: Dibromofluoromethane 98.3 56.5-129 %Rec 1 9/9/2016 3:50:23 PM Surr: Toluene-d8 97.5 64.3-131 %Rec 9/9/2016 3:50:23 PM 1 Surr: 1-Bromo-4-fluorobenzene 102 63.1-141 %Rec 1 9/9/2016 3:50:23 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



WO#: 1609081

Date Reported: 9/14/2016

Client: Shannon & Wilson Collection Date: 9/6/2016 10:36:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-004 **Matrix:** Soil

Client Sample ID: UD-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batch	n ID: 1	4743 Analyst: TN
Lead	3.40	0.182		mg/Kg-dry	1	9/8/2016 1:55:29 PM
Sample Moisture (Percent Moisture)			Batch	n ID: R	R31613 Analyst: CG
Percent Moisture	15.6	0.500		wt%	1	9/8/2016 12:55:34 PM



WO#: **1609081**Date Reported: **9/14/2016**

Client: Shannon & Wilson Collection Date: 9/6/2016 10:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-005 **Matrix:** Soil

Client Sample ID: UD-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	n ID: 147	732 Analyst: WC
Diesel (Fuel Oil)	ND	23.0		mg/Kg-dry	1	9/8/2016 1:14:00 AM
Heavy Oil	ND	57.6		mg/Kg-dry	1	9/8/2016 1:14:00 AM
Surr: 2-Fluorobiphenyl	105	50-150		%Rec	1	9/8/2016 1:14:00 AM
Surr: o-Terphenyl	105	50-150		%Rec	1	9/8/2016 1:14:00 AM
Gasoline by NWTPH-Gx				Batch	n ID: 147	755 Analyst: NG
Gasoline	5,390	510	D	mg/Kg-dry	100	9/13/2016 3:26:34 PM
Surr: Toluene-d8	101	65-135	D	%Rec	100	9/13/2016 3:26:34 PM
Surr: 4-Bromofluorobenzene	103	65-135	D	%Rec	100	9/13/2016 3:26:34 PM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	n ID: 147	755 Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	0.0612		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chloromethane	ND	0.0612		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Vinyl chloride	ND	0.00204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Bromomethane	ND	0.0918		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Trichlorofluoromethane (CFC-11)	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chloroethane	ND	0.0612		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1-Dichloroethene	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Methylene chloride	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
trans-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Methyl tert-butyl ether (MTBE)	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1-Dichloroethane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
2,2-Dichloropropane	ND	0.0510	Q	mg/Kg-dry	1	9/9/2016 6:17:01 PM
cis-1,2-Dichloroethene	ND	0.0204	-	mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chloroform	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1,1-Trichloroethane (TCA)	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1-Dichloropropene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Carbon tetrachloride	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dichloroethane (EDC)	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Benzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Trichloroethene (TCE)	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dichloropropane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Bromodichloromethane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Dibromomethane	ND	0.0408		mg/Kg-dry	1	9/9/2016 6:17:01 PM
cis-1,3-Dichloropropene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Toluene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
trans-1,3-Dichloropropylene	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM



Analytical Report

WO#: **1609081**

Date Reported: 9/14/2016

Client: Shannon & Wilson Collection Date: 9/6/2016 10:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-005 **Matrix:** Soil

Client Sample ID: UD-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	8260C		Batch	n ID: 14	755 Analyst: NG
1,1,2-Trichloroethane	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,3-Dichloropropane	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Tetrachloroethene (PCE)	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Dibromochloromethane	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dibromoethane (EDB)	ND	0.00510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1,1,2-Tetrachloroethane	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Ethylbenzene	3.03	0.306	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
m,p-Xylene	3.52	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
o-Xylene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Styrene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Isopropylbenzene	3.98	0.816	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
Bromoform	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1,2,2-Tetrachloroethane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
n-Propylbenzene	8.73	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
Bromobenzene	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,3,5-Trimethylbenzene	0.980	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
2-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
4-Chlorotoluene	0.205	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
tert-Butylbenzene	0.251	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2,3-Trichloropropane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2,4-Trichlorobenzene	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
sec-Butylbenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
4-Isopropyltoluene	5.14	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
1,3-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,4-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
n-Butylbenzene	11.2	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
1,2-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dibromo-3-chloropropane	ND	0.510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2,4-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Hexachlorobutadiene	ND	0.102		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Naphthalene	6.66	0.306	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
1,2,3-Trichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Surr: Dibromofluoromethane	93.3	56.5-129	D	%Rec	10	9/12/2016 3:10:39 PM
Surr: Toluene-d8	105	64.3-131	D	%Rec	10	9/12/2016 3:10:39 PM
Surr: 1-Bromo-4-fluorobenzene	102	63.1-141	D	%Rec	10	9/12/2016 3:10:39 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Analytical Report

WO#: 1609081

Date Reported: 9/14/2016

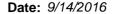
Client: Shannon & Wilson Collection Date: 9/6/2016 10:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-005 **Matrix:** Soil

Client Sample ID: UD-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batch	n ID: 14	743 Analyst: TN
Lead	2.50	0.182		mg/Kg-dry	1	9/8/2016 1:59:01 PM
Sample Moisture (Percent Moisture	<u>e)</u>			Batch	n ID: R3	Analyst: CG
Percent Moisture	14.1	0.500		wt%	1	9/8/2016 12:55:34 PM





SampType: MSD

Batch ID: 14743

Result

25.2

RΙ

0.191

Work Order: 1609081

Sample ID 1609082-001AMSD

Client ID: BATCH

Analyte

Lead

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Total Metals by EPA Method 6020

RunNo: 31615

SeaNo: 597092

%RPD

6.15

RPDLimit

20

Qual

Sample ID MB-14743 SampType: MBLK Units: ma/Ka Prep Date: 9/8/2016 RunNo: 31615 Client ID: MBLKS Batch ID: 14743 Analysis Date: 9/8/2016 SeqNo: 597086 Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual Lead ND 0.152 Sample ID LCS-14743 SampType: LCS Units: mg/Kg Prep Date: 9/8/2016 RunNo: 31615 Client ID: LCSS Analysis Date: 9/8/2016 SeqNo: 597087 Batch ID: 14743 SPK value SPK Ref Val LowLimit HighLimit RPD Ref Val Analyte Result RL %REC %RPD RPDLimit Qual 0 80 21.5 0.159 19.84 109 120 Lead Sample ID 1609082-001ADUP SampType: DUP Prep Date: 9/8/2016 Units: mg/Kg-dry RunNo: 31615 Client ID: BATCH Analysis Date: 9/8/2016 Batch ID: 14743 SeqNo: 597089 Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual Lead 2.79 0.181 2.849 2.14 20 Sample ID 1609082-001AMS Prep Date: 9/8/2016 SampType: MS Units: mg/Kg-dry RunNo: 31615 Analysis Date: 9/8/2016 Client ID: BATCH Batch ID: 14743 SeqNo: 597091 RI SPK value SPK Ref Val LowLimit HighLimit RPD Ref Val %RPD RPDLimit Analyte Result %REC Qual 75 23.7 23.45 Lead 0.188 2.849 89.0 125

Original Page 20 of 41

2.849

Units: mg/Kg-dry

%RFC

94.0

SPK value SPK Ref Val

23.81

Prep Date: 9/8/2016

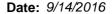
LowLimit HighLimit RPD Ref Val

125

23.73

Analysis Date: 9/8/2016

75





Work Order: 1609081

Surr: 2-Fluorobiphenyl

Surr: o-Terphenyl

22.9

22.8

QC SUMMARY REPORT

0

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sound Transit / Key Bank Project: Sample ID MB-14732 SampType: MBLK Units: ma/Ka Prep Date: 9/7/2016 RunNo: 31589 Client ID: MBLKS Batch ID: 14732 Analysis Date: 9/7/2016 SeqNo: 596553 Analyte Result RΙ SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual Diesel (Fuel Oil) ND 20.0 ND Heavy Oil 50.0 Surr: 2-Fluorobiphenyl 19.8 20.00 98.8 50 150 Surr: o-Terphenyl 19.1 20.00 95.7 50 150 Sample ID LCS-14732 SampType: LCS Prep Date: 9/7/2016 RunNo: 31589 Units: mq/Kq Client ID: LCSS Batch ID: 14732 Analysis Date: 9/7/2016 SeqNo: 596551 LowLimit HighLimit RPD Ref Val Analyte Result SPK value SPK Ref Val %RFC %RPD RPDLimit Qual Diesel (Fuel Oil) 413 20.0 500.0 0 82.6 65 135 Surr: 2-Fluorobiphenyl 20.0 20.00 99.9 50 150 Surr: o-Terphenyl 19.1 20.00 95.6 50 150 Sample ID LCSD-14732 SampType: LCSD Prep Date: 9/7/2016 RunNo: 31589 Units: mq/Kq Client ID: LCSS02 Batch ID: 14732 Analysis Date: 9/7/2016 SeaNo: 596552 Analyte Result RΙ SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD **RPDLimit** Qual Diesel (Fuel Oil) 420 20.0 500.0 84.0 65 135 413.1 1.64 30 Surr: 2-Fluorobiphenyl 20.2 20.00 50 150 101 0 Surr: o-Terphenyl 19.3 20.00 96.7 50 150 Sample ID 1609082-001ADUP SampType: DUP Units: mg/Kg-dry Prep Date: 9/7/2016 RunNo: 31589 Client ID: **BATCH** Analysis Date: 9/7/2016 Batch ID: 14732 SeqNo: 596740 LowLimit HighLimit RPD Ref Val Analyte Result RL SPK value SPK Ref Val %REC %RPD RPDLimit Qual Diesel (Fuel Oil) ND 22.9 0 30 30 Heavy Oil ND 57.3

Original Page 21 of 41

50

50

150

150

99.8

99.6

22.93

22.93

Date: 9/14/2016



Work Order: 1609081

Sample ID 1609082-001ADUP

QC SUMMARY REPORT

RunNo: **31589**

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Project: Sound Transit / Key Bank

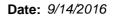
SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **9/7/2016**

Client ID: **BATCH** Batch ID: **14732** Analysis Date: **9/7/2016** SeqNo: **596740**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sample ID 1609077-002ADUP	SampType: DUP			Units: mg/k	(g-dry	Prep Da	te: 9/7/20 1	16	RunNo: 315	589	
Client ID: BATCH	Batch ID: 14732					Analysis Da	te: 9/8/20 1	6	SeqNo: 596	6732	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	21.5						0		30	
Heavy Oil	ND	53.8						0		30	
Surr: 2-Fluorobiphenyl	24.2		21.52		112	50	150		0		
Surr: o-Terphenyl	23.3		21.52		108	50	150		0		

Original Page 22 of 41





Work Order: 1609081

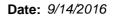
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Project: Sound Tran	nsit / Key Bank								Gasoline	by NW I	PH-G
Sample ID LCS-14755	SampType: LCS			Units: mg/Kg		Prep Date	e: 9/8/2016		RunNo: 316	642	
Client ID: LCSS	Batch ID: 14755					Analysis Date	e: 9/8/2016		SeqNo: 597	7561	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD	Ref Val	%RPD	RPDLimit	Qual
Gasoline	24.5	5.00	25.00	0	98.2	65	135				
Surr: Toluene-d8	1.25		1.250		100	65	135				
Surr: 4-Bromofluorobenzene	1.26		1.250		101	65	135				
Sample ID MB-14755	SampType: MBLK			Units: mg/Kg		Prep Date	e: 9/8/2016		RunNo: 316	642	
Client ID: MBLKS	Batch ID: 14755					Analysis Date	e: 9/9/2016		SeqNo: 597	7562	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD	Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	1.29		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.18		1.250		94.2	65	135				
Sample ID 1609077-002BDUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date	e: 9/8/2016		RunNo: 316	642	
Client ID: BATCH	Batch ID: 14755					Analysis Date	e: 9/9/2016		SeqNo: 597	7547	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD	Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.66						0		30	
Surr: Toluene-d8	1.36		1.416		95.7	65	135		0		
Surr: 4-Bromofluorobenzene	1.36		1.416		95.8	65	135		0		
Sample ID 1609084-001BMS	SampType: MS			Units: mg/Kg-	dry	Prep Date	e: 9/8/2016		RunNo: 316	642	
Client ID: BATCH	Batch ID: 14755					Analysis Date	e: 9/9/2016		SeqNo: 597	7555	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD	Ref Val	%RPD	RPDLimit	Qual
Gasoline	31.7	6.65	33.24	0.9161	92.7	65	135				
Surr: Toluene-d8	1.64		1.662		98.8	65	135				
Surr: 4-Bromofluorobenzene	1.67		1.662		100	65	135				

Original Page 23 of 41





Work Order: 1609081

Surr: Toluene-d8

Surr: 4-Bromofluorobenzene

25.1

25.0

QC SUMMARY REPORT

Shannon & Wilson CLIENT:

Gasoline by NWTPH-Gx

Project: Sound Tran	nsit / Key Bank								Gasoline	by NWT	PH-G
Sample ID 1609084-001BMSD	SampType: MSD			Units: mg/Kg	j-dry	Prep Date	: 9/8/201	6	RunNo: 31	642	
Client ID: BATCH	Batch ID: 14755					Analysis Date	: 9/9/20 1	16	SeqNo: 59	7556	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	31.8	6.65	33.24	0.9161	92.8	65	135	31.74	0.105	30	
Surr: Toluene-d8	1.60		1.662		96.5	65	135		0		
Surr: 4-Bromofluorobenzene	1.71		1.662		103	65	135		0		
Sample ID 1609084-005BDUP	SampType: DUP			Units: mg/Kg	j-dry	Prep Date	e: 9/8/20 1	16	RunNo: 31	642	
Client ID: BATCH	Batch ID: 14755					Analysis Date	: 9/9/20 1	6	SeqNo: 59	8056	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	4.93						0		30	
Surr: Toluene-d8	1.21		1.231		98.6	65	135		0		
Surr: 4-Bromofluorobenzene	1.20		1.231		97.8	65	135		0		
Sample ID CCV-D-14755	SampType: CCV			Units: mg/Kg		Prep Date	: 9/13/20)16	RunNo: 31	642	
Client ID: CCV	Batch ID: 14755					Analysis Date	: 9/13/20)16	SeqNo: 59	8996	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	471	5.00	500.0	0	94.3	80	120				
Surr: Toluene-d8	24.9		25.00		99.6	65	135				
Surr: 4-Bromofluorobenzene	24.8		25.00		99.2	65	135				
Sample ID CCV-E-14755	SampType: CCV			Units: mg/Kg	<u> </u>	Prep Date	e: 9/14/20)16	RunNo: 31	642	
Client ID: CCV	Batch ID: R31642					Analysis Date	e: 9/14/20)16	SeqNo: 59	9395	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	403	5.00	500.0	0	80.5	80	120				
0 T I IO	a										

Page 24 of 41 Original

101

100

65

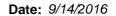
65

135

135

25.00

25.00





Work Order: 1609081

Project:

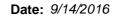
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD Ref Val Qual Dichlorodiffluoromethane (CFC-12) 0.842 0.0600 1.000 0 84.2 34.5 14.1 Chloromethane 0.872 0.0600 1.000 0 87.2 38.8 132 Vinyl chloride 0.861 0.02020 1.000 0 85.1 44 142 Bromomethane 0.999 0.0900 1.000 0 85.8 42.9 147 Tichloroffluoromethane (CFC-11) 0.858 0.0500 1.000 0 85.8 42.9 147 Tichlorofluoromethane 0.967 0.0500 1.000 0 85.8 42.9 147 Tichlorofluoromethane 0.967 0.0500 1.000 0 85.8 42.9 147 Tichloropethane 0.967 0.0500 1.000 0 85.8 140 Methylane chloride 0.946 0.0200 1.000 0 96.7 49.7 142 Methylane chloride 0.946 0.0200 1.000 0 96.7 49.7 142 Methylane chloride 1.05 0.0200 1.000 0 95.8 130 Methylane (MTBE) 0.986 0.0500 1.000 0 95.8 59.1 138 Tichloropropane 0.979 0.0500 1.000 0 97.9 28.1 149 Z.2-Dichloropropane 1.01 0.0200 1.000 0 97.5 69 132 Till-Dichloropropane 1.03 0.0200 1.000 0 97.5 69 132 Till-Dichloropropane 1.03 0.0200 1.000 0 97.5 69 132 Till-Dichloropropane 1.03 0.0200 1.000 0 99.0 130 137 Till-Dichloropropane 1.09 0.0200 1.000 0 99.0 130 137 Till-Dichloropropane 1.09 0.0200 1.000 0 99.0 130 133 Till-Dichloropropane 1.09 0.0200 1.000 0 99.0 130 133 Till-Dichloropropane 1.09 0.0200 1.000 0 99.0 140 153 Till-Dichloropropane 1.09 0.0200 1.000 0 99.0 140 153 Till-Dichloropropane 1.09 0.0200 1.000 0 99.0 140 153 Till-Dichloropropane 1.09 0.0200 1.000 0 99.0 153 Till-Dichloropropane 1.04 0.0200 1.000 0 99.0 153 Till-Dichloropropane 1.05 0.0300 1.000	Sample ID LCS-14755	SampType: LCS			Units: mg/Kg		Prep Da	te: 9/8/20 1	16	RunNo: 310	641	
Dichlorodifluoromethane (CFC-12) 0.842 0.0600 1.000 0 84.2 34.5 141	Client ID: LCSS	Batch ID: 14755					Analysis Da	te: 9/8/20 1	16	SeqNo: 597	7530	
Chloromethane 0.872 0.0600 1.000 0 87.2 38.8 132 Vinyl chloride 0.881 0.00200 1.000 0 86.1 44 142 Bromomethane 0.999 0.999 40.9 157 Trichlorofluoromethane (CFC-11) 0.858 0.0500 1.000 0 85.8 42.9 147 Chloroethane 0.850 0.0600 1.000 0 85.0 37.1 144 I.1-Dichloroethane 0.967 0.0500 1.000 0 96.7 49.7 142 Methylaen chloride 0.946 0.0200 1.000 0 96.7 49.7 142 Methylaer chloride there 1.05 0.0200 1.000 0 96.6 59.1 138 1.1-Dichloroethane 0.942 0.0200 1.000 0 97.6 61.9 137 2.2-Dichloroethane 0.979 0.0500 1.000 0 97.9 28.1 149 1.	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride 0.861 0.00200 1.000 0 86.1 44 142 Bromomethane 0.909 0.0900 1.000 0 90.9 40.9 157 Trichilorfouromethane (CFC-11) 0.858 0.0500 1.000 0 85.8 42.9 147 Chloroethane 0.950 0.0500 1.000 0 96.7 49.7 142 Methylene chloride 0.946 0.0200 1.000 0 96.7 49.7 142 Methyl terb-butyl ether (MTBE) 0.986 0.0200 1.000 0 94.6 46.3 140 I.1-Dichloroethene 1.05 0.0200 1.000 0 98.6 59.1 138 1.1-Dichloroethane 0.982 0.0500 1.000 0 97.2 28.1 149 Q 0.81-2-Dichloroethane 1.01 0.0200 1.000 0 97.9 28.1 149 Q 0.81-12-Dichloroethane (TCA) 0.975 0.0200 1.0	Dichlorodifluoromethane (CFC-12)	0.842	0.0600	1.000	0	84.2	34.5	141				
Bromomethane 0.909 0.0900 1.000 0 90.9 40.9 157 Trichlorofluoromethane (CFC-11) 0.858 0.0500 1.000 0 85.8 42.9 147 Chlorosthane 0.850 0.0600 1.000 0 85.0 37.1 144 1,1-Dichloroethene 0.967 0.0500 1.000 0 96.7 49.7 142 Methylene chloride 0.946 0.0200 1.000 0 96.6 46.3 140 Methyl terl-bulyl ether (MTBE) 0.986 0.0500 1.000 0 98.6 59.1 138 1,1-Dichloroethane 0.942 0.0200 1.000 0 97.9 2.81 149 Q 2,2-Dichloropropane 0.979 0.0500 1.000 0 191 71.3 135 Chloroform 0.994 0.0200 1.000 0 97.5 69 132 1,1-Dichloropropene 1.03 0.0200 1.000 0	Chloromethane	0.872	0.0600	1.000	0	87.2	38.8	132				
Trichlorofluoromethane (CFC-11) 0.858 0.0500 1.000 0 85.8 42.9 147 Chlorosethane 0.850 0.0600 1.000 0 85.0 37.1 144 1,1-Dichlorosethene 0.967 0.0500 1.000 0 96.7 48.7 142 Methylene chloride 0.946 0.0200 1.000 0 94.6 46.3 140 Wathyl ether (MTBE) 0.986 0.0500 1.000 0 94.6 46.3 130 Methyl ether (MTBE) 0.986 0.0500 1.000 0 94.2 61.9 137 2,2-Dichlorosthane 0.942 0.0200 1.000 0 97.9 28.1 149 0 2,2-Dichlorosthane 1.01 0.0200 1.000 0 97.9 28.1 149 0 2,2-Dichlorosthane 1.01 0.0200 1.000 0 97.5 69 132 1,1,1-Trichlorosthane (TCA) 0.937 0.0200 1.000	Vinyl chloride	0.861	0.00200	1.000	0	86.1	44	142				
Chloroethane 0.850 0.0600 1.000 0 85.0 37.1 144 1,1-Dichlororethene 0.967 0.0500 1.000 0 96.7 49.7 142 Methylene Chloride 1.05 0.0200 1.000 0 96.7 49.7 142 Methylene Chloride 1.05 0.0200 1.000 0 96.6 88 130 Methyleter-butyl ether (MTBE) 0.986 0.0500 1.000 0 98.6 59.1 138 1,1-Dichloroethane 0.942 0.0200 1.000 0 98.6 59.1 138 1,1-Dichloroethane 0.979 0.0500 1.000 0 97.9 81.1 149 2,2-Dichloroethane 1.01 0.0200 1.000 0 97.9 81.1 149 2,2-Dichloroethane 1.01 0.0200 1.000 0 97.9 81.1 149 2,2-Dichloroethane 1.01 0.0200 1.000 0 99.4 67.5 129 1,1-Tichloroethane (TCA) 0.975 0.0200 1.000 0 99.4 67.5 129 1,1-Dichloropropane 1.03 0.0200 1.000 0 103 72.7 131 Carbon tetrachloride 1.03 0.0200 1.000 0 99.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 63.2 137 1,2-Dichloroethane (TCE) 1.04 0.0200 1.000 0 99.0 64.3 133 Trichloroethane (TCE) 1.04 0.0200 1.000 0 99.0 65.2 142 Bromodichloromethane 1.03 0.0400 1.000 0 99.0 65.2 142 Bromodichloromethane 1.03 0.0400 1.000 0 99.0 65.2 142 Bromodichloropropene 1.03 0.0400 1.000 0 99.5 67.3 131 Coluene 0.985 0.0200 1.000 0 99.5 67.3 138 Toluene 0.985 0.0200 1.000 0 99.4 74.5 129 1,1-2-Tichloroethane 0.988 0.0800 1.000 0 99.4 74.5 129 1,1-2-Tichloroethane 0.988 0.0800 1.000 0 103 70 130 Toluene 0.985 0.0200 1.000 0 99.0 120 Toluene 0.985 0.0200 1.000 0 100 100 100 100 100 100 100 1	Bromomethane	0.909	0.0900	1.000	0	90.9	40.9	157				
1,1-Dichloroethene 0,967 0,0500 1,000 0 96.7 49.7 142 Methylene chloride 0,946 0,0200 1,000 0 94.6 46.3 140 trans-1,2-Dichloroethene 1,05 0,0200 1,000 0 105 68 130 Methyl tert-buyl ether (MTBE) 0,986 0,0500 1,000 0 98.6 59.1 138 1,1-Dichloroethane 0,942 0,0200 1,000 0 94.2 61.9 137 2,2-Dichloroethane 1,01 0,0200 1,000 0 101 71.3 135 Chloroform 0,994 0,0200 1,000 0 99.4 67.5 129 1,1,1-Trichloroethane (TCA) 0,975 0,0200 1,000 0 99.4 67.5 129 1,1-Dichloropropane 1,03 0,0200 1,000 0 103 63.4 137 Carbon tetrachloride 1,03 0,0200 1,000 0 96.4<	Trichlorofluoromethane (CFC-11)	0.858	0.0500	1.000	0	85.8	42.9	147				
Methylene chloride 0.946 0.0200 1.000 0 94.6 46.3 140 trans-1,2-Dichloroethene 1.05 0.0200 1.000 0 105 68 130 Methyl tert-butyl ether (MTBE) 0.986 0.0500 1.000 0 98.6 59.1 138 1,1-Dichloroethane 0.942 0.0200 1.000 0 97.9 28.1 149 2,2-Dichloropropane 0.979 0.0500 1.000 0 97.9 28.1 149 Chlordorm 0.994 0.0200 1.000 0 101 71.3 135 Chlordorm 0.994 0.0200 1.000 0 97.5 69 132 1,1-1Frichloropthane (TCA) 0.975 0.0200 1.000 0 97.5 69 132 1,1-2Dichloropropapee 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloropropane 0.991 0.0200 1.000 0 99.0	Chloroethane	0.850	0.0600	1.000	0	85.0	37.1	144				
trans-1,2-Dichloroethene 1.05 0.0200 1.000 0 105 68 130 Methyl tert-butyl ether (MTBE) 0.986 0.0500 1.000 0 98.6 59.1 138 1,1-Dichloroethane 0.942 0.0200 1.000 0 94.2 61.9 137 2,2-Dichloropropane 0.979 0.0500 1.000 0 101 71.3 135 Chloroform 0.994 0.0200 1.000 0 99.4 67.5 129 1,1,1-Trichloroethane (TCA) 0.975 0.0200 1.000 0 97.5 69 132 1,1-Dichloropropene 1.03 0.0200 1.000 0 97.5 69 132 Carbon tetrachloride 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0220 1.000 0 104	1,1-Dichloroethene	0.967	0.0500	1.000	0	96.7	49.7	142				
Methyl tert-butyl ether (MTBE) 0.986 0.0500 1.000 0 98.6 59.1 138 1,1-Dichloroethane 0.942 0.0200 1.000 0 94.2 61.9 137 2,2-Dichloropropane 0.997 0.0500 1.000 0 97.9 28.1 149 Q cis-1,2-Dichloroptropane 1.01 0.0200 1.000 0 101 71.3 135 Chloroform 0.994 0.0200 1.000 0 99.4 67.5 129 1,1,1-Trichloroptropene 1.03 0.0200 1.000 0 97.5 69 132 1,2-Dichloroptropene 1.03 0.0200 1.000 0 103 72.7 131 Carbon tetrachloride 1.03 0.0200 1.000 0 96.4 61.9 136 Benzene 0.994 0.0200 1.000 0 96.4 61.9 136 Benzene 0.9991 0.0200 1.000 0 104 <td>Methylene chloride</td> <td>0.946</td> <td>0.0200</td> <td>1.000</td> <td>0</td> <td>94.6</td> <td>46.3</td> <td>140</td> <td></td> <td></td> <td></td> <td></td>	Methylene chloride	0.946	0.0200	1.000	0	94.6	46.3	140				
1,1-Dichloroethane 0.942 0.0200 1.000 0 94.2 61.9 137 2,2-Dichloropropane 0.979 0.0500 1.000 0 97.9 28.1 149 Q cis-1,2-Dichloroethane 1.01 0.0200 1.000 0 101 71.3 135 Chloroform 0.994 0.0200 1.000 0 99.4 67.5 129 1,1,1-Tichloroethane (TCA) 0.975 0.0200 1.000 0 97.5 66.9 132 1,1-Dichloropropene 1.03 0.0200 1.000 0 103 63.4 137 Carbon tetrachloride 1.03 0.0200 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 96.4 61.9 136 Benzene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.991 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 1.04 0.0200 1.000<	trans-1,2-Dichloroethene	1.05	0.0200	1.000	0	105	68	130				
2,2-Dichloropropane 0.979 0.0500 1.000 0 97.9 28.1 149 Q cis-1,2-Dichloroethene 1.01 0.0200 1.000 0 101 71.3 135 Chloroform 0.994 0.0200 1.000 0 99.4 67.5 129 1,1-1-Tichloroethane (TCA) 0.975 0.0200 1.000 0 97.5 69 132 1,1-Dichloropropene 1.03 0.0200 1.000 0 103 72.7 131 Carbon tetrachloride 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Tichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.04 0.0200 1	Methyl tert-butyl ether (MTBE)	0.986	0.0500	1.000	0	98.6	59.1	138				
cis-1,2-Dichloroethene 1.01 0.0200 1.000 0 101 71.3 135 Chloroform 0.994 0.0200 1.000 0 99.4 67.5 129 1,1,1-Trichloroethane (TCA) 0.975 0.0200 1.000 0 97.5 69 132 1,1-Dichloroppene 1.03 0.0200 1.000 0 103 72.7 131 Carbon tetrachloride 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Tichloroethene (TCE) 1.04 0.0200 1.000 0 194 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 194 65.5 137 Dibromoethane 1.04 0.0200 1.000 0 103 70	1,1-Dichloroethane	0.942	0.0200	1.000	0	94.2	61.9	137				
Chloroform 0.994 0.0200 1.000 0 99.4 67.5 129 1,1,1-Trichloroethane (TCA) 0.975 0.0200 1.000 0 97.5 69 132 1,1-Dichloropropene 1.03 0.0200 1.000 0 103 72.7 131 Carbon tetrachloride 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Trichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.03 0.0400 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0200 1.000 0 103 59.1 </td <td>2,2-Dichloropropane</td> <td>0.979</td> <td>0.0500</td> <td>1.000</td> <td>0</td> <td>97.9</td> <td>28.1</td> <td>149</td> <td></td> <td></td> <td></td> <td>Q</td>	2,2-Dichloropropane	0.979	0.0500	1.000	0	97.9	28.1	149				Q
1,1,1-Trichloroethane (TCA) 0.975 0.0200 1.000 0 97.5 69 132 1,1-Dichloropropene 1.03 0.0200 1.000 0 103 72.7 131 Carbon tetrachloride 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Trichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1	cis-1,2-Dichloroethene	1.01	0.0200	1.000	0	101	71.3	135				
1,1-Dichloropropene 1.03 0.0200 1.000 0 103 72.7 131 Carbon tetrachloride 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Trichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 <td< td=""><td>Chloroform</td><td>0.994</td><td>0.0200</td><td>1.000</td><td>0</td><td>99.4</td><td>67.5</td><td>129</td><td></td><td></td><td></td><td></td></td<>	Chloroform	0.994	0.0200	1.000	0	99.4	67.5	129				
Carbon tetrachloride 1.03 0.0200 1.000 0 103 63.4 137 1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Trichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 99.4 74.5 </td <td>1,1,1-Trichloroethane (TCA)</td> <td>0.975</td> <td>0.0200</td> <td>1.000</td> <td>0</td> <td>97.5</td> <td>69</td> <td>132</td> <td></td> <td></td> <td></td> <td></td>	1,1,1-Trichloroethane (TCA)	0.975	0.0200	1.000	0	97.5	69	132				
1,2-Dichloroethane (EDC) 0.964 0.0300 1.000 0 96.4 61.9 136 Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Trichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,2-Trichloroethane 0.994 0.0300 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000	1,1-Dichloropropene	1.03	0.0200	1.000	0	103	72.7	131				
Benzene 0.991 0.0200 1.000 0 99.0 64.3 133 Trichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,2-Trichloroethane 0.994 0.0300 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7	Carbon tetrachloride	1.03	0.0200	1.000	0	103	63.4	137				
Trichloroethene (TCE) 1.04 0.0200 1.000 0 104 65.5 137 1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 106 <	1,2-Dichloroethane (EDC)	0.964	0.0300	1.000	0	96.4	61.9	136				
1,2-Dichloropropane 0.990 0.0200 1.000 0 99.0 63.2 142 Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	Benzene	0.991	0.0200	1.000	0	99.0	64.3	133				
Bromodichloromethane 1.04 0.0200 1.000 0 104 73.2 131 Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	Trichloroethene (TCE)	1.04	0.0200	1.000	0	104	65.5	137				
Dibromomethane 1.03 0.0400 1.000 0 103 70 130 cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	1,2-Dichloropropane	0.990	0.0200	1.000	0	99.0	63.2	142				
cis-1,3-Dichloropropene 1.03 0.0200 1.000 0 103 59.1 143 Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	Bromodichloromethane	1.04	0.0200	1.000	0	104	73.2	131				
Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	Dibromomethane	1.03	0.0400	1.000	0	103	70	130				
Toluene 0.985 0.0200 1.000 0 98.5 67.3 138 trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	cis-1,3-Dichloropropene	1.03	0.0200	1.000	0	103	59.1	143				
trans-1,3-Dichloropropylene 1.05 0.0300 1.000 0 105 49.2 149 1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	Toluene	0.985	0.0200		0	98.5	67.3	138				
1,1,2-Trichloroethane 0.994 0.0300 1.000 0 99.4 74.5 129 1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	trans-1,3-Dichloropropylene				0							
1,3-Dichloropropane 0.982 0.0500 1.000 0 98.2 70 130 Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144	1,1,2-Trichloroethane				0							
Tetrachloroethene (PCE) 1.01 0.0200 1.000 0 101 52.7 150 Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144												
Dibromochloromethane 1.06 0.0300 1.000 0 106 70.6 144												
	Dibromochloromethane				_							
	1,2-Dibromoethane (EDB)		0.00500	1.000								

Original Page 25 of 41





Work Order: 1609081

Project:

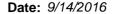
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14755	SampType: LCS			Units: mg/Kg		Prep Da	te: 9/8/20 1	6	RunNo: 310	641	
Client ID: LCSS	Batch ID: 14755					Analysis Da	te: 9/8/201	16	SeqNo: 597	7530	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.00	0.0200	1.000	0	100	76.1	123				
1,1,1,2-Tetrachloroethane	1.09	0.0300	1.000	0	109	65.9	141				
Ethylbenzene	0.996	0.0300	1.000	0	99.6	74	129				
m,p-Xylene	2.07	0.0200	2.000	0	104	70	124				
o-Xylene	0.982	0.0200	1.000	0	98.2	72.7	124				
Styrene	0.972	0.0200	1.000	0	97.2	76.8	130				
Isopropylbenzene	1.07	0.0800	1.000	0	107	70	130				
Bromoform	1.07	0.0200	1.000	0	107	67	154				
1,1,2,2-Tetrachloroethane	0.961	0.0200	1.000	0	96.1	60	130				
n-Propylbenzene	0.970	0.0200	1.000	0	97.0	74.8	125				
Bromobenzene	1.02	0.0300	1.000	0	102	49.2	144				
1,3,5-Trimethylbenzene	0.972	0.0200	1.000	0	97.2	74.6	123				
2-Chlorotoluene	0.967	0.0200	1.000	0	96.7	76.7	129				
4-Chlorotoluene	0.972	0.0200	1.000	0	97.2	77.5	125				
tert-Butylbenzene	0.973	0.0200	1.000	0	97.3	66.2	130				
1,2,3-Trichloropropane	0.944	0.0200	1.000	0	94.4	67.9	136				
1,2,4-Trichlorobenzene	1.07	0.0500	1.000	0	107	62.6	143				
sec-Butylbenzene	0.970	0.0200	1.000	0	97.0	75.6	133				
4-Isopropyltoluene	0.976	0.0200	1.000	0	97.6	76.8	131				
1,3-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	128				
1,4-Dichlorobenzene	0.978	0.0200	1.000	0	97.9	72.6	126				
n-Butylbenzene	1.04	0.0200	1.000	0	104	65.3	136				
1,2-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	126				
1,2-Dibromo-3-chloropropane	1.07	0.500	1.000	0	107	61.2	139				
1,2,4-Trimethylbenzene	0.982	0.0200	1.000	0	98.2	77.5	129				
Hexachlorobutadiene	1.06	0.100	1.000	0	106	42	151				
Naphthalene	1.11	0.0300	1.000	0	111	62.3	134				
1,2,3-Trichlorobenzene	1.09	0.0200	1.000	0	109	54.8	143				
Surr: Dibromofluoromethane	1.23		1.250		98.6	56.5	129				
Surr: Toluene-d8	1.21		1.250		96.4	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.27		1.250		102	63.1	141				

Original Page 26 of 41





Work Order: 1609081

Sample ID LCS-14755

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Project: Sound Transit / Key Bank

SampType: LCS

Units: mg/Kg Prep Date: 9/8/2016 RunNo: 31641

Client ID: LCSS Batch ID: 14755 Analysis Date: 9/8/2016 SeqNo: 597530

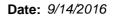
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-14755	SampType: MBLK			Units: mg/Kg		Prep Da	ate: 9/8/20	16	RunNo: 31 0	641	
Client ID: MBLKS	Batch ID: 14755					Analysis Da	ate: 9/9/20	16	SeqNo: 59	7531	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									Q
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									

Original Page 27 of 41





Work Order: 1609081

Project:

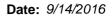
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14755	SampType: MBLK			Units: mg/Kg		Prep Da	ate: 9/8/20	16	RunNo: 31	641	
Client ID: MBLKS	Batch ID: 14755					Analysis Da	ate: 9/9/20	16	SeqNo: 59	7531	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									

Original Page 28 of 41





Work Order: 1609081

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

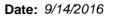
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14755	SampType: MBLK			Units: mg/Kg		Prep Dat	e: 9/8/2016	RunNo: 310	641	
Client ID: MBLKS	Batch ID: 14755					Analysis Dat	e: 9/9/2016	SeqNo: 597	7531	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	0.0200								
Hexachlorobutadiene	ND	0.100								
Naphthalene	ND	0.0300								
1,2,3-Trichlorobenzene	ND	0.0200								
Surr: Dibromofluoromethane	0.992		1.250		79.3	56.5	129			
Surr: Toluene-d8	1.21		1.250		97.0	64.3	131			
Surr: 1-Bromo-4-fluorobenzene	1.19		1.250		95.5	63.1	141			
NOTES:										

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609077-002BDUP	SampType: DUP			Units: mg/	/Kg-dry	Prep Da	te: 9/8/20	16	RunNo: 316	641	
Client ID: BATCH	Batch ID: 14755					Analysis Da	te: 9/9/20	16	SeqNo: 597	7516	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0680						0		30	
Chloromethane	ND	0.0680						0		30	
Vinyl chloride	ND	0.00227						0		30	
Bromomethane	ND	0.102						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0566						0		30	
Chloroethane	ND	0.0680						0		30	
1,1-Dichloroethene	ND	0.0566						0		30	
Methylene chloride	ND	0.0227						0		30	
trans-1,2-Dichloroethene	ND	0.0227						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0566						0		30	
1,1-Dichloroethane	ND	0.0227						0		30	
2,2-Dichloropropane	ND	0.0566						0		30	Q
cis-1,2-Dichloroethene	ND	0.0227						0		30	
Chloroform	ND	0.0227						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0227						0		30	
1,1-Dichloropropene	ND	0.0227						0		30	
Carbon tetrachloride	ND	0.0227						0		30	

Original Page 29 of 41





Work Order: 1609081

Project:

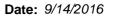
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609077-002BDUP	SampType: DUP			Units: mg/l	(g-dry	Prep Da	te: 9/8/20 1	16	RunNo: 316	41	
Client ID: BATCH	Batch ID: 14755					Analysis Da	te: 9/9/20 1	16	SeqNo: 597	516	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	ND	0.0340						0		30	
Benzene	ND	0.0227						0		30	
Trichloroethene (TCE)	ND	0.0227						0		30	
1,2-Dichloropropane	ND	0.0227						0		30	
Bromodichloromethane	ND	0.0227						0		30	
Dibromomethane	ND	0.0453						0		30	
cis-1,3-Dichloropropene	ND	0.0227						0		30	
Toluene	ND	0.0227						0		30	
trans-1,3-Dichloropropylene	ND	0.0340						0		30	
1,1,2-Trichloroethane	ND	0.0340						0		30	
1,3-Dichloropropane	ND	0.0566						0		30	
Tetrachloroethene (PCE)	ND	0.0227						0		30	
Dibromochloromethane	ND	0.0340						0		30	
1,2-Dibromoethane (EDB)	ND	0.00566						0		30	
Chlorobenzene	ND	0.0227						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0340						0		30	
Ethylbenzene	ND	0.0340						0		30	
m,p-Xylene	ND	0.0227						0		30	
o-Xylene	ND	0.0227						0		30	
Styrene	ND	0.0227						0		30	
Isopropylbenzene	ND	0.0906						0		30	
Bromoform	ND	0.0227						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0227						0		30	
n-Propylbenzene	ND	0.0227						0		30	
Bromobenzene	ND	0.0340						0		30	
1,3,5-Trimethylbenzene	ND	0.0227						0		30	
2-Chlorotoluene	ND	0.0227						0		30	
4-Chlorotoluene	ND	0.0227						0		30	
tert-Butylbenzene	ND	0.0227						0		30	
1,2,3-Trichloropropane	ND	0.0227						0		30	
1,2,4-Trichlorobenzene	ND	0.0566						0		30	

Original Page 30 of 41





Work Order: 1609081

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

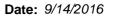
Sample ID 1609077-002BDUP	SampType: DUP			Units: mg	/Kg-dry	Prep Da	te: 9/8/20 1	16	RunNo: 31	641	
Client ID: BATCH	Batch ID: 14755					Analysis Da	te: 9/9/20 1	16	SeqNo: 59	7516	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	ND	0.0227						0		30	
4-Isopropyltoluene	ND	0.0227						0		30	
1,3-Dichlorobenzene	ND	0.0227						0		30	
1,4-Dichlorobenzene	ND	0.0227						0		30	
n-Butylbenzene	ND	0.0227						0		30	
1,2-Dichlorobenzene	ND	0.0227						0		30	
1,2-Dibromo-3-chloropropane	ND	0.566						0		30	
1,2,4-Trimethylbenzene	ND	0.0227						0		30	
Hexachlorobutadiene	ND	0.113						0		30	
Naphthalene	ND	0.0340						0		30	
1,2,3-Trichlorobenzene	ND	0.0227						0		30	
Surr: Dibromofluoromethane	1.35		1.416		95.4	56.5	129		0		
Surr: Toluene-d8	1.37		1.416		96.8	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.38		1.416		97.2	63.1	141		0		

NOTES

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609081-002BMS	SampType:	: MS			Units: mg	/Kg-dry	Prep Da	te: 9/8/20 1	6	RunNo: 310	641	
Client ID: UD-SW-W	Batch ID:	14755					Analysis Da	te: 9/9/20 1	16	SeqNo: 597	7520	
Analyte	R	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)		1.20	0.0669	1.115	0	107	43.5	121				
Chloromethane		1.10	0.0669	1.115	0	98.8	45	130				
Vinyl chloride		1.09	0.00223	1.115	0	98.2	51.2	146				
Bromomethane		1.10	0.100	1.115	0	98.7	21.3	120				
Trichlorofluoromethane (CFC-11)		1.15	0.0557	1.115	0	103	35	131				
Chloroethane		1.13	0.0669	1.115	0	102	43.8	117				
1,1-Dichloroethene		1.18	0.0557	1.115	0	106	61.9	141				
Methylene chloride		1.11	0.0223	1.115	0	99.7	54.7	142				
trans-1,2-Dichloroethene		1.19	0.0223	1.115	0	107	52	136				
Methyl tert-butyl ether (MTBE)		1.12	0.0557	1.115	0	100	54.4	132				

Original Page 31 of 41





Work Order: 1609081

Project:

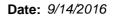
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609081-002BMS	SampType: MS			Units: mg/l	(g-dry	Prep Da	te: 9/8/20 1	6	RunNo: 310	641	
Client ID: UD-SW-W	Batch ID: 14755					Analysis Da	te: 9/9/201	6	SeqNo: 597	7520	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	1.13	0.0223	1.115	0	101	51.8	141				
2,2-Dichloropropane	0.876	0.0557	1.115	0	78.5	36	123				Q
cis-1,2-Dichloroethene	1.14	0.0223	1.115	0	102	58.6	136				
Chloroform	1.14	0.0223	1.115	0.009477	101	53.2	129				
1,1,1-Trichloroethane (TCA)	1.11	0.0223	1.115	0	99.7	58.3	145				
1,1-Dichloropropene	1.20	0.0223	1.115	0	108	55.1	138				
Carbon tetrachloride	1.18	0.0223	1.115	0	106	53.3	144				
1,2-Dichloroethane (EDC)	1.07	0.0334	1.115	0	95.8	51.3	139				
Benzene	1.13	0.0223	1.115	0	101	63.5	133				
Trichloroethene (TCE)	1.17	0.0223	1.115	0	105	68.6	132				
1,2-Dichloropropane	1.12	0.0223	1.115	0	100	59	136				
Bromodichloromethane	1.12	0.0223	1.115	0	100	50.7	141				
Dibromomethane	1.16	0.0446	1.115	0	104	50.6	137				
cis-1,3-Dichloropropene	1.10	0.0223	1.115	0	98.9	50.4	138				
Toluene	1.15	0.0223	1.115	0	103	63.4	132				
trans-1,3-Dichloropropylene	1.09	0.0334	1.115	0	97.5	44.1	147				
1,1,2-Trichloroethane	1.14	0.0334	1.115	0	102	51.6	137				
1,3-Dichloropropane	1.12	0.0557	1.115	0	100	53.1	134				
Tetrachloroethene (PCE)	1.16	0.0223	1.115	0	104	35.6	158				
Dibromochloromethane	1.13	0.0334	1.115	0	102	55.3	140				
1,2-Dibromoethane (EDB)	1.09	0.00557	1.115	0	97.8	50.4	136				
Chlorobenzene	1.13	0.0223	1.115	0	101	60	133				
1,1,1,2-Tetrachloroethane	1.17	0.0334	1.115	0	105	53.1	142				
Ethylbenzene	1.15	0.0334	1.115	0.01784	101	54.5	134				
m,p-Xylene	2.39	0.0223	2.230	0.02230	106	53.1	132				
o-Xylene	1.14	0.0223	1.115	0	103	53.3	139				
Styrene	1.14	0.0223	1.115	0	103	51.1	132				
Isopropylbenzene	1.28	0.0892	1.115	0.02286	113	58.9	138				
Bromoform	1.15	0.0223	1.115	0	103	57.9	130				
1,1,2,2-Tetrachloroethane	1.23	0.0223	1.115	0	111	51.9	131				
n-Propylbenzene	1.20	0.0223	1.115	0.04627	103	53.6	140				

Original Page 32 of 41





Work Order: 1609081

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

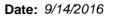
Sample ID 1609081-002BMS	SampType: MS		•	Units: mg/	Kg-dry	Prep Da	te: 9/8/201	6	RunNo: 316	641	•
Client ID: UD-SW-W	Batch ID: 14755					Analysis Da	te: 9/9/201	6	SeqNo: 597	7520	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	1.19	0.0334	1.115	0	107	54.2	140				
1,3,5-Trimethylbenzene	1.17	0.0223	1.115	0.01115	104	51.8	136				
2-Chlorotoluene	1.14	0.0223	1.115	0	102	51.6	136				
4-Chlorotoluene	1.17	0.0223	1.115	0	105	50.1	139				
tert-Butylbenzene	1.19	0.0223	1.115	0	107	50.5	135				
1,2,3-Trichloropropane	1.06	0.0223	1.115	0	95.4	50.5	131				
1,2,4-Trichlorobenzene	1.25	0.0557	1.115	0	112	50.8	130				
sec-Butylbenzene	1.23	0.0223	1.115	0.03623	107	52.6	141				
4-Isopropyltoluene	1.26	0.0223	1.115	0.04069	109	52.9	134				
1,3-Dichlorobenzene	1.14	0.0223	1.115	0	102	52.6	131				
1,4-Dichlorobenzene	1.10	0.0223	1.115	0	98.4	52.9	129				
n-Butylbenzene	1.33	0.0223	1.115	0.07972	112	52.6	130				
1,2-Dichlorobenzene	1.15	0.0223	1.115	0	103	55.8	129				
1,2-Dibromo-3-chloropropane	1.09	0.557	1.115	0	97.9	40.5	131				
1,2,4-Trimethylbenzene	1.46	0.0223	1.115	0.2464	109	50.6	137				
Hexachlorobutadiene	1.28	0.111	1.115	0	115	40.6	158				
Naphthalene	1.32	0.0334	1.115	0.03679	115	52.3	124				
1,2,3-Trichlorobenzene	1.21	0.0223	1.115	0	109	54.4	124				
Surr: Dibromofluoromethane	1.41		1.394		101	56.5	129				
Surr: Toluene-d8	1.39		1.394		99.7	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.46		1.394		105	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609081-002BMSD	SampType: MSD			Units: mg/K	g-dry	Prep Da	te: 9/8/201	6	RunNo: 316	641	
Client ID: UD-SW-W	Batch ID: 14755					Analysis Da	te: 9/9/20 1	6	SeqNo: 597	7521	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.13	0.0669	1.115	0	101	43.5	121	1.197	5.85	30	
Chloromethane	1.08	0.0669	1.115	0	96.9	45	130	1.102	1.99	30	
Vinyl chloride	1.06	0.00223	1.115	0	95.1	51.2	146	1.095	3.15	30	

Original Page 33 of 41





Work Order: 1609081

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609081-002BMSD	SampType: MSD			Units: mg/k	(g-dry	Prep Da	te: 9/8/20 1	16	RunNo: 316	641	
Client ID: UD-SW-W	Batch ID: 14755					Analysis Da	te: 9/9/20 1	16	SeqNo: 597	7521	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	1.09	0.100	1.115	0	98.0	21.3	120	1.100	0.661	30	
Trichlorofluoromethane (CFC-11)	1.36	0.0557	1.115	0	122	35	131	1.154	16.1	30	
Chloroethane	1.10	0.0669	1.115	0	99.1	43.8	117	1.134	2.64	30	
1,1-Dichloroethene	1.16	0.0557	1.115	0	104	61.9	141	1.185	1.71	30	
Methylene chloride	1.08	0.0223	1.115	0	97.2	54.7	142	1.112	2.54	30	
trans-1,2-Dichloroethene	1.16	0.0223	1.115	0	104	52	136	1.193	2.70	30	
Methyl tert-butyl ether (MTBE)	1.09	0.0557	1.115	0	97.8	54.4	132	1.117	2.42	30	
1,1-Dichloroethane	1.11	0.0223	1.115	0	99.5	51.8	141	1.131	1.89	30	
2,2-Dichloropropane	0.866	0.0557	1.115	0	77.6	36	123	0.8758	1.15	30	Q
cis-1,2-Dichloroethene	1.10	0.0223	1.115	0	99.0	58.6	136	1.142	3.38	30	
Chloroform	1.10	0.0223	1.115	0.009477	98.1	53.2	129	1.140	3.28	30	
1,1,1-Trichloroethane (TCA)	1.09	0.0223	1.115	0	97.8	58.3	145	1.112	1.87	30	
1,1-Dichloropropene	1.14	0.0223	1.115	0	103	55.1	138	1.201	4.80	30	
Carbon tetrachloride	1.26	0.0223	1.115	0	113	53.3	144	1.178	6.94	30	
1,2-Dichloroethane (EDC)	1.06	0.0334	1.115	0	94.8	51.3	139	1.069	1.05	30	
Benzene	1.09	0.0223	1.115	0	97.4	63.5	133	1.131	3.97	30	
Trichloroethene (TCE)	1.13	0.0223	1.115	0	102	68.6	132	1.172	3.34	30	
1,2-Dichloropropane	1.07	0.0223	1.115	0	96.1	59	136	1.115	3.98	30	
Bromodichloromethane	1.12	0.0223	1.115	0	100	50.7	141	1.119	0.249	30	
Dibromomethane	1.13	0.0446	1.115	0	101	50.6	137	1.162	3.22	30	
cis-1,3-Dichloropropene	1.11	0.0223	1.115	0	99.8	50.4	138	1.103	0.905	30	
Toluene	1.12	0.0223	1.115	0	100	63.4	132	1.148	2.66	30	
trans-1,3-Dichloropropylene	1.14	0.0334	1.115	0	103	44.1	147	1.088	5.09	30	
1,1,2-Trichloroethane	1.11	0.0334	1.115	0	99.8	51.6	137	1.142	2.52	30	
1,3-Dichloropropane	1.09	0.0557	1.115	0	97.5	53.1	134	1.118	2.83	30	
Tetrachloroethene (PCE)	1.13	0.0223	1.115	0	101	35.6	158	1.164	3.16	30	
Dibromochloromethane	1.15	0.0334	1.115	0	103	55.3	140	1.132	1.32	30	
1,2-Dibromoethane (EDB)	1.06	0.00557	1.115	0	94.9	50.4	136	1.090	2.96	30	
Chlorobenzene	1.10	0.0223	1.115	0	99.1	60	133	1.129	2.15	30	
1,1,1,2-Tetrachloroethane	1.16	0.0334	1.115	0	104	53.1	142	1.171	1.10	30	
Ethylbenzene	1.11	0.0334	1.115	0.01784	98.1	54.5	134	1.148	3.21	30	

Original Page 34 of 41

Date: 9/14/2016



Work Order: 1609081

QC SUMMARY REPORT

Shannon & Wilson **CLIENT:**

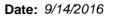
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609081-002BMSD	SampType: MSD			Units: mg/h	(g-dry	Prep Da	te: 9/8/201	6	RunNo: 316	641	
Client ID: UD-SW-W	Batch ID: 14755					Analysis Da	te: 9/9/201	6	SeqNo: 597	7521	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	2.31	0.0223	2.230	0.02230	102	53.1	132	2.393	3.73	30	
o-Xylene	1.12	0.0223	1.115	0	100	53.3	139	1.144	2.32	30	
Styrene	1.12	0.0223	1.115	0	100	51.1	132	1.144	2.37	30	
Isopropylbenzene	1.24	0.0892	1.115	0.02286	109	58.9	138	1.285	3.58	30	
Bromoform	1.16	0.0223	1.115	0	104	57.9	130	1.146	1.45	30	
1,1,2,2-Tetrachloroethane	1.21	0.0223	1.115	0	108	51.9	131	1.233	2.24	30	
n-Propylbenzene	1.16	0.0223	1.115	0.04627	99.5	53.6	140	1.197	3.51	30	
Bromobenzene	1.17	0.0334	1.115	0	105	54.2	140	1.194	1.74	30	
1,3,5-Trimethylbenzene	1.13	0.0223	1.115	0.01115	101	51.8	136	1.171	3.34	30	
2-Chlorotoluene	1.11	0.0223	1.115	0	99.8	51.6	136	1.142	2.52	30	
4-Chlorotoluene	1.13	0.0223	1.115	0	102	50.1	139	1.168	3.00	30	
tert-Butylbenzene	1.15	0.0223	1.115	0	103	50.5	135	1.190	3.33	30	
1,2,3-Trichloropropane	1.04	0.0223	1.115	0	93.5	50.5	131	1.064	1.96	30	
1,2,4-Trichlorobenzene	1.23	0.0557	1.115	0	110	50.8	130	1.251	1.66	30	
sec-Butylbenzene	1.18	0.0223	1.115	0.03623	103	52.6	141	1.231	4.26	30	
4-Isopropyltoluene	1.21	0.0223	1.115	0.04069	105	52.9	134	1.258	3.70	30	
1,3-Dichlorobenzene	1.13	0.0223	1.115	0	101	52.6	131	1.137	0.788	30	
1,4-Dichlorobenzene	1.09	0.0223	1.115	0	97.6	52.9	129	1.098	0.867	30	
n-Butylbenzene	1.30	0.0223	1.115	0.07972	109	52.6	130	1.326	2.04	30	
1,2-Dichlorobenzene	1.13	0.0223	1.115	0	102	55.8	129	1.154	1.75	30	
1,2-Dibromo-3-chloropropane	1.12	0.557	1.115	0	101	40.5	131	1.092	2.82	30	
1,2,4-Trimethylbenzene	1.41	0.0223	1.115	0.2464	104	50.6	137	1.463	3.69	30	
Hexachlorobutadiene	1.25	0.111	1.115	0	112	40.6	158	1.283	2.82	30	
Naphthalene	1.34	0.0334	1.115	0.03679	116	52.3	124	1.322	0.965	30	
1,2,3-Trichlorobenzene	1.21	0.0223	1.115	0	108	54.4	124	1.214	0.552	30	
Surr: Dibromofluoromethane	1.42		1.394		102	56.5	129		0		
Surr: Toluene-d8	1.39		1.394		100	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.49		1.394		107	63.1	141		0		

NOTES:

Page 35 of 41 Original

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).





Work Order: 1609081

Project:

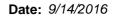
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609084-005BDUP	SampType: DUP			Units: mg/	Kg-dry	Prep Da	te: 9/8/20 1	16	RunNo: 316	641	
Client ID: BATCH	Batch ID: 14755					Analysis Da	te: 9/9/20 1	16	SeqNo: 598	3028	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0591						0		30	
Chloromethane	ND	0.0591						0		30	
Vinyl chloride	ND	0.00197						0		30	
Bromomethane	ND	0.0887						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0493						0		30	
Chloroethane	ND	0.0591						0		30	
1,1-Dichloroethene	ND	0.0493						0		30	
Methylene chloride	ND	0.0197						0		30	
trans-1,2-Dichloroethene	ND	0.0197						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0493						0		30	
1,1-Dichloroethane	ND	0.0197						0		30	
2,2-Dichloropropane	ND	0.0493						0		30	Q
cis-1,2-Dichloroethene	ND	0.0197						0		30	
Chloroform	ND	0.0197						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0197						0		30	
1,1-Dichloropropene	ND	0.0197						0		30	
Carbon tetrachloride	ND	0.0197						0		30	
1,2-Dichloroethane (EDC)	ND	0.0296						0		30	
Benzene	ND	0.0197						0		30	
Trichloroethene (TCE)	ND	0.0197						0		30	
1,2-Dichloropropane	ND	0.0197						0		30	
Bromodichloromethane	ND	0.0197						0		30	
Dibromomethane	ND	0.0394						0		30	
cis-1,3-Dichloropropene	ND	0.0197						0		30	
Toluene	ND	0.0197						0		30	
trans-1,3-Dichloropropylene	ND	0.0296						0		30	
1,1,2-Trichloroethane	ND	0.0296						0		30	
1,3-Dichloropropane	ND	0.0493						0		30	
Tetrachloroethene (PCE)	ND	0.0197						0		30	
Dibromochloromethane	ND	0.0296						0		30	
1,2-Dibromoethane (EDB)	ND	0.00493						0		30	

Original Page 36 of 41





Work Order: 1609081

Project:

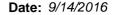
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609084-005BDUP	SampType: DUP			Units: mg/	/Kg-dry	Prep Da	te: 9/8/20	16	RunNo: 316	41	
Client ID: BATCH	Batch ID: 14755					Analysis Da	te: 9/9/20	16	SeqNo: 598	028	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	ND	0.0197				-		0		30	
1,1,1,2-Tetrachloroethane	ND	0.0296						0		30	
Ethylbenzene	ND	0.0296						0		30	
m,p-Xylene	ND	0.0197						0		30	
o-Xylene	ND	0.0197						0		30	
Styrene	ND	0.0197						0		30	
Isopropylbenzene	ND	0.0788						0		30	
Bromoform	ND	0.0197						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0197						0		30	
n-Propylbenzene	ND	0.0197						0		30	
Bromobenzene	ND	0.0296						0		30	
1,3,5-Trimethylbenzene	ND	0.0197						0		30	
2-Chlorotoluene	ND	0.0197						0		30	
4-Chlorotoluene	ND	0.0197						0		30	
tert-Butylbenzene	ND	0.0197						0		30	
1,2,3-Trichloropropane	ND	0.0197						0		30	
1,2,4-Trichlorobenzene	ND	0.0493						0		30	
sec-Butylbenzene	ND	0.0197						0		30	
4-Isopropyltoluene	ND	0.0197						0		30	
1,3-Dichlorobenzene	ND	0.0197						0		30	
1,4-Dichlorobenzene	ND	0.0197						0		30	
n-Butylbenzene	ND	0.0197						0		30	
1,2-Dichlorobenzene	ND	0.0197						0		30	
1,2-Dibromo-3-chloropropane	ND	0.493						0		30	
1,2,4-Trimethylbenzene	ND	0.0197						0		30	
Hexachlorobutadiene	ND	0.0985						0		30	
Naphthalene	ND	0.0296						0		30	
1,2,3-Trichlorobenzene	ND	0.0197						0		30	
Surr: Dibromofluoromethane	1.19		1.231		96.4	56.5	129		0		
Surr: Toluene-d8	1.21		1.231		98.3	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.22		1.231		99.2	63.1	141		0		

Original Page 37 of 41





Work Order: 1609081

Sample ID 1609084-005BDUP

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Project: Sound Transit / Key Bank

> Units: mg/Kg-dry Prep Date: 9/8/2016

RunNo: 31641

Result

Analysis Date: 9/9/2016

SeqNo: 598028

Client ID: BATCH

SampType: **DUP** Batch ID: 14755

SPK value SPK Ref Val

%REC LowLimit HighLimit RPD Ref Val

%RPD RPDLimit Qual

NOTES:

Analyte

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID CCV-A-14755	SampType: CCV			Units: µg/L	·	Prep Da	te: 9/12/20	16	RunNo: 31	703	·
Client ID: CCV	Batch ID: 14755					Analysis Da	te: 9/12/2 0	16	SeqNo: 59	8808	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	20.4	0.0300	20.00	0	102	80	120				
m,p-Xylene	41.2	0.0200	40.00	0	103	80	120				
o-Xylene	20.4	0.0200	20.00	0	102	80	120				
Isopropylbenzene	20.6	0.0800	20.00	0	103	80	120				
n-Propylbenzene	20.8	0.0200	20.00	0	104	80	120				
sec-Butylbenzene	21.1	0.0200	20.00	0	105	80	120				
4-Isopropyltoluene	21.7	0.0200	20.00	0	108	80	120				
n-Butylbenzene	21.8	0.0200	20.00	0	109	80	120				
Naphthalene	18.3	0.0300	20.00	0	91.6	80	120				
Surr: Dibromofluoromethane	23.2		25.00		93.0	63.7	129				
Surr: Toluene-d8	25.0		25.00		100	62.4	141				
Surr: 1-Bromo-4-fluorobenzene	26.5		25.00		106	63.1	141				

Page 38 of 41 Original

Date: 9/14/2016



Work Order: 1609081

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Sample Moisture (Percent Moisture)

Project: Sound Transit / Key Bank

Sample ID 1609084-001ADUP SampType: DUP Units: wt% Prep Date: 9/8/2016 RunNo: 31613

Client ID: BATCH Batch ID: R31613 Analysis Date: 9/8/2016 SeqNo: 597020

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Percent Moisture 4.48 0.500 3.704 18.9 20

Original Page 39 of 41



Sample Log-In Check List

С	lient Name: SW	Work Order Numb	er: 1609081	
Lo	ogged by: Erica Silva	Date Received:	9/6/2016	4:30:00 PM
Cha	ain of Custody			
1.	Is Chain of Custody complete?	Yes 🗸	No 🗌	Not Present
2.	How was the sample delivered?	Client		
<u>Log</u>	ı İn			
_	Coolers are present?	Yes 🗹	No 🗌	NA 🗆
0.	·			
4.	Shipping container/cooler in good condition?	Yes 🗸	No \square	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	No 🗌	Not Required 🗹
6.	Was an attempt made to cool the samples?	Yes 🗸	No \square	NA \square
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes 🔽	No 🗆	na 🗆
8.	Sample(s) in proper container(s)?	Yes 🗸	No 🗆	
9.	Sufficient sample volume for indicated test(s)?	Yes 🗸	No 🗌	
10.	Are samples properly preserved?	Yes 🗸	No \square	
11.	Was preservative added to bottles?	Yes	No 🗹	NA \square
12.	Is there headspace in the VOA vials?	Yes	No 🗌	NA 🗸
13.	Did all samples containers arrive in good condition(unbroken)?	Yes 🗸	No 🗌	
14.	Does paperwork match bottle labels?	Yes 🗸	No 🗌	
15.	Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗌	
16.	Is it clear what analyses were requested?	Yes 🗸	No 🗌	
17.	Were all holding times able to be met?	Yes 🗸	No 🗌	
Spe	ecial Handling (if applicable)			
-	Was client notified of all discrepancies with this order?	Yes	No \square	NA 🗸
	Person Notified: Da	ate		
	By Whom: Via		one Fax	☐ In Person
	Regarding:			
	Client Instructions:			

Item Information

Item #	Temp ⁰C
Cooler	6.1
Sample	4.0
Temp Blank	5.5

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Original

The second secon											-									
Frem	and	-				1 14	Cha	ain	n of Custody Record and Laborator								boratory Service	ry Services Agreement		
	VIII	9 80.								I	Date: _	9-	6-1	6	_		Laboratory Project No (internal):	1409081	of 41	
	206-352-379																Page:of:		e 41	
Seattle, WA 98103 Fax:	206-352-71	78						Proje	ct Name:	<	Sour	J b	rans	+ 16	/ K	eus	Bank		Pag	
Client: Shannor	& w	11/500;	Inc.	A A	3 2 1	u na											Bank SKH			
Address: 400 N	344h 5	5+, 5	te 100	0 3	- 25-29			Report To (PM):			Agnes Tirao ACT@ Shanwil.com									
City, State, Zip: Seatle,	_																			
Telephone:								- 1991 V												
*Matrix Codes: A = Air, AQ = Aqueous, B	= Bulk, O = Oth	ner, P = Pro	duct, S = So	il, SD =	= Sedim	ent, SL	= Solic	1, W = 1	water, by	N = Drin	King wat	er, Gv	v = Grot	ind wat	er, Sw	= Stor	m water, ww = waste water		114.6 110.00g	
	nie word ge in	n				/	//	//	[5] [6	CHO CONT			2000	//	//	/				
					/	01624	//	Or S	A THE STATE OF THE PARTY OF THE	500 10 l	30, 214	199/6	20d	¥//	/0	<i>}</i> /				
	artistanti National and	元	Sample		18 P			Range	S. S. S. S.	8 18 P	18 8 E	*	03/10	\$ 12 ×	5/	/				
Sample Name	Sample Date	Sample Time	Type (Matrix)*	15	S SK	150 /	Casoling	HAPLO OF		2 KH2	Metal	otal ,	riot (d	12		_	Comme	nts	Ga., 12	
1 4D - SW - E	9/6/16	1033	Soil	V		V	1	~	100					V						
, UD-5W- W	a de	1030	Soil	~		-	1000	~	71 NO. 1		s ce or	100	beco	~		gee	NO to compression to break entres	Same the contents	magge.	
40-5W-N	11000	1039	Soil	V		~	-	/	1,000 01,000		Street SE.	109,00			in the second	14 45	NO SOCIOLARIOS PODA ARECIALES	ye dap and leader		
4 UD-SW-S		1036	Soil	V	33 (3)	1	1	V		e George				-	200		n sa seuro de Angel Rolle de Angle	a agricultura a straighta sea		
uo - B1		1045	Soil	L	80.00	L	-	~	E 0 10 10 10 10 10 10 10 10 10 10 10 10 1	w. 1	i je Ki	8.0		1		64 ×	e so and correction with the	resident in met vij	A 12 C	
K R COMPONENT - GENERAL SE AND COMPONENT	Valuation of the St. of	Des collecti			10 a	0.0					14 3		1.4.00		_					
	//					376 G	-	-					1.78U/j	300			The state of the s	g Million (s. 1876), 1970 An Angel – 1991, 1971, 1981, 1981	Control of	
7							\pm													
					A	ER .	, .										and the second of	lagrappy i strate i da	e (d. green)	
9 January Carlotte American American	0 000 000	MBW	N 18 4 (1 (1 cm)			-	+	+	2	+		+						130000		
10					to divid			a P P	Po Co	C4 C0	Cr. Cu	Fo. Ha	K Ma	Mp N	10 Na	Ni Dh	Sh So Sr Sp Ti Tl II V 7p			
**Metals Analysis (Circle): MTCA-5		Priority Pollu		AL		hospha		Fluori		Vitrate+1					or sampl		Special Remarks:		ion lie	
***Anions (Circle): Nitrate Nitrit Sample Disposal: Return to 0		Disposal by	Lab (Sample	mide s will b	e held f	or 30 da	ays unl								m will be iness da					
Sample Disposal: Return to 0 I represent that I am authorized to en			with Frem					of the	Client na	med al	oove, tha		all desired	Margel SS	Year or and		and the administration of the second of the second			
agreement to each of the terms on the	front and ba	ckside of tl	nis Agreem	ent.	219 1544	grands.	\$ 11/2	1210	100		te/Time				121					
	ate/Time 9-1 6 9-0	-16/1	630		Receive				_ 0	7/10	1110	10	2: 3	O						
	ate/Time	-			Receiv	ed	*			Da	te/Time						TAT → SameDay^ NextDay^ 2.0	Day 3 Day STD		
X					X												Aplease spordingto with the lab in advance			



SITE CHECK/SITE ASSESSMENT CHECKLIST

FOR UNDERGROUND STORAGE TANKS

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

UST ID #: Un Known

County: King

I. UST FACILITY	II. OWNER/OPERATOR INFORMATION
Facility Compliance Tag #: Facility Site ID 8342	Owner/Operator Name: Sound Transit
USTID#: Unknown	Business Name: Sound Transit
Site Name: Sound Transit NE 45th St	Address: 401 5 Jackson Street
Site Address: 1000 NE 45th Street	City: Seattle State: WA Zip: 98104
City: Seatle	Phone: 206-398-5227
Phone:	Email: mark. menard @ sound transit.org
III. CERTIFIED	SITE ASSESSOR
Service Provider Name: Shoshana Howard, PE	Company Name: Shannon & Wilson, Inc.
Cell Phone: 695-6811 Email: SKH@shanwil.com	Address: 400 N 34th St, Ste 100
Certification #: 53263 (PE) Exp. Date: 5-15-18	City: Seatle State: WA Zip: 98103
IV. TANK IN	IFORMATION
TANK ID TANK CAPACITY	LAST SUBSTANCE STORED DATE SITE CHECK OR ASSESSMENT CONDUCTED
ust-1 ~3,000 gal	gasoline 9-6-16
,	
V. Reason for Conducting Site (CHECK/SITE ASSESSMENT (check one)
Release investigation following permanent UST system	closure (i.e. tank removal or closure-in-place).
☐ Release investigation following a failed tank and/or line	tightness test.
☐ Release investigation following discovery of contamination	ted soil and/or groundwater.
☐ Release investigation directed by Ecology to determine	if the UST system is the source of offsite impacts.
UST system is undergoing a "change-in-service", which gasoline) to storing a non-regulated substance (e.g. wat	
☐ Directed by Ecology for UST system permanently closed	or abandoned before 12/22/1988.
☐ Other (describe):	

	VI. CHECKLIST						
	The site assessor must check each of the following items and include it in the report. Sections referenced below can be found in the Ecology publication Guidance for Site Checks and Site Assessments for Underground Storage Tanks.	YES	NO				
1.	The location of the UST site is shown on a vicinity map.	YES	NO				
	A brief summary of information obtained during the site inspection is provided (Section 3.2)	U					
3.	A summary of UST system data is provided (Section 3.1)	K					
4.	The soils characteristics at the UST site are described. (Section 5.2)	U					
5.	Is there any apparent groundwater in the tank excavation?		b				
6.	A brief description of the surrounding land use is provided. (Section 3.1)	10					
	The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.	4					
8.	The following items are provided in one or more sketches:						
	Location and ID number for all field samples collected	U					
	If applicable, groundwater samples are distinguished from soil samples		d				
	Location of samples collected from stockpiled excavated soil		V				
	Tank and piping locations and limits of excavation pit	Ø					
,	Adjacent structures and streets	Ø					
	Approximate locations of any on-site and nearby utilities	Ø					
	If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4)		b				
	A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.	ď					
11.	Any factors that may have compromised the quality of the data or validity of the results are described. NA	П	b				
	The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred. The requirements for reporting confirmed releases can be found in WAC 173-360-372.	世					
	VII. REQUIRED SIGNATURES						
	Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through -395.						
	noshana K. Howard, PE Shushana K Howard 11-2-	-16					
Print	t or Type Name Signature of Certified Site Assessor Date						

SHANNON & WILSON, INC.

