Limited Phase II Environmental Site Assessment Report

Former Maralco Aluminum Site, 7730 S. 202nd Street Kent, Washington

Cooperative Agreement Number: BF-00J65701



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Sign-off Sheet

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has completed this Phase II Environmental Site Assessment (ESA) for the former Maralco Aluminum Property, 7730 South 202nd Street, Kent, Washington ("Property" or "Site"), on behalf of the City of Kent ("City" or "Client") and the Lyon John P & Gloria Irrevocable Living Trust and the Halpin Donna Irrevocable Living Trust (Property Owners). The Phase II ESA was funded through a United States Environmental Protection Agency (USEPA) Community-Wide Assessment Brownfield Grant. Site eligibility was approved by the USEPA on July 28, 2016. The work described herein was completed in accordance with: 1) Cooperative Agreement Number BF-00J65701; 2) a master Quality Assurance Project Plan (QAPP) approved by the USEPA on July 2, 2014; and 3) a Site-Specific Sampling and Analysis Plan (SSSAP) approved by the USEPA on October 6, 2016.

1.1 Site Description & History

The Property (King County Parcel Identification Number 6315000300) encompasses approximately 12.05 acres of land and is located at 7730 South 202nd Street in Kent, Washington. The location and layout of the Property are provided on **Figures 1** and **2**, respectively. The Property is currently zoned for industrial development and improved with a 45,000 square foot warehouse building constructed in 1981 and a former farmhouse with several out-buildings constructed between 1960 and 1968. An asphalt-paved parking lot is located in the northwest corner of the parcel. Portions of the parking lot are currently utilized for storage of steel pipe by Puget Sound Pipe and Supply, a business located on a north adjacent property. The eastern portion of the Property is covered in blackberry bushes and other shrubbery. The surrounding area is predominantly occupied by heavy industrial properties. The Property background information presented herein were obtained through a Phase I ESA conducted by Stantec, dated July 20, 2015 (Stantec, 2015).

The Property was operated from 1980 to 1986 as a smelting facility that processed aluminum scrap into ingots for recycling. The company filed for bankruptcy in 1983; however, operations continued through 1986 until the plant was shuttered. The company used an archaic molten salt process to smelt the aluminum. The salt flux was used to protect the molten aluminum from oxidation and improve metal recovery. The salt flux contained sodium chloride (NaCI) and potassium chloride (KCI). After the smelting process, the salt flux becomes a waste product consisting of aluminum oxide and impurities from the molten salt smelting process called "black dross" or "salt cake." During the first year of operation the black dross was hauled offsite for disposal at a solid waste landfill. Subsequently, the black dross was stored on-site until approximately 20,000 cubic yards accumulated in a consolidated stockpile located on the south and east sides of the warehouse building. The black dross has remained on-site since the plant closed in 1986. From a disposal perspective, black dross is problematic for two primary reasons: 1) the material is capable of generating leachate, and 2) the material if capable of producing gaseous products including ammonia, methane and hydrogen. Because of aluminum's amphoteric properties (it dissolves in both acid and alkaline solutions, generating heat and gas) disposal of large quantities can be problematic. In 1987, to determine the appropriate disposal method for the black dross, Ecology and Environment (E&E) collected several waste characterization samples from the black dross pile. The waste characterization samples indicated the black dross was a dangerous waste due to rat toxicity and an extremely hazardous waste for



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aquatic life due to elevated levels of copper. As a remedial alternative to off-site disposal, the property owner requested that the Washington State Department of Ecology (Ecology) approve on-site capping of the waste. Ecology did not agree with this approach because the waste was already book designated as dangerous waste. Beginning in 2000, the property owner and their consultant worked with Ecology to reevaluate the waste characteristics of the dross pile. Based on the results of eight fish bioassay results and four rat bioassay samples, the waste was redesignated as a non-hazardous waste that could be disposed of at a Subtitle D landfill (Sutton, Yasuda, & Peck, 2007). However, this determination only considered the toxicity of the black dross and not the reactivity of the material. Additional detail regarding the history of the property and previous investigations is provided in the following section.

1.2 Geologic/Hydrogeologic Setting

1.2.1 Regional Geology

The Property is located in the lower Green River Valley, which runs north from Auburn to Renton. The valley is located within the Puget Sound Lowland. The physiography of this area has been dominated by the advance and retreat of continental glaciers during the Vashon Glaciation in the Pleistocene Epoch. The Vashon stade was the last glacial retreat and advance, which began to recede approximately 10,000 years before present.

Advance of the glaciers into western Washington carved out the Kent Valley while depositing outwash chiefly comprised of sand and gravel and dense compacted glacial till in the upland areas. Retreat of the glaciers left the valley as a deep marine embayment. The Green, White, and Cedar rivers deposited a thick accumulation of fluvial sediments, which were eroded from the glacial drift uplands into the valley. The remaining sediments consist of coarse sand and gravel near the mouth of the rivers at Auburn and Renton, and become finer toward the Kent area.

During subsurface investigation of the Property, native unconsolidated sediments observed from the ground surface to the maximum depth explored (approximately 15 feet below ground surface (bgs)) are generally silty fine sand with some interbeds of fine and medium sand.

1.2.2 Property Hydrogeology

The Property is located within the Duwamish (Green) River Basin. Regional groundwater in the area of the Property is dominated by flow toward and discharge into the Green River. Five distinct hydrogeological units comprise the aquifer system and are (from youngest too oldest): White River Alluvium, Vashon glacial deposits, Salmon Springs deposit, Older Undifferentiated Glacial and Interglacial deposits, and Bedrock of the Puget Group.

1.2.3 Surface Water Hydrogeology

The water table occurs at the Property at a depth of approximately 5 feet bgs. Mapping of the potentiometric surface of the water table has historically indicated groundwater migration to the north-northwest. Local groundwater on the Property is likely influenced by the ditches that cross the Property. Regionally, groundwater flow is to the northwest towards the Green River.



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The Site is trisected by two drainage ditches. Christopher Ditch extends from 80th Avenue South southwest across the Site and at the approximate center of the Site the ditch turns to the northwest and extends across the Site to South 202nd Street. An unnamed ditch extends from the southeast west portion of the Site along the southeastern edge of the dross piles and joins the Christopher Ditch at the approximate center of the Site. Christopher Ditch flows to the northwest and eventually discharges into Mill Creek approximately 34 of a mile northwest of the Site. Mill Creek is a tributary to the Green River (Ecology and Environment, 1987). Reportedly, the two drainage ditches pre-date construction of existing improvements at the Site and have been in their current locations since at least the late 1940s, based on review of historical photographs (Morrison-Knudsen Environmental Services, 1991). Based on their historical presence and connection to Mill Creek, it is likely the two drainage ditches will be regulated as streams. Kent City Code 11.06.680.C requires a 50-foot buffer and a 15-foot building setback for streams located in the industrial valley.

1.2.4 Wetlands

A wetland site assessment was completed in April of 2003 at the Site. The assessment identified wetland areas along the sides of, and in Christopher Ditch and its tributary at the Site, designated as Wetland A. The wetlands comprise 49,227 square feet of wetlands. Kent City Code 11.06.590.D states that wetland delineation reports are valid for 5 years, so a new delineation will be necessary prior to cleanup or development activities. Wetland categories and buffers in Kent's code have changed since 2003.

The wetland soils consist of Woodinville silt loam, typical of drainage ways and stream bottoms in King County. The Woodinville soils are very wet with standing water to saturation to 20 inches below ground surface (EMR Incorporated, 2003).

2.0 PREVIOUS ENVIRONMENTAL REPORTS

The following six previous environmental documents provided pertinent information relative to this Phase II ESA.

1.) Ecology and Environment, Inc.; Site Assessment Report Maralco Aluminum, Kent, Washington; June 25, 1987.

E&E completed a site assessment at the Property in the summer of 1987. The locations of samples collected during the investigation are shown on **Figure 2**. According to E&E, Maralco had analyzed samples of black dross, baghouse dust, and aluminum oxide using the Extraction Procedure Toxicity (EP-Tox) method and acute fish toxicity testing in February and July of 1986. Although the report does not state explicitly the purpose of collecting these samples, it is assumed that these samples were for waste characterization purposes to assess disposal options for the black dross. The sample results indicated the materials did not exceed EP-Tox hazardous waste criteria, however, that surface water sample mortality for acute fish toxicity testing was 100%. A sediment sample was collected from within the drainage ditch that transects the Property adjacent to the black dross pile (sample location B2, **Figure 2**.) The analytical results indicated that metals contained in the black dross (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel and zinc) impacted drainage ditch sediments. Four of the detected metals [cadmium (4.5 milligrams/kilogram) (mg/kg), chromium (232 mg/kg), copper (1,500 mg/kg), and



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nickel (74.0 mg/kg)] exceeded their respective Sediment Management Standard (SMS) Sediment Cleanup Objective (SCO) criteria. To evaluate whether the sediment sample would constitute a hazardous waste, the sample was also submitted for EP-Tox analysis. The results indicated that the sample did not meet the criteria of a hazardous waste. A surface water sample co-located with the sediment sample was also collected for laboratory analysis of priority pollutant metals. Only copper (0.19 micrograms/liter [μ g/L]) and zinc (0.16 μ g/L) were detected, however at concentrations significantly less than the applicable Surface Water Aquatic Life Acute and Chronic Exposure cleanup levels.

2.) Morrison-Knudsen Environmental Services, Inc.; Draft Phase I Remedial Investigation Report, Maralco Site, Kent, Washington; February, 1991.

Groundwater, sediment, surface water, and black dross samples were collected as part of this investigation. Assessment activities completed by Morrison-Knudsen Environmental Services, Inc. (MKE) included the characterization of the exterior dross piles, and the installation, development, and sampling of four monitoring wells. Testing of the dross samples for leachable metals indicated that the material was not a characteristic hazardous waste. Groundwater concentrations for arsenic and lead were detected at concentrations greater than the Model Toxics Control Act (MTCA) Method A Groundwater screening levels, and for barium exceeding the federal primary drinking water standard of 1.0 milligram per liter (mg/L). The surface water and sediment sample results revealed that dross was entering on-site drainage ditches and that surface water was transporting the material off-site. The report indicates that in 1987 Ecology placed plastic barricades around the dross stockpile to prevent run-off from entering the drainage ditches; however, by 1989 the barricades were no longer in place.

3.) Enviros, Inc.; Underground Storage Tank Decommissioning at the Maralco Aluminum Site, 7730 South 202nd Street, Kent, Washington; July 31, 1995

On behalf of Ecology, Enviros, Inc. (Enviros) decommissioned a 35,000-gallon diesel underground storage tank (UST) located in the parking lot at the northwest portion of the Property in July of 1995. Approximately 150 cubic yards of contaminated soil was removed from the excavation and stockpiled on visqueen. The report indicates that upon inspection the UST was observed to be in generally good condition with the exception of three pin-point sized holes located near the west end of the UST. Confirmation soil samples were collected from the base and sidewalls of the excavation. The approximate extent of the excavation is shown on **Figure 2**. The analytical results indicated the presence of diesel-range organics (DRO) in soil from only the south and west sidewalls (6,300 mg/kg and 96 mg/kg respectively), with only the sample collected from the south sidewall exceeding the MTCA Method A screening level of 2,000 mg/kg. DRO was also detected in stockpiled soils from the excavation at concentrations ranging from 1,200 mg/kg to 2,100 mg/kg. The MTCA Method A screening level for DRO is 2,000 mg/kg. According to the report, Ecology approved returning stockpiled soil to the excavation following completion of UST removal activities.



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4.) Environmental Management Resources, Inc.; Draft Remedial Investigation/Feasibility Study for the Former Maralco Site, Kent, Washington; May, 2003

EMR conducted a Remedial Investigation/Feasibility Study (RI/FS) in 2003 at the Site. The RI/FS included the installation, development, and sampling of one new monitoring well (MW-5); sampling of three of the four existing monitoring wells (MW-2 through MW-4); and the collection of 22 dross samples from four soil borings (DP-1 through DP-4). The locations for samples during this investigation are shown on **Figure 2**. Depth to groundwater measurements collected by EMR and others indicates that groundwater occurs at a depth of approximately 5 feet below the ground surface, and that groundwater flow is generally to the north-northwest. Aluminum, arsenic, barium, chloride and fluoride were found to exceed the Project Remediation Goals (PRGs) in groundwater (generally equivalent to the MTCA Method B formula values corresponding to the lesser concentration for a Hazard Quotient of 1 or a potential carcinogenic risk of one in one million). Constituents of concern in soil were reportedly less than the PRGs for the Property. The dross and site sediments contain arsenic, barium, copper and mercury at concentrations greater than the Site PRGs. However, leachability testing indicated that the black dross was not a characteristic hazardous waste. The report identified three cleanup action alternatives:

- Alternative 1 Limited Action/Institutional Controls
- Alternative 2 Removal and Off-Site Disposal
- Alternative 3 On-Site Containment

The Draft RI/FS report recommended Alternative 2 – Removal and Off-Site Disposal as the recommended alternative. This alternative included the removal and off-site disposal of the dross and other wastes inside the warehouse building and impacted soil and sediment.

5.) URS Corporation; Draft Cleanup Action Plan, Maralco Redevelopment Project; November 12, 2004

URS Corporation (URS), completed an inventory of stockpiled particulate matter collected in baghouses located in the southwest corner of the warehouse building. Seven cribbed stockpiles were noted. The total estimated volume of material in these stockpiles was 1,100 cubic yards. Also noted by URS were five 55-gallon drums of waste located in the southeast corner of the building. Further characterization of these wastes was recommended by URS.

The URS report summarized findings from additional investigations that include a URS "Black Dross Characterization Report" dated 2000 as well as a "Former UST Investigation" conducted by EMR dated 2003. URS's summaries of these reports are provided below.

• URS completed further characterization of dross at the Property in August of 2000 by collecting and analyzing one discrete black dross sample and four composite black dross samples from the exterior dross stockpiles. The samples were collected east of the warehouse with a hand auger from a depth of five feet or less except for one sample that was collected at a depth of 9.5 feet. Testing included evaluation of toxicity using the Toxicity Characteristic Leaching Procedure (TCLP) and fish bioassay test methods. The TCLP testing results indicated that the black dross was not a characteristic hazardous



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waste. Also, the fish bioassay testing indicated that the black dross was not a State of Washington dangerous waste.

• In 2003, EMR conducted additional site characterization activities in the former UST area of the Property. The investigation indicated that two 1.5-inch copper pipes extended from the UST area to the southeast toward the warehouse suggesting that diesel may have been used to fuel one or more of the furnaces within the building. These pipes were only removed to the edge of the UST excavation, and the pipes left in place were capped. Soil samples collected during this investigation indicated no evidence of petroleum hydrocarbon impacts exceeding MTCA Method A screening levels. However, petroleum hydrocarbon concentrations in the groundwater grab sample collected from boring SB-1 exceeded the MTCA Method A screening levels at a concentration of 450 mg/L.

The preferred remedial action identified by URS was the removal and disposal of black dross, baghouse dust and other wastes inside the warehouse at an off-site disposal facility. URS further recommended sampling of the black dross and interior waste piles for hazardous waste characterization purposes, sampling of groundwater in the former UST area, and resampling of the five existing monitoring wells on the Site as part of a supplemental RI.

<u>6.)</u> <u>URS Corporation; Proposal, Environmental Services, Maralco Restoration Project; 202nd Street, Kent Washington. November 14, 2011</u>

The purpose of the URS proposal was to document the scope of work required by Ecology for entry into a Prospective Purchaser Consent Decree (PPCD). The PPCD is a particular type of Consent Decree entered into with a person who is not currently liable for remedial action at the Property and who wishes to purchase the Property. Ecology identified the following three requirements which are needed prior to developing a PPCD:

- 1. Completing a supplemental Remedial Investigation (RI) to address data gaps in site characterization;
- 2. Update the existing RI/FS report prepared by EMR (the proposal erroneously refers to another consulting company "ERM"); and
- 3. Revise the URS November 12, 2004 Draft Cleanup Action Plan (DCAP) to address comments provided by Ecology.

Additionally, a fourth task was identified, updating the Wetland Delineation report for the Site. The last wetland report for the Site was prepared in April of 2003; wetland assessments are valid for a period of 5 years according to Kent City Code 11.06.590.D.

The Task 1 – Supplemental RI tasks were recommended to include:

- Additional sampling and analysis of the black dross stockpiles located outside of the warehouse building for disposal characterization;
- Sampling the waste stockpiles inside the warehouse for disposal characterization;
- Drilling and sampling seven borings around the former USTs at the Site;
- Sampling existing Site monitoring wells; and



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 Inspecting the farmhouse to confirm former uses of the structure. Ecology suspected the building may have been used as a drug or chemical laboratory which included the use and onsite disposal of hazardous substances.

3.0 PURPOSE AND OBJECTIVE

The purpose of this limited Phase II ESA is to provide an evaluation of recognized environmental conditions (RECs) as identified in the Phase I ESA (Stantec 2015) and to confirm previously identified impacts to soil, groundwater, sediment, and surface water at the Property. Additionally, the information in this report is intended to support future application of the Property in the Ecology Voluntary Cleanup Program (VCP). Specifically, the scope of this investigation consisted of the following tasks:

- Completing a geophysical survey to explore for evidence of buried subsurface utilities in the areas planned for drilling and in the former UST area;
- Advancing 6 direct-push soil borings (B-1 through B-6) to depths up to 20 feet bgs. The locations of the borings are shown on **Figure 2**.
- Collecting up to two soil samples at each of the 6 soil boring locations for laboratory analysis. At three locations (B-1 through B-3) soil samples were collected to assess the current condition of petroleum hydrocarbon impacts historically associated with the former diesel UST and petroleum hydrocarbon impacted soil used to backfill the excavation. At three locations (B-4 through B-6) soil samples were collected to assess the current concentrations of contaminants associated with the stockpiled black dross.
- Collecting groundwater grab samples for laboratory analysis from each of the borings (B1 through B-6). Temporary wells were installed using 0.010 polyvinyl chloride (PVC) screen.
 Groundwater grab samples were collected to assess the current condition of metals
 associated with the stockpiled black dross and petroleum hydrocarbons around the
 former UST.
- Sampling of one existing groundwater monitoring well on the Property (MW-2) and collecting a groundwater sample for laboratory analysis. The location of the existing groundwater monitoring well network is shown on **Figure 2**. (Note that three of the wells planned for sampling could not be located and one well had been destroyed.)
- Sampling of surface sediment and surface water from 2 locations along the on-site drainage ditch (SS-1; SS-2/SW-10; and SW-11).
- Collecting three depth composited samples of black dross from the exterior stockpile at location (D-1) for waste characterization purposes.

The tasks and field sampling activities described below were performed in general accordance with the SSSAP and QAPP (Stantec 2016 and Stantec 2014).



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4.0 FIELD INVESTIGATION PROCEDURES

Field investigation activities were conducted in October and November 2016, and included the following:

- Collecting 15 soil samples from 6 soil boring locations across the Property on October 27, 2016;
- Collecting 6 groundwater grab samples from the soil borings;
- Collecting 2 surface sediment samples and 2 surface water samples on October 28, 2016;
- Sampling existing monitoring well MW-2 on November 2, 2016; and
- Collecting three depth composited samples of black dross from the exterior stockpile at location (D-1) on November 28, 2016.

The sample locations are shown on **Figure 2**. The following report sections summarize the field sampling and laboratory analytical methods implemented during the field program.

4.1 Geophysical Assessment

Stantec oversaw a geophysical assessment of the Property by Underground Locations Services Corporation (ULS) on October 21, 2016. ULS used a Fisher Split Box Electromagnetic Induction Metal Detector (EMIMD) and Schonstedt Magnetic Locator to scan portions of the Property for anomalies that may indicate the presence of buried metal objects. Following the magnetic survey, a MALA ground penetrating radar (GPR) system with a 500-MHz antenna was used to further evaluate the identity of metallic anomalies, and screen borehole locations for subsurface utilities. The ULS report is provided in **Appendix A**. A summary of the results is provided in **Section 5.1**.

4.2 Subsurface Soil Investigation

Stantec supervised the drilling of 6 soil borings (B-1 through B-6) at the Property on October 27, 2016 (Figure 2). Drilling was performed by Environmental Services Network Northwest (ESN NW; based in Olympia, WA and subcontracted to Stantec). Drilling was accomplished by direct-push methods using an AMS 9630 PRO-PTO truck-mounted rig. The soil samples were collected to evaluate subsurface conditions and to access the presence or absence of metals (in particular aluminum) at the Property from past Property operations) and petroleum hydrocarbons from the former 35,000-gallon diesel UST. Boring B-6 was located inside the abandoned warehouse building.

The six soil borings were drilled to maximum depths of 20 feet bgs. One discrete vadose zone soil sample was collected from each location slightly above the capillary fringe at depths ranging from 4 to 8 feet bgs and a second discrete soil sample was collected at the depth interval from 15 to 17 feet bgs. A depth of 15 feet is equivalent to the extent of direct contact exposure (as defined by Washington Administrative Code [WAC] 173-340-740) and 15 to 17 feet is the estimated bottom of the former diesel UST. Groundwater was encountered in each of the borings at depths ranging between 5 feet bgs (B-2) and 9 feet bgs (B-5). Soil descriptions, sampling methods, and field screening results are provided below in **Section 5.3**.



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Soil samples from the six borings were collected in clean, acetate-lined 2.25-inch stainless steel core barrels using the direct-push technique. The sampling equipment was decontaminated between each sample interval by cleaning with a solution of AlconoxTM, followed by a two-step deionized water rinse.

Stantec field personnel used clean stainless steel hand tools to transfer the soil from the liner into new clean laboratory-supplied glass jars. New disposable gloves were donned by field personnel for the collection of each soil sample to minimize any possible cross-contamination. Soil samples for volatile organic compound (VOC) analyses were collected in accordance with USEPA Soil Sampling Method 5035 using TerracoresTM. Following filling, each of the sample containers were labeled, placed in sealable plastic bags, and stored in an insulated cooler with ice. The samples were subsequently transported to the laboratory under chain-of-custody (COC) protocols specified in the project-specific QAPP (Stantec 2014). The borehole logs are included as **Appendix C**.

Soil samples collected from borings B-1 through B-3 were submitted for laboratory analysis of the following constituents:

- o Gasoline-range petroleum hydrocarbons (GRO) via Ecology Method NWTPH-Gx,
- o DRO and residual-range petroleum hydrocarbons (RRO) via Ecology Method NWTPH-Dx,
- o Benzene, toluene, ethylbenzene, and total xylenes (BTEX) via USEPA Method 8021B, and;
- Polycyclic Aromatic Hydrocarbons (PAHs) including Carcinogenic PAHs (cPAHs) via USEPA Method 8270 Selective Ion Method (SIM).

Soil samples collected from borings B-4 through B-6 were submitted for laboratory analysis of the following constituents:

- Toxicity characteristic leaching procedure (TCLP) metals arsenic, barium, cadmium, chromium, lead, selenium, silver and mercury via USEPA Method 6010/7470;
- Total Resource Conservations and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) via USEPA Method 200.7, 6010B and 6010C;
- Aluminum via USEPA Method 200.7, and;
- o Ammonia-nitrogen, nitrate, chloride, and fluoride via USEPA Method 300.0.

One soil field duplicate sample was collected and analyzed for each of the constituents of concern for quality assurance/quality control purposes.

The soil sample results are provided in **Table 1** and discussed in **Section 5.3**.

4.3 Surface Water Sampling

Stantec collected surface water samples (SW-10 and SW-11) on October 28, 2016 from the on-Property drainage ditch. The surface water samples were obtained by filling a clean stainless steel scoop with the surface water and decanting the water into laboratory-supplied sample containers. The samples were sealed with Teflon® lined caps and placed on ice for shipment to the analytical laboratory.

Each surface water sample collected was submitted for laboratory analysis of:



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- Total RCRA 8 Metals via USEPA Method 200.8;
- Aluminum via USEPA Method 200.8; and
- Ammonia Nitrogen, Chloride, Nitrate Nitrogen, Fluoride via USEPA Method 300.0

One surface water field duplicate sample was collected and analyzed for each of the constituents of concern for quality assurance/quality control purposes.

The surface water sample results are provided in Table 2 and discussed in Section 5.4.

4.4 Surface Sediment Sampling

Stantec collected surface sediment samples (SS-1 and SS-2) on October 28, 2016 from the on-Property drainage ditch. The surface sediment samples were obtained from the sides of the drainage ditch near the water line by using a clean stainless steel scoop to dig to approximately six inches bgs and placing the samples into laboratory-supplied sample containers. The samples were sealed with Teflon® lined caps and placed on ice for shipment to the analytical laboratory.

Each surface sediment sample collected was submitted for laboratory analysis of:

- Total RCRA 8 Metals via USEPA Method 200.8;
- Aluminum via USEPA Method 200.8; and
- Ammonia Nitrogen, Chloride, Nitrate Nitrogen, Fluoride via USEPA Method 300.0

One surface sediment field duplicate sample was collected and analyzed for each of the constituents of concern for quality assurance/quality control purposes.

The sediment sample results are provided in Table 3 and discussed in **Section 5.5**.

4.5 Groundwater Investigation

On October 28, 2016, Stantec redeveloped monitoring well MW-2 because it had not been sampled in approximately 12 years. The purpose of the well redevelopment was to remove accumulated fines and debris from the cell casing and to reestablish the hydraulic conductivity between the well sand pack and the aquifer.

A depth to groundwater measurement was collected from well MW-2 prior to sampling using an electronic water level meter. The remaining wells were not accessible or had been destroyed. Water level measurements were measured from the northern edge of the top of the well casing and recorded to the nearest 0.01 foot on the field data sheet. The water level meter was decontaminated with AlconoxTM and deionized water. The water level is tabulated on **Table 5**.

Stantec collected a groundwater sample from MW-2 on November 2, 2016 using low-flow sampling methods following purging of the well. Field parameters, including temperature, pH, conductivity, and oxidation-reduction potential (redox/ORP) were recorded on the field data sheet every 3 to 5 minutes, depending on the purge rate. Purging of the monitoring well was considered complete when the field parameters became stable for three successive readings as outlined in the SSSAP (Stantec 2016). The groundwater samples were collected in laboratory-supplied sample containers, sealed with Teflon® lined caps, and placed on ice for shipment to



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the analytical laboratory in accordance with the project-specific QAPP (Stantec 2014). The purge logs are included in **Appendix D** and the water quality parameters are presented on **Table 6**.

The groundwater samples collected were submitted for laboratory analysis of the following constituents:

- o Total RCRA 8 Metals via USEPA Method 200.8, 6010B and 6010C;
- o PAHs via USEPA Method 8270D SIM;
- Aluminum via USEPA Method 200.8;
- o DRO and RRO via Ecology Method NWTPH-Dx; and
- o Ammonia-nitrogen, nitrate, chloride, and fluoride via USEPA Method 300.

The groundwater sample results are provided in Table 4 and discussed in Section 5.6.

4.6 Groundwater Grab Sampling

Groundwater grab samples were collected from each of the soil borings (B-1 through B-6). The drilling subcontractor constructed a temporary well using 0.010 PVC screen and 10/20 Colorado Silica Sand to fill the annulus. The depth to water was measured from the top of the temporary well screen and recorded on the field data sheet. Groundwater samples were collected into laboratory-supplied sample containers, sealed with Teflon® lined caps, and placed on ice for shipment to the analytical laboratory. Groundwater was encountered in each of the borings at depths ranging between 5 feet bgs (B-2) and 9 feet bgs (B-5).

The groundwater samples collected were submitted for laboratory analysis of the following constituents:

- o Total RCRA 8 Metals via USEPA Method 200.8, 6010B and 6010C;
- o PAHs including cPAHs via USEPA Method 8270D SIM;
- o Aluminum via USEPA Method 200.8;
- DRO and RRO via Ecology Method NWTPH-Dx; and
- Ammonia-nitrogen, nitrate, chloride, and fluoride via USEPA Method 300.0.

The groundwater grab sample results are provided in **Table 4** and discussed in **Section 5.7**.

4.7 Dross Waste Characterization Sampling

On November 28, 2016 Stantec collected a depth-composited sample of the dross from the stockpile for waste characterization purposes to evaluate offsite disposal options. The sample was collected using a clean, standard garden shovel from a single location (D-1) near the base and along the western edge of the dross stockpile (**Figure 2**). The dross sample consisted of a composite of surface (0 to 0.5 feet bgs), shallow (1-2 feet bgs) and deep (2-3 feet bgs) dross material that was homogenized and subsequently placed into sealed plastic bags and sealed in three 5-gallon plastic buckets for transportation.



4.8 Investigation Derived Waste (IDW)

Upon the completion of soil sample collection at each location, each boring was backfilled with bentonite chips (hydrated in place). Any excess soil from the boring locations was placed in one 16-gallon, properly-labeled Department of Transportation (DOT)-approved steel drum.