APPENDIX B

UST-1 – CONTRACTOR-PROVIDED DOCUMENTATION

PELLCO COρετηυςτίορ, iρς 13036 BEVERLY PARK ROAD

LETTER OF TRANSMITTAL

MUKILTEO, WA 98275 (425) 265-7211 FAX (425) 265-7215

То:		Transit uth Jackson Stree WA 98104	t	From: Date: Ph:	Mike Pellitteri 10/10/16 (425) 265-7211 Office					
Attn:	Alex Kv	<i>r</i> ok		FAX:	(425) 265-7215					
Projec Contra Contra	t Owner: act Name act No.: upplier::	Sound Transi	te Link Extension: Advanc -15	ced Dem	olition and Site Prep, Northgate & UDS Sta	ging				
WE AF	RE SEND	ING YOU 🖂	Attached 🔲 Under sepa	arate co	ver viathe following i	tems:				
		p Drawings y of Letter	☐ Product Data ☐ Sar ☐ Change Order ☒ <u>SU</u>	mples BMITTA	☐ Plans ☐ Specifications AL 026500-004.001	3				
Item #	Copies	Spec Section & Paragraph	Description			Pages				
1	1	026500 1.03D	Submittal 026500-00 for UDS 1, Anticipate		IST Closure Report Backup Information at Key Bank.					
 ☐ For ☐ As 	Approva Your Us Requesto review a	ıl e	checked below: ☐ No Exceptions Taken ☐ Make Corrections Not ☐ Revise and Resubmit ☐ Rejected	ted	Resubmit copies for app Submit copies for dist Return corrected print	ribution				
Sincer	ely,									
MIKE F	Pellitteri									
CC: F	ile	•	Signed: Mike Pellitteri		Received:					



Pellco Construction 13036 Beverly Park Road Mukilteo, WA 9827 October 5, 2016

RE: UST Closure Report Back-up Submittal

UDS-1 Anticipated Underground Storage Tank

Northgate Link Extension Advanced Demolition and Site Prep

Sound Transit Contract No.: N105

Dear Mr. Gordon:

Attached to this memo is the UST Closure Report back-up documentation required by section 02 65 00 1.03D of the Contract Documents for the **anticipated** underground storage tank (UST) at the University District jobsite.

Section 02 65 00 1.06 goes into further detail regarding the specific documents, letters, and certifications that are required to be provided.

02 65 00 1.06

- A. "Provide the following information to allow the Resident Engineer to prepare a UST Closure Report."
 - N/A
- B. "A letter signed by responsible company official certifying the decommissioning services were performed in accordance with the applicable regulations and the terms and conditions of these Specifications."
 - Attachment B.1 UST Decomissioner's Report
- C. "UST removal checklist, notifications, sample chains of custody, analytical test results, and other relevant documentation to the Resident Engineer."
 - UST removal checklist and confirmation sampling was performed by Shannon and Wilson
 - Attachment C.1 30-Day Notice
- D. "Copies of tank-contents analyses and waste analyses or waste profile sheets."
 - There were no contents to analyze.
- E. "Copies of certifications of final disposal signed by the responsible disposal facility official."
 - Attachment E.1 UST Destruction Certification
- F. "Information on who transported and accepted wastes encountered, including copies of manifests, waste profile sheets, land disposal restriction, notification and certification forms, disposal ticket and receipts, certificates of disposal, and other pertinent documentation."
 - Attachment F.1 Marine Vacuum Bill of Lading
 - Manifests, land disposal restriction, notification and certification forms, certificates of disposal are not required for the disposal of this UST.
- G. "Scaled one-line drawings showing tank locations, limits of excavation, limits of contamination, and underground utilities within 50 feet."
 - A drawing is included in the UST Decomissioner's report (Attachment B.1)
- H. "Documentation prepared for Ecology and the local fire department, including permits, notices and closure checklists."
 - Attachment H.1 UST Triple-Rinse Certification
 - Attachment H.2 Marine Chemist Certification for Inerting the UST
 - Attachment H.3 Fire Marshal Permit

OSG O'Neill Service Group

Please let me know if you have any questions.

Sincerely,

O'Neill Service Group, LLC

Project Manager

OSG O'Neill Service Group

Attachment B.1 UST Decomissioner's Report

GALLOWAY ENVIRONMENTAL, INC



3102-220th PL SE Sammamish, WA 98075-9540 Gary@GallowayEnvironmental.com 425) 688-8852

September 20, 2016

Eric Laumbattus

Environmental Project Manager
O'Neill Service Group
17619 NE 67th Court, suite 100
Redmond, Washington 98052

Emailed to: Ericl@oneillsg.com

SUBJECT: SOUND TRANSIT BROOKLYN STATION AREA

UNDERGROUND STORAGE TANK DECOMMISSIONING REPORT, 1000 NE 45^{TH} STREET, SEATTLE, WASHINGTON 98103

Dear Mr. Laumbattus:

This letter report presents Galloway Environmental, Inc.'s ("GEI's") findings regarding the removal of one 3,000 gallon underground storage tank ("UST") at 1000 NE 45th Street in Seattle, Washington (47.6616N & -122.34592W — See Figure 1 for location). The Washington Department of Ecology (WDOE) lists the Site as Facility ID 8342 and Site ID 619989.

Reportedly, the tank was used to store gasoline fuel for retail service station sales; however its age is unknown. The on-site field portion of these services was performed on September 6, 2016.

PROJECT SUMMARY

During planned re-development of the Site, Sound Transit hired Pellco Construction to assist in the removal of one 3,000 gallon underground storage tank (UST) at this Site. The O'Neill Service Group was asked to coordinate the removal of the tank. O'Neill contracted GEI to oversee the tank decommissioning and provide this report. Sound Transit's environmental consultant (Shannon & Wilson) was asked to perform the necessary Environmental Site Checklist and Assessment for the decommissioning. The attached figures show the approximate location of the UST (See Figures 1 and 2).

Tank decommissioning services were performed (or supported) by the following (See Attachments A - Photos; and B - Permits, manifests, etc.)

- 1. MARVAC provided the following decommissioning services:
 - Pumped the tank of residual liquids (Gasoline fuel and water),
 - Triple-rinsed the tank prior to decommissioning, and
 - Properly disposed of the liquids and recycled the tank
- 2. The owner's contractor (Pellco) performed the excavating and tank removal services
- 3. Sound Testing, Inc. provided a marine chemist to inspect the tank, inert the tank, and measure oxygen levels, carbon monoxide levels, and total hydrocarbon concentrations prior to certifying that the UST site was safe for removal and transport to an offsite location.

- 4. Randy Devitt (*Seattle Fire Department Inspector*) inspected the site conditions and approved the tank's removal.
- 5. GEI oversaw the tank's decommissioning Washington State UST Decommissioner Supervisor Certificate No. 0878867-U2

UST REMOVAL AND OBSERVATIONS

UST Removal

Following Marvac's pumping and rinsing of the tank, Sound Testing: 1) Inerted the tank with carbon dioxide, 2) Measured the residual oxygen levels in the tank and petroleum vapor concentrations in the tank, and 3) Verified that the tank was safe to remove from belowground and transport it to an offsite location.

Pellco removed the tank and loaded it directly onto Marvac's truck and Marvac delivered the tank to its facility in South Seattle to process the tank prior to its delivery to the Seattle Iron & Metals Recycling facility in Seattle, Washington.

No information regarding the age of the UST was available to GEI.

Condition of the UST

The top of the tank was estimated to be approximately three feet below the ground surface in the approximate location as shown in Figure 2. The tank was six feet in diameter by 14 feet long with a capacity of approximately 3,000 gallons. The tank was in good condition — the tank had evidence of corrosion on its sidewalls, but no holes were observed in the tank (*See photos*). Marvac told GEI that the tank was nearly empty of all liquids prior to the pumping and rinsing of the tank. The tank's fill port, fuel line, and vent pipes were not present in the excavation.

CONCLUSIONS

Based on these field observations, the tank was properly decommissioned.

Should you have any questions regarding this report or if you would like to discuss our findings, please contact me at the addresses listed at the top of this letter.

Respectfully Submitted,

GALLOWAY ENVIRONMENTAL, INC.

Gary L. Galloway, LHG, CHMM, REA

Hary Malloway

President

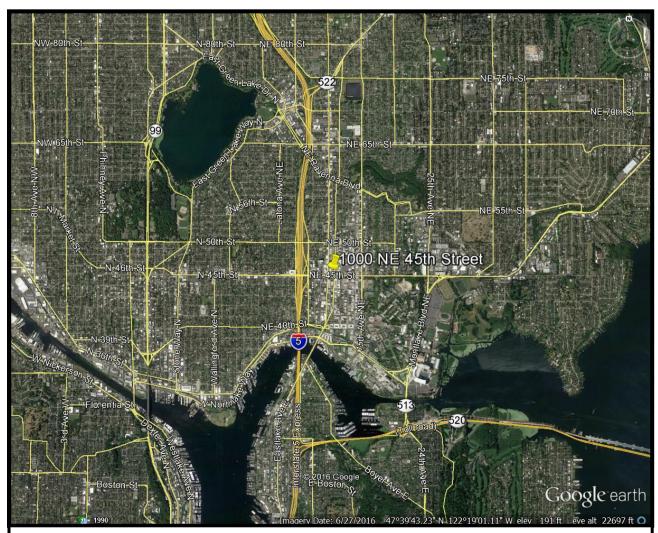


FIGURE 1 — SITE LOCATION,
Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington
Source: Google Maps 2016, GEI Project # 36021

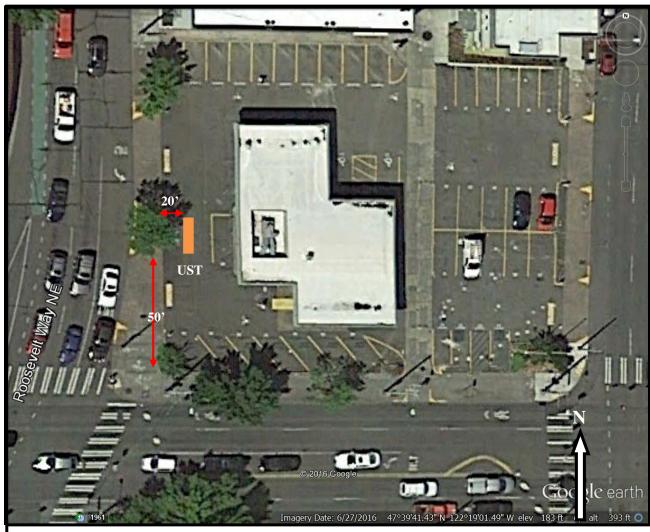


FIGURE 2 — SITE PLAN MAP

Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington Source: Google Maps 2016, GEI Project # 36021

ATTACHMENTS A

PHOTOS

Site Photos













ATTACHMENTS B

PERMITS, MANIFESTS, ETC.

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 14 L & Dia.
Last Contents 60-5 cleve
Tank Location: 1000 NE 45th Seattle
Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are NOT GAS FREE or NOT SAFE FOR HOT WORK
Tank Owner: Sound Transit 401 S. Jackson St. Seattle 98101
Contractor: Pellee Construction 13036 Beverly Park Road Mukilter WA 98275
M.V.S. Representative:
Notes:

SOUND TESTING, INC.

IFICATE

P.O. BOX 16204 SEATTLE, WA 98116 (206) 932-0206 FAX (206) 937-3848	MARINE CHEMIST CERT
WWW.SOUNDTESTINGINC.COM	SERIAL Nº

MARINE VACUUM Survey Requested by		SEPTEMBER 6,2016
Survey Requested by	Vessel Owner or Agent	SEPTEMBER 6, 2016 SEATTLE Date
115	UST	1000 NE 45th ST
Vessel	Type of Vessel	Specific Location of Vessel
LACTINE VZ	02=20,97	9:00 AM
Last Three (3) Loadings	Tests Performed	Time Survey Completed
		× 1
	INERT WITH CL	02
3,000 q VST		Bonne
	02567	
	MAY BE SAFELY	EXCAVATED
	MAY BE SAFELY	TRANSPORTEN
	MAY BE SAICE)	
	/	
KEEP ALL HOLES/VE	VTS PLUGGED TO PREVEN	IT COS FROM
LEAKING FROM TAN	K	

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued.

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

POSTING

INDULIVED

Your Seattle 0930-0
Fire Department

SEP 02 2016 PERMIT SECTION



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Commercial Tank Removal/Decommissioning

Tank(s) must be removed from site on the same day as permit is issued: Tank(s) must be removed from site on the same day as permit is issued: FIRM NAME Galloway Environmental, Inc. MAILING ADDRESS 3102 220th PL SE SUITE CITY Sammamish STATE Washington ZIP 98075 LOBSITE ADDRESS 1000 NE 45th St., Scattle, 98103 CONTACT PERSON Gary Galloway PHONE NUMBER (425) 688-8852 Number of Tank(s): 1 Tank Size(s): 3,000 gallon Aboveground tank Product(s) Previously Contained: Unknown petroleum XXXX Underground tank X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents) Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted: X No Yes (If yes, a separate hot work permit is required) Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to: Seattle Fire Department	Permit Fee: \$218.00	Date Issued:
MAILING ADDRESS 3102 220th PL SE CITY Sammamish STATE Washington ZIP 98075 JOBSITE ADDRESS 1000 NE 45th St., Seattle, 98103 CONTACT PERSON Gary Galloway PHONE NUMBER (425) 688-8852 Number of Tank(s):1 Tank Size(s):3,000 gallon Aboveground tank Product(s) Previously Contained:Unknown petroleum XXXX Underground tank X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents) Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted:X No Yes (If yes, a separate hot work permit is required) Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to: Seattle Fire Department Fire Marshal's Office - Permits 220 Third Ave S, 2th Floor Seattle, WA 98104-2608 Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment. TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-380-4) and of Marine Chemist All Your Certificate # Total Chemist All Y	TO BE COMPLETED BY PERMIT APPLICANT	Tank(s) must be removed from site on the same day as permit is issued!
CITY Sammamish STATE Washington ZIP 98075 JOBSITE ADDRESS 1000 NE 45th St., Seattle, 98103 CONTACT PERSON Gary Galloway PHONE NUMBER (425) 688-8852 Number of Tank(s):1 Tank Size(s):3,000 gallon Aboveground tank Product(s) Previously Contained:Unknown petroleum XXXXX Underground tank X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents) Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted: X No	FIRM NAME Galloway Environmental, Inc.	
DOBITE ADDRESS 1000 NE 45th St., Seattle, 98103 CONTACT PERSON Gary Galloway PHONE NUMBER (425) 688-8852 Number of Tank(s):1 Tank Size(s):3,000 gallon Aboveground tank Product(s) Previously Contained:Unknown petroleum XXXX Underground tank X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents) Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted:X No Yes (If yes, a separate hot work permit is required) Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to: Seattle Fire Department Fire Marshal's Office - Permits 220 Third Ave S, 2 nd Floor Seattle, WA 98104-2608 Call 336-1450, at least 24 hours prior to needed inspection time to arrange for an appointment. TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and loca regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-4)	MAILING ADDRESS 3102 220 th PL SE	SUITE
CONTACT PERSON Gary Galloway PHONE NUMBER (425) 688-8852 Number of Tank(s): 1 Tank Size(s): 3,000 gallon Aboveground tank Product(s) Previously Contained:Unknown petroleum XXXX Underground tank X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents) Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted: X No	CITY Sammamish	STATE Washington ZIP 98075
Number of Tank(s): Tank Size(s): 3,000 gallon Aboveground tank Product(s) Previously Contained: Unknown petroleum XXXX Underground tank X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents) Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted: X No	JOBSITE ADDRESS 1000 NE 45 th St., Seattle, 98103	
Product(s) Previously Contained:Unknown petroleum	CONTACT PERSON Gary Galloway	PHONE NUMBER (425) 688-8852
X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents) Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted:	Number of Tank(s):1 Tank Size(s	s):3,000 gallon Aboveground tank
Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns) Hot work being conducted: X No Yes (If yes, a separate hot work permit is required) Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to: Seattle Fire Department Fire Marshal's Office – Permits Then Call. Us TO CONFIRM RECEIPT AND MAKE PAYMENT Tel: (206) 386-1450 / Fax: (206) 386-1348 E-mail: permits@seattle.gov Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment. TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and loca regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-4) [MAC 173-360-4] FMO USE: Check No.: 5 - 2 6 5 5 7 7 [Name of Marine Chemist Apply 2014] [SFD ID# 1 3 7 2 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4	Product(s) Previously Contained:Unknown pet	roleum XXXX Underground tank
APPROVED BY: Check No.: 1838 9 0 1 6 Receipt No.: 5 24 1838 9 0 1 6 Receipt No.: 5 24 1838 9 0 1 6 Receipt No.: 5 24 1838 9 0 1 6 Receipt No.: 5 24 1838 9 0 1 6 Receipt No.: 5 24 1838 9 0 1 6 Receipt No.: 5 24 1838 9 0 1 6 Receipt No.: 5 2 4 5 5 1 3 APPROVED BY: Receipt No.: 5 5 2 6 5 5 1 3	X Removal (Marine Chemist inspection and o	certificate required for all tanks regardless of size or contents)
Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to: Seattle Fire Department Fire Marshal's Office – Permits Then Call Us TO CONFIRM RECEIPT AND MAKE PAYMENT Tel: (206) 386-1450 / Fax: (206) 386-1348 Seattle, WA 98104-2608 Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment. TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified Individual (WAC 173-360-4) APPROVED BY: Inspector: Name of Marine Chemist AMY Sex Certificate # Tokanon Marine Chemist	Abandonment-in-Place (Marine Chemist certificand/or unknowns)	icate required for tanks previously containing Class I flammable liquids
Seattle Fire Department Fire Marshal's Office – Permits 220 Third Ave S, 2 nd Floor Seattle, WA 98104-2608 Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment. TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-4). APPROVED BY: Inspector: Name of Marine Chemist Alary Sty. Certificate # TOK. Certificate # TOK.	Hot work being conducted: X No	Yes (If yes, a separate hot work permit is required)
Fire Marshal's Office – Permits 220 Third Ave S, 2 nd Floor Seattle, WA 98104-2608 Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment. TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-4). FMO USE: Check No.: 183899916 Receipt No.: 5-265073 APPROVED BY: Inspector: Name of Marine Chemist Adv. School Certificate # Joke	Permit applications may be submitted in person w	reekdays from 8:00 a.m. to 4:30 p.m., or mailed to:
TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-4). FMO USE: Check No.: 183809016 Inspector: Name of Marine Chemist AMA SCALE Certificate # TOWN.	Fire Marshal's Office – Permits 220 Third Ave S, 2 nd Floor	THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT Tel: (206) 386-1450 / Fax: (206) 386-1348
conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6). Special permit conditions: Tank removal/decommissioning must be pe	TANKS MAY BE REMOVED/DECON	IMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION
FMO USE: 18380 902 16 Inspector: SFD ID# 1372 Receipt No.: 5-265673 Name of Marine Chemist AMY SCY Certificate # 706	conditions, all noted special conditions, and all	I applicable provisions of the Seattle Fire Code, federal, state and local
Check No.: 1838090216 Inspector: SFD ID# SFD I	Special permit conditions:	ioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600,
Check No.: 1838090216 Inspector: SFD ID# SFD I		
Check No.: 18380 902 6 Inspector: SFD ID# SFD ID# Receipt No.: 5 - 265 6 75 Name of Marine Chemist AMY SLY Certificate # 706	FMO USE:	APPROVED BY:
Receipt No.	Check No.: 1838090216	Inspector: SFD ID# 13/2
		(1-1 -13:11

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

STORAGE TANK CERTIFICATE OF DESTRUCTION

DATE: September 9, 2016

TANK OWNER: Sound Transit

TANK LOCATION: 1000 NE 45TH ST, SEATTLE

TANK DESCRIPTION: 3000 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE OR DIESEL

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,

Marine Vacuum Service, Inc.

OSG O'Neill Service Group

Attachment C.1
30-day Notice



UNDERGROUND STORAGE TANK (UST) 30-

(See

COULD	SILVOT IVIAIS (OO	.,
DAY	NOTICE	1
e back of form	n for instructions)	,

FOR OFFICE	USE ONLY
Site ID#	
FS ID#	
	11.11.11

JUN 29 2016

Please ✓ th	e appropriate box	:	L. L	ntent Close			JUN Z 9 ZUID	TV
HQ (360)407-7170	/ Central (509)57	/5-2490 / E	astern (509)32	9-3400 / Noi	thwest (425)6			
SITE INFORMATION				OWNER I	NFORMATION will be returned to			
Unlisted				Sou	nd Transi	t		
Tag or UBI number					er/Operator			
N105	*				Jackson :	St		
Site Name NE 45th and	Doogorrol+ r	W			ddress/PO Box	*0	00014	
Site Physical Address		way .			tle, WA	±\s\-1	98014	
	55	0.0	104	City -	8-5000	÷**	Zip Code	
Seattle			104 ip Code		erator Phone Nu	ımher		
City		2	ip code	Owner/Op	crator r none ru	imoci		
Site Phone Number	1			Owner/Op	erator Email Ad	ldress		
TANK INFORMATION								
Tank ID	Substance	C	Date Pro	•		Commo		
West-UST1	Stored	Capacity	Expected t	o Begin		Comme	ents:	
	Unknown	NA	8/1/16		-			
West-UST2	Unknown	NA	8/1/16		-			
East-UST1	Unknown	NA	8/1/16		-			
							-	
1) SERVICE PROVIDE	P INFORMATION - c	heck the ann	ronriate hoves					
							The state of the s	
P	LEASE NOTE: INDIV PASSED ANOTHE							
Installer	Decommissioner	Site	Assessor		- Constant C			
O'Neill Ser	vice Group			Eric	Laumbattus			
Service Provider Com	*			Contact Person				
Eric Laumbatt	us			(360)770-5261				
Certified Service Prov	vider Name			Contact Phone Number				
8226147				ericl@oneillsg.com				
ICC Certification #				Contact E	nail Address			
2) SERVICE PROVIDE	R INFORMATION (R	EQUIRED IF	USING MORE TH	AN ONE PROV	/IDER) - check th	e appropriate b	oxes	
☐ Installer 🗔	Decommissioner	Site	Assessor					
Galloway Env	ironmental			Gary G	alloway			
Service Provider Com				Contact Pe				
Gary Gallowa	У	*		42568	88852			
Certified Service Prov	ider Name		-		none Number			
0878867-u7				gallowaye@comcast.net				
ICC Certification #				Contact Email Address				



STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Dear owner, operator or interested party:

This packet summarizes requirements in the underground storage tank (UST) regulations (Chapter 173-360 WAC) for permanent closure of regulated USTs. It also includes forms that must be used to complete this process. These requirements do not apply to tanks that are exempt from these regulations.

At-a-Glance Summary of Permanent Closure Requirements:

- At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to the Department of Ecology (Ecology).
- Decommissioning and site assessment activities must be performed by International Code Council (ICC)-certified UST service providers.
- Within 30 days of completing permanent closure activities, submit a Permanent Closure Notice signed by the ICC-certified UST Decommissioner.
- If **no** contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 30 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site assessment report completed by the Site Assessor
- If contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 90 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site characterization report completed by the Site Assessor

Detailed Look at Permanent Closure:

Ecology must be notified 30 days in advance

At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to Ecology. This form, which includes service provider and owner information, provides the UST inspector advance notice so that he or she may visit the project site while decommissioning work is being conducted. If the exact date of closure is unknown when the 30-Day Notice is submitted, be sure to contact the Ecology inspector at least three business days prior to the project start date. It is your responsibility to contact other local authorities, including the fire marshal, for any additional policies and/or permits.

During the 30-day notice period, the contents of the tank may be pumped from the tank and recycled or disposed of as dangerous wastes.

ICC-certified service providers must be used



Service providers performing permanent closure activities must carry proof they are certified by the International Code Council (ICC) as an UST Decommissioner and Site Assessor.

Conducting tank closures is dangerous work and should <u>not</u> be completed by unqualified or inexperienced persons. Failure to follow proper procedures may result in fire, explosion, and other hazards to human health or the environment.

Permanent closure procedures

Permanent closure includes "removal", "closure-in-place", or "change-in-service" (i.e. changing the product stored in a tank from a regulated substance to an unregulated substance). These projects may begin 30 days after Ecology date stamps the 30-Day Notice and must be completed within 90 days after this date.

To begin the process, the ICC-certified Decommissioner will empty and clean tanks of all liquids and accumulated sludges. The tank must be properly inerted of flammable vapors, as directed by the International Fire Code. The Decommissioner must ensure the tank atmosphere and excavation area is regularly monitored for flammable or vapor concentrations until the tank is removed from both the excavation and the site. Piping, except any vent lines, shall be drained of product and be either capped or removed from the ground.

Tanks may then either be removed from the ground or filled with a solid inert material, such as CDF, a controlled density fill. Although the UST regulations allow for tanks to be closed in place, Ecology strongly recommends tanks be removed for the following reasons:

- (1) it allows for the soil conditions to be observed,
- (2) it is easier to collect soil samples needed for the site assessment (described below), and
- (3) it may make any future property transactions less complicated, as potential buyers may not want to buy a property with a buried tank on it.

If a tank will be closed-in-place, first check with the local jurisdiction and fire marshal to ensure they will allow tanks to be closed using this method.

Once a tank is removed or filled with an inert material, the UST Decommissioner is required to fill out a Permanent Closure Notice that must also be signed by the owner or operator. This notice shall be submitted to Ecology within 30 days after tank closure activities are completed. If the site has a facility compliance tag, the tag must also be returned to Ecology at this time.

All permanent closures require a site assessment be conducted

A site assessment is an investigation to determine if the UST system released regulated product into the soil or groundwater. It must be performed in accordance with Ecology's *Guidance for Site Checks and Site Assessments for USTs* and completed by an ICC-certified Site Assessor or a Washington-registered Professional Engineer (or P.E.) who is competent, by means of examination, experience, or education, to perform site assessments. The guidance provides information on sampling procedures, the number and locations of samples to be obtained, required laboratory analyses, and reporting requirements.

A Site Check/Site Assessment Checklist must be completed by the Site Assessor and submitted to Ecology within thirty (30) days of completion of the site assessment. A site assessment report must be submitted to Ecology within 30 days after tank closure if no confirmed contamination is discovered. If the UST

system has caused a release to the environment, then, instead, a site characterization report shall be submitted within 90 days of tank closure.

Releases discovered during tank closure must be reported to Ecology

When contaminated soil, groundwater, or free liquid- or vapor-phase petroleum products are discovered during tank removal, site assessment, or by any other means, the owner/operator is responsible for reporting this information to Ecology within twenty-four (24) hours of discovery. The Decommissioner or Site Assessor must report confirmed releases to the owner/operator immediately and to Ecology within 72 hours after discovering the condition.

Soil contaminated by petroleum and/or hazardous substances must be remediated under the Model Toxics Control Act, which describes the process for cleaning up contaminated sites. Contaminated soil must be disposed of at a permitted facility that accepts dangerous waste. If it is to be "landfarmed" on or offsite, be sure your local jurisdiction allows this and that you understand all the requirements for this remediation method.

Record Keeping

The results of a site assessment must be submitted to Ecology and maintained by the owner for at least five years after completion of tank permanent closure. However, Ecology recommends records be maintained indefinitely by the owner. Proof of a "clean closure" is very important regarding any future property transfers or related business transactions, such as obtaining loans or insurance.

Further questions or reporting a release? Please contact your regional office below.

Regional Office	Counties Served
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman
HQ (360) 407-7170	Federal facilities in Western Washington
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at: www.ecy.wa.gov/programs/tcp/ust-lust/people.html

To find electronic versions of this letter and the enclosed forms, please visit: http://www.ecy.wa.gov/programs/tcp/ust-lust/2011/03-out-of-svc.html.

If you need this document in a format for the visually impaired, called the Toxics Cleanup Program at 360-407-7071. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



PERMANENT CLOSURE NOTICE

FOR UNDERGROUND STORAGE TANKS

UST ID #:	
County:	Ball

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

	. UST FACILITY			II. OWNER/OP	ERATOR INFORMA	NOITA
Facility Compliance Ta	Owner/Op	Owner/Operator Name:				
UST ID #:			Business N	lame:		
Site Name:			Address:			
Site Address:		1	City:		State:	Zip:
City:			Phone:	*		
Phone:	Y		Email:			
		III. CERTIFIED US	ST DECOMMIS	SIONER		
Company Name:		40	Service Pro	ovider Name:		
Address:		· P	Certificatio	on Type:	. 7-	- X
City:	State:	Zip:	Cert. No.:		Exp. Date:	
Provider Phone:		8	Provider Er	mail:		
Provider Signature:			Date:			
IV. TANK INFORMATION						
		IV. TANK	INFORMATION			
TANK ID	TANK CAPACITY	LAST SUBSTANCE	INFORMATION	CLOSURE METHO	D D	CLOSURE DATE
TANK ID	TANK CAPACITY	CONTRACTOR OF THE PROPERTY OF	INFORMATION removal		op change-in-service	CLOSURE DATE
TANK ID	TANK CAPACITY	LAST SUBSTANCE		CLOSURE METHO	•	CLOSURE DATE
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	removal	CLOSURE METHO closed-in-place	change-in-service	CLOSURE DATE
		LAST SUBSTANCE STORED	removal	CLOSURE METHO closed-in-place	change-in-service	
		LAST SUBSTANCE STORED V. REQUIR	removal	CLOSURE METHO closed-in-place	change-in-service	

PERMANENT CLOSURE NOTICE

FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This form must be completed and submitted within thirty days of completing permanent closure activities to the following address:

Dept. of Ecology UST Section PO Box 47655 Olympia, WA 98504-7655

- I./II. UST Facility and Owner/Operator: Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number. If all tanks at the site are permanently closed, the facility compliance tag must be returned with this notice.
- III. UST Decommissioner: It is the responsibility of the ICC-certified Decommissioner to follow proper tank closure procedures in accordance with WAC 173-360-375. The Decommissioner signature certifies these procedures were followed.
- IV. Tank Information: Use the same Tank IDs that are listed on the facility's Business License. List the last substance stored in each tank, the tank sizes, the method by which the tank is being closed, and the date closure activities were conducted. All closure methods require a site assessment be conducted in accordance with Ecology's Guidance for Site Checks and Site Assessments for Underground Storage Tanks.
- V. Required Signature: The owner and/or operator's signature is required. Also, the owner and/or operator is responsible for reporting confirmed releases to Ecology within 24 hours.

All confirmed releases must be reported to Ecology by the owner immediately and by service providers within 72 hours of the discovery of the condition. If the owner or operator is not immediately available, the report should be made directly to Ecology.

Be sure to contact your local fire marshal and other local jurisdictions. They may have other codes and regulations that apply to a permanent tank closure.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office	Counties Served
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman
HQ (360) 407-7170	Federal facilities in Western Washington
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at: www.ecy.wa.gov/programs/tcp/ust-lust/people.html



SITE CHECK/SITE ASSESSMENT CHECKLIST

UST ID #:	
County:	£

FOR UNDERGROUND STORAGE TANKS

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

		I. UST FACIL	LITY	II. OWNER/OPER	ATOR INFORM	IATION	
Facility Compliance Tag #:			Owner/Operator Name:				
UST ID #:			Business Name:	Business Name:			
Site	Name:	le.	1-	Address:			
Site	Address:			City:	State:	Zip:	
City	.			Phone:	8 101		
Phone:			Email:				
			III. CERTIF	EIED SITE ASSESSOR			
Sen	vice Provider Nam	ie:		Company Name:			
Cell	Phone:	Email:	3	Address:			
Cer	tification #:	1	Exp. Date:	City:	State:	Zip:	
			IV. TAN	K INFORMATION			
1	TANK ID	, y	TANK CAPACITY	LAST SUBSTANCE STORED		ITE CHECK OR INT CONDUCTED	
	2	1		4			
	777.23						
				el el		¥	
		W. T.				, a	
		V. REASON	N FOR CONDUCTING SI	ITE CHECK/SITE ASSESSMENT (che	ck one)		
	Release investig	ation followir	ng permanent UST syst	tem closure (i.e. tank removal or c	losure-in-place	≥).	
	Release investiga	ation followir	ng a failed tank and/or	line tightness test.	V		
	Release investiga	ation followin	ng discovery of contam	ninated soil and/or groundwater.			
	Release investiga	ation directed	by Ecology to determ	nine if the UST system is the source	e of offsite imp	oacts.	
		The state of the s	change-in-service", wh ulated substance (e.g.	nich is changing from storing a regularity.	ılated substan	ce (e.g.	
	Directed by Ecolo	ogy for UST s	ystem permanently clo	osed or abandoned before 12/22/2	1988.	*	
	Other (describe)	:	N.				

	VI. CHECKLIST		
	The site assessor must check each of the following items and include it in the report. Sections referenced below can be found in the Ecology publication Guidance for Site Checks and Site Assessments for Underground Storage Tanks.		
1.	The location of the UST site is shown on a vicinity map.	YES	NO.
		-	
2.	A brief summary of information obtained during the site inspection is provided (Section 3.2)	片	
3.			
4.	The soils characteristics at the UST site are described. (Section 5.2)		
5.	Is there any apparent groundwater in the tank excavation?		
6.	A brief description of the surrounding land use is provided. (Section 3.1)		
7.	The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.		
8.	The following items are provided in one or more sketches:		
	Location and ID number for all field samples collected		
	If applicable, groundwater samples are distinguished from soil samples		
	Location of samples collected from stockpiled excavated soil		
	Tank and piping locations and limits of excavation pit		
	Adjacent structures and streets		
	Approximate locations of any on-site and nearby utilities		
9.	If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4)		
10.	A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.		
11.	Any factors that may have compromised the quality of the data or validity of the results are described.		
12.	The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred. The requirements for reporting confirmed releases can be found in WAC 173-360-372.		
	VII. REQUIRED SIGNATURES		
-	Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through	395.	
Prin	nt or Type Name Signature of Certified Site Assessor Date		

SITE CHECK/SITE ASSESSMENT CHECKLIST

FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This checklist must accompany the results of a Site Check Report, which is performed if a release of petroleum or other regulated substance is suspected. It is also required to accompany a Site Assessment Report, which is required following the permanent closure or "change-in-service" of an underground storage tank system. This form is required to be filled out whether or not contamination is found. This checklist is to be completed by the Site Assessor and submitted within thirty days of completing these activities to the following address:

Dept. of Ecology UST Section PO Box 47655 Olympia, WA 98504-7655

- I./II. UST Facility and Owner/Operator Information: Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number.
- III. Service Provider Information: It is the responsibility of the ICC-certified Site Assessor to ensure that sampling and documentation procedures are completed in accordance with Ecology's Guidance for Site Checks and Site Assessment for Underground Storage Tanks.
- IV. Tank Information: Use the same Tank identification numbers listed on the facility's Business License which is based on the most recent UST Addendum on file with Ecology. List the last substance stored in each tank, the tank sizes and the date the site check or site assessment was completed.
- V. Required Signature: The Site Assessor signature certifies these procedures were followed.

All confirmed releases must be reported to Ecology by the owner within 24 hours and by service providers within 72 hours of discovery. A Site Characterization Report must be submitted to Ecology within 90 days after confirming a release.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office	Counties Served			
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima			
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln Pend Oreille, Spokane, Stevens, Walla Walla, Whitman			
HQ (360) 407-7170	Federal facilities in Western Washington			
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom			
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum			

or find a complete list of UST inspectors at: www.ecy.wa.gov/programs/tcp/ust-lust/people.html

OSG O'Neill Service Group

Attachment E.1 UST Destruction Certification

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

STORAGE TANK CERTIFICATE OF DESTRUCTION

DATE: September 9, 2016

TANK OWNER: Sound Transit

TANK LOCATION: 1000 NE 45TH ST, SEATTLE

TANK DESCRIPTION: 3000 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE OR DIESEL

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,

Marine Vacuum Service, Inc.

OSG O'Neill Service Group

Attachment F.1
Marine Vacuum
Bill of Lading

is an acknowledgment that a Bill of Lading has been issued and is not Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record. This Memorandum MARINE VACUUM SERVICE INC.

Shipper No.	027649

Carrier No.			
		1	

Page	of	-	MARINE VACOUR	N SERVICE, II	NC	Date _	7 2	16
\	"	- :	(Name of	carrier)	(SCAC)			
·		*COD* must appear before consignee's name of VACUUM SERVICE	34 0 191 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		45 AND		125	7
Street 1516	s. GR/	AHAM ST			1 R.	State WA 2		/
SEATT	LE	State WA	Zip Code 98108	City Gold		300-540-74		
		Side	Zip Gode	24 hr. Emergency Co	ontact Tel. No.	Vehicle		
Route			BASIC DESCRIPTION		TOTAL QUANTITY	Numbe WEIGHT	r	CHARGES
No. of Units & Container Type	HM		Shipping Name, Hazard Class	, Packing Group	(Weight, Volume, Gallons, etc.)	(Subject to Correction)	RATE	(For Carrier Use Only)
177		WASTWI	ATER		30	Gall		
		NON RE	GULATED	Bygot				1.
				-			Н	
		2-		p = 4/2			1	
,			4.1					
			l,	100			7	
								h
						.71		
		1		*	Y			
				×			green . See	
			MI.	2				2
		NDERED: YES NO control on value, shippers are required to state	I hereby declare that the contents of this	REMIT C.O.D. TO: ADDRESS				
greed or declared value of e not exceeding	the property i	ared value of the property, as follows: "The s hereby specifically stated by the shipper to per" secify a limitation of the carrier's liability absent	consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are	COD	Amt: \$	C.O.D. FE PREPAID COLLECT	E:	
ne carrier's liability or declar rovided by such provisions B) Commodities requiring	are a value, the See NMFC Ite special or addi	tional care or attention in handling or stowing	in all respects in proper condition for transport according to applicable international and national governmental regulations.	Subject to Section 7 of the co- consignee without recourse or following statement: The carrier shall not make	onditions, if this shipment is to be de in the consignor, the consignor st delivery of this shipment without	livered to the nall sign the CHARGE		3FS
	reight Bills and	nsure safe transportation. See Section 2(e) of d Statements of Charges and Section 1(a) of st of such articles.	Signature	freight and all other lawful charg	ges. ignature of Consignor)	FREIGHT PR except when t right is checken	EPAID Chec	k box if charges are to be collect
the protection of the wind possesses nation.	perty describer of packages unload ord carrier bein sion of the prop if on its route,	o the classifications and tariffs in effect on the date of above in apparent good order, except as noted known), marked, consigned, and destined as inc g understood throughout this contract as meani nerty under the contract) agrees to carry to its usu otherwise to deliver to another carrier on the roul carrier of all or any of, said property over all or.	(contents and condition of con- licated above which said carrier ng any person or corporation in al place of delivery at said desti- e to said destination. It is mutu-	be performed hereunder s sification on the date of Shipper hereby ce	ertifies that he is familiar with all and the said terms and conditions	terms and conditions in the g the lading terms and con-	overning clas- ditions in the	
HIPPER	T.	111		CARRIER MA	RINE VACUUM	A SERVICE	, INC.	
ERY C	L	andths		PER All	1/2-			_ 4
Permanent post-offic	2	16		DATE A	2 /6	0) 001 5000		-
estruatuent post-offic	2291DH =	o Staffiller		STATE F375.4 (C) 20	TABLITANTER W /80	TO WWW ROBERTS IN	aumactor co	1111

The 09/06/16
8AM SK
0930-0945 Fire Department

SEP 02 2016 PERMIT SECTION

RECEIVED



APPLICATION FOR TEMPORARY PERMIT

Cala	7000
Code	7908

Your Seattle

Code 7908 Commercial T	ank Removal/Decommissioning
Permit Fee: \$218.00	Date Issued:
TO BE COMPLETED BY PERMIT APPLICANT	Tank(s) must be removed from site on the same day as permit is issued!
FIRM NAME Galloway Environmental, Inc.	All security types requires to broadings in a security of security of the second security of the second security of the second security of the second
MAILING ADDRESS 3102 220 th PL SE	SUITE
CITY Sammamish	STATE Washington ZIP 98075
JOBSITE ADDRESS 1000 NE 45 th St., Seattle, 98103	
CONTACT PERSON Gary Galloway	PHONE NUMBER (425) 688-8852
Product(s) Previously Contained:Unknown petro X Removal (Marine Chemist inspection and cer	rtificate required for all tanks regardless of size or contents) ate required for tanks previously containing Class I flammable liquids Yes (If yes, a separate hot work permit is required)
TANKS MAY BE REMOVED/DECOMMINATION OF THE PROPERTY OF THE PROP	to needed inspection time to arrange for an appointment. ISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION STEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT! Ission the tank(s) identified in this permit in accordance with the attached pplicable provisions of the Seattle Fire Code, federal, state and local F PERMIT CONDITIONS ARE NOT ATTACHED Ing must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-6)
Check No.: 7838090216 Ins	PROVED BY: pector: SFD ID# 1372 me of Marine Chemist AMY 5CY Certificate # 106 te:

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 14'L 6' Dia.
Last Contents 6 as sleve
Tank Location: 1000 NE 45th Seattle
Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are NOT GAS FREE or NOT SAFE FOR HOT WORK
Tank Owner: Sound Transit 401 S. Jackson St. Seattle 98101
Contractor: Pelles Construction 13036 Bevery Park Road Mukiltes WA 98275
M.V.S. Representative:
Date: <u>4 2 16</u> Notes:

EPA # WAD980974521

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116 (206) 932-0206 FAX (206) 937-3848 WWW.SOUNDTESTINGING.COM

MARINE CHEMIST CERTIFICATE SERIAL N

MARINE VAC	W M			SEPTEMI	2FP 6.2011
Survey Requested by		Vessel Owner or Agent			3ER 4, 2016 Date
V5T Vessel		VST		1000 NE	Specific Location of Vesse
Vessel		Type of Vessel			
Last Three (3) Loadings	3	02=20,97			9:00 AM Time Survey Complete
Last Three (3) Loadings		Tests Performed	JAPA L		Time Survey Complete
TERLE REPORT			5.7		
		INERT W	ITH C	02	
3,000 9	UST				
		02	E67		
		THE RESIDENCE OF THE SHAPE			
Transfer of the North Assessment		MAY OF 6	AFFIN	EXCAVATED	
		FIAT DE D	VV-CL7	CAMPIVALEIJ	
		MAY BE S	AFELY	TRANSPURTER	
				Burnelly, Walt	
				NAME OF STREET	TEXA STATE
	parasistant de la		2 2× (1 = v	water that the tree	
				HARLE TOWNS	
عدوم والمرابط الك					
KEEP ALL	HAES/VENTS	PLUGGED TO	PREVEN	IT CO, FFC	M
LEAKING	FROM TANK				
AL DEWINE THE					
		s adversely affecting conditions in t			
Qualifications: Maninglatic		stop all work and contact the under		S. CALLES CONTROL CONT	is cortificate will
require re-inspection and a	a new Certificate for spaces so a	o alter conditions in pipe lines or tanks r ffected. All piping, heating coils, pumps			
listed above shall be consi	idered "NOT SAFE" unless other	wise specifically designated.			

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted. "The undersigned acknowledges receipt of this Certificate and understands conditions and This Certificate is based on conditions existing at the time the inspection herein set forth was completed limitations under which it was issued.' and is issued subject to compliance with all qualifications and instructions. **POSTING**



Attachment H.1 UST Triple-Rinse Certification

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 14'L 6' Dia.
Last Contents 6 as over
Tank Location: 1000 NE 45th Seattle
Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are NOT GAS FREE or NOT SAFE FOR HOT WORK
Tank Owner: Sound Transit 401 S. Jackson St. Seattle 98101
Contractor: Pellet Construction 13036 Bevery Park Road Mukiltes WA 98275
M.V.S. Representative:
Date: 9 2 16
Notes:

DBE # D4M1302341

EPA # WAD980974521

OSG O'Neill Service Group

Attachment H.2 Marine Chemist Certification for Inerting the UST

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116 (206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGING.COM

MARINE CHEMIST CERTIFICATE SERIAL NO 48771

V5T UST 100 Vessel Type of Vessel	E Substitute	Date 45+h ST Specific Location of Ves 9:00 A M
Vessel Vessel Type of Vessel D2 = 20,97. Last Three (3) Loadings Tests Performed INERT WITH CO2 3,000 g VST D2 < 672	E Substitute	Specific Location of Ves
Type of Vessel	ONE	Specific Location of Ves
Vessel Type of Vessel GASOUNE X3 D2	- AL	Specific Location of Ves
Last Three (3) Loadings Tests Performed INERT WITH CO2 3,000 g VST 02<672		Q'EDALA
3,000 g UST NERT WITH CO2		LUDAM
3,000 g UST 02<672		Time Survey Comple
3,000 g UST 02<672		The same of the sa
3,000 g UST 02<672		
3,000 g UST 02<672		A
02<6%		
MAY BE SAFELY EXCAVA		
	NED	
MAY BE SAFELY TRANS	PURTER	
	1. 41	
KEEP ALL HARS/VENTS PLUGGED TO PREVENT CO	a FEO	M
LEAKING FROM TANK.		
In the event of changes adversely affecting conditions in the above spaces, or if in any		
immediately stop all work and contact the undersigned Marine Chemist. Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically	y doubt,	

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed

Name

Company

Date

Signed

Marine Chemist

Certificate No.

OSG O'Neill Service Group

Attachment H.3 Fire Marshal Permit

SEP 02 2016

RECEIVED

PERMIT SECTION

Fire Department

Your Seattle

APPLICATION FOR TEMPORARY PERMIT

Code 7908 Commer	cial Tank Removal/Decommissioning					
Permit Fee: \$218.00	Date Issued:					
TO BE COMPLETED BY PERMIT APPLICANT	Tank(s) must be removed from site on the same day as permit is issued!					
FIRM NAME Galloway Environmental, I	nc.					
MAILING ADDRESS 3102 220 th PL SE	SUITE					
CITY Sammamish	STATE Washington ZIP 98075					
JOBSITE ADDRESS 1000 NE 45 th St., Seattle, 9	98103					
CONTACT PERSON Gary Galloway	PHONE NUMBER (425) 688-8852					
Number of Tank(s):1 Tank	Size(s):3,000 gallon Aboveground tank					
Product(s) Previously Contained:Unkno	wn petroleumXXXX Underground tank					
X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)						
Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns)						
Hot work being conducted:	No Yes (If yes, a separate hot work permit is required)					
Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to:						
Seattle Fire Department	To pay with a Visa or Master Card: Fax or email this application					
Fire Marshal's Office – Permits 220 Third Ave S, 2 nd Floor	THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT					
Seattle, WA 98104-2608	Tel: (206) 386-1450 / Fax: (206) 386-1348 E-mail: <u>permits@seattle.gov</u>					
TANKS MAY BE REMOVED/D	rs prior to needed inspection time to arrange for an appointment. ECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION ANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!					
conditions, all noted special conditions, a	decommission the tank(s) identified in this permit in accordance with the attached and all applicable provisions of the Seattle Fire Code, federal, state and local VOID IF PERMIT CONDITIONS ARE NOT ATTACHED					
Special permit conditions: Tank removal/deco	mmissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600)					

APPROVED BY: FMO USE: Check No.: 18380 902 Receipt No.: 5-2650 Name of Marine Chemist Application ID#: Date:

COMMERCIAL TANK REMOVAL/DECOMMISSIONING PERMIT CONDITIONS

- 1. Two (2) portable fire extinguishers each having a minimum rating of 40 BC shall be on site within 50 feet of the operation. Fire extinguishers shall be inspected, approved and certified annually.
- 2. Rope or ribbon barricades located at least 10 feet from the tank shall surround every outdoor storage tank removal or decommissioning operation or the operation shall be enclosed in a fenced yard.
- 3. "No Smoking" signs shall be posted in readily visible locations.
- 4. No hot work is allowed on a tank system prior to issuance of this permit and the tank is certified "Safe for Hot Work" by a Certified Marine Chemist. Hot work means any activities involving riveting, welding, burning, brazing, soldering, heating, chopping, grinding, ripping, drilling, cutting with a chop saw or "Sawzall", abrasive blasting, use of powder-actuated tools or similar spark-producing operations, crushing or mechanically shearing to facilitate opening for cleaning, disposal, scrapping for recycling purposes.
- 5. A separate temporary Seattle Fire Department permit (Code 4913) or a validation number assigned in conjunction with an annual hot work permit (Code 4911 or 4912) is required prior to any hot work operations.
- 6. Permits may cover multiple tanks located at the same address. If additional tanks are to be removed or abandoned at later dates, separate permits shall be obtained. Each address location requires a separate permit application regardless of whether multiple address locations are physically next to one another.
- 7. Additional fees will be charged if inspectors are required to work other than normal business hours. (Normal business hours are Monday through Friday, 8:00 a.m. to 4:30 p.m.)
- 8. No excavation of an underground tank is permitted prior to inspection by the Seattle Fire Marshal's Office. Exception: Removal of the top layer of asphalt or concrete only with no removal of dirt, pea gravel or soil over the underground storage tank. Further excavation may be allowed by a Seattle Fire Department Special Hazards Unit Inspector prior to the initial inspection depending on conditions and if the tank has been inerted by a Marine Chemist who is present on site. The name of the inspector and the time permission was given shall be made available at time of inspection.
- Prior to inspection, to ensure tanks and connected piping are completely free of all flammable or combustible liquids, a
 receipt or certificate must be on site indicating the tanks have been pumped and rinsed by an approved company.
 Product and rinse water must be disposed of in an approved manner.
- 10. For tanks being decommissioned in place that previously contained Class I liquids, a Certified Marine Chemist certificate must be issued and available on site for inspection certifying that the tank has been properly inerted prior to filling.
- 11. No tank shall be filled prior to an inspection by the Seattle Fire Marshal's Office.
- 12. Tanks being decommissioned in place must be filled with a lean concrete mixture. Filling with foam is prohibited.
- 13. A Marine Chemist's certificate verifying the tank has been properly inerted or is otherwise certified "Safe for Hot Work" shall be issued and available on site for inspection for each underground and aboveground tank being removed regardless of the product previously contained.
- 14. If tanks are being removed, the tanks' atmosphere must be inert using one of the following approved methods:
 - Dry ice (pellets or chunks of solid CO₂). Minimum 40 lbs per 1000 gallons of tank capacity is recommended.
 - Compressed CO₂ gas in cylinders (Note: This method may only be performed by a Certified Marine Chemist).
 - Purging with air (gas-freeing) using Venturi tube apparatus, with proper bonding and grounding and after the tank has been pumped and rinsed by an approved company.
- 15. A maximum reading of less than 6% of oxygen must be obtained prior to the removal of the tanks if CO₂ or another inert gas, as approved by the Marine Chemist, is used to inert the tank or, a reading of 0% LEL must be obtained prior to removal of the tank if the air-purging (Venturi air moving devices) method is used.
- All local, state and federal regulations for confined space entry shall be complied with prior to entering an underground storage tank.
- 17. Tanks with baffles to prevent movement of liquid must be certified gas-freed or inerted by a Certified Marine Chemist or a Petroleum Industry Safety Engineer regularly engaged in that business prior to removal.
- 18. Tanks being removed must be removed from the site and relocated to a remote, approved facility on the same day that the permit is issued.
- 19. During the hot work operations, digging, excavating, hauling or transport of petroleum storage tanks that have not been cleaned and gas-freed, tanks must be inerted to less than 6% oxygen. All openings are to be cap closed and secured except for one 1/8" hole drilled through a cap. These tanks are to be sprayed painted with "INERTED, DO NOT ENTER" or "INERTED WITH CO₂, NOT SAFE FOR WORKERS".



PERMANENT CLOSURE NOTICE

FOR UNDERGROUND STORAGE TANKS

USTID #: West-UST1
County: King

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

I. UST FACILITY			ll.	II. OWNER/OPERATOR INFORMATION			
Facility Compliance Tag #: 8342			Owner/Ope	Owner/Operator Name: Sound Transit			
USTID#: West-UST1			Business Na	Business Name: Sound Transit			
Site Name: UDS			Address: 4	Address: 401 S Jackson St			
Site Address: NE 45th St and Roosevelt Way			ıy City: Sea	ttle	State: WA	Zip: 98104	
City: Seattle, Washington			Phone: 2	Phone: 206-398-5000			
Phone:	Email:						
	III. CERTIFIED UST DECOMMISSIONER						
Company Name: Galloway Environmental, Inc Service Provider Name: Gary Galloway							
Address: 3102 220th Pl SE Certification Type: ICC							
City: Sammamish	City: Sammamish State: WA Zip: 98075 Cert. No.: 32000831 Exp. Date: 6/4/2017						
Provider Phone: 425-688-8852 Provider Email: gary@gallowayenvironmental.com							
Provider Signature: Many Mulloway Date: 11/1/16							
IV. TANK INFORMATION							
TANK ID TANK CAP	TANK CAPACITY	LAST SUBSTANCE STORED		CLOSURE METHOD			
TANKID	TANK CAPACITI		removal	closed-in-place	change-in-service	CLOSURE DATE	
West-UST1	3,000	Gasoline	X			9/6/2016	
	8						
	,						
V. REQUIRED SIGNATURE							
Signature acknowledges UST(s) comply with UST regulation WAC 173-360-380 Permanent Closure Requirements.							
Date Signature of Tank Owner/Operator or Authorized Print or Type Name Representative							

SHANNON & WILSON, INC.

APPENDIX C

UST-2 – ANALYTICAL LABORATORY REPORT AND SITE CHECK/ SITE ASSESSMENT CHECKLIST



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Shannon & Wilson

Agnes Tirao 400 N. 34th Street, Suite 100 Seattle, WA 98103

RE: Sound Transit / Key Bank

Lab ID: 1609155

September 20, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 4 sample(s) on 9/13/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Sample Moisture (Percent Moisture)

Total Metals by EPA Method 6020

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway Laboratory Director

Mohal C. Redy

DoD/ELAP Certification #L2371, ISO/ICC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)

Date: 09/20/2016



CLIENT: Shannon & Wilson Work Order Sample Summary

Project: Sound Transit / Key Bank

Lab Order: 1609155

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609155-001	UD2-SW-N	09/13/2016 10:15 AM	09/13/2016 4:15 PM
1609155-002	UD2-SW-S	09/13/2016 10:18 AM	09/13/2016 4:15 PM
1609155-003	UD2-B1	09/13/2016 10:21 AM	09/13/2016 4:15 PM
1609155-004	Trip Blank	09/12/2016 3:06 PM	09/13/2016 4:15 PM



Case Narrative

WO#: **1609155**Date: **9/20/2016**

CLIENT: Shannon & Wilson

Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **1609155**

Date Reported: 9/20/2016

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-001 **Matrix:** Soil

Client Sample ID: UD2-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	ı ID:	14820 Analyst: WC
Diesel (Fuel Oil)	ND	23.4		mg/Kg-dry	1	9/15/2016 4:36:00 AM
Heavy Oil	ND	58.5		mg/Kg-dry	1	9/15/2016 4:36:00 AM
Surr: 2-Fluorobiphenyl	78.1	50-150		%Rec	1	9/15/2016 4:36:00 AM
Surr: o-Terphenyl	76.8	50-150		%Rec	1	9/15/2016 4:36:00 AM
Gasoline by NWTPH-Gx				Batch	ı ID:	14821 Analyst: NG
Gasoline	ND	4.78		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Surr: Toluene-d8	99.0	65-135		%Rec	1	9/15/2016 3:46:46 PM
Surr: 4-Bromofluorobenzene	101	65-135		%Rec	1	9/15/2016 3:46:46 PM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	ı ID:	14821 Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	0.0574	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Chloromethane	ND	0.0574	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Vinyl chloride	ND	0.00191	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Bromomethane	ND	0.0861	•	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Trichlorofluoromethane (CFC-11)	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Chloroethane	ND	0.0574	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1-Dichloroethene	ND	0.0478	_	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Methylene chloride	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
trans-1,2-Dichloroethene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Methyl tert-butyl ether (MTBE)	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1-Dichloroethane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
2,2-Dichloropropane	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
cis-1,2-Dichloroethene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Chloroform	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1,1-Trichloroethane (TCA)	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1-Dichloropropene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Carbon tetrachloride	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2-Dichloroethane (EDC)	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Benzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Trichloroethene (TCE)	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2-Dichloropropane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Bromodichloromethane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Dibromomethane	ND	0.0383		mg/Kg-dry	1	9/15/2016 3:46:46 PM
cis-1,3-Dichloropropene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Toluene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
trans-1,3-Dichloropropylene	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-001 **Matrix:** Soil

Client Sample ID: UD2-SW-N

RL Qual Units DF **Date Analyzed Analyses** Result **Volatile Organic Compounds by EPA Method 8260C** Batch ID: 14821 Analyst: NG ND mg/Kg-dry 1,1,2-Trichloroethane 0.0287 9/15/2016 3:46:46 PM 1 1.3-Dichloropropane ND 0.0478 mg/Kg-dry 1 9/15/2016 3:46:46 PM 0.140 Tetrachloroethene (PCE) 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM Dibromochloromethane ND 0.0287 1 9/15/2016 3:46:46 PM mg/Kg-dry 1,2-Dibromoethane (EDB) ND 0.00478 mg/Kg-dry 1 9/15/2016 3:46:46 PM Chlorobenzene ND 9/15/2016 3:46:46 PM 0.0191 mg/Kg-dry 1 1.1.1.2-Tetrachloroethane ND 0.0287 mg/Kg-dry 1 9/15/2016 3:46:46 PM ND Ethylbenzene 0.0287 mg/Kg-dry 1 9/15/2016 3:46:46 PM m,p-Xylene 0.0330 0.0191 1 9/15/2016 3:46:46 PM mg/Kg-dry o-Xylene ND 9/15/2016 3:46:46 PM 0.0191 1 mg/Kg-dry Styrene ND 9/15/2016 3:46:46 PM 0.0191 mg/Kg-dry 1 Isopropylbenzene ND 0.0765 9/15/2016 3:46:46 PM mg/Kg-dry 1 **Bromoform** ND 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM 1,1,2,2-Tetrachloroethane ND 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM ND n-Propylbenzene 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM Bromobenzene ND 0.0287 mg/Kg-dry 1 9/15/2016 3:46:46 PM 1,3,5-Trimethylbenzene 0.0191 9/15/2016 3:46:46 PM 0.0191 mg/Kg-dry 1 2-Chlorotoluene ND 9/15/2016 3:46:46 PM 0.0191 mg/Kg-dry 1 4-Chlorotoluene ND 0.0191 1 9/15/2016 3:46:46 PM mg/Kg-dry tert-Butylbenzene ND 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM ND 1,2,3-Trichloropropane 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM 1,2,4-Trichlorobenzene ND 0.0478 mg/Kg-dry 1 9/15/2016 3:46:46 PM ND 9/15/2016 3:46:46 PM sec-Butylbenzene 0.0191 mg/Kg-dry 1 4-Isopropyltoluene ND 0.0191 1 9/15/2016 3:46:46 PM mg/Kg-dry 1,3-Dichlorobenzene ND 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM 1,4-Dichlorobenzene ND 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM n-Butylbenzene ND 0.0191 9/15/2016 3:46:46 PM mg/Kg-dry 1 ND 1,2-Dichlorobenzene 0.0191 1 9/15/2016 3:46:46 PM mg/Kg-dry ND 1,2-Dibromo-3-chloropropane 0.478 mg/Kg-dry 1 9/15/2016 3:46:46 PM 0.0306 1,2,4-Trimethylbenzene 0.0191 mg/Kg-dry 1 9/15/2016 3:46:46 PM Hexachlorobutadiene ND 0.0956 1 9/15/2016 3:46:46 PM mg/Kg-dry Naphthalene ND 0.0287 mg/Kg-dry 1 9/15/2016 3:46:46 PM 1.2.3-Trichlorobenzene ND 0.0191 1 9/15/2016 3:46:46 PM mg/Kg-dry Surr: Dibromofluoromethane 96.7 56.5-129 %Rec 1 9/15/2016 3:46:46 PM Surr: Toluene-d8 96.2 64.3-131 %Rec 9/15/2016 3:46:46 PM 1 Surr: 1-Bromo-4-fluorobenzene 102 63.1-141 %Rec 1 9/15/2016 3:46:46 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-001 **Matrix:** Soil

Client Sample ID: UD2-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batcl	n ID:	14856 Analyst: TN
Lead	19.7	0.188		mg/Kg-dry	1	9/19/2016 3:37:48 PM
Sample Moisture (Percent Moistur	<u>e)</u>			Batch	n ID:	R31720 Analyst: ME
Percent Moisture	17.6	0.500		wt%	1	9/14/2016 8:53:21 AM



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:18:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-002 **Matrix:** Soil

Client Sample ID: UD2-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	n ID: 148	320 Analyst: WC
Diesel (Fuel Oil)	ND	22.5		mg/Kg-dry	1	9/15/2016 5:07:00 AM
Heavy Oil	169	56.3		mg/Kg-dry	1	9/15/2016 5:07:00 AM
Surr: 2-Fluorobiphenyl	101	50-150		%Rec	1	9/15/2016 5:07:00 AM
Surr: o-Terphenyl	93.6	50-150		%Rec	1	9/15/2016 5:07:00 AM
Gasoline by NWTPH-Gx				Batch	n ID: 148	321 Analyst: NG
Gasoline	2,780	524	D	mg/Kg-dry	100	9/19/2016 11:39:18 AM
Surr: Toluene-d8	96.7	65-135	D	%Rec	100	9/19/2016 11:39:18 AM
Surr: 4-Bromofluorobenzene	101	65-135	D	%Rec	100	9/19/2016 11:39:18 AM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	n ID: 148	321 Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	0.0629	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
Chloromethane	ND	0.0629	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
Vinyl chloride	ND	0.0020	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
Bromomethane	ND	0.0943	•	mg/Kg-dry	1	9/15/2016 4:16:15 PM
Trichlorofluoromethane (CFC-11)	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Chloroethane	ND	0.0629	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1-Dichloroethene	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Methylene chloride	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
trans-1,2-Dichloroethene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Methyl tert-butyl ether (MTBE)	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1-Dichloroethane	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
2,2-Dichloropropane	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
cis-1,2-Dichloroethene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Chloroform	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1,1-Trichloroethane (TCA)	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1-Dichloropropene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Carbon tetrachloride	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2-Dichloroethane (EDC)	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Benzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Trichloroethene (TCE)	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2-Dichloropropane	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Bromodichloromethane	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Dibromomethane	ND	0.0419		mg/Kg-dry	1	9/15/2016 4:16:15 PM
cis-1,3-Dichloropropene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Toluene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
trans-1,3-Dichloropropylene	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:18:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-002 **Matrix:** Soil

Client Sample ID: UD2-SW-S

RL Qual Units DF **Date Analyzed Analyses** Result **Volatile Organic Compounds by EPA Method 8260C** Batch ID: 14821 Analyst: NG ND 9/15/2016 4:16:15 PM 1,1,2-Trichloroethane 0.0314 mg/Kg-dry 1 1,3-Dichloropropane ND 0.0524 mg/Kg-dry 1 9/15/2016 4:16:15 PM ND Tetrachloroethene (PCE) 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM Dibromochloromethane ND 0.0314 1 9/15/2016 4:16:15 PM mg/Kg-dry 1,2-Dibromoethane (EDB) ND 0.00524 mg/Kg-dry 1 9/15/2016 4:16:15 PM Chlorobenzene ND 9/15/2016 4:16:15 PM 0.0210 mg/Kg-dry 1 1.1.1.2-Tetrachloroethane ND 0.0314 mg/Kg-dry 1 9/15/2016 4:16:15 PM 0.700 Ethylbenzene 0.0314 mg/Kg-dry 1 9/15/2016 4:16:15 PM m,p-Xylene 1.73 0.0210 1 9/15/2016 4:16:15 PM mg/Kg-dry o-Xylene ND 9/15/2016 4:16:15 PM 0.0210 1 mg/Kg-dry Styrene ND 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM Isopropylbenzene 1.55 0.0838 9/15/2016 4:16:15 PM mg/Kg-dry 1 **Bromoform** ND 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM 1,1,2,2-Tetrachloroethane ND 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM 2.14 D 9/19/2016 12:08:32 PM n-Propylbenzene 0.210 mg/Kg-dry 10 Bromobenzene ND 0.0314 mg/Kg-dry 1 9/15/2016 4:16:15 PM 1,3,5-Trimethylbenzene 8.35 D 9/19/2016 12:08:32 PM 0.210 mg/Kg-dry 10 2-Chlorotoluene 0.0529 0.0210 9/15/2016 4:16:15 PM mg/Kg-dry 1 4-Chlorotoluene 9/15/2016 4:16:15 PM 1.12 0.0210 mg/Kg-dry 1 tert-Butylbenzene 0.171 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM 1,2,3-Trichloropropane 0.0445 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM 1,2,4-Trichlorobenzene ND 0.0524 mg/Kg-dry 1 9/15/2016 4:16:15 PM ND 9/15/2016 4:16:15 PM sec-Butylbenzene 0.0210 mg/Kg-dry 1 4-Isopropyltoluene 4.01 0.210 D 10 9/19/2016 12:08:32 PM mg/Kg-dry 1,3-Dichlorobenzene ND 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM 1,4-Dichlorobenzene ND 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM n-Butylbenzene ND 0.0210 9/15/2016 4:16:15 PM mg/Kg-dry 1 ND 1,2-Dichlorobenzene 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM ND 1,2-Dibromo-3-chloropropane 0.524 mg/Kg-dry 1 9/15/2016 4:16:15 PM 15.7 D 1,2,4-Trimethylbenzene 0.210 mg/Kg-dry 10 9/19/2016 12:08:32 PM Hexachlorobutadiene ND 0.105 mg/Kg-dry 1 9/15/2016 4:16:15 PM Naphthalene 3.29 0.314 D mg/Kg-dry 10 9/19/2016 12:08:32 PM 1.2.3-Trichlorobenzene ND 0.0210 mg/Kg-dry 1 9/15/2016 4:16:15 PM Surr: Dibromofluoromethane 98.4 56.5-129 %Rec 1 9/15/2016 4:16:15 PM Surr: Toluene-d8 114 64.3-131 %Rec 9/15/2016 4:16:15 PM 1 Surr: 1-Bromo-4-fluorobenzene 103 63.1-141 D %Rec 10 9/19/2016 12:08:32 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:18:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-002 **Matrix:** Soil

Client Sample ID: UD2-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batch	ı ID: ˈ	14856 Analyst: TN
Lead	19.3	0.182		mg/Kg-dry	1	9/19/2016 3:59:05 PM
Sample Moisture (Percent Moisture	2)			Batch	ı ID: I	R31720 Analyst: ME
Percent Moisture	14.0	0.500		wt%	1	9/14/2016 8:53:21 AM



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:21:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-003 **Matrix:** Soil

Client Sample ID: UD2-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	ı ID:	14820 Analyst: WC
Diesel (Fuel Oil)	ND	23.5		mg/Kg-dry	1	9/15/2016 5:38:00 AM
Heavy Oil	ND	58.8		mg/Kg-dry	1	9/15/2016 5:38:00 AM
Surr: 2-Fluorobiphenyl	80.0	50-150		%Rec	1	9/15/2016 5:38:00 AM
Surr: o-Terphenyl	79.9	50-150		%Rec	1	9/15/2016 5:38:00 AM
Gasoline by NWTPH-Gx				Batch	ı ID:	14821 Analyst: NG
Gasoline	23.1	4.93		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Surr: Toluene-d8	95.8	65-135		%Rec	1	9/15/2016 2:47:58 PM
Surr: 4-Bromofluorobenzene	105	65-135		%Rec	1	9/15/2016 2:47:58 PM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	ı ID:	14821 Analyst: NG
Dichlorodifluoromethane (CFC-12)	ND	0.0591	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
Chloromethane	ND	0.0591	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
Vinyl chloride	ND	0.00197	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
Bromomethane	ND	0.0887		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Trichlorofluoromethane (CFC-11)	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Chloroethane	ND	0.0591	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1-Dichloroethene	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Methylene chloride	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
trans-1,2-Dichloroethene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Methyl tert-butyl ether (MTBE)	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1-Dichloroethane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
2,2-Dichloropropane	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
cis-1,2-Dichloroethene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Chloroform	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1,1-Trichloroethane (TCA)	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1-Dichloropropene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Carbon tetrachloride	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2-Dichloroethane (EDC)	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Benzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Trichloroethene (TCE)	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2-Dichloropropane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Bromodichloromethane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Dibromomethane	ND	0.0394		mg/Kg-dry	1	9/15/2016 2:47:58 PM
cis-1,3-Dichloropropene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Toluene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
trans-1,3-Dichloropropylene	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM



WO#: **1609155**

Date Reported: 9/20/2016

Client: Shannon & Wilson Collection Date: 9/13/2016 10:21:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-003 **Matrix:** Soil

Client Sample ID: UD2-B1

Result RL Qual Units DF **Date Analyzed Analyses Volatile Organic Compounds by EPA Method 8260C** Batch ID: 14821 Analyst: NG ND 1,1,2-Trichloroethane 0.0296 mg/Kg-dry 9/15/2016 2:47:58 PM 1 1.3-Dichloropropane ND 0.0493 mg/Kg-dry 1 9/15/2016 2:47:58 PM 0.0635 Tetrachloroethene (PCE) 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM Dibromochloromethane ND 0.0296 1 9/15/2016 2:47:58 PM mg/Kg-dry 1,2-Dibromoethane (EDB) ND 0.00493 mg/Kg-dry 1 9/15/2016 2:47:58 PM Chlorobenzene ND 9/15/2016 2:47:58 PM 0.0197 mg/Kg-dry 1 1.1.1.2-Tetrachloroethane ND 0.0296 mg/Kg-dry 1 9/15/2016 2:47:58 PM ND Ethylbenzene 0.0296 mg/Kg-dry 1 9/15/2016 2:47:58 PM m,p-Xylene 0.0537 0.0197 1 9/15/2016 2:47:58 PM mg/Kg-dry o-Xylene 0.0246 9/15/2016 2:47:58 PM 0.0197 1 mg/Kg-dry Styrene ND 9/15/2016 2:47:58 PM 0.0197 mg/Kg-dry 1 Isopropylbenzene ND 0.0788 9/15/2016 2:47:58 PM mg/Kg-dry 1 **Bromoform** ND 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM 1,1,2,2-Tetrachloroethane ND 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM 0.0256 9/15/2016 2:47:58 PM n-Propylbenzene 0.0197 mg/Kg-dry 1 Bromobenzene ND 0.0296 mg/Kg-dry 1 9/15/2016 2:47:58 PM 1,3,5-Trimethylbenzene 0.145 9/15/2016 2:47:58 PM 0.0197 mg/Kg-dry 1 2-Chlorotoluene ND 9/15/2016 2:47:58 PM 0.0197 mg/Kg-dry 1 4-Chlorotoluene ND 0.0197 1 9/15/2016 2:47:58 PM mg/Kg-dry tert-Butylbenzene ND 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM ND 1,2,3-Trichloropropane 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM 1,2,4-Trichlorobenzene ND 0.0493 mg/Kg-dry 1 9/15/2016 2:47:58 PM 0.0222 9/15/2016 2:47:58 PM sec-Butylbenzene 0.0197 mg/Kg-dry 1 4-Isopropyltoluene 0.0502 0.0197 1 9/15/2016 2:47:58 PM mg/Kg-dry 1,3-Dichlorobenzene ND 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM 1,4-Dichlorobenzene ND 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM n-Butylbenzene ND 0.0197 9/15/2016 2:47:58 PM mg/Kg-dry 1 ND 1,2-Dichlorobenzene 0.0197 1 9/15/2016 2:47:58 PM mg/Kg-dry ND 1,2-Dibromo-3-chloropropane 0.493 mg/Kg-dry 1 9/15/2016 2:47:58 PM 0.313 1,2,4-Trimethylbenzene 0.0197 mg/Kg-dry 1 9/15/2016 2:47:58 PM Hexachlorobutadiene ND 0.0985 1 9/15/2016 2:47:58 PM mg/Kg-dry 0.0980 Naphthalene 0.0296 mg/Kg-dry 1 9/15/2016 2:47:58 PM 1.2.3-Trichlorobenzene ND 0.0197 1 9/15/2016 2:47:58 PM mg/Kg-dry Surr: Dibromofluoromethane 98.4 56.5-129 %Rec 1 9/15/2016 2:47:58 PM Surr: Toluene-d8 96.4 64.3-131 %Rec 9/15/2016 2:47:58 PM 1 Surr: 1-Bromo-4-fluorobenzene 105 63.1-141 %Rec 1 9/15/2016 2:47:58 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



WO#: **1609155**

Date Reported: 9/20/2016

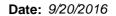
Client: Shannon & Wilson Collection Date: 9/13/2016 10:21:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-003 **Matrix:** Soil

Client Sample ID: UD2-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batcl	h ID: 1	4856 Analyst: TN
Lead	19.9	0.196		mg/Kg-dry	1	9/19/2016 4:02:37 PM
Sample Moisture (Percent Moisture	<u>e)</u>			Batcl	h ID: F	R31720 Analyst: ME
Percent Moisture	18.9	0.500		wt%	1	9/14/2016 8:53:21 AM





QC SUMMARY REPORT

CLIENT: Shannon & Wilson

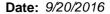
Total Metals by EPA Method 6020

Project: Sound Transit / Key Bank

Sample ID 1609155-001ADUP	SampType: DUP			Units: mg/	Kg-dry	Prep Da	te: 9/19/2 ()16	RunNo: 318	339	
Client ID: UD2-SW-N	Batch ID: 14856					Analysis Da	te: 9/19/2 0)16	SeqNo: 601	506	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	33.9	0.194						19.71	52.9	20	R

NOTES:

R - High	RPD observed. The me	thod is in control as indica	ted by the L	.CS.								
Sample ID	1609155-001AMS	SampType: MS			Units: mg/Kg-	dry	Prep Date:	9/19/20	16	RunNo: 318	339	
Client ID:	UD2-SW-N	Batch ID: 14856					Analysis Date:	9/19/20	16	SeqNo: 601	1508	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		41.3	0.188	23.52	19.71	91.7	75	125				
Sample ID	1609155-001AMSD	SampType: MSD			Units: mg/Kg-	dry	Prep Date:	9/19/20	16	RunNo: 318	339	
Client ID:	UD2-SW-N	Batch ID: 14856					Analysis Date:	9/19/20	16	SeqNo: 601	1509	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		41.2	0.190	23.70	19.71	90.6	75	125	41.27	0.246	20	
Sample ID	MB-14856	SampType: MBLK			Units: mg/Kg		Prep Date:	9/19/20	16	RunNo: 318	339	
Client ID:	MBLKS	Batch ID: 14856					Analysis Date:	9/19/20	16	SeqNo: 601	1517	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		ND	0.147									
Sample ID	LCS-14856	SampType: LCS			Units: mg/Kg		Prep Date:	9/19/20	16	RunNo: 31 8	339	
Client ID:	LCSS	Batch ID: 14856					Analysis Date:	9/19/20	16	SeqNo: 601	1518	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		19.0	0.152	18.94	0	100	80	120				





Analyte

QC SUMMARY REPORT

%RPD RPDLimit

Qual

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

%REC LowLimit HighLimit RPD Ref Val

Project:Sound Transit / Key BankSample IDMB-14820SampType: N

 Sample ID
 MB-14820
 SampType: MBLK
 Units: mg/Kg
 Prep Date: 9/14/2016
 RunNo: 31742

 Client ID:
 MBLKS
 Batch ID: 14820
 Analysis Date: 9/14/2016
 SeqNo: 599541

SPK value SPK Ref Val

Diesel (Fuel Oil)

Heavy Oil

ND

20.0

ND

50.0

Result

 Surr: 2-Fluorobiphenyl
 18.2
 20.00
 91.1
 50
 150

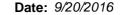
 Surr: o-Terphenyl
 17.3
 20.00
 86.4
 50
 150

RL

Sample ID LCS-14820 SampType: LCS Prep Date: 9/14/2016 RunNo: 31742 Units: mq/Kq Client ID: LCSS Batch ID: 14820 Analysis Date: 9/14/2016 SeqNo: 599540 LowLimit HighLimit RPD Ref Val Analyte Result SPK value SPK Ref Val %REC %RPD RPDLimit Qual Diesel (Fuel Oil) 438 20.0 500.0 0 87.6 65 135 Surr: 2-Fluorobiphenyl 19.4 20.00 96.9 50 150 Surr: o-Terphenyl 18.3 20.00 91.7 50 150

Sample ID 1609161-001ADUP SampType: DUP Prep Date: 9/14/2016 RunNo: 31742 Units: mg/Kg-dry Analysis Date: 9/14/2016 Client ID: BATCH Batch ID: 14820 SeaNo: 599527 Analyte Result RΙ SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual Diesel (Fuel Oil) ND 20.2 0 30 Heavy Oil ND 30 50.4 Surr: 2-Fluorobiphenyl 20.5 20.15 102 50 150 0 19.9 20.15 98.6 50 150 0 Surr: o-Terphenyl

Sample ID 1609161-002AMS SampType: MS Units: mg/Kg-dry Prep Date: 9/14/2016 RunNo: 31742 Client ID: BATCH Batch ID: 14820 Analysis Date: 9/15/2016 SeqNo: 599529 RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val Result %RPD **RPDLimit** Analyte Qual Diesel (Fuel Oil) 420 20.8 520.0 80.7 65 135 22.1 50 150 Surr: 2-Fluorobiphenyl 20.80 106 Surr: o-Terphenyl 20.6 20.80 99.1 50 150





QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Project: Sound Transit / Key Bank

Sample ID 1609161-002AMS SampType: MS Units: mg/Kg-dry Prep Date: 9/14/2016 RunNo: 31742

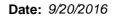
Client ID: **BATCH** Batch ID: **14820** Analysis Date: **9/15/2016** SeqNo: **599529**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sample ID 1609161-002AMSD	SampType: MSD			Units: mg/K	Units: mg/Kg-dry Prep Date: 9/14/2016)16	RunNo: 31742			
Client ID: BATCH	Batch ID: 14820					Analysis Da	te: 9/15/2 0	16	SeqNo: 59 9	9530		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Diesel (Fuel Oil)	585	20.7	517.0	0	113	65	135	419.6	33.0	30	R	
Surr: 2-Fluorobiphenyl	28.5		20.68		138	50	150		0			
Surr: o-Terphenyl	26.9		20.68		130	50	150		0			

NOTES:

R - High RPD observed, spike recoveries are within range.



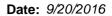


QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Project: Sound Tran	nsit / Key Bank								Gasoline	by NWT	PH-G
Sample ID LCS-14821	SampType: LCS			Units: mg/l	K g	Prep Date	e: 9/14/20	16	RunNo: 31	758	
Client ID: LCSS	Batch ID: 14821					Analysis Date	e: 9/15/20	16	SeqNo: 60	0251	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	20.8	5.00	25.00	0	83.1	65	135				
Surr: Toluene-d8	1.24		1.250		99.0	65	135				
Surr: 4-Bromofluorobenzene	1.27		1.250		101	65	135				
Sample ID MB-14821	SampType: MBLK			Units: mg/l	Kg	Prep Date	e: 9/14/20	16	RunNo: 31	758	
Client ID: MBLKS	Batch ID: 14821					Analysis Date	e: 9/15/20	16	SeqNo: 60	0252	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	1.22		1.250		97.2	65	135				
Surr: 4-Bromofluorobenzene	1.23		1.250		98.2	65	135				
Sample ID 1609155-001BDUP	SampType: DUP			Units: mg/l	Kg-dry	Prep Date	e: 9/14/20	16	RunNo: 31	758	
Client ID: UD2-SW-N	Batch ID: 14821					Analysis Date	e: 9/15/20	16	SeqNo: 60	0243	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	4.78						0		30	
Surr: Toluene-d8	1.16		1.195		96.9	65	135		0		
Surr: 4-Bromofluorobenzene	1.22		1.195		102	65	135		0		
Sample ID 1609155-003BMS	SampType: MS			Units: mg/l	Kg-dry	Prep Date	e: 9/14/20	16	RunNo: 31	758	
Client ID: UD2-B1	Batch ID: 14821					Analysis Date	e: 9/15/20	16	SeqNo: 60	0246	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	46.8	4.93	24.63	23.07	96.2	65	135				
Surr: Toluene-d8	1.19		1.232		96.7	65	135				
Surr: 4-Bromofluorobenzene	1.30		1.232		105	65	135				





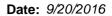
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Sample ID 1609155-003BMSD	SampType: MSD		Units: mg/Kg-dry			Prep Dat	te: 9/14/2 0	116	RunNo: 31758		
Client ID: UD2-B1	Batch ID: 14821					Analysis Da	te: 9/15/20	16	SeqNo: 600	0247	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	47.5	4.93	24.63	23.07	99.0	65	135	46.77	1.46	30	
Surr: Toluene-d8	1.17		1.232		95.2	65	135		0		
Surr: 4-Bromofluorobenzene	1.27		1.232		103	65	135		0		

Sample ID CCV-C-14821	SampType: CCV			Units: mg/Kg		Prep Da	te: 9/19/20	16	RunNo: 317	758	
Client ID: CCV	Batch ID: 14821					Analysis Da	te: 9/19/20	16	SeqNo: 601	1991	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	532	5.00	500.0	0	106	80	120				
Surr: Toluene-d8	24.9		25.00		99.6	65	135				
Surr: 4-Bromofluorobenzene	24.8		25.00		99.4	65	135				



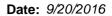


QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14821	SampType: LCS			Units: µg/L		Prep Da	te: 9/14/2 0	16	RunNo: 31	757	
Client ID: LCSS	Batch ID: 14821					Analysis Da	te: 9/15/2 0	16	SeqNo: 59	9839	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.608	0.0600	1.000	0	60.8	34.5	141				Q
Chloromethane	0.794	0.0600	1.000	0	79.4	38.8	132				Q
Vinyl chloride	0.790	0.00200	1.000	0	79.0	44	142				Q
Bromomethane	0.961	0.0900	1.000	0	96.1	40.9	157				
Trichlorofluoromethane (CFC-11)	1.07	0.0500	1.000	0	107	42.9	147				
Chloroethane	0.865	0.0600	1.000	0	86.5	37.1	144				Q
1,1-Dichloroethene	0.970	0.0500	1.000	0	97.0	49.7	142				
Methylene chloride	0.948	0.0200	1.000	0	94.8	46.3	140				
trans-1,2-Dichloroethene	1.04	0.0200	1.000	0	104	68	130				
Methyl tert-butyl ether (MTBE)	1.07	0.0500	1.000	0	107	59.1	138				
1,1-Dichloroethane	0.917	0.0200	1.000	0	91.7	61.9	137				
2,2-Dichloropropane	1.30	0.0500	1.000	0	130	28.1	149				
cis-1,2-Dichloroethene	1.01	0.0200	1.000	0	101	71.3	135				
Chloroform	0.988	0.0200	1.000	0	98.8	67.5	129				
1,1,1-Trichloroethane (TCA)	1.00	0.0200	1.000	0	100	69	132				
1,1-Dichloropropene	1.04	0.0200	1.000	0	104	72.7	131				
Carbon tetrachloride	1.11	0.0200	1.000	0	111	63.4	137				
1,2-Dichloroethane (EDC)	0.996	0.0300	1.000	0	99.6	61.9	136				
Benzene	0.984	0.0200	1.000	0	98.4	64.3	133				
Trichloroethene (TCE)	1.03	0.0200	1.000	0	103	65.5	137				
1,2-Dichloropropane	1.01	0.0200	1.000	0	101	63.2	142				
Bromodichloromethane	1.09	0.0200	1.000	0	109	73.2	131				
Dibromomethane	1.11	0.0400	1.000	0	111	70	130				
cis-1,3-Dichloropropene	1.14	0.0200	1.000	0	114	59.1	143				
Toluene	1.02	0.0200	1.000	0	102	67.3	138				
trans-1,3-Dichloropropylene	1.20	0.0300	1.000	0	120	49.2	149				
1,1,2-Trichloroethane	1.07	0.0300	1.000	0	107	74.5	129				
1,3-Dichloropropane	1.05	0.0500	1.000	0	105	70	130				
Tetrachloroethene (PCE)	1.04	0.0200	1.000	0	104	52.7	150				
Dibromochloromethane	1.17	0.0300	1.000	0	117	70.6	144				
1,2-Dibromoethane (EDB)	1.04	0.00500	1.000	0	104	70	130				





QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14821	SampType: LCS			Units: µg/L		Prep Da	te: 9/14/20	116	RunNo: 317	' 57	
Client ID: LCSS	Batch ID: 14821					Analysis Dat	te: 9/15/20	116	SeqNo: 599	1839	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.01	0.0200	1.000	0	101	76.1	123				_
1,1,1,2-Tetrachloroethane	1.13	0.0300	1.000	0	113	65.9	141				
Ethylbenzene	0.991	0.0300	1.000	0	99.0	74	129				
m,p-Xylene	2.09	0.0200	2.000	0	104	70	124				
o-Xylene	1.00	0.0200	1.000	0	100	72.7	124				
Styrene	1.02	0.0200	1.000	0	102	76.8	130				
Isopropylbenzene	1.09	0.0800	1.000	0	109	70	130				
Bromoform	1.20	0.0200	1.000	0	120	67	154				
1,1,2,2-Tetrachloroethane	1.06	0.0200	1.000	0	106	60	130				
n-Propylbenzene	1.00	0.0200	1.000	0	100	74.8	125				
Bromobenzene	1.09	0.0300	1.000	0	109	49.2	144				
1,3,5-Trimethylbenzene	1.02	0.0200	1.000	0	102	74.6	123				
2-Chlorotoluene	1.01	0.0200	1.000	0	101	76.7	129				
4-Chlorotoluene	1.03	0.0200	1.000	0	103	77.5	125				
tert-Butylbenzene	1.02	0.0200	1.000	0	102	66.2	130				
1,2,3-Trichloropropane	1.08	0.0200	1.000	0	108	67.9	136				
1,2,4-Trichlorobenzene	1.08	0.0500	1.000	0	108	62.6	143				
sec-Butylbenzene	1.02	0.0200	1.000	0	102	75.6	133				
4-Isopropyltoluene	1.04	0.0200	1.000	0	104	76.8	131				
1,3-Dichlorobenzene	1.02	0.0200	1.000	0	102	72.8	128				
1,4-Dichlorobenzene	0.994	0.0200	1.000	0	99.4	72.6	126				
n-Butylbenzene	1.05	0.0200	1.000	0	105	65.3	136				
1,2-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	126				
1,2-Dibromo-3-chloropropane	1.20	0.500	1.000	0	120	61.2	139				
1,2,4-Trimethylbenzene	1.03	0.0200	1.000	0	103	77.5	129				
Hexachlorobutadiene	1.06	0.100	1.000	0	106	42	151				
Naphthalene	1.16	0.0300	1.000	0	116	62.3	134				
1,2,3-Trichlorobenzene	1.08	0.0200	1.000	0	108	54.8	143				
Surr: Dibromofluoromethane	1.28		1.250		103	56.5	129				
Surr: Toluene-d8	1.25		1.250		100	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.34		1.250		107	63.1	141				

Date: 9/20/2016



Work Order: 1609155

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14821 SampType: LCS

Units: µg/L Prep Date: 9/14/2016

RunNo: 31757

Result

Analysis Date: 9/15/2016

SeqNo: 599839

Client ID: LCSS

Batch ID: 14821

Sound Transit / Key Bank

SPK value SPK Ref Val

%REC LowLimit HighLimit RPD Ref Val

%RPD RPDLimit Qual

NOTES:

Analyte

Project:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-14821	SampType: MBLK			Units: mg/Kg		Prep Dat	te: 9/14/20	716	RunNo: 317	757	
Client ID: MBLKS	Batch ID: 14821					Analysis Dat	e: 9/15/2 0	116	SeqNo: 599	7840	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									Q
Chloromethane	ND	0.0600									Q
Vinyl chloride	ND	0.00200									Q
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									Q
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									

Date: 9/20/2016



1609155 Work Order:

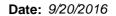
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Project:	Sound Transit / Key Ba	ınk					Volatile Organic Compound	is by EPA Method 8260C
Sample ID MB-1	4821 SampType	e: MBLK			Units: mg/Kg		Prep Date: 9/14/2016	RunNo: 31757
Client ID: MBL	S Batch ID:	14821					Analysis Date: 9/15/2016	SeqNo: 599840
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Toluene		ND	0.0200					

Client ID: MBLKS	Batch ID: 14821				Analysis Date: 9/15/2016			016	SeqNo: 599840		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									





Sound Transit / Key Bank

Work Order: 1609155

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14821	SampType: MBLK			Units: mg/Kg		Prep Dat	te: 9/14/2016	RunNo: 31	757	
Client ID: MBLKS	Batch ID: 14821		Analysis Date: 9/15/2016		te: 9/15/2016	SeqNo: 59	9840			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	0.0200								
Hexachlorobutadiene	ND	0.100								
Naphthalene	ND	0.0300								
1,2,3-Trichlorobenzene	ND	0.0200								
Surr: Dibromofluoromethane	1.19		1.250		95.5	56.5	129			
Surr: Toluene-d8	1.23		1.250		98.2	64.3	131			
Surr: 1-Bromo-4-fluorobenzene	1.25		1.250		99.6	63.1	141			
NOTES:										

NOTES:

Project:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609155-001BDUP	SampType: DUP			Units: mg/K	g-dry	Prep Dat	te: 9/14/2 0)16	RunNo: 317	⁷ 57	·
Client ID: UD2-SW-N	Batch ID: 14821					Analysis Dat	te: 9/15/2 0	116	SeqNo: 600	1225	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0574						0		30	Q
Chloromethane	ND	0.0574						0		30	Q
Vinyl chloride	ND	0.00191						0		30	Q
Bromomethane	ND	0.0861						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0478						0		30	
Chloroethane	ND	0.0574						0		30	Q
1,1-Dichloroethene	ND	0.0478						0		30	
Methylene chloride	ND	0.0191						0		30	
trans-1,2-Dichloroethene	ND	0.0191						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0478						0		30	
1,1-Dichloroethane	ND	0.0191						0		30	
2,2-Dichloropropane	ND	0.0478						0		30	
cis-1,2-Dichloroethene	ND	0.0191						0		30	
Chloroform	ND	0.0191						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0191						0		30	
1,1-Dichloropropene	ND	0.0191						0		30	
Carbon tetrachloride	ND	0.0191						0		30	

Date: 9/20/2016



Sound Transit / Key Bank

Work Order: 1609155

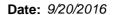
Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609155-001BDUP	SampType: DUP			Units: mg/l	Kg-dry	Prep Date	e: 9/14/2 0)16	RunNo: 31	757	
Client ID: UD2-SW-N	Batch ID: 14821					Analysis Date	e: 9/15/2 0)16	SeqNo: 60	0225	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	ND	0.0287						0		30	
Benzene	ND	0.0191						0		30	
Trichloroethene (TCE)	ND	0.0191						0		30	
1,2-Dichloropropane	ND	0.0191						0		30	
Bromodichloromethane	ND	0.0191						0		30	
Dibromomethane	ND	0.0383						0		30	
cis-1,3-Dichloropropene	ND	0.0191						0		30	
Toluene	ND	0.0191						0		30	
trans-1,3-Dichloropropylene	ND	0.0287						0		30	
1,1,2-Trichloroethane	ND	0.0287						0		30	
1,3-Dichloropropane	ND	0.0478						0		30	
Tetrachloroethene (PCE)	0.140	0.0191						0.1401	0.342	30	
Dibromochloromethane	ND	0.0287						0		30	
1,2-Dibromoethane (EDB)	ND	0.00478						0		30	
Chlorobenzene	ND	0.0191						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0287						0		30	
Ethylbenzene	ND	0.0287						0		30	
m,p-Xylene	0.0392	0.0191						0.03299	17.2	30	
o-Xylene	ND	0.0191						0		30	
Styrene	ND	0.0191						0		30	
Isopropylbenzene	ND	0.0765						0		30	
Bromoform	ND	0.0191						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0191						0		30	
n-Propylbenzene	ND	0.0191						0		30	
Bromobenzene	ND	0.0287						0		30	
1,3,5-Trimethylbenzene	0.0263	0.0191						0.01913	31.6	30	
2-Chlorotoluene	ND	0.0191						0		30	
4-Chlorotoluene	ND	0.0191						0		30	
tert-Butylbenzene	ND	0.0191						0		30	
1,2,3-Trichloropropane	ND	0.0191						0		30	
1,2,4-Trichlorobenzene	ND	0.0478						0		30	





Sound Transit / Key Bank

Work Order: 1609155

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

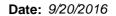
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609155-001BDUP	SampType: DUP			Units: mg/	/Kg-dry	Prep Da	te: 9/14/2 0)16	RunNo: 317	757	
Client ID: UD2-SW-N	Batch ID: 14821					Analysis Da	te: 9/15/2 0)16	SeqNo: 600	0225	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	ND	0.0191						0		30	
4-Isopropyltoluene	ND	0.0191						0		30	
1,3-Dichlorobenzene	ND	0.0191						0		30	
1,4-Dichlorobenzene	ND	0.0191						0		30	
n-Butylbenzene	ND	0.0191						0		30	
1,2-Dichlorobenzene	ND	0.0191						0		30	
1,2-Dibromo-3-chloropropane	ND	0.478						0		30	
1,2,4-Trimethylbenzene	0.0435	0.0191						0.03060	34.8	30	
Hexachlorobutadiene	ND	0.0956						0		30	
Naphthalene	ND	0.0287						0		30	
1,2,3-Trichlorobenzene	ND	0.0191						0		30	
Surr: Dibromofluoromethane	1.17		1.195		97.5	56.5	129		0		
Surr: Toluene-d8	1.18		1.195		98.4	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.24		1.195		103	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609172-001AMS	SampType: MS	•		Units: mg/	Kg-dry	Prep Da	te: 9/14/2 0)16	RunNo: 317	757	
Client ID: BATCH	Batch ID: 14821					Analysis Da	te: 9/15/2 0	16	SeqNo: 600	0238	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.778	0.0610	1.017	0.04069	72.5	43.5	121				Q
Chloromethane	0.815	0.0610	1.017	0	80.2	45	130				Q
Vinyl chloride	0.887	0.00203	1.017	0	87.2	51.2	146				Q
Bromomethane	0.952	0.0916	1.017	0	93.6	21.3	120				
Trichlorofluoromethane (CFC-11)	1.23	0.0509	1.017	0	121	35	131				
Chloroethane	0.877	0.0610	1.017	0	86.3	43.8	117				Q
1,1-Dichloroethene	1.07	0.0509	1.017	0	105	61.9	141				
Methylene chloride	0.977	0.0203	1.017	0	96.1	54.7	142				
trans-1,2-Dichloroethene	1.08	0.0203	1.017	0	106	52	136				
Methyl tert-butyl ether (MTBE)	1.11	0.0509	1.017	0	109	54.4	132				



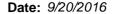


QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609172-001AMS	SampType: MS			Units: mg/l	Kg-dry	Prep Da	te: 9/14/2 0	16	RunNo: 31	757	
Client ID: BATCH	Batch ID: 14821					Analysis Da	te: 9/15/2 0	16	SeqNo: 60	0238	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	0.964	0.0203	1.017	0	94.8	51.8	141				
2,2-Dichloropropane	0.614	0.0509	1.017	0	60.4	36	123				
cis-1,2-Dichloroethene	1.03	0.0203	1.017	0	101	58.6	136				
Chloroform	1.05	0.0203	1.017	0.01526	101	53.2	129				
1,1,1-Trichloroethane (TCA)	1.08	0.0203	1.017	0.08139	98.4	58.3	145				
1,1-Dichloropropene	1.10	0.0203	1.017	0	108	55.1	138				
Carbon tetrachloride	1.11	0.0203	1.017	0	109	53.3	144				
1,2-Dichloroethane (EDC)	1.01	0.0305	1.017	0	99.7	51.3	139				
Benzene	1.01	0.0203	1.017	0	99.6	63.5	133				
Trichloroethene (TCE)	1.09	0.0203	1.017	0.02035	105	68.6	132				
1,2-Dichloropropane	1.03	0.0203	1.017	0	102	59	136				
Bromodichloromethane	1.11	0.0203	1.017	0.02035	107	50.7	141				
Dibromomethane	1.13	0.0407	1.017	0	111	50.6	137				
cis-1,3-Dichloropropene	1.03	0.0203	1.017	0	101	50.4	138				
Toluene	0.996	0.0203	1.017	0	97.9	63.4	132				
trans-1,3-Dichloropropylene	1.04	0.0305	1.017	0	102	44.1	147				
1,1,2-Trichloroethane	1.12	0.0305	1.017	0.1577	94.8	51.6	137				
1,3-Dichloropropane	1.05	0.0509	1.017	0	103	53.1	134				
Tetrachloroethene (PCE)	5.76	0.0203	1.017	15.97	-1,000	35.6	158				S
Dibromochloromethane	1.12	0.0305	1.017	0	110	55.3	140				
1,2-Dibromoethane (EDB)	1.04	0.00509	1.017	0	102	50.4	136				
Chlorobenzene	1.03	0.0203	1.017	0	102	60	133				
1,1,1,2-Tetrachloroethane	1.13	0.0305	1.017	0	111	53.1	142				
Ethylbenzene	1.03	0.0305	1.017	0.02543	99.0	54.5	134				
m,p-Xylene	2.14	0.0203	2.035	0	105	53.1	132				
o-Xylene	1.04	0.0203	1.017	0.04578	97.9	53.3	139				
Styrene	1.05	0.0203	1.017	0	103	51.1	132				
Isopropylbenzene	1.14	0.0814	1.017	0.02543	110	58.9	138				
Bromoform	1.17	0.0203	1.017	0	115	57.9	130				
1,1,2,2-Tetrachloroethane	1.08	0.0203	1.017	0	107	51.9	131				
n-Propylbenzene	1.03	0.0203	1.017	0.05087	96.1	53.6	140				





Sound Transit / Key Bank

Work Order: 1609155

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

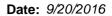
Sample ID 1609172-001AMS	SampType: MS			Units: mg	/Kg-dry	Prep Da	te: 9/14/20	16	RunNo: 317	757	
Client ID: BATCH	Batch ID: 14821					Analysis Da	te: 9/15/20	16	SeqNo: 600	0238	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	1.12	0.0305	1.017	0	111	54.2	140				
1,3,5-Trimethylbenzene	1.04	0.0203	1.017	0.06104	95.8	51.8	136				
2-Chlorotoluene	1.04	0.0203	1.017	0.03052	99.5	51.6	136				
4-Chlorotoluene	1.05	0.0203	1.017	0.04069	99.3	50.1	139				
tert-Butylbenzene	1.07	0.0203	1.017	0.06104	99.6	50.5	135				
1,2,3-Trichloropropane	1.05	0.0203	1.017	0	103	50.5	131				
1,2,4-Trichlorobenzene	1.09	0.0509	1.017	0	107	50.8	130				
sec-Butylbenzene	1.05	0.0203	1.017	0.07121	96.7	52.6	141				
4-Isopropyltoluene	1.05	0.0203	1.017	0.07121	96.5	52.9	134				
1,3-Dichlorobenzene	1.02	0.0203	1.017	0	100	52.6	131				
1,4-Dichlorobenzene	0.995	0.0203	1.017	0	97.8	52.9	129				
n-Butylbenzene	1.04	0.0203	1.017	0	102	52.6	130				
1,2-Dichlorobenzene	1.03	0.0203	1.017	0	101	55.8	129				
1,2-Dibromo-3-chloropropane	1.22	0.509	1.017	0	120	40.5	131				
1,2,4-Trimethylbenzene	1.05	0.0203	1.017	0.07121	96.3	50.6	137				
Hexachlorobutadiene	1.05	0.102	1.017	0	103	40.6	158				
Naphthalene	1.24	0.0305	1.017	0.08647	114	52.3	124				
1,2,3-Trichlorobenzene	1.10	0.0203	1.017	0	108	54.4	124				
Surr: Dibromofluoromethane	1.31		1.272		103	56.5	129				
Surr: Toluene-d8	1.19		1.272		93.6	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.37		1.272		107	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609172-001AMSD	SampType: MSD			Units: mg/	Kg-dry	Prep Da	te: 9/14/2 0	116	RunNo: 317	7 57	
Client ID: BATCH	Batch ID: 14821					Analysis Da	te: 9/15/2 0	SeqNo: 600239			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.781	0.0610	1.017	0.04069	72.8	43.5	121	0.7783	0.326	30	Q
Chloromethane	0.862	0.0610	1.017	0	84.8	45	130	0.8154	5.58	30	Q

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.



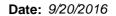


QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609172-001AMSD	SampType: MSD			Units: mg/h	(g-dry	Prep Dat	e: 9/14/2 0)16	RunNo: 31	757	
Client ID: BATCH	Batch ID: 14821					Analysis Dat	e: 9/15/2 0)16	SeqNo: 60	0239	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	0.902	0.00203	1.017	0	88.7	51.2	146	0.8871	1.71	30	Q
Bromomethane	0.959	0.0916	1.017	0	94.3	21.3	120	0.9522	0.692	30	
Trichlorofluoromethane (CFC-11)	1.16	0.0509	1.017	0	114	35	131	1.232	6.43	30	
Chloroethane	0.891	0.0610	1.017	0	87.6	43.8	117	0.8774	1.55	30	Q
1,1-Dichloroethene	1.10	0.0509	1.017	0	108	61.9	141	1.071	2.25	30	
Methylene chloride	1.01	0.0203	1.017	0	99.1	54.7	142	0.9771	3.08	30	
trans-1,2-Dichloroethene	1.08	0.0203	1.017	0	106	52	136	1.077	0.424	30	
Methyl tert-butyl ether (MTBE)	1.10	0.0509	1.017	0	108	54.4	132	1.112	0.873	30	
1,1-Dichloroethane	0.964	0.0203	1.017	0	94.8	51.8	141	0.9644	0.0528	30	
2,2-Dichloropropane	0.616	0.0509	1.017	0	60.6	36	123	0.6140	0.331	30	
cis-1,2-Dichloroethene	1.05	0.0203	1.017	0	103	58.6	136	1.030	1.67	30	
Chloroform	1.05	0.0203	1.017	0.01526	102	53.2	129	1.046	0.582	30	
1,1,1-Trichloroethane (TCA)	1.08	0.0203	1.017	0.08139	97.9	58.3	145	1.082	0.471	30	
1,1-Dichloropropene	1.09	0.0203	1.017	0	107	55.1	138	1.099	0.790	30	
Carbon tetrachloride	1.23	0.0203	1.017	0	121	53.3	144	1.110	10.1	30	
1,2-Dichloroethane (EDC)	1.02	0.0305	1.017	0	100	51.3	139	1.014	0.600	30	
Benzene	1.02	0.0203	1.017	0	100	63.5	133	1.013	0.751	30	
Trichloroethene (TCE)	1.09	0.0203	1.017	0.02035	105	68.6	132	1.089	0.187	30	
1,2-Dichloropropane	1.05	0.0203	1.017	0	103	59	136	1.033	1.22	30	
Bromodichloromethane	1.12	0.0203	1.017	0.02035	108	50.7	141	1.107	1.05	30	
Dibromomethane	1.14	0.0407	1.017	0	112	50.6	137	1.132	0.269	30	
cis-1,3-Dichloropropene	1.04	0.0203	1.017	0	102	50.4	138	1.032	0.737	30	
Toluene	1.01	0.0203	1.017	0	99.3	63.4	132	0.9960	1.37	30	
trans-1,3-Dichloropropylene	1.05	0.0305	1.017	0	103	44.1	147	1.039	1.02	30	
1,1,2-Trichloroethane	1.15	0.0305	1.017	0.1577	97.2	51.6	137	1.122	2.15	30	
1,3-Dichloropropane	1.07	0.0509	1.017	0	106	53.1	134	1.052	2.11	30	
Tetrachloroethene (PCE)	6.59	0.0203	1.017	15.97	-923	35.6	158	5.763	13.4	30	S
Dibromochloromethane	1.13	0.0305	1.017	0	111	55.3	140	1.124	0.542	30	
1,2-Dibromoethane (EDB)	1.08	0.00509	1.017	0	106	50.4	136	1.042	3.22	30	
Chlorobenzene	1.04	0.0203	1.017	0	102	60	133	1.035	0.0983	30	
1,1,1,2-Tetrachloroethane	1.12	0.0305	1.017	0	110	53.1	142	1.129	0.723	30	



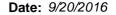


QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609172-001AMSD	SampType: MSD			Units: mg/	Kg-dry	Prep Da	te: 9/14/2 ()16	RunNo: 317		
Client ID: BATCH	Batch ID: 14821					Analysis Da	te: 9/15/2 0)16	SeqNo: 600	0239	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	1.02	0.0305	1.017	0.02543	97.7	54.5	134	1.033	1.29	30	
m,p-Xylene	2.13	0.0203	2.035	0	105	53.1	132	2.139	0.357	30	
o-Xylene	1.03	0.0203	1.017	0.04578	97.2	53.3	139	1.041	0.637	30	
Styrene	1.04	0.0203	1.017	0	102	51.1	132	1.049	0.779	30	
Isopropylbenzene	1.15	0.0814	1.017	0.02543	110	58.9	138	1.142	0.400	30	
Bromoform	1.15	0.0203	1.017	0	113	57.9	130	1.174	1.70	30	
1,1,2,2-Tetrachloroethane	1.07	0.0203	1.017	0	105	51.9	131	1.084	1.66	30	
n-Propylbenzene	1.03	0.0203	1.017	0.05087	96.3	53.6	140	1.028	0.198	30	
Bromobenzene	1.10	0.0305	1.017	0	108	54.2	140	1.124	2.15	30	
1,3,5-Trimethylbenzene	1.04	0.0203	1.017	0.06104	95.8	51.8	136	1.035	0	30	
2-Chlorotoluene	1.04	0.0203	1.017	0.03052	99.1	51.6	136	1.042	0.342	30	
4-Chlorotoluene	1.04	0.0203	1.017	0.04069	98.4	50.1	139	1.050	0.875	30	
tert-Butylbenzene	1.07	0.0203	1.017	0.06104	98.9	50.5	135	1.074	0.665	30	
1,2,3-Trichloropropane	1.01	0.0203	1.017	0	99.5	50.5	131	1.047	3.36	30	
1,2,4-Trichlorobenzene	1.11	0.0509	1.017	0	109	50.8	130	1.090	1.67	30	
sec-Butylbenzene	1.05	0.0203	1.017	0.07121	96.0	52.6	141	1.055	0.726	30	
4-Isopropyltoluene	1.03	0.0203	1.017	0.07121	94.3	52.9	134	1.053	2.15	30	
1,3-Dichlorobenzene	1.03	0.0203	1.017	0	101	52.6	131	1.020	1.14	30	
1,4-Dichlorobenzene	1.00	0.0203	1.017	0	98.3	52.9	129	0.9949	0.459	30	
n-Butylbenzene	1.04	0.0203	1.017	0	102	52.6	130	1.036	0.343	30	
1,2-Dichlorobenzene	1.03	0.0203	1.017	0	101	55.8	129	1.030	0.148	30	
1,2-Dibromo-3-chloropropane	1.27	0.509	1.017	0	124	40.5	131	1.221	3.64	30	
1,2,4-Trimethylbenzene	1.03	0.0203	1.017	0.07121	94.0	50.6	137	1.050	2.20	30	
Hexachlorobutadiene	1.06	0.102	1.017	0	104	40.6	158	1.051	1.11	30	
Naphthalene	1.26	0.0305	1.017	0.08647	115	52.3	124	1.242	1.26	30	
1,2,3-Trichlorobenzene	1.13	0.0203	1.017	0	111	54.4	124	1.100	2.51	30	
Surr: Dibromofluoromethane	1.32		1.272		104	56.5	129		0		
Surr: Toluene-d8	1.20		1.272		94.3	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.35		1.272		106	63.1	141		0		





QC SUMMARY REPORT

Shannon & Wilson CLIENT:

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609172-001AMSD SampType: MSD

Sound Transit / Key Bank

Units: mg/Kg-dry

Prep Date: 9/14/2016

RunNo: 31757

Client ID: BATCH

Batch ID: 14821

Result

Analysis Date: 9/15/2016

SeqNo: 600239

Analyte

Project:

RLSPK value SPK Ref Val

%REC LowLimit HighLimit RPD Ref Val

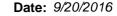
%RPD RPDLimit Qual

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID CCV-D-14821		Units: µg/L Prep Date: 9/19				/2016 RunNo: 31757					
Client ID: CCV	Batch ID: 14821					Analysis Da	te: 9/19/2 0)16	SeqNo: 60		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
n-Propylbenzene	21.3	0.0200	20.00	0	107	80	120				
1,3,5-Trimethylbenzene	21.0	0.0200	20.00	0	105	80	120				
4-Isopropyltoluene	21.8	0.0200	20.00	0	109	80	120				
1,2,4-Trimethylbenzene	21.0	0.0200	20.00	0	105	80	120				
Naphthalene	19.9	0.0300	20.00	0	99.7	80	120				
Surr: Dibromofluoromethane	25.9		25.00		103	63.7	129				
Surr: Toluene-d8	26.1		25.00		104	62.4	141				
Surr: 1-Bromo-4-fluorobenzene	25.5		25.00		102	63.1	141				





Analyte

QC SUMMARY REPORT

%RPD RPDLimit Qual

CLIENT: Shannon & Wilson

Sample Moisture (Percent Moisture)

%REC LowLimit HighLimit RPD Ref Val

Project: Sound Transit / Key Bank

Result

RL

 Sample ID
 1609152-001ADUP
 SampType:
 DUP
 Units:
 wt%
 Prep Date:
 9/14/2016
 RunNo:
 31720

 Client ID:
 BATCH
 Batch ID:
 R31720
 Analysis Date:
 9/14/2016
 SeqNo:
 599124

SPK value SPK Ref Val

Percent Moisture 13.2 0.500 11.08 17.8 20



Sample Log-In Check List

С	lient Name:	sw		V	Vork Orc	ler Number:	1609155		
Lo	ogged by:	Erica Silva			Date Rec	eived:	9/13/201	6 4:15:00 PM	
<u>Cha</u>	nin of Custo	<u>ody</u>							
1.	Is Chain of C	ustody complete?			Yes	✓	No 🗌	Not Present	
2.	How was the	sample delivered?			Client				
<u>Log</u>	ı In								
	Coolers are p	resent?			Yes	✓	No 🗌	na 🗆	
4.	Shipping conf	tainer/cooler in good o	ondition?		Yes	✓	No 🗌		
5.		s present on shipping ments for Custody Se			Yes		No 🗌	Not Required 🗹	
6.	Was an atten	npt made to cool the s	amples?		Yes	✓	No 🗌	NA 🗌	
7.	Were all item	s received at a tempe	rature of >0°C to 10.0°	C*	Yes	✓	No 🗆	NA \square	
8.	Sample(s) in	proper container(s)?			Yes	✓	No 🗌		
9.	Sufficient san	nple volume for indica	ted test(s)?		Yes	✓	No \square		
10.	Are samples	properly preserved?			Yes	✓	No \square		
11.	Was preserva	ative added to bottles?			Yes		No 🗸	NA 🗆	
12.	Is there head	space in the VOA vial	s?		Yes		No \square	NA 🗹	
13.	Did all sample	es containers arrive in	good condition(unbroke	en)?	Yes	✓	No \square		
14.	Does paperw	ork match bottle label	s?		Yes	✓	No \square		
15.	Are matrices	correctly identified on	Chain of Custody?		Yes	✓	No \square		
16.	Is it clear wha	at analyses were reque	ested?		Yes	✓	No 🗌		
17.	Were all hold	ing times able to be m	et?		Yes	✓	No 🗌		
<u>Spe</u>	cial Handli	ing (if applicable)						
18.	Was client no	otified of all discrepand	ies with this order?		Yes		No \square	NA 🗸	
	Person	Notified:		Date					
	By Who	m:		Via:	eMail	☐ Phone	e 🗌 Fax	☐ In Person	
	Regardi	ng:							
	Client In	structions:							
19.	Additional rer	narks:							
ltem	<u>Information</u>								

Item #	Temp ⁰C
Cooler	8.6
Sample	4.3

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Frem	on	ł					C	hai	n of	Cu	sto	dy	Re	co	rd	an	d L	aboratory Services Agreemen
		oo oo.									Dat	e:	9-1	13-	16	_		
3600 Fremont Ave N. Tel: 2	206-352-37	90																Page: of:
Seattle, WA 98103 Fax:	206-352-71	78						_			<			_			/	/ × 0 · ·
Client: Shannor	41.	ile o	n -	9.54.05					oject Na									Key Bank
							-		oject No							-12	> Co	Collected by: SKH
Address: 400 N	24m	37	2142	2 10	0		285		cation:		The second second	A STATE OF THE PARTY OF	Selle and - page	4 10 10 10 10 10 10 10 10 10 10 10 10 10	a series	4,520	Harris	
City, State, Zip: Seattle Telephone: 206 - 6				- 0	-	-/7	_	Re	port To	PIVI):	A							
				1000000	192 102 104	18 AS	9	E CALLON	/I Email:	WA IS	-							sil.com
*Matrix Codes: A = Air, AQ = Aqueous, B =	Bulk, O = Ot	her, P = Pro	duct, S = S	oil, SD	= Sedi	ment,	SL = S	Solid, W	= Water,	DW =	= Drinkin	Water	r, GW	= Gro	ound W	ater,	SW = S	Storm Water, WW = Waste Water
PRESIDE TOOM AND ATTEMPT OF THE PROPERTY.	gen plant		in and the second			/6			Solito S	dion's	ore St	in'	00/0	0 120	80	/	1	
	-0.5%)				/	260/	/	and a		OILEG	270 270	2002/	(ESV.)	OISSON	*/	/:	2	
	Sample	Sample	Sample Type	/	SEN SEN	10 m	/	dine 20	aro Hear	(4) S	ER E	A 35.		100	86)	×	//	The first of the second state of the code and a water
Sample Name	Date	Time	(Matrix)*	/\	0 9	1/8/	3	1/4/	0185 ST	100	/2/	V6 10	N N		~~	7	//	Comments
1 UD2 - SW - N	9-13-16	1015	Soil	X	_		X	- X		\pm				-	X	$\overline{}$		-
2 UD2 - SW- S	40.000	1018	C 1998 0	X	-	_	X	$ \times$	(-	end in	arrie (i	MIL LOS	(84,000)	_	X	-	1200	The second secon
3 UD2- BI	1	1021	1	X	MANA	MO H	X	- X		AGES CS	2 24 200	111231	0943	•	X	360	न्द्रा । व्य	and the second second from the first of sold and results
1949 - 1944 - 19		BOATING CONTRACTOR		De typy C	20	attoral.	eurin.	euged), or cuiv	17 60.000	260 (1)	uden.			1980-1				
rement characters to suspend by 1971 (mind- 2	во(вет жиз	in con six	VIII JUOGA	0.00	2008)	SUCTO)	l to	W-131 30	of Sixo	le pa	is orch		0. 2	ALCS.	94.0	7Å 14	ale led	rg and an extractor as a source with that the place to discuss with the purpose
o angs tars' syrabsh ng ga cet en tar.	en a gar	ger to a	100000000000000000000000000000000000000	-	, sug	- 19	127	1 11 12	S. Santa	102 3	n Plan		ia o	91.0		(6.5.1	10.191	372
		Model of the second	0 900 0A		- 1	una.		3 3 4 3 4 4			7500 2500		7 22 22		7.7.2			and the second second control of the second
on and undersomes bear as in this component	44 3 5 d. s. sans	at an 120 150					\forall	+	+						9157 511 62			and contain to 1 85c accepts and specific classing has about the
ा कार है और अपने कार्यक्रमाई वर अब १८५० वर १५५ हुन्।	ar provid	01115,716		363	1 v 6 .//	E 10	eq a	253	52.63	erin ga	rej nigarcij	a Lydo	Dige of	29(A)	VG4eO E	one g	SXIII LI	ective, explande, framable, contain bioberands, bigit levels
	502160 00	/ DICT 10.30	5	1			Cross I	tras per			14 (8)		276 x 1	3.10	z rote k		r 10	e en la de como en escripción de la servición y por una abajos contra an Estrocaso.
10	and the second		pa entre	al _e		+-1												The second secon
**Metals Analysis (Circle): MTCA-5	RCRA-8	Priority Pollu	tants T	AL	Indivi	dual: I	Ag Al	As B	Ba Be	Ca Cd	Co Cr	Cu Fe				A4 10 K	post mark	i Pb Sb Se Sr Sn Ti Tl U V Zn
***Anions (Circle): Nitrate Nitrite	Chloride		te Bro Lab (Sample	mide		Phospl			oride herwise n		ate+Nitrit		receiv	ed aft		pm w	ill begin	in
Sample Disposal: Return to Clie		assessed if	samples are	retaine	d after	30 day	/s.)	na dallace	many Serie	SENSON SI	を行きかのから	\$100 de L.S			wing bu		CHES A SILV	ne and of a resident times parties and kins in an appetitude suestima.
I represent that I am authorized to ente agreement to each of the terms on the fr	r into this A	greement	with Frem	nont A	nalyti	cal on	beha	alf of th	e Client	name	d above	, that	I have	e veri	ified (lient	s	
Relinquished Date	e/Time	615	Agreent		Receiv x	ved	3	17	S		Date/T	me //	10		61	15	180 00	Managara di Composi.
	e/Time				Receiv	/ed		-	11		Date/T	me	W	ı				TAT → SameDay^ NextDay^ 2 Day 3 Day STD
X MENT, RECEIVANCE, Transportance, Founda-	6 1008.670	30 L T U 30	bu sycus	girl Is.	X	Franky	3-12	otops and	V	file of	e betwe	90 g g	gene s	hug g	(Johan	- 9450	udha i	^Please coordinate with the lab in advance



SITE CHECK/SITE ASSESSMENT CHECKLIST

FOR UNDERGROUND STORAGE TANKS

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

UST ID #: <u>Unknown</u>
County: <u>King</u>

I. UST FACILITY	II. Owner/Opera	TOR INFORMATION
Facility Compliance Tag #: Facility Site ID 8342 Cleanup Site ID 12019	Owner/Operator Name: 50	ound Transit
USTID#: Unknown	Business Name: Sound	
Site Name: Sound Transit NE 45th St	Address: 401 5 Jack	ison Street
Site Address: 1000 NE 45th 5t	City: Seattle	State: WA Zip: 98104
City: Seattle	Phone: 206-398-57	227
Phone:	Email: mark.menard	@soundtransit.org
III. CERTIFIED S		
Service Provider Name: Shoshana Howard, PE		
Cell Phone: 695-6811 Email: SKH@Shanwil.com		Street
Certification #: 53203 (PE) Exp. Date: 5-15-18	CHARLES THE STATE OF THE STATE	State: WA Zip: 98103
IV. TANK INI	FORMATION	
TANK ID TANK CAPACITY	LAST SUBSTANCE STORED	DATE SITE CHECK OR ASSESSMENT CONDUCTED
UST - 2 ~ 500 gal	gasoline	9-13-16
	·	
		9
		-
V. Reason for Conducting Site C	HECK/SITE ASSESSMENT (check	cone)
Release investigation following permanent UST system of	closure (i.e. tank removal or clo	sure-in-place).
☐ Release investigation following a failed tank and/or line	tightness tost	
	tigrithess test.	
☐ Release investigation following discovery of contaminate		
	ed soil and/or groundwater.	of offsite impacts.
☐ Release investigation following discovery of contaminate	ed soil and/or groundwater. If the UST system is the source of the sour	
Release investigation following discovery of contaminate Release investigation directed by Ecology to determine in UST system is undergoing a "change-in-service", which is	ed soil and/or groundwater. If the UST system is the source of the sour	ated substance (e.g.

VI. CHECKLIST		
The site assessor must check each of the following items and include it in Sections referenced below can be found in the Ecology publication Guidance for Site Checks and Site Assessments for Underground Storage	ion ge Tanks.	ES NO
The location of the UST site is shown on a vicinity map.		± 0
2. A brief summary of information obtained during the site inspection is provided (Sec	ction 3.2)	4 0
3. A summary of UST system data is provided (Section 3.1)	ď	4 0
4. The soils characteristics at the UST site are described. (Section 5.2)	[ø i
5. Is there any apparent groundwater in the tank excavation?		
6. A brief description of the surrounding land use is provided. (Section 3.1)	Ľ	7 0
7. The name and address of the laboratory used to perform analyses is provided. The collect and analyze the samples, including the number and types of samples collect documented in the report. The data from the laboratory is appended to the report	ted, are also	<u> </u>
8. The following items are provided in one or more sketches:		
Location and ID number for all field samples collected	t	<u> </u>
If applicable, groundwater samples are distinguished from soil samples	NA	
Location of samples collected from stockpiled excavated soil	NA	
Tank and piping locations and limits of excavation pit	Ľ	1 0
Adjacent structures and streets	<u>u</u>	1 0
Approximate locations of any on-site and nearby utilities		7 0
9. If sampling procedures are different from those specified in the guidance, has justifical ternative sampling procedures been provided? (Section 3.4)	fication for using these NA	
10. A table is provided showing laboratory results for each sample collected including; s constituents analyzed for and corresponding concentration, analytical method, and that method. Any sample exceeding MTCA Method A cleanup standards are highlig	detection limit for	1 0
11. Any factors that may have compromised the quality of the data or validity of the res	sults are described. NA) (b /
12. The results of this site check/site assessment indicate that a confirmed release of a has occurred. The requirements for reporting confirmed releases can be found in W		1 0
VII. REQUIRED SIGNATURES		
Signature acknowledges the Site Check or Site Assessment complies with UST regulations W	VAC 173-360-360 through -395	i
Shoshana K. Howard, PE Shorhama K Howard	11-2-16	
Print or Type Name Signature of Certified Site Assessor	Date	

SHANNON & WILSON, INC.

APPENDIX D

UST-2 – CONTRACTOR-PROVIDED DOCUMENTATION

PELLCO CONSTRUCTION, INC

LETTER OF TRANSMITTAL

COPSTRUCTIOP, IPC13036 BEVERLY PARK ROAD
MUKILTEO, WA 98275
(425) 265-7211 FAX (425) 265-7215

То:		Transit uth Jackson Street , WA 98104		From: Date: Ph:	Mike Pellitteri 10/11/16 (425) 265-7211 Office					
	Seattle	, WA 90104		FAX:	(425) 265-7211 Offic	. e				
Attn:	Alex Kv	vok		. , , , ,	(120) 200 1210					
Contra Contra	t Owner: ct Name ct No.: upplier::		15	ced Dem	olition and Site Prep, No	orthgate & UDS Stag	ing			
WE AF	RE SEND	DING YOU 🛛 A	ttached 🔲 Under sep	arate co	ver via	the following ite	ems:			
		p Drawings by of Letter]Product Data □ Sa]Change Order ☑ <u>SU</u>	imples JBMITT <i>A</i>	☐ Plans AL 026500-006.001	☐ Specifications				
Item #	Copies	Spec Section & Paragraph	Description				Pages			
1	1	026500 1.03D	Submittal 026500-00 for Un-anticipated U		IST Closure Report Bac ey Bank Site.	ckup Information				
☐ For☐ As	Approva Your Us Request review a	se [checked below: No Exceptions Taker Make Corrections No Revise and Resubmi Rejected	ted	☐ Resubmit _ ☐ Submit _ ☐ Return _	copies for approcession copies for districes corrected prints	bution			
Sincer	ely,									
	ellitteri									
CC: F	ile	s	igned: Mike Pellitteri		Received	 i:				



Pellco Construction 13036 Beverly Park Road Mukilteo, WA 9827 October 5, 2016

RE: UST Closure Report Back-up Submittal

UDS Unanticipated Underground Storage Tank (UDS-2) (PSA 08.02)
Northgate Link Extension Advanced Demolition and Site Prep

Sound Transit Contract No.: N105

Dear Mr. Gordon:

Attached to this memo is the UST Closure Report back-up documentation required by section 02 65 00 1.03D of the Contract Documents for the unanticipated underground storage tank (UST) was discovered at the University District jobsite on September 1, 2016.

Section 02 65 00 1.06 goes into further detail regarding the specific documents, letters, and certifications that are required to be provided.

02 65 00 1.06

- A. "Provide the following information to allow the Resident Engineer to prepare a UST Closure Report."
 - N/A
- B. "A letter signed by responsible company official certifying the decommissioning services were performed in accordance with the applicable regulations and the terms and conditions of these Specifications."
 - Attachment B.1 UST Decomissioner's Report
- C. "UST removal checklist, notifications, sample chains of custody, analytical test results, and other relevant documentation to the Resident Engineer."
 - UST removal checklist and confirmation sampling was performed by Shannon and Wilson
 - Attachment C.1 30-Day Notice
 - Attachment C.2 Stockpile Soil Samples and Chains of Custody
- D. "Copies of tank-contents analyses and waste analyses or waste profile sheets."
 - Attachment D.1 UST contents sample analysis and chain of custody
- E. "Copies of certifications of final disposal signed by the responsible disposal facility official."
 - Attachment E.1 UST Destruction Certification
- F. "Information on who transported and accepted wastes encountered, including copies of manifests, waste profile sheets, land disposal restriction, notification and certification forms, disposal ticket and receipts, certificates of disposal, and other pertinent documentation."
 - Attachment F.1 Marine Vacuum Bill of Lading
 - Manifests, land disposal restriction, notification and certification forms, certificates of disposal are not required for the disposal of this UST.
- G. "Scaled one-line drawings showing tank locations, limits of excavation, limits of contamination, and underground utilities within 50 feet."
 - A drawing is included in the UST Decomissioner's report (Attachment B.1)
- H. "Documentation prepared for Ecology and the local fire department, including permits, notices and closure checklists."
 - Attachment H.1 UST Triple-Rinse Certification
 - Attachment H.2 Marine Chemist Certification for Inerting the UST
 - Attachment H.3 Fire Marshal Permit

OSG O'Neill Service Group

Please let me know if you have any questions.