Equipment decontamination fluids and purge water from groundwater grab samples and existing monitoring wells were contained in two 16-gallon, properly-labeled DOT-approved steel drums. The drums containing the solid and liquid IDW were placed in the north-central portion of the Property, pending receipt of analytical results and final disposition options.

4.9 Deviations from the SSSAP/QAPP

The following deviations occurred from the SSSAP and QAPP (Stantec 2016 and Stantec 2014):

- Field sample nomenclature outlined in the QAPP was not adhered to for consistency purposes to match previous sampling on site (e.g., MW-1 was used instead of KFMMW01 as outlined in the QAPP);
- Because four of the monitoring wells (MW-1, and MW-3 through MW-5) could not be located, only one monitoring well was sampled during the Phase II ESA;
- During groundwater sampling from the existing monitoring well a duplicate sample was not collected due to an oversight;
- During groundwater sampling, turbidity measurements were not collected due to an oversight;
- During surface sediment and surface water sampling two sediment samples (SS-3 and SS-4) were not collected due to inability to access surface sediments at or near the proposed sampling locations; one surface water sample (SW-9) was not collected because there was no water present in the drainage ditch; and one surface water sample (SW-12) was not collected due to inaccessibility of the sampling location.

With the exception of the turbidity measurements, the aforementioned deviations are not expected to alter the results and/or conclusions of this Phase II ESA. Please see the conclusions and recommendations (Section 8.0) regarding turbidity.

5.0 FIELD INVESTIGATION RESULTS

Tabulated sample results are included in **Tables 1 through 4** for soil, surface water, sediment, and groundwater, respectively. The ESC Lab Sciences analytical report and chain-of-custody documents are provided in **Appendix E**.

5.1 Geophysical Assessment Findings

As described in **Section 4.1**, Stantec oversaw a geophysical assessment performed by ULS at the Property on October 21, 2016. The ULS report is provided in **Appendix A**.

Three magnetic anomalies were identified during the survey:

a. A north-south trending linear anomaly located in the southeast portion of the building near B-6 appeared to be a possible conduit line,



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- A northwest-southeast trending linear anomaly located between the former UST area and the northeast corner of the building appeared to be a possible former fuel piping line, and;
- c. A northeast-southwest trending linear anomaly located between the northeast corner of the building and the Property entrance appeared to be a possible former electrical and/or communications line.

The goal of geophysical assessment was to provide a rapid means of exploring for abandoned USTs and/or other underground structures/utilities using non-intrusive methods. Conclusions based upon these methods are generally reliable; however, due to the inherent ambiguity of the methods, it is not possible to definitively identify a metallic subsurface feature such as rebar within a former building foundation or a UST.

5.2 Screening Levels

The MTCA screening levels referenced in this report are defined as a means of measuring the relative severity of contamination at the Property and are used for screening of soil, groundwater, sediment, and surface water concentrations for data evaluation purposes. These screening levels may or may not be the same as future cleanup or action levels used to guide remediation at the Property. These would be developed based on concurrence with Ecology, if required. The MTCA soil screening levels used for screening were selected as the most stringent of direct contact concentrations (Method A Unrestrictive Land Use and B Cancer/ Non cancer). For arsenic, the most stringent direct contact concentration is the Method B Cancer Direct Contact value of 0.667 milligrams per kilograms. However, this value is less than the natural background level for Washington State of 7 mg/kg (Ecology 1994). As a result, the screening level used herein for arsenic is 7 mg/kg (Table 1). The MTCA groundwater screening levels used for screening were selected as the most stringent of the standard MTCA Method A of B formula values (non-restrictive; Table 4); however, it is unlikely that groundwater will be used as a potable source at the Property in the future because of the availability of municipal water for water supply in this area. The WAC Chapter 173-201A and the Clean Water Act (CWA) Surface Water Fresh Acute and Chronic values (Table 2) were selected as the most appropriate screening levels for surface water. Finally, the WAC Chapter 173-204, SMS SCO value was selected as the most stringent standard for sediments at the Property. (**Table 4**).

5.3 Soil Results

5.3.1 Soil Sample Observations

Soil from the borings was logged lithologically using the Unified Soil Classification System. Artificial fill was present from ground surface to approximately 3 feet bgs. Native soil beneath the Artificial Fill was primarily grey to brown, fine to very fine sand and silty fine sand with minor layers of silt/clayey silt/clay. Boring logs showing lithology are provided in **Appendix C**.

During sampling, soil not used for sample collection was field-screened for potential volatile organic compound vapors with a photoionization detector (PID) calibrated to the manufacturer's specifications. PID readings ranged from non-detect to 2 parts per million (ppm). Slight



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diesel/petroleum hydrocarbon odor was noted at borings B-1 and B-3 near the former diesel UST and slight natural decay/organic odor was noted at borings B-2, B-4 and B-5. No staining was observed in the soil.

Shallow groundwater was encountered at each of the borings at depths ranging from 5 to 9 feet bgs.

5.3.2 Soil Analytical Results

A total of 15 soil samples were collected on October 27, 2016 and submitted to ESC Lab Sciences for GRO, DRO and RRO; BTEX; PAH; TCLP metals; RCRA 8 metals; aluminum; and/or ammonianitrogen, nitrate, chloride, and fluoride analysis. The soil analytical results are described below and summarized on **Table 1**.

5.3.2.1 Petroleum Hydrocarbon and BTEX Analytical Results

- GRO, DRO, and RRO were not detected in any of the soil samples.
- Benzene was detected in five of the fifteen soil samples at concentrations less than the MTCA screening level of 0.03 mg/kg. The detected benzene concentrations ranged between 0.00014 mg/kg (B-6-9.5') and 0.000604 mg/kg (B-5-10').
- Toluene was detected in two of the fifteen soil samples at concentrations of 0.000476 mg/kg (B-4-9') and 0.000557 mg/kg (B-5-10'), which is less than the MTCA screening level of 7.0 mg/kg.
- Ethylbenzene and total xylenes were not detected in any of the soil samples.

5.3.2.2 Polycyclic Aromatic Hydrocarbon Analytical Results

- A total of six soil samples from borings B-1, B-2 and B-3 were submitted for analysis of PAHs.
- Eleven PAHs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene, and 2-methylnaphthalene were detected in the soil samples. Each of the PAHs were detected at concentrations less than the MTCA screening levels.
- Carcinogenic PAHs (cPAHs) are a subset of PAHs and identified by the EPA as Group A (known human) or B (probable human) carcinogens. There are seven cPAHs including benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthrancene and indeno(1,2,3cd)pyrene. For mixtures of cPAHs the reference chemical is benzo(a)pyrene. This constituent was chosen as the reference chemical because the toxicity is well characterized. The toxicity equivalence factor for each cPAH is an estimate of the relative toxicity of the cPAH compound compared to benzo(a)pyrene.
- cPAHs were detected in one soil sample (B-3-6') at a cumulative concentration of 0.002485 mg/kg, which is less than the MTCA screening level of 0.137 mg/kg.



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5.3.2.3 Total RCRA 8 Metals and Aluminum,

- Six soil samples from borings (B-4-7', B-4-15', B-5-8', B-5-15', B-6-7.5' and B-6-15') were submitted for analysis of total RCRA 8 metals and aluminum.
- Eight metals, including aluminum, arsenic, barium, cadmium, chromium, lead, mercury, and selenium, were detected in the soil samples at concentrations less than the MTCA screening levels.
- Barium and mercury were detected in soil at concentrations greater than the natural background levels for the Puget Sound region (Ecology, 1994).
 - The mercury concentration in soil sample B-6-7.5' (0.141 mg/kg) is greater than the natural background level of 0.07 mg/kg however significantly less than the MTCA screening level of 2 mg/kg.

5.3.2.4 TCLP Metals Analytical Results

- Six soil samples from borings (B-4-7', B-4-15', B-5-8', B-5-15', B-6-7.5' and B-6-15') were submitted for analysis of total TCLP metals analysis.
- Barium was the only metal detected through leaching extraction at concentrations ranging between 0.0539 mg/L (B-5-8') and 0.177 mg/L (B-6-7.5') which is significantly less than the Washington State Maximum Concentration of Contaminants for the Toxicity Characteristic of 100 mg/L for barium.

5.3.2.5 Geochemical Parameter Analytical Results

- Six soil samples were submitted from borings B-4-7', B-4-15', B-5-8', B-5-15', B-6-7.5' and B-6-15' for analysis of chloride, fluoride and ammonia-nitrogen and nitrate.
- Chloride was detected at concentrations ranging from 41.4 mg/kg (B-5-8') to 4,280 mg/kg (B-5-15'). There is no established MTCA screening level for chloride.
- Fluoride was detected at concentrations ranging from 0.544 mg/kg (B-5-15') to 35.9 mg/kg (B-6-15') which is less than the MTCA screening level of 3,200 mg/kg.
- Nitrate was detected in two soil samples at concentrations of 0.954 mg/kg (B-5-8') and 2.25 mg/kg (B-4-7'), which is less than the MTCA screening level of 128,000 mg/kg.
- Ammonia nitrogen was detected at concentrations between 5.92 mg/kg (B-4-15') and 33.1 mg/kg (B-5-15'). There is no established MTCA screening level for ammonia-nitrogen.
- The highest concentration of geochemical parameters were observed in soil samples collected from boring B-5 which is located adjacent to and downgradient from the exterior dross stockpile.

5.4 Surface Water Analytical Results

A total of two surface water samples were collected on October 28, 2016 and submitted to ESC Lab Sciences for RCRA 8 metals; aluminum; and ammonia-nitrogen, nitrate, chloride, and fluoride



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analysis. The surface water analytical results are described below, summarized on **Table 2**, and shown on **Figure 3**.

5.4.1 Total RCRA 8 Metals and Aluminum Analytical Results

- Five of the nine metals including, aluminum, barium, cadmium, chromium and lead, were detected in the surface water samples.
- Aluminum, cadmium, and lead were detected at concentrations exceeding their MTCA screening levels.
 - Aluminum exceeded the Clean Water Act (CWA) surface water fresh/chronic screening level of 87 μg/L in both samples SW-10 (730 μg/L) and SW-11 (618 μg/L);
 - o Cadmium exceeded the CWA surface water fresh/chronic screening level of 0.25 μ g/L in the sample SW-10 (2.13 μ g/L), and
 - Lead exceeded the WAC surface water aquatic life fresh/chronic screening level of 0.54 μg/L in the sample SW-11 (2 μg/L).

5.4.2 Geochemical Parameter Analytical Results

- Two surface water samples were submitted for analysis of chloride, fluoride and ammonianitrogen and nitrate.
- With the exception of chloride, each of the geochemical parameters were detected at concentrations less than their MTCA screening levels.
- Chloride was detected at concentrations of 379,000 µg/L (SW-11) and 8,940,000 µg/L (SW-10), which is greater than both the CWA Surface Water Fresh/Chronic screening level and the WAC Surface Water Aquatic Life Fresh/Chronic screening level of 230,000 µg/L.
- The concentration of chloride in sample SW-10 was also greater than the WAC surface water aquatic life fresh/acute screening level.

5.5 Sediment Analytical Results

On October 28, 2016, a total of two surface sediment samples were collected and submitted to ESC Lab Sciences for analysis of RCRA 8 metals; aluminum; and ammonia-nitrogen, nitrate, chloride, and fluoride. The sediment analytical results are described below and summarized on **Table 4**.

5.5.1 Total RCRA 8 Metals and Aluminum Analytical Results

- Each of the nine metals were detected in the sediment samples.
- Cadmium, chromium and silver were detected at concentrations exceeding their screening levels:
 - Cadmium exceeded the SMS Freshwater SCO of 2.1 mg/kg in the sample collected at SS-2; and



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- Silver exceeded the SMS Freshwater SCO of 0.57 mg/kg in the sample collected at SS-2.
- Chromium exceeded the SMS Freshwater Sediment SCO and CSL in the duplicate sample from SS-2 ("SS-900," 112 mg/kg).

5.5.2 Geochemical Parameter Analytical Results

- Chloride was detected at concentrations ranging from 82.3 mg/kg to 26,800 mg/kg. There are no established SMS criteria for chloride.
- Fluoride was detected at concentrations ranging from 226 mg/kg to 383 mg/kg. There are no established SMS criteria for chloride.
- Nitrate was detected at concentrations ranging from 3.62 mg/kg to 13.8 mg/kg. There are no established SMS criteria for nitrate.
- Ammonia-nitrogen was detected at concentrations ranging from 4.26 mg/kg to 6.65 mg/kg, less than the SMS SCO of 230 mg/kg.
- The highest concentrations of each of the constituents were detected at sampling location SS-2 adjacent to the exterior dross stockpile.

5.6 Groundwater Analytical Results

On November 2, 2016, a groundwater sample was collected from existing monitoring well MW-2 and submitted to ESC Lab Sciences for analysis of DRO, RRO; PAHs; RCRA 8 metals; aluminum; and ammonia-nitrogen, nitrate, chloride, and fluoride. The groundwater analytical results are described below, summarized on **Table 4** and shown on **Figure 3**.

5.6.1 Petroleum Hydrocarbons Analytical Results

DRO and RRO were not detected in the groundwater sample.

5.6.2 Total RCRA 8 Metals and Aluminum Analytical Results

• Three of the nine metals including aluminum, barium, and lead were detected at concentrations of 174 μg/L, 5.65 μg/L, and 2.59 μg/L, respectively, in the groundwater sample, which is significantly less than each of the MTCA screening levels: 16,000 μg/L, 2,000 μg/L and 15 μg/L, respectively.

5.6.3 Geochemical Parameter Analytical Results

- Chloride and fluoride were detected at concentrations of 3,890 μg/L and 80.7 μg/L, which
 is less than the MTCA screening levels of 250,000 μg/L and 4,000 μg/L, respectively.
- Fluoride was detected at a concentration of 80.7 μ g/L which is less than the MTCA screening level of 640 μ g/L.
- Ammonia-nitrogen and nitrate were not detected in the groundwater sample.



5.6.3.1 Polycyclic Aromatic Hydrocarbon Analytical Results

- Four PAHs including fluorene, phenanthrene, 1-methylnaphthalene and 2-methylnaphthalene were detected in the groundwater at concentrations less than the MTCA screening levels.
- cPAHs were not detected in the groundwater sample.

5.7 Groundwater Grab Sample Analytical Results

Groundwater grab samples were collected from temporary wells installed at soil boring locations B-1 through B-6 on October 27, 2016. The groundwater samples were submitted to ESC Lab Sciences for analysis of DRO, RRO; PAHs; RCRA 8 metals; aluminum; and ammonia-nitrogen, nitrate, chloride, and fluoride. The groundwater grab sample analytical results are described below and summarized on **Table 4** and shown on **Figure 3**.

5.7.1 Petroleum Hydrocarbons Analytical Results

- DRO were detected in two of the six groundwater grab samples from temporary well B-1 (160 μ g/L) and temporary well B-3 (235 μ g/L) at concentrations less than the MTCA screening level of 500 μ g/L.
- RRO was not detected in any of the groundwater samples.

5.7.2 Total RCRA 8 Metals and Aluminum Analytical Results

- Six groundwater grab samples were submitted for analysis of total RCRA 8 metals and aluminum.
- Three total metals, cadmium, chromium and mercury, were detected in the groundwater grab samples, but at concentrations less than the MTCA screening levels.
- Two metals, silver and selenium were not detected in the grab groundwater samples.
- Four metals including, aluminum, arsenic, barium and lead, were detected at concentrations exceeding their MTCA screening levels.
 - Aluminum exceeded the MTCA screening level of 16,000 μg/L in samples collected from wells B-1, B-2, B-4, and B-6;
 - Arsenic exceeded the MTCA screening level of 5.0 μg/L in samples collected from wells B-1 through B-6;
 - $_{\odot}$ Barium exceeded the MTCA screening level of 3,200 $\mu g/L$ in the sample collected from well B-5; and
 - $_{\odot}$ Lead exceeded the MTCA screening level of 15 $\mu g/L$ in the samples collected from wells B-1, B-2, B-4, and B-6.



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5.7.3 Geochemical Parameter Analytical Results

- Chloride and fluoride were detected in the groundwater grab samples at concentrations greater than the MTCA screening levels.
 - o Chloride concentrations were greater than the MTCA screening level L of 250,000 μ g/L in samples collected from B-1 (265,000 μ g/L), B-3 (341,000 μ g/L) and B-5 (8,970,000 μ g/L).
 - $_{\odot}$ Fluoride concentrations were greater than the MTCA Method B Non Cancer screening level of 640 μg/L in samples collected from B-2 (850 μg/L), B-4 (5,090 μg/L), B-6 (52,900 μg/L) and B-5 (7,740 μg/L). The concentration in samples collected from B-4, B-6 and B-5 also exceeded the WAC maximum contaminant level (MCL) of 4,000 μg/L.
- Ammonia-nitrogen and nitrate were detected in the groundwater grab samples, however at concentrations less than the MTCA screening levels.

5.7.4 Polycyclic Aromatic Hydrocarbon Analytical Results

- Six groundwater grab samples were submitted for analysis of PAHs.
- Eight PAHs including acenaphthene, acenaphthylene, benzo(a)pyrene, fluorene, naphthalene, phenanthrene, 1-methylnaphthalene, and 2-methylnaphthalene were detected in the groundwater samples.
- Benzo(a)pyrene was the only cPAH detected in the groundwater grab samples and exceeded the MTCA Method B Cancer screening level of 0.012 μ g/L in one sample from well B-1 (0.0812 μ g/L).

5.8 Dross Waste Characterization Results

The dross waste characterization results are discussed in Section 7.5 below.

6.0 DATA VALIDATION RESULTS

Stantec performed a QA/QC (data validation) review of the analytical results, which included a review of accuracy and precision of data supplied by the laboratory per USEPA guidelines. The data validation resulted in assignment of qualifiers to several sample results. Analytical results for all other QA/QC samples, including water blanks, trip blanks, and equipment/rinsate blanks are provided in the laboratory reports. The data validation report is provided as **Appendix F**.

7.0 SUMMARY

7.1 Soil Summary

A total of 15 soil samples were collected from six soil borings during this Limited Phase II ESA. Three of the soil borings were advanced around a former UST excavation at the northwest corner of the Property and the remaining three soil borings were advanced adjacent or downgradient from the



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black dross stockpile to the east and south of the warehouse building. Soil samples were analyzed for petroleum hydrocarbons, total metals, geochemical parameters and PAHs. None of the constituents were detected at concentrations greater than the applicable MTCA Method A or B screening levels. The data indicate the following:

- Petroleum hydrocarbons were not detected in soil samples from borings B-1 through B-3, which were advanced around the former UST excavation. Detected BTEX and PAH concentrations were less than the MTCA screening levels.
- With the exception of selenium, each of the RCRA 8 metals were detected in soil samples
 collected downgradient and/or adjacent to the black dross piles. While none of the
 detected metals exceeded their MTCA screening levels, the concentrations of mercury
 were greater than the natural background levels for the Puget Sound in one or more of
 the soil samples. The source of these elevated metals is likely leaching of contaminants
 from the black dross. None of the detected mercury concentrations are greater than the
 MTCA screening level.
- A total of six soil samples from borings B-4, B-5 and B-6 were submitted for TCLP analysis.
 Barium was the only leachable metal detected in these soil samples, but the concentration of barium detected was below regulatory levels.

7.2 Surface Water Summary

Two surface water samples, SW-10 and SW-11 were collected during this Limited Phase II ESA to evaluate impacts from surface water runoff and leaching from the dross stock piles. Surface water samples, SW-10 and SW-11, were collected on the east and southeast sides of the black dross stockpile, respectively. The analytical results for these surface water samples indicate that three metals, aluminum, cadmium and lead, and one geochemical parameter, chloride, were detected in the surface water samples at concentrations greater than their screening levels. Each of these constituents are contaminants associated with black dross and the salt flux. Further, fluoride, nitrate, and ammonia-nitrogen were also detected in the surface water samples, although there are no established surface water screening levels for these constituents. Surface water flow via the drainage ditches is a transport medium for these contaminants, which are likely being transported offsite by means of the north running drainage ditch on the Property. Proposed upgradient surface water sample location SS-9 was dry at the time of the investigation. Downgradient location SW-12, was inaccessible because of heavy brush.

7.3 Sediment Summary

Two surface sediment samples, SS-1 and SS-2, were collected from where the east and southeast sides of the black dross stockpile intersect the drainage ditch, respectively. Elevated geochemical parameters including chloride and fluoride were detected in the sediment samples. Three metals, cadmium, chromium and silver, were detected in the sediment samples at concentrations greater than screening levels. The source of these contaminants is likely a result of surface water run-off and erosion from the black dross stockpile. The surface water transports contaminants into the drainage ditches on the eastern and western portions of the stockpile.



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7.4 Groundwater Summary

Only one of the five existing monitoring wells (MW-2) was sampled during the investigation. Two of the wells, MW-4 and MW-5, were destroyed. Wells MW-1 and MW-3 could not be accessed because of designated wetland areas and thick brush on the eastern portion of the Property. Well MW-2 is cross-gradient to groundwater from the dross stockpile area based on reported historical groundwater flow to the north/northwest at the Property. Because this well is not proximate or downgradient from the black dross and is located in an area where contamination is unlikely to be present based on historical information on Property usage, the data provide information on background water quality at the Property. The results indicate:

- Three metals: aluminum, barium and lead, and PAHs were detected in the groundwater sample at concentrations less than MTCA screening levels.
- Geochemical parameters chloride and fluoride were also detected in the sample, however at concentrations less than the MTCA screening levels.

Six groundwater grab samples were collected to evaluate groundwater quality around the former UST excavation and adjacent or downgradient from the black dross stockpile to the east and south of the warehouse building. Groundwater grab samples are collected from temporary monitoring wells installed by the driller and subsequently abandoned after the sample was collected. These types of samples are considered to be qualitative in nature because of the potential for "drag-down" of impacted soil at shallower intervals. In addition, high turbidity levels associated with groundwater grab samples tend to bias high groundwater analytical results. The groundwater grab sample results indicate:

- Groundwater was encountered at depths ranging between 5 feet bgs and 9 feet bgs during the investigation.
- Four metals: aluminum, arsenic, barium and lead, and chloride, fluoride and benzo(a)pyrene were detected at concentrations greater than their MTCA screening levels.
- The data suggest that leaching of contaminants from the black dross pile and infiltration to the subsurface continue to adversely impact groundwater quality at the Property.

The extent of impacted groundwater has not been fully delineated vertically or horizontally at the Property. As discussed in the 1991 MKE RI, groundwater beneath the dross pile would be expected to exhibit very high salinities. Brines (salt solutions) have greater densities than natural groundwater and have the potential to sink through the shallow aquifer and transport heavy metals in solution with them.

7.5 Dross Waste Characterization Summary

Depth composited samples of the black dross were collected and shipped to two waste disposal companies (Waste Connections and U.S Ecology) for waste characterization purposes. Each of the disposal companies performed their own reactivity testing on the dross to evaluate if it was suitable for disposal at their landfills. Based on the favorable responses from the facilities, it is apparent that over the last 30 years the reactivity of the dross has diminished substantially, making



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it suitable for disposal at a landfill. However, because the landfills are not accredited laboratories, the UN/DOT 4.3 analysis is recommended to formalize these preliminary findings.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The results of the Limited Phase II ESA at the former Maralco Aluminum Property indicate that metals, chloride, fluoride, and benzo(a)pyrene exceed screening levels in groundwater, surface water and sediment at the Property. A summary of Stantec's conclusions and recommendations are provided below.

Mercury was detected at concentrations greater than the natural background levels for the Puget Sound Basin in soil at the Property. The likely source of these contaminants is the black dross stockpiled onsite. The stockpile material was covered as part of interim action in 1991; however, the cover has not been maintained over time. The majority of the stockpile is now exposed to surface water runoff and wind dispersion. Interim actions to mitigate erosion of this material could include placing and securing a visqueen cover over the stockpiled material and erecting new barricades (e.g., silt fences or similar) to prevent the black dross from entering the onsite drainage ditches. Based on the data from borings B-1 through B-3, petroleum hydrocarbon impacted soil was not identified in the former UST excavation area. No further evaluation of soil in this area of the Property is recommended.

Only one of the five existing monitoring wells was sampled during this investigation. To delineate the horizontal extent of impacted groundwater at the Property, monitoring wells MW-3, 4 and 5 should be replaced. In addition, working with Ecology and the Army Corps of Engineers for any wetland impacts, permits should be obtained to clear vegetation and/or provide access to well MW-1 located in the southeast corner of the Property. After the installation of the monitoring wells, a full round of water levels and groundwater samples should be collected and analyzed for metals, geochemical parameters and PAHs. The results may indicate that additional monitoring wells are needed to adequately delineate the horizontal and vertical extent of contaminants in groundwater.

Surface water at the Property has been impacted with aluminum, cadmium, lead and chloride. Similarly, surface sediment has been impacted with cadmium, chromium and silver and elevated levels of chloride. These contaminants may be migrating off-site via surface water or sediment transport in the drainage ditches. To evaluate the transport of these contaminants, surface water and surface sediment samples should be collected from the upgradient portion of the ditch along the southern property boundary and at a downgradient location near the northern Property boundary prior to discharge off-site. Subsurface sediment samples may also be necessary to fully delineate contamination associated with the drainage ditches.

Internal testing by two disposal companies indicates that the black dross is suitable for disposal at a Subtitle D landfill. The wastes inside the warehouse will still need to be characterized to evaluate disposal options. Additionally, the federal wetland delineation manual, state wetland rating system and City of Kent code have been revised since the original wetland delineation. The wetland boundaries should be verified and the wetland report updated.



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The data collected for this limited Phase II ESA can be used to update the existing RI/FS report prepared by EMR, and provided to Ecology for review under the VCP program. Pending Ecology review and possible additional investigation based on the recommendations provided herein, the RI/FS report can be finalized, and the URS November 12, 2004 DCAP can be updated and revised accordingly for submittal to Ecology for review and approval.



7730 South 202nd Street, Kent, Washington March 21, 2017

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Tables

Former Maralco Aluminum Site Kent, Washington March 21, 2017

		Model Toxics	Control Act (M	TCA) Cleanup																	
		MICCO TOXICO	Levels	ron, oleanap	WAC	Ecology								Soil Samples	3						
Sample Ident		MTCA				Background	B-1-5'	B-1-17'	B-2-4'	B-2-16.5'	B-3-6'	B-3-16'	B-4-7'	B-4-9'	B-4-15'	B-5-8'	B-5-10'	B-5-15'	B-6-7.5'	B-6-9.5'	B-6-15'
Sample Dept	h (ft bgs)	Method A	MTCA	MTCA		Level for	5	17	4	16.5	6	16	7	9	15	8	10	15	7.5	9.5	15
Date Collecte	ed	Unrestricted Land use	Method B Non Cancer	Method B Cancer	173-303-090	metals in Puget Sound ²	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016
Petroleum Hy	Petroleum Hydrocarbons (mg/kg)																				
NWTPHDX	Diesel Range Organics	2000	na	na	na	-	4.4 U	5.38 U	4.61 U	5.04 U	45.1 U	5.5 U			-				-		
NWTPHDX	Residual Range Organics	2000	na	na	na	-	11 U	13.5 U	11.5 U	12.6 U	113 U	13.8 U			-						
NWTPHGX	Gasoline Range Organics	30/100 ¹	na	na	na	-		0.1 U				0.1 U		0.1 U			0.1 U			0.1 U	
8021B	Benzene	0.03	320	18.2	na	-		0.000522				0.000205 J		0.00132			0.000604			0.00014 J	
8021B 8021B	Toluene	7.00 6.00	6,400 8,000	na	na	-		0.005 U 0.0005 U				0.005 U 0.0005 U		0.000476 B J 0.0005 U	-		0.000557 B J 0.0005 U		-	0.005 U 0.0005 U	
8021B	Ethylbenzene Xylenes, Total	9.00	160,000	na na	na na	-		0.0005 U				0.0005 U		0.0005 U			0.0005 U			0.0005 U	
	l Parameters (mg/kg)	3.00	100,000	Tita	i ia			0.0013 0				0.0013 0		0.0013 0			0.0013 0			0.0013 0	
9056A	Chloride	na	na	na	na	-							44.4		309	41.4		4,280	212		183
9056A	Fluoride	na	3,200	na	na	-							5.03		2.75	31.8		0.544 J P1	7.72		35.9
9056A	Nitrate	na	128,000	na	na	-	-						2.25		1.37 U	0.954 J		1.38 U	1.31 U		1.45 U
350.1	Ammonia Nitrogen	na	na	na	na	-							15.2		5.92 J	5.27 U		33.1	27.7		9.72 J6
Total Metals	(mg/kg)																				
6020	Aluminum	na	80,000	na	na	32,581							9,370 O1 V		12,200	5,730		8,840	16,600		19,800
6010C	Arsenic	20	24	0.667	na	7.30							2.34 U		2.73	3.46		2.77 U	2.47 J		2.88 J
6010C	Barium	na	16,000	na	na	-		-					<u>39.6</u>		<u>55.7</u>	<u>19.1</u>		<u>42.1</u>	70.2		<u>52.2</u>
6010C	Cadmium	2	80	na	na	0.77	_						0.115 J		0.128 J	0.0759 J		0.692 U	0.153 J		0.234 J
6010C	Chromium	na	na	na	na	48.15							13		14.5	8.32		11.4	18		20.1
6010C 7471A	Lead	250 2	na	na	na	16.83							2.37 0.023 J		3.26 0.0288	2.14 0.0211 U		2.57 0.0281	4.35 <u>0.141</u>		6 0.0163 J
6010C	Mercury Selenium	na na	na 400	na na	na na	<u>0.07</u> -							2.34 U		1.41 J	2.11 U		2.77 U	2.62		1.11 J
6010C	Silver	na	400	na	na	-							1.17 U		1.41 J	1.05 U		1.38 U	1.31		1.45 U
TCLP Metals		i iu	400	nu	i iu								1.17		1.07 0	1.00 0	l l	1.00 0	1.01		1.40 0
6010C	Arsenic	na	na	na	5.0	-							0.1 U		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U
6010C	Barium	na	na	na	100.0	-							0.056		0.127	0.0539		0.0736	0.177		0.0989
6010C	Cadmium	na	na	na	1.0	-	-						0.02 U		0.02 U	0.02 U		0.02 U	0.02 U		0.02 U
6010C	Chromium	na	na	na	5.0	-							0.1 U		0.1 U	0.1 U		0.1 U	0.1 U		0.1 U
6010C	Lead	na	na	na	5.0	-							0.05 U		0.05 U	0.05 U		0.05 U	0.05 U		0.05 U
6010C	Selenium	na	na	na	1.0	-	-						0.1 U	Ele	0.1 U	0.1 U		0.1 U	0.1 U		0.1 U
6010C	Silver	na	na	na	5.0	-							0.05 U		0.05 U	0.05 U		0.05 U	0.05 U		0.05 U
7470A	Mercury	na	na	na	0.2	-		<u> </u>					0.01 U		0.01 U	0.01 U		0.01 U	0.01 U		0.01 U
	romatic Hydrocarbons (mg	1	04.000		1	ı	0.0000.11	0.00000.11	0.00000.11	0.00750.11	0.00070	0.00000.11					I				
8270D-SIM 8270D-SIM	Anthracene	na	24,000	na	na	-	0.0066 U 0.0066 U	0.00808 U 0.00808 U	0.00692 U 0.00692 U	0.00756 U 0.00756 U	0.00676	0.00826 U 0.00826 U									
8270D-SIM	Acenaphthene Acenaphthylene	na na	4,800 na	na na	na na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.00676 0.00676	0.00826 U									
8270D-SIM	Benzo(A)Anthracene*	na	na	1.37	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.000687 J	0.00826 U									
8270D-SIM	Benzo(A)Pyrene*	0.1	0.137	2.33	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.000855 J	0.00826 U									
8270D-SIM	Benzo(B)Fluoranthene*	na	na	1.37	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.00114 J	0.00826 U			-	-			-		
8270D-SIM	Benzo(G,H,I)Perylene	na	na	na	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.00184 J	0.00826 U									
8270D-SIM	Benzo(K)Fluoranthene*	na	na	13.7	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.00676	0.00826 U									
8270D-SIM	Chrysene*	na	na	137	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.00153 J	0.00826 U			-	-			-		
8270D-SIM	Dibenz(A,H)Anthracene*	na	na	0.137	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.00676	0.00826 U			-	-			-	-	
8270D-SIM	Fluoranthene	na	3,200	na	na	-	0.0066 U	0.00808 U	0.00692 U	0.00756 U	0.00111 J	0.00826 U							-		
8270D-SIM	Fluorene	na	3,200	na	na	-	0.0066 U		0.00692 U	0.00756 U	0.00676	0.00826 U		-	-	-			-	-	
8270D-SIM	Indeno(1,2,3-Cd)Pyrene*	na	na	1.37	na	-	0.0066 U		0.00692 U	0.00756 U	0.000801 J	0.00826 U									
8270D-SIM	Naphthalene	5	1,600	na	na	-	0.022 U		0.0231 U	0.0252 U	0.0225	0.0275 U									
8270D-SIM	Phenanthrene	na	na	na	na	-	0.0066 U		0.00132 J	0.00756 U	0.00198 J	0.00826 U						-			
8270D-SIM	Pyrene 1 Methylpenhthelene	na	2,400	na 24 E	na	-	0.0066 U		0.00692 U	0.00756 U	0.00159 J	0.00826 U			-	-			-		
8270D-SIM 8270D-SIM	1-Methylnaphthalene	na	56,000 320	34.5	na	-	0.022 U 0.022 U	0.0269 U 0.0269 U	0.0231 U 0.0231 U	0.0252 U 0.0252 U	0.0225 0.00249 J	0.0275 U 0.0275 U									
8270D-SIM 8270D-SIM	2-Methylnaphthalene 2-Chloronaphthalene	na na	6,400	na na	na na	-	0.022 U		0.0231 U	0.0252 U	0.00249 J 0.0225	0.0275 U			-				-		
	oncentrations (ND = 0)	na	0,400 na	na	na	-	0.022 0	0.0209 0	0.0231 0	0.0232 0	0.002485	0.0275 0									
. 0101 01 7111 00	5554410110 (14D 0)	i iu	Πū	iiu.	i iu	l	<u> </u>				5.00 <u>2</u> -100	v									

(mg/kg): milligrams per kilogram

(mg/L): milligrams per liter

Constituent exceeds one or more regulatory values BOLD: Constituent detected

Italicized: Coinciding regulatory value exceeded

<u>Underlined</u> = concentration is greater than the natural background concentration

--: not sampled for the constituent

*: carcinogenic polycyclic aromoatic hydrocarbons

¹ If benzene is present the MTCA Method A CUL is 30 mg/kg; however, if benzene is not present the MTCA Method A CUL is 100 mg/kg.

*Washington State Department of Ecology Natural Background 90th Percentile value for the Puget Sound (Ecology 1994)

ft bgs: feet below ground surface

B: Analyte found in the associated blank

J: The identification of the analyte is acceptable; the reported value is an estimate.

J6: Sample matrix interfered with the ability to make any accurate determination; spike value is low

O1: Analyte failed the method require serial dilution test and/or subsequent post-spike criteria. This indicates matrix interference.

P1: Relative % Difference value not applicable for sample concentrations less than 5 times the reporting limit

TCLP: Toxicity Characteristic Leaching Procedure
U: Constituent not detected

V: Sample concentration is too high to evaluate accurate spike recoveries

WAC: Washington State Administrative Code

Table 2 - Summary of Surface Water Analytical Data

Former Maralco Aluminum Site Kent, Washington March 21, 2017

		CWA	W	AC	Sur	face Water Samp	les
Sample Identification		Occupant Makes	Surface Water	Surface Water	SW-10	SW-11	SW-900
Date Collected		Surface Water Fresh/Chronic	Aquatic Life	Aquatic Life	011 10		(Dup of SW-11)
Method	Analyte		Fresh/Acute	Fresh/Chronic	10/28/2016	10/28/2016	10/28/2016
Total Meta	Is (μg/L)				_		
6020	Aluminum	87	na	na	730	618 J	373 J
6010C	Arsenic	150	360	190	10 U	10 U	10 U
6010C	Barium	na	na	na	481	15.5	14.4
6010C	Cadmium	0.25	0.82	0.37	2.13	2 U	2 U
6010C	Chromium	na	na	na	1.91 J	1.41 J	10 U
6010C	Lead	2.5	13.9	0.54	5 U	2 J	5 U
7470A	Mercury	0.77	2.1	0.012	0.2 U	0.2 U	0.2 U
6010C	Selenium	5	20	5	10 U	10 U	10 U
6010C	Silver	3.20	0.32	na	5 U	5 U	5 U
Geochemi	cal Parameters (µg/L)				<u>.</u>		
300	Chloride	230,000	860,000	230,000	8,940,000	379,000	367,000
300	Fluoride	na	na	na	6,630	4,170	4,210
300	Nitrate	na	na	na	10,200	288 J	288 J
350.1	Ammonia Nitrogen	na	na	na	2,680	62 J	60 J

Notes:

(µg/L): micrograms per liter

Constituent exceeds one or more regulatory values

BOLD: Constituent detected

Italicized: Coinciding regulatory value exceeded

CWA: Clean Water Act

J: The identification of the analyte is acceptable; the reported value is an estimate.

U: Constituent not detected

WAC: Washington State Administrative Code (WAC) Maximum Contaminant Cleanup Levels (MCL), chapter 173-201A

Table 3 - Summary of Sediment Analytical Data

Former Maralco Aluminum Site Kent, Washington March 21, 2017

			Sediment Samples					
Sample Ide	entification	SMS Freshwater Sediment SCO	SMS Freshwater Sediment CSL	SS-1	SS-2	SS-900		
Date Collec	cted	333	302	10/28/2016	10/28/2016	10/28/2016		
Geochemic	cal Parameters (mg/kg)							
9056A	Chloride	na	na	82.3	26,800	29,900		
9056A	Fluoride	na	na	226	383	579		
9056A	Nitrate	na	na	3.62	13.8	8.21		
350.1	Ammonia Nitrogen	230	300	4.26 J F	6.65 J	15.6 U		
Total Meta	ls (mg/kg)							
6010C	Arsenic	14	120	6.78	4.3 J	9.47		
6010C	Barium	na	na	58.5	60.2	120		
6010C	Cadmium	2.1	5.4	0.619 J	2.74	5.56		
6010C	Chromium	72	88	36.3	54.4	112		
6010C	Lead	360	>1300	42	53.7	113		
6010C	Selenium	11	>20	1.87 J	4.98 U	3.09 J		
6010C	Silver	0.57	1.7	1.57 U	0.776 J	3.14		
6020	Aluminum	na	na	55,500	22,200	81,100		
7470A	Mercury	0.66	0.8	0.0564	0.116	0.158		

Notes:

Constituent exceeds one or more regulatory values

BOLD: Constituent detected

>: the toxicity level is unknown but exceeds the value listed

(mg/kg): milligrams per kilograms CSL: Cleanup Screening Level SCO: Sediment Cleanup Objective

SMS: Sediment Management Standard as defined, chapter 173-240, Section 173-240-562

Table 4 - Summary of Groundwater Analytical Data

Former Maralco Aluminum Site Kent, Washington March 21, 2017

		Model Toxics Cor	ntrol Act (MTCA) Cl	eanup Levels	WAC	Monitoring Well Sample		Groundwater Grab Samples					
Sample Identification		MTCA Mothod A	MTCA Method B	MTCA Method B	Groundwater	MW-2	B-1-GW	B-2-GW	B-3-GW	B-4-GW	B-6-GW	B-5-GW	
Date Collecte	ed	Groundwater	Non Cancer	Cancer	MCL	10177-2	B-1-011	D-2-GW	D-3-GW	D-4-GVV	D-0-GVV	D-3-GW	
Method	Analyte	Groundwater	Hon Gancer	Ouncer	WOL	11/02/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	
Petroleum H	Petroleum Hydrocarbons (μg/L)												
	Diesel Range Organics	500	na	na	na	250 U	160 J	250 U	235 J	250 U	250 U	250 U	
	Residual Range Organics	500	na	na	na	500 U	500 U	500 U	500	500 U	500 U	500 U	
Total Metals													
6020	Aluminum	na	16,000	na	na	174	151,000	159,000	11,000	363,000 J	43,500	7,880	
6010C	Arsenic	5	4.8	0.0583	10	10 U	68.6	45.2	33.8	65.9	64	43.9	
6010C	Barium	na	3,200	na	2,000	5.65	608	590	164	676	325	3,850	
6010C	Cadmium	5	8	na	5	2 U	1.13 J	1.5 J	2 U	1.56 J	2 U	2 U	
6010C	Chromium	50	na	na	100	10 U	86.6	124	15.4	108	44.3	18.7	
6010C	Lead	15	na	na	15	2.59 J	41.9	49.3	6.73	28.5	40.3	9.4	
7470A	Mercury	2	na	na	2	0.2 U	0.0726 J	0.234	0.2 U	0.0681 J	0.338	0.0502 J	
6010C	Selenium	na	80	na	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	
6010C	Silver	na	80	na	na	5 U	5 U	5 U	5 U	5 U	5 U	5 U	
Geochemica	l Parameters (μg/L)												
300	Chloride	na	na	na	250,000	3,890	265,000	177,000	341,000	109,000	111,000	8,970,000	
300	Fluoride	na	640	na	4,000	80.7 J	428	850	496	5,090	52,900	7,740	
300	Nitrate	na	25,600	na	10,000	100 U	488	177	55.6 J	363	100 U	100 U	
350.1	Ammonia Nitrogen	na	na	na	na	250 U	4,070	4,570	7,030	4,150	516	39,800	
Polycyclic A	romatic Hydrocarbons (µg/L)												
8270D-SIM	Anthracene	na	4800	na	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
8270D-SIM	Acenaphthene	na	960	na	na	0.05 U	0.112	0.05 U	0.459	0.1 U	0.1 U	0.1 U	
8270D-SIM	Acenaphthylene	na	na	na	na	0.05 U	0.0136 J	0.05 U	0.0735 J	0.1 U	0.1 U	0.1 U	
8270D-SIM	Benzo(A)Anthracene*	na	na	0.120	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
8270D-SIM	Benzo(A)Pyrene*	0.100	na	0.012	0.200	0.05 U	0.0812	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
	Benzo(B)Fluoranthene*	na	na	0.12	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
8270D-SIM	Benzo(G,H,I)Perylene	na	na	na	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
8270D-SIM	Benzo(K)Fluoranthene*	na	na	1.2	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
8270D-SIM	Chrysene*	na	na	12	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
8270D-SIM	Dibenz(A,H)Anthracene*	na	na	0.012	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
	Fluoranthene	na	640	na	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
8270D-SIM	Fluorene	na	640	na	na	0.00874 J	0.0431 J	0.05 U	0.483	0.1 U	0.1 U	0.1 U	
	Indeno(1,2,3-Cd)Pyrene*	na	na	0.12	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
	Naphthalene	160	160	na	na	0.131 U	0.167 J	0.0429 J	0.614	0.5 U	0.5 U	0.5 U	
	Phenanthrene	na	na	0.12	na	0.00915 J	0.0124 J	0.05 U	0.0249 J	0.1 U	0.1 U	0.1 U	
	Pyrene	na	480	na	na	0.05 U	0.05 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	
	1-Methylnaphthalene	na	560	na	na	0.036 J	0.147 J	0.0167 J	2.38	0.5 U	0.5 U	0.5 U	
	2-Methylnaphthalene	na	32	na	na	0.0646 J	0.0585 J	0.0165 J	0.226 J	0.5 U	0.5 U	0.5 U	
	2-Chloronaphthalene	na	na	na	na	0.25 U	0.25 U	0.25 U	0.5 U	0.5 U	0.5 U	0.5 U	
	oncentrations (ND = 0)	na	na	na	na	0.05 U	0.0812	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	

Notes:

Constituent exceeds one or more regulatory values **BOLD**: Constituent detected

Italicized: Coinciding regulatory value exceeded

* = Carcinogenic Polycyclic Aromatic Hydrocarbon

J: The identification of the analyte is acceptable; the reported value is an estimate. U: Constituent not detected

MCL = Maximum Contaminant Level

WAC: Washington State Administrative Code (WAC) Maximum Contaminant Cleanup Levels (MCL), chapter 246-290, Section 246-290-310 (μ g/L): micrograms per liter

Table 5 - Groundwater Elevation Data

Former Maralco Aluminum Site Kent, Washington March 21, 2017

Well ID	Date	DTW (ft btoc)	DTB (ft btoc)	TOC Elevation ¹	Water Elevation ¹	Well Diameter (in)	Construction Material	Screen Interval (ft bgs)
MW-2	11/02/16	5.21	16.4	26.99	21.78	2	Schedule 40 PVC	6-16

Notes:

DTB = depth to bottom of the well

DTW = depth to water

ft bgs = feet below ground surface

ft btoc = feet below top of well casing

in = inches

PVC = Polyvinyl chloride

TOC = top of well casing

¹ Feet above mean sea level based upon previous survey data (MKE, 1991)

Table 6 - Groundwater Quality Data

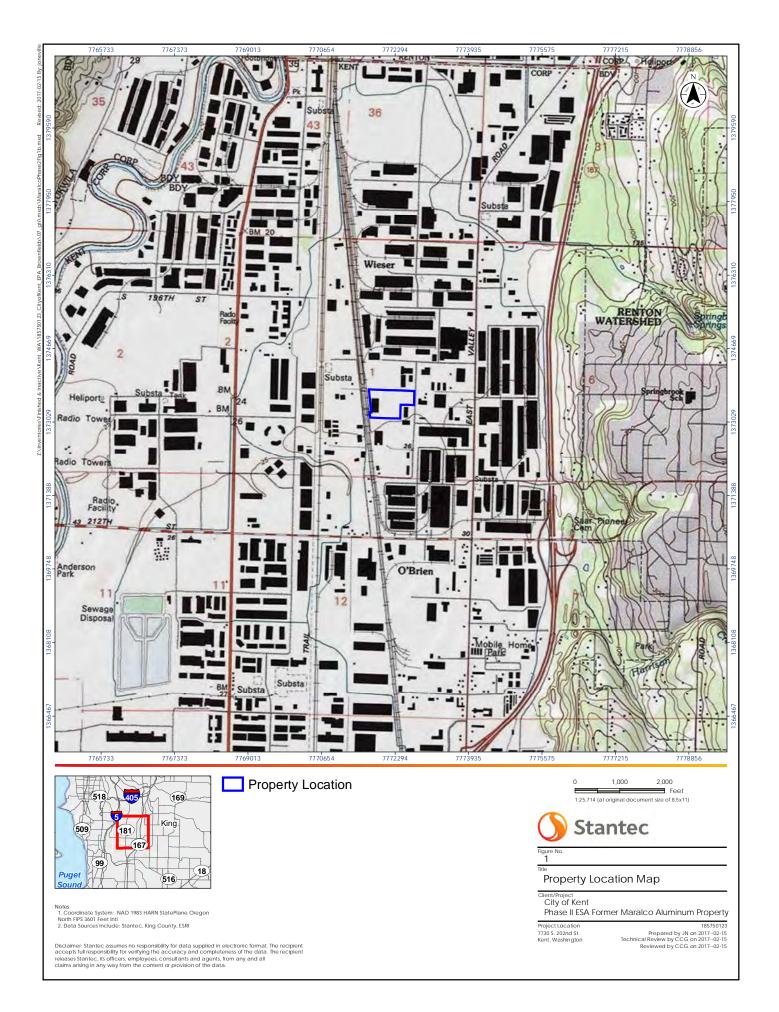
Former Maralco Aluminum Site Kent, Washington March 21, 2017

Well ID	Date	Temperature (°C) ¹	Conductivity (mS/c ³) ¹	pH ¹	Color ¹	O.R.P. ¹
MW-2	11/02/16	11.83	0.155	6.59	Clear	47.3

Notes:

¹ Final water quality reading prior to sampling mS/c³ = microsiemens per cubic centimeter O.R.P. = oxidation reduction potential

Figures





Property Layout Map with Current & Historical Sampling Locations

City of Kent

Phase II ESA Former Maralco Aluminum Property

Project Location 7730 S. 202nd St., Kent, Washington

185750123 Prepared by JDN on 2017-02-15 Iechnical Review by CCG on 2017-02-15 Independent Review by CCG on 2017-02-15

1:1,200 (At original document size of 11x17)



Property Location



Approximate location of former 35,000-gallon Diesel UST excavation



Sediment Sample

Surface Water Sample

Groundwater Sample

Stantec Depth Composited Dross Sample, collected 11/28/16

Sample Collected by E&E, 1987

Sample Collected by MKE, 1990

Sample Location, Stantec 2016

Location Inaccessible, Stantec 2016

Groundwater Sample from Monitoring Well

Well not located, 10/21/16

- Surface Water Drainage



- 1. Coordinate System: NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet

- 2. Data Sources Include: Stantec, King County, URS, ESRI
 3. Orthophotography: NAIP 2013
 4. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations and property boundaries to
- S. Waste characterization sample locations of the dross material are not shown on this Figure. See MKE's Phase I Remedial Investigation Report, 1991 & EMR's Remedial Investigation / Feasibility Study for the Former
- 6. The locations of subsurface soil samples associated with HB-10 and HB-16 are not known and are not present on this map.





Groundwater & Surface Water Analytical Results

Client/Project

City of Kent

Phase II ESA, Former Maralco Aluminum Property

185750123 Prepared by JDN on 2017-02-15 Technical Review by CCG on 2017-02-15 Independent Review by CCG on 2017-02-15 Project Location 7730 S. 202nd St., Kent, Washington

■ Feet

1:1,200 (At original document size of 11x17)



<u>Legend</u>

Property Location

Approximate location of former 35,000-gallon Diesel UST excavation

Groundwater Grab Sample, Stantec 2016

Surface Water Sample, Stantec 2016

Location Inaccessible, Stantec 2016

Groundwater Sample from Monitoring Well

Well not located, 10/21/16

Surface Water Drainage Flow Direction

Shaded Constituent exceeds one or more Model Toxics Control Act (MTCA) screening levels

BOLD: Constituent detected

= Carcinogenic Polycyclic Aromatic Hydrocarbon

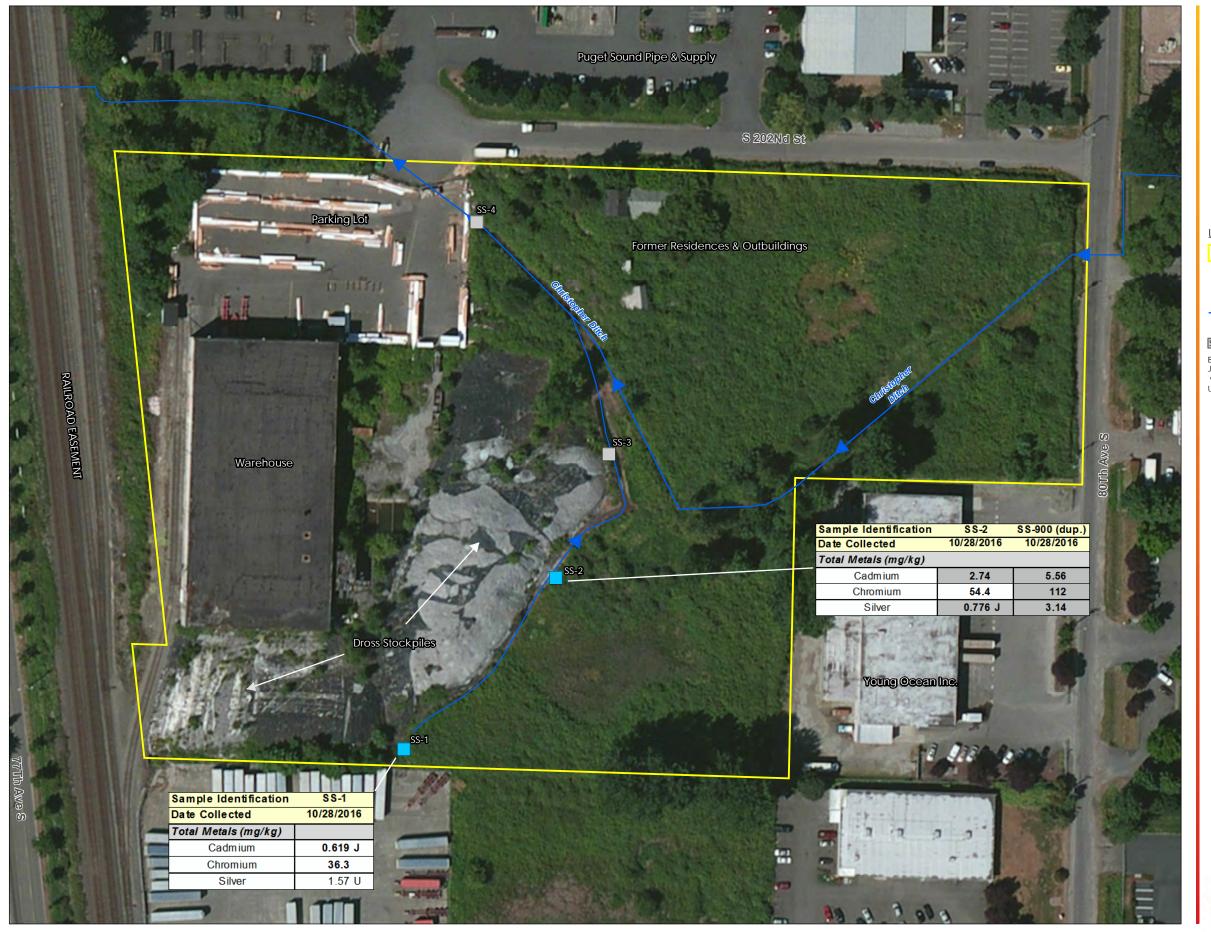
All constituents reported as micrograms/Liter (ug/L)

J: The reported value is an estimate U: Constituent not detected

(99) (181) (515)

- 1. Coordinate System: NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet
- Data Sources Include: Stantec, King County, URS, ESRI
 Orthophotography: NAIP 2013
- 4. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations and property boundaries to appear offset.
- 5. Waste characterization sample locations of the dross material are not shown on this Figure. See MKE's Phase I Remedial Investigation Report, 1991 & EMR's Remedial Investigation / Feasibility Study for the Former
- 6. The locations of subsurface soil samples associated with HB-10 and HB-16 are not known and are not present on this map.





Sediment Analytical Results

Client/Project

City of Kent

Phase II ESA Former Maralco Aluminum Property

Project Location 7730 S. 202nd St,, Kent, Washington 185750123 Prepared by JDN on 2017-02-15 Technical Review by CCG on 2017-02-15 Independent Review by CCG on 2017-02-15

= Feet

1:1,200 (At original document size of 11x17)



<u>Legend</u>

Property Location

Sediment Sample Location, Stantec 2016

Location Not Accessible

Surface Water Drainage Flow Direction

Shaded Constituent exceeds one or more Model Toxics Control Act (MTCA) screening levels

BOLD: Constituent detected

J: The identification of the analyte is acceptable; the reported value is an estimate
U: Constituent not detected



- 1. Coordinate System: NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet

- 2. Data Sources Include: Stantec, King County, URS, ESRI
 3. Orthophotography: NAIP 2013
 4. Differences in the spatial alignment between the aerial imagery and GIS/spatial data may cause locations and property boundaries to
- appear offset.

 5. Waste characterization sample locations of the dross material are not shown on this Figure. See MKE's Phase I Remedial Investigation Report, 1991 & EMR's Remedial Investigation / Feasibility Study for the Former
- 6. The locations of subsurface soil samples associated with HB-10 and HB-16 are not known and are not present on this map.



Appendix A

Geophysical Survey Report



a trade name of ULS Services Corporation

Work Order Agreement

0	
Job Site Location	Job PO TO
7730 S. 202	
City, State	Job Date
Kent, WA	21 Oct 16

WWW.GEOMARKOUT.COM

CORPORATE ADDRESS / INQUIRIES

P.O. Box 724, Pocatello, ID 83204 (Mail only) 6742 W Buckskin Rd, Pocatello, ID 83201 (Parcels only) Ph. (208) 234-1441 (800) 301-4420 FAX (208) 234-1507

FIELD SER VICES: SEATTLE/PDX/ALASKA/SAC/HWI-GUAM: 15151 52 AVE. S., Suite 2 Seattle, WA 98188

1 866 804-5734

SOCAL 1 800 528-8206

City, State	Job Date						
Kent, WA	21 Oct 16						
CLIENT STANTEC		21 Oct 16 730-1230- (5hrs) LABOR HOURS W/REPO TOTAL 6					
		FIELD 5. REPORT 1					
E-MAIL			E-MAILED				
WORK REQUESTED: UTILIT AT ONE DAMAGED MW. ALSO			TIONS. UTILITY CLEARANCE				
WORK PERFORMED		PRELIMINARY REVIEW OF CLIENT PROVIDED UTILITY DRAWINGS/AS-BUILTS: LIMITED					
VISUAL SITE INSPECTION (M DRAINS): SD INLETS ON SI ONLY			VE UTILITY SURVEY: CHECK TRIC: X COMM.: X WATER: X				
EMIMD METAL DETECTION AMBIENT NOISE AND SETTINGS A METAL AND REINORCED ONCRE LOW NOISE GAIN 7.0	ABOVEGROUND	EM INSERTION: N	J A				
GPR NON-CONDUCTIVE SUR	VEY: YES FAIR	CLIENT ON-SITE R	REVIEW OF FINDINGS: YES				

GENERAL LIMITATIONS

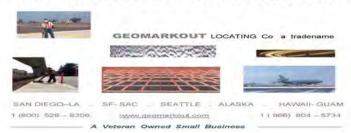
TO RESPONSE

NOTE: The work described herein is performed to industry standards (or higher) using multiple methodology and QA/QC protocol. ULS cannot guarantee the accuracy or the ability to detect all underground facilities and potential interferences. Nonconductive or conductive utilities/facilities may not be detected due to variables and constraints beyond ULS control. Where known, constraints and limitations will be brought to the client's attention. Excavation work may result in injury to persons and/or damage to facilities. Client and/or excavator are advised to take all steps necessary to avoid contact with underground facilities. This includes, but is not limited to, safe digging practices, hand tooling in congested areas and within two feet on side of marked utilities (distance may vary by law), utility drawing review, site facilities representative review, and "one-call" utilities notification. ULS and its representatives are not responsible for injury to persons or damage to facilities. This document and accompanying pages will be delivered to the client before commencement of intrusive work for the client's review. If any questions arise, please notify our office immediately.