Sincerely,

O'Neill Service Group, LLC

Project Manager

OSG O'Neill Service Group

Attachment B.1 UST Decomissioner's Report

GALLOWAY ENVIRONMENTAL, INC



3102-220th PL SE Sammamish, WA 98075-9540 Gary@GallowayEnvironmental.com 425) 688-8852

September 21, 2016

Eric Laumbattus

Environmental Project Manager
O'Neill Service Group
17619 NE 67th Court, suite 100
Redmond, Washington 98052

Emailed to: Ericl@oneillsg.com

SUBJECT: <u>SOUND TRANSIT BROOKLYN STATION AREA</u>

UNDERGROUND STORAGE TANK DECOMMISSIONING REPORT, 1000 NE 45^{TH} STREET, SEATTLE, WASHINGTON 98103

Dear Mr. Laumbattus:

This letter report presents Galloway Environmental, Inc.'s ("GEI's") findings regarding the removal of one 500 gallon underground storage tank ("UST") at 1000 NE 45th Street in Seattle, Washington (47.6616N & -122.34592W — See Figures 1 and 2 for location). The Washington Department of Ecology (WDOE) lists the Site as Facility ID 8342 and Site ID 619989.

Reportedly, the tank was used to store gasoline fuel for retail service station sales; however its age is unknown. The on-site field portion of these services was performed on September 13, 2016.

PROJECT SUMMARY

During planned re-development of the Site, Sound Transit hired Pellco Construction to assist in the removal of one 500 gallon underground storage tank (UST) at this Site. The O'Neill Service Group was asked to coordinate the removal of the tank. O'Neill contracted GEI to oversee the tank decommissioning and provide this report. Sound Transit's environmental consultant (Shannon & Wilson) was asked to perform the necessary Environmental Site Checklist and Assessment for the decommissioning.

Tank decommissioning services were performed (or supported) by the following (See Attachments A - Photos; and B - Permits, manifests, etc.)

- 1. MARVAC provided the following decommissioning services:
 - Pumped the tank of residual liquids (Gasoline fuel and water),
 - Triple-rinsed the tank prior to decommissioning, and
 - Properly disposed of the liquids and recycled the tank
- 2. The owner's contractor (Pellco) performed the excavating and tank removal services.
- 3. Sound Testing, Inc. provided a marine chemist to inspect the tank, inert or vapor free the tank, and measure oxygen levels and total hydrocarbon concentrations prior to certifying that the UST site was safe for removal and transport to an offsite location.
- 4. Randy Devitt (*Seattle Fire Department Inspector*) inspected the site conditions and approved the tank's removal.

Sound Transit Brooklyn Area Project - UST Decommissioning Letter Report, 1000 NE 45th Street, Seattle, WA September 21, 2016 Page 2

5. GEI oversaw the tank's decommissioning — Washington State UST Decommissioner Supervisor – Certificate No. 0878867-U2

UST REMOVAL AND OBSERVATIONS

UST Removal

Following Marvac's pumping and rinsing of the tank, Sound Testing: 1) Inspected the tank and decided that the tank was "vapor-free" of petroleum compounds and did not need to be inerted prior to its removal, 2) Measured the residual oxygen levels in the tank and petroleum vapor concentrations in the tank, and 3) Verified that the tank was safe to remove from belowground and transport it to an offsite location.

Pellco removed the tank and loaded it directly onto Marvac's truck and Marvac delivered the tank to its facility in South Seattle to process the tank prior to its delivery to the Seattle Iron & Metals Recycling facility in Seattle, Washington.

No information regarding the age of the UST was available to GEI.

Condition of the UST

The top of the tank was estimated to be approximately three feet below the ground surface in the approximate location as shown in Figure 2. The tank was three feet in diameter by 10 feet long with a capacity of approximately 500 gallons. The tank was in poor condition — the tank had evidence of corrosion and pinholes on its sidewalls and tank ends (*See photos*). Marvac told GEI that the tank was nearly empty of all liquids prior to the pumping and rinsing of the tank. The tank's fill port, fuel line, and vent pipes were not present in the excavation.

CONCLUSIONS

Based on these field observations, the tank was properly decommissioned.

Should you have any questions regarding this report or if you would like to discuss our findings, please contact me at the addresses listed at the top of this letter.

Respectfully Submitted,

GALLOWAY ENVIRONMENTAL, INC.

Gary L. Galloway, LHG, CHMM, REA

President

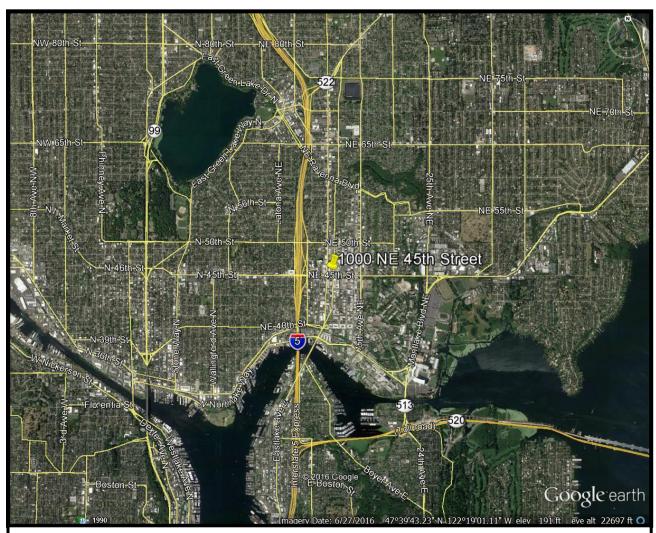


FIGURE 1 — SITE LOCATION,
Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington
Source: Google Maps 2016, GEI Project # 36021

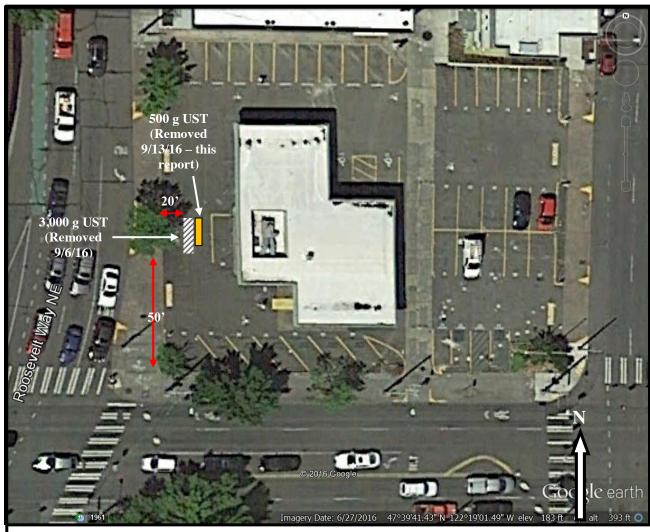


FIGURE 2 — SITE PLAN MAP

Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington Source: Google Maps 2016, GEI Project # 36021

ATTACHMENTS A

PHOTOS





ATTACHMENTS B

PERMITS, MANIFESTS, ETC.

TUE 09/13/16

SEP 12 2016 PERMIT SECTION

RECEIVED



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Fire Department

Your Seattle

Commercial Tank Removal/Decommissioning

Code 7908 Commercial Tai	ink Removal/Decommissioning
Permit Fee: \$218.00	Date Issued: 4/12/7/2 Tank(s) must be removed from site on the same day as permit is issued!
TO BE COMPLETED BY PERMIT APPLICANT	tuni(o) muo
FIRM NAME Galloway Environmental, Inc.	
MAILING ADDRESS 3102 220 th PL SE	SUITE
CITY Sammamish	STATE Washington ZIP 98075
JOBSITE ADDRESS 1000 NE 45 th St., Seattle, 98103	
CONTACT PERSON Gary Galloway	PHONE NUMBER (425) 688-8852
Abandonment-in-Place (Marine Chemist certificate and/or unknowns) Hot work being conducted: X No	Yes (If yes, a separate hot work permit is required)
Permit applications may be submitted in person weeks Seattle Fire Department Fire Marshal's Office – Permits 220 Third Ave S, 2 nd Floor Seattle, WA 98104-2608	To pay with a Visa or Master Card: Fax or email this application THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT Tel: (206) 386-1450 / Fax: (206) 386-1348 E-mail: permits@seattle.gov
TANKS MAY BE REMOVED/DECOMMIS	o needed inspection time to arrange for an appointment. SSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION TEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!
	sion the tank(s) identified in this permit in accordance with the attached plicable provisions of the Seattle Fire Code, federal, state and local PERMIT CONDITIONS ARE NOT ATTACHED
Special permit conditions: Tank removal/decommissioning	g must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600
Check No.: 1894091016 Insp	PROVED BY: Dector: SFD ID# 1321 Dector Sly Certificate # 467 83 Dector Sly Certificate # 467 83

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116 (206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGING.COM

MARINE CHEMIST CERTIFICATE SERIAL Nº 46783

WWW.SOUNDTESTINGINC.COM				DEMIAL	14 =	20109
GARY GALLOWAY	- Telephone	nicita .		SEPT	13	2016
Survey Requested by	Vessel Ov	wner or Agent			1000	Date 45T
PLEASE SEE BELOW	STEEL	LINDE	RERIOUN	D TK	1000	NETJ
Vessel	Туре	of Vessel	TOR D PLI	-	Specific	c Location of Vessel
GASOLINE	02	LEL 1	1SUAL		8	:20AV
Last Three (3) Loadings	Tests F	Performed	A PARK TO BE		Time	Survey Completed
	Lagrant of the			in the		to very
	XIVE TE					\$1. 44 has
1 1,000 - GAL STEEL	- GYLIA	SDRICA	- LENS	DER-GR	OKAK)
STORAGE T		FOR STATE	Dec Care No.			-15-
STORAGE I	pa 10 pa	14-1-15 ()			1	
	pier	Die et		and the first	and in the	-
	FREE	OF CE	MBUS.	TIBLE	GAS	Fluid 1900
	1	IND PR	ODUCT	RESID	ME	2 10 4
						the same
and the second second	- MAY	RE SA	FELY	EXCAU	TED	4-115
		15.77	RANSPI		PN	
		-			(7)	
		PUBLIC	HIETT	WAYS		Tex and
			Transfer of			S - S - ST
	NoT	REQUIR	ED: Fu	RTHER	CLEA	NING
			0	R INER	T GI	150
		rate of				
		NE NE	T. R. Salari			Para III
	Marie Barrer	11.11.1			5 LY 1	Section 1
	172		1 100			1/2 - 2/17

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

Date

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed_____Name

Company

ned Marine Chemist

Certificate No.

Marine Vacuum Service, Inc. Po. Box 24263 Seattle, Washington 98124

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size:	500	9 gallo	n)		
Last Contents	gasoline	<i></i>		1	
Tank Location: 1000	n Ne	45 th	st -		
5	eattle,	cua			
Marine Vacuum Service accordance with the income 380(I), API 1604, API accordance with Federa or NOT SAFE FOR H	e, Inc. certifies lustry standard 2015 and that Il, State and Lo	that the above as outlined in all residual pr	e mentioned ta 40 CFR PART roduct and rins	nk(s) have be Γ 280.70, WA ate has been	AC 173-360- disposed of in
Tank Owner:	rund 7	Tains17	-		
Contractor: Onic	ell Env	ironmen	tal		
M.V.S. Representative: Date: 09.12. Notes:		Chily.			

DBE # D4M1302341

EPA # WAD980974521

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

STORAGE TANK

CERTIFICATE OF DESTRUCTION

DATE: SEPTEMBER 15, 2016

TANK OWNER: SOUND TRANSIT

TANK LOCATION: 1000 NE 45TH ST, SEATTLE WA

TANK DESCRIPTION: 500 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,

Marine Vacuum Service, Inc.

OSG O'Neill Service Group

Attachment C.1
30-Day Notice



UNDERGROUND STORAGE TANK (UST) 30-

(See

COULD	SILVOT IVIAIS (OO	.,
DAY	NOTICE	1
e back of form	n for instructions)	,

FOR OFFICE	USE ONLY
Site ID#	
FS ID#	

JUN 29 2016

Please ✓ th	e appropriate box	:	L. L	ntent Close			JUN Z 9 ZUID	TV
HQ (360)407-7170	/ Central (509)57	/5-2490 / E	astern (509)32	9-3400 / Noi	thwest (425)6			
SITE INFORMATION				OWNER I	NFORMATION will be returned to			
Unlisted				Sou	nd Transi	t		
Tag or UBI number					er/Operator			
N105	*				Jackson :	St		
Site Name NE 45th and	Doogorrol+ r	W			ddress/PO Box	*0	00014	
Site Physical Address		way .			tle, WA	±\s\-1	98014	
	55	0.0	104	City -	8-5000	÷**	Zip Code	
Seattle			104 ip Code		erator Phone Nu	ımher		
City		2	ip code	Owner/Op	crator r none ru	imoci		
Site Phone Number	1			Owner/Op	erator Email Ad	ldress		
TANK INFORMATION								
Tank ID	Substance	C	Date Pro	•		Commo		
West-UST1	Stored	Capacity	Expected t	o Begin		Comme	ents:	
	Unknown	NA	8/1/16		-			
West-UST2	Unknown	NA	8/1/16		-			
East-UST1	Unknown	NA	8/1/16		-			
							-	
1) SERVICE PROVIDE	P INFORMATION - c	heck the ann	ronriate hoves					
							The state of the s	
P	LEASE NOTE: INDIV PASSED ANOTHE							
Installer	Decommissioner	Site	Assessor		- Constant C			
O'Neill Ser	vice Group			Eric	Laumbattus			
Service Provider Com	*			Contact Pe	erson			
Eric Laumbatt	us			(360	770-5261			
Certified Service Prov	vider Name				none Number		10	
8226147					oneillsg.	com	-1	
ICC Certification #				Contact E	nail Address			
2) SERVICE PROVIDE	R INFORMATION (R	EQUIRED IF	USING MORE TH	AN ONE PROV	/IDER) - check th	e appropriate b	oxes	
☐ Installer 🗔	Decommissioner	Site	Assessor					
Galloway Env	ironmental			Gary G	alloway			
Service Provider Com				Contact Pe				
Gary Gallowa	У	*		42568	88852			
Certified Service Prov	ider Name		-		none Number			
0878867-u7				gallow	aye@comca	st.net		
ICC Certification #				Contact E	nail Address			



STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Dear owner, operator or interested party:

This packet summarizes requirements in the underground storage tank (UST) regulations (Chapter 173-360 WAC) for permanent closure of regulated USTs. It also includes forms that must be used to complete this process. These requirements do not apply to tanks that are exempt from these regulations.

At-a-Glance Summary of Permanent Closure Requirements:

- At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to the Department of Ecology (Ecology).
- Decommissioning and site assessment activities must be performed by International Code Council (ICC)-certified UST service providers.
- Within 30 days of completing permanent closure activities, submit a Permanent Closure Notice signed by the ICC-certified UST Decommissioner.
- If **no** contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 30 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site assessment report completed by the Site Assessor
- If contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 90 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site characterization report completed by the Site Assessor

Detailed Look at Permanent Closure:

Ecology must be notified 30 days in advance

At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to Ecology. This form, which includes service provider and owner information, provides the UST inspector advance notice so that he or she may visit the project site while decommissioning work is being conducted. If the exact date of closure is unknown when the 30-Day Notice is submitted, be sure to contact the Ecology inspector at least three business days prior to the project start date. It is your responsibility to contact other local authorities, including the fire marshal, for any additional policies and/or permits.

During the 30-day notice period, the contents of the tank may be pumped from the tank and recycled or disposed of as dangerous wastes.

ICC-certified service providers must be used



Service providers performing permanent closure activities must carry proof they are certified by the International Code Council (ICC) as an UST Decommissioner and Site Assessor.

Conducting tank closures is dangerous work and should <u>not</u> be completed by unqualified or inexperienced persons. Failure to follow proper procedures may result in fire, explosion, and other hazards to human health or the environment.

Permanent closure procedures

Permanent closure includes "removal", "closure-in-place", or "change-in-service" (i.e. changing the product stored in a tank from a regulated substance to an unregulated substance). These projects may begin 30 days after Ecology date stamps the 30-Day Notice and must be completed within 90 days after this date.

To begin the process, the ICC-certified Decommissioner will empty and clean tanks of all liquids and accumulated sludges. The tank must be properly inerted of flammable vapors, as directed by the International Fire Code. The Decommissioner must ensure the tank atmosphere and excavation area is regularly monitored for flammable or vapor concentrations until the tank is removed from both the excavation and the site. Piping, except any vent lines, shall be drained of product and be either capped or removed from the ground.

Tanks may then either be removed from the ground or filled with a solid inert material, such as CDF, a controlled density fill. Although the UST regulations allow for tanks to be closed in place, Ecology strongly recommends tanks be removed for the following reasons:

- (1) it allows for the soil conditions to be observed,
- (2) it is easier to collect soil samples needed for the site assessment (described below), and
- (3) it may make any future property transactions less complicated, as potential buyers may not want to buy a property with a buried tank on it.

If a tank will be closed-in-place, first check with the local jurisdiction and fire marshal to ensure they will allow tanks to be closed using this method.

Once a tank is removed or filled with an inert material, the UST Decommissioner is required to fill out a Permanent Closure Notice that must also be signed by the owner or operator. This notice shall be submitted to Ecology within 30 days after tank closure activities are completed. If the site has a facility compliance tag, the tag must also be returned to Ecology at this time.

All permanent closures require a site assessment be conducted

A site assessment is an investigation to determine if the UST system released regulated product into the soil or groundwater. It must be performed in accordance with Ecology's *Guidance for Site Checks and Site Assessments for USTs* and completed by an ICC-certified Site Assessor or a Washington-registered Professional Engineer (or P.E.) who is competent, by means of examination, experience, or education, to perform site assessments. The guidance provides information on sampling procedures, the number and locations of samples to be obtained, required laboratory analyses, and reporting requirements.

A Site Check/Site Assessment Checklist must be completed by the Site Assessor and submitted to Ecology within thirty (30) days of completion of the site assessment. A site assessment report must be submitted to Ecology within 30 days after tank closure if no confirmed contamination is discovered. If the UST

system has caused a release to the environment, then, instead, a site characterization report shall be submitted within 90 days of tank closure.

Releases discovered during tank closure must be reported to Ecology

When contaminated soil, groundwater, or free liquid- or vapor-phase petroleum products are discovered during tank removal, site assessment, or by any other means, the owner/operator is responsible for reporting this information to Ecology within twenty-four (24) hours of discovery. The Decommissioner or Site Assessor must report confirmed releases to the owner/operator immediately and to Ecology within 72 hours after discovering the condition.

Soil contaminated by petroleum and/or hazardous substances must be remediated under the Model Toxics Control Act, which describes the process for cleaning up contaminated sites. Contaminated soil must be disposed of at a permitted facility that accepts dangerous waste. If it is to be "landfarmed" on or offsite, be sure your local jurisdiction allows this and that you understand all the requirements for this remediation method.

Record Keeping

The results of a site assessment must be submitted to Ecology and maintained by the owner for at least five years after completion of tank permanent closure. However, Ecology recommends records be maintained indefinitely by the owner. Proof of a "clean closure" is very important regarding any future property transfers or related business transactions, such as obtaining loans or insurance.

Further questions or reporting a release? Please contact your regional office below.

Regional Office	Counties Served
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman
HQ (360) 407-7170	Federal facilities in Western Washington
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at: www.ecy.wa.gov/programs/tcp/ust-lust/people.html

To find electronic versions of this letter and the enclosed forms, please visit: http://www.ecy.wa.gov/programs/tcp/ust-lust/2011/03-out-of-svc.html.

If you need this document in a format for the visually impaired, called the Toxics Cleanup Program at 360-407-7071. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



PERMANENT CLOSURE NOTICE

FOR UNDERGROUND STORAGE TANKS

UST ID #:	
County:	Ball

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

		II. OWNER/OP	ERATOR INFORMA	NOITA			
Facility Compliance Ta	g #:	3.	Owner/Op	perator Name:			
UST ID #:			Business N	lame:			
Site Name:			Address:				
Site Address:		1	City:		State:	Zip:	
City:			Phone:	*			
Phone:	Y		Email:				
		III. CERTIFIED US	ST DECOMMIS	SIONER			
Company Name:		40	Service Pro	ovider Name:			
Address:		· P	Certificatio	on Type:	. 7-	- X	
City:	State:	Zip:	Cert. No.:		Exp. Date:		
Provider Phone:		8	Provider Er	Provider Email:			
Provider Signature:			Date:				
IV. TANK INFORMATION							
		IV. TANK	INFORMATION				
TANK ID	TANK CAPACITY	LAST SUBSTANCE	INFORMATION	CLOSURE METHO	D D	CLOSURE DATE	
TANK ID	TANK CAPACITY	CONTRACTOR OF THE PROPERTY OF	INFORMATION removal		op change-in-service	CLOSURE DATE	
TANK ID	TANK CAPACITY	LAST SUBSTANCE		CLOSURE METHO	•	CLOSURE DATE	
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE	
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE	
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE	
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE	
TANK ID	TANK CAPACITY	LAST SUBSTANCE	removal	CLOSURE METHO	change-in-service	CLOSURE DATE	
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	removal	CLOSURE METHO closed-in-place	change-in-service	CLOSURE DATE	
		LAST SUBSTANCE STORED	removal	CLOSURE METHO closed-in-place	change-in-service		
		LAST SUBSTANCE STORED V. REQUIR	removal	CLOSURE METHO closed-in-place	change-in-service		

PERMANENT CLOSURE NOTICE

FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This form must be completed and submitted within thirty days of completing permanent closure activities to the following address:

Dept. of Ecology UST Section PO Box 47655 Olympia, WA 98504-7655

- I./II. UST Facility and Owner/Operator: Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number. If all tanks at the site are permanently closed, the facility compliance tag must be returned with this notice.
- III. UST Decommissioner: It is the responsibility of the ICC-certified Decommissioner to follow proper tank closure procedures in accordance with WAC 173-360-375. The Decommissioner signature certifies these procedures were followed.
- IV. Tank Information: Use the same Tank IDs that are listed on the facility's Business License. List the last substance stored in each tank, the tank sizes, the method by which the tank is being closed, and the date closure activities were conducted. All closure methods require a site assessment be conducted in accordance with Ecology's Guidance for Site Checks and Site Assessments for Underground Storage Tanks.
- V. Required Signature: The owner and/or operator's signature is required. Also, the owner and/or operator is responsible for reporting confirmed releases to Ecology within 24 hours.

All confirmed releases must be reported to Ecology by the owner immediately and by service providers within 72 hours of the discovery of the condition. If the owner or operator is not immediately available, the report should be made directly to Ecology.

Be sure to contact your local fire marshal and other local jurisdictions. They may have other codes and regulations that apply to a permanent tank closure.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office	Counties Served
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman
HQ (360) 407-7170	Federal facilities in Western Washington
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at: www.ecy.wa.gov/programs/tcp/ust-lust/people.html



SITE CHECK/SITE ASSESSMENT CHECKLIST

UST ID #:	
County:	£

FOR UNDERGROUND STORAGE TANKS

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

I. UST FACILITY			II. OWNER/OPERATOR INFORMATION					
Facility Compliance Tag #:			Owner/Operator Name:	Owner/Operator Name:				
UST ID #:			Business Name:	Business Name:				
Site Name:			Address:					
Site	Address:			City:	State:	Zip:		
City	.			Phone:	8 101			
Pho	one:		8 + 1 +	Email:				
			III. CERTIF	EIED SITE ASSESSOR				
Sen	vice Provider Nam	ie:		Company Name:				
Cell	Phone:	Email:	3	Address:				
Cer	tification #:	1	Exp. Date:	City:	State:	Zip:		
			IV. TAN	K INFORMATION				
1	TANK ID	, y	TANK CAPACITY	LAST SUBSTANCE STORED		ITE CHECK OR INT CONDUCTED		
	2	1		4				
	777.23							
				el el		¥		
		11 -				, a		
		V. REASON	N FOR CONDUCTING SI	ITE CHECK/SITE ASSESSMENT (che	ck one)			
	Release investig	ation followir	ng permanent UST syst	tem closure (i.e. tank removal or c	losure-in-place	≥).		
	Release investiga	ation followir	ng a failed tank and/or	line tightness test.	V			
	Release investiga	ation followin	ng discovery of contam	ninated soil and/or groundwater.				
	Release investiga	ation directed	by Ecology to determ	nine if the UST system is the source	e of offsite imp	oacts.		
	UST system is undergoing a "change-in-service", which is changing from storing a regulated substance (e.g. gasoline) to storing a non-regulated substance (e.g. water).							
	Directed by Ecolo	ogy for UST s	ystem permanently clo	osed or abandoned before 12/22/2	1988.	*		
	Other (describe)	:	N.					

	VI. CHECKLIST		
	The site assessor must check each of the following items and include it in the report. Sections referenced below can be found in the Ecology publication Guidance for Site Checks and Site Assessments for Underground Storage Tanks.		
1.	The location of the LIST site is shown on a visinity man	YES	NO.
		-	
2.		片	
3.			
4.			
5.	Is there any apparent groundwater in the tank excavation?		
6.	A brief description of the surrounding land use is provided. (Section 3.1)		
7.	The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.		
8.	The following items are provided in one or more sketches:		
	Location and ID number for all field samples collected		
	If applicable, groundwater samples are distinguished from soil samples		
	Sections referenced below can be found in the Ecology publication Guidance for Site Checks and Site Assessments for Underground Storage Tanks. The location of the UST site is shown on a vicinity map. A brief summary of information obtained during the site inspection is provided (Section 3.2) A summary of UST system data is provided (Section 3.1) The soils characteristics at the UST site are described. (Section 5.2) Is there any apparent groundwater in the tank excavation? A brief description of the surrounding land use is provided. (Section 3.1) The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report. The following items are provided in one or more sketches: Location and ID number for all field samples collected If applicable, groundwater samples are distinguished from soil samples Location of samples collected from stockpiled excavated soil Tank and piping locations and limits of excavation pit Adjacent structures and streets Approximate locations of any on-site and nearby utilities If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4) A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.		
	Tank and piping locations and limits of excavation pit		
	Adjacent structures and streets		
	Approximate locations of any on-site and nearby utilities		
9.			
10.	constituents analyzed for and corresponding concentration, analytical method, and detection limit for		
11.	Any factors that may have compromised the quality of the data or validity of the results are described.		
12.			
	VII. REQUIRED SIGNATURES		
-	Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through	395.	
Prin	nt or Type Name Signature of Certified Site Assessor Date		

SITE CHECK/SITE ASSESSMENT CHECKLIST

FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This checklist must accompany the results of a Site Check Report, which is performed if a release of petroleum or other regulated substance is suspected. It is also required to accompany a Site Assessment Report, which is required following the permanent closure or "change-in-service" of an underground storage tank system. This form is required to be filled out whether or not contamination is found. This checklist is to be completed by the Site Assessor and submitted within thirty days of completing these activities to the following address:

Dept. of Ecology UST Section PO Box 47655 Olympia, WA 98504-7655

- I./II. UST Facility and Owner/Operator Information: Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number.
- III. Service Provider Information: It is the responsibility of the ICC-certified Site Assessor to ensure that sampling and documentation procedures are completed in accordance with Ecology's Guidance for Site Checks and Site Assessment for Underground Storage Tanks.
- IV. Tank Information: Use the same Tank identification numbers listed on the facility's Business License which is based on the most recent UST Addendum on file with Ecology. List the last substance stored in each tank, the tank sizes and the date the site check or site assessment was completed.
- V. Required Signature: The Site Assessor signature certifies these procedures were followed.

All confirmed releases must be reported to Ecology by the owner within 24 hours and by service providers within 72 hours of discovery. A Site Characterization Report must be submitted to Ecology within 90 days after confirming a release.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office	Counties Served
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman
HQ (360) 407-7170	Federal facilities in Western Washington
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at: www.ecy.wa.gov/programs/tcp/ust-lust/people.html

OSG O'Neill Service Group

Attachment C.2 Stockpile Soil Samples and Chains of Custody



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

O'Neill Service Group

Eric Laumbattus 17619 NE 67th Court, Suite 100 Redmond, WA 98052

RE: N105-Pellco UDS Unanticipated

Lab ID: 1609119

September 12, 2016

Attention Eric Laumbattus:

Fremont Analytical, Inc. received 3 sample(s) on 9/9/2016 for the analyses presented in the following report.

Sample Moisture (Percent Moisture)
Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Mil c. Redy

Sincerely,

Mike Ridgeway Laboratory Director

DoD/ELAP Certification #L2371, ISO/ICC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)



Date: 09/12/2016

CLIENT: O'Neill Service Group Work Order Sample Summary

Project: N105-Pellco UDS Unanticipated

Lab Order: 1609119

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609119-001	TANKEAST-160909-1	09/09/2016 1:10 PM	09/09/2016 3:50 PM
1609119-002	TANKWEST-160909-1	09/09/2016 1:15 PM	09/09/2016 3:50 PM
1609119-003	STOCK-160909-1	09/09/2016 1:20 PM	09/09/2016 3:50 PM



Case Narrative

WO#: **1609119**Date: **9/12/2016**

CLIENT: O'Neill Service Group

Project: N105-Pellco UDS Unanticipated

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **1609119**

Date Reported: 9/12/2016

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



WO#: **1609119**

Date Reported: 9/12/2016

Client: O'Neill Service Group Collection Date: 9/9/2016 1:10:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-001 **Matrix:** Soil

Client Sample ID: TANKEAST-160909-1

Analyses Result RL Qual Units DF Date Analyzed

Volatile Organic Compounds by	EPA Method	8260C	Batch II	D:	14766 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0658	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chloromethane	ND	0.0658	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Vinyl chloride	ND	0.00219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Bromomethane	ND	0.0987	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Trichlorofluoromethane (CFC-11)	ND	0.0548	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chloroethane	ND	0.0658	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1-Dichloroethene	ND	0.0548	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Methylene chloride	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
trans-1,2-Dichloroethene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Methyl tert-butyl ether (MTBE)	ND	0.0548	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1-Dichloroethane	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
2,2-Dichloropropane	ND	0.0548	mg/Kg-dry	1	9/12/2016 11:08:26 AM
cis-1,2-Dichloroethene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chloroform	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1,1-Trichloroethane (TCA)	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1-Dichloropropene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Carbon tetrachloride	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dichloroethane (EDC)	ND	0.0329	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Benzene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Trichloroethene (TCE)	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dichloropropane	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Bromodichloromethane	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Dibromomethane	ND	0.0439	mg/Kg-dry	1	9/12/2016 11:08:26 AM
cis-1,3-Dichloropropene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Toluene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
trans-1,3-Dichloropropylene	ND	0.0329	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1,2-Trichloroethane	ND	0.0329	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,3-Dichloropropane	ND	0.0548	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Tetrachloroethene (PCE)	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Dibromochloromethane	ND	0.0329	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dibromoethane (EDB)	ND	0.00548	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chlorobenzene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1,1,2-Tetrachloroethane	ND	0.0329	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Ethylbenzene	0.127	0.0329	mg/Kg-dry	1	9/12/2016 11:08:26 AM
m,p-Xylene	0.226	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
o-Xylene	0.108	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Styrene	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Isopropylbenzene	0.144	0.0877	mg/Kg-dry	1	9/12/2016 11:08:26 AM
Bromoform	ND	0.0219	mg/Kg-dry	1	9/12/2016 11:08:26 AM
DIGINOIGIII	טאו	0.0219	mg/kg-ury	'	3/12/2010 11.00.20 AIVI



WO#: **1609119**

Date Reported: 9/12/2016

Client: O'Neill Service Group Collection Date: 9/9/2016 1:10:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-001 **Matrix:** Soil

Client Sample ID: TANKEAST-160909-1

RL Qual **Units** DF **Date Analyzed Analyses** Result Volatile Organic Compounds by EPA Method 8260C Batch ID: 14766 Analyst: EM 1,1,2,2-Tetrachloroethane ND 0.0219 9/12/2016 11:08:26 AM mg/Kg-dry 1 n-Propylbenzene 0.264 0.0219 mg/Kg-dry 1 9/12/2016 11:08:26 AM Bromobenzene ND 0.0329 mg/Kg-dry 1 9/12/2016 11:08:26 AM 0.630 1,3,5-Trimethylbenzene 0.0219 mg/Kg-dry 1 9/12/2016 11:08:26 AM ND 9/12/2016 11:08:26 AM 2-Chlorotoluene 0.0219 mg/Kg-dry 1 4-Chlorotoluene ND 0.0219 9/12/2016 11:08:26 AM mg/Kg-dry 1 tert-Butylbenzene 0.0230 0.0219 mg/Kg-dry 1 9/12/2016 11:08:26 AM ND 9/12/2016 11:08:26 AM 1,2,3-Trichloropropane 0.0219 mg/Kg-dry 1 1,2,4-Trichlorobenzene ND 0.0548 1 9/12/2016 11:08:26 AM mg/Kg-dry 0.220 sec-Butylbenzene 9/12/2016 11:08:26 AM 0.0219 mg/Kg-dry 1 4-Isopropyltoluene 0.481 0.0219 9/12/2016 11:08:26 AM mg/Kg-dry 1 1,3-Dichlorobenzene ND 0.0219 1 9/12/2016 11:08:26 AM mg/Kg-dry 1.4-Dichlorobenzene ND 9/12/2016 11:08:26 AM 0.0219 mg/Kg-dry 1 n-Butylbenzene ND 0.0219 mg/Kg-dry 1 9/12/2016 11:08:26 AM ND 0.0219 1 9/12/2016 11:08:26 AM 1,2-Dichlorobenzene mg/Kg-dry 1,2-Dibromo-3-chloropropane ND 0.548 mg/Kg-dry 1 9/12/2016 11:08:26 AM 1,2,4-Trimethylbenzene 1.77 0.0219 1 9/12/2016 11:08:26 AM mg/Kg-dry Hexachlorobutadiene ND 0.110 1 9/12/2016 11:08:26 AM mg/Kg-dry Naphthalene 0.377 0.0329 9/12/2016 11:08:26 AM mg/Kg-dry 1 1,2,3-Trichlorobenzene ND 0.0219 mg/Kg-dry 1 9/12/2016 11:08:26 AM Surr: Dibromofluoromethane 98.9 56.5-129 %Rec 1 9/12/2016 11:08:26 AM Surr: Toluene-d8 98.6 64.3-131 %Rec 1 9/12/2016 11:08:26 AM 9/12/2016 11:08:26 AM Surr: 1-Bromo-4-fluorobenzene 107 63.1-141 %Rec 1 **Sample Moisture (Percent Moisture)** Batch ID: R31668 Analyst: BB

0.500

wt%

1

14.6

Percent Moisture

9/12/2016 9:24:51 AM



WO#: **1609119**

Date Reported: 9/12/2016

Client: O'Neill Service Group Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-002 **Matrix:** Soil

Client Sample ID: TANKWEST-160909-1

Analyses Result RL Qual Units DF Date Analyzed

platile Organic Compounds by	EPA Method	8260C	Batch	ID:	14766 Analyst: EN
Dichlorodifluoromethane (CFC-12)	ND	0.0572	mg/Kg-dry	1	9/12/2016 11:37:56
Chloromethane	ND	0.0572	mg/Kg-dry	1	9/12/2016 11:37:56 A
/inyl chloride	ND	0.00191	mg/Kg-dry	1	9/12/2016 11:37:56 A
Bromomethane	ND	0.0858	mg/Kg-dry	1	9/12/2016 11:37:56 A
Trichlorofluoromethane (CFC-11)	ND	0.0476	mg/Kg-dry	1	9/12/2016 11:37:56 A
Chloroethane	ND	0.0572	mg/Kg-dry	1	9/12/2016 11:37:56 A
,1-Dichloroethene	ND	0.0476	mg/Kg-dry	1	9/12/2016 11:37:56 A
Methylene chloride	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 A
rans-1,2-Dichloroethene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 A
Methyl tert-butyl ether (MTBE)	ND	0.0476	mg/Kg-dry	1	9/12/2016 11:37:56 A
,1-Dichloroethane	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 A
2,2-Dichloropropane	ND	0.0476	mg/Kg-dry	1	9/12/2016 11:37:56 A
sis-1,2-Dichloroethene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
Chloroform	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
,1,1-Trichloroethane (TCA)	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
,1-Dichloropropene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 /
Carbon tetrachloride	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
,2-Dichloroethane (EDC)	ND	0.0286	mg/Kg-dry	1	9/12/2016 11:37:56 /
Benzene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 /
Trichloroethene (TCE)	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 /
1,2-Dichloropropane	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
Bromodichloromethane	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
Dibromomethane	ND	0.0381	mg/Kg-dry	1	9/12/2016 11:37:56
cis-1,3-Dichloropropene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
Toluene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
rans-1,3-Dichloropropylene	ND	0.0286	mg/Kg-dry	1	9/12/2016 11:37:56
I,1,2-Trichloroethane	ND	0.0286	mg/Kg-dry	1	9/12/2016 11:37:56
1,3-Dichloropropane	ND	0.0476	mg/Kg-dry	1	9/12/2016 11:37:56
Tetrachloroethene (PCE)	0.0958	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
Dibromochloromethane	ND	0.0286	mg/Kg-dry	1	9/12/2016 11:37:56
1,2-Dibromoethane (EDB)	ND	0.00476	mg/Kg-dry	1	9/12/2016 11:37:56
Chlorobenzene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
I,1,1,2-Tetrachloroethane	ND	0.0286	mg/Kg-dry	1	9/12/2016 11:37:56
Ethylbenzene	0.0581	0.0286	mg/Kg-dry	1	9/12/2016 11:37:56
n,p-Xylene	0.0981	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
o-Xylene	0.0229	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56
Styrene	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 A
sopropylbenzene	0.0781	0.0762	mg/Kg-dry	1	9/12/2016 11:37:56 A
Bromoform	ND	0.0191	mg/Kg-dry	1	9/12/2016 11:37:56 A



WO#: 1609119

Date Reported: 9/12/2016

Client: O'Neill Service Group Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-002 **Matrix:** Soil

Client Sample ID: TANKWEST-160909-1

RL Qual **Units** DF **Date Analyzed Analyses** Result Volatile Organic Compounds by EPA Method 8260C Batch ID: 14766 Analyst: EM 1,1,2,2-Tetrachloroethane ND 0.0191 9/12/2016 11:37:56 AM mg/Kg-dry 1 n-Propylbenzene 0.128 0.0191 mg/Kg-dry 1 9/12/2016 11:37:56 AM ND 9/12/2016 11:37:56 AM Bromobenzene 0.0286 mg/Kg-dry 1 0.273 1,3,5-Trimethylbenzene 0.0191 mg/Kg-dry 1 9/12/2016 11:37:56 AM ND 9/12/2016 11:37:56 AM 2-Chlorotoluene 0.0191 mg/Kg-dry 1 4-Chlorotoluene ND 0.0191 mg/Kg-dry 9/12/2016 11:37:56 AM 1 tert-Butylbenzene ND 0.0191 mg/Kg-dry 1 9/12/2016 11:37:56 AM ND 1,2,3-Trichloropropane 0.0191 mg/Kg-dry 1 9/12/2016 11:37:56 AM 1,2,4-Trichlorobenzene ND 0.0476 1 9/12/2016 11:37:56 AM mg/Kg-dry ND sec-Butylbenzene 9/12/2016 11:37:56 AM 0.0191 mg/Kg-dry 1 4-Isopropyltoluene 0.144 0.0191 9/12/2016 11:37:56 AM mg/Kg-dry 1 1,3-Dichlorobenzene ND 0.0191 1 9/12/2016 11:37:56 AM mg/Kg-dry 1.4-Dichlorobenzene ND 0.0191 mg/Kg-dry 1 9/12/2016 11:37:56 AM n-Butylbenzene ND 0.0191 mg/Kg-dry 1 9/12/2016 11:37:56 AM ND 0.0191 1 9/12/2016 11:37:56 AM 1,2-Dichlorobenzene mg/Kg-dry 1,2-Dibromo-3-chloropropane ND 0.476 mg/Kg-dry 1 9/12/2016 11:37:56 AM 1,2,4-Trimethylbenzene 0.612 0.0191 1 9/12/2016 11:37:56 AM mg/Kg-dry Hexachlorobutadiene ND 0.0953 1 9/12/2016 11:37:56 AM mg/Kg-dry Naphthalene 0.189 9/12/2016 11:37:56 AM 0.0286 mg/Kg-dry 1 1,2,3-Trichlorobenzene ND 0.0191 mg/Kg-dry 1 9/12/2016 11:37:56 AM Surr: Dibromofluoromethane 100 56.5-129 %Rec 1 9/12/2016 11:37:56 AM Surr: Toluene-d8 99.0 64.3-131 %Rec 1 9/12/2016 11:37:56 AM Surr: 1-Bromo-4-fluorobenzene 9/12/2016 11:37:56 AM 104 63.1-141 %Rec 1

Sample Moisture (Percent Moisture)

Percent Moisture 9.82 0.500 wt% 1 9/12/2016 9:24:51 AM

Batch ID: R31668

Original

Analyst: BB



WO#: **1609119**

Date Reported: 9/12/2016

Client: O'Neill Service Group Collection Date: 9/9/2016 1:20:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-003 **Matrix:** Soil

Client Sample ID: STOCK-160909-1

Analyses Result RL Qual Units DF Date Analyzed

Volatile Organic Compounds by E	PA Method	8260C	Batch	ID:	14766 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0626	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chloromethane	ND	0.0626	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Vinyl chloride	ND	0.00209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Bromomethane	ND	0.0940	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Trichlorofluoromethane (CFC-11)	ND	0.0522	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chloroethane	ND	0.0626	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1-Dichloroethene	ND	0.0522	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Methylene chloride	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
trans-1,2-Dichloroethene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Methyl tert-butyl ether (MTBE)	ND	0.0522	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1-Dichloroethane	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
2,2-Dichloropropane	ND	0.0522	mg/Kg-dry	1	9/12/2016 12:07:14 PM
cis-1,2-Dichloroethene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chloroform	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1,1-Trichloroethane (TCA)	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1-Dichloropropene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Carbon tetrachloride	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dichloroethane (EDC)	ND	0.0313	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Benzene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Trichloroethene (TCE)	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dichloropropane	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Bromodichloromethane	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Dibromomethane	ND	0.0418	mg/Kg-dry	1	9/12/2016 12:07:14 PM
cis-1,3-Dichloropropene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Toluene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
trans-1,3-Dichloropropylene	ND	0.0313	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1,2-Trichloroethane	ND	0.0313	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,3-Dichloropropane	ND	0.0522	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Tetrachloroethene (PCE)	0.0626	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Dibromochloromethane	ND	0.0313	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dibromoethane (EDB)	ND	0.00522	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chlorobenzene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1,1,2-Tetrachloroethane	ND	0.0313	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Ethylbenzene	0.397	0.0313	mg/Kg-dry	1	9/12/2016 12:07:14 PM
m,p-Xylene	0.807	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
o-Xylene	0.0219	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Styrene	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Isopropylbenzene	0.717	0.0835	mg/Kg-dry	1	9/12/2016 12:07:14 PM
Bromoform	ND	0.0209	mg/Kg-dry	1	9/12/2016 12:07:14 PM



WO#: **1609119**

Date Reported: 9/12/2016

Client: O'Neill Service Group Collection Date: 9/9/2016 1:20:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-003 **Matrix:** Soil

Client Sample ID: STOCK-160909-1

Result RL Qual **Units** DF **Date Analyzed Analyses** Volatile Organic Compounds by EPA Method 8260C Batch ID: 14766 Analyst: EM 1,1,2,2-Tetrachloroethane ND 0.0209 9/12/2016 12:07:14 PM mg/Kg-dry 1 n-Propylbenzene 1.06 0.0209 mg/Kg-dry 1 9/12/2016 12:07:14 PM ND 9/12/2016 12:07:14 PM Bromobenzene 0.0313 mg/Kg-dry 1 1,3,5-Trimethylbenzene 3.40 0.209 mg/Kg-dry 10 9/12/2016 3:03:33 PM ND 9/12/2016 12:07:14 PM 2-Chlorotoluene 0.0209 mg/Kg-dry 1 4-Chlorotoluene ND 0.0209 mg/Kg-dry 9/12/2016 12:07:14 PM 1 tert-Butylbenzene 0.0731 0.0209 mg/Kg-dry 1 9/12/2016 12:07:14 PM ND 1,2,3-Trichloropropane 0.0209 mg/Kg-dry 1 9/12/2016 12:07:14 PM 1,2,4-Trichlorobenzene ND 0.0522 1 9/12/2016 12:07:14 PM mg/Kg-dry ND sec-Butylbenzene 9/12/2016 12:07:14 PM 0.0209 mg/Kg-dry 1 4-Isopropyltoluene 1.36 0.0209 9/12/2016 12:07:14 PM mg/Kg-dry 1 1,3-Dichlorobenzene ND 0.0209 1 9/12/2016 12:07:14 PM mg/Kg-dry 1.4-Dichlorobenzene ND 0.0209 mg/Kg-dry 1 9/12/2016 12:07:14 PM n-Butylbenzene ND 0.0209 mg/Kg-dry 1 9/12/2016 12:07:14 PM ND 0.0209 1 9/12/2016 12:07:14 PM 1,2-Dichlorobenzene mg/Kg-dry 1,2-Dibromo-3-chloropropane ND 0.522 mg/Kg-dry 1 9/12/2016 12:07:14 PM 1,2,4-Trimethylbenzene 7.10 0.209 D mg/Kg-dry 10 9/12/2016 3:03:33 PM Hexachlorobutadiene ND 0.104 9/12/2016 12:07:14 PM mg/Kg-dry 1 1.20 Naphthalene 0.0313 9/12/2016 12:07:14 PM mg/Kg-dry 1 1,2,3-Trichlorobenzene ND 0.0209 mg/Kg-dry 1 9/12/2016 12:07:14 PM Surr: Dibromofluoromethane 98.5 56.5-129 %Rec 1 9/12/2016 12:07:14 PM Surr: Toluene-d8 107 64.3-131 %Rec 1 9/12/2016 12:07:14 PM 9/12/2016 12:07:14 PM Surr: 1-Bromo-4-fluorobenzene 98.8 63.1-141 %Rec 1 **Sample Moisture (Percent Moisture)** Batch ID: R31668 Analyst: BB

0.500

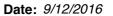
wt%

1

11.3

Percent Moisture

9/12/2016 9:24:51 AM





QC SUMMARY REPORT

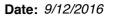
CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

Project: N105-Pellco UDS Unanticipated

Sample ID 1609119-001BMS	SampType: MS			Units: mg	/Kg-dry	Prep Da	te: 9/9/201	6	RunNo: 310	677	
Client ID: TANKEAST-160909-1	Batch ID: 14766					Analysis Da	te: 9/12/20	16	SeqNo: 598	3349	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.541	0.0658	1.097	0	49.3	43.5	121				
Chloromethane	0.732	0.0658	1.097	0	66.7	45	130				
Vinyl chloride	0.773	0.00219	1.097	0	70.5	51.2	146				
Bromomethane	0.740	0.0987	1.097	0	67.4	21.3	120				
Trichlorofluoromethane (CFC-11)	0.930	0.0548	1.097	0	84.8	35	131				
Chloroethane	0.897	0.0658	1.097	0	81.8	43.8	117				
1,1-Dichloroethene	1.00	0.0548	1.097	0	91.5	61.9	141				
Methylene chloride	0.943	0.0219	1.097	0.006581	85.4	54.7	142				
trans-1,2-Dichloroethene	1.03	0.0219	1.097	0	93.7	52	136				
Methyl tert-butyl ether (MTBE)	1.08	0.0548	1.097	0	98.6	54.4	132				
1,1-Dichloroethane	1.01	0.0219	1.097	0	91.9	51.8	141				
2,2-Dichloropropane	0.140	0.0548	1.097	0	12.7	36	123				S
cis-1,2-Dichloroethene	0.981	0.0219	1.097	0	89.4	58.6	136				
Chloroform	0.992	0.0219	1.097	0	90.4	53.2	129				
1,1,1-Trichloroethane (TCA)	1.02	0.0219	1.097	0	92.6	58.3	145				
1,1-Dichloropropene	1.02	0.0219	1.097	0	93.4	55.1	138				
Carbon tetrachloride	1.19	0.0219	1.097	0	108	53.3	144				
1,2-Dichloroethane (EDC)	0.977	0.0329	1.097	0	89.0	51.3	139				
Benzene	0.966	0.0219	1.097	0	88.1	63.5	133				
Trichloroethene (TCE)	1.02	0.0219	1.097	0	92.7	68.6	132				
1,2-Dichloropropane	1.00	0.0219	1.097	0	91.3	59	136				
Bromodichloromethane	1.06	0.0219	1.097	0	96.8	50.7	141				
Dibromomethane	1.06	0.0439	1.097	0	97.1	50.6	137				
cis-1,3-Dichloropropene	0.866	0.0219	1.097	0	79.0	50.4	138				
Toluene	1.03	0.0219	1.097	0.02029	91.7	63.4	132				
trans-1,3-Dichloropropylene	0.923	0.0329	1.097	0	84.1	44.1	147				
1,1,2-Trichloroethane	1.07	0.0329	1.097	0	97.3	51.6	137				
1,3-Dichloropropane	1.03	0.0548	1.097	0	94.2	53.1	134				
Tetrachloroethene (PCE)	1.01	0.0219	1.097	0.01919	90.5	35.6	158				
Dibromochloromethane	1.08	0.0329	1.097	0	98.8	55.3	140				
1,2-Dibromoethane (EDB)	1.01	0.00548	1.097	0	92.3	50.4	136				

Original Page 11 of 22





QC SUMMARY REPORT

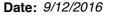
CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

Project: N105-Pellco UDS Unanticipated

Sample ID 1609119-001BMS	SampType: MS			Units: mg/l	Kg-dry	Prep Da	te: 9/9/2016	3	RunNo: 316	677	
Client ID: TANKEAST-160909-1	Batch ID: 14766					Analysis Da	te: 9/12/201	6	SeqNo: 598	3349	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit I	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	0.970	0.0219	1.097	0	88.4	60	133				
1,1,1,2-Tetrachloroethane	1.08	0.0329	1.097	0	98.5	53.1	142				
Ethylbenzene	1.10	0.0329	1.097	0.1267	89.1	54.5	134				
m,p-Xylene	2.24	0.0219	2.194	0.2265	91.8	53.1	132				
o-Xylene	1.10	0.0219	1.097	0.1080	90.4	53.3	139				
Styrene	1.01	0.0219	1.097	0	91.8	51.1	132				
Isopropylbenzene	1.24	0.0877	1.097	0.1437	100	58.9	138				
Bromoform	1.10	0.0219	1.097	0	100	57.9	130				
1,1,2,2-Tetrachloroethane	2.64	0.0219	1.097	0	241	51.9	131				S
n-Propylbenzene	1.25	0.0219	1.097	0.2643	90.0	53.6	140				
Bromobenzene	1.06	0.0329	1.097	0	96.3	54.2	140				
1,3,5-Trimethylbenzene	1.65	0.0219	1.097	0.6301	92.7	51.8	136				
2-Chlorotoluene	0.987	0.0219	1.097	0	89.9	51.6	136				
4-Chlorotoluene	1.09	0.0219	1.097	0	99.0	50.1	139				
tert-Butylbenzene	1.04	0.0219	1.097	0.02303	93.1	50.5	135				
1,2,3-Trichloropropane	0.927	0.0219	1.097	0	84.5	50.5	131				
1,2,4-Trichlorobenzene	1.12	0.0548	1.097	0	102	50.8	130				
sec-Butylbenzene	1.24	0.0219	1.097	0.2199	92.8	52.6	141				
4-Isopropyltoluene	1.53	0.0219	1.097	0.4815	95.8	52.9	134				
1,3-Dichlorobenzene	1.01	0.0219	1.097	0	91.7	52.6	131				
1,4-Dichlorobenzene	0.968	0.0219	1.097	0	88.3	52.9	129				
n-Butylbenzene	1.70	0.0219	1.097	0	155	52.6	130				S
1,2-Dichlorobenzene	1.03	0.0219	1.097	0	93.7	55.8	129				
1,2-Dibromo-3-chloropropane	1.65	0.548	1.097	0	151	40.5	131				S
1,2,4-Trimethylbenzene	2.90	0.0219	1.097	1.770	103	50.6	137				
Hexachlorobutadiene	1.16	0.110	1.097	0	105	40.6	158				
Naphthalene	1.73	0.0329	1.097	0.3773	123	52.3	124				
1,2,3-Trichlorobenzene	1.14	0.0219	1.097	0	104	54.4	124				
Surr: Dibromofluoromethane	1.40		1.371		102	56.5	129				
Surr: Toluene-d8	1.40		1.371		102	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.46		1.371		107	63.1	141				

Original Page 12 of 22





Sample ID 1609119-001BMS

QC SUMMARY REPORT

CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

Project: N105-Pellco UDS Unanticipated

> Prep Date: 9/9/2016 RunNo: 31677

Analysis Date: 9/12/2016 Client ID: TANKEAST-160909-1 Batch ID: 14766

SeqNo: 598349

%REC LowLimit HighLimit RPD Ref Val Analyte Result RL SPK value SPK Ref Val %RPD RPDLimit Qual

Units: mg/Kg-dry

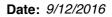
NOTES:

S - Outlying QC recoveries were observed. The method is in control as indicated by the LCS.

SampType: MS

Sample ID 1609119-001BMSD	SampType: MSD			Units: mg/	Kg-dry	Prep Dat	te: 9/9/201	6	RunNo: 316	<u></u> 677	
Client ID: TANKEAST-160909-1	Batch ID: 14766					Analysis Dat	te: 9/12/20	16	SeqNo: 598	3350	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.516	0.0658	1.097	0	47.0	43.5	121	0.5413	4.77	30	
Chloromethane	0.722	0.0658	1.097	0	65.8	45	130	0.7321	1.36	30	
Vinyl chloride	0.770	0.00219	1.097	0	70.2	51.2	146	0.7732	0.355	30	
Bromomethane	0.744	0.0987	1.097	0	67.8	21.3	120	0.7398	0.518	30	
Trichlorofluoromethane (CFC-11)	0.883	0.0548	1.097	0	80.5	35	131	0.9301	5.20	30	
Chloroethane	0.877	0.0658	1.097	0	79.9	43.8	117	0.8972	2.29	30	
1,1-Dichloroethene	0.988	0.0548	1.097	0	90.0	61.9	141	1.004	1.65	30	
Methylene chloride	0.959	0.0219	1.097	0.006581	86.8	54.7	142	0.9432	1.61	30	
trans-1,2-Dichloroethene	1.01	0.0219	1.097	0	91.6	52	136	1.028	2.21	30	
Methyl tert-butyl ether (MTBE)	1.07	0.0548	1.097	0	97.9	54.4	132	1.082	0.763	30	
1,1-Dichloroethane	1.00	0.0219	1.097	0	91.5	51.8	141	1.008	0.436	30	
2,2-Dichloropropane	0.128	0.0548	1.097	0	11.7	36	123	0.1398	8.59	30	S
cis-1,2-Dichloroethene	0.980	0.0219	1.097	0	89.3	58.6	136	0.9811	0.112	30	
Chloroform	0.985	0.0219	1.097	0	89.8	53.2	129	0.9920	0.721	30	
1,1,1-Trichloroethane (TCA)	1.01	0.0219	1.097	0	92.2	58.3	145	1.016	0.433	30	
1,1-Dichloropropene	1.02	0.0219	1.097	0	92.9	55.1	138	1.025	0.590	30	
Carbon tetrachloride	1.18	0.0219	1.097	0	108	53.3	144	1.189	0.694	30	
1,2-Dichloroethane (EDC)	0.958	0.0329	1.097	0	87.3	51.3	139	0.9767	1.93	30	
Benzene	0.957	0.0219	1.097	0	87.3	63.5	133	0.9663	0.912	30	
Trichloroethene (TCE)	1.01	0.0219	1.097	0	91.6	68.6	132	1.017	1.14	30	
1,2-Dichloropropane	0.985	0.0219	1.097	0	89.8	59	136	1.002	1.66	30	
Bromodichloromethane	1.06	0.0219	1.097	0	97.0	50.7	141	1.062	0.258	30	
Dibromomethane	1.08	0.0439	1.097	0	98.1	50.6	137	1.065	1.02	30	
cis-1,3-Dichloropropene	0.842	0.0219	1.097	0	76.7	50.4	138	0.8665	2.89	30	

Page 13 of 22 Original





QC SUMMARY REPORT

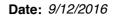
CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

Project: N105-Pellco UDS Unanticipated

Sample ID 1609119-001BMSD	SampType: MSD			Units: mg/	Kg-dry	Prep Da	ite: 9/9/20 1	6	RunNo: 316	677	
Client ID: TANKEAST-160909-1	Batch ID: 14766					Analysis Da	ite: 9/12/2 0)16	SeqNo: 598	3350	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	1.03	0.0219	1.097	0.02029	92.1	63.4	132	1.027	0.373	30	
trans-1,3-Dichloropropylene	0.880	0.0329	1.097	0	80.2	44.1	147	0.9229	4.74	30	
1,1,2-Trichloroethane	1.08	0.0329	1.097	0	98.3	51.6	137	1.067	1.07	30	
1,3-Dichloropropane	1.03	0.0548	1.097	0	94.3	53.1	134	1.033	0.106	30	
Tetrachloroethene (PCE)	1.03	0.0219	1.097	0.01919	92.5	35.6	158	1.012	2.14	30	
Dibromochloromethane	1.10	0.0329	1.097	0	100	55.3	140	1.084	1.36	30	
1,2-Dibromoethane (EDB)	1.02	0.00548	1.097	0	92.6	50.4	136	1.012	0.324	30	
Chlorobenzene	0.990	0.0219	1.097	0	90.3	60	133	0.9701	2.07	30	
1,1,1,2-Tetrachloroethane	1.10	0.0329	1.097	0	101	53.1	142	1.080	2.16	30	
Ethylbenzene	1.12	0.0329	1.097	0.1267	90.8	54.5	134	1.104	1.63	30	
m,p-Xylene	2.29	0.0219	2.194	0.2265	94.2	53.1	132	2.241	2.27	30	
o-Xylene	1.11	0.0219	1.097	0.1080	91.2	53.3	139	1.100	0.795	30	
Styrene	1.02	0.0219	1.097	0	93.2	51.1	132	1.007	1.51	30	
Isopropylbenzene	1.27	0.0877	1.097	0.1437	103	58.9	138	1.240	2.36	30	
Bromoform	1.14	0.0219	1.097	0	104	57.9	130	1.097	3.54	30	
1,1,2,2-Tetrachloroethane	2.90	0.0219	1.097	0	264	51.9	131	2.645	9.24	30	S
n-Propylbenzene	1.29	0.0219	1.097	0.2643	93.4	53.6	140	1.251	2.98	30	
Bromobenzene	1.09	0.0329	1.097	0	99.5	54.2	140	1.056	3.32	30	
1,3,5-Trimethylbenzene	1.71	0.0219	1.097	0.6301	98.7	51.8	136	1.647	3.92	30	
2-Chlorotoluene	0.999	0.0219	1.097	0	91.0	51.6	136	0.9866	1.22	30	
4-Chlorotoluene	1.10	0.0219	1.097	0	101	50.1	139	1.086	1.60	30	
tert-Butylbenzene	1.06	0.0219	1.097	0.02303	94.6	50.5	135	1.044	1.62	30	
1,2,3-Trichloropropane	0.883	0.0219	1.097	0	80.5	50.5	131	0.9268	4.79	30	
1,2,4-Trichlorobenzene	1.15	0.0548	1.097	0	105	50.8	130	1.124	2.74	30	
sec-Butylbenzene	1.28	0.0219	1.097	0.2199	96.2	52.6	141	1.238	2.97	30	
4-Isopropyltoluene	1.59	0.0219	1.097	0.4815	101	52.9	134	1.533	3.55	30	
1,3-Dichlorobenzene	1.02	0.0219	1.097	0	92.9	52.6	131	1.006	1.35	30	
1,4-Dichlorobenzene	0.995	0.0219	1.097	0	90.7	52.9	129	0.9685	2.68	30	
n-Butylbenzene	1.75	0.0219	1.097	0	160	52.6	130	1.697	3.21	30	S
1,2-Dichlorobenzene	1.04	0.0219	1.097	0	95.1	55.8	129	1.028	1.54	30	
1,2-Dibromo-3-chloropropane	1.70	0.548	1.097	0	155	40.5	131	1.652	2.88	30	S

Original Page 14 of 22





QC SUMMARY REPORT

CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

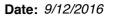
Project: N105-Pellco	UDS Unanticipated					Volatile	Organic	Compound	ds by EPA	Method	8260C
Sample ID 1609119-001BMSD	SampType: MSD			Units: mg/l	Kg-dry	Prep Da	te: 9/9/201	16	RunNo: 31	677	
Client ID: TANKEAST-160909-1	Batch ID: 14766					Analysis Da	te: 9/12/2 0)16	SeqNo: 59	8350	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	2.99	0.0219	1.097	1.770	112	50.6	137	2.896	3.33	30	
Hexachlorobutadiene	1.22	0.110	1.097	0	111	40.6	158	1.157	4.99	30	
Naphthalene	1.77	0.0329	1.097	0.3773	127	52.3	124	1.729	2.13	30	S
1,2,3-Trichlorobenzene	1.19	0.0219	1.097	0	108	54.4	124	1.142	3.81	30	
Surr: Dibromofluoromethane	1.42		1.371		104	56.5	129		0		
Surr: Toluene-d8	1.40		1.371		102	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.47		1.371		108	63.1	141		0		

NOTES:

S - Outlying QC recoveries were observed. The method is in control as indicated by the LCS.