NOTE: Specific comments/limitations/constraints, known and recognized will be recorded on attached pages (field notes). Caution – some facilities (conductive or non- conductive) may not be detected. Not all limitations and constraints may be recognized.

SIGNATURE OF ULS REPRESENTATIVE ON-SITE	PAGE OF
M BENEDICT	1

ULS SERVICES CORPORATION



.....

GEOMARKOUT

a trade name of ULS Services Corp

7730 S. 202, KENT 21 OCT 16

METHODS:

ARRIVED SITE REVIEWED HS AND TAIL GATE INFO. REVIEWED SOW AND PROPOSED WORK AREAS WITH CLIENT. <u>METHODS UTILIZED INCLUDE: GPR, MAGNETIC LOCATOR, AND EM PIPE AND CABLE LOCATOR (EMPCL).</u>

OBSERVATIONS - INSTRUMENT RESPONCE :

WEATHER IS DAMP TO DRY. GPR RESPONSE IS FAIR. EMPCL RESPONSE IS GOOD AS WELL. AMBIENT LIVE LINE MODE USED TO OBSERVE E, TELE, AND CONDUCTIVES. GROUND INDUCTION MODE USED IN ASPHALT AREAS.

X	ADVIDED ONECALL /DIG ALERT RECALL ADVISED
Х	UTILITY MAINS
X	ELECTRIC ABANDONED NE CORNER BLDG OUT TO VAULT NEAR GATE NE BLDG AT ROAD.
X	TELEPHONE SAME AS TEL.
X	NAT GAS NONE ON SITE KNOWN. SITE REPORTED TO HAVED USED DIESEL OR FO (UST REMOVED). PIPING MAY HAVE BEEN LEFT IN PLACE.
X	WATER CAUTION NO DETECT ON FIRE HYDRANT EAST SIDE PARKING LOT NEAR PROPOSED MW REPAIR OVER DRILL.
X	SEWER/STORM SD INLETS CHECKED VISUALLY AND MARKED. SEWER NOT KNOWN.
X	
Х	

SEE ADDITIONAL NOTES TO RIGHT SIDE AND BELOW AS WELL AS PHOTO LOG

<u>.....</u>......

GEOMARKOUT

A trade name of ULS Services Corp 7730 S. 202, KENT 21 OCT 16

PROPOSED SB LOCATIONS:

INDOOR SB LOCATION AT SE CORNER BLDG:

A CONDUCTIVE LINEATION IS OBSERVED TRENDING NS East Side ZONE. ABANDONED E CONDUIT MAT TREND EW ALONG SOUTH WALL.

CLUSTER (3EA) NEAR FORMER UST:

A CONDUCTIVE LINEATION (POTENTIAL FUEL PIPING) IS OBSERVED TRENDING SE FROM FORMER TANK EXCAVATION AREA OVER TOV NE CORNER OF BLDG. SOME NEAR SURFACE MAGNETIC ANOMALIES (SURFACE DEBRIS UNDER ASPHLT) IS OBSERVED NEAR SB LOCATION NW FORMER UST.

SB LOCATION SE CORNER ASPALT AREA (NE BLDG)

A CONDUCTIVE LINEATION IS OBSERVED TRENDING EW NORTH SIDE ZONE. AGNETIC REPONCE IS OBSERVED FORMING LINEATION THRU MIDDLE OF ZONE. CAUTION A FIRE HYDRNT TO EAST SIDE IS NOT DETECTED. MAY TREND NORTH OUT TO STREET.

MW OVERDRILL LOCATION EAST ASPALT AREA (NE BLDG)

CAUTION A POTENTAL FIRE HYDRNT LINE TO EAST SIDE ASSOCIATED WITH FH TO SOUTH IS NOT DETECTED. MAY TREND NORTH OUT TO STREET. AIR VAC CAREFULLY.

SB LOCATION EAST BLDG

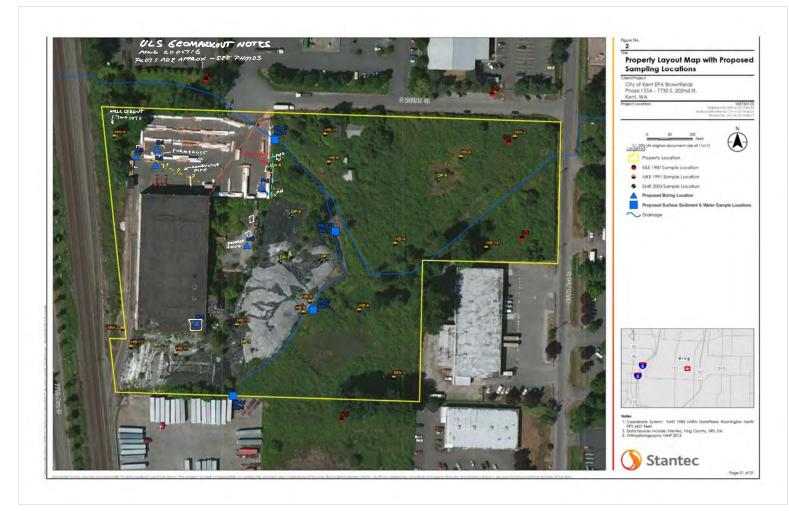
NO OBSERVATIONS

MW SEARCH NW SITE

ONE SMALL MAGNETIC HIT IS OPEN OBSERVED. OTHER HITS OBSERVED MAY BE DEBRIS.

SEE MAP AND PHOTOS BELOW:

END TEXT REPORT MWB



DTILITY (LEARANCES 7730 SOUTH 262 JKENT WA

SEOMARKOUT MUB 20 OCT 16

























Appendix B

Boring Logs

this my to bestock 5400

soil samples = 7 , 8.5 (for BTEX/Termina); and 15' gur nample (viz temp. well) @ 09:30 am

PROJECT: 1	Fare	T .a.c	Maalco WA	WE	LL / PROBEH	OLE / B	OREH	DLE NO):	900
PROJECT N					B-4		PAGE	1 OF 2	a< 1	Stantec
DRILLING: INSTALLATIO DRILLING CO DRILLING EQ DRILLING ME	S NN: S OMPAN OUIPME THOD	TAR TAR IY: 1 ENT:	ESN NW AMS 4630 PRO-PTO inct-push T: Continuous Core	GRO INITI STA	THING (ft): TUDE; DUND ELEV (ft): AL DTW (ft): TIC DTW (ft): L-GASING DU GED BY:	i): 7.5	,		EASTIN LONGI TOC EI BOREH WELL I BOREH	 (fl): ZO
Time & Depth (feet)	Log	SSS	Description	ЅатрІе	Tirne Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units:)	Depth (feet)	Borehole Backfill
1.5'		PP	3" Asptalt Artificial Fill= gray-brn gravel/sand mixture FINE SAND(SP), gray, SI. maist, g odor, g stain, true clay FINE SAND(SP), medium gray-brown, micaceons, Slighth maist to maist, no HC odor, no stain, massive					Þ	5-	hydred In

	, ,		πγ	Arthur franchisture	6	_	
	1.5 -		<u>5P</u>	FINE SAND(SP), grey, SI. moist, godor, g stain, true clay	P		
				1 · 1 · 1 · 1 · 1			
				FINE SAND(SP), medium grey-brown, micactons,			/
	-		50	Slighth maist to moist,	./	-	*
				no HC odor, no stain,	Ø		1/2
	5-			massire	•	5-	My
	-					-	51
				7'@	1		w ye
	7.5'-	-		09:00	9	¥ 5	w
	201		۲۲	to wet no stain, no HC odos. 8.5.0	D	F G 7.5	d 🔻
	8.5 -		ML	SILT (ML) to CLAYEY SILI, STORE (MO HC) medium	Ø	//-	, k
	9.5%			FINE SAND(SP), grey, saturated, massive, no odor, no stain.	1		3 ×
	10-		SP	massive, no odor, no stain. Color change to red-brn 10.5-11	Ø	10-	1 2
	111			CLAYEY SILT (ML), medium gray,	1	_	1 8
	1		ML	CLAVEY SILT (ML), medium gray, V. mo lst, boggy odas (no He) no stain, high PI,	P		1
80/	12		5M	SAND (SM), medium gray,			22
10/15				Saturated, faint thin bedding,	φ		3
T.GD.				no oder, no stain.	,		18
CORIN				15'@)
PJ SE	15.25				,	15-	
0.901	_		SP	FINE SAND (SP), dark brown, 09:10 Micaclono, saturated.	Ø		
T GINT	16.5 -		ML	SILT TO CLAYEY SILT (ML), gry, wet, of oder.	d		
20-FGO	17'			SILT (ML), medium grey-brown,	٣	-	
BLANK 20-FOOT			ML	SILT (ML), medium grey-brown, wet to saturated, trace v. fire			
				sand, massive, low PI, no odor, no stain			
GEO FORM 304	19' -		ML	SILT (ML), medium brown,	6	1	
GEC			′	moist, trace clay medium PI	1		

TD=20'

soil samples = 8', 10.5' (for 8TEX/Terracone); and 15' gas now nample (via temp. well) @ 11:10 cm

LOCATION	1: Ker	vt, 1	Maratio	WE	ELL/PROBEH				. /	%
PROJECT DRILLING: INSTALLAT	₩.—	STAR		LAI			PAGE_	•	EASTING LONGITU TOC ELE	JDÉ:
DRILLING E	EQUIPN METHO	MENT:	ESN NW: AMS 4630 PRO-PTO rect pust. Core	STA	TAL DTW (ft): ATIC DTW (ft): LL CASING DI GGED BY: C	9'	R (in) :		BOREHO	DLE DEPTH (ft): 20 EPTH (ft): DLE DIAMETER (in): D
Time & Depth (feet)	Graphic Log	nscs	Description	Sampte	Time Sample ID	Measured Recov. (feet)	Blow	Headspace PID (units)	Depth (feet)	Borehole Backfill
		")						ø	-	
3 ~		sP	FINE SAND (SP), yellow-bra slightly moist, no odor, no stain, massive to slightly bedded.	,				Ø	5-	pka
8.5 ['] -			red-brown 6.5-7. Increasing moisture widepth.	\geq	8 0:30			ø	-	3 draded in
10-		5M	SILTY FINE SAND(SM), medium gruy, saturated, thinly-leminated to massive, no oder, no stan, color chage to brn 10.5-11.5'	×	0.5 ['] @ 0:32			Þ	10-	to Chys, My
11.5'		WL	SILT to CLAYEY SILT (ML), gray, wet, baggy oder (no HC)					ø		de l'a
- 15—		SM	SILTY FINE SAND (SM), medium to dark grey, Saturated, no odor, no stail thinly-laminated to massim, micace ons	١,	> 15'@				15-	backfilled of benton
15.5" -		Νr	SILT TO CLAYEY SILT (ML), gray, wet to saturated, trace to some v. fire sand, no odor, no	Z sta	10:40				-	backs
- 1			SILTY FINE TO V. FINE SAND (SM), grey, saturated, thinly -laminated, micaceons, ho odur, no stain.							
			,,, out), or olive.							

WELL / PROBEHOLE / BOREHOLE NO:

Soil Samples = 6'; 16' (including BTEX/Terracon due to slight HC odor); + 20' (due to slight HC gow sample (via temp. casing) @ 12:20pm gur sample (via temp. casirs) @ 12;20pm

PROJECT: FOYMER MARAGO

			Maralco	WE	LL / PROBEH		OREH	DLE NO):		96
LOCATION: PROJECT N			A K		B-3 *		PAGE	1 OF :	1		Stantor
DRILLING:			TED 10 27 2016 COMPLETED: 10 27 2016	NOR	_	_	7101		EASTIN	G (ft):	- Stanton
	ON S	TAR	TED	LATI	TUDE:				LONGIT		
DRILLING C	OMPAN	IY: 6	esn nw	GRO	UND ELEV (F	l):			TOC EL		(0) 20/
DRILLING E	QUIPME	ENT:	AMS 9630 PRO-PTO	l	AL DTW (ft):	1				OLE DEPTH (EPTH (ft); —	,iii): 2,0
DRILLING M	IETHOD	e d	ind-push	l	L CASING DI	AMETE	(in).			QLE DIAMETI	ER (in): 2.
SAMPLING 8	EQUIPN	/ENT	r: cont core		GED BY: 🛭 🗸				CHECK		
~ _	o			ø		ed .	-	ace)			
Тіте & Depth (feet)	Graphic	nscs	Description	Sample	Time Sample ID	asur eet)	Blow	dsp Sign	Depth (feet)		Borehole Backfill
<u>=</u> = = ,	: ^ا ق	≌	·	Sa	oample in	Measure Recov. (feet)	шО	Headspac PJD (units:)			DECKIII
+		_	3" asphalt	-T							
			3 77 11					d			
1 1	I A	F	Arthur L'U= grand		1			y			
1 1	''	"	Artificial Fill = grand/ sand/silt mix.								
1			June / G					d	-		1
2.25		P	V. FINE SAND (SP), gray, dry, no	ode	no stain,			9			
2.5			V. FINE SAND/IP) brown, dry	,	Ţ				-		
	5	P	V. FINE SAND/SP), brown, dry laminated, no odor, no stains					Ø			
1 4				-							
			FINE SAND(SP), grey-brn,		1						
		.	Slightly maist to moist, no					0	5-		
5-	SF	1	odor, no stain					'			
			ousi, no stan		6'@						
1. 4.				$\geq_{\!$	16 @ 11:25A	w .			1		
6.51		$\overline{}$	FINE GRAVEL/ COARSE SAND		11.724			0	J	GWQ	
16,17		V	(GU/SW), moist, or storing no oder			i		<i>P</i>	📑	7'	
	3	M						ر ا		,	
1 - 24 -		2 M	to FINE SANDY SILT (ML) -3	l.	l.			9	-		
8.25	·		SILT (ML), Ylw-brn, Saturated, 1	10 97	(enis			′			
9'		46)	ho odor, massing michelland						-		
'			CLAYEY SILT (ML), light gray, moist to wet, trace v. fire sand,	V.				d			· \
10-		\setminus	moist to wet, trace v. fine sand,					0	10-		*
		Ŋ	ho stain, no odor, massive						[న
								1			7
1 1		اير.	SILTY FINE SAND (SM),					$ \varphi $			3
	'	51	grey, saturated, micaceons,								
g 7			massive, no odor, no stain.								2
10/15/08			110033170)					1			
								P	1		3
الإ								'			ا ځ
SECOR INTLEDT									1		9
8			Course travelly about 15					2			3
7 15			('slight diesel/HC odor 15-17')	'					15-		backfred
9.9					16						7
				X	@ 11:40 A	m			-		
20-FOOT GINTLOG.GPJ			ľ		2011101	,,,,					
			(
20		NL	SILT TO CLAYEY SILT (ML)					,			
회 -	/	~ [-	brown-grey, w/some v. fire					0			
3			Sand, wet is saturated, no stain, no odor, massive.					′			
Ψ M		Ī	stain, he odor, massive.								
19.25		_	DINE SAND (SP), dade and - box	,	20' 0	16.0	m				
B	- 2	SP	PINE SAND (SP), dark grey-bro SATURATED, Slightly Laminated	' S	7 611	47 ~		<u> </u>			

T) = 20'

to massive, slight to trace diesel/HC odor, micaceons.

solsangles = 5'; 17' (ind. BTEX) Tenacor due to slight He ador; 20' (due to slight He gur sample (via temp. casing) collected @ 13:00

	PROJECT LOCATION PROJECT	N: [4	اراحيا	Madeo	WE	LL/PROBEH	Ė	OREHO				Startle	
_	DRILLING:	FION:-	STAF	ECAL ALW	GRO	TUDE: OUND ELEV (f	t):	1100	·	EASTIN LONGI TOC EI	TUDE: LEV (ft):		
	DRILLING DRILLING	EQUIP METH(MENT	AMS 9630 PRO-PTO ired-push T: cont core	STA	AL DTW (fl): TIC DTW (fl): L-CASING DI GED BY: (-	₹ (în) .	_	WELL I BOREH	HOLE DEPTH (ft): DEPTH (ft): HOLE DIAMETER (ED BY:		<u>.</u>
	Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PtD (units)	Depth (feet)		orehole Jackfill	
			Af	3" asphalt Artificial FU = grand/sand					Ø	_			
	2' - - -		SP	FINE SAND (SP), YIN-brn to medium brown dry to slightly moist, laminated, micacross, no stain, no odor.					P	-			
	5-				×	5'@ Noon			Ø	5	LGW@		
	ק' .		47	Saturately, no stan, no odor.		<u></u>			P	-	6'		
	۹۱ .		2/4	Wet, mottled medium to light gray + brn, trace v. fire send, mo stain, no odor.					ø	_			
	10-		SP	FINE SAND(SP), dark gry-brn, but - saturated, laminated, no oder, no stain.					0	10-		,	
	11.5		사	Same as 7-9' (above) SILTY FIME SAND(SM),					P		,	or te	
SECOR INTL.GDT 10/15/08	-		SM	medium to dark grey-torown, wet -> saturated, no stain, no odor, massive to slightly laminated.					\$	-		d wo bent	
BLANK 20-FOOT GINT LOGGED SECO	15-			Note: slight diesel/HC odor					2	15-	-	backfilled	
NK 20-FOOT					\Rightarrow	17:10	pm			-		_	
	18.75		WL	to gray-brn, trace the oder					1-2				
GEO FORM 304			SΜ	FINE SAND(SP), wet, dark grey-bra, faint Hc/diesel od	er T	70 e	2 pm		1	1 *			

TD=201

* Southern-most boring & former diesel UTT

									()	
	PROJECT: F			WI	ELL / PROBEH	OLE/B	OREH	DLE NO	D:	
	LOCATION: Ke PROJECT NUM		Wri		13-2		PAGE	1 OF ,	11	Stantec
	DRILLING:	STAR	RTED 10 27/2016 COMPLETED: 10/27/20	NOI	RTHING (fl):			•	EASTIN	' '
~	INSTALLATION:	-9TAF	COMPLETED:	LAT	TTUDE: DUND ELEV (f	+1.			LONG!	
	DRILLING COMP	ANY:	ESN NW	INII	IAL DTW (ft):	51				IOLE DEPTH (ft): 20
	DRILLING EQUIP	MENT	AMS 9630 PRO-PTO		TIC DTW (ft):					DEPTH (ft):
	DRILLING METH	OD: ø	lind-put		LL CASING DE		R (in).	•		OLE DIAMETER (in): 2 , 4
		_	IT: Cor# Lore		GED BY: 6	77		ø	CHECK	ED BY:
	Time & Depth (feet) Graphic Log	nscs	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspac PID (units)	Depth (feet)	Borehole Backfill
	2.5	Af	3" asphalt Atificial Fix: gravel/sand					Ø	-	
	5-	5M	dry, dark brown, laminated, no stain, no odar. FINE SAND (SP), gray-bry, slightly mo ist -> saturated (below 5'), no stain, no oda	X	4/			ø		<u>, </u>
	7.25	ML	6-6.25; SW (well-graded) Sand, fine three course grained	4.				ø	-	
1 10/15/08		SM	SHITY FINE SAND(SM),					ø	10-	y beston te
BLANK 20-FOOT GINT LOG.GPJ SECOR INTL. GDT			2" silt (ML) layer @ 15' SILT W clay TO CLAYEY SILT (A	(4),	16.5 1 @ 12:58				15	backfrod
GEO FORM 304 BLAI		ML	no oder, no stain FING SAND(ST), dark gray-						-	
			Story laminated.							

Soil samples = 4'; 16.5' (= 87EX/Terra cort = no adors(4C)
gr. nample collected @ 13:25

* inside abandoned warehouse : raised floor 4.5' above suronds outside ground.

Description Description Time Surgel of Sold Sold Sold Sold Sold Sold Sold Sold		DRILLING COMPANY: E DRILLING EQUIPMENT: DRILLING METHOD: SAMPLING EQUIPMENT:	ED 10/27/206 COMPLETED: 10/27/2016 ED COMPLETED: 10/27/2016 ESN NW AMS 9630 PRO-PTO	WELL / PROBEHO NORTHING (fl): LATITUDE: GROUND ELEV (fl INITIAL DTW (ft): STATIC DTW (ft): WELL CASING DW LOGGED BY:	PAGE 1 (EASTING (ft): LONGITUDE: TOC ELEV (ft): BOREHOLE DEF	
The state of the same of the state of the st	,51+		<u> </u>				
SP FINE SAND(JP), medium to dark bon-gray, Saturated, no orbor, no stain, massire. SM SILTY FINE SAND(JM)/FINE SANDY SILT (ML), gray-bry, Saturated, no orbor, no stain musice > lamindal SILT (ML), gray-bry, Jaturated, no orbor, no stain trace to vi fine and fine sand Vi fine and fine sand SILTY FINE SAND(JM), Saturated, gray-bry, SM SATURATED SM SATURATED SM S	BTEX/Turnscon);		SILT (ML), brown, dry, no stain, no other, some day, trace v. line sand.	7,5'		1	J_,
	9.5'	SP SP	to saturated (@ 8.5), medium to clark gray-brn, no order, no order, no order, mo stain, micaccors. FINE SAND(SP), medium to dark bon-gray, Saturated, no order, mo stain, massive. SILTY FINE SAND (IM) / FINE SANDY SILT (ML), gray-bry, Saturated, no order, no standard.	2 14:38	nindal 9	10-	of bendante
odor.		4.50 SECORINIL 6	SILTY FINE SAND (SM), Saturated, gray-born, I a minoted, no stain, no	X 6		15-	backpred

TD = 201

Appendix C

Groundwater Purge Logs



Water Sample Field Data Sheet

Project Name: Project Manag Field Technicia	er: Chris G	daqk	در ام		Lab: ESC	185750123 MW-Z	
Date Purged: Date Sampled: Sample Type:	10/3	8/16 ((1/3/16 er	[1/2/16 Samp	Start (2400hr): ble Time (2400hr): Low-Flow Used?	1801	End (2400hr):	14/0
Casing Diamete Casing Volume		r foot):	2" 1.17	3"(0.38)	0.6	7	
Depth to Botton Depth to Water Water Column H	(ft):		40 44 19	16.40 5, \$1	Actu	al Purge (gal):	
			Field Med	surements			
	1350 1350 1355 1400	10 L 10 L	16.78 16.78 16.87 11.89	0.143 0.144 0.144 0.155	6.63 6.63		97.4 47.4 47.3
Calculated Vari Temp: Acceptable Var Temp:	Condu	ctivity:	pH;	Color:		P.:	
Depth to Purge I	ntake Durin	g Purge:		Sample DTW:			
Quantity of TPH-G BTEX TPH-O TPH-D Total Lead		Pesticides Pesticides Pesticides Permetals EDB/EDC Naphth	valive:		Analy	/565: 	
Bailer	Purging Eq	ulpment		P	Sampling E	quipment:	
-	tion:	soul	Sample Colle	well Casing Cond Seal Present?:	No	Bolis Present	e:

Appendix D

Laboratory Report and Chain-of-Custody Documentation



ANALYTICAL REPORT

November 09, 2016



Stantec-Bellevue, WA

Sample Delivery Group: L869381

Samples Received: 10/29/2016

Project Number: 185750123A

Description: Maralco, Phase II ESA

Report To: Cyrus Gorman

11130 NE 33rd Pl, Suite 200

Bellevue, WA 98004

Entire Report Reviewed By:

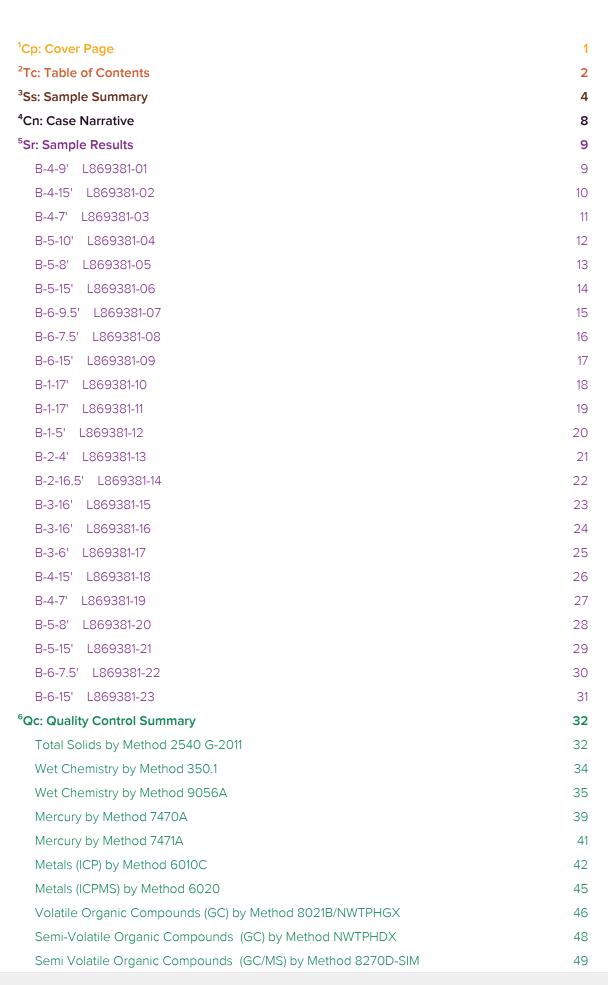
Buar Ford

Brian Ford

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

























⁷Gl: Glossary of Terms
 ⁸Al: Accreditations & Locations
 ⁹Sc: Chain of Custody
 53



















-	Ó.
4	K

B-4-9' L869381-01 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 09:02	Received date/time 10/29/16 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX	WG923098	1	10/27/16 09:02	11/04/16 02:29	ВМВ	
			Collected by	Collected date/time	Received date/time	
B-4-15' L869381-02 Solid			Carol Shestag	10/27/16 09:10	10/29/16 09:00	
Method	Batch	Dilution	Preparation	Analysis	Analyst	
M 174744	III.CO.2.2.042		date/time	date/time	NID	
Mercury by Method 7471A	WG922813	1	11/02/16 11:36	11/02/16 15:56	NJB	
Metals (ICP) by Method 6010C	WG922544	1	11/01/16 16:49	11/02/16 04:02	LTB	
Metals (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19:33	VSS	
Total Solids by Method 2540 G-2011	WG922975	1	11/03/16 08:20	11/03/16 08:30	KDW	
Wet Chemistry by Method 350.1	WG922902	1	11/03/16 02:34	11/03/16 10:56	JER	
Wet Chemistry by Method 9056A	WG923165	1	11/03/16 11:08	11/03/16 21:56	SAM	
			Collected by	Collected date/time	Received date/time	
B-4-7' L869381-03 Solid			Carol Shestag	10/27/16 09:00	10/29/16 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Mercury by Method 7471A	WG922813	1	11/02/16 11:36	11/02/16 16:11	NJB	
Metals (ICP) by Method 6010C	WG922544	1	11/01/16 16:49	11/02/16 04:05	LTB	
Metals (ICPMS) by Method 6020	WG922399	5	11/01/16 10:38	11/02/16 18:47	VSS	
Total Solids by Method 2540 G-2011	WG922239 WG922975	1	11/03/16 08:20	11/03/16 08:30	KDW	
•	WG922973 WG922902	1	11/03/16 08:20	11/03/16 08:30	JER	
Wet Chemistry by Method 350.1 Wet Chemistry by Method 9056A	WG923165	1	11/03/16 02.34	11/03/16 11:00	SAM	
D F 401 1 000004 04 0 11 1			Collected by Carol Shestag	Collected date/time 10/27/16 10:32	Received date/time 10/29/16 09:00	
B-5-10' L869381-04 Solid						
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX	WG923098	1	10/27/16 10:32	11/04/16 02:50	BMB	
B-5-8' L869381-05 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 10:30	Received date/time 10/29/16 09:00	
Method	Batch	Dilution	Preparation	Analysis	Analyst	
			date/time	date/time		
Mercury by Method 7471A	WG922813	1	11/02/16 11:36	11/02/16 16:14	NJB	
Metals (ICP) by Method 6010C	WG922544	1	11/01/16 16:49	11/02/16 04:07	LTB	
Metals (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19:36	VSS	
Total Solids by Method 2540 G-2011	WG922975	1	11/03/16 08:20	11/03/16 08:30	KDW	
Wet Chemistry by Method 350.1	WG922902	1	11/03/16 02:34	11/03/16 11:01	JER	
	WG922902 WG923165	1	11/03/16 02.34		SAM	
Wet Chemistry by Method 9056A	WG923105	ı	11/03/10 11.06	11/04/16 01:00	SAIVI	
B-5-15' L869381-06 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 10:40	Received date/time 10/29/16 09:00	
		Dilution	Preparation	Analysis	Analyst	
Method	Batch	יוטווטווט				
Method	Batch	Dilution	date/time	date/time		
Method Mercury by Method 7471A	Batch WG922813	1	•	•	NJB	
			date/time	date/time	NJB LTB	
Mercury by Method 7471A	WG922813	1	date/time 11/02/16 11:36	date/time 11/02/16 16:23		
Mercury by Method 7471A Metals (ICP) by Method 6010C	WG922813 WG922544	1 1	date/time 11/02/16 11:36 11/01/16 16:49	date/time 11/02/16 16:23 11/02/16 04:10	LTB	
Mercury by Method 7471A Metals (ICP) by Method 6010C Metals (ICPMS) by Method 6020	WG922813 WG922544 WG922239	1 1 5	date/time 11/02/16 11:36 11/01/16 16:49 11/01/16 10:38	date/time 11/02/16 16:23 11/02/16 04:10 11/02/16 19:39	LTB VSS	



















Received date/time

LTB

VSS

KDW

JER

SAM

Received date/time

Analyst

10/29/16 09:00

SAMPLE SUMMARY

Collected by

ONE	IAR	NATIONWIE
ONE	LAD.	INATIONVIL

Collected date/time

11/02/16 04:13

11/02/16 19:42

11/03/16 08:30

11/03/16 11:03

11/04/16 06:44

10/27/16 14:45

Analysis

Collected date/time

B-5-15' L869381-06 Solid			Carol Shestag	10/27/16 10:40	10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG923165	5	11/03/16 11:08	11/04/16 02:09	SAM
B-6-9.5' L869381-07 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 14:38	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX	WG923098	1	10/27/16 14:38	11/04/16 03:11	BMB
B-6-7.5' L869381-08 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 14:35	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG922813	1	11/02/16 11:36	11/02/16 16:26	NJB

WG922544

WG922239

WG922975

WG922902

WG923183

Batch

1

5

1

1

1

Dilution

11/01/16 16:49

11/01/16 10:38

11/03/16 08:20

11/03/16 02:34

11/03/16 14:09

Collected by

Carol Shestag

Preparation



'Ss

Cn

Sr

СQс

Gl



			date/time	date/time	
Mercury by Method 7471A	WG922813	1	11/02/16 11:36	11/02/16 16:29	NJB
Metals (ICP) by Method 6010C	WG922544	1	11/01/16 16:49	11/02/16 04:16	LTB
Metals (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19:45	VSS
Total Solids by Method 2540 G-2011	WG922975	1	11/03/16 08:20	11/03/16 08:30	KDW
Wet Chemistry by Method 350.1	WG922902	1	11/03/16 02:34	11/03/16 11:04	JER
Wet Chemistry by Method 9056A	WG923183	1	11/03/16 14:09	11/04/16 07:30	SAM
			Collected by Carol Shestag	Collected date/time 10/27/16 12:10	Received date/time
B-1-17' 869381-10 Solid			Caror Snestag	10/2//10 12.10	10/29/16 09.00

B-1-17' L869381-10 Solid			Carol Shestag	10/27/16 12:10	10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX	WG923098	1	10/27/16 12:10	11/04/16 03:32	ВМВ
			Collected by	Collected date/time	Received date/time
B-1-17' L869381-11 Solid			Carol Shestag	10/27/16 12:10	10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922194	1	11/02/16 17:53	11/03/16 11:18	KMP
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG923175	1	11/05/16 16:44	11/07/16 14:37	DMG
Total Solids by Method 2540 G-2011	WG922975	1	11/03/16 08:20	11/03/16 08:30	KDW

Metals (ICP) by Method 6010C

Metals (ICPMS) by Method 6020

Wet Chemistry by Method 350.1

Wet Chemistry by Method 9056A

Method

B-6-15' L869381-09 Solid

Total Solids by Method 2540 G-2011

	Carol Shestag	10/27/16 12:00	10/29/16 09:00
n	Preparation	Analysis	Analyst
	date/time	date/time	
	11/02/16 17:53	11/03/16 11:39	KMP

















B-1-5' L869381-12 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 12:00	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922194	1	11/02/16 17:53	11/03/16 11:39	KMP
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG923175	1	11/05/16 16:44	11/07/16 14:54	DMG
Total Solids by Method 2540 G-2011	WG922976	1	11/03/16 08:06	11/03/16 08:17	KDW
B-2-4' L869381-13 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 12:50	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922194	1	11/02/16 17:53	11/03/16 12:01	KMP
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG923175	1	11/05/16 16:44	11/07/16 16:58	DMG
Total Solids by Method 2540 G-2011	WG922976	1	11/03/16 08:06	11/03/16 08:17	KDW
B-2-16.5' L869381-14 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 12:58	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922194	1	11/02/16 17:53	11/03/16 12:22	KMP
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG923175	1	11/05/16 16:44	11/07/16 17:15	DMG
Total Solids by Method 2540 G-2011	WG922976	1	11/03/16 08:06	11/03/16 08:17	KDW
B-3-16' L869381-15 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 11:40	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX	WG923098	1	10/27/16 11:40	11/08/16 14:06	DWR
B-3-16' L869381-16 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 11:40	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922194	1	11/02/16 17:53	11/03/16 12:43	KMP
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG923175	1	11/05/16 16:44	11/07/16 17:32	DMG
Total Solids by Method 2540 G-2011	WG922976	1	11/03/16 08:06	11/03/16 08:17	KDW
B-3-6' L869381-17 Solid			Collected by Carol Shestag	Collected date/time 10/27/16 11:25	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
6 17 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	Woods		date/time	date/time	10.15
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922194	1	11/02/16 17:53	11/03/16 13:25	KMP
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX Total Solids by Method 2540 G-2011	WG923175 WG922976	10 1	11/05/16 16:44 11/03/16 08:06	11/07/16 21:20 11/03/16 08:17	DMG KDW
			Collected by	Collected date/time	Received date/time

SAMPLE SUMMARY

B-4-15' L869381-18 Waste

Method

Mercury by Method 7470A

Preparation by Method 1311

Metals (ICP) by Method 6010C

Batch

WG923664

WG923644

WG923641

Carol Shestag

Preparation

11/04/16 05:28

11/03/16 23:22

11/03/16 21:03

date/time

Dilution

1

10/27/16 09:10

11/04/16 09:53

11/04/16 02:46

11/03/16 21:03

Analysis

date/time

10/29/16 09:00

Analyst

TRB

CCE

LJN

SAMPLE SU

AB. NATION	٧W
۱В.	NATION

			Collected by Carol Shestag	Collected date/time 10/27/16 09:00	Received date/time 10/29/16 09:00
B-4-7' L869381-19 Waste			Caror Silestag	10/27/10 03:00	10/23/10 03:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG923664	1	11/04/16 05:28	11/04/16 09:55	TRB
Metals (ICP) by Method 6010C	WG923644	1	11/03/16 23:22	11/04/16 02:57	CCE
Preparation by Method 1311	WG923641	1	11/03/16 21:03	11/03/16 21:03	LJN
			Collected by	Collected date/time	Received date/time
B-5-8' L869381-20 Waste			Carol Shestag	10/27/16 10:30	10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG923721	1	11/04/16 09:42	11/04/16 12:04	TRB
Metals (ICP) by Method 6010C	WG923732	1	11/04/16 10:23	11/04/16 15:05	CCE
Preparation by Method 1311	WG923481	1	11/03/16 12:50	11/03/16 12:50	BG
			Collected by	Collected date/time	Received date/time
B-5-15' L869381-21 Waste			Carol Shestag	10/27/16 10:40	10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG923664	1	11/04/16 05:28	11/04/16 09:58	TRB
Metals (ICP) by Method 6010C	WG923644	1	11/03/16 23:22	11/04/16 03:00	CCE
Preparation by Method 1311	WG923641	1	11/03/16 21:03	11/03/16 21:03	LJN
			Collected by	Collected date/time	Received date/time
B-6-7.5' L869381-22 Waste			Carol Shestag	10/27/16 14:35	10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG923721	1	11/04/16 09:42	11/04/16 12:19	TRB



















CCE

BG

Received date/time

10/29/16 09:00



Metals (ICP) by Method 6010C

Preparation by Method 1311

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG923664	1	11/04/16 05:28	11/04/16 10:01	TRB
Metals (ICP) by Method 6010C	WG923644	1	11/03/16 23:22	11/04/16 03:02	CCE
Preparation by Method 1311	WG923641	1	11/03/16 21:03	11/03/16 21:03	LJN

WG923732

WG923481

1

11/04/16 10:23

11/03/16 12:50

Collected by

Carol Shestag

11/04/16 14:53

11/03/16 12:50

10/27/16 14:45

Collected date/time



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the

















Technical Service Representative

Buar Ford

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 09:02

L869381

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.0339	0.100	1	11/04/2016 02:29	WG923098
Benzene	0.00132		0.000120	0.000500	1	11/04/2016 02:29	WG923098
Toluene	0.000476	ВJ	0.000150	0.00500	1	11/04/2016 02:29	WG923098
Ethylbenzene	U		0.000110	0.000500	1	11/04/2016 02:29	WG923098
Total Xylene	U		0.000460	0.00150	1	11/04/2016 02:29	WG923098
(S) a,a,a-Trifluorotoluene(PID)	112			54.0-114		11/04/2016 02:29	WG923098
(S) a.a.a-Trifluorotoluene(FID)	111			59.0-128		11/04/2016 02:29	WG923098



















ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 09:10

L869381

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	73.2		1	11/03/2016 08:30	WG922975



Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	5.92	<u>J</u>	2.15	6.83	1	11/03/2016 10:56	WG922902



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	309		1.09	13.7	1	11/03/2016 21:56	WG923165
Fluoride	2.75		0.357	1.37	1	11/03/2016 21:56	WG923165
Nitrate	U		0.0159	1.37	1	11/03/2016 21:56	WG923165



[°]Qc

Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0288		0.00383	0.0273	1	11/02/2016 15:56	WG922813



Metals (ICP) by Method 6010C

(- / - /							
	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	2.73		0.888	2.73	1	11/02/2016 04:02	WG922544
Barium	55.7		0.232	0.683	1	11/02/2016 04:02	WG922544
Cadmium	0.128	<u>J</u>	0.0957	0.683	1	11/02/2016 04:02	WG922544
Chromium	14.5		0.191	1.37	1	11/02/2016 04:02	WG922544
Lead	3.26		0.260	0.683	1	11/02/2016 04:02	WG922544
Selenium	1.41	<u>J</u>	1.01	2.73	1	11/02/2016 04:02	WG922544
Silver	I I		0.383	1.37	1	11/02/2016 04:02	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	12200		22.5	68.3	5	11/02/2016 19:33	WG922239

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 09:00

L869381

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	85.3		1	11/03/2016 08:30	WG922975



Wet Chemistry by Method 350.1

	Result (dry)	<u>Qualifier</u>	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	15.2		1.84	5.86	1	11/03/2016 11:00	WG922902



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	44.4		0.932	11.7	1	11/03/2016 22:19	WG923165
Fluoride	5.03		0.306	1.17	1	11/03/2016 22:19	WG923165
Nitrate	2.25		0.0136	1.17	1	11/03/2016 22:19	WG923165



[°]Qc

Cn

Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0230	J	0.00328	0.0234	1	11/02/2016 16:11	WG922813



Metals (ICP) by Method 6010C

\ / /							
	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	U		0.762	2.34	1	11/02/2016 04:05	WG922544
Barium	39.6		0.199	0.586	1	11/02/2016 04:05	WG922544
Cadmium	0.115	<u>J</u>	0.0821	0.586	1	11/02/2016 04:05	WG922544
Chromium	13.0		0.164	1.17	1	11/02/2016 04:05	WG922544
Lead	2.37		0.223	0.586	1	11/02/2016 04:05	WG922544
Selenium	U		0.868	2.34	1	11/02/2016 04:05	WG922544
Silver	П		0.328	1 17	1	11/02/2016 04:05	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	9370	01 V	19.3	58.6	5	11/02/2016 18:47	WG922239

B-5-10'

SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 10:32

L869381

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.0339	0.100	1	11/04/2016 02:50	WG923098
Benzene	0.000604		0.000120	0.000500	1	11/04/2016 02:50	WG923098
Toluene	0.000557	ВJ	0.000150	0.00500	1	11/04/2016 02:50	WG923098
Ethylbenzene	U		0.000110	0.000500	1	11/04/2016 02:50	WG923098
Total Xylene	U		0.000460	0.00150	1	11/04/2016 02:50	WG923098
(S) a,a,a-Trifluorotoluene(PID)	111			54.0-114		11/04/2016 02:50	WG923098
(S) a,a,a-Trifluorotoluene(FID)	110			59.0-128		11/04/2016 02:50	WG923098



















ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 10:30

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	94.9		1	11/03/2016 08:30	<u>WG922975</u>



Wet Chemistry by Method 350.1

	Result (dry)	<u>Qualifier</u>	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	U		1.65	5.27	1	11/03/2016 11:01	WG922902



Cn

Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	41.4		0.838	10.5	1	11/04/2016 01:00	WG923165
Fluoride	31.8		0.275	1.05	1	11/04/2016 01:00	WG923165
Nitrate	0.954	<u>J</u>	0.0122	1.05	1	11/04/2016 01:00	WG923165



[°]Qc

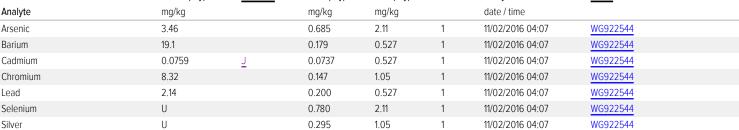
Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.00295	0.0211	1	11/02/2016 16:14	WG922813



Metals (ICP) by Method 6010C

(- / - /							
	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	3.46		0.685	2.11	1	11/02/2016 04:07	WG922544
Barium	19.1		0.179	0.527	1	11/02/2016 04:07	WG922544
Cadmium	0.0759	<u>J</u>	0.0737	0.527	1	11/02/2016 04:07	WG922544
Chromium	8.32		0.147	1.05	1	11/02/2016 04:07	WG922544
Lead	2.14		0.200	0.527	1	11/02/2016 04:07	WG922544
Selenium	U		0.780	2.11	1	11/02/2016 04:07	WG922544
Silver	U		0.295	1.05	1	11/02/2016 04:07	WG922544



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Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Aluminum	5730		17.4	52.7	5	11/02/2016 19:36	WG922239	

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 10:40

L869381

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	72.3		1	11/03/2016 08:30	<u>WG922975</u>



Wet Chemistry by Method 350.1

	Result (dry)	<u>Qualifier</u>	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	33.1		2.17	6.92	1	11/03/2016 11:02	WG922902



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	4280		5.51	69.2	5	11/04/2016 02:09	WG923165
Fluoride	0.544	<u>J P1</u>	0.361	1.38	1	11/04/2016 01:23	WG923165
Nitrate	U		0.0161	1.38	1	11/04/2016 01:23	WG923165



[°]Qc

Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0281		0.00387	0.0277	1	11/02/2016 16:23	WG922813



Metals (ICP) by Method 6010C

(- / -)							
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	U		0.899	2.77	1	11/02/2016 04:10	WG922544
Barium	42.1		0.235	0.692	1	11/02/2016 04:10	WG922544
Cadmium	U		0.0969	0.692	1	11/02/2016 04:10	WG922544
Chromium	11.4		0.194	1.38	1	11/02/2016 04:10	WG922544
Lead	2.57		0.263	0.692	1	11/02/2016 04:10	WG922544
Selenium	U		1.02	2.77	1	11/02/2016 04:10	WG922544
Silver	U		0.387	138	1	11/02/2016 04:10	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Aluminum	8840		22.8	69.2	5	11/02/2016 19:39	WG922239	

B-6-9.5'

SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 14:38

L869381

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.0339	0.100	1	11/04/2016 03:11	WG923098
Benzene	0.000140	<u>J</u>	0.000120	0.000500	1	11/04/2016 03:11	WG923098
Toluene	0.000765	ВJ	0.000150	0.00500	1	11/04/2016 03:11	WG923098
Ethylbenzene	U		0.000110	0.000500	1	11/04/2016 03:11	WG923098
Total Xylene	U		0.000460	0.00150	1	11/04/2016 03:11	WG923098
(S) a,a,a-Trifluorotoluene(PID)	111			54.0-114		11/04/2016 03:11	WG923098
(S) a.a.a-Trifluorotoluene(FID)	110			59.0-128		11/04/2016 03:11	WG923098



















ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 14:35

L869381

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	76.3		1	11/03/2016 08:30	WG922975



Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	27.7		2.06	6.55	1	11/03/2016 11:03	WG922902



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	212		1.04	13.1	1	11/04/2016 06:44	WG923183
Fluoride	7.72		0.342	1.31	1	11/04/2016 06:44	WG923183
Nitrate	U		0.0152	1.31	1	11/04/2016 06:44	WG923183



[°]Qc

Cn

Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.141		0.00367	0.0262	1	11/02/2016 16:26	WG922813



Metals (ICP) by Method 6010C

(-) -)							
	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	2.47	<u>J</u>	0.852	2.62	1	11/02/2016 04:13	WG922544
Barium	70.2		0.223	0.655	1	11/02/2016 04:13	WG922544
Cadmium	0.153	<u>J</u>	0.0917	0.655	1	11/02/2016 04:13	WG922544
Chromium	18.0		0.183	1.31	1	11/02/2016 04:13	WG922544
Lead	4.35		0.249	0.655	1	11/02/2016 04:13	WG922544
Selenium	U		0.970	2.62	1	11/02/2016 04:13	WG922544
Silver	U		0.367	1.31	1	11/02/2016 04:13	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	16600		21.6	65.5	5	11/02/2016 19:42	WG922239

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 14:45

L869381

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	68.9		1	11/03/2016 08:30	WG922975



Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	9.72	<u>J6</u>	2.28	7.26	1	11/03/2016 11:04	WG922902



Ss

Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	183		1.15	14.5	1	11/04/2016 07:30	WG923183
Fluoride	35.9		0.379	1.45	1	11/04/2016 07:30	WG923183
Nitrate	U		0.0168	1.45	1	11/04/2016 07:30	WG923183



[°]Qc

Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0163	J	0.00406	0.0290	1	11/02/2016 16:29	WG922813



Metals (ICP) by Method 6010C

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	2.88	<u>J</u>	0.943	2.90	1	11/02/2016 04:16	WG922544
Barium	52.2		0.247	0.726	1	11/02/2016 04:16	WG922544
Cadmium	0.234	<u>J</u>	0.102	0.726	1	11/02/2016 04:16	WG922544
Chromium	20.1		0.203	1.45	1	11/02/2016 04:16	WG922544
Lead	6.00		0.276	0.726	1	11/02/2016 04:16	WG922544
Selenium	1.11	<u>J</u>	1.07	2.90	1	11/02/2016 04:16	WG922544
Silver	U		0.406	1.45	1	11/02/2016 04:16	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	19800		23.9	72.6	5	11/02/2016 19:45	WG922239

B-1-17'

SAMPLE RESULTS - 10

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 12:10

L869381

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.0339	0.100	1	11/04/2016 03:32	WG923098
Benzene	0.000522		0.000120	0.000500	1	11/04/2016 03:32	WG923098
Toluene	0.000524	ВJ	0.000150	0.00500	1	11/04/2016 03:32	WG923098
Ethylbenzene	U		0.000110	0.000500	1	11/04/2016 03:32	WG923098
Total Xylene	U		0.000460	0.00150	1	11/04/2016 03:32	WG923098
(S) a,a,a-Trifluorotoluene(PID)	111			54.0-114		11/04/2016 03:32	WG923098
(S) a,a,a-Trifluorotoluene(FID)	109			59.0-128		11/04/2016 03:32	WG923098



















ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 12:10

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	74.3		1	11/03/2016 08:30	WG922975

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.78	5.38	1	11/07/2016 14:37	WG923175
Residual Range Organics (RRO)	U		4.44	13.5	1	11/07/2016 14:37	WG923175
(S) o-Terphenyl	75.3			50.0-150		11/07/2016 14:37	WG923175



Ss

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Acenaphthene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Acenaphthylene	U		808000.0	0.00808	1	11/03/2016 11:18	WG922194
Benzo(a)anthracene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Benzo(a)pyrene	U		808000.0	0.00808	1	11/03/2016 11:18	WG922194
Benzo(b)fluoranthene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Benzo(g,h,i)perylene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Benzo(k)fluoranthene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Chrysene	U		808000.0	0.00808	1	11/03/2016 11:18	WG922194
Dibenz(a,h)anthracene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Fluoranthene	U		808000.0	0.00808	1	11/03/2016 11:18	WG922194
Fluorene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
Indeno(1,2,3-cd)pyrene	U		808000.0	0.00808	1	11/03/2016 11:18	WG922194
Naphthalene	0.00473	<u>J</u>	0.00269	0.0269	1	11/03/2016 11:18	WG922194
Phenanthrene	0.000954	<u>J</u>	808000.0	0.00808	1	11/03/2016 11:18	WG922194
Pyrene	U		0.000808	0.00808	1	11/03/2016 11:18	WG922194
1-Methylnaphthalene	U		0.00269	0.0269	1	11/03/2016 11:18	WG922194
2-Methylnaphthalene	U		0.00269	0.0269	1	11/03/2016 11:18	WG922194
2-Chloronaphthalene	U		0.00269	0.0269	1	11/03/2016 11:18	WG922194
(S) Nitrobenzene-d5	84.1			22.1-146		11/03/2016 11:18	WG922194
(S) 2-Fluorobiphenyl	92.3			40.6-122		11/03/2016 11:18	WG922194
(S) p-Terphenyl-d14	92.0			32.2-131		11/03/2016 11:18	WG922194











ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 12:00

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	<u>Batch</u>
Analyte	%			date / time	
Total Solids	90.9		1	11/03/2016 08:17	WG922976

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U	<u>J3</u>	1.45	4.40	1	11/07/2016 14:54	WG923175
Residual Range Organics (RRO)	U	<u>J3 J6</u>	3.63	11.0	1	11/07/2016 14:54	WG923175
(S) o-Terphenyl	103			50.0-150		11/07/2016 14:54	WG923175



Cn

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Acenaphthene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Acenaphthylene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Benzo(a)anthracene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Benzo(a)pyrene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Benzo(b)fluoranthene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Benzo(g,h,i)perylene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Benzo(k)fluoranthene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Chrysene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Dibenz(a,h)anthracene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Fluoranthene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Fluorene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Indeno(1,2,3-cd)pyrene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Naphthalene	U		0.00220	0.0220	1	11/03/2016 11:39	WG922194
Phenanthrene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
Pyrene	U		0.000660	0.00660	1	11/03/2016 11:39	WG922194
1-Methylnaphthalene	U		0.00220	0.0220	1	11/03/2016 11:39	WG922194
2-Methylnaphthalene	U		0.00220	0.0220	1	11/03/2016 11:39	WG922194
2-Chloronaphthalene	U		0.00220	0.0220	1	11/03/2016 11:39	WG922194
(S) Nitrobenzene-d5	81.3			22.1-146		11/03/2016 11:39	WG922194
(S) 2-Fluorobiphenyl	94.3			40.6-122		11/03/2016 11:39	WG922194
(S) p-Terphenyl-d14	80.2			32.2-131		11/03/2016 11:39	WG922194











ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 12:50

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	86.7		1	11/03/2016 08:17	WG922976

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.52	4.61	1	11/07/2016 16:58	WG923175
Residual Range Organics (RRO)	U		3.81	11.5	1	11/07/2016 16:58	WG923175
(S) o-Terphenyl	97.6			50.0-150		11/07/2016 16:58	WG923175



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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Acenaphthene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Acenaphthylene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Benzo(a)anthracene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Benzo(a)pyrene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Benzo(b)fluoranthene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Benzo(g,h,i)perylene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Benzo(k)fluoranthene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Chrysene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Dibenz(a,h)anthracene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Fluoranthene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Fluorene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Indeno(1,2,3-cd)pyrene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
Naphthalene	U		0.00231	0.0231	1	11/03/2016 12:01	WG922194
Phenanthrene	0.00132	<u>J</u>	0.000692	0.00692	1	11/03/2016 12:01	WG922194
Pyrene	U		0.000692	0.00692	1	11/03/2016 12:01	WG922194
1-Methylnaphthalene	U		0.00231	0.0231	1	11/03/2016 12:01	WG922194
2-Methylnaphthalene	U		0.00231	0.0231	1	11/03/2016 12:01	WG922194
2-Chloronaphthalene	U		0.00231	0.0231	1	11/03/2016 12:01	WG922194
(S) Nitrobenzene-d5	84.3			22.1-146		11/03/2016 12:01	WG922194
(S) 2-Fluorobiphenyl	90.5			40.6-122		11/03/2016 12:01	WG922194
(S) p-Terphenyl-d14	96.9			32.2-131		11/03/2016 12:01	WG922194



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ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 12:58

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	79.4		1	11/03/2016 08:17	WG922976

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.66	5.04	1	11/07/2016 17:15	WG923175
Residual Range Organics (RRO)	U		4.16	12.6	1	11/07/2016 17:15	WG923175
(S) o-Terphenyl	57.5			50.0-150		11/07/2016 17:15	WG923175



Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	_
Anthracene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Acenaphthene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Acenaphthylene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Benzo(a)anthracene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Benzo(a)pyrene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Benzo(b)fluoranthene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Benzo(g,h,i)perylene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Benzo(k)fluoranthene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Chrysene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Dibenz(a,h)anthracene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Fluoranthene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Fluorene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Indeno(1,2,3-cd)pyrene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Naphthalene	U		0.00252	0.0252	1	11/03/2016 12:22	WG922194
Phenanthrene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
Pyrene	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
1-Methylnaphthalene	U		0.00252	0.0252	1	11/03/2016 12:22	WG922194
2-Methylnaphthalene	U		0.00252	0.0252	1	11/03/2016 12:22	WG922194
2-Chloronaphthalene	U		0.00252	0.0252	1	11/03/2016 12:22	WG922194
(S) Nitrobenzene-d5	86.5			22.1-146		11/03/2016 12:22	WG922194
(S) 2-Fluorobiphenyl	99.8			40.6-122		11/03/2016 12:22	WG922194
(S) p-Terphenyl-d14	92.5			32.2-131		11/03/2016 12:22	WG922194

















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SAMPLE RESULTS - 15

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 11:40

L869381

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.0339	0.100	1	11/08/2016 14:06	WG923098
Benzene	0.000205	J	0.000120	0.000500	1	11/08/2016 14:06	WG923098
Toluene	0.000619	<u>B J</u>	0.000150	0.00500	1	11/08/2016 14:06	WG923098
Ethylbenzene	U		0.000110	0.000500	1	11/08/2016 14:06	WG923098
Total Xylene	U		0.000460	0.00150	1	11/08/2016 14:06	WG923098
(S) a,a,a-Trifluorotoluene(PID)	90.8			54.0-114		11/08/2016 14:06	WG923098
(S) a.a.a-Trifluorotoluene(FID)	97.9			59.0-128		11/08/2016 14:06	WG923098



















ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 11:40

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	72.7		1	11/03/2016 08:17	WG922976

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Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.82	5.50	1	11/07/2016 17:32	WG923175
Residual Range Organics (RRO)	U		4.54	13.8	1	11/07/2016 17:32	WG923175
(S) o-Terphenyl	61.1			50.0-150		11/07/2016 17:32	WG923175