Sample ID LCS-14766	SampType: LCS			Units: mg/Kg		Prep Dat	e: 9/9/2016		RunNo: 316	677	
Client ID: LCSS	Batch ID: 1476	6				Analysis Dat	e: 9/12/201 6	6	SeqNo: 598	3354	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit F	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.30	0.0600	1.000	0	130	34.5	141				
Chloromethane	1.07	0.0600	1.000	0	107	38.8	132				
Vinyl chloride	1.07	0.00200	1.000	0	107	44	142				
Bromomethane	0.992	0.0900	1.000	0	99.2	40.9	157				
Trichlorofluoromethane (CFC-11)	0.917	0.0500	1.000	0	91.7	42.9	147				
Chloroethane	0.960	0.0600	1.000	0	96.0	37.1	144				
1,1-Dichloroethene	1.15	0.0500	1.000	0	115	49.7	142				
Methylene chloride	0.978	0.0200	1.000	0	97.8	46.3	140				
trans-1,2-Dichloroethene	1.12	0.0200	1.000	0	112	68	130				
Methyl tert-butyl ether (MTBE)	1.08	0.0500	1.000	0	108	59.1	138				
1,1-Dichloroethane	1.04	0.0200	1.000	0	104	61.9	137				
2,2-Dichloropropane	1.26	0.0500	1.000	0	126	28.1	149				
cis-1,2-Dichloroethene	1.06	0.0200	1.000	0	106	71.3	135				
Chloroform	1.04	0.0200	1.000	0	104	67.5	129				
1,1,1-Trichloroethane (TCA)	1.11	0.0200	1.000	0	111	69	132				
1,1-Dichloropropene	1.15	0.0200	1.000	0	115	72.7	131				
Carbon tetrachloride	1.16	0.0200	1.000	0	116	63.4	137				

Page 15 of 22 Original





QC SUMMARY REPORT

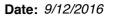
CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

Project: N105-Pellco UDS Unanticipated

Sample ID LCS-14766	SampType: LCS			Units: mg/Kg		Prep Dat	e: 9/9/201	6	RunNo: 316	677	
Client ID: LCSS	Batch ID: 14766					Analysis Dat	e: 9/12/2 0	16	SeqNo: 598	3354	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	0.989	0.0300	1.000	0	98.9	61.9	136				
Benzene	1.01	0.0200	1.000	0	101	64.3	133				
Trichloroethene (TCE)	1.10	0.0200	1.000	0	110	65.5	137				
1,2-Dichloropropane	1.03	0.0200	1.000	0	103	63.2	142				
Bromodichloromethane	1.11	0.0200	1.000	0	111	73.2	131				
Dibromomethane	1.10	0.0400	1.000	0	110	70	130				
cis-1,3-Dichloropropene	1.19	0.0200	1.000	0	119	59.1	143				
Toluene	1.03	0.0200	1.000	0	103	67.3	138				
trans-1,3-Dichloropropylene	1.24	0.0300	1.000	0	124	49.2	149				
1,1,2-Trichloroethane	1.01	0.0300	1.000	0	101	74.5	129				
1,3-Dichloropropane	1.02	0.0500	1.000	0	102	70	130				
Tetrachloroethene (PCE)	1.07	0.0200	1.000	0	107	52.7	150				
Dibromochloromethane	1.10	0.0300	1.000	0	110	70.6	144				
1,2-Dibromoethane (EDB)	1.01	0.00500	1.000	0	101	70	130				
Chlorobenzene	1.02	0.0200	1.000	0	102	76.1	123				
1,1,1,2-Tetrachloroethane	1.12	0.0300	1.000	0	112	65.9	141				
Ethylbenzene	1.03	0.0300	1.000	0	103	74	129				
m,p-Xylene	2.14	0.0200	2.000	0	107	70	124				
o-Xylene	1.03	0.0200	1.000	0	103	72.7	124				
Styrene	1.03	0.0200	1.000	0	103	76.8	130				
Isopropylbenzene	1.14	0.0800	1.000	0	114	70	130				
Bromoform	1.15	0.0200	1.000	0	115	67	154				
1,1,2,2-Tetrachloroethane	1.00	0.0200	1.000	0	100	60	130				
n-Propylbenzene	1.04	0.0200	1.000	0	104	74.8	125				
Bromobenzene	1.08	0.0300	1.000	0	108	49.2	144				
1,3,5-Trimethylbenzene	1.04	0.0200	1.000	0	104	74.6	123				
2-Chlorotoluene	1.02	0.0200	1.000	0	102	76.7	129				
4-Chlorotoluene	1.04	0.0200	1.000	0	104	77.5	125				
tert-Butylbenzene	1.05	0.0200	1.000	0	105	66.2	130				
1,2,3-Trichloropropane	1.03	0.0200	1.000	0	103	67.9	136				
1,2,4-Trichlorobenzene	1.16	0.0500	1.000	0	116	62.6	143				

Original Page 16 of 22





QC SUMMARY REPORT

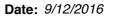
CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

•	UDS Unanticipated			Unite:		Dran Dat	0/0/004		Dunble: 04	^77	
Sample ID LCS-14766	SampType: LCS			Units: mg/Kg		Ргер Баі	te: 9/9/201 0	ь	RunNo: 31 0	0//	
Client ID: LCSS	Batch ID: 14766					Analysis Dat	te: 9/12/20	16	SeqNo: 59	8354	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	1.06	0.0200	1.000	0	106	75.6	133				
4-Isopropyltoluene	1.07	0.0200	1.000	0	107	76.8	131				
1,3-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	128				
1,4-Dichlorobenzene	0.996	0.0200	1.000	0	99.6	72.6	126				
n-Butylbenzene	1.11	0.0200	1.000	0	111	65.3	136				
1,2-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	126				
1,2-Dibromo-3-chloropropane	1.20	0.500	1.000	0	120	61.2	139				
1,2,4-Trimethylbenzene	1.04	0.0200	1.000	0	104	77.5	129				
Hexachlorobutadiene	1.13	0.100	1.000	0	113	42	151				
Naphthalene	1.19	0.0300	1.000	0	119	62.3	134				
1,2,3-Trichlorobenzene	1.10	0.0200	1.000	0	110	54.8	143				
Surr: Dibromofluoromethane	1.30		1.250		104	56.5	129				
Surr: Toluene-d8	1.24		1.250		99.1	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.32		1.250		105	63.1	141				
Sample ID MP-14766	SampType: MRLK			Unite: ma/Ka		Pren Dat	b. 0/0/201	<u> </u>	PunNo: 21	677	

Sample ID MB-14766	SampType: MBLK			Units: mg/Kg		Prep Date:	9/9/2016		RunNo: 316	677	
Client ID: MBLKS	Batch ID: 14766					Analysis Date:	9/12/2016		SeqNo: 598	3353	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit Hi	ighLimit RF	PD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									

Original Page 17 of 22





QC SUMMARY REPORT

CLIENT: O'Neill Service Group

Volatile Organic Compounds by EPA Method 8260C

Project:	N105-Pellco UDS Unanticipated
----------	-------------------------------

Dient ID: MBLKS Batch ID: 14766 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPD Limit Qual	Sample ID MB-14766	SampType: MBLK			Units: mg/Kg		Prep Da	te: 9/9/20	16	RunNo: 31	677	
2,2-Dichloropropane	Client ID: MBLKS	Batch ID: 14766					Analysis Da	ite: 9/12/2 0	016	SeqNo: 59	8353	
	Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	2,2-Dichloropropane	ND	0.0500									
1.1,1-Trichloroethane (TCA) ND 0.0200 1,1-Dichloropropene ND 0.0200 Carbon tetrachloride ND 0.0300 Benzene ND 0.0200 Trichloroethane (EDC) ND 0.0200 1,2-Dichloropropane ND 0.0200 Trichloroethane ND 0.0200 Bromodichloromethane ND 0.0400 Gis-1,3-Dichloropropene ND 0.0200 Toluene ND 0.0300 1,1-2-Trichloroethane ND 0.0300 1,1-2-Trichloroethane ND 0.0300 1,3-Dichloropropane ND 0.0300 1,3-Dichloropropane ND 0.0200 Dibromoethane (PCB) ND 0.0200 Dibromoethane (EDB) ND 0.0300 1,2-Dibroroethane (EDB) ND 0.0300 1,1,1-2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0200 Styrene ND 0.0200 Styrene ND	cis-1,2-Dichloroethene	ND	0.0200									
1,1-Dichloropropene ND 0.0200 Carbon tetrachloride ND 0.0200 1,2-Dichloroethane (EDC) ND 0.0300 Benzene ND 0.0200 Trichloroethene (TCE) ND 0.0200 1,2-Dichloropropane ND 0.0200 Bromodichloromethane ND 0.0200 Dibromomethane ND 0.0200 Toluene ND 0.0200 trans-1,3-Dichloropropene ND 0.0200 trans-1,3-Dichloropropylene ND 0.0300 1,1,2-Trichloroethane ND 0.0300 1,1,3-Tichloropropane ND 0.0500 Tetrachloroethene (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,1,1,2-Tetrachloroethane ND 0.0300 Chlorobenzene ND 0.0300 Thylene ND 0.0300 Rnp-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND <td< td=""><td>Chloroform</td><td>ND</td><td>0.0200</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Chloroform	ND	0.0200									
Carbon tetrachloride ND 0.0200 1,2-Dichloroethane (EDC) ND 0.0300 Benzene ND 0.0200 Trichloroethane (TCE) ND 0.0200 Trichloropropane ND 0.0200 Bromodichloromethane ND 0.0200 Dibromomethane ND 0.0200 Toluene ND 0.0200 trans-1,3-Dichloropropene ND 0.0300 1,1,2-Trichloroethane ND 0.0300 1,1,2-Trichloroethane ND 0.0300 1,3-Dichloropropane ND 0.0300 Tetrachloroethane (PCE) ND 0.0300 Dibromochloromethane (EDB) ND 0.0300 Chlorobenzene ND 0.0300 Titylenezene ND 0.0300 NpXylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0200 Formodrom ND 0.0200 Isopropylbenzene ND 0.0200 </td <td>1,1,1-Trichloroethane (TCA)</td> <td>ND</td> <td>0.0200</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,2-Dichloroethane (EDC) ND 0.0300 Benzene ND 0.0200 Trichloroethene (TCE) ND 0.0200 1,2-Dichloropropane ND 0.0200 Bromodichloromethane ND 0.0400 cis-1,3-Dichloropropene ND 0.0200 Toluene ND 0.0200 trans-1,3-Dichloropropylene ND 0.0300 1,3-Dichloropropylene ND 0.0300 1,3-Dichloropropane ND 0.0500 Tetrachloroethane (PCE) ND 0.0200 Dibromochloromethane (EDB) ND 0.0300 1,2-Dibromoethane (EDB) ND 0.0300 1,1,1,2-Tetrachloroethane ND 0.0300 Chlorobenzene ND 0.0300 mp-Xylene ND 0.0300 mp-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0200 Isopropylbenzene ND 0.0200 Poptylbenzene ND <	1,1-Dichloropropene	ND	0.0200									
	Carbon tetrachloride	ND	0.0200									
Trichloroethene (TCE) ND 0.0200 1,2-Dichloropropane ND 0.0200 Bromodichloromethane ND 0.0200 Dibromomethane ND 0.0400 dis-1,3-Dichloropropene ND 0.0200 Toluene ND 0.0300 1,1,2-Trichloropthane ND 0.0300 1,3-Dichloropropane ND 0.0500 Tetrachloroethane (PCE) ND 0.0300 1,2-Dibromoethane (EDB) ND 0.0300 1,1,1,2-Tetrachloroethane ND 0.0300 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 Ethylbenzene ND 0.0300 Ethylbenzene ND 0.0200 O-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0200 Bromodorm ND 0.0200 Formoform ND 0.0200 P-Propylbenzene ND 0.0200 <td>1,2-Dichloroethane (EDC)</td> <td>ND</td> <td>0.0300</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1,2-Dichloroethane (EDC)	ND	0.0300									
1,2-Dichloropropane ND 0.0200 Bromodichloromethane ND 0.0200 Dibromomethane ND 0.0200 cis-1,3-Dichloropropene ND 0.0200 Toluene ND 0.0300 1,1,2-Trichloroptopape ND 0.0300 1,3-Dichloropropane ND 0.0500 Tetrachloroethane (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,2-Dibromochlane (EDB) ND 0.0200 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 Ethylbenzene ND 0.0300 Styrene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 Styrene ND 0.0200 Formoform ND 0.0200 Tetrachloroethane ND 0.0200 <td>Benzene</td> <td>ND</td> <td>0.0200</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Benzene	ND	0.0200									
Bromodichloromethane ND 0.0200 Dibromomethane ND 0.0400 cis-1,3-Dichloropropene ND 0.0200 Tolluene ND 0.0300 1,1,2-Trichloroethane ND 0.0300 1,3-Dichloropropane ND 0.0500 Tetrachloroethene (PCE) ND 0.0300 1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0300 1,1,1-2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 mp-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isoropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200	Trichloroethene (TCE)	ND	0.0200									
Dibromomethane ND 0.0400 cis-1,3-Dichloropropene ND 0.0200 Toluene ND 0.0300 1,1,2-Tichloropthane ND 0.0300 1,3-Dichloropropane ND 0.0500 Tetrachloroethene (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0300 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 Styrene ND 0.0200 Styrene ND 0.0200 Styrene ND 0.0200 Bromoform ND 0.0200 Bromoform ND 0.0200 n-Propylbenzene ND 0.0200	1,2-Dichloropropane	ND	0.0200									
cis-1,3-Dichloropropene ND 0.0200 Toluene ND 0.0200 trans-1,3-Dichloropropylene ND 0.0300 1,1,2-Trichloroethane ND 0.0500 Tetrachloroethene (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0300 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 O-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200	Bromodichloromethane	ND	0.0200									
Toluene ND 0.0200 trans-1,3-Dichloropropylene ND 0.0300 1,1,2-Trichloroethane ND 0.0300 1,3-Dichloropropane ND 0.0500 Tetrachloroethene (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,2-Dibromoethane (EDB) ND 0.0200 Chlorobenzene ND 0.0300 Ethylbenzene ND 0.0300 Ethylbenzene ND 0.0200 Styrene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200	Dibromomethane	ND	0.0400									
	cis-1,3-Dichloropropene	ND	0.0200									
1,1,2-Trichloroethane ND 0.0300 1,3-Dichloropropane ND 0.0500 Tetrachloroethene (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0300 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	Toluene	ND	0.0200									
1,3-Dichloropropane ND 0.0500 Tetrachloroethene (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0200 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	trans-1,3-Dichloropropylene	ND	0.0300									
Tetrachloroethene (PCE) ND 0.0200 Dibromochloromethane ND 0.0300 1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0200 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	1,1,2-Trichloroethane	ND	0.0300									
Dibromochloromethane ND 0.0300 1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0200 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	1,3-Dichloropropane	ND	0.0500									
1,2-Dibromoethane (EDB) ND 0.00500 Chlorobenzene ND 0.0200 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	Tetrachloroethene (PCE)	ND	0.0200									
Chlorobenzene ND 0.0200 1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	Dibromochloromethane	ND	0.0300									
1,1,1,2-Tetrachloroethane ND 0.0300 Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	1,2-Dibromoethane (EDB)	ND	0.00500									
Ethylbenzene ND 0.0300 m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	Chlorobenzene	ND	0.0200									
m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	1,1,1,2-Tetrachloroethane	ND	0.0300									
m,p-Xylene ND 0.0200 o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	Ethylbenzene	ND	0.0300									
o-Xylene ND 0.0200 Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	-	ND										
Styrene ND 0.0200 Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200		ND	0.0200									
Isopropylbenzene ND 0.0800 Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	-		0.0200									
Bromoform ND 0.0200 1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200	-	ND	0.0800									
1,1,2,2-Tetrachloroethane ND 0.0200 n-Propylbenzene ND 0.0200												
n-Propylbenzene ND 0.0200	1,1,2,2-Tetrachloroethane	ND										
• •		ND										
			0.0300									

Original Page 18 of 22

Date: 9/12/2016



Work Order: 1609119

Project:

QC SUMMARY REPORT

CLIENT: O'Neill Service Group

N105-Pellco UDS Unanticipated

Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14766	SampType: MBLK			Units: mg/Kg		Prep Date:	9/9/201	16	RunNo: 310	677	
Client ID: MBLKS	Batch ID: 14766					Analysis Date:	9/12/20)16	SeqNo: 598	8353	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit Hi	ghLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.20		1.250		96.3	56.5	129				
Surr: Toluene-d8	1.25		1.250		100	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.27		1.250		102	63.1	141				

Original Page 19 of 22

Date: 9/12/2016



Work Order: 1609119

QC SUMMARY REPORT

CLIENT: O'Neill Service Group

Sample Moisture (Percent Moisture)

Project: N105-Pellco UDS Unanticipated

 Sample ID
 1609115-001ADUP
 SampType:
 DUP
 Units:
 wt%
 Prep Date:
 9/12/2016
 RunNo:
 31668

 Client ID:
 BATCH
 Batch ID:
 R31668
 Analysis Date:
 9/12/2016
 SeqNo:
 597947

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Percent Moisture 13.8 0.500 13.89 0.810 20

Original Page 20 of 22



Sample Log-In Check List

C	lient Name:	ONEILL				Work Ord	er Numl	ber: 1609119		
Lo	ogged by:	Clare Griggs				Date Rec	eived:	9/9/2016	3:50:00 PM	
Cha	in of Cust	od <u>v</u>								
		ustody complet	e?			Yes [/	No 🗌	Not Present	
2.	How was the	sample delivere	ed?			Client				
1.00	ı İn									
<u>Log</u>		procent?				Yes [No 🗆	NA 🗆	
3.	Coolers are p	nesent:				165	•	NO 🗀	NA L	
4.	Shipping con	tainer/cooler in	good conditior	1?		Yes	/	No \square		
5.		ls present on sh nments for Cust				Yes [No \square	Not Required 🗹	
6		npt made to coo				Yes [No 🗸	NA 🗆	
0.			campioo		Samples		straigh	t from field.		
7.	Were all item	s received at a	temperature o			Yes [No 🗌	NA 🗸	
						-	_			
•		proper containe	` '				✓	No 🗌		
٥.		nple volume for		(s)?		г	✓	No 🗀		
		properly preser					✓	No □		
11.	Was preserv	ative added to b	ottles?			Yes L		No 🗹	NA L	
12.	Is there head	space in the VC	OA vials?			Yes [No 🗌	NA 🗸	
13.	Did all sampl	es containers a	rrive in good c	ondition(unbrok	(en)?	Yes [✓	No \square		
14.	Does paperw	ork match bottle	e labels?			Yes [/	No \square		
45	Ara matriaga	aarraatly idantif	iad on Chain a	of Custody?		Vaa [✓	No 🗆		
_		correctly identif at analyses were		or Custody?		-	<u>~</u>	No □ No □		
		ling times able t				_	<u> </u>	No \square		
٠,,		3								
<u>Spe</u>	cial Handl	ing (if applic	cable)							
18.	Was client no	otified of all disc	repancies with	this order?		Yes [No 🗌	NA 🗸	. .
	Person	Notified:			Date					
	By Who	m:			Via:	eMail	☐ Ph	none Fax	☐ In Person	
	Regardi	ng:								
	Client Ir	structions:								
19.	Additional rei	marks:								
Item	<u>Information</u>									
		Item #		Temp °C						
	Cooler			26.1						

27.0

Original

Sample

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

W Erom	OD:	+				Cha	ain d	of C	usto	dy	Rec	ord a	and	La	boratory Services Agreem	ent
Freme									Da	ite: _	9/9	116	_		Laboratory Project No (internal):	of 22
	206-352-37 206-352-71						Project	t Name:		/	VIC	5-	Pell	co	Laboratory Project No (internal): Page: of: UDS Ugantici pated ected by:	Page 22
Client:	OS	G-					Project			1	754			Coll	ected by:	ery i
Address:							Locatio	n:	-24							
City, State, Zip:		120					035 S. \$100 S. S.	To (PM)):			-			the state of the s	
Telephone: Matrix Codes: A = Air, AQ = Aqueous, B = I	Pulk O = Ot	Fax:		ii sn - s	diment	- 12	PM Em	A first	V = Deinki	ng Wate	w GW =	Scound W	ator S	W = Sto	rm Water WW - Waste Water	
Matrix codes. A - All, AQ - Aqueous, 0 - 1	Sample	Sample	Sample Type		State Park	//	arte sign	8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AND STATE OF THE PARTY OF THE P	34 Sept 300	State of		//			Augusta.
Sample Name	Date	Time	(Matrix)*	(30)	4/8/	(38)	8 38 J		*/ «*/	ME	SOFT SHE	4	//	4	Comments	
TANKEAST-160909.1	9/9	1310	5	X	+			\perp	\vdash	\perp	\vdash	+	+	+		
TANKWEST-160909-1	- CC	1315	5	X						2×			1	1	Market since Amine to all this resource	digi.
Stock-160909-1	er.	1320	5	X	\perp		\sqcup		1				_	1	No metals	
ANTHORN COLUMN	T. Inte													_	Control of the Contro	
						10						01111	100			Hills
CORRESPONDED TO SEC. 10	1-11-1	-				II I										
Mark to More than the													-			
															A Comment of the Contract of t	E1-1
•					+		\Box						\top			
*Metals Analysis (Circle): MTCA-5	RCRA-8	Priority Pollu	tants TA	AL Inc	lividual: A	g Al As	ВВа	Be Ca (Cd Co C	r Cu F	e Hg K	Mg Mn	Mo Na	Ni Pi	o Sb Se Sr Sn Ti Ti U V Zn	He.
**Anions (Circle): Nitrate Nitrite ample Disposal: Return to Clie	Chloride	Disposal by	te Bron Lab (Sample samples are	s will be he		lays unle	Fluoride ss otherw		trate+Niti		received	und times after 4:00 llowing bu	pm will	begin	Special Remarks:	
represent that I am authorized to ente greement to each of the terms on the fr		Agreement	with Frem	ont Anal			of the Cl	ient nar	ned abov	e, that	I have v	erified C	lient's			
	7Time 9/16 (_	550		eived	7		q	Date/	Time	135	D 15	39/	D 1	THE STATE OF THE S	
elinquished Date	e/Time				eived				Date/	Time					TAT → SameDay NextDay Day 3 Day STD	
				×								1 10			^Please coordinate with the lab in advance	

OSG O'Neill Service Group

Attachment D.1 UST Contents Sample Analysis and Chains of Custody



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

O'Neill Service Group

Eric Laumbattus 17619 NE 67th Court, Suite 100 Redmond. WA 98052

RE: N105-Pellco Lab ID: 1609114

September 12, 2016

Attention Eric Laumbattus:

Fremont Analytical, Inc. received 2 sample(s) on 9/9/2016 for the analyses presented in the following report.

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway Laboratory Director

DoD/ELAP Certification #L2371, ISO/ICC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)



Date: 09/12/2016

CLIENT: O'Neill Service Group Work Order Sample Summary

Project: N105-Pellco Lab Order: 1609114

 Lab Sample ID
 Client Sample ID
 Date/Time Collected
 Date/Time Received

 1609114-001
 UDS-Unknown-1
 09/09/2016 1:15 PM
 09/09/2016 1:39 PM

 1609114-002
 Trip Blank
 09/09/2016 12:15 PM
 09/09/2016 1:37 PM



Case Narrative

WO#: **1609114**Date: **9/12/2016**

CLIENT: O'Neill Service Group

Project: N105-Pellco

WorkOrder Narrative:

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **1609114**

Date Reported: 9/12/2016

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Analytical Report

WO#: **1609114**Date Reported: **9/12/2016**

Client: O'Neill Service Group Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco

Lab ID: 1609114-001 **Matrix:** Wipe

Client Sample ID: UDS-Unknown-1

Qual Units DF **Date Analyzed Analyses** Result **Volatile Organic Compounds by EPA Method 8260C** Batch ID: 14764 Analyst: NG Dichlorodifluoromethane (CFC-12) ND 0.00150 Q 9/9/2016 3:43:42 PM µg/wipe 1 Chloromethane 0.00338 0.00150 μg/wipe 1 9/9/2016 3:43:42 PM Vinyl chloride ND 0.0000500 µg/wipe 1 9/9/2016 3:43:42 PM Bromomethane ND 0.00225 Q 1 9/9/2016 3:43:42 PM µg/wipe Trichlorofluoromethane (CFC-11) ND 0.00125 µg/wipe 1 9/9/2016 3:43:42 PM Chloroethane ND 0.00150 9/9/2016 3:43:42 PM μg/wipe 1 1,1-Dichloroethene ND 0.00125 μg/wipe 1 9/9/2016 3:43:42 PM ND Methylene chloride 0.000500 µg/wipe 1 9/9/2016 3:43:42 PM trans-1,2-Dichloroethene ND 0.000500 1 9/9/2016 3:43:42 PM μg/wipe ND Methyl tert-butyl ether (MTBE) 0.00125 1 9/9/2016 3:43:42 PM µg/wipe 9/9/2016 3:43:42 PM 1,1-Dichloroethane ND 0.000500 µg/wipe 1 2,2-Dichloropropane ND 0.00125 1 9/9/2016 3:43:42 PM µg/wipe cis-1.2-Dichloroethene ND 0.000500 μg/wipe 1 9/9/2016 3:43:42 PM Chloroform ND 0.000500 μg/wipe 1 9/9/2016 3:43:42 PM 1,1,1-Trichloroethane (TCA) ND 0.000500 9/9/2016 3:43:42 PM 1 µg/wipe 1,1-Dichloropropene ND 0.000500 µg/wipe 1 9/9/2016 3:43:42 PM Carbon tetrachloride ND 0.000500 1 9/9/2016 3:43:42 PM µg/wipe 1,2-Dichloroethane (EDC) ND 0.000750 9/9/2016 3:43:42 PM µg/wipe 1 ND 9/9/2016 3:43:42 PM Benzene 0.000500 1 µg/wipe Trichloroethene (TCE) NΠ 0.000500 μg/wipe 1 9/9/2016 3:43:42 PM 1,2-Dichloropropane ND 0.000500 µg/wipe 1 9/9/2016 3:43:42 PM Bromodichloromethane ND 0.000500 1 9/9/2016 3:43:42 PM µg/wipe ND 9/9/2016 3:43:42 PM Dibromomethane 0.00100 µg/wipe 1 cis-1,3-Dichloropropene ND 0.000500 1 9/9/2016 3:43:42 PM µg/wipe Toluene 0.00565 0.000500 µg/wipe 1 9/9/2016 3:43:42 PM trans-1,3-Dichloropropylene ND 0.000750 µg/wipe 1 9/9/2016 3:43:42 PM 1,1,2-Trichloroethane ND 0.000750 1 9/9/2016 3:43:42 PM μg/wipe ND 1,3-Dichloropropane 0.00125 1 9/9/2016 3:43:42 PM µg/wipe 9/9/2016 3:43:42 PM Tetrachloroethene (PCE) ND 0.000500 μg/wipe 1 Dibromochloromethane ND 0.000750 µg/wipe 1 9/9/2016 3:43:42 PM 1.2-Dibromoethane (EDB) ND 0.000125 1 9/9/2016 3:43:42 PM µg/wipe Chlorobenzene ND 0.000500 µg/wipe 1 9/9/2016 3:43:42 PM 1.1.1.2-Tetrachloroethane ND 0.000750 1 9/9/2016 3:43:42 PM µg/wipe Ethylbenzene 0.00385 0.000750 µg/wipe 1 9/9/2016 3:43:42 PM m,p-Xylene 0.0155 0.000500 9/9/2016 3:43:42 PM µg/wipe 1 o-Xylene 0.00640 0.000500 1 9/9/2016 3:43:42 PM µg/wipe Styrene ND 0.000500 µg/wipe 1 9/9/2016 3:43:42 PM μg/wipe Isopropylbenzene 0.00203 0.00200 1 9/9/2016 3:43:42 PM Bromoform ND 0.000500 μg/wipe 1 9/9/2016 3:43:42 PM



Analytical Report

WO#: **1609114**

Date Reported: 9/12/2016

Client: O'Neill Service Group Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco

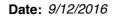
Lab ID: 1609114-001 **Matrix:** Wipe

Client Sample ID: UDS-Unknown-1

Result	RL	Qual	Units	DF	Date Analyzed
y EPA Method	8260C		Batcl	h ID:	14764 Analyst: NG
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
0.00345	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000750		μg/wipe	1	9/9/2016 3:43:42 PM
0.00772	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.00125		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
0.00203	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.0125		μg/wipe	1	9/9/2016 3:43:42 PM
0.0218	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.00250		μg/wipe	1	9/9/2016 3:43:42 PM
0.0101	0.000750		μg/wipe	1	9/9/2016 3:43:42 PM
ND	0.000500		μg/wipe	1	9/9/2016 3:43:42 PM
91.7	56.5-129		%Rec	1	9/9/2016 3:43:42 PM
101	64.3-131		%Rec	1	9/9/2016 3:43:42 PM
103	63.1-141		%Rec	1	9/9/2016 3:43:42 PM
	ND 0.00345 ND 0.00772 ND ND ND ND ND ND ND ND ND ND ND ND ND	ND 0.000500 ND 0.00250 ND 0.00250 ND 0.00250 0.0101 0.000750 ND 0.000500	ND 0.000500 0.00345 0.000500 ND 0.000750 0.00772 0.000500 ND 0.00250 ND 0.00250 0.0101 0.000750 ND 0.000500	ND 0.000500 µg/wipe 0.00345 0.000500 µg/wipe ND 0.000750 µg/wipe 0.00772 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.00125 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.00250 µg/wipe ND 0.00250 µg/wipe ND 0.00250 µg/wipe ND 0.000500 µg/wipe ND 0.00250 µg/wipe ND 0.000500 µg/wipe ND 0.00250 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.00250 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe ND 0.000500 µg/wipe	ND

NOTES:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).





Project:

QC SUMMARY REPORT

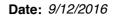
CLIENT: O'Neill Service Group

N105-Pellco

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14764	SampType: LCS			Units: mg/Kg	_	Prep Da	te: 9/9/201	6	RunNo: 310	661	
Client ID: LCSS	Batch ID: 14764					Analysis Da	te: 9/9/201	6	SeqNo: 598	3116	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.322	0.0600	1.000	0	32.2	34.5	141				SQ
Chloromethane	0.852	0.0600	1.000	0	85.2	38.8	132				
Vinyl chloride	0.768	0.00200	1.000	0	76.8	44	142				
Bromomethane	0.607	0.0900	1.000	0	60.7	40.9	157				Q
Trichlorofluoromethane (CFC-11)	0.533	0.0500	1.000	0	53.3	42.9	147				
Chloroethane	0.441	0.0600	1.000	0	44.1	37.1	144				
1,1-Dichloroethene	0.684	0.0500	1.000	0	68.4	49.7	142				
Methylene chloride	0.686	0.0200	1.000	0	68.6	46.3	140				
trans-1,2-Dichloroethene	0.842	0.0200	1.000	0	84.2	68	130				
Methyl tert-butyl ether (MTBE)	0.876	0.0500	1.000	0	87.6	59.1	138				
1,1-Dichloroethane	0.688	0.0200	1.000	0	68.8	61.9	137				
2,2-Dichloropropane	1.35	0.0500	1.000	0	135	28.1	149				
cis-1,2-Dichloroethene	0.908	0.0200	1.000	0	90.8	71.3	135				
Chloroform	0.865	0.0200	1.000	0	86.5	67.5	129				
1,1,1-Trichloroethane (TCA)	0.848	0.0200	1.000	0	84.9	69	132				
1,1-Dichloropropene	0.895	0.0200	1.000	0	89.5	72.7	131				
Carbon tetrachloride	0.796	0.0200	1.000	0	79.6	63.4	137				
1,2-Dichloroethane (EDC)	0.859	0.0300	1.000	0	85.9	61.9	136				
Benzene	0.922	0.0200	1.000	0	92.2	64.3	133				
Trichloroethene (TCE)	0.889	0.0200	1.000	0	88.9	65.5	137				
1,2-Dichloropropane	0.868	0.0200	1.000	0	86.8	63.2	142				
Bromodichloromethane	0.790	0.0200	1.000	0	79.0	73.2	131				
Dibromomethane	0.811	0.0400	1.000	0	81.1	70	130				
cis-1,3-Dichloropropene	0.882	0.0200	1.000	0	88.2	59.1	143				
Toluene	0.872	0.0200	1.000	0	87.2	67.3	138				
trans-1,3-Dichloropropylene	0.854	0.0300	1.000	0	85.4	49.2	149				
1,1,2-Trichloroethane	0.830	0.0300	1.000	0	83.0	74.5	129				
1,3-Dichloropropane	0.830	0.0500	1.000	0	83.0	70	130				
Tetrachloroethene (PCE)	0.887	0.0200	1.000	0	88.7	52.7	150				
Dibromochloromethane	0.763	0.0300	1.000	0	76.2	70.6	144				
1,2-Dibromoethane (EDB)	0.814	0.00500	1.000	0	81.4	70	130				

Original Page 7 of 15





Project:

QC SUMMARY REPORT

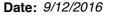
CLIENT: O'Neill Service Group

N105-Pellco

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14764	SampType: LCS			Units: mg/Kg		Prep Dat	e: 9/9/20 1	6	RunNo: 31	661	
Client ID: LCSS	Batch ID: 14764					Analysis Dat	e: 9/9/20 1	16	SeqNo: 59	8116	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	0.899	0.0200	1.000	0	89.9	76.1	123				
1,1,1,2-Tetrachloroethane	0.865	0.0300	1.000	0	86.5	65.9	141				
Ethylbenzene	0.919	0.0300	1.000	0	91.9	74	129				
m,p-Xylene	1.77	0.0200	2.000	0	88.5	70	124				
o-Xylene	0.868	0.0200	1.000	0	86.8	72.7	124				
Styrene	0.860	0.0200	1.000	0	86.1	76.8	130				
Isopropylbenzene	0.885	0.0800	1.000	0	88.4	70	130				
Bromoform	0.762	0.0200	1.000	0	76.2	67	154				
1,1,2,2-Tetrachloroethane	0.755	0.0200	1.000	0	75.4	60	130				
n-Propylbenzene	0.892	0.0200	1.000	0	89.2	74.8	125				
Bromobenzene	0.858	0.0300	1.000	0	85.8	49.2	144				
1,3,5-Trimethylbenzene	0.888	0.0200	1.000	0	88.8	74.6	123				
2-Chlorotoluene	0.858	0.0200	1.000	0	85.8	76.7	129				
4-Chlorotoluene	0.863	0.0200	1.000	0	86.3	77.5	125				
tert-Butylbenzene	0.882	0.0200	1.000	0	88.2	66.2	130				
1,2,3-Trichloropropane	0.780	0.0200	1.000	0	78.0	67.9	136				
1,2,4-Trichlorobenzene	1.10	0.0500	1.000	0	110	62.6	143				
sec-Butylbenzene	0.891	0.0200	1.000	0	89.1	75.6	133				
4-Isopropyltoluene	0.921	0.0200	1.000	0	92.1	76.8	131				
1,3-Dichlorobenzene	0.940	0.0200	1.000	0	94.0	72.8	128				
1,4-Dichlorobenzene	0.926	0.0200	1.000	0	92.6	72.6	126				
n-Butylbenzene	1.07	0.0200	1.000	0	107	65.3	136				
1,2-Dichlorobenzene	0.926	0.0200	1.000	0	92.6	72.8	126				
1,2-Dibromo-3-chloropropane	0.810	0.500	1.000	0	81.0	61.2	139				
1,2,4-Trimethylbenzene	0.890	0.0200	1.000	0	89.0	77.5	129				
Hexachlorobutadiene	1.07	0.100	1.000	0	107	42	151				
Naphthalene	1.04	0.0300	1.000	0	104	62.3	134				
1,2,3-Trichlorobenzene	1.01	0.0200	1.000	0	101	54.8	143				
Surr: Dibromofluoromethane	1.16		1.250	-	93.0	56.5	129				
Surr: Toluene-d8	1.26		1.250		101	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.21		1.250		96.6	63.1	141				

Original Page 8 of 15





QC SUMMARY REPORT

O'Neill Service Group CLIENT:

N105-Pellco

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14764

Units: mg/Kg

Prep Date: 9/9/2016

RunNo: 31661

SampType: LCS

Result

Analysis Date: 9/9/2016

SeqNo: 598116

Client ID: LCSS

Batch ID: 14764

SPK value SPK Ref Val

%REC LowLimit HighLimit RPD Ref Val

%RPD RPDLimit Qual

NOTES:

Analyte

Project:

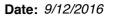
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

RL

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID LCSD-14764	SampType: LCSD			Units: mg/Kg	_	Prep Dat	e: 9/9/201	6	RunNo: 316	661	_
Client ID: LCSS02	Batch ID: 14764					Analysis Dat	e: 9/9/201	6	SeqNo: 598	3117	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.394	0.0600	1.000	0	39.4	34.5	141	0.3215	20.1	20	RQ
Chloromethane	1.08	0.0600	1.000	0	108	38.8	132	0.8520	23.7	20	R
Vinyl chloride	0.960	0.00200	1.000	0	96.0	44	142	0.7675	22.2	20	R
Bromomethane	0.693	0.0900	1.000	0	69.3	40.9	157	0.6070	13.2	20	Q
Trichlorofluoromethane (CFC-11)	0.517	0.0500	1.000	0	51.6	42.9	147	0.5330	3.14	20	
Chloroethane	0.503	0.0600	1.000	0	50.3	37.1	144	0.4405	13.2	20	
1,1-Dichloroethene	0.747	0.0500	1.000	0	74.7	49.7	142	0.6840	8.81	20	
Methylene chloride	0.854	0.0200	1.000	0	85.4	57.6	135	0.6860	21.9	20	R
trans-1,2-Dichloroethene	0.989	0.0200	1.000	0	98.9	68	130	0.8415	16.1	20	
Methyl tert-butyl ether (MTBE)	1.10	0.0500	1.000	0	110	59.1	138	0.8765	22.6	20	R
1,1-Dichloroethane	0.792	0.0200	1.000	0	79.2	61.9	137	0.6885	13.9	20	
2,2-Dichloropropane	1.36	0.0500	1.000	0	136	28.1	149	1.350	0.775	20	
cis-1,2-Dichloroethene	0.959	0.0200	1.000	0	95.9	71.6	123	0.9075	5.47	20	
Chloroform	0.917	0.0200	1.000	0	91.7	67.5	129	0.8650	5.84	20	
1,1,1-Trichloroethane (TCA)	0.898	0.0200	1.000	0	89.8	69	132	0.8485	5.61	20	
1,1-Dichloropropene	0.944	0.0200	1.000	0	94.4	72.7	131	0.8950	5.33	20	
Carbon tetrachloride	0.860	0.0200	1.000	0	86.1	63.4	137	0.7955	7.85	20	
1,2-Dichloroethane (EDC)	0.908	0.0300	1.000	0	90.8	61.9	136	0.8590	5.49	20	
Benzene	0.983	0.0200	1.000	0	98.2	74.6	124	0.9225	6.30	20	
Trichloroethene (TCE)	0.946	0.0200	1.000	0	94.6	65.5	137	0.8890	6.21	20	
1,2-Dichloropropane	0.946	0.0200	1.000	0	94.6	63.2	142	0.8675	8.71	20	
Bromodichloromethane	0.872	0.0200	1.000	0	87.2	73.2	131	0.7895	9.87	20	
Dibromomethane	0.902	0.0400	1.000	0	90.2	70	130	0.8105	10.6	20	

Page 9 of 15 Original





Project:

QC SUMMARY REPORT

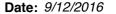
CLIENT: O'Neill Service Group

N105-Pellco

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCSD-14764	SampType: LCSD			Units: mg/Kg		Prep Dat	te: 9/9/20 1	6	RunNo: 316	661	
Client ID: LCSS02	Batch ID: 14764					Analysis Da	te: 9/9/201	16	SeqNo: 598	3117	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	0.967	0.0200	1.000	0	96.7	59.1	143	0.8820	9.19	20	
Toluene	0.952	0.0200	1.000	0	95.2	67.3	138	0.8720	8.77	20	
trans-1,3-Dichloropropylene	0.957	0.0300	1.000	0	95.7	49.2	149	0.8540	11.4	20	
1,1,2-Trichloroethane	0.930	0.0300	1.000	0	93.0	74.5	129	0.8295	11.5	20	
1,3-Dichloropropane	0.928	0.0500	1.000	0	92.8	70	130	0.8305	11.0	20	
Tetrachloroethene (PCE)	0.981	0.0200	1.000	0	98.1	52.7	150	0.8870	10.1	20	
Dibromochloromethane	0.863	0.0300	1.000	0	86.3	70.6	144	0.7625	12.4	20	
1,2-Dibromoethane (EDB)	0.928	0.00500	1.000	0	92.8	70	130	0.8145	13.0	20	
Chlorobenzene	1.01	0.0200	1.000	0	101	76.1	123	0.8990	11.4	20	
1,1,1,2-Tetrachloroethane	0.975	0.0300	1.000	0	97.5	65.9	141	0.8650	12.0	20	
Ethylbenzene	1.01	0.0300	1.000	0	101	74	129	0.9190	9.24	20	
m,p-Xylene	2.03	0.0200	2.000	0	102	70	124	1.770	13.8	20	
o-Xylene	1.01	0.0200	1.000	0	101	72.7	124	0.8680	15.4	20	
Styrene	1.01	0.0200	1.000	0	101	76.8	130	0.8605	16.1	20	
Isopropylbenzene	1.03	0.0800	1.000	0	103	70	130	0.8845	15.2	20	
Bromoform	0.924	0.0200	1.000	0	92.4	67	154	0.7615	19.3	20	
1,1,2,2-Tetrachloroethane	0.945	0.0200	1.000	0	94.5	60	130	0.7545	22.4	20	R
n-Propylbenzene	1.04	0.0200	1.000	0	104	74.8	125	0.8915	14.9	20	
Bromobenzene	1.01	0.0300	1.000	0	101	49.2	144	0.8575	16.1	20	
1,3,5-Trimethylbenzene	1.03	0.0200	1.000	0	103	74.6	123	0.8875	14.8	20	
2-Chlorotoluene	1.01	0.0200	1.000	0	101	76.7	129	0.8575	16.5	20	
4-Chlorotoluene	1.02	0.0200	1.000	0	102	77.5	125	0.8630	16.3	20	
tert-Butylbenzene	1.02	0.0200	1.000	0	102	66.2	130	0.8820	14.4	20	
1,2,3-Trichloropropane	0.951	0.0200	1.000	0	95.1	67.9	136	0.7795	19.8	20	
1,2,4-Trichlorobenzene	1.20	0.0500	1.000	0	120	62.6	143	1.102	8.72	20	
sec-Butylbenzene	1.04	0.0200	1.000	0	104	75.6	133	0.8910	15.2	20	
4-Isopropyltoluene	1.05	0.0200	1.000	0	105	76.8	131	0.9210	13.2	20	
1,3-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	128	0.9405	9.52	20	
1,4-Dichlorobenzene	1.01	0.0200	1.000	0	101	72.6	126	0.9255	8.29	20	
n-Butylbenzene	1.12	0.0200	1.000	0	112	65.3	136	1.074	4.60	20	
1,2-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	126	0.9255	10.4	20	

Original Page 10 of 15





QC SUMMARY REPORT

CLIENT: O'Neill Service Group

N105-Pellco

Volatile Organic Compounds by EPA Method 8260C

			Units: mg/Kg		Prep Dat	e: 9/9/201	RunNo: 31661			
Batch ID: 14764					Analysis Dat	e: 9/9/201	6	SeqNo: 598	3117	
Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
0.920	0.500	1.000	0	92.0	61.2	139	0.8100	12.7	20	
1.03	0.0200	1.000	0	103	77.5	129	0.8895	14.9	20	
1.14	0.100	1.000	0	114	42	151	1.068	6.26	20	
1.16	0.0300	1.000	0	116	62.3	134	1.038	11.4	20	
1.14	0.0200	1.000	0	114	54.8	143	1.008	12.2	20	
1.10		1.250		88.3	56.5	129		0		
1.27		1.250		101	64.3	131		0		
1.27		1.250		102	63.1	141		0		
	Result 0.920 1.03 1.14 1.16 1.14 1.10 1.27	Result RL 0.920 0.500 1.03 0.0200 1.14 0.100 1.16 0.0300 1.14 0.0200 1.10 1.27	Result RL SPK value 0.920 0.500 1.000 1.03 0.0200 1.000 1.14 0.100 1.000 1.16 0.0300 1.000 1.14 0.0200 1.000 1.10 1.250 1.27 1.250	Result RL SPK value SPK Ref Val 0.920 0.500 1.000 0 1.03 0.0200 1.000 0 1.14 0.100 1.000 0 1.16 0.0300 1.000 0 1.14 0.0200 1.000 0 1.10 1.250 1.27 1.250	Result RL SPK value SPK Ref Val %REC 0.920 0.500 1.000 0 92.0 1.03 0.0200 1.000 0 103 1.14 0.100 1.000 0 114 1.16 0.0300 1.000 0 116 1.14 0.0200 1.000 0 114 1.10 1.250 88.3 1.27 1.250 101	Result RL SPK value SPK Ref Val %REC LowLimit 0.920 0.500 1.000 0 92.0 61.2 1.03 0.0200 1.000 0 103 77.5 1.14 0.100 1.000 0 114 42 1.16 0.0300 1.000 0 116 62.3 1.14 0.0200 1.000 0 114 54.8 1.10 1.250 88.3 56.5 1.27 1.250 101 64.3	Result RL SPK value SPK Ref Val %REC LowLimit HighLimit 0.920 0.500 1.000 0 92.0 61.2 139 1.03 0.0200 1.000 0 103 77.5 129 1.14 0.100 1.000 0 114 42 151 1.16 0.0300 1.000 0 116 62.3 134 1.14 0.0200 1.000 0 114 54.8 143 1.10 1.250 88.3 56.5 129 1.27 1.250 101 64.3 131	Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val 0.920 0.500 1.000 0 92.0 61.2 139 0.8100 1.03 0.0200 1.000 0 103 77.5 129 0.8895 1.14 0.100 1.000 0 114 42 151 1.068 1.16 0.0300 1.000 0 116 62.3 134 1.038 1.14 0.0200 1.000 0 114 54.8 143 1.008 1.10 1.250 88.3 56.5 129 1.27 1.250 101 64.3 131	Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD 0.920 0.500 1.000 0 92.0 61.2 139 0.8100 12.7 1.03 0.0200 1.000 0 103 77.5 129 0.8895 14.9 1.14 0.100 1.000 0 114 42 151 1.068 6.26 1.16 0.0300 1.000 0 116 62.3 134 1.038 11.4 1.14 0.0200 1.000 0 114 54.8 143 1.008 12.2 1.10 1.250 88.3 56.5 129 0 1.27 1.250 101 64.3 131 0	Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit 0.920 0.500 1.000 0 92.0 61.2 139 0.8100 12.7 20 1.03 0.0200 1.000 0 103 77.5 129 0.8895 14.9 20 1.14 0.100 1.000 0 114 42 151 1.068 6.26 20 1.16 0.0300 1.000 0 116 62.3 134 1.038 11.4 20 1.14 0.0200 1.000 0 114 54.8 143 1.008 12.2 20 1.10 1.250 88.3 56.5 129 0 0 1.27 1.250 101 64.3 131 0 0

NOTES:

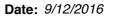
Project:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-14764	SampType:	MBLK			Units: mg/Kg		Prep Da	te: 9/9/20	16	RunNo: 310	661	
Client ID: MBLKS	Batch ID:	14764					Analysis Da	te: 9/9/20	16	SeqNo: 598	3118	
Analyte	R	esult	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)		ND	0.0600									Q
Chloromethane		ND	0.0600									
Vinyl chloride		ND	0.00200									
Bromomethane		ND	0.0900									Q
Trichlorofluoromethane (CFC-11)		ND	0.0500									
Chloroethane		ND	0.0600									
1,1-Dichloroethene		ND	0.0500									
Methylene chloride		ND	0.0200									
trans-1,2-Dichloroethene		ND	0.0200									
Methyl tert-butyl ether (MTBE)		ND	0.0500									
1,1-Dichloroethane		ND	0.0200									
2,2-Dichloropropane		ND	0.0500									
cis-1,2-Dichloroethene		ND	0.0200									
Chloroform		ND	0.0200									
1,1,1-Trichloroethane (TCA)		ND	0.0200									

Original Page 11 of 15

R - High RPD observed, spike recoveries are within range.





Project:

QC SUMMARY REPORT

CLIENT: O'Neill Service Group

N105-Pellco

Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14764	SampType: MBLK			Units: mg/Kg		Prep Da	ite: 9/9/20	16	RunNo: 31	661	
Client ID: MBLKS	Batch ID: 14764					Analysis Da	nte: 9/9/20	16	SeqNo: 59	8118	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									

Original Page 12 of 15

Date: 9/12/2016



Work Order: 1609114

Project:

QC SUMMARY REPORT

CLIENT: O'Neill Service Group

N105-Pellco

Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14764	SampType: MBLK		Units: mg/Kg		Prep Date: 9	9/9/2016	RunNo: 31661	
Client ID: MBLKS	Batch ID: 14764				Analysis Date: 9	9/9/2016	SeqNo: 598118	
Analyte	Result	RL SPK valu	e SPK Ref Val	%REC	LowLimit High	hLimit RPD Ref Val	%RPD RPDLimit	Qual
1,2,3-Trichloropropane	ND 0.	200						
1,2,4-Trichlorobenzene	ND 0.	500						
sec-Butylbenzene	ND 0.	200						
4-Isopropyltoluene	ND 0.	200						
1,3-Dichlorobenzene	ND 0.	200						
1,4-Dichlorobenzene	ND 0.	200						
n-Butylbenzene	ND 0.	200						
1,2-Dichlorobenzene	ND 0.	200						
1,2-Dibromo-3-chloropropane	ND 0	500						
1,2,4-Trimethylbenzene	ND 0.	200						
Hexachlorobutadiene	ND 0	100						
Naphthalene	ND 0.	300						
1,2,3-Trichlorobenzene	ND 0.	200						
Surr: Dibromofluoromethane	1.09	1.25	0	86.9	56.5	129		
Surr: Toluene-d8	1.20	1.25	0	95.9	64.3	131		
Surr: 1-Bromo-4-fluorobenzene	1.20	1.25	0	96.2	63.1	141		
NOTES:								

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Original Page 13 of 15



Sample Log-In Check List

С	lient Name:	ONEILL	Work Order Numb	oer: 1609114	
Lo	ogged by:	Clare Griggs	Date Received:	9/9/2016	1:37:00 PM
<u>Cha</u>	in of Cust	<u>ody</u>			
1.	Is Chain of C	sustody complete?	Yes 🗹	No 🗌	Not Present
2.	How was the	sample delivered?	<u>Client</u>		
Log	<u>ı In</u>				
_	Coolers are p	present?	Yes 🗹	No 🗌	na 🗆
4.	Shipping con	tainer/cooler in good condition?	Yes 🗸	No \square	
5.		ls present on shipping container/cooler? nments for Custody Seals not intact)	Yes	No 🗌	Not Required ✓
6.	Was an atter	npt made to cool the samples?	Yes	No 🗸	NA \square
		Sample	e received straight	from field.	
7.	Were all item	s received at a temperature of >0°C to 10.0°C*	Yes	No 🗌	NA 🗹
8.	Sample(s) in	proper container(s)?	Yes 🗸	No \square	
9.	Sufficient sar	mple volume for indicated test(s)?	Yes 🗸	No \square	
10.	Are samples	properly preserved?	Yes 🗹	No \square	
11.	Was preserva	ative added to bottles?	Yes	No 🗸	NA 🗆
12.	Is there head	Ispace in the VOA vials?	Yes	No 🗌	NA 🗸
13.	Did all sampl	es containers arrive in good condition(unbroken)?	Yes 🗸	No \square	
14.	Does paperw	ork match bottle labels?	Yes 🗹	No \square	
15.	Are matrices	correctly identified on Chain of Custody?	Yes 🗸	No \square	
16.	Is it clear who	at analyses were requested?	Yes 🗹	No \square	
17.	Were all hold	ling times able to be met?	Yes 🗸	No \square	
Spe	cial Handl	ing (if applicable)			
-		otified of all discrepancies with this order?	Yes	No 🗌	NA 🗹
	Person	Notified: Date			
	By Who			one Fax [In Person
	Regardi	-			
		nstructions:			
		· · · · · · · · · · · · · · · · · · ·			

19. Additional remarks:

Item Information

Original

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

					_	FIRE PAGE	26		2130	STREET	1072170	10000		_	50.0	9 12		1000	
Fren	MAN	-				C	hai	n o	f C	ust	ody	Re	cor	d aı	nd I	Lab	oratory Service	es Agr	eement
FIGI	Antalysiss									ı	Date: _	9/	9/	6	_	L	aboratory Project No (internal):	11000	114 5
3600 Fremont Ave N. Seattle, WA 98103	Tel: 206-352-379 Fax: 206-352-71	78					P	roject N	Name:			417	00	- -	- 1	21	rage: of:		Page 15 c
Client:	OSG					_		roject N				+50	1	here	_	Collect	ted by:	e majora Tribi	Contribution of
Address:						-		ocation		_								and the same	-
City, State, Zip: Telephone:		Eave				_		eport T M Emai):	10000						AND DESCRIPTION OF THE PARTY OF		THE OF THE CASE
*Matrix Codes: A = Air, AQ = Aqueo	us R = Rulk O = Otl	Fax:		nil SD = S	ediment	SI = S				/ = Drin	king Wat	er GW	- Grou	nd Wate	r SW-	- Storm	Water WW = Waste Water		_
Matrix codes. A - All, AQ - Aqueo	us, b = buik, b = bu	1	duct, 3 – 30	JII, JU - J	realifient	, 30	//	/	/	131	4	/	7		/	//	/////	# NA PER	Ellering -
	Same	Samala	Sample	/	ER STELL	94i/	The Bark	\$ 18 18 18 18 18 18 18 1	ST SE	10 10 10 10 10 10 10 10 10 10 10 10 10 1		8 8	120°	STILL STILL					
Sample Name	Sample Date	Sample Time	Type (Matrix)*	189	4	\$\langle 3	S. 14.	38	30/0	15 S	Neto:		8/3	//	/	//	Com	ments	Charles I
1 UDS-Unknown - I	1 9/9	1315	WP	X													Wige		
7	and the same	the part of	170		-			in Just		W.	i in ein		in i	Carriero				and the second of	international designation of
				1-1-			LUU (III.									A Section Associated	Little Co.
S CONTRACTOR OF THE STATE OF TH		-	1 - 1			Н	-0.1	-			17		_		+	_			
4									11	200		\vdash	-	90	1000				
5				+	_						\perp					_			en od teres
6	a net presente				the second					111111									
7	physical c		100					-11	41.0										chelanomic .
8			-		1										П				
			1		141		-18	1	V _x					-			The state of the state of	1000	- mbroon
9			10000			\vdash	+	_			\top		+					N	
10 **Metals Analysis (Circle): MTCA	A-5 RCRA-8 I	Priority Pollu	tante T	AL In	dividual	Λσ. Δ	ι Δε B	Ba Be	. (2.1	rd Co	Cr Cu I	a Ha	K Ma	Mn Mc	No N	di Dh G	Sb Se Sr Sn Ti Tl U V Zn		
AND AND AND AND AND AND AND AND AND AND	Nitrite Chloride		1 T D S A S	mide	O-Phos	annum et e	150	uoride		trate+N							pecial Remarks:		
II-Helt C. C.		Disposal by assessed if	Lab (Sample	es will be h	neld for 3	0 days i								r 4:00pm ing busir			Prelin by	ypm	
I represent that I am authorized agreement to each of the terms of	n the front and bac			ent.	A 11	n beh	alf of t	he Clie	nt nar			t I have	verif	ied Clie	nt's		1	-1	
Relinguished x	9/9/16 (a) r	339	Re	ceived	1	1	11	9	19 I	e/Time		12	:30	7	1000			
Relinquished	Date/Time				eceived					Dat	e/Time					T/	AT - SameDay NextDay^	2 Day 3 Day	STD
	1.77			×		Thui B	W		ON.			911		OEAT I		^p	Please coordinate with the lab in adva	ince	LONG THE RESERVE OF T

OSG O'Neill Service Group

Attachment E.1 UST Destruction Certification

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

STORAGE TANK

CERTIFICATE OF DESTRUCTION

DATE: SEPTEMBER 15, 2016

TANK OWNER: SOUND TRANSIT

TANK LOCATION: 1000 NE 45TH ST, SEATTLE WA

TANK DESCRIPTION: 500 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,

Marine Vacuum Service, Inc.

OSG O'Neill Service Group

Attachment F.1
Marine Vacuum
Bill of Lading

This Shipping Order

must be legibly filled in, in Ink indelible Pencil, or in Carbon, and retained by the agent

Shipper No.	UZ/00
-------------	-------

0	urrier	No		
	curior			

		M	ARINE VACUUI	M SERVICE, I	INC	Data	00 1	0 0010
Page o	f	_ = -	(Name of ca	arrier)	(SCAC)	Date _	09. 1	2.2016
F.O.		"COD" must appear before consignee's name or as oth			iel Envi			
1516	SGE	RAHAM ST	1		Ne			<i>f</i>
Sireei			ARC BY IS	City 500	ittle	State (1)	Zip Code	
SEAT	ILE	State WA Zi	o Code 98108	24 hr. Emergency Co	ntact Tel. No	800-540-7	491	
Route						Vehicle Number		
No. of Units & Container Type	НМ	BASI UN or NA Number, Proper Ship	C DESCRIPTION pping Name, Hazard Class,	Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
111		Waste	Water	-	100	gallon		
		u .	8		,	J		
	_				V	*		-
ilean e e e e e e e e e e e e e e e e e e		12 1			- 4	(e.		
		- N			¥.			
					4100	e:		F
2				4				
				×				
		-	·	- V				
					5			
Note — (1) Where the ra	ite is depende	NDERED: YES NO CONTROL NO NO NO NO NO NO NO NO NO NO NO NO NO	areby declare that the contents of this	REMIT C.O.D. TO: ADDRESS				
agreed or declared value of be not exceeding	I the property iff provisions s	ared value of the property, as follows: "The is hereby specifically stated by the shipper to desper " pecify a limitation of the carrier's liability absent ma	signment are fully and accurately scribed above by the proper shipping me and are classified, packaged, rked and labelled/placarded, and are all respects in proper condition for	COD	Amt: \$	C.O.D. I PREPAI COLLEG	DU	
the carrier's liability or deck provided by such provisions (3) Commodities requiring must be so marked and page	are a value, the See NMFC It special or addickaged as to e reight Bills an	e carrier's liability shall be limited to the extent rrai rm 172. Illional care or attention in handling or stowing respectively of distances and Section 1(a) of distances of Charges and Section 1(a) of	asport according to applicable relational and national governmental ulations. Signature	Subject to Section 7 of the co- consignee without recourse or following statement: The carrier shall not make freight and all other lawful charg	anditions, if this shipment is to be do the consignor, the consignor sidelivery of this shipment without ges.	shall sign the CHARG	IGHT CHAR	GES ck box if charges are to be collect
the protents of (the work) posses nation	operty describe of packages un ord carrier beir ssion of the pro , if on its route,	the classifications and tariffs in effect on the date of the dabove in apparent good order, except as noted (con known), marked, consigned, and destined as indicate gunderstood throughout this contract as meaning are perty under the contract) agrees to carry to its usual pla office of the contract of	e issue of this Bill of Lading, tents and condition of con- d above which said carrier ny person or corporation in ce of delivery at said desti- said destination. It is mutu-	tination and as to each performed hereunder sification on the date of Shipper hereby ce	party at any time interested in all shall be subject to all the bill of ladin shipment. prtifies that he is familiar with a and the said terms and condition	or any said property, that g terms and conditions in the Il the lading terms and co	every service to governing clas- anditions in the	9
SHIPPER.	11/2/	Enlywahnen	100	CARRIER	ADINE VACIU	IN CEDIAL	e in	

PER DATE

is an acknowledgment that a Bill of Lading has been issued and is not Original This Memorandum Shipper No. Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record. Carrier No. MARINE VACUUM SERVICE, INC (Name of carrier) (SCAC) On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1. Shipper MARINE VACUUM SERVICE INC Consignee 1516 S. GRAHAM ST SEATTLE WA 98108 State Zip Code 800-540-749 24 hr. Emergency Contact Tel. No. Vehicle Route Number TOTAL QUANTITY WEIGHT CHARGES BASIC DESCRIPTION HM No. of Units (Weight, Volume, (Subject to RATE (For Carrier UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group & Container Type Correction) Use Only) Gallons, etc.) PLACARDS TENDERED: YES . NO . REMIT Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding per (2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172. (3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(e) of them 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles. C.O.D. TO: I hereby declare that the contents of this **ADDRESS** consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are C.O.D. FEE: PREPAID [COD PREPAID COLLECT Amt: \$ in all respects in proper condition for transport according to applicable international and national governmental regulations. Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: TOTAL CHARGES The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Signature

(Signature of Consignor)

FREIGHT CHARGES
FREIGHT PREPAID
except when box at right is checked

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, The property described above in apparent good order, except as noted (contents and condition of con-the property described above in apparent good order, except as noted (contents and condition of con-tents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said desti-nation, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutu-ally agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing clas-sification on the date of shipment.

Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER Polled Constr	CARRIER MARINE VACUUM SERVICE, INC.
PER Sinolalla	PER Cy
	DATE 9.13.16

OSG O'Neill Service Group

Attachment H.1 UST Triple-Rinse Certification

Marine Vacuum Service, Inc. Po. Box 24263 Seattle, Washington 98124

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P0. Box 24263 Seattle, Washington 98124
Telephone (206) 762-0240
FAX (206) 763-8084
1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size:	500	2 gal/0			
Last Contents	gasoline	<i></i>		1.	
Tank Location: 1000	n Ne	45 th	st -		
5	eattle,	cua	110000		
Marine Vacuum Servic accordance with the ind 380(I), API 1604, API accordance with Federa or NOT SAFE FOR H	e, Inc. certifies lustry standard 2015 and that Il, State and Lo	that the above as outlined in all residual pr	e mentioned ta 40 CFR PART roduct and rins	nk(s) have be Γ 280.70, WA ate has been o	C 173-360- lisposed of in
Tank Owner:	rund 7	rains17	-		
Contractor: One	ell Env	iron men	tal		
M.V.S. Representative: Date: 09.12. Notes:		chily.			

DBE # D4M1302341

EPA # WAD980974521

OSG O'Neill Service Group

Attachment H.2 Marine Chemist Certification for Inerting the UST

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116 (206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGING.COM

MARINE CHEMIST CERTIFICATE SERIAL Nº 46783

THAT ISOURD FESTINGING COM		DERINIE 1	Z0100
GARY GALLOWAY	Management (D)	SEPT 1	3 2016
Survey Requested by	Vessel Owner or Agent	16	80 NE 45T
PLEASE SEE BELOW	STEEL UNDERGR	MUNDA THE	OU NETS
Vessel	Type of Vessel		Specific Location of Vessel
GASOLINE	02 LEL VISU		8:20AV
Last Three (3) Loadings	Tests Performed		Time Survey Completed
			THE RESERVE TO SERVE
4 1 4 2 2 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4		1 2 - 2	NAME OF THE PARTY
1 1,000 - GAL STE	EL CYLINDRICAL	MAJDEK-GROW	NO
STORAGE	TANK		
	FREE OF COME	BUSTIBLE GE	16
	AND PRODU	LCT RESIDU	E
			The training
	- MAY BE SAFEL	Y EXCAULATE	ED O
	AND TRAM	/	
100 S (200)			-
	PUBLIC H	HEHWAYS	A CONTRACTOR
			N A IN A SHI
	- NOT REQUIRED.	FURTHER CL	EANING
	The state of the state of the state of		
		OR INFRT	Cor Solid
			A THE WAY
			RC TAILS LAND

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed______Name

Name

Company

Date

gned Marine Chemist

Certificate No.