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Acenaphthene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Acenaphthylene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Benzo(a)anthracene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Benzo(a)pyrene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Benzo(b)fluoranthene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Benzo(g,h,i)perylene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Benzo(k)fluoranthene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Chrysene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Dibenz(a,h)anthracene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Fluoranthene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Fluorene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Indeno(1,2,3-cd)pyrene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Naphthalene	U		0.00275	0.0275	1	11/03/2016 12:43	WG922194
Phenanthrene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
Pyrene	U		0.000826	0.00826	1	11/03/2016 12:43	WG922194
1-Methylnaphthalene	U		0.00275	0.0275	1	11/03/2016 12:43	WG922194
2-Methylnaphthalene	U		0.00275	0.0275	1	11/03/2016 12:43	WG922194
2-Chloronaphthalene	U		0.00275	0.0275	1	11/03/2016 12:43	WG922194
(S) Nitrobenzene-d5	75.9			22.1-146		11/03/2016 12:43	WG922194
(S) 2-Fluorobiphenyl	89.2			40.6-122		11/03/2016 12:43	WG922194
(S) p-Terphenyl-d14	76.2			32.2-131		11/03/2016 12:43	WG922194

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 11:25

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	88.8		1	11/03/2016 08:17	WG922976

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	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		14.9	45.1	10	11/07/2016 21:20	WG923175
Residual Range Organics (RRO)	U		37.2	113	10	11/07/2016 21:20	WG923175
(S) o-Terphenyl	124			50.0-150		11/07/2016 21:20	WG923175

Sample Narrative:

NWTPHDX L869381-17 WG923175: Dilution due to matrix

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Anthracene	U		0.000676	0.00676	1	11/03/2016 13:25	WG922194
Acenaphthene	U		0.000676	0.00676	1	11/03/2016 13:25	WG922194
Acenaphthylene	U		0.000676	0.00676	1	11/03/2016 13:25	WG922194
Benzo(a)anthracene	0.000687	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Benzo(a)pyrene	0.000855	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Benzo(b)fluoranthene	0.00114	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Benzo(g,h,i)perylene	0.00184	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Benzo(k)fluoranthene	U		0.000676	0.00676	1	11/03/2016 13:25	WG922194
Chrysene	0.00153	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Dibenz(a,h)anthracene	U		0.000676	0.00676	1	11/03/2016 13:25	WG922194
Fluoranthene	0.00111	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Fluorene	U		0.000676	0.00676	1	11/03/2016 13:25	WG922194
Indeno(1,2,3-cd)pyrene	0.000801	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Naphthalene	U		0.00225	0.0225	1	11/03/2016 13:25	WG922194
Phenanthrene	0.00198	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
Pyrene	0.00159	<u>J</u>	0.000676	0.00676	1	11/03/2016 13:25	WG922194
1-Methylnaphthalene	U		0.00225	0.0225	1	11/03/2016 13:25	WG922194
2-Methylnaphthalene	0.00249	<u>J</u>	0.00225	0.0225	1	11/03/2016 13:25	WG922194
2-Chloronaphthalene	U		0.00225	0.0225	1	11/03/2016 13:25	WG922194
(S) Nitrobenzene-d5	89.2			22.1-146		11/03/2016 13:25	WG922194
(S) 2-Fluorobiphenyl	94.5			40.6-122		11/03/2016 13:25	WG922194
(S) p-Terphenyl-d14	95.3			32.2-131		11/03/2016 13:25	WG922194

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 09:10

Preparation by Method 1311

	Result	Qualifier	Prep	Batch					
Analyte			date / time						
TCLP Extraction	-		11/3/2016 9:03:14 PM	WG923641					
Fluid	1		11/3/2016 9:03:14 PM	WG923641					
Initial pH	7.09		11/3/2016 9:03:14 PM	WG923641					
Final pH	4.90		11/3/2016 9:03:14 PM	WG923641					







Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	11/04/2016 09:53	WG923664



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	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Arsenic	ND		0.100	5	1	11/04/2016 02:46	WG923644
Barium	0.127		0.0500	100	1	11/04/2016 02:46	WG923644
Cadmium	ND		0.0200	1	1	11/04/2016 02:46	WG923644
Chromium	ND		0.100	5	1	11/04/2016 02:46	WG923644
Lead	ND		0.0500	5	1	11/04/2016 02:46	WG923644
Selenium	ND		0.100	1	1	11/04/2016 02:46	WG923644
Silver	ND		0.0500	5	1	11/04/2016 02:46	WG923644









ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 09:00

Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
TCLP Extraction	-		11/3/2016 9:03:14 PM	WG923641
Fluid	1		11/3/2016 9:03:14 PM	WG923641
Initial pH	7.12		11/3/2016 9:03:14 PM	WG923641
Final pH	4.91		11/3/2016 9:03:14 PM	WG923641







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Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	11/04/2016 09:55	<u>WG923664</u>





	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Arsenic	ND		0.100	5	1	11/04/2016 02:57	WG923644
Barium	0.0560		0.0500	100	1	11/04/2016 02:57	WG923644
Cadmium	ND		0.0200	1	1	11/04/2016 02:57	WG923644
Chromium	ND		0.100	5	1	11/04/2016 02:57	WG923644
Lead	ND		0.0500	5	1	11/04/2016 02:57	WG923644
Selenium	ND		0.100	1	1	11/04/2016 02:57	WG923644
Silver	ND		0.0500	5	1	11/04/2016 02:57	WG923644









ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 10:30

Preparation by Method 1311

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	Result	Qualifier	Prep	Batch					
Analyte			date / time						
TCLP Extraction	-		11/3/2016 12:50:25 PM	WG923481					
Fluid	1		11/3/2016 12:50:25 PM	WG923481					
Initial pH	6.58		11/3/2016 12:50:25 PM	WG923481					
Final nH	4.85		11/3/2016 12·50·25 PM	WCQ23/81					







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	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	11/04/2016 12:04	WG923721





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	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / time	
Arsenic	ND		0.100	5	1	11/04/2016 15:05	WG923732
Barium	0.0539		0.0500	100	1	11/04/2016 15:05	WG923732
Cadmium	ND		0.0200	1	1	11/04/2016 15:05	WG923732
Chromium	ND		0.100	5	1	11/04/2016 15:05	WG923732
Lead	ND		0.0500	5	1	11/04/2016 15:05	WG923732
Selenium	ND		0.100	1	1	11/04/2016 15:05	WG923732
Silver	ND		0.0500	5	1	11/04/2016 15:05	WG923732







ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 10:40

Preparation by Method 1311

-				
	Result	Qualifier	Prep	Batch
Analyte			date / time	
TCLP Extraction	-		11/3/2016 9:03:14 PM	WG923641
Fluid	1		11/3/2016 9:03:14 PM	WG923641
Initial pH	8.08		11/3/2016 9:03:14 PM	WG923641
Final pH	4.93		11/3/2016 9:03:14 PM	WG923641







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Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	11/04/2016 09:58	<u>WG923664</u>





	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l	<u> </u>	mg/l	mg/l		date / time	
Arsenic	ND		0.100	5	1	11/04/2016 03:00	WG923644
Barium	0.0736		0.0500	100	1	11/04/2016 03:00	WG923644
Cadmium	ND		0.0200	1	1	11/04/2016 03:00	WG923644
Chromium	ND		0.100	5	1	11/04/2016 03:00	WG923644
Lead	ND		0.0500	5	1	11/04/2016 03:00	WG923644
Selenium	ND		0.100	1	1	11/04/2016 03:00	WG923644
Silver	ND		0.0500	5	1	11/04/2016 03:00	WG923644









ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 14:35

Preparation by Method 1311

	Result	Qualifier	Prep	Batch
Analyte			date / time	
TCLP Extraction	-		11/3/2016 12:50:25 PM	WG923481
Fluid	1		11/3/2016 12:50:25 PM	WG923481
Initial pH	7.27		11/3/2016 12:50:25 PM	WG923481
Final pH	4.89		11/3/2016 12:50:25 PM	WG923481







Cn

Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	11/04/2016 12:19	WG923721





[°]Qc

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/I		date / time	
Arsenic	ND		0.100	5	1	11/04/2016 14:53	WG923732
Barium	0.177		0.0500	100	1	11/04/2016 14:53	WG923732
Cadmium	ND		0.0200	1	1	11/04/2016 14:53	WG923732
Chromium	ND		0.100	5	1	11/04/2016 14:53	WG923732
Lead	ND		0.0500	5	1	11/04/2016 14:53	WG923732
Selenium	ND		0.100	1	1	11/04/2016 14:53	WG923732
Silver	ND		0.0500	5	1	11/04/2016 14:53	WG923732









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Collected date/time: 10/27/16 14:45

Preparation by Method 1311

- 1 7				
	Result	Qualifier	Prep	<u>Batch</u>
Analyte			date / time	
TCLP Extraction	-		11/3/2016 9:03:14 PM	WG923641
Fluid	1		11/3/2016 9:03:14 PM	WG923641
Initial pH	9.18		11/3/2016 9:03:14 PM	WG923641
Final pH	4.96		11/3/2016 9:03:14 PM	WG923641







Cn

Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l		date / time	
Mercury	ND		0.0100	0.20	1	11/04/2016 10:01	<u>WG923664</u>





	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l	<u> </u>	mg/l	mg/l		date / time	
Arsenic	ND		0.100	5	1	11/04/2016 03:02	WG923644
Barium	0.0989		0.0500	100	1	11/04/2016 03:02	WG923644
Cadmium	ND		0.0200	1	1	11/04/2016 03:02	WG923644
Chromium	ND		0.100	5	1	11/04/2016 03:02	WG923644
Lead	ND		0.0500	5	1	11/04/2016 03:02	WG923644
Selenium	ND		0.100	1	1	11/04/2016 03:02	WG923644
Silver	ND		0.0500	5	1	11/04/2016 03:02	WG923644









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Total Solids by Method 2540 G-2011

L869381-02,03,05,06,08,09,11

Method Blank (MB)

Total Solids

(MB) R3175784-1 11/03/16 08:30

MB Result MB Qualifier MB MDL MB RDL

Analyte % % %



Ss

L869381-11 Original Sample (OS) • Duplicate (DUP)

0.000400



Laboratory Control Sample (LCS)

(LCS) R3175784-2 11/03/16 08:30





GI



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Total Solids by Method 2540 G-2011

L869381-12,13,14,16,17

Method Blank (MB)

(MB) R3175783-1 11/03/16 08:17

MB Result MB Qualifier MB MDL

Analyte %

Analyte %
Total Solids 0.00110

MB MDL MB RDL %

0.00110

L869381-13 Original Sample (OS) • Duplicate (DUP)

(OS) L869381-13 11/03/16 08:17 • (DUP) R3175783-3 11/03/16 08:17

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%

Total Solids 86.7 86.3 1 0.434 5

Laboratory Control Sample (LCS)

(LCS) R3175783-2 11/03/16 08:17

, ,	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85 0-115	



GI

Ss

Stantec-Bellevue, WA

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Wet Chemistry by Method 350.1

L869381-02,03,05,06,08,09

Method Blank (MB)

(MB) R3175568-1 11/03/16 10:46								
	MB Result	MB Qualifier	MB MDL	MB RDL				
Analyte	mg/kg		mg/kg	mg/kg				
Ammonia Nitrogen	U		1.57	5.00				



L869365-01 Original Sample (OS) • Duplicate (DUP)

(OS) L869365-01	11/03/16	10:52 •	(DUP) R31/5568	3-4 11/03/16 10):53
		0-:-:-	al Dagula		

Original Resul (dry)		DUP Result (dry) Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Ammonia Nitrogen	4.26	ND	1	200	<u>P1</u>	20





L869697-01 Original Sample (OS) • Duplicate (DUP)

(OS) L869697-01 11/03/16 11:18 • (DUP) R3175568-7 11/03/16 11:19

	Original Result (dry)	DUP Result (dry) Dilution		DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Ammonia Nitrogen	ND	ND	1	0.000		20





Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175568-2	11/03/16 10:48 • ((LCSD) R3175568-3 11/03/16 10:49
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(LCS) K31/3300-2 11/03/10	Spike Amount		LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Ammonia Nitrogen	2760	2180	2270	79.0	82.0	58.0-114			4.00	20

L869381-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869381-09 11/03/16 11:04 • (MS) R3175568-5 11/03/16 11:05 • (MSD) R3175568-6 11/03/16 11:06

(,			MS Result (dry)	•		MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Ammonia Nitrogen	726	9.72	377	380	51.0	51.0	1	80.0-120	J6	J6	1.00	20

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Wet Chemistry by Method 9056A

L869381-02,03,05,06

Method Blank (MB)

(MB) R31/5/62-1	11/03/16 11:50
	MB I

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	U		0.795	10.0
Fluoride	U		0.261	1.00
Nitrate	U		0.0116	1.00









L868989-21 Original Sample (OS) • Duplicate (DUP)

(OS) L868989-21 11	11/03/16 13:45 • (DL	JP) R3175762-4	11/03/16 14:08
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	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/kg	mg/kg		%		%	
Chloride	180	191	1	6		15	
Fluoride	3.71	3.58	1	4		15	
Nitrate	14.6	16.2	1	10		15	









(,	Original Docult	DUP Result (dry		DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Fluoride	0.544	0.429	1	24	<u>J P1</u>	15
Nitrate	U	0	1	0		15



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L869381-06	Original	Sample	(OS) •	Duplicate	(DUP)
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(OS) L869381-06	11/04/16 02:09 •	(DUP) R3175762-8	11/04/16 02:32
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, ,	Original Result (dry)	DUP Result (dr	y) Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	4280	4660	5	8		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) NS173702-2 11/03/10	12.15 (LCSD)	1(31/3/02-3 1	1/03/10 12.30							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloride	200	215	214	108	107	80-120			1	15
Fluoride	20.0	22.5	22.2	113	111	80-120			2	15
Nitrate	20.0	22.5	22.5	113	112	80-120			0	15

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Wet Chemistry by Method 9056A

L869381-02,03,05,06

L869121-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869121-03 11/03/16 18:30 • (MS) R3175762-5 11/03/16 18:53 • (MSD) R3175762-6 11/03/16 19:16

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	500	39.3	523	524	97	97	1	80-120			0	15
Fluoride	50.0	3.58	38.9	39.9	71	73	1	80-120	<u>J6</u>	<u>J6</u>	3	15
Nitrate	50.0	ND	27.0	26.0	54	52	1	80-120	J6	J6	4	15





















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Wet Chemistry by Method 9056A

L869381-08,09

Method Blank (MB)

(MB) R3175833-1	11/04/16 04:26

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	U		0.795	10.0
Fluoride	U		0.261	1.00
Nitrate	U		0.0116	1.00









L869381-08 Original Sample (OS) • Duplicate (DUP)

(OS) L 869381-08 11/04/16 06:44 • (DLIP) P3175833-4 11/04/16 07:07

(OS) L869381-08 11/04	4/16 06:44 • (DUP) F	31/5833-4	11/04/16 07:	.07		
	Original Result (dry)	DUP Result ((dry) Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	212	210	1	1		15
Fluoride	7.72	7.6	1	2		15
Nitrate	U	0	1	0		15











(OS) L 869816-01 11/04/16 18:52 • (DLIP) P3175833-7 11/04/16 19:15

(03) 1809810-01 11/04/10		DUP Result (dry			DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	42.4	43.4	1	2		15
Fluoride	11.7	11.7	1	0		15



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) P3175833-2 11/04/16 04:49 • (LCSD) P3175833-3 11/04/16 05:12

(LCS) KS173633-2 11/04/1	LC3) K31/3033-2 11/04/10 04.43 • (LC3D) K31/3033-3 11/04/10 03.12										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Chloride	200	214	213	107	107	80-120			0	15	
Fluoride	20.0	22.0	22.0	110	110	80-120			0	15	
Nitrate	20.0	22.1	22.2	111	111	80-120			0	15	

L869587-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) | 869587-04 11/04/16 15:26 • (MS) R3175833-5 11/04/16 15:48 • (MSD) R3175833-6 11/04/16 16:11

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	500	41.0	545	541	101	100	1	80-120			1	15
Fluoride	50.0	6.89	27.0	26.1	40	38	1	80-120	<u>J6</u>	<u>J6</u>	3	15

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Wet Chemistry by Method 9056A

L869381-08.09

L869587-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869587-04 11/04/16 15:26 • (MS) R3175833-5 11/04/16 15:48 • (MSD) R3175833-6 11/04/16 16:11

	Spike Amount		•	•	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Nitrate	50.0	0.509	55.0	53.5	109	106	1	80-120			3	15





















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L869381-18,19,21,23

Method Blank (MB)

Mercury by Method 7470A

(MB) R3175877-1 11/04/16 09:02

	MB Result	MB Qualifier	MB MDL	MB RDL
nalyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100









Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175877-2 11/04/16 09:05 • (LCSD) R3175877-3 11/04/16 09:07

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0305	0.0327	102	109	80-120			7	20









(OS) L869947-04 11/04/16 09:10 • (MS) R3175877-4 11/04/16 09:20 • (MSD) R3175877-5 11/04/16 09:22

(00) 2000047 04 11/04/		Original Result		MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%	
Mercury	0.0300	ND	0.0308	0.0300	103	100	1	75-125			3	20	







L869023-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869023-02 11/04/16 09:25 • (MS) R3175877-6 11/04/16 09:27 • (MSD) R3175877-7 11/04/16 09:30

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%	
Mercury	0.0300	ND	0.0294	0.0321	98	107	1	75-125			9	20	

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Mercury by Method 7470A

L869381-20,22

Method Blank (MB)

(MB) R3175922-1 11/04/16 11:57

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.00333	0.0100







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175922-2 11/0	4/16 11:59 • (LCSD)	R3175922-3	11/04/16 12:02		
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Mercury	0.0300	0.0309	0.0310	103	103	80-120			0	20





L869381-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) | 869381-20 11/04/16 12:04 • (MS) R3175922-4 11/04/16 12:07 • (MSD) R3175922-5 11/04/16 12:09

(03) 2003301 20 11/04/	, ,	Original Result	,	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%	
Mercury	0.0300	ND	0.0301	0.0298	100	99	1	75-125			1	20	







L869871-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) | 869871-02 11/04/16 12:12 • (MS) | R3175922-6 11/04/16 12:14 • (MSD) | R3175922-7 11/04/16 12:17

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.0300	ND	0.0299	0.0301	100	100	1	75-125			0	20

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Mercury by Method 7471A

L869381-02,03,05,06,08,09

Method Blank (MB)

Mercury

(MB) R3175402-1 11/02/16	5 15:48	
	MB Result	MB Qualifie
Analyte	mg/kg	

U

MB Qualifier	MB MDL	MB RDL		
	mg/kg	mg/kg		

0.0028











	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Mercury	0.300	0.274	0.283	91	94	80-120			3	20

0.0200









(OS) L869381-02 11/02/16 15:56 • (MS) R3175402-4 11/02/16 15:59 • (MSD) R3175402-5 11/02/16 16:02

(US) L809381-UZ 11/UZ/10 15.50 • (MS) R31/54UZ-4 11/UZ/10 15.59 • (MSD) R31/54UZ-5 11/UZ/10 16.UZ													
		Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
	Mercury	0.410	0.0288	0.474	0.484	109	111	1	75-125			2	20







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Metals (ICP) by Method 6010C

L869381-02,03,05,06,08,09

Method Blank (MB)

(MB) R3175124-1	11/02/16 02:55	

,				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Arsenic	U		0.65	2.00
Barium	U		0.17	0.500
Cadmium	U		0.07	0.500
Chromium	U		0.14	1.00
Lead	U		0.19	0.500
Selenium	U		0.74	2.00
Silver	U		0.28	1.00













(LCS) R3175124-2 11/02/16 02:57 • (LCSD) R3175124-3 11/02/16 03:0

()		,								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Arsenic	100	102	103	102	103	80-120			2	20
Barium	100	105	106	105	106	80-120			1	20
Cadmium	100	102	103	102	103	80-120			1	20
Chromium	100	101	102	101	102	80-120			1	20
Lead	100	102	103	102	103	80-120			1	20
Selenium	100	101	103	101	103	80-120			1	20
Silver	100	101	102	101	102	80-120			1	20





L869107-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(03) 1809107-03 11/0					11/02/10 00.10	,						
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	117	8.20	115	118	91	94	1	75-125			3	20
Barium	117	92.3	238	242	125	128	1	75-125		<u>J5</u>	2	20
Cadmium	117	ND	113	117	97	100	1	75-125			3	20
Chromium	117	20.4	130	135	94	98	1	75-125			4	20
Lead	117	13.0	130	134	100	104	1	75-125			3	20
Selenium	117	ND	111	114	94	97	1	75-125			3	20
Silver	117	ND	113	116	97	100	1	75-125			3	20

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Metals (ICP) by Method 6010C

L869381-18,19,21,23

Method Blank (MB)

Silver

(MB) R3175759-1 11/9	04/16 02:39			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0167	0.0500
Cadmium	U		0.00667	0.0200
Chromium	U		0.0333	0.100
Lead	U		0.0167	0.0500
Selenium	U		0.0333	0.100













0.0167

0.0500

(LCS) R3175759-2 11/04/16 02:41 • (LCSD) R3175759-3 11/04/16 02:44

U

(200) (101) 07 00 2 .		,	0 0 02								-
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%	L
Arsenic	10.0	9.27	9.35	93	94	80-120			1	20	8
Barium	10.0	9.37	9.40	94	94	80-120			0	20	
Cadmium	10.0	9.20	9.25	92	92	80-120			0	20	[
Chromium	10.0	9.21	9.15	92	91	80-120			1	20	,
Lead	10.0	9.23	9.23	92	92	80-120			0	20	L
Selenium	10.0	9.34	9.39	93	94	80-120			1	20	
Silver	10.0	9.13	9.21	91	92	80-120			1	20	









L869381-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869381-18 11/04/16 02:46 • (MS) R3175759-5 11/04/16 02:52 • (MSD) R3175759-6 11/04/16 02:54

(00) 2000001 10 11	00) E000301-10 11/04/10 02.40 * (MS) N31/3/30-3 11/04/10 02.32 * (MS) N31/3/30-0 11/04/10 02.34													
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits		
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%		
Arsenic	10.0	ND	9.70	9.47	97	95	1	75-125			2	20		
Barium	10.0	0.127	9.49	9.32	94	92	1	75-125			2	20		
Cadmium	10.0	ND	9.46	9.28	95	93	1	75-125			2	20		
Chromium	10.0	ND	9.20	9.02	92	90	1	75-125			2	20		
Lead	10.0	ND	9.50	9.31	95	93	1	75-125			2	20		
Selenium	10.0	ND	9.81	9.65	98	96	1	75-125			2	20		
Silver	10.0	ND	9.27	9.14	93	91	1	75-125			1	20		

ONE LAB. NATIONWIDE.

Metals (ICP) by Method 6010C

L869381-20,22

Method Blank (MB)

(MB) R3175962-1 11/04/	/16 14:45					L
	MB Result	MB Qualifier	MB MDL	MB RDL	Г	2
Analyte	mg/l		mg/l	mg/l		Ī
Arsenic	U		0.0333	0.100		-
Barium	U		0.0167	0.0500		3
Cadmium	U		0.00667	0.0200		
Chromium	U		0.0333	0.100	F.	4
Lead	U		0.0167	0.0500		1
Selenium	U		0.0333	0.100		-
Silver	U		0.0167	0.0500		5

atony Control Sample (LCS) - Laboratony Control Sample Duplicate (LCSD)

${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

(LCS) R3175962-2 1	1/04/16 14:48 • (LCSD)) R3175962-3	11/04/16 14:50								-
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	/
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%	
Arsenic	10.0	8.91	8.80	89	88	80-120			1	20	8
Barium	10.0	9.16	9.09	92	91	80-120			1	20	· /
Cadmium	10.0	9.00	8.92	90	89	80-120			1	20	٥
Chromium	10.0	8.86	8.82	89	88	80-120			0	20	
Lead	10.0	8.91	8.81	89	88	80-120			1	20	
Selenium	10.0	8.94	8.85	89	89	80-120			1	20	
Silver	10.0	8.61	8.54	86	85	80-120			1	20	

L869381-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869381-22 11/04/16	14:53 • (MS) R3	175962-5 11/04	4/16 14:59 • (M	ISD) R3175962-	6 11/04/16 15:0)2						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Arsenic	10.0	ND	9.29	9.32	93	93	1	75-125			0	20
Barium	10.0	0.177	9.26	9.26	91	91	1	75-125			0	20
Cadmium	10.0	ND	9.21	9.21	92	92	1	75-125			0	20
Chromium	10.0	ND	8.96	9.03	90	90	1	75-125			1	20
Lead	10.0	ND	9.01	9.02	90	90	1	75-125			0	20
Selenium	10.0	ND	9.44	9.47	94	95	1	75-125			0	20
Silver	10.0	ND	8 89	8 95	89	89	1	75-125			1	20

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Metals (ICPMS) by Method 6020

L869381-02,03,05,06,08,09

Method Blank (MB)

(MB) R31/5414-1	11/02/16	18:38
		MR R

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Aluminum	4.96	J	2.3	50.0







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

- /	I CC) D217E414 2	11/02/16 10:11 .	I CCD) D217E41	4-3 11/02/16 18:44
(LC3) R31/3414-2	11/02/10 10.41 • 1	LC3D) K31/341	+-3 11/02/10 10.44

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Δluminum	1000	1060	1100	106	110	80-120			Δ	20





L869381-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869381-03 11/02/16 18:47 • (MS) R3175414-6 11/02/16 18:57 • (MSD) R3175414-7 11/02/16 19:0	(OS) L869381-03	3 11/02/16 18:47 •	· (MS) R3175414-6	11/02/16 18:57 •	(MSD) R3175414-7	11/02/16 19:00
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(OS) L869381-03 11/02/16 18:47 • (MS) R3175414-6 11/02/16 18:57 • (MSD) R3175414-7 11/02/16 19:00												
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Aluminum	234	9370	11100	10600	149	106	5	75-125	V		5	20







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Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

L869381-01,04,07,10,15

Method Blank (MB)

(MB) R3176319-5 11/03	3/16 20:11			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Benzene	U		0.000120	0.000500
Gasoline Range Organics-NWTPH	U		0.0339	0.100
Toluene	0.000193	<u>J</u>	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
(S) a,a,a-Trifluorotoluen	e(FID) 111			59.0-128
(S) a,a,a-Trifluorotoluen	e(PID) 110			54.0-144

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3176319-1 11	/03/16 18:26 • (LCSD)	R3176319-2 1	1/03/16 18:47								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Benzene	0.0500	0.0539	0.0536	108	107	70.0-130			0.610	39	
Toluene	0.0500	0.0551	0.0548	110	110	70.0-130			0.580	42	
Ethylbenzene	0.0500	0.0534	0.0531	107	106	70.0-130			0.590	44	
Total Xylene	0.150	0.168	0.167	112	111	70.0-130			0.570	44	
(S) a,a,a-Trifluorotol	uene(FID)			110	110	59.0-128					
(S) a,a,a-Trifluorotol	uene(PID)			114	113	54.0-144					

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3176319-3 11/0	03/16 19:08 • (LCSD)	R3176319-4	11/03/16 19:29								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Gasoline Range Organics-NWTPH	5.50	5.90	5.89	107	107	67.0-135			0.130	20	
(S) a,a,a-Trifluorotoluei	ne(FID)			112	113	59.0-128					
(S) a.a.a-Trifluorotoluei	ne(PID)			119	116	54.0-144					

L869639-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

OS) L869639-01 11/08/16 14:28 • (MS) R3176600-1 11/08/16 17:03 • (MSD) R3176600-2 11/08/16 17:25													
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
Benzene	0.0500	0.000550	0.0337	0.0228	66.3	44.5	1	32.0-137			38.5	39	
Toluene	0.0500	ND	0.0261	0.0150	50.8	28.5	1	20.0-142		<u>J3</u>	54.2	42	
Ethylbenzene	0.0500	ND	0.0190	0.00901	37.6	17.7	1	10.0-150		<u>J3</u>	71.1	44	
Total Xylene	0.150	ND	0.0600	0.0287	39.7	18.8	1	12.0-149		<u>J3</u>	70.6	44	

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Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

L869381-01,04,07,10,15

L869639-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869639-01 11/08/16 14:28 • (MS) R3176600-1 11/08/16 17:03 • (MSD) R3176600-2 11/08/16 17:25

(
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
(S) a,a,a-Trifluorotoluene(FID))				92.5	89.2		59.0-128				
(S) a.a.a-Trifluorotoluene(PID)				89.7	84.7		54.0-144				

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L869639-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869639-01 11/08/16 14:28 • (MS) R3176600-3 11/08/16 17:47 • (MSD) R3176600-4 11/08/16 18:10

(03) 2003033-01 11/00/10	JS) L609039-01 11/06/10 14.26 • (MS) K31/0600-3 11/06/10 17.47 • (MSD) K31/0600-4 11/06/10 16.10													
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits		
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%		
Gasoline Range Organics-NWTPH	5.50	ND	1.47	0.405	26.7	7.36	1	55.0-109	<u>J6</u>	<u>J3 J6</u>	113	20		
(S) a,a,a-Trifluorotoluene(FID))				88.4	87.6		59.0-128						
(S) a,a,a-Trifluorotoluene(PID)				86.9	82.6		54.0-144						