OSG O'Neill Service Group

Attachment H.3 Fire Marshal Permit

TUE 09/13/16

SEP 12 2016 PERMIT SECTION

RECEIVED



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Fire Department

Your Seattle

Commercial Tank Removal/Decommissioning

Code 7908 Commercial la	ink Kemovai/Decommissioning
Permit Fee: \$218.00	Date Issued:
TO BE COMPLETED BY PERMIT APPLICANT	
FIRM NAME Galloway Environmental, Inc.	
MAILING ADDRESS 3102 220 th PL SE	SUITE
CITY Sammamish	STATE Washington ZIP 98075
JOBSITE ADDRESS 1000 NE 45 th St., Seattle, 98103	
CONTACT PERSON Gary Galloway	PHONE NUMBER (425) 688-8852
and/or unknowns) Hot work being conducted: X No	Yes (If yes, a separate hot work permit is required)
Permit applications may be submitted in person week Seattle Fire Department Fire Marshal's Office – Permits 220 Third Ave S, 2 nd Floor Seattle, WA 98104-2608	To pay with a Visa or Master Card: Fax or email this application THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT Tel: (206) 386-1450 / Fax: (206) 386-1348 E-mail: permits@seattle.gov
TANKS MAY BE REMOVED/DECOMMI	to needed inspection time to arrange for an appointment. SSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION TEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!
	ssion the tank(s) identified in this permit in accordance with the attached pplicable provisions of the Seattle Fire Code, federal, state and local F PERMIT CONDITIONS ARE NOT ATTACHED
Special permit conditions: Tank removal/decommissionin	ng must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600
Check No.: 1894091016 Insp	pector: SFD ID# 1321 me of Marine Chemist Dia Sty Certificate # 467 83 te: 913145



PERMANENT CLOSURE NOTICE

FOR UNDERGROUND STORAGE TANKS

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

USTID #: West-UST2
County: King

	I. UST FACILITY				RATOR INFORMAT		
acility Compliance T	cility Compliance Tag #: 8342			erator Name: S	ound Transi	t	
JSTID#: West-T	JST2			Business Name: Sound Transit			
Site Name: UDS			Address:	Address: 401 S Jackson St			
Site Address: NE	15th St and F	Roosevelt Wa	y City: Sea	attle	State: WA	Zip: 98104	
City: Seattle,	Washington		Phone: 2	06-398-500	0		
Phone:			Email:				
		III. CERTIFIED US	ST DECOMMIS	SIONER			
Company Name: Ga	lloway Envir	onmental, Ir	nd Service Pro	ovider Name: G	ary Gallowa	У	
Address: 3102 2	20th Pl SE		Certification	on Type: ICC			
City: Sammamish	State:	WA Zip: 9807	5 Cert. No.:	32000831	Exp. Date: 6,	/4/2017	
Provider Phone: 4	25-688-8852		Provider E	mail: gary@ga	allowayenviı	ronmental.	
Provider Signature:	May Mul	buy	Date: &	11/16			
		IV. TANK	Information	N			
TANK ID	TANK CAPACITY	LAST SUBSTANCE		CLOSURE METHOD		CLOSURE DATE	
	TAIN GALVELL	STORED	removal	closed-in-place	change-in-service		
West-UST2	500	Gasoline	X			9/13/201	
				· 🗆			
			RED SIGNATU				
Signature a	cknowledges UST(s) c	omply with UST regu	ulation WAC 17	3-360-380 Perman	ent Closure Require	ments.	
					•		
Date	Signature of Tank	Owner/Operator or	Authorized	Print or	Type Name		

Representative

APPENDIX E

EXCAVATION LIMIT - ANALYTICAL LABORATORY REPORTS



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Shannon & Wilson

Agnes Tirao 400 N. 34th Street, Suite 100 Seattle, WA 98103

RE: Sound Transit / Key Bank Work Order Number: 1610176

October 18, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 6 sample(s) on 10/11/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Sample Moisture (Percent Moisture)

Total Metals by EPA Method 6020

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

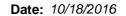
Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway Laboratory Director

Mohl c. Redy

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)





CLIENT: Shannon & Wilson Work Order Sample Summary

Project: Sound Transit / Key Bank

Work Order: 1610176

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1610176-001	UD-W-T1N	10/11/2016 8:05 AM	10/11/2016 4:34 PM
1610176-002	UD-W-T1W	10/11/2016 9:45 AM	10/11/2016 4:34 PM
1610176-003	UD-W-T2N	10/11/2016 8:15 AM	10/11/2016 4:34 PM
1610176-004	UD-W-T2S	10/11/2016 9:35 AM	10/11/2016 4:34 PM
1610176-005	UD-W-T2E	10/11/2016 8:20 AM	10/11/2016 4:34 PM
1610176-006	Trip Blank	10/06/2016 12:49 PM	10/11/2016 4:34 PM



Case Narrative

WO#: **1610176**Date: **10/18/2016**

CLIENT: Shannon & Wilson

Sound Transit / Koy R

Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **1610176**

Date Reported: 10/18/2016

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:05:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-001 **Matrix:** Soil

Client Sample ID: UD-W-T1N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	n ID: 1	5112 Analyst: WC
Diesel (Fuel Oil)	ND	21.4		mg/Kg-dry	1	10/12/2016 8:23:00 PM
Heavy Oil	ND	53.4		mg/Kg-dry	1	10/12/2016 8:23:00 PM
Surr: 2-Fluorobiphenyl	94.3	50-150		%Rec	1	10/12/2016 8:23:00 PM
Surr: o-Terphenyl	90.5	50-150		%Rec	1	10/12/2016 8:23:00 PM
Gasoline by NWTPH-Gx				Batch	n ID: 1	5125 Analyst: EM
Gasoline	398	48.4	D	mg/Kg-dry	10	10/17/2016 11:37:27 AM
Surr: Toluene-d8	113	65-135		%Rec	1	10/14/2016 9:27:52 AM
Surr: 4-Bromofluorobenzene	105	65-135		%Rec	1	10/14/2016 9:27:52 AM
Volatile Organic Compounds by	EPA Method 8	8260C		Batch	n ID: 1	5125 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0580	Q	mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chloromethane	ND	0.0580		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Vinyl chloride	ND	0.00193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromomethane	ND	0.0870		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Trichlorofluoromethane (CFC-11)	ND	0.0484	Q	mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chloroethane	ND	0.0580	Q	mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1-Dichloroethene	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Methylene chloride	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
trans-1,2-Dichloroethene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Methyl tert-butyl ether (MTBE)	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1-Dichloroethane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
2,2-Dichloropropane	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
cis-1,2-Dichloroethene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chloroform	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1,1-Trichloroethane (TCA)	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1-Dichloropropene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Carbon tetrachloride	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dichloroethane (EDC)	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Benzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Trichloroethene (TCE)	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dichloropropane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromodichloromethane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Dibromomethane	ND	0.0387		mg/Kg-dry	1	10/14/2016 9:27:52 AM
cis-1,3-Dichloropropene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Toluene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
trans-1,3-Dichloropropylene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:05:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-001 **Matrix:** Soil

Client Sample ID: UD-W-T1N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	8260C		Batch	ID: 15	125 Analyst: EM
1,1,2-Trichloroethane	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,3-Dichloropropane	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Tetrachloroethene (PCE)	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Dibromochloromethane	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dibromoethane (EDB)	ND	0.00484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1,1,2-Tetrachloroethane	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Ethylbenzene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
m,p-Xylene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
o-Xylene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Styrene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Isopropylbenzene	0.127	0.0774		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromoform	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1,2,2-Tetrachloroethane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
n-Propylbenzene	0.224	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromobenzene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,3,5-Trimethylbenzene	0.229	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
2-Chlorotoluene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
4-Chlorotoluene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
tert-Butylbenzene	0.0305	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,3-Trichloropropane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,4-Trichlorobenzene	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
sec-Butylbenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
4-Isopropyltoluene	0.279	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,3-Dichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,4-Dichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
n-Butylbenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dibromo-3-chloropropane	ND	0.484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,4-Trimethylbenzene	0.311	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Hexachlorobutadiene	ND	0.0967		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Naphthalene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,3-Trichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Surr: Dibromofluoromethane	92.1	56.5-129		%Rec	1	10/14/2016 9:27:52 AM
Surr: Toluene-d8	118	64.3-131		%Rec	1	10/14/2016 9:27:52 AM
Surr: 1-Bromo-4-fluorobenzene	97.8	63.1-141		%Rec	1	10/14/2016 9:27:52 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:05:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-001 **Matrix:** Soil

Client Sample ID: UD-W-T1N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batch	n ID:	15122 Analyst: TN
Lead	1.07	0.173		mg/Kg-dry	1	10/14/2016 3:48:46 PM
Sample Moisture (Percent Moisture	<u>e)</u>			Batch	n ID:	R32275 Analyst: BB
Percent Moisture	10.6	0.500		wt%	1	10/12/2016 2:44:20 PM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 9:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-002 **Matrix:** Soil

Client Sample ID: UD-W-T1W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	ı ID:	15112 Analyst: WC
Diesel (Fuel Oil)	ND	24.1		mg/Kg-dry	1	10/12/2016 9:57:00 PM
Heavy Oil	ND	60.3		mg/Kg-dry	1	10/12/2016 9:57:00 PM
Surr: 2-Fluorobiphenyl	99.4	50-150		%Rec	1	10/12/2016 9:57:00 PM
Surr: o-Terphenyl	98.4	50-150		%Rec	1	10/12/2016 9:57:00 PM
Gasoline by NWTPH-Gx				Batch	ı ID:	15125 Analyst: EM
Gasoline	ND	6.55		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Surr: Toluene-d8	101	65-135		%Rec	1	10/14/2016 10:26:40 AM
Surr: 4-Bromofluorobenzene	102	65-135		%Rec	1	10/14/2016 10:26:40 AM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	ı ID:	15125 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0786	Q	mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chloromethane	ND	0.0786	•	mg/Kg-dry	1	10/14/2016 10:26:40 AM
Vinyl chloride	ND	0.00262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromomethane	ND	0.118		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Trichlorofluoromethane (CFC-11)	ND	0.0655	Q	mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chloroethane	ND	0.0786	Q	mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1-Dichloroethene	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Methylene chloride	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
trans-1,2-Dichloroethene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Methyl tert-butyl ether (MTBE)	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1-Dichloroethane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
2,2-Dichloropropane	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
cis-1,2-Dichloroethene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chloroform	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1,1-Trichloroethane (TCA)	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1-Dichloropropene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Carbon tetrachloride	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dichloroethane (EDC)	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Benzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Trichloroethene (TCE)	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dichloropropane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromodichloromethane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Dibromomethane	ND	0.0524		mg/Kg-dry	1	10/14/2016 10:26:40 AM
cis-1,3-Dichloropropene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Toluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
trans-1,3-Dichloropropylene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 9:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-002 **Matrix:** Soil

Client Sample ID: UD-W-T1W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	8260C		Batch	n ID: 1	5125 Analyst: EM
1,1,2-Trichloroethane	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,3-Dichloropropane	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Tetrachloroethene (PCE)	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Dibromochloromethane	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dibromoethane (EDB)	ND	0.00655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1,1,2-Tetrachloroethane	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Ethylbenzene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
m,p-Xylene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
o-Xylene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Styrene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Isopropylbenzene	ND	0.105		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromoform	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1,2,2-Tetrachloroethane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
n-Propylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromobenzene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,3,5-Trimethylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
2-Chlorotoluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
4-Chlorotoluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
tert-Butylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,3-Trichloropropane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,4-Trichlorobenzene	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
sec-Butylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
4-Isopropyltoluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,3-Dichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,4-Dichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
n-Butylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dibromo-3-chloropropane	ND	0.655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,4-Trimethylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Hexachlorobutadiene	ND	0.131		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Naphthalene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,3-Trichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Surr: Dibromofluoromethane	91.3	56.5-129		%Rec	1	10/14/2016 10:26:40 AM
Surr: Toluene-d8	104	64.3-131		%Rec	1	10/14/2016 10:26:40 AM
Surr: 1-Bromo-4-fluorobenzene	101	63.1-141		%Rec	1	10/14/2016 10:26:40 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 9:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-002 **Matrix:** Soil

Client Sample ID: UD-W-T1W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batcl	n ID: 1	5122 Analyst: TN
Lead	5.08	0.196		mg/Kg-dry	1	10/14/2016 4:17:07 PM
Sample Moisture (Percent Moisture	2)			Batcl	n ID: F	R32275 Analyst: BB
Percent Moisture	19.5	0.500		wt%	1	10/12/2016 2:44:20 PM

Original



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-003 **Matrix:** Soil

Client Sample ID: UD-W-T2N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	ı ID:	15112 Analyst: WC
Diesel (Fuel Oil)	ND	22.0		mg/Kg-dry	1	10/12/2016 10:28:00 PM
Heavy Oil	ND	55.0		mg/Kg-dry	1	10/12/2016 10:28:00 PM
Surr: 2-Fluorobiphenyl	87.6	50-150		%Rec	1	10/12/2016 10:28:00 PM
Surr: o-Terphenyl	86.7	50-150		%Rec	1	10/12/2016 10:28:00 PM
Gasoline by NWTPH-Gx				Batch	ı ID:	15125 Analyst: EM
Gasoline	ND	5.14		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Surr: Toluene-d8	102	65-135		%Rec	1	10/14/2016 10:56:00 AM
Surr: 4-Bromofluorobenzene	99.1	65-135		%Rec	1	10/14/2016 10:56:00 AM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	ı ID:	15125 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0616	Q	mg/Kg-dry	1	10/14/2016 10:56:00 AM
Chloromethane	ND	0.0616		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Vinyl chloride	ND	0.00205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Bromomethane	ND	0.0925		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Trichlorofluoromethane (CFC-11)	ND	0.0514	Q	mg/Kg-dry	1	10/14/2016 10:56:00 AM
Chloroethane	ND	0.0616	Q	mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1-Dichloroethene	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Methylene chloride	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
trans-1,2-Dichloroethene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Methyl tert-butyl ether (MTBE)	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1-Dichloroethane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
2,2-Dichloropropane	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
cis-1,2-Dichloroethene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Chloroform	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1,1-Trichloroethane (TCA)	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1-Dichloropropene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Carbon tetrachloride	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2-Dichloroethane (EDC)	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Benzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Trichloroethene (TCE)	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2-Dichloropropane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Bromodichloromethane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Dibromomethane	ND	0.0411		mg/Kg-dry	1	10/14/2016 10:56:00 AM
cis-1,3-Dichloropropene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Toluene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
trans-1,3-Dichloropropylene	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-003 **Matrix:** Soil

Client Sample ID: UD-W-T2N

RL Qual Units DF **Analyses** Result **Date Analyzed Volatile Organic Compounds by EPA Method 8260C** Batch ID: 15125 Analyst: EM ND mg/Kg-dry 1,1,2-Trichloroethane 0.0308 10/14/2016 10:56:00 AM 1 1,3-Dichloropropane ND 0.0514 mg/Kg-dry 1 10/14/2016 10:56:00 AM 0.0559 Tetrachloroethene (PCE) 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM Dibromochloromethane ND 0.0308 1 10/14/2016 10:56:00 AM mg/Kg-dry 1,2-Dibromoethane (EDB) ND 0.00514 mg/Kg-dry 1 10/14/2016 10:56:00 AM Chlorobenzene ND 10/14/2016 10:56:00 AM 0.0205 mg/Kg-dry 1 1.1.1.2-Tetrachloroethane ND 0.0308 mg/Kg-dry 1 10/14/2016 10:56:00 AM ND Ethylbenzene 0.0308 mg/Kg-dry 1 10/14/2016 10:56:00 AM m,p-Xylene ND 0.0205 1 10/14/2016 10:56:00 AM mg/Kg-dry o-Xylene ND 0.0205 1 10/14/2016 10:56:00 AM mg/Kg-dry ND Styrene 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM Isopropylbenzene ND 0.0822 10/14/2016 10:56:00 AM mg/Kg-dry 1 **Bromoform** ND 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM 1,1,2,2-Tetrachloroethane ND 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM ND n-Propylbenzene 0.0205 1 10/14/2016 10:56:00 AM mg/Kg-dry Bromobenzene ND 0.0308 mg/Kg-dry 1 10/14/2016 10:56:00 AM 1,3,5-Trimethylbenzene ND 10/14/2016 10:56:00 AM 0.0205 mg/Kg-dry 1 2-Chlorotoluene ND 10/14/2016 10:56:00 AM 0.0205 mg/Kg-dry 1 4-Chlorotoluene ND 0.0205 1 10/14/2016 10:56:00 AM mg/Kg-dry tert-Butylbenzene ND 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM ND 1,2,3-Trichloropropane 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM 1,2,4-Trichlorobenzene ND 0.0514 mg/Kg-dry 1 10/14/2016 10:56:00 AM ND sec-Butylbenzene 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM 4-Isopropyltoluene ND 0.0205 1 10/14/2016 10:56:00 AM mg/Kg-dry 1,3-Dichlorobenzene ND 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM 1,4-Dichlorobenzene ND 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM n-Butylbenzene ND 10/14/2016 10:56:00 AM 0.0205 mg/Kg-dry 1 ND 1,2-Dichlorobenzene 0.0205 1 10/14/2016 10:56:00 AM mg/Kg-dry ND 1,2-Dibromo-3-chloropropane 0.514 mg/Kg-dry 1 10/14/2016 10:56:00 AM ND 1,2,4-Trimethylbenzene 0.0205 mg/Kg-dry 1 10/14/2016 10:56:00 AM Hexachlorobutadiene ND 0.103 1 10/14/2016 10:56:00 AM mg/Kg-dry Naphthalene ND 0.0308 mg/Kg-dry 1 10/14/2016 10:56:00 AM 1.2.3-Trichlorobenzene ND 0.0205 1 10/14/2016 10:56:00 AM mg/Kg-dry Surr: Dibromofluoromethane 89.6 56.5-129 %Rec 1 10/14/2016 10:56:00 AM Surr: Toluene-d8 103 64.3-131 %Rec 10/14/2016 10:56:00 AM 1 Surr: 1-Bromo-4-fluorobenzene 98.0 63.1-141 %Rec 1 10/14/2016 10:56:00 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-003 **Matrix:** Soil

Client Sample ID: UD-W-T2N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batch	ı ID:	15122 Analyst: TN
Lead	5.45	0.188		mg/Kg-dry	1	10/14/2016 4:20:40 PM
Sample Moisture (Percent Moisture)			Batch	n ID: I	R32275 Analyst: BB
Percent Moisture	15.6	0.500		wt%	1	10/12/2016 2:44:20 PM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 9:35:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-004 **Matrix:** Soil

Client Sample ID: UD-W-T2S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	n ID:	15112 Analyst: WC
Diesel (Fuel Oil)	ND	21.4		mg/Kg-dry	1	10/12/2016 10:59:00 PM
Heavy Oil	ND	53.5		mg/Kg-dry	1	10/12/2016 10:59:00 PM
Surr: 2-Fluorobiphenyl	98.7	50-150		%Rec	1	10/12/2016 10:59:00 PM
Surr: o-Terphenyl	96.6	50-150		%Rec	1	10/12/2016 10:59:00 PM
Gasoline by NWTPH-Gx				Batch	ı ID:	15125 Analyst: EM
Gasoline	ND	5.11		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Surr: Toluene-d8	102	65-135		%Rec	1	10/14/2016 11:25:28 AM
Surr: 4-Bromofluorobenzene	99.5	65-135		%Rec	1	10/14/2016 11:25:28 AM
Volatile Organic Compounds by	EPA Method	8260C		Batch	n ID:	15125 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0613	Q	mg/Kg-dry	1	10/14/2016 11:25:28 AM
Chloromethane	ND	0.0613		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Vinyl chloride	ND	0.00204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Bromomethane	ND	0.0920		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Trichlorofluoromethane (CFC-11)	ND	0.0511	Q	mg/Kg-dry	1	10/14/2016 11:25:28 AM
Chloroethane	ND	0.0613	Q	mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1-Dichloroethene	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Methylene chloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
trans-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Methyl tert-butyl ether (MTBE)	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1-Dichloroethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
2,2-Dichloropropane	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
cis-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Chloroform	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1,1-Trichloroethane (TCA)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Carbon tetrachloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2-Dichloroethane (EDC)	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Benzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Trichloroethene (TCE)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2-Dichloropropane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Bromodichloromethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Dibromomethane	ND	0.0409		mg/Kg-dry	1	10/14/2016 11:25:28 AM
cis-1,3-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Toluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
trans-1,3-Dichloropropylene	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 9:35:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-004 **Matrix:** Soil

Client Sample ID: UD-W-T2S

RL Qual Units DF **Analyses** Result **Date Analyzed Volatile Organic Compounds by EPA Method 8260C** Batch ID: 15125 Analyst: EM ND mg/Kg-dry 1,1,2-Trichloroethane 0.0307 10/14/2016 11:25:28 AM 1 1,3-Dichloropropane ND 0.0511 mg/Kg-dry 1 10/14/2016 11:25:28 AM 0.0454 Tetrachloroethene (PCE) 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM Dibromochloromethane ND 0.0307 1 10/14/2016 11:25:28 AM mg/Kg-dry 1,2-Dibromoethane (EDB) ND 0.00511 mg/Kg-dry 1 10/14/2016 11:25:28 AM Chlorobenzene ND 10/14/2016 11:25:28 AM 0.0204 mg/Kg-dry 1 1.1.1.2-Tetrachloroethane ND 0.0307 mg/Kg-dry 1 10/14/2016 11:25:28 AM ND Ethylbenzene 0.0307 mg/Kg-dry 1 10/14/2016 11:25:28 AM m,p-Xylene ND 0.0204 1 10/14/2016 11:25:28 AM mg/Kg-dry o-Xylene ND 0.0204 1 10/14/2016 11:25:28 AM mg/Kg-dry ND Styrene 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM Isopropylbenzene ND 0.0817 10/14/2016 11:25:28 AM mg/Kg-dry 1 **Bromoform** ND 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM 1,1,2,2-Tetrachloroethane ND 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM ND 10/14/2016 11:25:28 AM n-Propylbenzene 0.0204 1 mg/Kg-dry Bromobenzene ND 0.0307 mg/Kg-dry 1 10/14/2016 11:25:28 AM 1,3,5-Trimethylbenzene ND 10/14/2016 11:25:28 AM 0.0204 mg/Kg-dry 1 2-Chlorotoluene ND 10/14/2016 11:25:28 AM 0.0204 mg/Kg-dry 1 4-Chlorotoluene ND 0.0204 1 10/14/2016 11:25:28 AM mg/Kg-dry tert-Butylbenzene ND 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM ND 1,2,3-Trichloropropane 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM 1,2,4-Trichlorobenzene ND 0.0511 1 10/14/2016 11:25:28 AM mg/Kg-dry ND sec-Butylbenzene 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM 4-Isopropyltoluene ND 0.0204 1 10/14/2016 11:25:28 AM mg/Kg-dry 1,3-Dichlorobenzene ND 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM 1,4-Dichlorobenzene ND 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM n-Butylbenzene ND 10/14/2016 11:25:28 AM 0.0204 mg/Kg-dry 1 ND 1,2-Dichlorobenzene 0.0204 1 10/14/2016 11:25:28 AM mg/Kg-dry ND 1,2-Dibromo-3-chloropropane 0.511 mg/Kg-dry 1 10/14/2016 11:25:28 AM ND 1,2,4-Trimethylbenzene 0.0204 mg/Kg-dry 1 10/14/2016 11:25:28 AM Hexachlorobutadiene ND 0.102 1 10/14/2016 11:25:28 AM mg/Kg-dry Naphthalene ND 0.0307 mg/Kg-dry 1 10/14/2016 11:25:28 AM 1.2.3-Trichlorobenzene ND 0.0204 1 10/14/2016 11:25:28 AM mg/Kg-dry Surr: Dibromofluoromethane 91.5 56.5-129 %Rec 1 10/14/2016 11:25:28 AM Surr: Toluene-d8 103 64.3-131 %Rec 10/14/2016 11:25:28 AM 1 Surr: 1-Bromo-4-fluorobenzene 98.4 63.1-141 %Rec 1 10/14/2016 11:25:28 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 9:35:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-004 **Matrix:** Soil

Client Sample ID: UD-W-T2S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batc	h ID: 1	5122 Analyst: TN
Lead	6.11	0.182		mg/Kg-dry	1	10/14/2016 4:24:12 PM
Sample Moisture (Percent Moisture	<u>e)</u>			Batc	h ID: R	R32275 Analyst: BB
Percent Moisture	12.8	0.500		wt%	1	10/12/2016 2:44:20 PM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:20:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-005 **Matrix:** Soil

Client Sample ID: UD-W-T2E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	ı ID:	15112 Analyst: WC
Diesel (Fuel Oil)	ND	22.5		mg/Kg-dry	1	10/12/2016 11:30:00 PM
Heavy Oil	ND	56.2		mg/Kg-dry	1	10/12/2016 11:30:00 PM
Surr: 2-Fluorobiphenyl	98.8	50-150		%Rec	1	10/12/2016 11:30:00 PM
Surr: o-Terphenyl	95.9	50-150		%Rec	1	10/12/2016 11:30:00 PM
Gasoline by NWTPH-Gx				Batch	ı ID:	15125 Analyst: EM
Gasoline	ND	5.09		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Surr: Toluene-d8	101	65-135		%Rec	1	10/14/2016 11:54:58 AM
Surr: 4-Bromofluorobenzene	98.7	65-135		%Rec	1	10/14/2016 11:54:58 AM
Volatile Organic Compounds by	EPA Method 8	3260C		Batch	ı ID:	15125 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0611	Q	mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chloromethane	ND	0.0611		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Vinyl chloride	ND	0.00204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromomethane	ND	0.0916		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Trichlorofluoromethane (CFC-11)	ND	0.0509	Q	mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chloroethane	ND	0.0611	Q	mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1-Dichloroethene	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Methylene chloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
trans-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Methyl tert-butyl ether (MTBE)	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1-Dichloroethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
2,2-Dichloropropane	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
cis-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chloroform	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1,1-Trichloroethane (TCA)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Carbon tetrachloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dichloroethane (EDC)	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Benzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Trichloroethene (TCE)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dichloropropane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromodichloromethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Dibromomethane	ND	0.0407		mg/Kg-dry	1	10/14/2016 11:54:58 AM
cis-1,3-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Toluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
trans-1,3-Dichloropropylene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:20:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-005 **Matrix:** Soil

Client Sample ID: UD-W-T2E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	8260C		Batch	n ID: 15	125 Analyst: EM
1,1,2-Trichloroethane	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,3-Dichloropropane	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Tetrachloroethene (PCE)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Dibromochloromethane	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dibromoethane (EDB)	ND	0.00509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1,1,2-Tetrachloroethane	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Ethylbenzene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
m,p-Xylene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
o-Xylene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Styrene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Isopropylbenzene	ND	0.0815		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromoform	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1,2,2-Tetrachloroethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
n-Propylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromobenzene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,3,5-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
2-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
4-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
tert-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,3-Trichloropropane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,4-Trichlorobenzene	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
sec-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
4-Isopropyltoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,3-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,4-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
n-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dibromo-3-chloropropane	ND	0.509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,4-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Hexachlorobutadiene	ND	0.102		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Naphthalene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,3-Trichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Surr: Dibromofluoromethane	91.0	56.5-129		%Rec	1	10/14/2016 11:54:58 AM
Surr: Toluene-d8	104	64.3-131		%Rec	1	10/14/2016 11:54:58 AM
Surr: 1-Bromo-4-fluorobenzene	97.7	63.1-141		%Rec	1	10/14/2016 11:54:58 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610176**Date Reported: **10/18/2016**

Client: Shannon & Wilson Collection Date: 10/11/2016 8:20:00 AM

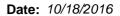
Project: Sound Transit / Key Bank

Lab ID: 1610176-005 **Matrix:** Soil

Client Sample ID: UD-W-T2E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020				Batcl	n ID: 15	5122 Analyst: TN
Lead	3.74	0.178		mg/Kg-dry	1	10/14/2016 4:27:45 PM
Sample Moisture (Percent Moisture	9			Batch	n ID: R	32275 Analyst: BB
Percent Moisture	11.0	0.500		wt%	1	10/12/2016 2:44:20 PM

Original





Work Order: 1610176

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Project: Sound Tran	nsit / Key Bank						Diesel a	nd Heavy	Oil by NW	/TPH-Dx/	Dx Ex
Sample ID MB-15112	SampType: MBLK			Units: mg/Kg)	Prep Date	: 10/12/20	16	RunNo: 32	283	
Client ID: MBLKS	Batch ID: 15112					Analysis Date	: 10/12/20	16	SeqNo: 610	0503	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit I	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	18.8		20.00		93.8	50	150				
Surr: o-Terphenyl	18.1		20.00		90.6	50	150				
Sample ID LCS-15112	SampType: LCS			Units: mg/Kg]	Prep Date	: 10/12/20	16	RunNo: 32	283	
Client ID: LCSS	Batch ID: 15112					Analysis Date	: 10/12/20	16	SeqNo: 61	0502	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit I	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	448	20.0	500.0	0	89.5	65	135				
Surr: 2-Fluorobiphenyl	19.8		20.00		98.9	50	150				
Surr: o-Terphenyl	18.9		20.00		94.3	50	150				
Sample ID 1610162-001ADUP	SampType: DUP			Units: mg/Kg	g-dry	Prep Date	: 10/12/20	16	RunNo: 32	283	
Client ID: BATCH	Batch ID: 15112					Analysis Date	: 10/12/20	16	SeqNo: 61	0554	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit I	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	21.8						0		30	
Heavy Oil	ND	54.6						0		30	
Surr: 2-Fluorobiphenyl	22.6		21.83		104	50	150		0		
Surr: o-Terphenyl	22.0		21.83		101	50	150		0		
Sample ID 1610162-001AMS	SampType: MS			Units: mg/Kg	g-dry	Prep Date	: 10/12/20	16	RunNo: 32	283	
Client ID: BATCH	Batch ID: 15112					Analysis Date	: 10/12/20	16	SeqNo: 610	0555	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit I	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	484	22.0	549.1	0	88.2	65	135				
Surr: 2-Fluorobiphenyl	23.7		21.97		108	50	150				
Surr: o-Terphenyl	22.9		21.97		104	50	150				

Original Page 20 of 38

Date: 10/18/2016



Work Order: 1610176

Sample ID 1610162-001AMS

Analyte

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Project: Sound Transit / Key Bank

Prep Date: **10/12/2016**Analysis Date: **10/12/2016**

RunNo: **32283** SeqNo: **610555**

Client ID: BATCH Batch II

Batch ID: 15112

Result

RL

SampType: MS

SPK value SPK Ref Val

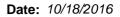
Units: mg/Kg-dry

%REC LowLimit HighLimit RPD Ref Val

%RPD RPDLimit Qual

Sample ID 1610162-001AMSD	SampType: MSD	Units: mg/Kg-dry				Prep Da	te: 10/12/2	2016	RunNo: 322	283	
Client ID: BATCH	Batch ID: 15112			Analysis Date: 10/12/2016 SeqNo: 610556							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	479	21.7	541.6	0	88.4	65	135	484.3	1.12	30	
Surr: 2-Fluorobiphenyl	22.3		21.66		103	50	150		0		
Surr: o-Terphenyl	21.5		21.66		99.3	50	150		0		

Original Page 21 of 38





Work Order: 1610176

CLIENT: Shannon & Wilson

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Project: Sound Tran	nsit / Key Bank								Gasonn	e by invv	ורח-נ
Sample ID LCS-15125	SampType: LCS			Units: mg/Kg		Prep Da	te: 10/13/	2016	RunNo: 32	332	
Client ID: LCSS	Batch ID: 15125					Analysis Da	te: 10/13/	2016	SeqNo: 61	1652	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	25.3	5.00	25.00	0	101	65	135				
Surr: Toluene-d8	1.27		1.250		102	65	135				
Surr: 4-Bromofluorobenzene	1.29		1.250		103	65	135				
Sample ID MB-15125	SampType: MBLK			Units: mg/Kg		Prep Da	te: 10/13/	2016	RunNo: 32	332	
Client ID: MBLKS	Batch ID: 15125					Analysis Da	te: 10/13/	2016	SeqNo: 61	1653	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	1.27		1.250		102	65	135				
Surr: 4-Bromofluorobenzene	1.19		1.250		95.1	65	135				
Sample ID 1610176-001BDUP	SampType: DUP			Units: mg/Kg	-dry	Prep Da	te: 10/13/	2016	RunNo: 32	332	
Client ID: UD-W-T1N	Batch ID: 15125					Analysis Da	te: 10/14/	2016	SeqNo: 61	1663	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	537	4.84						529.9	1.37	30	Е
Surr: Toluene-d8	1.37		1.209		114	65	135		0		
Surr: 4-Bromofluorobenzene	1.33		1.209		110	65	135		0		
Sample ID 1610176-005BMS	SampType: MS			Units: mg/Kg	-dry	Prep Da	te: 10/13/	2016	RunNo: 32	332	
Client ID: UD-W-T2E	Batch ID: 15125					Analysis Da	te: 10/14/	2016	SeqNo: 61	1668	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	20.9	5.09	25.46	0	82.3	65	135				
Surr: Toluene-d8	1.29		1.273		101	65	135				
			1.273			65	135				

Page 22 of 38 Original

Date: 10/18/2016



Work Order: 1610176

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Project:	Sound Transit	/ Key Bank
----------	---------------	------------

Sample ID 1610176-005BMSD	SampType: MSD	Units: m			g-dry	Prep Da	te: 10/13/2	2016	RunNo: 323		
Client ID: UD-W-T2E	Batch ID: 15125					Analysis Da	te: 10/14/2	2016	SeqNo: 611	1669	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	22.3	5.09	25.46	0	87.8	65	135	20.94	6.48	30	
Surr: Toluene-d8	1.30		1.273		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.28		1.273		100	65	135		0		

Sample ID CCV-C-15125	SampType: CCV			Units: mg/Kg		Prep Dat	te: 10/17/2	2016	RunNo: 323	332	
Client ID: CCV	Batch ID: 15125					Analysis Dat	te: 10/17/2	2016	SeqNo: 612	2071	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	540	5.00	500.0	0	108	80	120				
Surr: Toluene-d8	25.5		25.00		102	65	135				
Surr: 4-Bromofluorobenzene	25.6		25.00		102	65	135				

Original Page 23 of 38

Date: 10/18/2016



Sound Transit / Key Bank

Work Order: 1610176

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Sample Moisture (Percent Moisture)

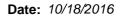
Sample ID 1610175-006ADUP SampType: DUP Units: wt% Prep Date: 10/12/2016 RunNo: 32275

Client ID: **BATCH** Batch ID: **R32275** Analysis Date: **10/12/2016** SeqNo: **610305**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Percent Moisture 16.7 0.500 16.46 1.25 20

Original Page 24 of 38





Work Order: 1610176

Lead

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Total Metals by EPA Method 6020

Project: Sound Transit / Key Bank

22.4

0.176

22.03

Sound Trans	Sit / Itey Darik										
15122	SampType: MBLK			Units: mg/Kg		Prep Date:	10/13/2	2016	RunNo: 32	330	
KS	Batch ID: 15122					Analysis Date:	10/14/2	2016	SeqNo: 61	1552	
	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	ND	0.148									
-15122	SampType: LCS			Units: mg/Kg		Prep Date:	10/13/2	2016	RunNo: 32	330	
s	Batch ID: 15122					Analysis Date:	10/14/2	2016	SeqNo: 61	1553	
	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	20.5	0.156	19.53	0	105	80	120				
176-001ADUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date:	10/13/2	2016	RunNo: 32	330	
V-T1N	Batch ID: 15122					Analysis Date:	10/14/2	2016	SeqNo: 61	1555	
	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	1.23	0.179						1.075	13.6	20	
176-001AMS	SampType: MS			Units: mg/Kg-	dry	Prep Date:	10/13/2	2016	RunNo: 32	330	
V-T1N	Batch ID: 15122					Analysis Date:	10/14/2	2016	SeqNo: 61	1559	
	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	22.8	0.179	22.38	1.075	97.1	75	125				
176-001AMSD	SampType: MSD			Units: mg/Kg-	dry	Prep Date:	10/13/2	2016	RunNo: 32	330	
V-T1N	Batch ID: 15122					Analysis Date:	10/14/2	2016	SeqNo: 61	1560	
	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	lighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	15122 .KS -15122 S 0176-001ADUP W-T1N 0176-001AMS W-T1N	Batch ID: 15122 Result	SampType: MBLK Result RL	SampType: MBLK RL SPK value	15122 SampType: MBLK Units: mg/Kg	SampType: MBLK				SampType: MBLK	SampType: MBLK Units: mg/Kg Prep Date: 10/13/2016 RunNo: 32330 Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Result REsult RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit RPD Ref Val

Original Page 25 of 38

1.075

75

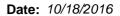
96.6

125

22.80

1.96

20





Work Order: 1610176

Project:

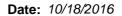
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15125	SampType: LCS			Units: mg/Kg		Prep Dat	e: 10/13/2	2016	RunNo: 32	331	
Client ID: LCSS	Batch ID: 15125					Analysis Dat	e: 10/13/2	2016	SeqNo: 61	1627	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.493	0.0600	1.000	0	49.3	34.5	141				Q
Chloromethane	0.902	0.0600	1.000	0	90.2	38.8	132				
Vinyl chloride	0.850	0.00200	1.000	0	85.0	44	142				Q
Bromomethane	0.998	0.0900	1.000	0	99.8	40.9	157				
Trichlorofluoromethane (CFC-11)	0.421	0.0500	1.000	0	42.1	41.7	153				Q
Chloroethane	0.532	0.0600	1.000	0	53.2	37.1	144				Q
1,1-Dichloroethene	0.797	0.0500	1.000	0	79.7	49.7	142				
Methylene chloride	0.957	0.0200	1.000	0	95.7	46.3	140				
trans-1,2-Dichloroethene	0.933	0.0200	1.000	0	93.3	68	130				
Methyl tert-butyl ether (MTBE)	1.06	0.0500	1.000	0	106	59.1	138				
1,1-Dichloroethane	0.830	0.0200	1.000	0	83.0	61.9	137				Q
2,2-Dichloropropane	1.21	0.0500	1.000	0	121	28.1	149				
cis-1,2-Dichloroethene	1.04	0.0200	1.000	0	104	71.3	135				
Chloroform	0.920	0.0200	1.000	0	92.0	67.5	129				
1,1,1-Trichloroethane (TCA)	0.889	0.0200	1.000	0	88.9	69	132				
1,1-Dichloropropene	0.932	0.0200	1.000	0	93.2	72.7	131				
Carbon tetrachloride	0.863	0.0200	1.000	0	86.3	63.4	137				
1,2-Dichloroethane (EDC)	1.03	0.0300	1.000	0	103	61.9	136				
Benzene	0.995	0.0200	1.000	0	99.5	64.3	133				
Trichloroethene (TCE)	0.953	0.0200	1.000	0	95.3	65.5	137				
1,2-Dichloropropane	1.05	0.0200	1.000	0	105	63.2	142				
Bromodichloromethane	0.960	0.0200	1.000	0	96.0	73.2	131				
Dibromomethane	1.04	0.0400	1.000	0	104	70	130				
cis-1,3-Dichloropropene	1.06	0.0200	1.000	0	106	59.1	143				
Toluene	1.06	0.0200	1.000	0	106	67.3	138				
trans-1,3-Dichloropropylene	1.14	0.0300	1.000	0	114	49.2	149				
1,1,2-Trichloroethane	1.07	0.0300	1.000	0	107	74.5	129				
1,3-Dichloropropane	1.09	0.0500	1.000	0	109	70	130				
Tetrachloroethene (PCE)	0.975	0.0200	1.000	0	97.5	52.7	150				
Dibromochloromethane	1.04	0.0300	1.000	0	104	70.6	144				
1,2-Dibromoethane (EDB)	1.16	0.00500	1.000	0	116	70	130				

Original Page 26 of 38





1610176 Work Order:

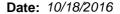
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15125	SampType: LCS			Units: mg/Kg		Prep Da	te: 10/13/2	2016	RunNo: 323	331	
Client ID: LCSS	Batch ID: 15125					Analysis Da	te: 10/13/2	2016	SeqNo: 611	1627	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.02	0.0200	1.000	0	102	76.1	123				
1,1,1,2-Tetrachloroethane	1.01	0.0300	1.000	0	101	65.9	141				
Ethylbenzene	0.970	0.0300	1.000	0	97.0	74	129				
m,p-Xylene	1.98	0.0200	2.000	0	98.9	70	124				
o-Xylene	0.980	0.0200	1.000	0	98.0	72.7	124				
Styrene	0.996	0.0200	1.000	0	99.6	76.8	130				
Isopropylbenzene	0.965	0.0800	1.000	0	96.5	70	130				
Bromoform	1.02	0.0200	1.000	0	102	67	154				
1,1,2,2-Tetrachloroethane	0.973	0.0200	1.000	0	97.3	60	130				Q
n-Propylbenzene	0.979	0.0200	1.000	0	97.9	74.8	125				
Bromobenzene	1.02	0.0300	1.000	0	102	49.2	144				
1,3,5-Trimethylbenzene	0.981	0.0200	1.000	0	98.1	74.6	123				
2-Chlorotoluene	0.979	0.0200	1.000	0	97.9	76.7	129				
4-Chlorotoluene	0.961	0.0200	1.000	0	96.1	77.5	125				
tert-Butylbenzene	0.962	0.0200	1.000	0	96.2	66.2	130				
1,2,3-Trichloropropane	1.05	0.0200	1.000	0	105	67.9	136				
1,2,4-Trichlorobenzene	1.00	0.0500	1.000	0	100	62.6	143				
sec-Butylbenzene	0.956	0.0200	1.000	0	95.6	75.6	133				
4-Isopropyltoluene	0.968	0.0200	1.000	0	96.8	76.8	131				
1,3-Dichlorobenzene	1.02	0.0200	1.000	0	102	72.8	128				
1,4-Dichlorobenzene	0.996	0.0200	1.000	0	99.6	72.6	126				
n-Butylbenzene	1.02	0.0200	1.000	0	102	65.3	136				
1,2-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	126				
1,2-Dibromo-3-chloropropane	1.06	0.500	1.000	0	106	61.2	139				
1,2,4-Trimethylbenzene	0.982	0.0200	1.000	0	98.2	77.5	129				
Hexachlorobutadiene	1.01	0.100	1.000	0	101	42	151				
Naphthalene	1.08	0.0300	1.000	0	108	62.3	134				
1,2,3-Trichlorobenzene	1.03	0.0200	1.000	0	103	54.8	143				
Surr: Dibromofluoromethane	1.16		1.250		92.4	56.5	129				
Surr: Toluene-d8	1.30		1.250		104	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.29		1.250		103	63.1	141				

Page 27 of 38 Original





Work Order: 1610176

Sample ID LCS-15125

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Project: Sound Transit / Key Bank

SampType: LCS

Units: mg/Kg Prep Date: 10/13/2016 RunNo: 32331

Client ID: LCSS Batch ID: 15125 Analysis Date: 10/13/2016 SeqNo: 611627

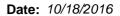
Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-15125	SampType: MBLK			Units: mg/Kg		Prep Date: 10/13/2	2016	RunNo: 323	331	
Client ID: MBLKS	Batch ID: 15125					Analysis Date: 10/13/2	2016	SeqNo: 611	628	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600								Q
Chloromethane	ND	0.0600								
Vinyl chloride	ND	0.00200								Q
Bromomethane	ND	0.0900								
Trichlorofluoromethane (CFC-11)	ND	0.0500								Q
Chloroethane	ND	0.0600								Q
1,1-Dichloroethene	ND	0.0500								
Methylene chloride	ND	0.0200								
trans-1,2-Dichloroethene	ND	0.0200								
Methyl tert-butyl ether (MTBE)	ND	0.0500								
1,1-Dichloroethane	ND	0.0200								Q
2,2-Dichloropropane	ND	0.0500								
cis-1,2-Dichloroethene	ND	0.0200								
Chloroform	ND	0.0200								
1,1,1-Trichloroethane (TCA)	ND	0.0200								
1,1-Dichloropropene	ND	0.0200								
Carbon tetrachloride	ND	0.0200								
1,2-Dichloroethane (EDC)	ND	0.0300								
Benzene	ND	0.0200								
Trichloroethene (TCE)	ND	0.0200								
1,2-Dichloropropane	ND	0.0200								
Bromodichloromethane	ND	0.0200								
Dibromomethane	ND	0.0400								
cis-1,3-Dichloropropene	ND	0.0200								

Original Page 28 of 38





Work Order: 1610176

Project:

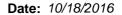
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-15125	SampType: MBLK			Units: mg/Kg		Prep Da	ate: 10/13/	2016	RunNo: 32:	331	
Client ID: MBLKS	Batch ID: 15125					Analysis Da	ate: 10/13/	2016	SeqNo: 61	1628	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									Q
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									

Original Page 29 of 38





Work Order: 1610176

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

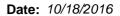
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-15125	SampType: MBLK			Units: mg/Kg		Prep Dat	te: 10/13/2	016	RunNo: 323		
Client ID: MBLKS	Batch ID: 15125					Analysis Dat	te: 10/13/2	016	SeqNo: 611	1628	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.11		1.250		89.1	56.5	129				
Surr: Toluene-d8	1.30		1.250		104	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.18		1.250		94.1	63.1	141				
NOTES:											

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610107-004BMS	SampType: MS			Units: mg/	Kg-dry	Prep Dat	e: 10/13/2016	RunNo: 32331	
Client ID: BATCH	Batch ID: 15125					Analysis Dat	e: 10/14/2016	SeqNo: 611604	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimi	t Qual
Dichlorodifluoromethane (CFC-12)	0.416	0.0513	0.8558	0	48.7	43.5	121		Q
Chloromethane	0.706	0.0513	0.8558	0	82.5	45	130		
Vinyl chloride	0.699	0.00171	0.8558	0	81.7	51.2	146		Q
Bromomethane	0.808	0.0770	0.8558	0	94.4	21.3	120		
Trichlorofluoromethane (CFC-11)	0.457	0.0428	0.8558	0	53.4	35	131		Q
Chloroethane	0.470	0.0513	0.8558	0	54.9	43.8	117		Q
1,1-Dichloroethene	0.728	0.0428	0.8558	0	85.0	61.9	141		
Methylene chloride	0.823	0.0171	0.8558	0.01594	94.3	54.7	142		
trans-1,2-Dichloroethene	0.791	0.0171	0.8558	0	92.5	52	136		
Methyl tert-butyl ether (MTBE)	0.822	0.0428	0.8558	0	96.0	54.4	132		
1,1-Dichloroethane	0.791	0.0171	0.8558	0	92.4	51.8	141		Q
2,2-Dichloropropane	0.689	0.0428	0.8558	0	80.5	36	123		
cis-1,2-Dichloroethene	0.862	0.0171	0.8558	0	101	58.6	136		
Chloroform	0.800	0.0171	0.8558	0	93.4	53.2	129		
1,1,1-Trichloroethane (TCA)	0.752	0.0171	0.8558	0	87.8	58.3	145		
1,1-Dichloropropene	0.774	0.0171	0.8558	0	90.4	55.1	138		
Carbon tetrachloride	0.830	0.0171	0.8558	0	97.0	53.3	144		

Original Page 30 of 38





Work Order: 1610176

Project:

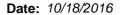
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610107-004BMS	SampType: MS			Units: mg/h	(g-dry	Prep Da	te: 10/13/ 2	2016	RunNo: 32331			
Client ID: BATCH	Batch ID: 15125					Analysis Da	te: 10/14/ 2	2016	SeqNo: 61	1604		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,2-Dichloroethane (EDC)	0.821	0.0257	0.8558	0	96.0	51.3	139					
Benzene	0.849	0.0171	0.8558	0	99.2	63.5	133					
Trichloroethene (TCE)	0.799	0.0171	0.8558	0	93.4	68.6	132					
1,2-Dichloropropane	0.866	0.0171	0.8558	0	101	59	136					
Bromodichloromethane	0.781	0.0171	0.8558	0	91.3	50.7	141					
Dibromomethane	0.853	0.0342	0.8558	0	99.7	50.6	137					
cis-1,3-Dichloropropene	0.806	0.0171	0.8558	0	94.2	50.4	138					
Toluene	0.890	0.0171	0.8558	0	104	63.4	132					
trans-1,3-Dichloropropylene	0.838	0.0257	0.8558	0	97.9	44.1	147					
1,1,2-Trichloroethane	0.872	0.0257	0.8558	0	102	51.6	137					
1,3-Dichloropropane	0.874	0.0428	0.8558	0	102	53.1	134					
Tetrachloroethene (PCE)	1.01	0.0171	0.8558	0.1864	96.1	35.6	158					
Dibromochloromethane	0.812	0.0257	0.8558	0	94.9	55.3	140					
1,2-Dibromoethane (EDB)	0.916	0.00428	0.8558	0	107	50.4	136					
Chlorobenzene	0.854	0.0171	0.8558	0	99.8	60	133					
1,1,1,2-Tetrachloroethane	0.816	0.0257	0.8558	0	95.3	53.1	142					
Ethylbenzene	0.812	0.0257	0.8558	0	94.9	54.5	134					
m,p-Xylene	1.64	0.0171	1.712	0	96.1	53.1	132					
o-Xylene	0.823	0.0171	0.8558	0	96.2	53.3	139					
Styrene	0.846	0.0171	0.8558	0	98.9	51.1	132					
Isopropylbenzene	0.814	0.0685	0.8558	0	95.2	58.9	138					
Bromoform	0.771	0.0171	0.8558	0	90.1	57.9	130					
1,1,2,2-Tetrachloroethane	0.775	0.0171	0.8558	0	90.5	51.9	131				Q	
n-Propylbenzene	0.819	0.0171	0.8558	0	95.7	53.6	140					
Bromobenzene	0.845	0.0257	0.8558	0	98.8	54.2	140					
1,3,5-Trimethylbenzene	0.818	0.0171	0.8558	0	95.6	51.8	136					
2-Chlorotoluene	0.824	0.0171	0.8558	0	96.3	51.6	136					
4-Chlorotoluene	0.813	0.0171	0.8558	0	95.0	50.1	139					
tert-Butylbenzene	0.813	0.0171	0.8558	0	95.0	50.5	135					
1,2,3-Trichloropropane	0.787	0.0171	0.8558	0	92.0	50.5	131					
1,2,4-Trichlorobenzene	0.754	0.0428	0.8558	0	88.1	50.8	130					

Original Page 31 of 38





Work Order: 1610176

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

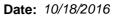
Sample ID 1610107-004BMS	SampType: MS		Units: mg/Kg-dry			Prep Da	te: 10/13/2	2016	RunNo: 32		
Client ID: BATCH	Batch ID: 15125					Analysis Da	te: 10/14/2	2016	SeqNo: 61	1604	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	0.803	0.0171	0.8558	0	93.9	52.6	141				
4-Isopropyltoluene	0.790	0.0171	0.8558	0	92.3	52.9	134				
1,3-Dichlorobenzene	0.853	0.0171	0.8558	0	99.7	52.6	131				
1,4-Dichlorobenzene	0.832	0.0171	0.8558	0	97.2	52.9	129				
n-Butylbenzene	0.838	0.0171	0.8558	0	97.9	52.6	130				
1,2-Dichlorobenzene	0.828	0.0171	0.8558	0	96.8	55.8	129				
1,2-Dibromo-3-chloropropane	0.735	0.428	0.8558	0	85.9	40.5	131				
1,2,4-Trimethylbenzene	0.817	0.0171	0.8558	0	95.4	50.6	137				
Hexachlorobutadiene	0.826	0.0856	0.8558	0	96.6	40.6	158				
Naphthalene	0.797	0.0257	0.8558	0	93.1	52.3	124				
1,2,3-Trichlorobenzene	0.794	0.0171	0.8558	0	92.8	54.4	124				
Surr: Dibromofluoromethane	1.04		1.070		97.5	56.5	129				
Surr: Toluene-d8	1.11		1.070		104	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.10		1.070		103	63.1	141				
NOTES:											

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610107-004BMSD	SampType: MSD			Units: mg/l	Kg-dry	Prep Da	te: 10/13/2	2016	RunNo: 323	331	
Client ID: BATCH	Batch ID: 15125					Analysis Da	te: 10/14/2	2016	SeqNo: 611	1605	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.386	0.0513	0.8558	0	45.2	43.5	121	0.4164	7.47	30	Q
Chloromethane	0.670	0.0513	0.8558	0	78.2	45	130	0.7057	5.24	30	
Vinyl chloride	0.655	0.00171	0.8558	0	76.6	51.2	146	0.6995	6.49	30	Q
Bromomethane	0.786	0.0770	0.8558	0	91.8	21.3	120	0.8079	2.78	30	
Trichlorofluoromethane (CFC-11)	0.411	0.0428	0.8558	0	48.0	35	131	0.4574	10.7	30	Q
Chloroethane	0.453	0.0513	0.8558	0	53.0	43.8	117	0.4698	3.54	30	Q
1,1-Dichloroethene	0.692	0.0428	0.8558	0	80.9	61.9	141	0.7275	4.99	30	
Methylene chloride	0.804	0.0171	0.8558	0.01594	92.1	54.7	142	0.8228	2.26	30	
trans-1,2-Dichloroethene	0.766	0.0171	0.8558	0	89.5	52	136	0.7915	3.27	30	
Methyl tert-butyl ether (MTBE)	0.827	0.0428	0.8558	0	96.7	54.4	132	0.8218	0.669	30	

Original Page 32 of 38





Work Order: 1610176

Project:

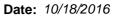
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610107-004BMSD	SampType: MSD			Units: mg/k	g-dry	Prep Dat	Prep Date: 10/13/2016			RunNo: 32331			
Client ID: BATCH	Batch ID: 15125					Analysis Da	te: 10/14/2	2016	SeqNo: 611	1605			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
1,1-Dichloroethane	0.769	0.0171	0.8558	0	89.8	51.8	141	0.7908	2.83	30	Q		
2,2-Dichloropropane	0.670	0.0428	0.8558	0	78.3	36	123	0.6888	2.71	30			
cis-1,2-Dichloroethene	0.847	0.0171	0.8558	0	99.0	58.6	136	0.8622	1.74	30			
Chloroform	0.786	0.0171	0.8558	0	91.8	53.2	129	0.7996	1.72	30			
1,1,1-Trichloroethane (TCA)	0.714	0.0171	0.8558	0	83.5	58.3	145	0.7516	5.09	30			
1,1-Dichloropropene	0.748	0.0171	0.8558	0	87.4	55.1	138	0.7739	3.43	30			
Carbon tetrachloride	0.692	0.0171	0.8558	0	80.8	53.3	144	0.8298	18.2	30			
1,2-Dichloroethane (EDC)	0.802	0.0257	0.8558	0	93.7	51.3	139	0.8213	2.43	30			
Benzene	0.821	0.0171	0.8558	0	96.0	63.5	133	0.8494	3.36	30			
Trichloroethene (TCE)	0.767	0.0171	0.8558	0	89.6	68.6	132	0.7989	4.09	30			
1,2-Dichloropropane	0.858	0.0171	0.8558	0	100	59	136	0.8658	0.935	30			
Bromodichloromethane	0.766	0.0171	0.8558	0	89.5	50.7	141	0.7813	1.94	30			
Dibromomethane	0.837	0.0342	0.8558	0	97.7	50.6	137	0.8533	1.98	30			
cis-1,3-Dichloropropene	0.791	0.0171	0.8558	0	92.5	50.4	138	0.8061	1.86	30			
Toluene	0.862	0.0171	0.8558	0	101	63.4	132	0.8896	3.10	30			
trans-1,3-Dichloropropylene	0.833	0.0257	0.8558	0	97.3	44.1	147	0.8378	0.584	30			
1,1,2-Trichloroethane	0.857	0.0257	0.8558	0	100	51.6	137	0.8716	1.66	30			
1,3-Dichloropropane	0.858	0.0428	0.8558	0	100	53.1	134	0.8736	1.82	30			
Tetrachloroethene (PCE)	0.969	0.0171	0.8558	0.1864	91.5	35.6	158	1.009	4.02	30			
Dibromochloromethane	0.792	0.0257	0.8558	0	92.5	55.3	140	0.8124	2.56	30			
1,2-Dibromoethane (EDB)	0.898	0.00428	0.8558	0	105	50.4	136	0.9159	1.99	30			
Chlorobenzene	0.835	0.0171	0.8558	0	97.5	60	133	0.8545	2.35	30			
1,1,1,2-Tetrachloroethane	0.802	0.0257	0.8558	0	93.7	53.1	142	0.8157	1.74	30			
Ethylbenzene	0.789	0.0257	0.8558	0	92.2	54.5	134	0.8119	2.81	30			
m,p-Xylene	1.60	0.0171	1.712	0	93.6	53.1	132	1.645	2.64	30			
o-Xylene	0.811	0.0171	0.8558	0	94.8	53.3	139	0.8231	1.42	30			
Styrene	0.825	0.0171	0.8558	0	96.4	51.1	132	0.8462	2.58	30			
Isopropylbenzene	0.789	0.0685	0.8558	0	92.2	58.9	138	0.8144	3.13	30			
Bromoform	0.744	0.0171	0.8558	0	86.9	57.9	130	0.7713	3.61	30			
1,1,2,2-Tetrachloroethane	0.764	0.0171	0.8558	0	89.3	51.9	131	0.7749	1.42	30	Q		
n-Propylbenzene	0.788	0.0171	0.8558	0	92.1	53.6	140	0.8191	3.85	30			

Original Page 33 of 38





Work Order: 1610176

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

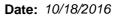
Sample ID 1610107-004BMSD	SampType: MSD			Units: mg/h	(g-dry	Prep Da	te: 10/13/2	016	RunNo: 32	331	
Client ID: BATCH	Batch ID: 15125					Analysis Da	te: 10/14/2	016	SeqNo: 61	1605	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	0.831	0.0257	0.8558	0	97.1	54.2	140	0.8454	1.68	30	
1,3,5-Trimethylbenzene	0.784	0.0171	0.8558	0	91.6	51.8	136	0.8180	4.24	30	
2-Chlorotoluene	0.798	0.0171	0.8558	0	93.2	51.6	136	0.8242	3.28	30	
4-Chlorotoluene	0.781	0.0171	0.8558	0	91.3	50.1	139	0.8133	4.03	30	
tert-Butylbenzene	0.782	0.0171	0.8558	0	91.4	50.5	135	0.8133	3.93	30	
1,2,3-Trichloropropane	0.777	0.0171	0.8558	0	90.8	50.5	131	0.7874	1.27	30	
1,2,4-Trichlorobenzene	0.781	0.0428	0.8558	0	91.2	50.8	130	0.7538	3.53	30	
sec-Butylbenzene	0.768	0.0171	0.8558	0	89.7	52.6	141	0.8034	4.57	30	
4-Isopropyltoluene	0.760	0.0171	0.8558	0	88.8	52.9	134	0.7899	3.92	30	
1,3-Dichlorobenzene	0.860	0.0171	0.8558	0	100	52.6	131	0.8529	0.823	30	
1,4-Dichlorobenzene	0.835	0.0171	0.8558	0	97.6	52.9	129	0.8318	0.383	30	
n-Butylbenzene	0.836	0.0171	0.8558	0	97.7	52.6	130	0.8381	0.251	30	
1,2-Dichlorobenzene	0.846	0.0171	0.8558	0	98.9	55.8	129	0.8281	2.15	30	
1,2-Dibromo-3-chloropropane	0.759	0.428	0.8558	0	88.7	40.5	131	0.7350	3.18	30	
1,2,4-Trimethylbenzene	0.790	0.0171	0.8558	0	92.3	50.6	137	0.8167	3.30	30	
Hexachlorobutadiene	0.810	0.0856	0.8558	0	94.7	40.6	158	0.8264	1.96	30	
Naphthalene	0.838	0.0257	0.8558	0	97.9	52.3	124	0.7966	5.01	30	
1,2,3-Trichlorobenzene	0.818	0.0171	0.8558	0	95.5	54.4	124	0.7941	2.93	30	
Surr: Dibromofluoromethane	1.03		1.070		96.0	56.5	129		0		
Surr: Toluene-d8	1.10		1.070		103	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.10		1.070		102	63.1	141		0		
NOTES:											

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610176-001BDUP	SampType: DUP			Units: mg/k	g-dry	Prep Da	te: 10/13/2	2016	RunNo: 323	331	
Client ID: UD-W-T1N	Batch ID: 15125					Analysis Da	te: 10/14/2	2016	SeqNo: 611	1618	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0580						0		30	Q
Chloromethane	ND	0.0580						0		30	
Vinyl chloride	ND	0.00193						0		30	

Original Page 34 of 38





Work Order: 1610176

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610176-001BDUP	SampType: DUP			Units: mg/	Kg-dry	Prep Dat	e: 10/13/2	2016	RunNo: 32	331	
Client ID: UD-W-T1N	Batch ID: 15125					Analysis Dat	e: 10/14/2	2016	SeqNo: 61	1618	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	ND	0.0870						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0484						0		30	Q
Chloroethane	ND	0.0580						0		30	Q
1,1-Dichloroethene	ND	0.0484						0		30	
Methylene chloride	ND	0.0193						0		30	
trans-1,2-Dichloroethene	ND	0.0193						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0484						0		30	
1,1-Dichloroethane	ND	0.0193						0		30	
2,2-Dichloropropane	ND	0.0484						0		30	
cis-1,2-Dichloroethene	ND	0.0193						0		30	
Chloroform	ND	0.0193						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0193						0		30	
1,1-Dichloropropene	ND	0.0193						0		30	
Carbon tetrachloride	ND	0.0193						0		30	
1,2-Dichloroethane (EDC)	ND	0.0290						0		30	
Benzene	ND	0.0193						0		30	
Trichloroethene (TCE)	ND	0.0193						0		30	
1,2-Dichloropropane	ND	0.0193						0		30	
Bromodichloromethane	ND	0.0193						0		30	
Dibromomethane	ND	0.0387						0		30	
cis-1,3-Dichloropropene	ND	0.0193						0		30	
Toluene	ND	0.0193						0		30	
trans-1,3-Dichloropropylene	ND	0.0290						0		30	
1,1,2-Trichloroethane	ND	0.0290						0		30	
1,3-Dichloropropane	ND	0.0484						0		30	
Tetrachloroethene (PCE)	ND	0.0193						0		30	
Dibromochloromethane	ND	0.0290						0		30	
1,2-Dibromoethane (EDB)	ND	0.00484						0		30	
Chlorobenzene	ND	0.0193						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0290						0		30	
Ethylbenzene	ND	0.0290						0		30	

Original Page 35 of 38

Date: 10/18/2016



Sound Transit / Key Bank

Work Order: 1610176

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610176-001BDUP	SampType: DUP			Units: mg/l	(g-dry	Prep Da	te: 10/13/ 2	2016	RunNo: 32	331	
Client ID: UD-W-T1N	Batch ID: 15125					Analysis Da	te: 10/14/ 2	2016	SeqNo: 61	1618	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	ND	0.0193						0		30	
o-Xylene	ND	0.0193						0		30	
Styrene	ND	0.0193						0		30	
Isopropylbenzene	0.126	0.0774						0.1266	0.198	30	
Bromoform	ND	0.0193						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0193						0		30	
n-Propylbenzene	0.229	0.0193						0.2242	1.92	30	
Bromobenzene	ND	0.0290						0		30	
1,3,5-Trimethylbenzene	0.231	0.0193						0.2289	0.873	30	
2-Chlorotoluene	ND	0.0193						0		30	
4-Chlorotoluene	ND	0.0193						0		30	
tert-Butylbenzene	0.0317	0.0193						0.03054	3.76	30	
1,2,3-Trichloropropane	ND	0.0193						0		30	
1,2,4-Trichlorobenzene	ND	0.0484						0		30	
sec-Butylbenzene	ND	0.0193						0		30	
4-Isopropyltoluene	0.288	0.0193						0.2790	3.07	30	
1,3-Dichlorobenzene	ND	0.0193						0		30	
1,4-Dichlorobenzene	ND	0.0193						0		30	
n-Butylbenzene	ND	0.0193						0		30	
1,2-Dichlorobenzene	ND	0.0193						0		30	
1,2-Dibromo-3-chloropropane	ND	0.484						0		30	
1,2,4-Trimethylbenzene	0.318	0.0193						0.3108	2.21	30	
Hexachlorobutadiene	ND	0.0967						0		30	
Naphthalene	ND	0.0290						0		30	
1,2,3-Trichlorobenzene	ND	0.0193						0		30	
Surr: Dibromofluoromethane	1.10		1.209		90.6	56.5	129		0		
Surr: Toluene-d8	1.42		1.209		118	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.22		1.209		101	63.1	141		0		
NOTES:											

NOTES

Original Page 36 of 38

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Sample Log-In Check List

С	lient Name:	sw				Work Or	der Numl	ber: 1610176		
Lo	ogged by:	Clare Griggs				Date Red	ceived:	10/11/20	16 4:34:00 PM	
<u>Cha</u>	in of Cust	<u>ody</u>								
1.	Is Chain of C	ustody complet	te?			Yes	✓	No 🗌	Not Present	
2.	How was the	sample deliver	ed?			Client	ţ			
Log	ı In									
_	Coolers are p	present?				Yes	✓	No 🗌	NA \square	
4.	Shipping con	tainer/cooler in	good condition	?		Yes	✓	No \square		
5.		ls present on sl nments for Cus				Yes		No 🗌	Not Required 🗹	
6.	Was an atten	npt made to co	ol the samples	?		Yes	✓	No 🗌	NA 🗌	
7.	Were all item	s received at a	temperature o	f >0°C to 10.	.0°C*	Yes	✓	No 🗌	na 🗆	
8.	Sample(s) in	proper contain	er(s)?			Yes	✓	No \square		
9.	Sufficient sar	nple volume for	r indicated test	(s)?		Yes	✓	No \square		
10.	Are samples	properly preser	ved?			Yes	✓	No \square		
11.	Was preserva	ative added to b	oottles?			Yes		No 🗸	NA \square	
12.	Is there head	space in the V	OA vials?			Yes		No 🗌	NA 🗸	
13.	Did all sampl	es containers a	rrive in good co	ondition(unbr	oken)?	Yes	✓	No 🗌		
14.	Does paperw	ork match bottl	e labels?			Yes	✓	No 🗌		
15.	Are matrices	correctly identi	fied on Chain o	of Custody?		Yes	✓	No 🗌		
16.	Is it clear wha	at analyses wer	e requested?			Yes	✓	No \square		
17.	Were all hold	ling times able	to be met?			Yes	✓	No \square		
Spe	cial Handl	ing (if appli	cable)							
-		otified of all disc	•	this order?		Yes		No 🗌	NA 🗸	
	Person	Notified:			Date					
	By Who	m:			Via:	eMail	l 🗌 Ph	one Fax	☐ In Person	
	Regardi	ng:								
	Client Ir	structions:								
19.	Additional rer	marks:								<u> </u>
<u>Item</u>	<u>Information</u>									
		Item #		Temp °C						
	Cooler			4.7						

4.4

Sample

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Frem	on	more on					Ch	ain (of Cu				l and I	Laboratory Services Agreement
[- 10] : 10] : [10]	206-352-37	7.7.												Page: of:
	206-352-7		τ.					- T	t Name:	500	nol	Tran	sit /	Key Bank
Client: Shannon						_		Project					125	Collected by: SKH
Address: 406 N								Locatio		-7	1545			
Telephone: 206-6									To (PM):					981000
*Matrix Codes: A = Air, AQ = Aqueous, B		VALUE OF STREET		ail co	C-4			PM Em	2/21 - 1/0/01				wil.co	
Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	/3	8 8 8	A SEGNICAL	Sassir		2 (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2		188 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1000 100 100 100 100 100 100 100 100 10	Zako Jeo	Campage .
1 UD-W-TIN	10/11/16	0805		X	K	()	<u>(</u>	X	11	11		X	111	Comments
2-W-W-T15		0815			H								2 3 3 3 3 7 5	- SKH
3 UD-W-TIW	10/11/16	0945	Soil	X	X	>		X	757	es es (50 W)	94	X	tapes (A) of	COMPLETE THE HEALTH WINDOWS OF THE CONTRACTOR DEPOSIT OF THE CONTRACTOR DEPOSIT OF THE CONTRACTOR OF T
4 UD-W-TZN		0815	6 1110 A	X	k	>		X	- 10	10 -0 - 1		X	Epity Intel (de	the Steel modern on anothernite chaest appears of CATHEGREE
5 UD-W- T2 S		0935		X	X	>	<	X				X		a them and to author, and to existing with
6 UD-W-TZE	1	0820	1	X	X	X	1	X		ENGLYSVIII TH	y - 1 1 1 1 1	X	neign at	A CHINGS MESHA A SECURITION OF STREET A STREET AND A STREET ASSESSMENT A STREET ASSESSMENT ASSESSME
7	and Samuel	Turn to	100 Page 1 100 Page 1	3 00		Spins 1		You are	of the control			17.	Similar Value	oma ment ich bis digede social erik bet bei bei kind in med in serve gemingen. Ed anveres 18eppel om depentencesseller, bis on hin social eine de trovisione s
8					9X	1								the right to adjust a say been followed the actions of
displicit in purifice, the fluid of	- Wile 28	ata in turni	e volnom				-	-	N - 463 -	15 3 milys 4 mily	10,000	A-17	discharge soft	NS AND TO POST MERTING HIS PASS THE THROUGH ANTI-DIAL AND GARLING CONTROL OF
וו מנוונית וסד שלאולף אומיאומילט לא פינו	THE WAYNEST	o te sexual	person and			And the		de un etc	1677 06	a dig	- 10			to subsect market have been seen seen as the Almanness Cal
**Metals Analysis (Circle): MTCA-5	RCRA-8	Priority Pollut	tants T	AL	Indivi	idual: Ag	Al A	s B Ba E	Be Ca Cd	Co Cr Cu	Fe Hg I	K Mg M	n Mo Na Ni	Pb Sb Se Sr Sn Ti Tl U V Zn ·
***Anions (Circle): Nitrate Nitrite				mide		-Phospha		Fluoride		e+Nitrite			es for samples	
Sample Disposal: Return to Cl		Disposal by assessed if s						ess otherwi	se noted. A	fee may be			business day.	VO(5, GX, DX, Total Lead
I represent that I am authorized to entagreement to each of the terms on the f	er into this A	Agreement	with Frem	ont A	nalyti	ical on b	ehalf o	of the Cli	ent named	above, th	at I have	e verified	Client's	of all and the desired and the formation has trained and the analysis of the same of the s
Relinquished Dat	te/Time	1633			Receiv	ved	_		lolu	Date/Time	163	H	I E UNE	e act the right was following and redshift or a consequence of the legal of
Relinquished Dat	te/Time				Receiv	ved	(ST 1)	100	Swifter (1)	Date/Time	of Service		chains and	TAT → SameDay [^] NextDay [^] 2 Day 3 Day
					х									^Please coordinate with the lab in advance



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Samples UD-E-3N, UD-E-3S, UD-E-3E, and UD-E-3W are

not discussed within this report.

Shannon & Wilson

Agnes Tirao 400 N. 34th Street, Suite 100 Seattle, WA 98103

RE: Sound Transit / Key Bank Work Order Number: 1610259

October 20, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 6 sample(s) on 10/14/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Sample Moisture (Percent Moisture)

Total Metals by EPA Method 6020

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway Laboratory Director

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)





CLIENT: Shannon & Wilson Work Order Sample Summary

Project: Sound Transit / Key Bank

Work Order: 1610259

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1610259-001	UD-E-3N	10/14/2016 12:30 PM	10/14/2016 2:10 PM
1610259-002	UD-E-3S	10/14/2016 12:35 PM	10/14/2016 2:10 PM
1610259-003	UD-E-3E	10/14/2016 12:40 PM	10/14/2016 2:10 PM
1610259-004	UD-E-3W	10/14/2016 12:45 PM	10/14/2016 2:10 PM
1610259-005	UD-W-TIS	10/14/2016 1:00 PM	10/14/2016 2:10 PM 🔥
1610259-006	Trip Blank	10/14/2016 12:00 AM	10/14/2016 2:10 PM

Samples UD-E-3N, UD-E-3S, UD-E-3E, and UD-E-3W are not discussed within this report.



Case Narrative

WO#: **1610259**Date: **10/20/2016**

CLIENT: Shannon & Wilson

Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **1610259**

Date Reported: 10/20/2016

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Work Order: **1610259**Date Reported: **10/20/2016**

Client: Shannon & Wilson Collection Date: 10/14/2016 12:30:00 PM

Project: Sound Transit / Key Bank

Lab ID: 1610259-001 **Matrix:** Soil

Client Sample ID: UD-E-3N

Analyses Result RL Qual **Units** DF **Date Analyzed** Batch ID: 15162 Analyst: MW Volatile Organic Compounds by EPA Method 8260C Dichlorodifluoromethane (CFC-12) ND 0.0561 Q mg/Kg-dry 10/18/2016 11:09:02 PM 1 Chloromethane ND 0.0561 Q mg/Kg-dry 1 10/18/2016 11:09:02 PM Vinyl chloride ND 0.00187 mg/Kg-dry 1 10/18/2016 11:09:02 PM Bromomethane ND 0.0841 10/18/2016 11:09:02 PM mg/Kg-dry Trichlorofluoromethane (CFC-11) ND 10/18/2016 11:09:02 PM 0.0467 mg/Kg-dry 1 Chloroethane ND 10/18/2016 11:09:02 PM 0.0561 mg/Kg-dry 1 ND 1,1-Dichloroethene 0.0467 mg/Kg-dry 1 10/18/2016 11:09:02 PM Methylene chloride ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM trans-1,2-Dichloroethene ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM 1.1-Dichloroethane ND 0.0187 1 10/18/2016 11:09:02 PM mg/Kg-dry 2,2-Dichloropropane ND 0.0467 mg/Kg-dry 1 10/18/2016 11:09:02 PM cis-1,2-Dichloroethene ND mg/Kg-dry 0.0187 1 10/18/2016 11:09:02 PM Chloroform 0.0408 0.0187 В 1 10/18/2016 11:09:02 PM mg/Kg-dry 1,1,1-Trichloroethane (TCA) ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM 1,1-Dichloropropene ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM ND Carbon tetrachloride 1 10/18/2016 11:09:02 PM 0.0187 mg/Kg-dry 1,2-Dichloroethane (EDC) ND 0.0280 mg/Kg-dry 1 10/18/2016 11:09:02 PM ND Trichloroethene (TCE) 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM 1,2-Dichloropropane ND 0.0187 1 10/18/2016 11:09:02 PM mg/Kg-dry Bromodichloromethane ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM Dibromomethane ND 0.0374 mg/Kg-dry 1 10/18/2016 11:09:02 PM cis-1,3-Dichloropropene ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM trans-1,3-Dichloropropylene ND 0.0280 1 10/18/2016 11:09:02 PM mg/Kg-dry 1,1,2-Trichloroethane ND 1 10/18/2016 11:09:02 PM 0.0280 mg/Kg-dry ND 1,3-Dichloropropane 0.0467 mg/Kg-dry 1 10/18/2016 11:09:02 PM Tetrachloroethene (PCE) 0.183 10/18/2016 11:09:02 PM 0.0187 mg/Kg-dry 1 Dibromochloromethane ND 0.0280 mg/Kg-dry 1 10/18/2016 11:09:02 PM 1,2-Dibromoethane (EDB) ND 0.00467 mg/Kg-dry 1 10/18/2016 11:09:02 PM ND Chlorobenzene 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM mg/Kg-dry 1,1,1,2-Tetrachloroethane ND 0.0280 1 10/18/2016 11:09:02 PM **Bromoform** ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM 1,1,2,2-Tetrachloroethane ND 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM Bromobenzene ND 0.0280 mg/Kg-dry 1 10/18/2016 11:09:02 PM ND 2-Chlorotoluene 0.0187 1 10/18/2016 11:09:02 PM mg/Kg-dry 4-Chlorotoluene ND 0.0187 1 10/18/2016 11:09:02 PM mg/Kg-dry ND 1,2,3-Trichloropropane 0.0187 mg/Kg-dry 1 10/18/2016 11:09:02 PM 1,2,4-Trichlorobenzene ND 0.0467 mg/Kg-dry 1 10/18/2016 11:09:02 PM ND 1,3-Dichlorobenzene 0.0187 1 10/18/2016 11:09:02 PM mg/Kg-dry 1,4-Dichlorobenzene ND 0.0187 mg/Kg-dry 10/18/2016 11:09:02 PM



Work Order: 1610259 Date Reported: 10/20/2016

Analyst: WF

Collection Date: 10/14/2016 12:30:00 PM Client: Shannon & Wilson

Batch ID: R32336

Project: Sound Transit / Key Bank

Lab ID: 1610259-001 Matrix: Soil

Client Sample ID: UD-E-3N

Analyses	Result	RL	Qual	Batch ID: 15162 Analyst: MW mg/Kg-dry 1 10/18/2016 11:09:02 PM mg/Kg-dry 1 10/18/2016 11:09:02 PM mg/Kg-dry 1 10/18/2016 11:09:02 PM mg/Kg-dry 1 10/18/2016 11:09:02 PM mg/Kg-dry 1 10/18/2016 11:09:02 PM %Rec 1 10/18/2016 11:09:02 PM		
Volatile Organic Compounds by	EPA Method	8260C		Batch	1D: 1	5162 Analyst: MW
1,2-Dichlorobenzene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2-Dibromo-3-chloropropane	ND	0.467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Hexachloro-1,3-butadiene	ND	0.0934		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2,3-Trichlorobenzene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Surr: Dibromofluoromethane	93.1	56.5-129		%Rec	1	10/18/2016 11:09:02 PM
Surr: Toluene-d8	100	64.3-131		%Rec	1	10/18/2016 11:09:02 PM
Surr: 1-Bromo-4-fluorobenzene	97.9	63.1-141		%Rec	1	10/18/2016 11:09:02 PM

NOTES:

Sample Moisture (Percent Moisture)

Percent Moisture 11.8 0.500 10/17/2016 9:05:34 AM

Original

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610259**Date Reported: **10/20/2016**

Client: Shannon & Wilson Collection Date: 10/14/2016 12:35:00 PM

Project: Sound Transit / Key Bank

Lab ID: 1610259-002 **Matrix:** Soil

Client Sample ID: UD-E-3S

Analyses Result RL Qual **Units** DF **Date Analyzed** Batch ID: 15162 Analyst: MW Volatile Organic Compounds by EPA Method 8260C Dichlorodifluoromethane (CFC-12) ND 0.0319 Q mg/Kg-dry 10/18/2016 11:37:45 PM 1 Chloromethane ND 0.0319 Q mg/Kg-dry 1 10/18/2016 11:37:45 PM Vinyl chloride ND 0.00106 mg/Kg-dry 1 10/18/2016 11:37:45 PM Bromomethane ND 0.0478 10/18/2016 11:37:45 PM mg/Kg-dry Trichlorofluoromethane (CFC-11) ND 10/18/2016 11:37:45 PM 0.0266 mg/Kg-dry 1 Chloroethane ND 10/18/2016 11:37:45 PM 0.0319 mg/Kg-dry 1 ND 1,1-Dichloroethene 0.0266 mg/Kg-dry 1 10/18/2016 11:37:45 PM Methylene chloride ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM trans-1,2-Dichloroethene ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM 1.1-Dichloroethane ND 0.0106 1 10/18/2016 11:37:45 PM mg/Kg-dry ND 2,2-Dichloropropane 0.0266 mg/Kg-dry 1 10/18/2016 11:37:45 PM cis-1,2-Dichloroethene ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM Chloroform 0.0224 0.0106 В 1 10/18/2016 11:37:45 PM mg/Kg-dry 1,1,1-Trichloroethane (TCA) ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM 1,1-Dichloropropene ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM ND Carbon tetrachloride 1 10/18/2016 11:37:45 PM 0.0106 mg/Kg-dry 1,2-Dichloroethane (EDC) ND 0.0159 mg/Kg-dry 1 10/18/2016 11:37:45 PM ND Trichloroethene (TCE) 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM 1,2-Dichloropropane ND 0.0106 1 10/18/2016 11:37:45 PM mg/Kg-dry Bromodichloromethane ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM Dibromomethane ND 0.0212 mg/Kg-dry 1 10/18/2016 11:37:45 PM cis-1,3-Dichloropropene ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM trans-1,3-Dichloropropylene ND 0.0159 1 10/18/2016 11:37:45 PM mg/Kg-dry 1,1,2-Trichloroethane ND 0.0159 1 10/18/2016 11:37:45 PM mg/Kg-dry ND 1,3-Dichloropropane 0.0266 mg/Kg-dry 1 10/18/2016 11:37:45 PM Tetrachloroethene (PCE) 0.293 10/18/2016 11:37:45 PM 0.0106 mg/Kg-dry 1 Dibromochloromethane ND 0.0159 mg/Kg-dry 1 10/18/2016 11:37:45 PM 1,2-Dibromoethane (EDB) ND 0.00266 mg/Kg-dry 1 10/18/2016 11:37:45 PM ND Chlorobenzene 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM 1,1,1,2-Tetrachloroethane ND 0.0159 1 10/18/2016 11:37:45 PM mg/Kg-dry **Bromoform** ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM 1,1,2,2-Tetrachloroethane ND 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM Bromobenzene ND 0.0159 mg/Kg-dry 1 10/18/2016 11:37:45 PM ND 2-Chlorotoluene 0.0106 1 10/18/2016 11:37:45 PM mg/Kg-dry ND 0.0106 1 10/18/2016 11:37:45 PM 4-Chlorotoluene mg/Kg-dry ND 1,2,3-Trichloropropane 0.0106 mg/Kg-dry 1 10/18/2016 11:37:45 PM 1,2,4-Trichlorobenzene ND 0.0266 mg/Kg-dry 1 10/18/2016 11:37:45 PM ND 1,3-Dichlorobenzene 0.0106 1 10/18/2016 11:37:45 PM mg/Kg-dry 1,4-Dichlorobenzene ND 0.0106 mg/Kg-dry 10/18/2016 11:37:45 PM



Work Order: 1610259 Date Reported: 10/20/2016

Analyst: WF

Collection Date: 10/14/2016 12:35:00 PM Client: Shannon & Wilson

Batch ID: R32336

Project: Sound Transit / Key Bank

Lab ID: 1610259-002 Matrix: Soil

Client Sample ID: UD-E-3S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	8260C		Batch	n ID: 1	5162 Analyst: MW
1,2-Dichlorobenzene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2-Dibromo-3-chloropropane	ND	0.266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Hexachloro-1,3-butadiene	ND	0.0531		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2,3-Trichlorobenzene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Surr: Dibromofluoromethane	94.1	56.5-129		%Rec	1	10/18/2016 11:37:45 PM
Surr: Toluene-d8	96.7	64.3-131		%Rec	1	10/18/2016 11:37:45 PM
Surr: 1-Bromo-4-fluorobenzene	98.6	63.1-141		%Rec	1	10/18/2016 11:37:45 PM

NOTES:

Sample Moisture (Percent Moisture)

Percent Moisture 19.9 0.500 10/17/2016 9:05:34 AM

Original

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610259**Date Reported: **10/20/2016**

Client: Shannon & Wilson Collection Date: 10/14/2016 12:40:00 PM

Project: Sound Transit / Key Bank

Lab ID: 1610259-003 **Matrix:** Soil

Client Sample ID: UD-E-3E

Volatile Organic Compounds by EPA Method 8260C Batch ID:	15162 Analyst: MW 10/19/2016 2:32:42 AM
	10/19/2016 2:32:42 AM
Dichlorodifluoromethane (CFC-12) ND 0.0546 Q mg/Kg-dry 1	10/15/2010 2:02:42 / tivi
Chloromethane ND 0.0546 Q mg/Kg-dry 1	10/19/2016 2:32:42 AM
Vinyl chloride ND 0.00182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Bromomethane ND 0.0818 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Trichlorofluoromethane (CFC-11) ND 0.0455 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Chloroethane ND 0.0546 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,1-Dichloroethene ND 0.0455 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Methylene chloride ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
trans-1,2-Dichloroethene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,1-Dichloroethane ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
2,2-Dichloropropane ND 0.0455 mg/Kg-dry 1	10/19/2016 2:32:42 AM
cis-1,2-Dichloroethene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Chloroform 0.0454 0.0182 B mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,1,1-Trichloroethane (TCA) ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,1-Dichloropropene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Carbon tetrachloride ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,2-Dichloroethane (EDC) ND 0.0273 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Trichloroethene (TCE) 0.0986 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,2-Dichloropropane ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Bromodichloromethane ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Dibromomethane ND 0.0364 mg/Kg-dry 1	10/19/2016 2:32:42 AM
cis-1,3-Dichloropropene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
trans-1,3-Dichloropropylene ND 0.0273 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,1,2-Trichloroethane ND 0.0273 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,3-Dichloropropane ND 0.0455 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Tetrachloroethene (PCE) 2.05 0.182 D mg/Kg-dry 10	10/19/2016 4:30:59 PM
Dibromochloromethane ND 0.0273 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,2-Dibromoethane (EDB) ND 0.00455 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Chlorobenzene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,1,1,2-Tetrachloroethane ND 0.0273 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Bromoform ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,1,2,2-Tetrachloroethane ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
Bromobenzene ND 0.0273 mg/Kg-dry 1	10/19/2016 2:32:42 AM
2-Chlorotoluene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
4-Chlorotoluene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,2,3-Trichloropropane ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,2,4-Trichlorobenzene ND 0.0455 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,3-Dichlorobenzene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM
1,4-Dichlorobenzene ND 0.0182 mg/Kg-dry 1	10/19/2016 2:32:42 AM



Work Order: 1610259 Date Reported: 10/20/2016

Analyst: WF

Collection Date: 10/14/2016 12:40:00 PM Client: Shannon & Wilson

Batch ID: R32336

Project: Sound Transit / Key Bank

Lab ID: 1610259-003 Matrix: Soil

Client Sample ID: UD-E-3E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method		Batch	ı ID:	15162 Analyst: MW	
1,2-Dichlorobenzene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2-Dibromo-3-chloropropane	ND	0.455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Hexachloro-1,3-butadiene	ND	0.0909		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2,3-Trichlorobenzene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Surr: Dibromofluoromethane	94.8	56.5-129		%Rec	1	10/19/2016 2:32:42 AM
Surr: Toluene-d8	97.5	64.3-131		%Rec	1	10/19/2016 2:32:42 AM
Surr: 1-Bromo-4-fluorobenzene	99.6	63.1-141		%Rec	1	10/19/2016 2:32:42 AM

NOTES:

Sample Moisture (Percent Moisture)

Percent Moisture 12.2 0.500 10/17/2016 9:05:34 AM

Original

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: **1610259**Date Reported: **10/20/2016**

Client: Shannon & Wilson Collection Date: 10/14/2016 12:45:00 PM

Project: Sound Transit / Key Bank

Lab ID: 1610259-004 **Matrix:** Soil

Client Sample ID: UD-E-3W

Analyses Result RL Qual **Units** DF **Date Analyzed** Batch ID: 15162 Analyst: MW Volatile Organic Compounds by EPA Method 8260C Dichlorodifluoromethane (CFC-12) ND 0.0568 Q mg/Kg-dry 10/19/2016 3:01:48 AM 1 Chloromethane ND 0.0568 Q mg/Kg-dry 1 10/19/2016 3:01:48 AM Vinyl chloride ND 0.00189 mg/Kg-dry 1 10/19/2016 3:01:48 AM Bromomethane ND 0.0852 10/19/2016 3:01:48 AM mg/Kg-dry Trichlorofluoromethane (CFC-11) ND 10/19/2016 3:01:48 AM 0.0473 mg/Kg-dry 1 Chloroethane ND 10/19/2016 3:01:48 AM 0.0568 mg/Kg-dry 1 ND 1,1-Dichloroethene 0.0473 mg/Kg-dry 1 10/19/2016 3:01:48 AM Methylene chloride ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM trans-1,2-Dichloroethene ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM 1.1-Dichloroethane ND 0.0189 1 10/19/2016 3:01:48 AM mg/Kg-dry 2,2-Dichloropropane ND 0.0473 mg/Kg-dry 1 10/19/2016 3:01:48 AM cis-1,2-Dichloroethene ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM Chloroform 0.0551 0.0189 В 1 10/19/2016 3:01:48 AM mg/Kg-dry 1,1,1-Trichloroethane (TCA) ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM 1,1-Dichloropropene ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM ND Carbon tetrachloride 1 10/19/2016 3:01:48 AM 0.0189 mg/Kg-dry 1,2-Dichloroethane (EDC) ND 0.0284 mg/Kg-dry 1 10/19/2016 3:01:48 AM ND Trichloroethene (TCE) 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM 1,2-Dichloropropane ND 0.0189 1 10/19/2016 3:01:48 AM mg/Kg-dry Bromodichloromethane ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM Dibromomethane ND 0.0379 mg/Kg-dry 1 10/19/2016 3:01:48 AM cis-1,3-Dichloropropene ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM trans-1,3-Dichloropropylene ND 0.0284 1 10/19/2016 3:01:48 AM mg/Kg-dry 1,1,2-Trichloroethane ND 1 10/19/2016 3:01:48 AM 0.0284 mg/Kg-dry ND 1,3-Dichloropropane 0.0473 mg/Kg-dry 1 10/19/2016 3:01:48 AM Tetrachloroethene (PCE) 0.428 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM Dibromochloromethane ND 0.0284 mg/Kg-dry 1 10/19/2016 3:01:48 AM 1,2-Dibromoethane (EDB) ND 0.00473 mg/Kg-dry 1 10/19/2016 3:01:48 AM ND Chlorobenzene 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM 1,1,1,2-Tetrachloroethane ND 0.0284 1 10/19/2016 3:01:48 AM mg/Kg-dry **Bromoform** ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM 1,1,2,2-Tetrachloroethane ND 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM Bromobenzene ND 0.0284 mg/Kg-dry 1 10/19/2016 3:01:48 AM ND 2-Chlorotoluene 0.0189 1 10/19/2016 3:01:48 AM mg/Kg-dry ND 0.0189 1 10/19/2016 3:01:48 AM 4-Chlorotoluene mg/Kg-dry ND 1,2,3-Trichloropropane 0.0189 mg/Kg-dry 1 10/19/2016 3:01:48 AM 1,2,4-Trichlorobenzene ND 0.0473 mg/Kg-dry 1 10/19/2016 3:01:48 AM ND 1,3-Dichlorobenzene 0.0189 1 10/19/2016 3:01:48 AM mg/Kg-dry 1,4-Dichlorobenzene ND 0.0189 mg/Kg-dry 10/19/2016 3:01:48 AM



Batch ID: R32336

Work Order: **1610259**Date Reported: **10/20/2016**

Analyst: WF

Client: Shannon & Wilson Collection Date: 10/14/2016 12:45:00 PM

Project: Sound Transit / Key Bank

Lab ID: 1610259-004 **Matrix:** Soil

Client Sample ID: UD-E-3W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
olatile Organic Compounds by EPA Method 1,2-Dichlorobenzene ND 1,2-Dibromo-3-chloropropane ND Hexachloro-1,3-butadiene ND		8260C		Batch	ı ID:	15162 Analyst: MW
1,2-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2-Dibromo-3-chloropropane	ND	0.473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Hexachloro-1,3-butadiene	ND	0.0946		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2,3-Trichlorobenzene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Surr: Dibromofluoromethane	95.3	56.5-129		%Rec	1	10/19/2016 3:01:48 AM
Surr: Toluene-d8	101	64.3-131		%Rec	1	10/19/2016 3:01:48 AM
Surr: 1-Bromo-4-fluorobenzene	99.4	63.1-141		%Rec	1	10/19/2016 3:01:48 AM

NOTES:

Sample Moisture (Percent Moisture)

Percent Moisture 11.4 0.500 wt% 1 10/17/2016 9:05:34 AM

Original

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: 1610259 Date Reported: 10/20/2016

Collection Date: 10/14/2016 1:00:00 PM Client: Shannon & Wilson

Project: Sound Transit / Key Bank

Lab ID: 1610259-005 Matrix: Soil

Client Sample ID: UD-W-TIS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTP	H-Dx/Dx Ext.			Batch	n ID: 15	145 Analyst: WC
Diesel (Fuel Oil)	ND	21.0		mg/Kg-dry	1	10/17/2016 10:22:00 PM
Heavy Oil	122	52.4		mg/Kg-dry	1	10/17/2016 10:22:00 PM
Surr: 2-Fluorobiphenyl	101	50-150		%Rec	1	10/17/2016 10:22:00 PM
Surr: o-Terphenyl	98.5	50-150		%Rec	1	10/17/2016 10:22:00 PM
Gasoline by NWTPH-Gx				Batch	n ID: 15	162 Analyst: NG
Gasoline	1,410	228	D	mg/Kg-dry	50	10/20/2016 12:33:47 PM
Surr: Toluene-d8	167	65-135	S	%Rec	1	10/19/2016 3:59:55 AM
Surr: 4-Bromofluorobenzene NOTES:	98.9	65-135		%Rec	1	10/19/2016 3:59:55 AM

S - Outlying surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).

Volatile Organic Compounds by E	PA Method	8260C		Batch	ID:	15162 Analyst: MW
Dichlorodifluoromethane (CFC-12)	ND	0.0548	Q	mg/Kg-dry	1	10/19/2016 3:59:55 AM
Chloromethane	ND	0.0548	Q	mg/Kg-dry	1	10/19/2016 3:59:55 AM
Vinyl chloride	ND	0.00183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Bromomethane	ND	0.0822		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Trichlorofluoromethane (CFC-11)	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Chloroethane	ND	0.0548		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1-Dichloroethene	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Methylene chloride	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
trans-1,2-Dichloroethene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Methyl tert-butyl ether (MTBE)	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1-Dichloroethane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
2,2-Dichloropropane	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
cis-1,2-Dichloroethene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Chloroform	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1,1-Trichloroethane (TCA)	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1-Dichloropropene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Carbon tetrachloride	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2-Dichloroethane (EDC)	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Benzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Trichloroethene (TCE)	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2-Dichloropropane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Bromodichloromethane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Dibromomethane	ND	0.0365		mg/Kg-dry	1	10/19/2016 3:59:55 AM



Work Order: **1610259**Date Reported: **10/20/2016**

Client: Shannon & Wilson Collection Date: 10/14/2016 1:00:00 PM

Project: Sound Transit / Key Bank

Lab ID: 1610259-005 **Matrix:** Soil

Client Sample ID: UD-W-TIS

Analyses Result RL Qual **Units** DF **Date Analyzed** Batch ID: 15162 Analyst: MW Volatile Organic Compounds by EPA Method 8260C mg/Kg-dry cis-1,3-Dichloropropene ND 0.0183 10/19/2016 3:59:55 AM 1 Toluene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM trans-1,3-Dichloropropylene ND 0.0274 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1,1,2-Trichloroethane ND 0.0274 10/19/2016 3:59:55 AM mg/Kg-dry ND 10/19/2016 3:59:55 AM 1,3-Dichloropropane 0.0457 mg/Kg-dry 1 Tetrachloroethene (PCE) ND 10/19/2016 3:59:55 AM 0.0183 mg/Kg-dry 1 ND Dibromochloromethane 0.0274 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1.2-Dibromoethane (EDB) ND 0.00457 mg/Kg-dry 1 10/19/2016 3:59:55 AM ND Chlorobenzene 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1.1.1.2-Tetrachloroethane ND 0.0274 mg/Kg-dry 1 10/19/2016 3:59:55 AM Ethylbenzene 0.279 0.0274 mg/Kg-dry 1 10/19/2016 3:59:55 AM ND m,p-Xylene 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM o-Xylene ND 0.0183 1 10/19/2016 3:59:55 AM mg/Kg-dry Styrene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM Isopropylbenzene 0.857 0.0731 mg/Kg-dry 1 10/19/2016 3:59:55 AM ND **Bromoform** 1 10/19/2016 3:59:55 AM 0.0183 mg/Kg-dry 1,1,2,2-Tetrachloroethane ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM n-Propylbenzene 1.56 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM mg/Kg-dry Bromobenzene ND 0.0274 1 10/19/2016 3:59:55 AM 1,3,5-Trimethylbenzene 2.23 0.183 D mg/Kg-dry 10 10/19/2016 5:00:15 PM 2-Chlorotoluene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM 4-Chlorotoluene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM tert-Butylbenzene ND 0.0183 1 10/19/2016 3:59:55 AM mg/Kg-dry 1,2,3-Trichloropropane ND 0.0183 1 10/19/2016 3:59:55 AM mg/Kg-dry ND 1,2,4-Trichlorobenzene 0.0457 mg/Kg-dry 1 10/19/2016 3:59:55 AM sec-Butylbenzene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM 4-Isopropyltoluene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1,3-Dichlorobenzene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1,4-Dichlorobenzene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM mg/Kg-dry n-Butylbenzene ND 0.0183 1 10/19/2016 3:59:55 AM ND 1,2-Dichlorobenzene 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1,2-Dibromo-3-chloropropane ND 0.457 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1,2,4-Trimethylbenzene 4.54 0.183 D mg/Kg-dry 10 10/19/2016 5:00:15 PM ND Hexachlorobutadiene 0.0913 mg/Kg-dry 1 10/19/2016 3:59:55 AM Naphthalene ND 0.0274 mg/Kg-dry 1 10/19/2016 3:59:55 AM 1,2,3-Trichlorobenzene ND 0.0183 mg/Kg-dry 1 10/19/2016 3:59:55 AM Surr: Dibromofluoromethane 91.4 56.5-129 %Rec 1 10/19/2016 3:59:55 AM S Surr: Toluene-d8 159 64.3-131 %Rec 1 10/19/2016 3:59:55 AM Surr: 1-Bromo-4-fluorobenzene 84.5 63.1-141 %Rec 1 10/19/2016 3:59:55 AM



Work Order: **1610259**Date Reported: **10/20/2016**

Client: Shannon & Wilson Collection Date: 10/14/2016 1:00:00 PM

Project: Sound Transit / Key Bank

Lab ID: 1610259-005 **Matrix:** Soil

Client Sample ID: UD-W-TIS

Analyses Result RL Qual Units DF Date Analyzed

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

NOTES:

S - Outlying surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).

Total Metals by EPA Method 6020

Batch ID: 15167 Analyst: TN

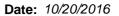
Lead 2.24 0.184 mg/Kg-dry 1 10/19/2016 4:08:04 PM

Sample Moisture (Percent Moisture)

Batch ID: R32336 Analyst: WF

Percent Moisture 13.0 0.500 wt% 1 10/17/2016 9:05:34 AM

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).





Work Order: 1610259

QC SUMMARY REPORT

Shannon & Wilson **CLIENT:**

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Project: Sound Tran	nsit / Key Bank						Diesel	and Heavy	Oil by NW	TPH-Dx/	Dx E
Sample ID MB-15145	SampType: MBLK			Units: mg/K	(g	Prep Dat	e: 10/17/2	016	RunNo: 323	861	
Client ID: MBLKS	Batch ID: 15145					Analysis Dat	e: 10/17/2	016	SeqNo: 612	2184	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	20.5		20.00		102	50	150				
Surr: o-Terphenyl	20.9		20.00		104	50	150				
Sample ID LCS-15145	SampType: LCS			Units: mg/K	ίg	Prep Dat	e: 10/17/2	016	RunNo: 323	B61	
Client ID: LCSS	Batch ID: 15145					Analysis Dat	e: 10/17/2	016	SeqNo: 612	2183	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
Diesel (Fuel Oil)	468	20.0	500.0	0	93.6	65	135				
Surr: 2-Fluorobiphenyl	23.4		20.00		117	50	150				
Surr: o-Terphenyl	23.8		20.00		119	50	150				
Sample ID 1610270-001ADUP	SampType: DUP			Units: mg/K	G-dry	Prep Dat	e: 10/17/2	016	RunNo: 323	861	
Client ID: BATCH	Batch ID: 15145					Analysis Dat	e: 10/17/2	016	SeqNo: 612	2263	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
Diesel (Fuel Oil)	ND	21.2						0		30	
Heavy Oil	ND	53.1						0		30	
Surr: 2-Fluorobiphenyl	20.7		21.25		97.5	50	150		0		
Surr: o-Terphenyl	20.6		21.25		96.8	50	150		0		
Sample ID 1610259-005ADUP	SampType: DUP			Units: mg/K	(g-dry	Prep Dat	e: 10/17/2	016	RunNo: 323	361	
Client ID: UD-W-TIS	Batch ID: 15145					Analysis Dat	e: 10/17/2	016	SeqNo: 612	2259	
	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
Analyte	Result										
Analyte Diesel (Fuel Oil)	ND	20.6						0		30	
<u>·</u>		20.6 51.5						0 122.2	61.6	30 30	R

Page 16 of 37 Original

Date: 10/20/2016



Work Order: 1610259

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID 1610259-005ADUP	SampType: DUP			Units: mg/Kg	j-dry	Prep Dat	te: 10/17/2	2016	RunNo: 32:	361	
Client ID: UD-W-TIS	Batch ID: 15145					Analysis Da	te: 10/17/2	2016	SeqNo: 612	2259	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: o-Terphenyl	20.3		20.62		98.3	50	150		0		

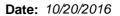
NOTES:

R - High RPD due to suspected sample inhomogeneity. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID 1610259-005AMS	SampType: MS			Units: mg/K	g-dry	Prep Da	te: 10/17/2	2016	RunNo: 323	361	
Client ID: UD-W-TIS	Batch ID: 15145					Analysis Da	te: 10/18/2	2016	SeqNo: 612	2260	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	508	21.2	531.2	0	95.7	65	135				
Surr: 2-Fluorobiphenyl	23.1		21.25		109	50	150				
Surr: o-Terphenyl	23.2		21.25		109	50	150				

Sample ID 1610259-005AMSD	SampType: MSD			Units: mg/k	(g-dry	Prep Da	te: 10/17/2	016	RunNo: 32	361	
Client ID: UD-W-TIS	Batch ID: 15145					Analysis Da	te: 10/18/2	016	SeqNo: 612	2261	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	476	19.6	489.6	0	97.2	65	135	508.1	6.52	30	
Surr: 2-Fluorobiphenyl	21.0		19.58		107	50	150		0		
Surr: o-Terphenyl	21.0		19.58		107	50	150		0		

Original Page 17 of 37





Work Order: 1610259

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Project: Sound Tran	nsit / Key Bank								Gasolin	e by NW	IPH-G
Sample ID LCS-15162	SampType: LCS			Units: mg/Kg		Prep Date	e: 10/18/2 0)16	RunNo: 32	433	
Client ID: LCSS	Batch ID: 15162					Analysis Date	e: 10/18/2 0	016	SeqNo: 61	3760	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	26.5	5.00	25.00	0	106	65	135				
Surr: Toluene-d8	1.29		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.29		1.250		103	65	135				
Sample ID MB-15162	SampType: MBLK			Units: mg/Kg		Prep Date	e: 10/18/2 0	016	RunNo: 32	433	
Client ID: MBLKS	Batch ID: 15162					Analysis Date	e: 10/18/2 0	016	SeqNo: 61	3761	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	1.30		1.250		104	65	135				
Surr: 4-Bromofluorobenzene	1.26		1.250		101	65	135				
Sample ID 1610194-004BDUP	SampType: DUP			Units: mg/Kg	-dry	Prep Date	e: 10/18/2 0	016	RunNo: 32	433	
Client ID: BATCH	Batch ID: 15162					Analysis Date	e: 10/18/2 0	016	SeqNo: 61	3741	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	4.59						0		30	
Surr: Toluene-d8	1.25		1.148		109	65	135		0		
Surr: 4-Bromofluorobenzene	1.22		1.148		106	65	135		0		
Sample ID 1610259-004BDUP	SampType: DUP			Units: mg/Kg	-dry	Prep Date	e: 10/18/2 0)16	RunNo: 32	433	
Client ID: UD-E-3W	Batch ID: 15162					Analysis Date	e: 10/19/2 0	016	SeqNo: 61:	3751	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	4.73						0		30	
Surr: Toluene-d8	1.29		1.183		109	65	135		0		
Surr: 4-Bromofluorobenzene	1.18		1.183		99.5	65	135		0		

Original Page 18 of 37

Date: 10/20/2016



Sound Transit / Key Bank

Work Order: 1610259

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Sample ID 1610259-003BMS	SampType: MS			Units: mg/	Kg-dry	Prep Da	te: 10/18/2	2016	RunNo: 324	133	
Client ID: UD-E-3E	Batch ID: 15162					Analysis Da	te: 10/19/2	2016	SeqNo: 613	3748	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	29.0	4.55	22.73	8.369	90.7	65	135				
Surr: Toluene-d8	1.14		1.137		100	65	135				
Surr: 4-Bromofluorobenzene	1.17		1.137		103	65	135				

Sample ID 1610259-003BMSD	SampType: MSD			Units: mg/	/Kg-dry	Prep Dat	e: 10/18/2	2016	RunNo: 324	433	
Client ID: UD-E-3E	Batch ID: 15162					Analysis Dat	e: 10/19/2	2016	SeqNo: 613	3749	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	30.2	4.55	22.73	8.369	96.0	65	135	28.98	4.07	30	
Surr: Toluene-d8	1.16		1.137		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.17		1.137		103	65	135		0		

Original Page 19 of 37

Date: 10/20/2016



Sound Transit / Key Bank

Work Order: 1610259

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Sample Moisture (Percent Moisture)

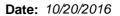
Sample ID 1610194-001ADUP SampType: DUP Units: wt% Prep Date: 10/17/2016 RunNo: 32336

Client ID: **BATCH** Batch ID: **R32336** Analysis Date: **10/17/2016** SeqNo: **611704**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Percent Moisture 8.78 0.500 8.500 3.27 20

Original Page 20 of 37





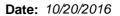
Work Order: 1610259

QC SUMMARY REPORT

Shannon & Wilson **CLIENT:**

CLILITI. CHAINION &	VVIISOIT							T (1 1 1	–	DA 84 41	
Project: Sound Tran	nsit / Key Bank							lotal Me	etals by E	PA Metho	od 6020
Sample ID MB-15167	SampType: MBLK			Units: mg/Kg		Prep Date:	10/19/20	016	RunNo: 32	424	
Client ID: MBLKS	Batch ID: 15167					Analysis Date:	10/19/20	016	SeqNo: 61	3491	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.161									
Sample ID LCS-15167	SampType: LCS			Units: mg/Kg		Prep Date:	10/19/20	016	RunNo: 32	424	
Client ID: LCSS	Batch ID: 15167					Analysis Date:	10/19/20	016	SeqNo: 61	3492	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	18.5	0.152	18.94	0	97.5	80	120				
Sample ID 1610194-001ADUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date:	10/19/20	016	RunNo: 32	424	
Client ID: BATCH	Batch ID: 15167					Analysis Date:	10/19/20	016	SeqNo: 61	3494	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	32.2	0.171						37.84	16.0	20	
Sample ID 1610194-001AMS	SampType: MS			Units: mg/Kg-	dry	Prep Date:	10/19/20	016	RunNo: 32	424	
Client ID: BATCH	Batch ID: 15167					Analysis Date:	10/19/20	016	SeqNo: 61	3498	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	54.0	0.172	21.51	37.84	75.1	75	125				
Sample ID 1610194-001AMSD	SampType: MSD			Units: mg/Kg-	dry	Prep Date:	10/19/20	016	RunNo: 32	424	
Client ID: BATCH	Batch ID: 15167					Analysis Date:	10/19/20	016	SeqNo: 61	3499	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	60.3	0.175	21.86	37.84	103	75	125	53.99	11.0	20	

Page 21 of 37 Original





Work Order: 1610259

Project:

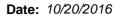
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15162	SampType: LCS			Units: mg/Kg		Prep Da	te: 10/18/2	2016	RunNo: 32	422	
Client ID: LCSS	Batch ID: 15162					Analysis Da	te: 10/18/2	2016	SeqNo: 61	3456	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.544	0.0600	1.000	0	54.4	34.5	141				Q
Chloromethane	0.686	0.0600	1.000	0	68.6	38.8	132				Q
Vinyl chloride	0.715	0.00200	1.000	0	71.5	44	142				
Bromomethane	0.906	0.0900	1.000	0	90.6	40.9	157				
Trichlorofluoromethane (CFC-11)	0.718	0.0500	1.000	0	71.8	41.7	153				
Chloroethane	0.742	0.0600	1.000	0	74.2	37.1	144				
1,1-Dichloroethene	0.785	0.0500	1.000	0	78.5	49.7	142				
Methylene chloride	0.806	0.0200	1.000	0	80.6	46.3	140				
trans-1,2-Dichloroethene	0.807	0.0200	1.000	0	80.7	68	130				
Methyl tert-butyl ether (MTBE)	0.849	0.0500	1.000	0	84.9	59.1	138				
1,1-Dichloroethane	0.874	0.0200	1.000	0	87.4	61.9	137				
2,2-Dichloropropane	1.25	0.0500	1.000	0	125	28.1	149				
cis-1,2-Dichloroethene	0.838	0.0200	1.000	0	83.8	71.3	135				
Chloroform	0.820	0.0200	1.000	0	82.0	67.5	129				В
1,1,1-Trichloroethane (TCA)	0.812	0.0200	1.000	0	81.2	69	132				
1,1-Dichloropropene	0.836	0.0200	1.000	0	83.6	72.7	131				
Carbon tetrachloride	0.844	0.0200	1.000	0	84.4	63.4	137				
1,2-Dichloroethane (EDC)	0.778	0.0300	1.000	0	77.8	61.9	136				
Benzene	0.845	0.0200	1.000	0	84.5	64.3	133				
Trichloroethene (TCE)	0.847	0.0200	1.000	0	84.7	65.5	137				
1,2-Dichloropropane	0.886	0.0200	1.000	0	88.6	63.2	142				
Bromodichloromethane	0.833	0.0200	1.000	0	83.3	73.2	131				
Dibromomethane	0.833	0.0400	1.000	0	83.3	70	130				
cis-1,3-Dichloropropene	0.928	0.0200	1.000	0	92.8	59.1	143				
Toluene	0.858	0.0200	1.000	0	85.8	67.3	138				
trans-1,3-Dichloropropylene	0.916	0.0300	1.000	0	91.6	49.2	149				
1,1,2-Trichloroethane	0.788	0.0300	1.000	0	78.8	74.5	129				
1,3-Dichloropropane	0.778	0.0500	1.000	0	77.8	70	130				
Tetrachloroethene (PCE)	0.818	0.0200	1.000	0	81.8	52.7	150				
Dibromochloromethane	0.814	0.0300	1.000	0	81.4	70.6	144				
1,2-Dibromoethane (EDB)	0.796	0.00500	1.000	0	79.6	70	130				

Original Page 22 of 37





Work Order: 1610259

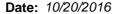
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15162	SampType: LCS			Units: mg/Kg		Prep Da	te: 10/18/ 2	2016	RunNo: 324	122	
Client ID: LCSS	Batch ID: 15162					Analysis Da	te: 10/18/ 2	2016	SeqNo: 613	3456	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	0.868	0.0200	1.000	0	86.8	76.1	123				
1,1,1,2-Tetrachloroethane	0.899	0.0300	1.000	0	89.9	65.9	141				
Ethylbenzene	0.852	0.0300	1.000	0	85.2	74	129				
m,p-Xylene	1.72	0.0200	2.000	0	86.1	70	124				
o-Xylene	0.843	0.0200	1.000	0	84.3	72.7	124				
Styrene	0.850	0.0200	1.000	0	85.0	76.8	130				
Isopropylbenzene	0.863	0.0800	1.000	0	86.3	70	130				
Bromoform	0.890	0.0200	1.000	0	89.0	67	154				
1,1,2,2-Tetrachloroethane	0.792	0.0200	1.000	0	79.2	60	130				
n-Propylbenzene	0.863	0.0200	1.000	0	86.3	74.8	125				
Bromobenzene	0.864	0.0300	1.000	0	86.4	49.2	144				
1,3,5-Trimethylbenzene	0.855	0.0200	1.000	0	85.5	74.6	123				
2-Chlorotoluene	0.865	0.0200	1.000	0	86.5	76.7	129				
4-Chlorotoluene	0.850	0.0200	1.000	0	85.0	77.5	125				
tert-Butylbenzene	0.864	0.0200	1.000	0	86.4	66.2	130				
1,2,3-Trichloropropane	0.826	0.0200	1.000	0	82.6	67.9	136				
1,2,4-Trichlorobenzene	0.913	0.0500	1.000	0	91.3	62.6	143				
sec-Butylbenzene	0.863	0.0200	1.000	0	86.3	75.6	133				
4-Isopropyltoluene	0.856	0.0200	1.000	0	85.6	76.8	131				
1,3-Dichlorobenzene	0.906	0.0200	1.000	0	90.6	72.8	128				
1,4-Dichlorobenzene	0.878	0.0200	1.000	0	87.8	72.6	126				
n-Butylbenzene	0.930	0.0200	1.000	0	93.0	65.3	136				
1,2-Dichlorobenzene	0.889	0.0200	1.000	0	88.9	72.8	126				
1,2-Dibromo-3-chloropropane	0.930	0.500	1.000	0	93.0	61.2	139				
1,2,4-Trimethylbenzene	0.860	0.0200	1.000	0	86.0	77.5	129				
Hexachlorobutadiene	0.972	0.100	1.000	0	97.2	42	151				
Naphthalene	0.873	0.0300	1.000	0	87.3	62.3	134				
1,2,3-Trichlorobenzene	0.875	0.0200	1.000	0	87.5	54.8	143				
Surr: Dibromofluoromethane	1.23		1.250		98.2	56.5	129				
Surr: Toluene-d8	1.23		1.250		98.6	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.32		1.250		105	63.1	141				

Page 23 of 37 Original





Batch ID: 15162

Work Order: 1610259

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15162 SampType: LCS Units: mg/Kg Prep Date: 10/18/2016 RunNo: 32422

Analysis Date: 10/18/2016 SeqNo: 613456

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

NOTES:

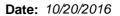
Client ID: LCSS

Project:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-15162	SampType: MBLK	-		Units: mg/Kg		Prep Da	te: 10/18/ 2	2016	RunNo: 324	422	
Client ID: MBLKS	Batch ID: 15162					Analysis Da	te: 10/18/ 2	2016	SeqNo: 61:	3457	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									Q
Chloromethane	ND	0.0600									Q
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	0.0411	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
											- 04 - 60

Original Page 24 of 37





Work Order: 1610259

QC SUMMARY REPORT

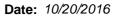
Shannon & Wilson CLIENT:

Volatile Organic Compounds by EPA Method 8260C

Project:	Sound Transit / Key Bank		Volatile Organic Com	pounds by EPA Me
Sample ID MB-15	SampType: MBLK	Units: mg/Kg	Prep Date: 10/18/2016	RunNo: 32422

Client ID: MBLKS	Batch ID: 15162					Analysis Da	ate: 10/18/2	2016	SeqNo: 61	3457	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									

Page 25 of 37 Original





Work Order: 1610259

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

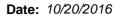
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-15162	SampType: MBLK			Units: mg/Kg		Prep Da	te: 10/18/ 2	2016	RunNo: 324	422	
Client ID: MBLKS	Batch ID: 15162					Analysis Da	te: 10/18/ 2	2016	SeqNo: 613	3457	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.21		1.250		96.9	56.5	129				
Surr: Toluene-d8	1.19		1.250		95.1	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.25		1.250		99.7	63.1	141				
NOTES:											

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610194-004BDUP	SampType: DUP	·		Units: mg/	Kg-dry	Prep Dat	e: 10/18/ 2	2016	RunNo: 324	122	
Client ID: BATCH	Batch ID: 15162					Analysis Dat	te: 10/18/ 2	2016	SeqNo: 613	3434	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0551						0		30	Q
Chloromethane	ND	0.0551						0		30	Q
Vinyl chloride	ND	0.00184						0		30	
Bromomethane	ND	0.0827						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0459						0		30	
Chloroethane	ND	0.0551						0		30	
1,1-Dichloroethene	ND	0.0459						0		30	
Methylene chloride	ND	0.0184						0		30	
trans-1,2-Dichloroethene	ND	0.0184						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0459						0		30	
1,1-Dichloroethane	ND	0.0184						0		30	
2,2-Dichloropropane	ND	0.0459						0		30	
cis-1,2-Dichloroethene	ND	0.0184						0		30	
Chloroform	0.0585	0.0184						0.05907	1.03	30	В
1,1,1-Trichloroethane (TCA)	ND	0.0184						0		30	
1,1-Dichloropropene	ND	0.0184						0		30	
Carbon tetrachloride	ND	0.0184						0		30	

Original Page 26 of 37





Work Order: 1610259

Project:

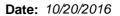
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610194-004BDUP	SampType: DUP			Units: mg/K	(g-dry	Prep Dat	te: 10/18/2	2016	RunNo: 324	122	
Client ID: BATCH	Batch ID: 15162					Analysis Dat	e: 10/18/2	2016	SeqNo: 613	3434	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	ND	0.0276						0		30	_
Benzene	ND	0.0184						0		30	
Trichloroethene (TCE)	ND	0.0184						0		30	
1,2-Dichloropropane	ND	0.0184						0		30	
Bromodichloromethane	ND	0.0184						0		30	
Dibromomethane	ND	0.0367						0		30	
cis-1,3-Dichloropropene	ND	0.0184						0		30	
Toluene	ND	0.0184						0		30	
trans-1,3-Dichloropropylene	ND	0.0276						0		30	
1,1,2-Trichloroethane	ND	0.0276						0		30	
1,3-Dichloropropane	ND	0.0459						0		30	
Tetrachloroethene (PCE)	ND	0.0184						0		30	
Dibromochloromethane	ND	0.0276						0		30	
1,2-Dibromoethane (EDB)	ND	0.00459						0		30	
Chlorobenzene	ND	0.0184						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0276						0		30	
Ethylbenzene	ND	0.0276						0		30	
m,p-Xylene	0.0276	0.0184						0.02677	3.00	30	
o-Xylene	ND	0.0184						0		30	
Styrene	ND	0.0184						0		30	
Isopropylbenzene	ND	0.0735						0		30	
Bromoform	ND	0.0184						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0184						0		30	
n-Propylbenzene	ND	0.0184						0		30	
Bromobenzene	ND	0.0276						0		30	
1,3,5-Trimethylbenzene	ND	0.0184						0		30	
2-Chlorotoluene	ND	0.0184						0		30	
4-Chlorotoluene	ND	0.0184						0		30	
tert-Butylbenzene	ND	0.0184						0		30	
1,2,3-Trichloropropane	ND	0.0184						0		30	
1,2,4-Trichlorobenzene	ND	0.0459						0		30	

Original Page 27 of 37





Work Order: 1610259

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

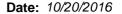
Sample ID 1610194-004BDUP	SampType: DUP			Units: mg	/Kg-dry	Prep Da	te: 10/18/ 2	2016	RunNo: 324	422	
Client ID: BATCH	Batch ID: 15162					Analysis Da	te: 10/18/ 2	2016	SeqNo: 613	3434	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	ND	0.0184						0		30	
4-Isopropyltoluene	ND	0.0184						0		30	
1,3-Dichlorobenzene	ND	0.0184						0		30	
1,4-Dichlorobenzene	ND	0.0184						0		30	
n-Butylbenzene	ND	0.0184						0		30	
1,2-Dichlorobenzene	ND	0.0184						0		30	
1,2-Dibromo-3-chloropropane	ND	0.459						0		30	
1,2,4-Trimethylbenzene	ND	0.0184						0		30	
Hexachlorobutadiene	ND	0.0919						0		30	
Naphthalene	ND	0.0276						0		30	
1,2,3-Trichlorobenzene	ND	0.0184						0		30	
Surr: Dibromofluoromethane	1.11		1.148		96.5	56.5	129		0		
Surr: Toluene-d8	1.20		1.148		104	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.19		1.148		104	63.1	141		0		
NOTES:											

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610194-009BMS	SampType: MS	Units: mg/K			/Kg-dry	Prep Da	te: 10/18/2	2016	RunNo: 324	122	•
Client ID: BATCH	Batch ID: 15162					Analysis Da	te: 10/19/2	2016	SeqNo: 613	3440	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.508	0.0591	0.9855	0	51.5	43.5	121				Q
Chloromethane	0.809	0.0591	0.9855	0	82.1	45	130				Q
Vinyl chloride	0.824	0.00197	0.9855	0	83.6	51.2	146				
Bromomethane	0.881	0.0887	0.9855	0	89.4	21.3	120				
Trichlorofluoromethane (CFC-11)	0.484	0.0493	0.9855	0	49.1	35	131				
Chloroethane	0.512	0.0591	0.9855	0	52.0	43.8	117				
1,1-Dichloroethene	0.843	0.0493	0.9855	0	85.6	61.9	141				
Methylene chloride	0.988	0.0197	0.9855	0	100	54.7	142				
trans-1,2-Dichloroethene	0.918	0.0197	0.9855	0	93.2	52	136				
Methyl tert-butyl ether (MTBE)	1.04	0.0493	0.9855	0	106	54.4	132				

Original Page 28 of 37





1.05

0.927

0.997

1.00

0.989

1.01

0.967

0.967

0.904

0.908

1.01

1.00

0.962

0.963

1.94

0.973

1.01

0.973

0.917

0.915

0.985

0.0197

0.0197

0.0394

0.0197

0.0197

0.0296

0.0296

0.0493

0.0197

0.0296

0.00493

0.0197

0.0296

0.0296

0.0197

0.0197

0.0197

0.0788

0.0197

0.0197

0.0197

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

1.971

0.9855

0.9855

0.9855

0.9855

0.9855

0.9855

Work Order: 1610259

1,2-Dichloropropane
Bromodichloromethane

cis-1,3-Dichloropropene

1,1,2-Trichloroethane

1,3-Dichloropropane

Chlorobenzene

Ethylbenzene

Isopropylbenzene

n-Propylbenzene

m,p-Xylene

Bromoform

o-Xylene

Styrene

Original

Tetrachloroethene (PCE)

1,2-Dibromoethane (EDB)

1,1,1,2-Tetrachloroethane

1,1,2,2-Tetrachloroethane

Dibromochloromethane

trans-1,3-Dichloropropylene

Dibromomethane

Toluene

QC SUMMARY REPORT

Page 29 of 37

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Project: Sound Tran	nsit / Key Bank					Volatile	e Organi	c Compour	ids by EP	A Method	1 82600
Sample ID 1610194-009BMS	SampType: MS			Units: mg/	Kg-dry	Prep Da	te: 10/18/2	2016	RunNo: 324	422	
Client ID: BATCH	Batch ID: 15162					Analysis Da	te: 10/19/2	2016	SeqNo: 613	3440	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	0.941	0.0197	0.9855	0	95.5	51.8	141				
2,2-Dichloropropane	1.05	0.0493	0.9855	0	107	36	123				
cis-1,2-Dichloroethene	1.02	0.0197	0.9855	0	104	58.6	136				
Chloroform	1.01	0.0197	0.9855	0.04945	97.3	53.2	129				В
1,1,1-Trichloroethane (TCA)	0.886	0.0197	0.9855	0	89.9	58.3	145				
1,1-Dichloropropene	0.925	0.0197	0.9855	0	93.9	55.1	138				
Carbon tetrachloride	0.842	0.0197	0.9855	0	85.4	53.3	144				
1,2-Dichloroethane (EDC)	0.956	0.0296	0.9855	0	97.0	51.3	139				
Benzene	0.984	0.0197	0.9855	0	99.8	63.5	133				
Trichloroethene (TCE)	0.946	0.0197	0.9855	0	96.0	68.6	132				

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

107

94.0

101

102

100

103

98.1

98.2

91.7

92.1

103

102

97.6

97.7

98.2

98.7

102

98.7

93.0

92.8

100

59

50.7

50.6

50.4

63.4

44.1

51.6

53.1

35.6

55.3

50.4

53.1

54.5

53.1

53.3

51.1

58.9

57.9

51.9

53.6

60

136

141

137

138

132

147

137

134

158

140

136

133

142

134

132

139

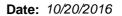
132

138

130

131

140





Work Order: 1610259

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

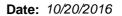
Sample ID 1610194-009BMS	SampType: MS			Units: mg/h	(g-dry	Prep Da	te: 10/18/2	2016	RunNo: 324	122	
Client ID: BATCH	Batch ID: 15162					Analysis Da	te: 10/19/2	2016	SeqNo: 613	3440	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	1.01	0.0296	0.9855	0	103	54.2	140				
1,3,5-Trimethylbenzene	0.990	0.0197	0.9855	0	100	51.8	136				
2-Chlorotoluene	1.00	0.0197	0.9855	0	101	51.6	136				
4-Chlorotoluene	0.985	0.0197	0.9855	0	99.9	50.1	139				
tert-Butylbenzene	0.984	0.0197	0.9855	0	99.8	50.5	135				
1,2,3-Trichloropropane	0.959	0.0197	0.9855	0	97.3	50.5	131				
1,2,4-Trichlorobenzene	0.917	0.0493	0.9855	0	93.1	50.8	130				
sec-Butylbenzene	0.974	0.0197	0.9855	0	98.8	52.6	141				
4-Isopropyltoluene	0.979	0.0197	0.9855	0	99.4	52.9	134				
1,3-Dichlorobenzene	1.02	0.0197	0.9855	0	103	52.6	131				
1,4-Dichlorobenzene	0.987	0.0197	0.9855	0	100	52.9	129				
n-Butylbenzene	1.02	0.0197	0.9855	0	104	52.6	130				
1,2-Dichlorobenzene	0.992	0.0197	0.9855	0	101	55.8	129				
1,2-Dibromo-3-chloropropane	0.882	0.493	0.9855	0	89.5	40.5	131				
1,2,4-Trimethylbenzene	0.996	0.0197	0.9855	0	101	50.6	137				
Hexachlorobutadiene	1.01	0.0986	0.9855	0	103	40.6	158				
Naphthalene	0.945	0.0296	0.9855	0	95.9	52.3	124				
1,2,3-Trichlorobenzene	0.947	0.0197	0.9855	0	96.1	54.4	124				
Surr: Dibromofluoromethane	1.20		1.232		97.3	56.5	129				
Surr: Toluene-d8	1.22		1.232		99.0	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.30		1.232		106	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610194-009BMSD	SampType: MSD			Units: mg/Kg-dry		Prep Date: 10/18/2016			RunNo: 324		
Client ID: BATCH	Batch ID: 15162					Analysis Da	te: 10/19/2	2016	SeqNo: 613	3441	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.439	0.0591	0.9855	0	44.5	43.5	121	0.5077	14.6	30	Q
Chloromethane	0.753	0.0591	0.9855	0	76.4	45	130	0.8093	7.22	30	Q
Vinyl chloride	0.763	0.00197	0.9855	0	77.4	51.2	146	0.8239	7.67	30	

Original Page 30 of 37





Work Order: 1610259

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Project: Sound Trans	sit / Key Bank					Volatile	Organi	c Compour	nds by EP	A Method	l 82600
Sample ID 1610194-009BMSD	SampType: MSD			Units: mg/k	(g-dry	Prep Da	te: 10/18/2	016	RunNo: 324	122	
Client ID: BATCH	Batch ID: 15162					Analysis Da	te: 10/19/2	016	SeqNo: 613	3441	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	0.847	0.0887	0.9855	0	85.9	21.3	120	0.8811	4.00	30	
Trichlorofluoromethane (CFC-11)	0.458	0.0493	0.9855	0	46.5	35	131	0.4839	5.42	30	
Chloroethane	0.480	0.0591	0.9855	0	48.7	43.8	117	0.5124	6.56	30	
1,1-Dichloroethene	0.797	0.0493	0.9855	0	80.9	61.9	141	0.8435	5.67	30	
Methylene chloride	0.940	0.0197	0.9855	0	95.4	54.7	142	0.9882	5.01	30	
trans-1,2-Dichloroethene	0.885	0.0197	0.9855	0	89.8	52	136	0.9182	3.67	30	
Methyl tert-butyl ether (MTBE)	1.04	0.0493	0.9855	0	105	54.4	132	1.041	0.447	30	
1,1-Dichloroethane	0.918	0.0197	0.9855	0	93.2	51.8	141	0.9408	2.40	30	
2,2-Dichloropropane	1.02	0.0493	0.9855	0	103	36	123	1.052	3.52	30	
cis-1,2-Dichloroethene	0.976	0.0197	0.9855	0	99.0	58.6	136	1.021	4.47	30	
Chloroform	0.971	0.0197	0.9855	0.04945	93.5	53.2	129	1.009	3.85	30	В
1,1,1-Trichloroethane (TCA)	0.866	0.0197	0.9855	0	87.8	58.3	145	0.8862	2.33	30	
1,1-Dichloropropene	0.891	0.0197	0.9855	0	90.4	55.1	138	0.9253	3.76	30	
Carbon tetrachloride	0.817	0.0197	0.9855	0	82.9	53.3	144	0.8416	2.96	30	
1,2-Dichloroethane (EDC)	0.943	0.0296	0.9855	0	95.7	51.3	139	0.9563	1.35	30	
Benzene	0.963	0.0197	0.9855	0	97.7	63.5	133	0.9838	2.13	30	
Trichloroethene (TCE)	0.924	0.0197	0.9855	0	93.8	68.6	132	0.9461	2.35	30	
1,2-Dichloropropane	1.02	0.0197	0.9855	0	103	59	136	1.052	3.35	30	
Bromodichloromethane	0.904	0.0197	0.9855	0	91.7	50.7	141	0.9266	2.48	30	
Dibromomethane	0.957	0.0394	0.9855	0	97.1	50.6	137	0.9968	4.09	30	
cis-1,3-Dichloropropene	0.980	0.0197	0.9855	0	99.5	50.4	138	1.001	2.05	30	
Toluene	0.948	0.0197	0.9855	0	96.2	63.4	132	0.9892	4.25	30	
trans-1,3-Dichloropropylene	0.997	0.0296	0.9855	0	101	44.1	147	1.014	1.63	30	
1,1,2-Trichloroethane	0.943	0.0296	0.9855	0	95.6	51.6	137	0.9669	2.55	30	
1,3-Dichloropropane	0.934	0.0493	0.9855	0	94.7	53.1	134	0.9674	3.56	30	
Tetrachloroethene (PCE)	0.865	0.0197	0.9855	0	87.8	35.6	158	0.9037	4.39	30	
Dibromochloromethane	0.893	0.0296	0.9855	0	90.6	55.3	140	0.9075	1.61	30	
1,2-Dibromoethane (EDB)	0.987	0.00493	0.9855	0	100	50.4	136	1.014	2.70	30	
Chlorobenzene	0.983	0.0197	0.9855	0	99.7	60	133	1.003	2.02	30	
1,1,1,2-Tetrachloroethane	0.932	0.0296	0.9855	0	94.6	53.1	142	0.9623	3.21	30	
Ethylbenzene											

Page 31 of 37 Original

Date: 10/20/2016



Sound Transit / Key Bank

Work Order: 1610259

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

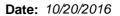
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610194-009BMSD	SampType: MSD			Units: mg/	Kg-dry	Prep Da	te: 10/18/2	2016	RunNo: 324	422	
Client ID: BATCH	Batch ID: 15162					Analysis Da	te: 10/19/2	2016	SeqNo: 613	3441	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	1.89	0.0197	1.971	0	96.0	53.1	132	1.936	2.30	30	
o-Xylene	0.958	0.0197	0.9855	0	97.2	53.3	139	0.9727	1.51	30	
Styrene	0.988	0.0197	0.9855	0	100	51.1	132	1.005	1.73	30	
Isopropylbenzene	0.950	0.0788	0.9855	0	96.4	58.9	138	0.9731	2.36	30	
Bromoform	0.907	0.0197	0.9855	0	92.0	57.9	130	0.9168	1.08	30	
1,1,2,2-Tetrachloroethane	0.894	0.0197	0.9855	0	90.7	51.9	131	0.9147	2.28	30	
n-Propylbenzene	0.963	0.0197	0.9855	0	97.7	53.6	140	0.9852	2.28	30	
Bromobenzene	0.996	0.0296	0.9855	0	101	54.2	140	1.012	1.54	30	
1,3,5-Trimethylbenzene	0.965	0.0197	0.9855	0	97.9	51.8	136	0.9897	2.53	30	
2-Chlorotoluene	0.972	0.0197	0.9855	0	98.7	51.6	136	0.9997	2.77	30	
4-Chlorotoluene	0.961	0.0197	0.9855	0	97.5	50.1	139	0.9847	2.41	30	
tert-Butylbenzene	0.959	0.0197	0.9855	0	97.3	50.5	135	0.9839	2.54	30	
1,2,3-Trichloropropane	0.937	0.0197	0.9855	0	95.1	50.5	131	0.9590	2.32	30	
1,2,4-Trichlorobenzene	0.932	0.0493	0.9855	0	94.6	50.8	130	0.9171	1.62	30	
sec-Butylbenzene	0.946	0.0197	0.9855	0	96.0	52.6	141	0.9741	2.95	30	
4-Isopropyltoluene	0.959	0.0197	0.9855	0	97.3	52.9	134	0.9792	2.09	30	
1,3-Dichlorobenzene	1.02	0.0197	0.9855	0	103	52.6	131	1.016	0.0841	30	
1,4-Dichlorobenzene	0.978	0.0197	0.9855	0	99.3	52.9	129	0.9868	0.854	30	
n-Butylbenzene	1.01	0.0197	0.9855	0	102	52.6	130	1.023	1.55	30	
1,2-Dichlorobenzene	0.988	0.0197	0.9855	0	100	55.8	129	0.9917	0.383	30	
1,2-Dibromo-3-chloropropane	0.933	0.493	0.9855	0	94.7	40.5	131	0.8822	5.59	30	
1,2,4-Trimethylbenzene	0.969	0.0197	0.9855	0	98.3	50.6	137	0.9958	2.76	30	
Hexachlorobutadiene	0.978	0.0986	0.9855	0	99.2	40.6	158	1.013	3.54	30	
Naphthalene	0.971	0.0296	0.9855	0	98.5	52.3	124	0.9450	2.72	30	
1,2,3-Trichlorobenzene	0.964	0.0197	0.9855	0	97.8	54.4	124	0.9472	1.72	30	
Surr: Dibromofluoromethane	1.18		1.232		95.6	56.5	129		0		
Surr: Toluene-d8	1.20		1.232		97.5	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.30		1.232		106	63.1	141		0		

NOTES:

Original Page 32 of 37

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).