ONE LAB. NATIONWIDE.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

L869381-11,12,13,14,16,17

Method Blank (MB)

(MB) R3176262-3 11/07/16	16:07			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	106			50.0-150







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3176262-4 11/07/16	LCS) R3176262-4 11/07/16 16:24 • (LCSD) R3176262-5 11/07/16 16:41									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Diesel Range Organics (DRO)	30.0	26.1	30.7	86.9	102	50.0-150			16.4	20
Residual Range Organics (RRO)	30.0	17.5	21.2	58.4	70.7	50.0-150			19.0	20
(S) o-Terphenyl				110	122	50.0-150				











(03) 6003301-12 11/07/10 1-	4.54 • (IVIS) NSI	70202-1 11/07/	10 13.11 • (10130)	K31/0202-2 1	1/0//10 13.20							
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Diesel Range Organics (DRO)	33.0	U	29.2	23.4	88.1	70.6	1	50.0-150		<u>J3</u>	21.9	20
Residual Range Organics (RRO)	33.0	U	20.0	15.6	60.4	47.1	1	50.0-150		J3 J6	24.8	20
(S) o-Terphenyl					109	90.5		50.0-150				







ONE LAB. NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

L869381-11,12,13,14,16,17

Method Blank (MB)

(MB) R3175501-3 11/03/1	6 07:05				`
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	mg/kg		mg/kg	mg/kg	² T
Anthracene	U		0.000600	0.00600	
Acenaphthene	U		0.000600	0.00600	³ S
Acenaphthylene	U		0.000600	0.00600	Ľ
Benzo(a)anthracene	U		0.000600	0.00600	4
Benzo(a)pyrene	U		0.000600	0.00600	4
Benzo(b)fluoranthene	U		0.000600	0.00600	느
Benzo(g,h,i)perylene	U		0.000600	0.00600	⁵ S
Benzo(k)fluoranthene	U		0.000600	0.00600	L
Chrysene	U		0.000600	0.00600	6
Dibenz(a,h)anthracene	U		0.000600	0.00600	6
Fluoranthene	U		0.000600	0.00600	
Fluorene	U		0.000600	0.00600	7 (-
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	L
Naphthalene	U		0.00200	0.0200	8
Phenanthrene	U		0.000600	0.00600	A
Pyrene	U		0.000600	0.00600	
1-Methylnaphthalene	U		0.00200	0.0200	9
2-Methylnaphthalene	U		0.00200	0.0200	L
2-Chloronaphthalene	U		0.00200	0.0200	
(S) p-Terphenyl-d14	104			32.2-131	
(S) Nitrobenzene-d5	89.7			22.1-146	
(S) 2-Fluorobiphenyl	101			40.6-122	

${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

(LCS) R3175501-1 11/03/10	6 06:23 • (LCSD)	R3175501-2	11/03/16 06:44								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Anthracene	0.0800	0.0640	0.0655	80.0	81.9	50.3-130			2.34	20	
Acenaphthene	0.0800	0.0627	0.0637	78.4	79.7	52.4-120			1.66	20	
Acenaphthylene	0.0800	0.0628	0.0643	78.5	80.3	49.6-120			2.25	20	
Benzo(a)anthracene	0.0800	0.0633	0.0660	79.1	82.5	46.7-125			4.12	20	
Benzo(a)pyrene	0.0800	0.0646	0.0666	80.8	83.2	42.3-119			3.01	20	
Benzo(b)fluoranthene	0.0800	0.0568	0.0544	71.0	68.1	43.6-124			4.19	20	
Benzo(g,h,i)perylene	0.0800	0.0633	0.0634	79.2	79.3	45.1-132			0.130	20	
Benzo(k)fluoranthene	0.0800	0.0530	0.0561	66.3	70.1	46.1-131			5.67	20	
Chrysene	0.0800	0.0648	0.0667	81.0	83.4	49.5-131			2.96	20	
Dibenz(a,h)anthracene	0.0800	0.0720	0.0712	90.0	89.0	44.8-133			1.09	20	
Fluoranthene	0.0800	0.0637	0.0644	79.6	80.5	49.3-128			1.16	20	

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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

L869381-11,12,13,14,16,17

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175501-1	11/03/16 06:23	• (LCSD)	R3175501-2	11/03/16 06:44	

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Fluorene	0.0800	0.0637	0.0645	79.6	80.6	50.6-121			1.21	20
Indeno(1,2,3-cd)pyrene	0.080.0	0.0671	0.0667	83.9	83.3	46.1-135			0.710	20
Naphthalene	0.080.0	0.0628	0.0638	78.5	79.7	49.6-115			1.48	20
Phenanthrene	0.080.0	0.0624	0.0649	78.0	81.1	48.8-121			3.97	20
Pyrene	0.080.0	0.0672	0.0684	84.0	85.5	44.7-130			1.78	20
1-Methylnaphthalene	0.080.0	0.0648	0.0672	81.1	84.0	50.6-122			3.50	20
2-Methylnaphthalene	0.080.0	0.0621	0.0638	77.7	79.8	50.4-120			2.67	20
2-Chloronaphthalene	0.080.0	0.0657	0.0676	82.1	84.5	53.9-121			2.82	20
(S) p-Terphenyl-d14				95.6	94.1	32.2-131				
(S) Nitrobenzene-d5				88.0	83.2	22.1-146				
(S) 2-Fluorobiphenyl				94.8	94.4	40.6-122				



















GLOSSARY OF TERMS

ONE LAB. NATIONWIDE.



SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
В	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.





















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State Accreditations

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Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
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Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
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ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
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Kentucky ¹	90010	South Dakota	n/a
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Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
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Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA - ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



















			Accounts Payable - Phil Haberman					Analysis / Container / Preservative								Chain of Cust	ody Page 1 of 2
tantec- Bellevue, WA 1130 NE 33rd Pl, Suite 200 sellevue, WA 98004	V		Accounts Payable- Phil Habe Man 11130 NE 33rd Pl, Ste 200 Bellevue, WA 98004													₩ 	ESC
eport to:	Gorm	a- (Email To: C	hris.Gdak@stant man@stantec.com					/MeO!							12065 Lettemon Mount Juliet, 11 Phone: 615-758	Ad 1 37122
esteription: Maralco,	Phase	IE	SA	City/State	ant, WA	1.0			34/5VT		Pres	VI C	50	19		Phone: 800 707 Fee: 615-758-58	
none: 425-289-7374 ex: 425-869-1190	Client Project	#		Lab Project # STANTECBW	A-KENT		4ozCir-NoPres	res	NaHSC	es	Al metals ZozClr-NoPres	NoPre	202CIr-NoPres	ichon		B22	4334
CAROL SHESTAS	Site/Facility ID	#		P.O.# 1857.	50123		ozch-l	JI-NoF	40ml/	Ir-NoPr	ials 200	8ozClr	SZOZE	XX		Acconum 5	TANTECBWA
offected by (signature):	Rush? (t. Same t Next D	7.5	200%		No X_Yes		NOB	NWTPHDX 402Clr-NoPres	NWTPHGXBTEX 40ml/NaH5O4/5yr/MeOH	PAHSIMD 402CIr-NoPres		TCLP RCRA8+AI 8ozCir-NoPres	VOCs Screen, TS	PE		Prelogin PS	573460
nmediately acked on los NYX	Two Da		50%	FAX7	NoYes	No.	CI,F,NH3,	TPE	TPH	HSIM	RCRA8 +	P RC	Gs Sc	757		PB: Shipped Wa	
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Entrs	EL,F	S Z	3	PA	RCF	TCL	0	1	no	THE PERSON WITH	1
8-4-9"	Grab	55	9'	10/27/16	09:02	3			X					2		1	0/
B-4-15'	11	SS	15	11	09:10	2	X				X			X			62
8-4-7'	11	SS	7'	51	09:00	2	X				X			X			63
8-5-10'	n	SS	10'	11	10:32	3			X								64
B-5-8'	11	S5	8'	и	10:30	2	X				X			X			65
B-5-15'	И	SS	151	11	10:40	Z	X				X			X			66
B-6-95'	/1	55	9,5	11	14:38	3			X								0
8-6 - 7.5'	15	SS	7,5'	"	14:35	2	X	1			X			X			B
R-6-15'	11	SS	151	11	14:45	13	X				X			X			07
8-1-17'	11	SS	17'	71	12:10	3			X								60
Matrix: 55 - Soil GW - Groundwater Remarks: Aluminum by Metho		ater DW - Di	inking Wate	er OT Other	= 1					pH _		_ Ten		_	Toronto.		
						77.5				Flow		_ Othe			Hold#		To the second
telinguished by : (Signature)		/0/28		15:45	eceived by: (Signa		Ġ.			700	edEx I	Couri	er 🛘		Condition 001	m) (II	ab-use onivi
Relinquished by \(\signature\)		Date			leceived by: (Signa		ς.			2	1		36	ceived:	COC Se		N INA
Relinquished by : (Signature)		Date:		Time:	lectived by last by	Signa	torej	-		Date:	29	16	04	00	pH Chec	ked: N)O

	Billing Information & Quote Number:								A	Analysis / Container / Preservative						Chain of Custo	say Fage 2 of
Stantec- Bellevue, W 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004	Ά		Billing Information & Quote Number: Color Accounts Payable- Phil Hoberman. 11130 NE 33rd Pl, Ste 200 Bellevue, WA 98004						T								ESC
Report to:	s Gorna	~ (Email To: C	hris Gdak@stante non@stantec.com					/MeO							19/6/1 Jelanon Mount Julier, 17 Mount 915 755 Phone 903-767	
Report to: Mate Magripson Cyru Project Description: Maralco,	Phase	I EJ	A	Collected:	wt WA				14/SVE		Pres	SS	sa	507		Fair \$25-758-58	59 国皇帝
Phone: 425-289-7374 Fasc 425-869-1190	Client Project	Bent Project #		STANTECHWA-KENT		NoPres	res	WAHSC	res	zClr-Ne	-NoPr	Ir-NoPr	hacking		L# 865381		
Collected by (print):	Site/Facility (I			1857	50123		4cz.Elr-	JC-No	40mily	II-NoP	als 20	Bozcír	202Cl	Ex		Account S	TANTECBWA
Collected by (signature) Immediately Packed on Ice N + *	Rush? (L Same (test D two D: three :	ty	Notified) 100% 100% 50%	Email?	No X_Yes	No	O, F, NH3, NO3 4cz CIr-NoPre	NWTPHDX 402CIT-NoPres	NWTPHGKBTEX 40ml/NaHSO4/Syr/MeOH	PAHSIMD 462CIT-NOPIES	RCRAB + Al metals 202Glr-Nepres	CLP RCRA8+Al BozCir-NoPres	s Screen, TS 202Clt-NoPres	072	070	Prelogin: PSR: 110-8	573460 rian Ford
Sample ID	Comp/Grab	Marrix *	Depth	Date	Time	Critis	CI,F.	NW	NW	PAH	RCR	TCLF	VOCS	F	X	Shipped Vsz	1
8-1-17'	Grab	55	17'	10/27/16	12:10	1	本	X		X	爱			乘			11
B-1-5'	te	55	51	11	12:00	1	×	X.		X	\$			裏			in
B-1-20'	lt	SS	201	T.F	12:12	1								1	X		
B-2-41	/1	55	41	10	12:50	1	48	X		X	18	1		TE.	Y		13
B-2-16.5'	11	55	16.5	11	12:58	1	×	X		X	25			多			.14
8-3-16'	B	SS	16'	H	11:40	3			X		1						15
B-3-16'	11	SS	16	II	10	1	K	X	爱	X				类			14
B-3-6'	11	SS	61	11	11:25	11	*	X	de	X				15			17
B-3-20'	10	SS	201	11	11:45	-	-	-					G		X		- 125
		.SS					121				100						
Martix: 55 - Soil GW - Groundwate Remarks: Aluminum by Meth Call for Lab Ma On Call 12: 2 Relinguished by : (Signaturg)	3 - Left	Con	rected	10/24 6 55C	/2016 acceived by TSigna	12.	20	pm.		Flow Samuel	ез гелип	Tan Orb	er		Hold #		ab use only)
CBPZ	wessage	10/20	1/2016	15:45			8			0	edEx	Cour	ier D	1	Surial		0.0 0.2 0.0 (19)
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Relinquished by : (Signature)		Date:		Time:	Download for the by	- Oren	atme!			Date:	1/6	'n	me: 090	100	pH Ch	ecked: A	K

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Stantec- Bellevue, W 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004	/A		Accounts Payable- Phil Haberman 11130 NE 33rd Pl, Ste 200 Bellevue, WA 98004			ur.										*	ESC	
Report to:	Gorma	~		hris.Gdak@stante nan@stantec.con	1			1	/MedH							A7065 Lettaini Mount Julier, Phone, 015-75	10 37122 25 3858 2FX	
Project Maralco,	Phase	TES	A	City/State Collected: L	ent, WA	120.			34/5Vr		Pres	55	53	Son		Phone 830-75 Fau 515-758-	1859 DEFT	
Phone: 425-289-7374 Fax: 425-869-1190	Client Project			STANTECBW	A-KENT		VoPres	res	NaHSC	sa	CIr-No	-NoPre	TS ZozCir-NoPres	Extraction		Table #	59391	
Collected by (print):	Site/Facility IE			1857	185750123		ozCl- f	SIT-NOP	40ml/	r-NoPr	als 203	8ozClr	S Zozel	Ex		200000000000000000000000000000000000000	Acctnum: STANTECBWA	
Collected by (signature): Immediately Packed on ice N y	Rush? (1 Same I Next D Two D: Three	ay	Notified) 200% 100% 50% 25%	Email?	No X_Yes	Na.	CI,F,NH3,NG3 402Clt-NOPres	NWTPHDX 402Cfr-NoPres	NWTPHGXBTEX 40ml/NaHSO4/Syt/MeOH	PAHSIMD 402CIr-NoPres	RERAB + Al metals 202Clr NoPres	TCLP RCRA8+AI 802Clr-NoPres	VOCs Screen, TS	CLP	070	Prelogiii P TSR: 110 - I PB:	573460 Brian Ford	
Sample ID	Comp/Grab	Matrix."	Depth	Date	Pirme -	Cotrs	CI,F.	3	NN	PAH	RER	TCF	VOC	F	K	Shipped Vi-		
B-1-17'	Grab	SS	17'	10/27/16	12:10	1	X				X			×			- 11	
B-1-5'	A	55	5'	11	12:00	1	X				×			X			11	
B-1-20'	11	SS	201	14	12:12	1									X			
B-2-41	11	SS	41	11	12:50	1	X				X			X			13	
B-2-16.5'	11	SS	165	"	12:58	1	*				X			X			14	
B-3-16'	11	SS	16	11	11:40	3			X							14	15	
8-3-16'	11	SS	16	1.0	11	1	X		X					X			14	
8-3-6'	1.6	55	6'	10	11:25	1	X		x					X			n	
B-3-20'	13.	SS	201	11	11:45										×			
		SS																
Matrix: SS - Soll GW - Groundwate Remarks: Aluminum by Meth		ater DW - Di	inking Wate	r OT-Other						pH Flow		_ Ten		_	Hold #			
(Relinguished by : (Signature)		10/2		15:45	eceived by: (5/gna		à.			Sample	edEx I	ed via:	D UPS		Eandi		ab use only)	
Relinquished by (Signature)	Relinquished by (Signature) Date:				eceived by: (Sign#	10										eal Intact:	Y N NA	
Relinquished by ('Signature')		Dater		Time:	eceived for lab by:	(Signa	ture)	-		Date:	-29	16	090	20	pH Che	ecked:	CF. DO	



Cooler R	eceipt Form			
Client: STANTECBUA	SDG#	2693	381	
Cooler Received/Opened On: 10/ 29 / 16	Temperature Upon Receipt:	2.9	°c.	
Received By: Dakota Busby				
Signature:				
Receipt Check L	ist	Yes	No	N/A
Were custody seals on outside of cooler and intact?				
Were custody papers properly filled out?		/		120
Did all bottles arrive in good condition?		-		
Were correct bottles used for the analyses requeste	d?	1		
Was sufficient amount of sample sent in each bottle	?	1		
Were all applicable sample containers correctly pres	erved and			/
checked for preservation? (Any not in accepted rang	e noted on COC)			
If applicable, was an observable VOA headspace pre-	sent?	1	T.	1
Non Conformance Generated. (If yes see attached N	CF)	X		

ESC Lab Sciences Non-Conformance Form

Login #L869381	Client: STANTECBWA	Date:10/29	Evaluated by:Dakota	
Non-Confo	rmance (check applicable item	is)		
Sample Integrity	Chain of Custody Cla	rification		

Sample Integrity		Chain of Custody Clarification	
Parameter(s) past holding time	×	Login Clarification Needed	If Broken Container:
Improper temperature		Chain of custody is incomplete	Insufficient packing material around container
Improper container type	1	Please specify Metals requested.	Insufficient packing material inside gooler
Improper preservation		Please specify TGLP requested:	Improper handling by carrier (FedEx / UPS / Cour
Insufficient sample volume.	II.	Received additional samples not listed on coc.	Sample was frozen
Sample is hiphasic.		Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.		Trip Blank not received.	If no Chain of Custody:
Broken container		Client did not "X" analysis.	Received by:
Broken container:		Chain of Custody is missing	Date/Time:
Sufficient sample remains			Temp./Cont. Rec./pH:
			Carriers
			Tracking#

Login Comments:

- 1. Received B-4-16.5 instead of B-2-16.5. Same date and time. Logged per COC
- 2. Please clarify TCLP Extraction

Client informed by:	Call	Email	X	Voice Mall	Date:10/31/16	Time; 1300	
TSR Initials:bjf	Client Con	tact: Cyrus Go	rmar				

Login Instructions:

- 1) Log per COC
- 2) M6010TCLP (RCRA8) and TCLP ALIEP_

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Brian Ford

From: **Brian Ford**

Sent: Monday, October 31, 2016 6:49 PM

To: **Brian Ford**

Subject: FW: ESC Lab Sciences Maralco L869248

L869381. Cancelling TCLP ALICP.

Thanks, **Brian Ford ESC Lab Sciences**

Direct: (615)773-9772 Mobile: (931)510-2229 bford@esclabsciences.com

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From: Gorman, Cyrus [mailto:Cyrus.Gorman@stantec.com]

Sent: Monday, October 31, 2016 5:29 PM

To: Brian Ford

Subject: RE: ESC Lab Sciences Maralco L869248

Sorry for the confusion. For the TCLP sample, we only want to run the RCRA 8 metals.

Thank you,

Cyrus Gorman, L.G.

Project Manager Stantec

4100 194th Street SW Suite 400 Lynnwood WA 98036-4613

Cell Phone: 425-599-9302 Direct: 206-494-5029 cyrus.gorman@stantec.com



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From: Brian Ford [mailto:BFord@esclabsciences.com]

Sent: Monday, October 31, 2016 3:28 PM

To: Gorman, Cyrus < Cyrus. Gorman@stantec.com > Subject: RE: ESC Lab Sciences Maralco L869248

Cyrus,

Are we cancelling aluminum on just the Maralco groundwaters only? Or also cancel for the Maralco soils as well.

Thanks, **Brian Ford**

ESC Lab Sciences

Office: (615)773-9772 Cell: (931)510-2229

bford@esclabsciences.com

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From: Gorman, Cyrus [mailto:Cyrus.Gorman@stantec.com]

Sent: Monday, October 31, 2016 5:14 PM

To: Brian Ford

Subject: RE: ESC Lab Sciences Maralco L869248

Brian,

Please skip the aluminum analysis. Sorry for the late notice.

Thank you.

Cyrus Gorman, L.G.

Project Manager Stantec 4100 194th Street SW Suite 400 Lynnwood WA 98036-4613 Cell Phone: 425-599-9302

Direct: 206-494-5029 cyrus.gorman@stantec.com



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ANALYTICAL REPORT

November 04, 2016



Stantec-Bellevue, WA

Sample Delivery Group: L869248

Samples Received: 10/29/2016

Project Number: 185750123A

Description: Maralco, Phase II ESA

Report To: Cyrus Gorman

11130 NE 33rd PI, Suite 200

Bellevue, WA 98004

Entire Report Reviewed By:

Buar Ford

Brian Ford

Results relate only to the tens sested or calibrated are opened as rounded values. This est report shall not be reproduced, except in full, without written approval of the albeatory. Where applicable, sampling conducted by SSC is performed per guidance provided in aboratory standard operating procedures' 06/302, 06/303, and 06/304.

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⁹Sc: Chain of Custody

35

SAMPLE SUN

MMARY	ONE LAB. NATIO
IVIIVIARI	ONL LAD. NATIO

B-6-GW L869248-01 GW			Collected by Carol Shestag	Collected date/time 10/27/16 15:15	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	





















B-6-GW L869248-01 GW			Collected by Carol Shestag	Collected date/time 10/27/16 15:15	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	· , · ·
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:19	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:32	ST
Metals (ICPMS) by Method 6020	WG922947	1	11/02/16 11:09	11/03/16 16:56	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922800	2	11/01/16 20:30	11/02/16 05:21	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/01/16 17:06	TRF
Wet Chemistry by Method 300.0	WG922052	1	10/29/16 12:28	10/29/16 12:28	SAM
Wet Chemistry by Method 300.0	WG922052	5	10/29/16 14:37	10/29/16 14:37	SAM
Wet Chemistry by Method 300.0	WG923169	10	11/03/16 18:41	11/03/16 18:41	CM
Wet Chemistry by Method 350.1	WG922833	1	11/02/16 14:01	11/02/16 14:01	DR
B-5-GW L869248-02 GW			Collected by Carol Shestag	Collected date/time 10/27/16 11:10	Received date/time 10/29/16 09:00
	Dotah	Dilution	Droporotion	Analysis	Amaluat
Method	Batch	Dilution	Preparation	Analysis	Analyst
Manager In Made of 74704	140000404		date/time	date/time	NIE
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:22	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:40	ST
Metals (ICPMS) by Method 6020	WG922947	1	11/02/16 11:09	11/03/16 16:59	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922800	2	11/01/16 20:30	11/02/16 05:44	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/01/16 17:26	TRF
Wet Chemistry by Method 300.0	WG922052	1	10/29/16 11:02	10/29/16 11:02	SAM
Wet Chemistry by Method 300.0	WG923169	500	11/03/16 18:55	11/03/16 18:55	CM
Wet Chemistry by Method 350.1	WG922833	10	11/02/16 14:51	11/02/16 14:51	DR
B-4-GW L869248-03 GW			Collected by Carol Shestag	Collected date/time 10/27/16 09:30	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
	Batton	511001011	date/time	date/time	, and you
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:24	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:43	ST
Metals (ICPMS) by Method 6020	WG922947	10	11/02/16 11:09	11/04/16 14:02	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922800	2	11/01/16 20:30	11/02/16 06:08	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/01/16 17:45	TRF
Wet Chemistry by Method 300.0	WG922052	1	10/29/16 12:42	10/29/16 12:42	SAM
Wet Chemistry by Method 300.0	WG923169	5	11/03/16 19:10	11/03/16 19:10	CM
Wet Chemistry by Method 350.1	WG922833	1	11/02/16 14:04	11/02/16 14:04	DR
B-3-GW L869248-04 GW			Collected by Carol Shestag	Collected date/time 10/27/16 12:20	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
Marcury by Mathod 7/70A	WC022404	1	date/time 11/02/16 11:14	date/time	MID
Mercury by Method 7470A	WG922404	1		11/02/16 16:27	NJB st
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:46	ST
Metals (ICPMS) by Method 6020	WG922947	1	11/02/16 11:09	11/03/16 17:12	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922800	2	11/01/16 20:30	11/02/16 06:31	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/02/16 13:40	TRF
Wet Chemistry by Method 300.0	WG922052	1	10/29/16 11:16	10/29/16 11:16	SAM

Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:27	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:46	ST
Metals (ICPMS) by Method 6020	WG922947	1	11/02/16 11:09	11/03/16 17:12	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922800	2	11/01/16 20:30	11/02/16 06:31	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/02/16 13:40	TRF
Wet Chemistry by Method 300.0	WG922052	1	10/29/16 11:16	10/29/16 11:16	SAM
Wet Chemistry by Method 300.0	WG922052	5	10/29/16 16:04	10/29/16 16:04	SAM
Wet Chemistry by Method 350.1	WG922833	1	11/02/16 14:06	11/02/16 14:06	DR



³Ss

Cn

Sr

[°]Qc

GI

Sc

	O/ (IVII LL O		\ 1		
B-2-GW L869248-05 GW			Collected by Carol Shestag	Collected date/time 10/27/16 13:25	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:29	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:49	ST
Metals (ICPMS) by Method 6020	WG922947	10	11/02/16 11:09	11/04/16 14:05	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922800	1	11/01/16 20:30	11/02/16 06:54	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/02/16 13:56	TRF
Wet Chemistry by Method 300.0	WG922052	1	10/29/16 12:13	10/29/16 12:13	SAM
Wet Chemistry by Method 300.0	WG922052	5	10/29/16 14:52	10/29/16 14:52	SAM
Wet Chemistry by Method 350.1	WG922833	1	11/02/16 14:07	11/02/16 14:07	DR
B-1-GW L869248-06 GW			Collected by Carol Shestag	Collected date/time 10/27/16 13:00	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:32	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:52	ST
Metals (ICPMS) by Method 6020	WG922947	10	11/02/16 11:09	11/04/16 14:08	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG922800	1	11/01/16 20:30	11/02/16 07:18	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/02/16 14:13	TRF
Wet Chemistry by Method 300.0	WG922052	1	10/29/16 11:59	10/29/16 11:59	SAM
Wet Chemistry by Method 300.0	WG922052	5	10/29/16 16:18	10/29/16 16:18	SAM
Wet Chemistry by Method 350.1	WG922833	1	11/02/16 14:09	11/02/16 14:09	DR
SW-10 L869248-07 GW			Collected by Carol Shestag	Collected date/time 10/28/16 10:40	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:34	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:55	ST
Metals (ICPMS) by Method 6020	WG922947	1	11/02/16 11:09	11/03/16 17:21	LAT
Wet Chemistry by Method 300.0	WG922071	1	10/29/16 23:09	10/29/16 23:09	CM
Wet Chemistry by Method 300.0	WG922071	100	10/30/16 00:07	10/30/16 00:07	CM
Wet Chemistry by Method 300.0	WG922071	5	10/29/16 23:52	10/29/16 23:52	CM
Wet Chemistry by Method 350.1	WG922833	1	11/02/16 14:15	11/02/16 14:15	DR
SW-11 L869248-08 GW			Collected by Carol Shestag	Collected date/time 10/28/16 11:05	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16:42	NJB
Metals (ICP) by Method 6010C	WG922127	1	10/31/16 08:58	10/31/16 15:57	ST
Metals (ICPMS) by Method 6020	WG922947	1	11/02/16 11:09	11/03/16 17:24	LAT
	WG922071	1	10/30/16 00:21	10/30/16 00:21	CM
Wet Chemistry by Method 300.0	WG922071				
	WG922071 WG922071	5	10/30/16 00:36	10/30/16 00:36	CM
Wet Chemistry by Method 300.0		5 1	10/30/16 00:36 11/02/16 14:17	10/30/16 00:36 11/02/16 14:17	CM DR
Wet Chemistry by Method 300.0	WG922071				
Wet Chemistry by Method 300.0 Wet Chemistry by Method 350.1 SW-900 L869248-09 GW Method	WG922071		11/02/16 14:17 Collected by	11/02/16 14:17 Collected date/time	DR Received date/time
Wet Chemistry by Method 300.0 Wet Chemistry by Method 350.1 SW-900 L869248-09 GW	WG922071 WG922833	1	11/02/16 14:17 Collected by Carol Shestag Preparation	11/02/16 14:17 Collected date/time 10/28/16 00:00 Analysis	DR Received date/time 10/29/16 09:00



		Collected by Carol Shestag	Collected date/time 10/28/16 00:00	Received date/time 10/29/16 09:00
Batch	Dilution	Preparation	Analysis	Analyst
		date/time	date/time	
WG922947	1	11/02/16 11:09	11/03/16 17:27	LAT
WG922071	1	10/30/16 00:50	10/30/16 00:50	CM
WG922071	5	10/30/16 01:33	10/30/16 01:33	CM
WG922833	1	11/02/16 14:18	11/02/16 14:18	DR
	WG922947 WG922071 WG922071	WG922947 1 WG922071 1 WG922071 5	Batch Dilution Preparation date/time WG922947 1 11/02/16 11:09 WG922071 1 10/30/16 00:50 WG922071 5 10/30/16 01:33	Batch Dilution date/time Preparation date/time Analysis date/time WG922947 1 11/02/16 11:09 11/03/16 17:27 WG922071 1 10/30/16 00:50 10/30/16 00:50 WG922071 5 10/30/16 01:33 10/30/16 01:33





















All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.





