Work Order: 1610259

Project:

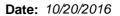
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610259-004BDUP	SampType: DUP			Units: mg/	Kg-dry	Prep Da	te: 10/18/ 2	2016	RunNo: 324	122	
Client ID: UD-E-3W	Batch ID: 15162					Analysis Da	te: 10/19/ 2	2016	SeqNo: 613	3446	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0568						0		30	Q
Chloromethane	ND	0.0568						0		30	Q
Vinyl chloride	ND	0.00189						0		30	
Bromomethane	ND	0.0852						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0473						0		30	
Chloroethane	ND	0.0568						0		30	
1,1-Dichloroethene	ND	0.0473						0		30	
Methylene chloride	ND	0.0189						0		30	
trans-1,2-Dichloroethene	ND	0.0189						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0473						0		30	
1,1-Dichloroethane	ND	0.0189						0		30	
2,2-Dichloropropane	ND	0.0473						0		30	
cis-1,2-Dichloroethene	ND	0.0189						0		30	
Chloroform	0.0561	0.0189						0.05505	1.90	30	В
1,1,1-Trichloroethane (TCA)	ND	0.0189						0		30	
1,1-Dichloropropene	ND	0.0189						0		30	
Carbon tetrachloride	ND	0.0189						0		30	
1,2-Dichloroethane (EDC)	ND	0.0284						0		30	
Benzene	ND	0.0189						0		30	
Trichloroethene (TCE)	ND	0.0189						0		30	
1,2-Dichloropropane	ND	0.0189						0		30	
Bromodichloromethane	ND	0.0189						0		30	
Dibromomethane	ND	0.0379						0		30	
cis-1,3-Dichloropropene	ND	0.0189						0		30	
Toluene	ND	0.0189						0		30	
trans-1,3-Dichloropropylene	ND	0.0284						0		30	
1,1,2-Trichloroethane	ND	0.0284						0		30	
1,3-Dichloropropane	ND	0.0473						0		30	
Tetrachloroethene (PCE)	0.434	0.0189						0.4277	1.56	30	
Dibromochloromethane	ND	0.0284						0		30	
1,2-Dibromoethane (EDB)	ND	0.00473						0		30	

Original Page 33 of 37





Work Order: 1610259

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610259-004BDUP	SampType: DUP			Units: mg/	Kg-dry	Prep Da	te: 10/18/ 2	2016	RunNo: 32	422	
Client ID: UD-E-3W	Batch ID: 15162					Analysis Da	te: 10/19/ 2	2016	SeqNo: 61	3446	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	ND	0.0189						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0284						0		30	
Ethylbenzene	ND	0.0284						0		30	
m,p-Xylene	ND	0.0189						0		30	
o-Xylene	ND	0.0189						0		30	
Styrene	ND	0.0189						0		30	
Isopropylbenzene	ND	0.0757						0		30	
Bromoform	ND	0.0189						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0189						0		30	
n-Propylbenzene	ND	0.0189						0		30	
Bromobenzene	ND	0.0284						0		30	
1,3,5-Trimethylbenzene	ND	0.0189						0		30	
2-Chlorotoluene	ND	0.0189						0		30	
4-Chlorotoluene	ND	0.0189						0		30	
tert-Butylbenzene	ND	0.0189						0		30	
1,2,3-Trichloropropane	ND	0.0189						0		30	
1,2,4-Trichlorobenzene	ND	0.0473						0		30	
sec-Butylbenzene	ND	0.0189						0		30	
4-Isopropyltoluene	ND	0.0189						0		30	
1,3-Dichlorobenzene	ND	0.0189						0		30	
1,4-Dichlorobenzene	ND	0.0189						0		30	
n-Butylbenzene	ND	0.0189						0		30	
1,2-Dichlorobenzene	ND	0.0189						0		30	
1,2-Dibromo-3-chloropropane	ND	0.473						0		30	
1,2,4-Trimethylbenzene	ND	0.0189						0		30	
Hexachlorobutadiene	ND	0.0946						0		30	
Naphthalene	ND	0.0284						0		30	
1,2,3-Trichlorobenzene	ND	0.0189						0		30	
Surr: Dibromofluoromethane	1.10		1.183		93.1	56.5	129		0		
Surr: Toluene-d8	1.20		1.183		102	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.16		1.183		98.4	63.1	141		0		

Original Page 34 of 37

Date: 10/20/2016



Work Order: 1610259

QC SUMMARY REPORT

Shannon & Wilson CLIENT:

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610259-004BDUP

SampType: **DUP**

Sound Transit / Key Bank

Units: mg/Kg-dry

Prep Date: 10/18/2016

RunNo: 32422

Client ID: UD-E-3W

Batch ID: 15162

Analysis Date: 10/19/2016

SeqNo: 613446

Analyte

Project:

Result

RL SPK value SPK Ref Val

%REC LowLimit HighLimit RPD Ref Val

%RPD RPDLimit Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Page 35 of 37 Original



Sample Log-In Check List

C	lient Name:	sw				Work O				
Lo	ogged by:	Clare Grig	gs			Date Re	ceived:	10/14/201	6 2:10:00 PM	
<u>Cha</u>	in of Custo	<u>ody</u>								
1.	Is Chain of C	ustody comp	olete?			Yes	✓	No \square	Not Present	
2.	How was the	sample deliv	vered?			Clier	<u>nt</u>			
<u>Log</u>	ı In									
_	Coolers are p	resent?				Yes	✓	No 🗌	NA 🗆	
4.	Shipping con	tainer/cooler	in good condition	?		Yes	✓	No \square		
5.			shipping contain ustody Seals not			Yes		No 🗌	Not Required 🗹	
6.	Was an atten	npt made to	cool the samples	?		Yes	✓	No \square	NA \square	
7.	Were all item	s received a	t a temperature o	f >0°C to 10.	.0°C*	Yes	•	No 🗌	na 🗆	
8.	Sample(s) in	proper conta	niner(s)?			Yes	✓	No 🗌		
			for indicated test	(s)?		Yes	✓	No 🗌		
10.	Are samples	properly pre	served?			Yes	✓	No \square		
11.	Was preserva	ative added t	o bottles?			Yes		No 🗸	NA \square	
12.	Is there head	space in the	VOA vials?			Yes		No 🗌	NA 🗸	
			s arrive in good co	ondition(unbr	oken)?	Yes	✓	No 🗌		
14.	Does paperw	ork match b	ottle labels?			Yes	✓	No 🗌		
15	Are matrices	correctly ide	ntified on Chain o	f Custody?		Yes	•	No 🗌		
			vere requested?	i Custody:		Yes	✓	No \square		
	Were all hold	-				Yes		No 🗆		
<u>Spe</u>	<u>cial Handli</u>	ing (if app	olicable)							
18.	Was client no	otified of all c	liscrepancies with	this order?		Yes		No 🗀	NA 🗹	٦
	Person	Notified:			Date					
	By Who				Via:	еМа	il 🗌 Ph	hone Fax [In Person	
	Regardi									
		nstructions:								
19.	Additional rer	marks:								
<u>ltem</u>	<u>Information</u>									
		Item #		Temp ⁰C						
	Cooler			7.2						

7.1

Sample

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Frem	on	t				C	hai	n c	of Cu							boratory Services Agreement
	alytica	000 to.								Dat	e:	10-1	4-1	6		Laboratory Project No (internal):
	206-352-37															Page:
	: 206-352-71						Р	roject	Name:	5	DUN	d T	ran	sit	1	V. Q V
Client: Shanno	n & W	ilson	Inc	_		_	P	roject	No:	2	-1-	-16=	00-	12	5 co	llected by: SKH
Address: 400 N	34+h	St	بدرين					ocatio			_	1154				is the college of the college of the best want barriers
City, State, Zip: Seattle							R	eport	To (PM):		45	nes	Tir	ac)	4300000
Telephone: ZOG-GO	5-272	Fax:				_	P	M Ema	ail:	_A	CT	0	Sho	m	١١١	(OM
Matrix Codes: A = Air, AQ = Aqueous, B	= Bulk, O = Ot	her, P = Pro	duct, S = Soi	il, SD =	Sediment	, SL = 5	Solid, \	W = Wa	iter, DW	= Drinkin	g Wate	r, GW =	Ground	Water	SW = St	orm Water, WW = Waste Water
			Sample		889)	SAI	1		Serification	\$ 00 10 10 10 10 10 10 10 10 10 10 10 10	Sur Sur Sur Sur Sur Sur Sur Sur Sur Sur	8 80 S	Man do			and the same of th
Sample Name	Sample Date	Sample Time	Type (Matrix)*	10	25/16/2	A 3	oline	Siesell	200		Metals.	Cal C Arios	18 80 A	3	19	Comments
UD-E-3N	10/4	1230					Ì	Ť			Ť		X			Comments
UD-E-35		1235		1 3 1		100	E ST		1079	e guidan el Saldas	iso a	i grittiner g will to	X		on the	 Provide the sort of the second section of the second
UD-E-3E		1240				П				est in		us metal	X		100	a contribution at the majority areas of production at the Ind.
UD-E-3W	+	1245	V			No. 10	14			A. S.		10162	X		10 to 10	CONFIDENTIALITY For more an electron manager as the confidence of
UD-W-TIS	1	1300	7	X		X)	X						X		minimum of your month because with the
ar port a r Hymra ser	and grant or a	T 18 11 1	to all annu	97 10	in the	.300	-		200	sq-		11/40	110		14 m 7 m	HANDERCHE MENANT BELLANDERS TANKERSE FERRANCE
	-0.4 -0.5 1	Spin In-Spi			o dola			10	J - 1-1-1-1	nes me		No Holling	talen r		es Heite a	essanting to the second control of the control of t
																mannersk til til en et en minnt at føste ett h
Lo Silve Ship Storage		William -	3,11 (6)		- 400	111		-24		(0)	-	el(.16 g))	No elect		of and the	UNISCIPLIFICATION FOR VENUE, Thus agree ment shout be some pretical
0	Electronic	r rionin	4 12		- In					SOT GAT	ПW	ergon for	ethere is		PR BOST	ASTED WARRANTT. TAI warmin's one that mail perform second
*Metals Analysis (Circle): MTCA-5	RCRA-8	Priority Pollu	tants TA	AL /	ndividual	Ag A	l As E	Ba E	Be Ca C	d Co Cr	Cu F	Hg K	Mg Mr	Мо	Na Ni I	Pb Sb Se Sr Sn Ti Tl U V Zn
**Anions (Circle): Nitrate Nitrit	e Chloride				O-Pho:			uoride		rate+Nitri		Turn-aro received			samples will begin	Special Remarks:
ample Disposal: Return to	Client	Disposal by assessed if s	Lab (Samples amples are r				unless	otherwi	ise noted.	. A fee ma	y be	on the fo	llowing	busine	ss day.	AND SECURITION OF THE PROPERTY OF A STREET OF THE ARM
I represent that I am authorized to engreement to each of the terms on the		_			alytical	on beh	alf of t	he Cli	ent nam	ed abov	e, that	I have v	erified	Clien	t's	THE STORES TO SELECT WHILE STORE THE STORE STATE OF THE STREET STATES ST
	ate/Time 10-14-1	/	: 10		Received	0	7	77	X	Date/	ime /	6	141	10)	Ne basal action, expendent of schotter to active toward variety in
	ate/Time	-			Received	I KING	U	11		Date/1	ine	ine obje	riosso	dancin	yes west	TAT → SameDay [^] NextDay [^] 2 Day 3 Day STD
				×												^Please coordinate with the lab in advance



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Shannon & Wilson

Agnes Tirao 400 N. 34th Street, Suite 100 Seattle, WA 98103

RE: Sound Transit / Key Bank Work Order Number: 1610353

October 27, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 3 sample(s) on 10/24/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Sample Moisture (Percent Moisture)

Total Metals by EPA Method 6020

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

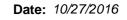
Thank you for using Fremont Analytical.

All c. Redy

Sincerely,

Mike Ridgeway Laboratory Director

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005 ORELAP Certification: WA 100009-007 (NELAP Recognized)





CLIENT: Shannon & Wilson Work Order Sample Summary

Project: Sound Transit / Key Bank

Work Order: 1610353

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1610353-001	UD-B2	10/24/2016 7:30 AM	10/24/2016 11:17 AM
1610353-002	UD2-B2	10/24/2016 7:40 AM	10/24/2016 11:17 AM
1610353-003	Trip Blank	10/20/2016 5:03 PM	10/24/2016 11:17 AM



Case Narrative

WO#: **1610353**Date: **10/27/2016**

CLIENT: Shannon & Wilson

Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



Qualifiers & Acronyms

WO#: **1610353**

Date Reported: 10/27/2016

Qualifiers:

- * Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



Work Order: **1610353**Date Reported: **10/27/2016**

Client: Shannon & Wilson Collection Date: 10/24/2016 7:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-001 **Matrix**: Soil

Client Sample ID: UD-B2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	n ID:	15250 Analyst: WC
Diesel (Fuel Oil)	ND	23.4		mg/Kg-dry	1	10/26/2016 7:28:00 PM
Heavy Oil	ND	58.4		mg/Kg-dry	1	10/26/2016 7:28:00 PM
Surr: 2-Fluorobiphenyl	97.4	50-150		%Rec	1	10/26/2016 7:28:00 PM
Surr: o-Terphenyl	100	50-150		%Rec	1	10/26/2016 7:28:00 PM
Gasoline by NWTPH-Gx				Batch	n ID:	15222 Analyst: EM
Gasoline	ND	3.03		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Surr: Toluene-d8	99.4	65-135		%Rec	1	10/25/2016 7:42:52 AM
Surr: 4-Bromofluorobenzene	100	65-135		%Rec	1	10/25/2016 7:42:52 AM
Volatile Organic Compounds by	EPA Method	8260C		Batch	n ID:	15222 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0364	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chloromethane	ND	0.0364	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Vinyl chloride	ND	0.00121	_	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromomethane	ND	0.0546		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Trichlorofluoromethane (CFC-11)	ND	0.0303	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chloroethane	ND	0.0364		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1-Dichloroethene	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Methylene chloride	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
trans-1,2-Dichloroethene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Methyl tert-butyl ether (MTBE)	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1-Dichloroethane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
2,2-Dichloropropane	ND	0.0303	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
cis-1,2-Dichloroethene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chloroform	0.0179	0.0121	В	mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1,1-Trichloroethane (TCA)	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1-Dichloropropene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Carbon tetrachloride	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dichloroethane (EDC)	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Benzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Trichloroethene (TCE)	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dichloropropane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromodichloromethane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Dibromomethane	ND	0.0243		mg/Kg-dry	1	10/25/2016 7:42:52 AM
cis-1,3-Dichloropropene	ND	0.0121	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Toluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
trans-1,3-Dichloropropylene	ND	0.0182	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM



Work Order: **1610353**Date Reported: **10/27/2016**

Client: Shannon & Wilson Collection Date: 10/24/2016 7:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-001 **Matrix:** Soil

Client Sample ID: UD-B2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Organic Compounds by	EPA Method	8260C		Batch	ID: 15	5222 Analyst: EM
1,1,2-Trichloroethane	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,3-Dichloropropane	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Tetrachloroethene (PCE)	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Dibromochloromethane	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dibromoethane (EDB)	ND	0.00303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1,1,2-Tetrachloroethane	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Ethylbenzene	0.0248	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
m,p-Xylene	0.0152	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
o-Xylene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Styrene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Isopropylbenzene	ND	0.0486		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromoform	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1,2,2-Tetrachloroethane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
n-Propylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromobenzene	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,3,5-Trimethylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
2-Chlorotoluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
4-Chlorotoluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
tert-Butylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,3-Trichloropropane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,4-Trichlorobenzene	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
sec-Butylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
4-Isopropyltoluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,3-Dichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,4-Dichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
n-Butylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dibromo-3-chloropropane	ND	0.303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,4-Trimethylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Hexachlorobutadiene	ND	0.0607		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Naphthalene	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,3-Trichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Surr: Dibromofluoromethane	96.1	56.5-129		%Rec	1	10/25/2016 7:42:52 AM
Surr: Toluene-d8	108	64.3-131		%Rec	1	10/25/2016 7:42:52 AM
Surr: 1-Bromo-4-fluorobenzene	98.9	63.1-141		%Rec	1	10/25/2016 7:42:52 AM



Work Order: **1610353**Date Reported: **10/27/2016**

Analyst: EM

Client: Shannon & Wilson Collection Date: 10/24/2016 7:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-001 **Matrix:** Soil

Client Sample ID: UD-B2

NOTES:

Analyses Result RL Qual Units DF Date Analyzed

Volatile Organic Compounds by EPA Method 8260C

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Total Metals by EPA Method 6020

Batch ID: 15225 Analyst: TN

Batch ID: 15222

Lead 1.68 0.181 mg/Kg-dry 1 10/25/2016 4:05:58 PM

Sample Moisture (Percent Moisture)

Batch ID: R32564

Analyst: BB

Percent Moisture 17.5 0.500 wt% 1 10/27/2016 10:52:48 AM

Original



Work Order: **1610353**Date Reported: **10/27/2016**

Client: Shannon & Wilson Collection Date: 10/24/2016 7:40:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-002 **Matrix:** Soil

Client Sample ID: UD2-B2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH	-Dx/Dx Ext.			Batch	n ID:	15250 Analyst: WC
Diesel (Fuel Oil)	ND	23.0		mg/Kg-dry	1	10/26/2016 9:35:00 PM
Heavy Oil	ND	57.4		mg/Kg-dry	1	10/26/2016 9:35:00 PM
Surr: 2-Fluorobiphenyl	88.7	50-150		%Rec	1	10/26/2016 9:35:00 PM
Surr: o-Terphenyl	90.5	50-150		%Rec	1	10/26/2016 9:35:00 PM
Gasoline by NWTPH-Gx				Batch	ı ID:	15222 Analyst: EM
Gasoline	ND	5.52		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Surr: Toluene-d8	101	65-135		%Rec	1	10/25/2016 8:12:03 AM
Surr: 4-Bromofluorobenzene	99.1	65-135		%Rec	1	10/25/2016 8:12:03 AM
Volatile Organic Compounds by	EPA Method 8	8260C		Batch	ı ID:	15222 Analyst: EM
Dichlorodifluoromethane (CFC-12)	ND	0.0663	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Chloromethane	ND	0.0663	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Vinyl chloride	ND	0.00221	_	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Bromomethane	ND	0.0994		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Trichlorofluoromethane (CFC-11)	ND	0.0552	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Chloroethane	ND	0.0663		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1-Dichloroethene	ND	0.0552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Methylene chloride	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
trans-1,2-Dichloroethene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Methyl tert-butyl ether (MTBE)	ND	0.0552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1-Dichloroethane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
2,2-Dichloropropane	ND	0.0552	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
cis-1,2-Dichloroethene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Chloroform	0.0363	0.0221	В	mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1,1-Trichloroethane (TCA)	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1-Dichloropropene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Carbon tetrachloride	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2-Dichloroethane (EDC)	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Benzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Trichloroethene (TCE)	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2-Dichloropropane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Bromodichloromethane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Dibromomethane	ND	0.0442		mg/Kg-dry	1	10/25/2016 8:12:03 AM
cis-1,3-Dichloropropene	ND	0.0221	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Toluene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
trans-1,3-Dichloropropylene	ND	0.0331	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM



Work Order: **1610353**Date Reported: **10/27/2016**

Client: Shannon & Wilson Collection Date: 10/24/2016 7:40:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-002 **Matrix:** Soil

Client Sample ID: UD2-B2

Analyses Result RL Qual **Units** DF **Date Analyzed** Batch ID: 15222 Analyst: EM Volatile Organic Compounds by EPA Method 8260C 1,1,2-Trichloroethane ND 0.0331 10/25/2016 8:12:03 AM mg/Kg-dry 1 1,3-Dichloropropane ND 0.0552 mg/Kg-dry 1 10/25/2016 8:12:03 AM Tetrachloroethene (PCE) ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM Dibromochloromethane ND 0.0331 10/25/2016 8:12:03 AM mg/Kg-dry 10/25/2016 8:12:03 AM 1,2-Dibromoethane (EDB) ND 0.00552 mg/Kg-dry 1 ND 10/25/2016 8:12:03 AM Chlorobenzene 0.0221 mg/Kg-dry 1 ND 1,1,1,2-Tetrachloroethane 0.0331 mg/Kg-dry 1 10/25/2016 8:12:03 AM Ethylbenzene ND 0.0331 mg/Kg-dry 1 10/25/2016 8:12:03 AM m,p-Xylene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM o-Xylene ND 0.0221 1 10/25/2016 8:12:03 AM mg/Kg-dry Styrene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM ND Isopropylbenzene 0.0883 mg/Kg-dry 1 10/25/2016 8:12:03 AM **Bromoform** ND 0.0221 1 10/25/2016 8:12:03 AM mg/Kg-dry ND 1,1,2,2-Tetrachloroethane 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM n-Propylbenzene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM ND Bromobenzene 0.0331 1 10/25/2016 8:12:03 AM mg/Kg-dry 1,3,5-Trimethylbenzene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM ND 2-Chlorotoluene 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM 4-Chlorotoluene ND 0.0221 1 10/25/2016 8:12:03 AM mg/Kg-dry tert-Butylbenzene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM 1,2,3-Trichloropropane ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM 1,2,4-Trichlorobenzene ND 0.0552 mg/Kg-dry 1 10/25/2016 8:12:03 AM sec-Butylbenzene ND 0.0221 1 10/25/2016 8:12:03 AM mg/Kg-dry 4-Isopropyltoluene ND 1 10/25/2016 8:12:03 AM 0.0221 mg/Kg-dry 1,3-Dichlorobenzene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM ND 10/25/2016 8:12:03 AM 1,4-Dichlorobenzene 0.0221 mg/Kg-dry 1 n-Butylbenzene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM 1,2-Dichlorobenzene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM ND 1,2-Dibromo-3-chloropropane 0.552 mg/Kg-dry 1 10/25/2016 8:12:03 AM mg/Kg-dry 1,2,4-Trimethylbenzene ND 0.0221 1 10/25/2016 8:12:03 AM ND Hexachlorobutadiene 0.110 mg/Kg-dry 1 10/25/2016 8:12:03 AM Naphthalene ND 0.0331 mg/Kg-dry 1 10/25/2016 8:12:03 AM 1,2,3-Trichlorobenzene ND 0.0221 mg/Kg-dry 1 10/25/2016 8:12:03 AM Surr: Dibromofluoromethane 95.8 56.5-129 %Rec 1 10/25/2016 8:12:03 AM Surr: Toluene-d8 106 64.3-131 %Rec 1 10/25/2016 8:12:03 AM Surr: 1-Bromo-4-fluorobenzene 98.0 63.1-141 1 10/25/2016 8:12:03 AM %Rec



Work Order: **1610353**Date Reported: **10/27/2016**

Analyst: EM

Client: Shannon & Wilson Collection Date: 10/24/2016 7:40:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-002 **Matrix:** Soil

Client Sample ID: UD2-B2

NOTES:

Analyses Result RL Qual Units DF Date Analyzed

Volatile Organic Compounds by EPA Method 8260C

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Total Metals by EPA Method 6020

Batch ID: 15225 Analyst: TN

Batch ID: 15222

Lead 1.65 0.181 mg/Kg-dry 1 10/25/2016 4:09:30 PM

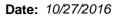
Sample Moisture (Percent Moisture)

Batch ID: R32564

Analyst: BB

Percent Moisture 13.5 0.500 wt% 1 10/27/2016 10:52:48 AM

Original





QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID MB-15250	SampType: MBLK			Units: mg/Kg	1	Prep Date	e: 10/26/2	2016	RunNo: 32 5	570	
Client ID: MBLKS	Batch ID: 15250				•	Analysis Date			SeqNo: 616	-	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	•		RPD Ref Val	%RPD	RPDLimit	Qua
			Of It value	Of Reference	701120	2011211111	- ingriEiiiiic	THE THOI VAL	70111 2	THE DEMINIC	Quu
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND 18.5	50.0	20.00		92.6	50	150				
Surr: a Tarabasyl	18.7		20.00		92.6	50 50	150				
Surr: o-Terphenyl	10.7		20.00		93.3	50	150				
Sample ID LCS-15250	SampType: LCS			Units: mg/Kg	l	Prep Date	e: 10/26/2	2016	RunNo: 325	570	
Client ID: LCSS	Batch ID: 15250					Analysis Date	e: 10/26/2	2016	SeqNo: 616	6779	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
Diesel (Fuel Oil)	447	20.0	500.0	0	89.3	65	135				
Surr: 2-Fluorobiphenyl	21.2		20.00		106	50	150				
Surr: o-Terphenyl	21.3		20.00		106	50	150				
Sample ID 1610353-001ADUP	SampType: DUP			Units: mg/Kg	ı-dry	Prep Date	e: 10/26/2	2016	RunNo: 325	570	
Client ID: UD-B2	Batch ID: 15250					Analysis Date	e: 10/26/2	2016	SeqNo: 616	6749	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
Diesel (Fuel Oil)	ND	20.7						0		30	
Heavy Oil	ND	51.8						0		30	
Surr: 2-Fluorobiphenyl	19.2		20.73		92.8	50	150		0		
Surr: o-Terphenyl	20.2		20.73		97.6	50	150		0		
Sample ID 1610353-001AMS	SampType: MS			Units: mg/Kg	j-dry	Prep Date	e: 10/26/2	2016	RunNo: 325	570	
Client ID: UD-B2	Batch ID: 15250				-	Analysis Date			SeqNo: 616	6750	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	•		RPD Ref Val	%RPD	RPDLimit	Qua
Diesel (Fuel Oil)	523	23.6	591.2	0	88.5	65	135				
,	24.0		23.65		101	50	150				
Surr: 2-Fluorobiphenyl	24.0		25.05		101	50	150				

Original Page 11 of 32

Date: 10/27/2016



Sound Transit / Key Bank

Work Order: 1610353

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

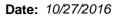
Sample ID 1610353-001AMS SampType: MS Units: mg/Kg-dry Prep Date: 10/26/2016 RunNo: 32570

Client ID: **UD-B2** Batch ID: **15250** Analysis Date: **10/26/2016** SeqNo: **616750**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Sample ID 1610353-001AMSD	SampType: MSD				g-dry	Prep Da	te: 10/26/2	2016	RunNo: 325		
Client ID: UD-B2	Batch ID: 15250					Analysis Da	te: 10/26/2	2016	SeqNo: 616	6751	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	487	21.9	548.4	0	88.9	65	135	523.5	7.13	30	
Surr: 2-Fluorobiphenyl	22.6		21.94		103	50	150		0		
Surr: o-Terphenyl	23.4		21.94		107	50	150		0		

Original Page 12 of 32





QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Project: Sound Tran	nsit / Key Bank								Gasolin	e by NW	ГРН-С
Sample ID LCS-15222	SampType: LCS			Units: mg/Kg		Prep Date	10/24/2	016	RunNo: 32	546	
Client ID: LCSS	Batch ID: 15222					Analysis Date	: 10/25/2	016	SeqNo: 610	365	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	23.3	5.00	25.00	0	93.1	65	135				
Surr: Toluene-d8	1.28		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.26		1.250		101	65	135				
Sample ID MB-15222	SampType: MBLK			Units: mg/Kg		Prep Date	: 10/24/2	016	RunNo: 32	546	
Client ID: MBLKS	Batch ID: 15222					Analysis Date	10/25/2	016	SeqNo: 610	6366	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit F	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	1.29		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.23		1.250		98.1	65	135				
Sample ID 1610345-006BDUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date	10/24/2	016	RunNo: 32	546	
Client ID: BATCH	Batch ID: 15222					Analysis Date	10/25/2	016	SeqNo: 610	6345	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	11.1						0		30	
Surr: Toluene-d8	3.03		2.763		110	65	135		0		
Surr: 4-Bromofluorobenzene	2.78		2.763		101	65	135		0		
Sample ID 1610345-022BDUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date	: 10/24/2	016	RunNo: 32	546	
Client ID: BATCH	Batch ID: 15222					Analysis Date	10/25/2	016	SeqNo: 610	6354	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.93						0		30	
Surr: Toluene-d8	1.52		1.483		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.45		1.483		98.1	65	135		0		

Original Page 13 of 32

Date: 10/27/2016



Sound Transit / Key Bank

Work Order: 1610353

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Gasoline by NWTPH-Gx

Sample ID 1610345-019BMS	SampType: MS			Units: mg/k	(g-dry	Prep Da	te: 10/24/2	2016	RunNo: 32	546	
Client ID: BATCH	Batch ID: 15222					Analysis Da	te: 10/25/2	2016	SeqNo: 616	6351	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	27.5	6.50	32.51	0	84.7	65	135				
Surr: Toluene-d8	1.69		1.626		104	65	135				
Surr: 4-Bromofluorobenzene	1.62		1.626		99.9	65	135				

Sample ID 1610345-019BMSD	SampType: MSD			Units: mg/h	(g-dry	Prep Dat	e: 10/24/2	2016	RunNo: 325	546	
Client ID: BATCH	Batch ID: 15222					Analysis Dat	te: 10/25/2	2016	SeqNo: 616	6352	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	30.6	6.50	32.51	0	94.1	65	135	27.54	10.5	30	
Surr: Toluene-d8	1.62		1.626		99.5	65	135		0		
Surr: 4-Bromofluorobenzene	1.67		1.626		103	65	135		0		

Original Page 14 of 32

Date: 10/27/2016



Sound Transit / Key Bank

Work Order: 1610353

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Sample Moisture (Percent Moisture)

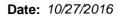
Sample ID 1610395-003ADUP SampType: DUP Units: wt% Prep Date: 10/27/2016 RunNo: 32564

Client ID: **BATCH** Batch ID: **R32564** Analysis Date: **10/27/2016** SeqNo: **616606**

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Percent Moisture 26.5 0.500 26.23 0.880 20

Original Page 15 of 32



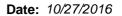


QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Project: Sound Trai	nsit / Key Bank						Total	Metals by EPA Metho	od 6020
Sample ID MB-15225	SampType: MBLK			Units: mg/Kg			10/25/2016	RunNo: 32525	
Client ID: MBLKS	Batch ID: 15225					Analysis Date:	10/25/2016	SeqNo: 615808	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref V	al %RPD RPDLimit	Qual
Lead	ND	0.146							
Sample ID LCS-15225	SampType: LCS			Units: mg/Kg		Prep Date:	10/25/2016	RunNo: 32525	
Client ID: LCSS	Batch ID: 15225					Analysis Date:	10/25/2016	SeqNo: 615809	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref V	al %RPD RPDLimit	Qual
Lead	18.7	0.154	19.23	0	97.3	80	120		
Sample ID 1610340-001ADUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date:	10/25/2016	RunNo: 32525	
Client ID: BATCH	Batch ID: 15225					Analysis Date:	10/25/2016	SeqNo: 615813	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref V	al %RPD RPDLimit	Qual
Lead	15.6	0.162					14.5	7.02 20	
Sample ID 1610340-001AMS	SampType: MS			Units: mg/Kg-	dry	Prep Date:	10/25/2016	RunNo: 32525	
Client ID: BATCH	Batch ID: 15225					Analysis Date:	10/25/2016	SeqNo: 615815	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref V	al %RPD RPDLimit	Qual
Lead	33.4	0.162	20.29	14.57	93.0	75	125		
Sample ID 1610340-001AMSD	SampType: MSD			Units: mg/Kg-	dry	Prep Date:	10/25/2016	RunNo: 32525	
Client ID: BATCH	Batch ID: 15225					Analysis Date:	10/25/2016	SeqNo: 615816	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref V	al %RPD RPDLimit	Qual
Lead	33.6	0.162	20.29	14.57	93.7	75	125 33.4	0.403 20	

Page 16 of 32 Original





QC SUMMARY REPORT

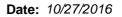
CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Project: Sound Transit / Key Bank

Sample ID LCS-15222	SampType: LCS			Units: mg/Kg	_	Prep Da	te: 10/24/2	2016	RunNo: 32	545	_
Client ID: LCSS	Batch ID: 15222					Analysis Da	te: 10/25/2	2016	SeqNo: 61	6341	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.559	0.0600	1.000	0	55.9	34.5	141				Q
Chloromethane	0.711	0.0600	1.000	0	71.1	38.8	132				Q
Vinyl chloride	0.845	0.00200	1.000	0	84.5	44	142				
Bromomethane	1.22	0.0900	1.000	0	122	40.9	157				
Trichlorofluoromethane (CFC-11)	0.798	0.0500	1.000	0	79.8	41.7	153				Q
Chloroethane	0.864	0.0600	1.000	0	86.4	37.1	144				
1,1-Dichloroethene	0.927	0.0500	1.000	0	92.7	49.7	142				
Methylene chloride	0.982	0.0200	1.000	0	98.2	46.3	140				
trans-1,2-Dichloroethene	0.987	0.0200	1.000	0	98.7	68	130				
Methyl tert-butyl ether (MTBE)	1.09	0.0500	1.000	0	109	59.1	138				
1,1-Dichloroethane	1.03	0.0200	1.000	0	103	61.9	137				
2,2-Dichloropropane	0.934	0.0500	1.000	0	93.4	28.1	149				Q
cis-1,2-Dichloroethene	1.03	0.0200	1.000	0	103	71.3	135				
Chloroform	1.02	0.0200	1.000	0	102	67.5	129				В
1,1,1-Trichloroethane (TCA)	0.988	0.0200	1.000	0	98.8	69	132				
1,1-Dichloropropene	0.993	0.0200	1.000	0	99.3	72.7	131				
Carbon tetrachloride	0.984	0.0200	1.000	0	98.4	63.4	137				
1,2-Dichloroethane (EDC)	1.01	0.0300	1.000	0	101	61.9	136				
Benzene	1.06	0.0200	1.000	0	106	64.3	133				
Trichloroethene (TCE)	1.01	0.0200	1.000	0	101	65.5	137				
1,2-Dichloropropane	1.10	0.0200	1.000	0	110	63.2	142				
Bromodichloromethane	1.03	0.0200	1.000	0	103	73.2	131				
Dibromomethane	1.05	0.0400	1.000	0	105	70	130				
cis-1,3-Dichloropropene	1.07	0.0200	1.000	0	107	59.1	143				Q
Toluene	1.10	0.0200	1.000	0	110	67.3	138				
trans-1,3-Dichloropropylene	1.09	0.0300	1.000	0	109	49.2	149				Q
1,1,2-Trichloroethane	1.07	0.0300	1.000	0	107	74.5	129				
1,3-Dichloropropane	1.06	0.0500	1.000	0	106	70	130				
Tetrachloroethene (PCE)	1.01	0.0200	1.000	0	101	52.7	150				
Dibromochloromethane	1.05	0.0300	1.000	0	105	70.6	144				
1,2-Dibromoethane (EDB)	1.07	0.00500	1.000	0	107	70	130				

Original Page 17 of 32





Work Order: 1610353

Proiect:

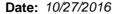
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15222	SampType: LCS			Units: mg/Kg		Prep Dat	e: 10/24/ 2	2016	RunNo: 32	545	
Client ID: LCSS	Batch ID: 15222					Analysis Dat	te: 10/25/ 2	2016	SeqNo: 610	6341	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.05	0.0200	1.000	0	105	76.1	123				
1,1,1,2-Tetrachloroethane	1.07	0.0300	1.000	0	107	65.9	141				
Ethylbenzene	1.03	0.0300	1.000	0	103	74	129				
m,p-Xylene	2.06	0.0200	2.000	0	103	70	124				
o-Xylene	1.03	0.0200	1.000	0	103	72.7	124				
Styrene	1.03	0.0200	1.000	0	103	76.8	130				
Isopropylbenzene	1.01	0.0800	1.000	0	101	70	130				
Bromoform	1.07	0.0200	1.000	0	107	67	154				
1,1,2,2-Tetrachloroethane	1.02	0.0200	1.000	0	102	60	130				
n-Propylbenzene	1.01	0.0200	1.000	0	101	74.8	125				
Bromobenzene	1.06	0.0300	1.000	0	106	49.2	144				
1,3,5-Trimethylbenzene	1.01	0.0200	1.000	0	101	74.6	123				
2-Chlorotoluene	1.02	0.0200	1.000	0	102	76.7	129				
4-Chlorotoluene	1.01	0.0200	1.000	0	101	77.5	125				
tert-Butylbenzene	1.01	0.0200	1.000	0	101	66.2	130				
1,2,3-Trichloropropane	0.992	0.0200	1.000	0	99.2	67.9	136				
1,2,4-Trichlorobenzene	1.05	0.0500	1.000	0	105	62.6	143				
sec-Butylbenzene	0.991	0.0200	1.000	0	99.1	75.6	133				
4-Isopropyltoluene	0.985	0.0200	1.000	0	98.5	76.8	131				
1,3-Dichlorobenzene	1.05	0.0200	1.000	0	105	72.8	128				
1,4-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.6	126				
n-Butylbenzene	1.03	0.0200	1.000	0	103	65.3	136				
1,2-Dichlorobenzene	1.07	0.0200	1.000	0	107	72.8	126				
1,2-Dibromo-3-chloropropane	1.15	0.500	1.000	0	115	61.2	139				
1,2,4-Trimethylbenzene	1.01	0.0200	1.000	0	101	77.5	129				
Hexachlorobutadiene	1.05	0.100	1.000	0	105	42	151				
Naphthalene	1.07	0.0300	1.000	0	107	62.3	134				
1,2,3-Trichlorobenzene	1.03	0.0200	1.000	0	103	54.8	143				
Surr: Dibromofluoromethane	1.26		1.250		101	56.5	129				
Surr: Toluene-d8	1.29		1.250		103	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.31		1.250		105	63.1	141				

Original Page 18 of 32





QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

 Project:
 Sound Transit / Key Bank

 Sample ID
 LCS-15222
 SampType: LCS

Batch ID: 15222

Units: mg/Kg Prep Date: 10/24/2016 RunNo: 32545

Analysis Date: 10/25/2016 SeqNo: 616341

Analyte Result RL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

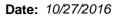
NOTES:

Client ID: LCSS

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF). Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Sample ID MB-15222	SampType: MBLK			Units: mg/Kg		Prep Date: 1	10/24/20)16	RunNo: 32	2545	
Client ID: MBLKS	Batch ID: 15222					Analysis Date: 1	10/25/20	116	SeqNo: 61	6342	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit High	hLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									Q
Chloromethane	ND	0.0600									Q
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									Q
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									Q
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	0.0456	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									

Original Page 19 of 32





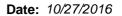
QC SUMMARY REPORT

Shannon & Wilson CLIENT:

Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-15222	SampType: MBLK			Units: mg/Kg		Prep Da	ate: 10/24/	2016	RunNo: 32	545	
Client ID: MBLKS	Batch ID: 15222					Analysis Da	ate: 10/25/	2016	SeqNo: 610	6342	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	ND	0.0200									Q
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									Q
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									

Page 20 of 32 Original





Work Order: 1610353

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

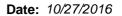
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-15222	SampType: MBLK			Units: mg/Kg		Prep Da	te: 10/24/ 2	2016	RunNo: 32	545	
Client ID: MBLKS	Batch ID: 15222					Analysis Da	te: 10/25/ 2	2016	SeqNo: 61	6342	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.23		1.250		98.6	56.5	129				
Surr: Toluene-d8	1.29		1.250		103	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.21		1.250		96.5	63.1	141				
NOTES:											

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610353-001BMS	SampType: MS			Units: mg/l	(g-dry	Prep Dat	e: 10/24/2	016	RunNo: 32	545	
Client ID: UD-B2	Batch ID: 15222					Analysis Dat	e: 10/25/2	016	SeqNo: 616	6335	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.284	0.0364	0.6069	0	46.8	43.5	121				Q
Chloromethane	0.463	0.0364	0.6069	0	76.3	45	130				Q
Vinyl chloride	0.517	0.00121	0.6069	0	85.2	51.2	146				
Bromomethane	0.600	0.0546	0.6069	0	98.9	21.3	120				
Trichlorofluoromethane (CFC-11)	0.336	0.0303	0.6069	0	55.3	35	131				Q
Chloroethane	0.319	0.0364	0.6069	0	52.6	43.8	117				
1,1-Dichloroethene	0.571	0.0303	0.6069	0	94.1	61.9	141				
Methylene chloride	0.605	0.0121	0.6069	0.006962	98.6	54.7	142				
trans-1,2-Dichloroethene	0.607	0.0121	0.6069	0	100	52	136				
Methyl tert-butyl ether (MTBE)	0.656	0.0303	0.6069	0	108	54.4	132				
1,1-Dichloroethane	0.616	0.0121	0.6069	0	101	51.8	141				
2,2-Dichloropropane	0.516	0.0303	0.6069	0	85.0	36	123				Q
cis-1,2-Dichloroethene	0.652	0.0121	0.6069	0	107	58.6	136				
Chloroform	0.637	0.0121	0.6069	0.01786	102	53.2	129				В
1,1,1-Trichloroethane (TCA)	0.614	0.0121	0.6069	0	101	58.3	145				
1,1-Dichloropropene	0.634	0.0121	0.6069	0	105	55.1	138				

Original Page 21 of 32





Work Order: 1610353

Project:

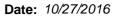
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610353-001BMS	SampType: MS			Units: mg/l	Kg-dry	Prep Da	te: 10/24/ 2	2016	RunNo: 32	545	
Client ID: UD-B2	Batch ID: 15222					Analysis Da	te: 10/25/ 2	2016	SeqNo: 61	6335	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	0.606	0.0121	0.6069	0	99.9	53.3	144				
1,2-Dichloroethane (EDC)	0.625	0.0182	0.6069	0	103	51.3	139				
Benzene	0.656	0.0121	0.6069	0	108	63.5	133				
Trichloroethene (TCE)	0.643	0.0121	0.6069	0	106	68.6	132				
1,2-Dichloropropane	0.697	0.0121	0.6069	0	115	59	136				
Bromodichloromethane	0.621	0.0121	0.6069	0	102	50.7	141				
Dibromomethane	0.668	0.0243	0.6069	0	110	50.6	137				
cis-1,3-Dichloropropene	0.637	0.0121	0.6069	0	105	50.4	138				Q
Toluene	0.694	0.0121	0.6069	0.003948	114	63.4	132				
trans-1,3-Dichloropropylene	0.655	0.0182	0.6069	0	108	44.1	147				Q
1,1,2-Trichloroethane	0.657	0.0182	0.6069	0	108	51.6	137				
1,3-Dichloropropane	0.676	0.0303	0.6069	0	111	53.1	134				
Tetrachloroethene (PCE)	0.641	0.0121	0.6069	0	106	35.6	158				
Dibromochloromethane	0.622	0.0182	0.6069	0	102	55.3	140				
1,2-Dibromoethane (EDB)	0.675	0.00303	0.6069	0	111	50.4	136				
Chlorobenzene	0.649	0.0121	0.6069	0	107	60	133				
1,1,1,2-Tetrachloroethane	0.621	0.0182	0.6069	0	102	53.1	142				
Ethylbenzene	0.652	0.0182	0.6069	0.02485	103	54.5	134				
m,p-Xylene	1.27	0.0121	1.214	0.01519	103	53.1	132				
o-Xylene	0.630	0.0121	0.6069	0	104	53.3	139				
Styrene	0.638	0.0121	0.6069	0	105	51.1	132				
Isopropylbenzene	0.639	0.0486	0.6069	0.01129	103	58.9	138				
Bromoform	0.581	0.0121	0.6069	0	95.7	57.9	130				
1,1,2,2-Tetrachloroethane	0.586	0.0121	0.6069	0	96.5	51.9	131				
n-Propylbenzene	ND	0.0121	0.6069	0	0	53.6	140				S
Bromobenzene	0.641	0.0182	0.6069	0	106	54.2	140				
1,3,5-Trimethylbenzene	0.640	0.0121	0.6069	0.008317	104	51.8	136				
2-Chlorotoluene	0.634	0.0121	0.6069	0	105	51.6	136				
4-Chlorotoluene	0.628	0.0121	0.6069	0	103	50.1	139				
tert-Butylbenzene	0.643	0.0121	0.6069	0	106	50.5	135				
1,2,3-Trichloropropane	0.585	0.0121	0.6069	0	96.3	50.5	131				

Original Page 22 of 32





Work Order: 1610353

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

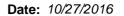
Sample ID 1610353-001BMS	SampType: MS			Units: mg	/Kg-dry	Prep Da	te: 10/24/2	2016	RunNo: 32	545	
Client ID: UD-B2	Batch ID: 15222					Analysis Da	te: 10/25/2	2016	SeqNo: 61	6335	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	0.597	0.0303	0.6069	0	98.4	50.8	130				
sec-Butylbenzene	0.638	0.0121	0.6069	0	105	52.6	141				
4-Isopropyltoluene	0.627	0.0121	0.6069	0	103	52.9	134				
1,3-Dichlorobenzene	0.657	0.0121	0.6069	0	108	52.6	131				
1,4-Dichlorobenzene	0.634	0.0121	0.6069	0	104	52.9	129				
n-Butylbenzene	0.670	0.0121	0.6069	0.006875	109	52.6	130				
1,2-Dichlorobenzene	0.641	0.0121	0.6069	0	106	55.8	129				
1,2-Dibromo-3-chloropropane	0.577	0.303	0.6069	0	95.1	40.5	131				
1,2,4-Trimethylbenzene	0.634	0.0121	0.6069	0.008741	103	50.6	137				
Hexachlorobutadiene	0.657	0.0607	0.6069	0	108	40.6	158				
Naphthalene	0.615	0.0182	0.6069	0.01341	99.1	52.3	124				
1,2,3-Trichlorobenzene	0.602	0.0121	0.6069	0	99.2	54.4	124				
Surr: Dibromofluoromethane	0.759		0.7587		100	56.5	129				
Surr: Toluene-d8	0.810		0.7587		107	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	0.791		0.7587		104	63.1	141				
NOTES:											

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610353-001BMSD	SampType: MSD			Units: mg/	Kg-dry	Prep Da	te: 10/24/ 2	2016	RunNo: 32	545	
Client ID: UD-B2	Batch ID: 15222					Analysis Da	te: 10/25/2	2016	SeqNo: 610	6336	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.238	0.0364	0.6069	0	39.2	43.5	121	0.2842	17.7	30	SQ
Chloromethane	0.449	0.0364	0.6069	0	74.0	45	130	0.4631	3.08	30	Q
Vinyl chloride	0.481	0.00121	0.6069	0	79.3	51.2	146	0.5173	7.21	30	
Bromomethane	0.596	0.0546	0.6069	0	98.1	21.3	120	0.6002	0.775	30	
Trichlorofluoromethane (CFC-11)	0.306	0.0303	0.6069	0	50.4	35	131	0.3358	9.37	30	Q
Chloroethane	0.311	0.0364	0.6069	0	51.2	43.8	117	0.3191	2.59	30	
1,1-Dichloroethene	0.550	0.0303	0.6069	0	90.6	61.9	141	0.5710	3.79	30	
Methylene chloride	0.595	0.0121	0.6069	0.006962	97.0	54.7	142	0.6053	1.65	30	
trans-1,2-Dichloroethene	0.583	0.0121	0.6069	0	96.1	52	136	0.6070	4.03	30	

Original Page 23 of 32





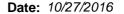
QC SUMMARY REPORT

Shannon & Wilson CLIENT:

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610353-001BMSD	SampType: MSD			Units: mg/h	(g-dry	Prep Da	te: 10/24/2	2016	RunNo: 325	545	
Client ID: UD-B2	Batch ID: 15222					Analysis Da	te: 10/25/2	2016	SeqNo: 616	6336	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.649	0.0303	0.6069	0	107	54.4	132	0.6557	0.994	30	
1,1-Dichloroethane	0.590	0.0121	0.6069	0	97.2	51.8	141	0.6157	4.22	30	
2,2-Dichloropropane	0.490	0.0303	0.6069	0	80.8	36	123	0.5157	5.02	30	Q
cis-1,2-Dichloroethene	0.646	0.0121	0.6069	0	106	58.6	136	0.6517	0.836	30	
Chloroform	0.622	0.0121	0.6069	0.01786	99.5	53.2	129	0.6372	2.46	30	В
1,1,1-Trichloroethane (TCA)	0.586	0.0121	0.6069	0	96.6	58.3	145	0.6145	4.70	30	
1,1-Dichloropropene	0.602	0.0121	0.6069	0	99.2	55.1	138	0.6344	5.21	30	
Carbon tetrachloride	0.570	0.0121	0.6069	0	93.9	53.3	144	0.6064	6.21	30	
1,2-Dichloroethane (EDC)	0.606	0.0182	0.6069	0	99.8	51.3	139	0.6245	3.05	30	
Benzene	0.630	0.0121	0.6069	0	104	63.5	133	0.6564	4.06	30	
Trichloroethene (TCE)	0.616	0.0121	0.6069	0	102	68.6	132	0.6427	4.18	30	
1,2-Dichloropropane	0.669	0.0121	0.6069	0	110	59	136	0.6971	4.07	30	
Bromodichloromethane	0.598	0.0121	0.6069	0	98.5	50.7	141	0.6208	3.79	30	
Dibromomethane	0.648	0.0243	0.6069	0	107	50.6	137	0.6682	3.05	30	
cis-1,3-Dichloropropene	0.618	0.0121	0.6069	0	102	50.4	138	0.6373	3.11	30	Q
Toluene	0.662	0.0121	0.6069	0.003948	108	63.4	132	0.6945	4.73	30	
trans-1,3-Dichloropropylene	0.641	0.0182	0.6069	0	106	44.1	147	0.6553	2.18	30	Q
1,1,2-Trichloroethane	0.632	0.0182	0.6069	0	104	51.6	137	0.6566	3.83	30	
1,3-Dichloropropane	0.644	0.0303	0.6069	0	106	53.1	134	0.6764	4.93	30	
Tetrachloroethene (PCE)	0.610	0.0121	0.6069	0	101	35.6	158	0.6414	4.99	30	
Dibromochloromethane	0.599	0.0182	0.6069	0	98.7	55.3	140	0.6217	3.75	30	
1,2-Dibromoethane (EDB)	0.654	0.00303	0.6069	0	108	50.4	136	0.6747	3.05	30	
Chlorobenzene	0.626	0.0121	0.6069	0	103	60	133	0.6489	3.55	30	
1,1,1,2-Tetrachloroethane	0.599	0.0182	0.6069	0	98.7	53.1	142	0.6214	3.62	30	
Ethylbenzene	0.630	0.0182	0.6069	0.02485	99.7	54.5	134	0.6523	3.47	30	
m,p-Xylene	1.22	0.0121	1.214	0.01519	99.4	53.1	132	1.266	3.51	30	
o-Xylene	0.603	0.0121	0.6069	0	99.3	53.3	139	0.6298	4.36	30	
Styrene	0.616	0.0121	0.6069	0	102	51.1	132	0.6380	3.47	30	
Isopropylbenzene	0.609	0.0486	0.6069	0.01129	98.5	58.9	138	0.6391	4.78	30	
Bromoform	0.556	0.0121	0.6069	0	91.5	57.9	130	0.5811	4.50	30	
1,1,2,2-Tetrachloroethane	0.556	0.0121	0.6069	0	91.6	51.9	131	0.5859	5.21	30	

Page 24 of 32 Original





Work Order: 1610353

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610353-001BMSD	SampType: MSD			Units: mg/	Kg-dry	Prep Da	te: 10/24/2	2016	RunNo: 32	545	
Client ID: UD-B2	Batch ID: 15222					Analysis Da	te: 10/25/2	2016	SeqNo: 610	6336	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
n-Propylbenzene	0.612	0.0121	0.6069	0	101	53.6	140	0	200	30	
Bromobenzene	0.618	0.0182	0.6069	0	102	54.2	140	0.6405	3.60	30	
1,3,5-Trimethylbenzene	0.606	0.0121	0.6069	0.008317	98.5	51.8	136	0.6400	5.47	30	
2-Chlorotoluene	0.609	0.0121	0.6069	0	100	51.6	136	0.6345	4.11	30	
4-Chlorotoluene	0.602	0.0121	0.6069	0	99.2	50.1	139	0.6277	4.16	30	
tert-Butylbenzene	0.627	0.0121	0.6069	0	103	50.5	135	0.6425	2.41	30	
1,2,3-Trichloropropane	0.560	0.0121	0.6069	0	92.3	50.5	131	0.5845	4.27	30	
1,2,4-Trichlorobenzene	0.584	0.0303	0.6069	0	96.2	50.8	130	0.5973	2.32	30	
sec-Butylbenzene	0.623	0.0121	0.6069	0	103	52.6	141	0.6384	2.37	30	
4-Isopropyltoluene	0.618	0.0121	0.6069	0	102	52.9	134	0.6268	1.39	30	
1,3-Dichlorobenzene	0.643	0.0121	0.6069	0	106	52.6	131	0.6568	2.09	30	
1,4-Dichlorobenzene	0.624	0.0121	0.6069	0	103	52.9	129	0.6336	1.48	30	
n-Butylbenzene	0.649	0.0121	0.6069	0.006875	106	52.6	130	0.6705	3.30	30	
1,2-Dichlorobenzene	0.623	0.0121	0.6069	0	103	55.8	129	0.6407	2.76	30	
1,2-Dibromo-3-chloropropane	0.557	0.303	0.6069	0	91.8	40.5	131	0.5770	3.54	30	
1,2,4-Trimethylbenzene	0.626	0.0121	0.6069	0.008741	102	50.6	137	0.6338	1.19	30	
Hexachlorobutadiene	0.631	0.0607	0.6069	0	104	40.6	158	0.6571	3.98	30	
Naphthalene	0.599	0.0182	0.6069	0.01341	96.5	52.3	124	0.6148	2.62	30	
1,2,3-Trichlorobenzene	0.584	0.0121	0.6069	0	96.2	54.4	124	0.6019	3.01	30	
Surr: Dibromofluoromethane	0.756		0.7587		99.6	56.5	129		0		
Surr: Toluene-d8	0.795		0.7587		105	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	0.781		0.7587		103	63.1	141		0		

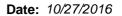
NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610345-006BDUP	UP SampType: DUP			Units: mg	RunNo: 32							
Client ID: BATCH	Batch ID: 15222		Analysis Date: 10/25/2016							SeqNo: 616321		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Dichlorodifluoromethane (CFC-12)	ND	0.133						0		30	Q	

Original Page 25 of 32

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.





Work Order: 1610353

Project:

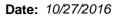
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610345-006BDUP	SampType: DUP			Units: mg/	Kg-dry	Prep Date	e: 10/24/ 2	2016	RunNo: 32	545	
Client ID: BATCH	Batch ID: 15222					Analysis Date	e: 10/25/ 2	2016	SeqNo: 616	6321	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	ND	0.133						0		30	Q
Vinyl chloride	ND	0.00442						0		30	
Bromomethane	ND	0.199						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.111						0		30	
Chloroethane	ND	0.133						0		30	
1,1-Dichloroethene	ND	0.111						0		30	
Methylene chloride	ND	0.0442						0		30	
trans-1,2-Dichloroethene	ND	0.0442						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.111						0		30	
1,1-Dichloroethane	ND	0.0442						0		30	
2,2-Dichloropropane	ND	0.111						0		30	Q
cis-1,2-Dichloroethene	ND	0.0442						0		30	
Chloroform	0.0749	0.0442						0.07251	3.23	30	В
1,1,1-Trichloroethane (TCA)	ND	0.0442						0		30	
1,1-Dichloropropene	ND	0.0442						0		30	
Carbon tetrachloride	ND	0.0442						0		30	
1,2-Dichloroethane (EDC)	ND	0.0663						0		30	
Benzene	ND	0.0442						0		30	
Trichloroethene (TCE)	ND	0.0442						0		30	
1,2-Dichloropropane	ND	0.0442						0		30	
Bromodichloromethane	ND	0.0442						0		30	
Dibromomethane	ND	0.0884						0		30	
cis-1,3-Dichloropropene	ND	0.0442						0		30	
Toluene	ND	0.0442						0		30	
trans-1,3-Dichloropropylene	ND	0.0663						0		30	
1,1,2-Trichloroethane	ND	0.0663						0		30	
1,3-Dichloropropane	ND	0.111						0		30	
Tetrachloroethene (PCE)	ND	0.0442						0		30	
Dibromochloromethane	ND	0.0663						0		30	
1,2-Dibromoethane (EDB)	ND	0.0111						0		30	
Chlorobenzene	ND	0.0442						0		30	

Original Page 26 of 32





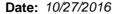
QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610345-006BDUP	SampType: DUP			Units: mg/k	(g-dry	Prep Da	ite: 10/24/	2016	RunNo: 325	545	
Client ID: BATCH	Batch ID: 15222					Analysis Da	ite: 10/25/	2016	SeqNo: 616	6321	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.0663						0		30	
Ethylbenzene	ND	0.0663						0		30	
m,p-Xylene	ND	0.0442						0		30	
o-Xylene	ND	0.0442						0		30	
Styrene	ND	0.0442						0		30	
Isopropylbenzene	ND	0.177						0		30	
Bromoform	ND	0.0442						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0442						0		30	
n-Propylbenzene	ND	0.0442						0		30	
Bromobenzene	ND	0.0663						0		30	
1,3,5-Trimethylbenzene	ND	0.0442						0		30	
2-Chlorotoluene	ND	0.0442						0		30	
4-Chlorotoluene	ND	0.0442						0		30	
tert-Butylbenzene	ND	0.0442						0		30	
1,2,3-Trichloropropane	ND	0.0442						0		30	
1,2,4-Trichlorobenzene	ND	0.111						0		30	
sec-Butylbenzene	ND	0.0442						0		30	
4-Isopropyltoluene	ND	0.0442						0		30	
1,3-Dichlorobenzene	ND	0.0442						0		30	
1,4-Dichlorobenzene	ND	0.0442						0		30	
n-Butylbenzene	ND	0.0442						0		30	
1,2-Dichlorobenzene	ND	0.0442						0		30	
1,2-Dibromo-3-chloropropane	ND	1.11						0		30	
1,2,4-Trimethylbenzene	ND	0.0442						0		30	
Hexachlorobutadiene	ND	0.221						0		30	
Naphthalene	ND	0.0663						0		30	
1,2,3-Trichlorobenzene	ND	0.0442						0		30	
Surr: Dibromofluoromethane	2.67		2.763		96.6	56.5	129		0		
Surr: Toluene-d8	2.77		2.763		100	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	2.75		2.763		99.5	63.1	141		0		

Page 27 of 32 Original





QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610345-006BDUP

SampType: DUP

Sound Transit / Key Bank

Units: mg/Kg-dry

Prep Date: 10/24/2016

RunNo: 32545

Analysis Date: 10/25/2016

SeqNo: 616321

Client ID: BATCH

Batch ID: 15222

Result

RL SPK value SPK Ref Val

%REC LowLimit HighLimit RPD Ref Val

%RPD RPDLimit Qual

NOTES:

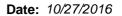
Analyte

Project:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF). Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Sample ID 1610345-022BDUP	SampType: DUP			Units: mg/Kg	j-dry	Prep Da	te: 10/24/ 2	2016	RunNo: 325	545	
Client ID: BATCH	Batch ID: 15222					Analysis Da	te: 10/25/ 2	2016	SeqNo: 616	6328	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0712						0		30	Q
Chloromethane	ND	0.0712						0		30	Q
Vinyl chloride	ND	0.00237						0		30	
Bromomethane	ND	0.107						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0593						0		30	
Chloroethane	ND	0.0712						0		30	
1,1-Dichloroethene	ND	0.0593						0		30	
Methylene chloride	ND	0.0237						0		30	
trans-1,2-Dichloroethene	ND	0.0237						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0593						0		30	
1,1-Dichloroethane	ND	0.0237						0		30	
2,2-Dichloropropane	ND	0.0593						0		30	Q
cis-1,2-Dichloroethene	ND	0.0237						0		30	
Chloroform	ND	0.0237						0.02396	34.7	30	
1,1,1-Trichloroethane (TCA)	ND	0.0237						0		30	
1,1-Dichloropropene	ND	0.0237						0		30	
Carbon tetrachloride	ND	0.0237						0		30	
1,2-Dichloroethane (EDC)	ND	0.0356						0		30	
Benzene	ND	0.0237						0		30	
Trichloroethene (TCE)	ND	0.0237						0		30	
1,2-Dichloropropane	ND	0.0237						0		30	
Bromodichloromethane	ND	0.0237						0		30	
Dibromomethane	ND	0.0475						0		30	

Page 28 of 32 Original





Work Order: 1610353

Project:

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610345-022BDUP	SampType: DUP			Units: mg/h	(g-dry	Prep Dat	e: 10/24/ 2	2016	RunNo: 32	545	
Client ID: BATCH	Batch ID: 15222					Analysis Dat	e: 10/25/ 2	2016	SeqNo: 61	6328	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	ND	0.0237						0		30	
Toluene	ND	0.0237						0		30	
trans-1,3-Dichloropropylene	ND	0.0356						0		30	
1,1,2-Trichloroethane	ND	0.0356						0		30	
1,3-Dichloropropane	ND	0.0593						0		30	
Tetrachloroethene (PCE)	ND	0.0237						0		30	
Dibromochloromethane	ND	0.0356						0		30	
1,2-Dibromoethane (EDB)	ND	0.00593						0		30	
Chlorobenzene	ND	0.0237						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0356						0		30	
Ethylbenzene	ND	0.0356						0		30	
m,p-Xylene	ND	0.0237						0		30	
o-Xylene	ND	0.0237						0		30	
Styrene	ND	0.0237						0		30	
Isopropylbenzene	ND	0.0949						0		30	
Bromoform	ND	0.0237						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0237						0		30	
n-Propylbenzene	ND	0.0237						0		30	
Bromobenzene	ND	0.0356						0		30	
1,3,5-Trimethylbenzene	ND	0.0237						0		30	
2-Chlorotoluene	ND	0.0237						0		30	
4-Chlorotoluene	ND	0.0237						0		30	
tert-Butylbenzene	ND	0.0237						0		30	
1,2,3-Trichloropropane	ND	0.0237						0		30	
1,2,4-Trichlorobenzene	ND	0.0593						0		30	
sec-Butylbenzene	ND	0.0237						0		30	
4-Isopropyltoluene	ND	0.0237						0		30	
1,3-Dichlorobenzene	ND	0.0237						0		30	
1,4-Dichlorobenzene	ND	0.0237						0		30	
n-Butylbenzene	ND	0.0237						0		30	
1,2-Dichlorobenzene	ND	0.0237						0		30	

Original Page 29 of 32

Date: 10/27/2016



Sound Transit / Key Bank

Work Order: 1610353

QC SUMMARY REPORT

CLIENT: Shannon & Wilson

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610345-022BDUP	SampType: DUP			Units: mg/K	(g-dry	Prep Da	te: 10/24/ 2	2016	RunNo: 32	545	
Client ID: BATCH	Batch ID: 15222					Analysis Da	te: 10/25/ 2	2016	SeqNo: 610	6328	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.593						0		30	
1,2,4-Trimethylbenzene	ND	0.0237						0		30	
Hexachlorobutadiene	ND	0.119						0		30	
Naphthalene	ND	0.0356						0		30	
1,2,3-Trichlorobenzene	ND	0.0237						0		30	
Surr: Dibromofluoromethane	1.41		1.483		94.8	56.5	129		0		
Surr: Toluene-d8	1.41		1.483		94.7	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.44		1.483		97.0	63.1	141		0		

NOTES:

Project:

Original Page 30 of 32

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Sample Log-In Check List

Cli	ent Name:	sw		Work Order Nu	mber: 1610353	.	
Lo	gged by:	Clare Griggs		Date Received:	10/24/20	016 11:17:00 AM	
<u>Chai</u>	in of Cust	<u>ody</u>					
1.	Is Chain of C	ustody complete?		Yes 🗸	No 🗌	Not Present	
2. 1	How was the	sample delivered?		<u>Client</u>			
Log	In						
_	— Coolers are p	present?		Yes 🗹	No 🗌	na 🗆	
O.							
4.	Shipping con	tainer/cooler in good condition	n?	Yes 🗸	No \square		
		ls present on shipping contair nments for Custody Seals not		Yes	No 🗌	Not Required 🗹	
6. '	Was an atten	npt made to cool the samples	?	Yes 🗹	No \square	NA \square	
7. '	Were all item	s received at a temperature of	f >0°C to 10.0°C*	Yes 🗸	No 🗆	NA \square	
8.	Sample(s) in	proper container(s)?		Yes 🗸	No 🗌		
		mple volume for indicated test	(s)?	Yes 🗸	No 🗌		
10.	Are samples	properly preserved?		Yes 🗹	No 🗌		
11.	Was preserva	ative added to bottles?		Yes	No 🗸	NA \square	
12.	Is there head	space in the VOA vials?		Yes	No 🗌	NA 🗹	
13.	Did all sampl	es containers arrive in good c	ondition(unbroken)?	Yes 🗹	No 🗌		
14.	Does paperw	ork match bottle labels?		Yes 🗸	No 🗌		
15.	Are matrices	correctly identified on Chain of	of Custody?	Yes 🗸	No 🗌		
_		at analyses were requested?	-	Yes 🗹	No 🗌		
17.	Were all hold	ling times able to be met?		Yes 🗸	No 🗌		
Spec	cial Handl	ing (if applicable)					
_		otified of all discrepancies with	this order?	Yes	No 🗌	NA 🗹	
		Notified:	Dat	te			
	By Who		Via		Phone Fax	☐ In Person	
	Regardi				٠ ب		
	_	nstructions:					
19.	Additional rer	narks:					_
ltem lı	nformation						
		Item #	Temp ⁰C				
	Cooler		6.1				

Sample

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Frem	On'	-				(Cha	ain	of	Cu	sto	dy	Re	СО	rd	an	d L	aboratory Services Agreement
Ana											Dat	e:	10-	24	-16	ion of		Laboratory Project No (internal): 1010353 8
	206-352-379	361																Page: of:
Seattle, WA 98103 Fax:	206-352-71	78						Proje	ect Na	me:	5	OLLI	d	Tro	2151	+	1	Page: of: SE
Client: Shannon	wire	on I	nc						ect No	al Qué	2	1-1-	-16	OF) -	123	C	Key Bank Collected by: SKH
Address: 400 N 31						-501410			tion:									+ reprinting the property of the control of the con
City, State, Zip: Seattle,								Repo	ort To	(PM):	A	and	5	Tic	ao			Serial X-X
Telephone: 206-900	-2720	Fax:	-	NEW SORT	Hilland To	omel)			mail:		A	CT	05	hao	nui	1.	on	VI months in the company (Colombia) and account (Colombia) (Colombia)
*Matrix Codes: A = Air, AQ = Aqueous, B =	Bulk, O = Oti	ner, P = Pro	duct, S = So	il, SD	= Sedime	ent, SL	= Solid,	W=	Water,	DW =								
The second on secretar requiring section to the control of the con	Sample	Sample	Sample Type	100 mm	le ve de la company de la comp	al equi	line.	and of	Sail Sail	Side of the state	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A SUN SUN SUN SUN SUN SUN SUN SUN SUN SUN	SO SO SO	01200		oxo	400	
Sample Name	Date	Time	(Matrix)*	13	2 46	\$ P	29 Silve	PHC OF	3/5	10/2/2	200/	Meter	23 A	10/4	8/ K	9	//	Comments
1 UD-BZ	10-24-16	0730	Soil	X		X		X							X			
2 UD2-82	10-24-16	0740	Soil	X	- Average	X	1718	X	ingles and	Jane I	RE LIG		nut to	1.000	X	-0.77		mel and several transfer and an arministration of the mean and the
2				Т				Orp.	13924	Jan 1818	3 000		110015		WACE	10eres		en contrade to the contrade the second field the second f
Libert time et al. 19. Victoria no m	of modes re	the seats	DA. W.S.	1000	III. 194 p. 1	Top Las	- tall	10.1	1-11	gentern	35 00	1100	1771 OU		h la	y(g)		,
4 TAN DEFENDANT BUARDER VERSION SUBMITTED	1000 M	NG-CH THEOR	170,000	207	2017 (0)	9019 790 7		POT 100	galouge	ya 190 ga	00000		1073		00.12	100	100 7	remound in the effort by \$41 are sometically for the ligenif (but the decide). If
5				\vdash		+	+				+	-		-		-	+	
6	a convenience	THE WATER					1		ext D	34 11 17	201 222		ajiri esi	300	1929/10	9790		Lands archite any stave promata magnification as a financial
7 AN STIERRED HOUSE IN A MARKET OF THE BOOK OF THE PARTY	CTE	ig Inners	the second		A SHIP SE		DC 15	200	61Au	SOLE 1960	11/2	100	hon	pole	pl 88		1,110	- unun prantato y sun mass sida y matta de la superior de la successión de la superior de la sup
8						v.												menantis no commente some some se to to suf-
Control to a subsequent support	42 200 to (et = 5	11	- Linguis	121	100		Prov.	e la la	See 1	3 2 13	profession and		di si	H.	date in	9 99	Alle	Manager and restrict the street on the Philips and a pick at a position
or on Kingboom — As wife — one sign	Na man	s we wi	10 m	1.29	GO CT	of growing		o Irri	7	1 (5)	100		rilion	offer		decap	3000	io vanamining the residual of memory (A3 YMALSAN, 935) is a
**Metals Analysis (Circle): MTCA-5	RCRA-8	Priority Pollu	tants TA	AL	Individu	al· Aø	ΔΙ Δς	B Ba	Re (Ca Cd	Co. Cr	Cu F	Ня	K M	z Mn	Mo	Va Ni	Pb Sb Se Sr Sn Ti Tl U V Zn
***Anions (Circle): Nitrate Nitrite	Chloride			nide	Table Coop	osphate		Fluori	200	725.5	te+Nitri		_		d times			
Sample Disposal: Return to Clie		Disposal by	Lab (Sample samples are	s will b	e held to	r 30 day									ter 4:00 wing b		_	THEASE XILL LIDE WY
I represent that I am authorized to ento		greement	with Frem	ont A	_		half o	f the (Client	name	d abov	e, that	I have	e ver	ified (lient	's	results.
Relinquished Date	e/Time - 24-16	,		_	Received x	1		1	0-	1	Date/T	ime	111	1	-	1,87		and the second are seen as the second of the
700000	e/Time			1	Receive		TANK I		1	V	Date/T	ime	111				11 VO 2	TAT → SameDay^ NextDay^ 2 Day 3 Day(STD)
×					x													^Please coordinate with the lab in advance

APPENDIX F

IMPORTANT INORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

Attachment to and part of Report 21-1-16700-123

Date: December 19, 2016

To: Sound Transit

Attn: Mr. Mark Menard

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

Page 1 of 2 1/2016

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland

Page 2 of 2 1/2016