Brian Ford Technical Service Representative

Buar Ford

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L869248-03	B-4-GW	300.0
L869248-09	SW-900	300.0

Fluoride Nitrate

SAMPLE RESULTS - 01

10

1

11/03/2016 18:41

10/29/2016 12:28

ONE LAB. NATIONWIDE.

WG923169

WG922052

Collected date/time: 10/27/16 15:15

Wet Chemistry by Method 300 0

- VCt Chemis	ay by wellous	000.0					
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	111000		260	5000	5	10/29/2016 14:37	WG922052

99.0

22.7









52900

U

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	516		38.0	250	1	11/02/2016 14:01	WG922833

1000

100



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	0.338		0.0490	0.200	1	11/02/2016 16:19	WG922404





Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	64.0		6.50	10.0	1	10/31/2016 15:32	WG922127
Barium	325		1.70	5.00	1	10/31/2016 15:32	WG922127
Cadmium	U		0.700	2.00	1	10/31/2016 15:32	WG922127
Chromium	44.3		1.40	10.0	1	10/31/2016 15:32	WG922127
Lead	40.3		1.90	5.00	1	10/31/2016 15:32	WG922127
Selenium	U		7.40	10.0	1	10/31/2016 15:32	WG922127
Silver	U		2.80	5.00	1	10/31/2016 15:32	WG922127



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Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	43500		2.00	100	1	11/03/2016 16:56	WG922947

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		82.5	250	1	11/01/2016 17:06	WG922176
Residual Range Organics (RRO)	U		165	500	1	11/01/2016 17:06	WG922176
(S) o-Terphenyl	127			50.0-150		11/01/2016 17:06	WG922176

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0280	0.100	2	11/02/2016 05:21	WG922800
Acenaphthene	U		0.0200	0.100	2	11/02/2016 05:21	WG922800
Acenaphthylene	U		0.0240	0.100	2	11/02/2016 05:21	WG922800
Benzo(a)anthracene	U		0.00820	0.100	2	11/02/2016 05:21	WG922800
Benzo(a)pyrene	U		0.0232	0.100	2	11/02/2016 05:21	WG922800
Benzo(b)fluoranthene	U		0.00424	0.100	2	11/02/2016 05:21	WG922800
Benzo(g,h,i)perylene	U		0.00454	0.100	2	11/02/2016 05:21	WG922800
Benzo(k)fluoranthene	U		0.0272	0.100	2	11/02/2016 05:21	WG922800
Chrysene	U		0.0216	0.100	2	11/02/2016 05:21	WG922800
Dibenz(a,h)anthracene	U		0.00792	0.100	2	11/02/2016 05:21	WG922800
Fluoranthene	U		0.0314	0.100	2	11/02/2016 05:21	WG922800
Fluorene	U		0.0170	0.100	2	11/02/2016 05:21	WG922800
Indeno(1,2,3-cd)pyrene	U		0.0296	0.100	2	11/02/2016 05:21	WG922800

B-6-GW

SAMPLE RESULTS - 01

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 15:15

L869248

Jenn volatile Org	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
		Qualifier			Dilution	,	Baten
Analyte	ug/l		ug/l	ug/l		date / time	
Naphthalene	U		0.0396	0.500	2	11/02/2016 05:21	WG922800
Phenanthrene	U		0.0164	0.100	2	11/02/2016 05:21	WG922800
Pyrene	U		0.0234	0.100	2	11/02/2016 05:21	WG922800
1-Methylnaphthalene	U		0.0164	0.500	2	11/02/2016 05:21	WG922800
2-Methylnaphthalene	U		0.0180	0.500	2	11/02/2016 05:21	WG922800
2-Chloronaphthalene	U		0.0129	0.500	2	11/02/2016 05:21	WG922800
(S) Nitrobenzene-d5	45.4			45.1-170		11/02/2016 05:21	WG922800
(S) 2-Fluorobiphenyl	24.1	<u>J2</u>		<i>57.7-153</i>		11/02/2016 05:21	WG922800
(S) p-Terphenyl-d14	16.5	<u>J2</u>		53.2-156		11/02/2016 05:21	WG922800



















SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 11:10

L869248

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	8970000		26000	500000	500	11/03/2016 18:55	WG923169
Fluoride	7740		9.90	100	1	10/29/2016 11:02	WG922052
Nitrate	U		22.7	100	1	10/29/2016 11:02	WG922052

²Tc



	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	39800		380	2500	10	11/02/2016 14:51	WG922833



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Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	0.0502	J	0.0490	0.200	1	11/02/2016 16:22	WG922404



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Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	43.9		6.50	10.0	1	10/31/2016 15:40	WG922127
Barium	3850		1.70	5.00	1	10/31/2016 15:40	WG922127
Cadmium	U		0.700	2.00	1	10/31/2016 15:40	WG922127
Chromium	18.7		1.40	10.0	1	10/31/2016 15:40	WG922127
Lead	9.40		1.90	5.00	1	10/31/2016 15:40	WG922127
Selenium	U		7.40	10.0	1	10/31/2016 15:40	WG922127
Silver	U		2.80	5.00	1	10/31/2016 15:40	WG922127



Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	7880		2.00	100	1	11/03/2016 16:59	WG922947

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		82.5	250	1	11/01/2016 17:26	WG922176
Residual Range Organics (RRO)	U		165	500	1	11/01/2016 17:26	WG922176
(S) o-Terphenyl	93.8			50.0-150		11/01/2016 17:26	<u>WG922176</u>

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0280	0.100	2	11/02/2016 05:44	WG922800
Acenaphthene	U		0.0200	0.100	2	11/02/2016 05:44	WG922800
Acenaphthylene	U		0.0240	0.100	2	11/02/2016 05:44	WG922800
Benzo(a)anthracene	U		0.00820	0.100	2	11/02/2016 05:44	WG922800
Benzo(a)pyrene	U		0.0232	0.100	2	11/02/2016 05:44	WG922800
Benzo(b)fluoranthene	U		0.00424	0.100	2	11/02/2016 05:44	WG922800
Benzo(g,h,i)perylene	U		0.00454	0.100	2	11/02/2016 05:44	WG922800
Benzo(k)fluoranthene	U		0.0272	0.100	2	11/02/2016 05:44	WG922800
Chrysene	U		0.0216	0.100	2	11/02/2016 05:44	WG922800
Dibenz(a,h)anthracene	U		0.00792	0.100	2	11/02/2016 05:44	WG922800
Fluoranthene	U		0.0314	0.100	2	11/02/2016 05:44	WG922800
Fluorene	U		0.0170	0.100	2	11/02/2016 05:44	WG922800
Indeno(1,2,3-cd)pyrene	U		0.0296	0.100	2	11/02/2016 05:44	WG922800

B-5-GW

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 11:10

L869248

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
		Qualifier			Dilution	,	Daten
Analyte	ug/l		ug/l	ug/l		date / time	
Naphthalene	U		0.0396	0.500	2	11/02/2016 05:44	WG922800
Phenanthrene	U		0.0164	0.100	2	11/02/2016 05:44	WG922800
Pyrene	U		0.0234	0.100	2	11/02/2016 05:44	WG922800
1-Methylnaphthalene	U		0.0164	0.500	2	11/02/2016 05:44	WG922800
2-Methylnaphthalene	U		0.0180	0.500	2	11/02/2016 05:44	WG922800
2-Chloronaphthalene	U		0.0129	0.500	2	11/02/2016 05:44	WG922800
(S) Nitrobenzene-d5	97.1			45.1-170		11/02/2016 05:44	WG922800
(S) 2-Fluorobiphenyl	71.9			<i>57.7-153</i>		11/02/2016 05:44	WG922800
(S) p-Terphenyl-d14	59.2			53.2-156		11/02/2016 05:44	WG922800



















SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 09:30

L869248

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	109000		260	5000	5	11/03/2016 19:10	WG923169
Fluoride	5090		9.90	100	1	10/29/2016 12:42	WG922052
Nitrate	363		22.7	100	1	10/29/2016 12:42	WG922052

²Tc



	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	4150		38.0	250	1	11/02/2016 14:04	WG922833



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Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	0.0681	J	0.0490	0.200	1	11/02/2016 16:24	WG922404



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Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	65.9		6.50	10.0	1	10/31/2016 15:43	WG922127
Barium	676		1.70	5.00	1	10/31/2016 15:43	WG922127
Cadmium	1.56	<u>J</u>	0.700	2.00	1	10/31/2016 15:43	WG922127
Chromium	108		1.40	10.0	1	10/31/2016 15:43	WG922127
Lead	28.5		1.90	5.00	1	10/31/2016 15:43	WG922127
Selenium	U		7.40	10.0	1	10/31/2016 15:43	WG922127
Silver	U		2.80	5.00	1	10/31/2016 15:43	WG922127



Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	363000		20.0	1000	10	11/04/2016 14:02	WG922947

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		82.5	250	1	11/01/2016 17:45	WG922176
Residual Range Organics (RRO)	U		165	500	1	11/01/2016 17:45	WG922176
(S) o-Terphenyl	113			50.0-150		11/01/2016 17:45	<u>WG922176</u>

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0280	0.100	2	11/02/2016 06:08	WG922800
Acenaphthene	U		0.0200	0.100	2	11/02/2016 06:08	WG922800
Acenaphthylene	U		0.0240	0.100	2	11/02/2016 06:08	WG922800
Benzo(a)anthracene	U		0.00820	0.100	2	11/02/2016 06:08	WG922800
Benzo(a)pyrene	U		0.0232	0.100	2	11/02/2016 06:08	WG922800
Benzo(b)fluoranthene	U		0.00424	0.100	2	11/02/2016 06:08	WG922800
Benzo(g,h,i)perylene	U		0.00454	0.100	2	11/02/2016 06:08	WG922800
Benzo(k)fluoranthene	U		0.0272	0.100	2	11/02/2016 06:08	WG922800
Chrysene	U		0.0216	0.100	2	11/02/2016 06:08	WG922800
Dibenz(a,h)anthracene	U		0.00792	0.100	2	11/02/2016 06:08	WG922800
Fluoranthene	U		0.0314	0.100	2	11/02/2016 06:08	WG922800
Fluorene	U		0.0170	0.100	2	11/02/2016 06:08	WG922800
Indeno(1,2,3-cd)pyrene	U		0.0296	0.100	2	11/02/2016 06:08	WG922800

B-4-GW

SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 09:30

L869248

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Naphthalene	U		0.0396	0.500	2	11/02/2016 06:08	WG922800
Phenanthrene	U		0.0164	0.100	2	11/02/2016 06:08	WG922800
Pyrene	U		0.0234	0.100	2	11/02/2016 06:08	WG922800
1-Methylnaphthalene	U		0.0164	0.500	2	11/02/2016 06:08	WG922800
2-Methylnaphthalene	U		0.0180	0.500	2	11/02/2016 06:08	WG922800
2-Chloronaphthalene	U		0.0129	0.500	2	11/02/2016 06:08	WG922800
(S) Nitrobenzene-d5	71.6			45.1-170		11/02/2016 06:08	WG922800
(S) 2-Fluorobiphenyl	39.8	<u>J2</u>		<i>57.7-153</i>		11/02/2016 06:08	WG922800
(S) p-Terphenyl-d14	29.5	<u>J2</u>		53.2-156		11/02/2016 06:08	WG922800



















SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 12:20

Wat Chamistry by Mathad 300 0

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	Result	Qua

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	341000		260	5000	5	10/29/2016 16:04	WG922052
Fluoride	496		9.90	100	1	10/29/2016 11:16	WG922052
Nitrate	55.6	<u>J</u>	22.7	100	1	10/29/2016 11:16	WG922052

Ss

Wet Chemistry by Method 350.1

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	7030		38.0	250	1	11/02/2016 14:06	<u>WG922833</u>



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	U		0.0490	0.200	1	11/02/2016 16:27	WG922404





Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	33.8		6.50	10.0	1	10/31/2016 15:46	WG922127
Barium	164		1.70	5.00	1	10/31/2016 15:46	WG922127
Cadmium	U		0.700	2.00	1	10/31/2016 15:46	WG922127
Chromium	15.4		1.40	10.0	1	10/31/2016 15:46	WG922127
Lead	6.73		1.90	5.00	1	10/31/2016 15:46	WG922127
Selenium	U		7.40	10.0	1	10/31/2016 15:46	WG922127
Silver	U		2.80	5.00	1	10/31/2016 15:46	WG922127



ΆΙ

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	11000		2.00	100	1	11/03/2016 17:12	WG922947

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	235	<u>J</u>	82.5	250	1	11/02/2016 13:40	WG922176
Residual Range Organics (RRO)	U		165	500	1	11/02/2016 13:40	WG922176
(S) o-Terphenyl	121			50.0-150		11/02/2016 13:40	WG922176

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0280	0.100	2	11/02/2016 06:31	WG922800
Acenaphthene	0.459		0.0200	0.100	2	11/02/2016 06:31	WG922800
Acenaphthylene	0.0735	<u>J</u>	0.0240	0.100	2	11/02/2016 06:31	WG922800
Benzo(a)anthracene	U		0.00820	0.100	2	11/02/2016 06:31	WG922800
Benzo(a)pyrene	U		0.0232	0.100	2	11/02/2016 06:31	WG922800
Benzo(b)fluoranthene	U		0.00424	0.100	2	11/02/2016 06:31	WG922800
Benzo(g,h,i)perylene	U		0.00454	0.100	2	11/02/2016 06:31	WG922800
Benzo(k)fluoranthene	U		0.0272	0.100	2	11/02/2016 06:31	WG922800
Chrysene	U		0.0216	0.100	2	11/02/2016 06:31	WG922800
Dibenz(a,h)anthracene	U		0.00792	0.100	2	11/02/2016 06:31	WG922800
Fluoranthene	U		0.0314	0.100	2	11/02/2016 06:31	WG922800
Fluorene	0.483		0.0170	0.100	2	11/02/2016 06:31	WG922800
Indeno(1,2,3-cd)pyrene	U		0.0296	0.100	2	11/02/2016 06:31	WG922800

B-3-GW

SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 12:20

L869248

Jenn Volatile Or	garne comp	30 di 1 d 3 (0)	Crivio, by it	1100 021	OD SIIVI			
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Naphthalene	0.614		0.0396	0.500	2	11/02/2016 06:31	WG922800	
Phenanthrene	0.0249	<u>J</u>	0.0164	0.100	2	11/02/2016 06:31	WG922800	
Pyrene	U		0.0234	0.100	2	11/02/2016 06:31	WG922800	
1-Methylnaphthalene	2.38		0.0164	0.500	2	11/02/2016 06:31	WG922800	
2-Methylnaphthalene	0.226	<u>J</u>	0.0180	0.500	2	11/02/2016 06:31	WG922800	
2-Chloronaphthalene	U		0.0129	0.500	2	11/02/2016 06:31	WG922800	
(S) Nitrobenzene-d5	108			45.1-170		11/02/2016 06:31	WG922800	
(S) 2-Fluorobiphenyl	86.5			<i>57.7-153</i>		11/02/2016 06:31	WG922800	
(S) p-Terphenyl-d14	86.7			53.2-156		11/02/2016 06:31	WG922800	



















SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 13:25

L869248

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	177000		260	5000	5	10/29/2016 14:52	WG922052
Fluoride	850		9.90	100	1	10/29/2016 12:13	WG922052
Nitrate	177		22.7	100	1	10/29/2016 12:13	WG922052



Ss



	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	4570		38.0	250	1	11/02/2016 14:07	<u>WG922833</u>



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	0.234		0.0490	0.200	1	11/02/2016 16:29	WG922404



Gl

Metals (ICP) by Method 6010C

(/)							
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	45.2		6.50	10.0	1	10/31/2016 15:49	WG922127
Barium	590		1.70	5.00	1	10/31/2016 15:49	WG922127
Cadmium	1.50	<u>J</u>	0.700	2.00	1	10/31/2016 15:49	WG922127
Chromium	124		1.40	10.0	1	10/31/2016 15:49	WG922127
Lead	49.3		1.90	5.00	1	10/31/2016 15:49	WG922127
Selenium	U		7.40	10.0	1	10/31/2016 15:49	WG922127
Silver	U		2.80	5.00	1	10/31/2016 15:49	WG922127



ΆΙ

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	159000		20.0	1000	10	11/04/2016 14:05	WG922947

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		82.5	250	1	11/02/2016 13:56	WG922176
Residual Range Organics (RRO)	U		165	500	1	11/02/2016 13:56	WG922176
(S) o-Terphenyl	125			50.0-150		11/02/2016 13:56	<u>WG922176</u>

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0140	0.0500	1	11/02/2016 06:54	WG922800
Acenaphthene	U		0.0100	0.0500	1	11/02/2016 06:54	WG922800
Acenaphthylene	U		0.0120	0.0500	1	11/02/2016 06:54	WG922800
Benzo(a)anthracene	U		0.00410	0.0500	1	11/02/2016 06:54	WG922800
Benzo(a)pyrene	U		0.0116	0.0500	1	11/02/2016 06:54	WG922800
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/02/2016 06:54	WG922800
Benzo(g,h,i)perylene	U		0.00227	0.0500	1	11/02/2016 06:54	WG922800
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/02/2016 06:54	WG922800
Chrysene	U		0.0108	0.0500	1	11/02/2016 06:54	WG922800
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/02/2016 06:54	WG922800
Fluoranthene	U		0.0157	0.0500	1	11/02/2016 06:54	WG922800
Fluorene	U		0.00850	0.0500	1	11/02/2016 06:54	WG922800
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/02/2016 06:54	WG922800

B-2-GW

SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 13:25

L869248

Cerm Volatile Or	Jenn Veraline enganne compounds (comme, sy metrica ez res en m											
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch					
Analyte	ug/l		ug/l	ug/l		date / time						
Naphthalene	0.0429	J	0.0198	0.250	1	11/02/2016 06:54	WG922800					
Phenanthrene	U		0.00820	0.0500	1	11/02/2016 06:54	WG922800					
Pyrene	U		0.0117	0.0500	1	11/02/2016 06:54	WG922800					
1-Methylnaphthalene	0.0167	<u>J</u>	0.00821	0.250	1	11/02/2016 06:54	WG922800					
2-Methylnaphthalene	0.0165	<u>J</u>	0.00902	0.250	1	11/02/2016 06:54	WG922800					
2-Chloronaphthalene	U		0.00647	0.250	1	11/02/2016 06:54	WG922800					
(S) Nitrobenzene-d5	112			45.1-170		11/02/2016 06:54	WG922800					
(S) 2-Fluorobiphenyl	84.3			57.7-153		11/02/2016 06:54	WG922800					
(S) p-Terphenyl-d14	72.9			53.2-156		11/02/2016 06:54	WG922800					



















SAMPLE RESULTS - 06

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 13:00

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	265000		260	5000	5	10/29/2016 16:18	WG922052
Fluoride	428		9.90	100	1	10/29/2016 11:59	WG922052
Nitrate	488		22.7	100	1	10/29/2016 11:59	WG922052





Ss

Wet Chemistry by Method 350.1

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	4070		38.0	250	1	11/02/2016 14:09	WG922833



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	0.0726	<u>J</u>	0.0490	0.200	1	11/02/2016 16:32	WG922404





ΆΙ

Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	68.6		6.50	10.0	1	10/31/2016 15:52	WG922127
Barium	608		1.70	5.00	1	10/31/2016 15:52	WG922127
Cadmium	1.13	<u>J</u>	0.700	2.00	1	10/31/2016 15:52	WG922127
Chromium	86.6		1.40	10.0	1	10/31/2016 15:52	WG922127
Lead	41.9		1.90	5.00	1	10/31/2016 15:52	WG922127
Selenium	U		7.40	10.0	1	10/31/2016 15:52	WG922127
Silver	U		2.80	5.00	1	10/31/2016 15:52	WG922127

Sc

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	151000		20.0	1000	10	11/04/2016 14:08	WG922947

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	160	<u>J</u>	82.5	250	1	11/02/2016 14:13	WG922176
Residual Range Organics (RRO)	U		165	500	1	11/02/2016 14:13	WG922176
(S) o-Terphenyl	119			50.0-150		11/02/2016 14:13	WG922176

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0140	0.0500	1	11/02/2016 07:18	WG922800
Acenaphthene	0.112		0.0100	0.0500	1	11/02/2016 07:18	WG922800
Acenaphthylene	0.0136	<u>J</u>	0.0120	0.0500	1	11/02/2016 07:18	WG922800
Benzo(a)anthracene	U		0.00410	0.0500	1	11/02/2016 07:18	WG922800
Benzo(a)pyrene	0.0812		0.0116	0.0500	1	11/02/2016 07:18	WG922800
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/02/2016 07:18	WG922800
Benzo(g,h,i)perylene	U		0.00227	0.0500	1	11/02/2016 07:18	WG922800
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/02/2016 07:18	WG922800
Chrysene	U		0.0108	0.0500	1	11/02/2016 07:18	WG922800
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/02/2016 07:18	WG922800
Fluoranthene	U		0.0157	0.0500	1	11/02/2016 07:18	WG922800
Fluorene	0.0431	<u>J</u>	0.00850	0.0500	1	11/02/2016 07:18	WG922800
ndeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/02/2016 07:18	WG922800

B-1-GW

SAMPLE RESULTS - 06

ONE LAB. NATIONWIDE.

Collected date/time: 10/27/16 13:00

L869248

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Naphthalene	0.167	J	0.0198	0.250	1	11/02/2016 07:18	WG922800
Phenanthrene	0.0124	<u>J</u>	0.00820	0.0500	1	11/02/2016 07:18	WG922800
Pyrene	U		0.0117	0.0500	1	11/02/2016 07:18	WG922800
1-Methylnaphthalene	0.147	<u>J</u>	0.00821	0.250	1	11/02/2016 07:18	WG922800
2-Methylnaphthalene	0.0585	<u>J</u>	0.00902	0.250	1	11/02/2016 07:18	WG922800
2-Chloronaphthalene	U		0.00647	0.250	1	11/02/2016 07:18	WG922800
(S) Nitrobenzene-d5	111			45.1-170		11/02/2016 07:18	WG922800
(S) 2-Fluorobiphenyl	86.2			57.7-153		11/02/2016 07:18	WG922800
(S) p-Terphenyl-d14	87.8			53.2-156		11/02/2016 07:18	WG922800



















Analyte

Ammonia Nitrogen

SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE.

Collected date/time: 10/28/16 10:40

Wet Chemistry by Method 300.0

Wet Chemistry by Method 350.1

Result

ug/l

2680

Qualifier

MDL

ug/l

38.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	8940000		5190	100000	100	10/30/2016 00:07	WG922071
Fluoride	6630		9.90	100	1	10/29/2016 23:09	WG922071
Nitrate	10200		114	500	5	10/29/2016 23:52	WG922071

Dilution

Analysis

date / time

11/02/2016 14:15

Batch

WG922833

RDL

ug/l

250







Cn



















Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	U		0.0490	0.200	1	11/02/2016 16:34	WG922404

Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	U		6.50	10.0	1	10/31/2016 15:55	WG922127
Barium	481		1.70	5.00	1	10/31/2016 15:55	WG922127
Cadmium	2.13		0.700	2.00	1	10/31/2016 15:55	WG922127
Chromium	1.91	<u>J</u>	1.40	10.0	1	10/31/2016 15:55	WG922127
Lead	U		1.90	5.00	1	10/31/2016 15:55	WG922127
Selenium	U		7.40	10.0	1	10/31/2016 15:55	WG922127
Silver	U		2.80	5.00	1	10/31/2016 15:55	WG922127

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	730		2.00	100	1	11/03/2016 17:21	WG922947

SAMPLE RESULTS - 08

ONE LAB. NATIONWIDE.

Collected date/time: 10/28/16 11:05

L869248

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	379000		260	5000	5	10/30/2016 00:36	WG922071
Fluoride	4170		9.90	100	1	10/30/2016 00:21	WG922071
Nitrate	288	<u>B</u>	22.7	100	1	10/30/2016 00:21	WG922071





³Ss

Wet Chemistry by Method 350.1

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	62.0	J	38.0	250	1	11/02/2016 14:17	<u>WG922833</u>



⁵Sr

Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	U		0.0490	0.200	1	11/02/2016 16:42	WG922404





Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>	
Analyte	ug/l		ug/l	ug/l		date / time		
Arsenic	U		6.50	10.0	1	10/31/2016 15:57	WG922127	
Barium	15.5		1.70	5.00	1	10/31/2016 15:57	WG922127	
Cadmium	U		0.700	2.00	1	10/31/2016 15:57	WG922127	
Chromium	1.41	<u>J</u>	1.40	10.0	1	10/31/2016 15:57	WG922127	
Lead	2.00	<u>J</u>	1.90	5.00	1	10/31/2016 15:57	WG922127	
Selenium	U		7.40	10.0	1	10/31/2016 15:57	WG922127	
Silver	U		2.80	5.00	1	10/31/2016 15:57	WG922127	



Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	618		2.00	100	1	11/03/2016 17:24	WG922947

SAMPLE RESULTS - 09

ONE LAB. NATIONWIDE.

Collected date/time: 10/28/16 00:00

L869248

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	367000		260	5000	5	10/30/2016 01:33	WG922071
Fluoride	4210		9.90	100	1	10/30/2016 00:50	WG922071
Nitrate	288	В	22.7	100	1	10/30/2016 00:50	WG922071

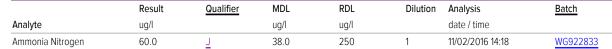




Ss









Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	U		0.0490	0.200	1	11/02/2016 16:45	WG922404



GI

Metals (ICP) by Method 6010C

(/)								
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		
Arsenic	U		6.50	10.0	1	10/31/2016 16:00	WG922127	
Barium	14.4		1.70	5.00	1	10/31/2016 16:00	WG922127	
Cadmium	U		0.700	2.00	1	10/31/2016 16:00	WG922127	
Chromium	U		1.40	10.0	1	10/31/2016 16:00	WG922127	
Lead	U		1.90	5.00	1	10/31/2016 16:00	WG922127	
Selenium	U		7.40	10.0	1	10/31/2016 16:00	WG922127	
Silver	U		2.80	5.00	1	10/31/2016 16:00	WG922127	

⁹Sc

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	373		2.00	100	1	11/03/2016 17:27	WG922947

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Wet Chemistry by Method 300.0

L869248-01,02,03,04,05,06

Method Blank (MB)

(MB) R3174914-1	10/29/16 08:51	
	MB Result	

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	182	<u>J</u>	51.9	1000
Fluoride	U		9.90	100
Nitrate	11		22.7	100







L869248-03 Original Sample (OS) • Duplicate (DUP)

(OS) L869248-03	10/29/16 12:42	• (DUP) R3174914-4	10/29/16 13:54
-----------------	----------------	--------------------	----------------

(US) L009240-US 10/29/10	5 12.42 • (DUP)	K31/4914-4 I	J/29/10 13.	54		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Fluoride	5090	5220	1	3		20
Nitrate	363	370	1	2		20









L869236-01 Original Sample (OS) • Duplicate (DUP)

(OS) L869236-01 10/29/16 15:06 • (DUP) R3174914-7 10/29/16 15:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	8390	8380	1	0		20
Fluoride	27.4	27.0	1	0	<u>J</u>	20
Nitrate	216	207	1	4		20





Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) P3174914-2 10/29/16 09:05 • (LCSD) P3174914-3 10/29/16 09:20

(LCS) NS174314-2 10/23/N	0 00.00 (LCOL) K317+31+-3	10/23/10 03.20	,						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Chloride	40000	39200	39300	98	98	90-110			0	20
Fluoride	8000	8210	8230	103	103	90-110			0	20
Nitrate	8000	8500	8540	106	107	90-110			1	20

L869248-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869248-06 10/29/16 11:59 • (MS) R3174914-5 10/29/16 15:21 • (MSD) R3174914-6 10/29/16 15:35

(03) 2003240 00 10/23/10	0 11100 (1110) 110	317 1311 3 1072	3/10/10.21 (1110	3D) 11017 1311 0	10/23/10 10.0	•						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Fluoride	5000	428	5570	5640	103	104	1	80-120			1	20
Nitrate	5000	488	5660	5820	103	107	1	80-120			3	20

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Wet Chemistry by Method 300.0

L869248-07,08,09

Method Blank (MB)

Nitrate

(MB) R3174635-2 10/29/16 20:02

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	187	<u>J</u>	51.9	1000
Fluoride	U		9.90	100
Nitrate	36.0	J	22.7	100









L869236-03 Original Sample (OS) • Duplicate (DUP)

(OS) L869236-03 10/29/1	6 21:28 • (DUP)	R3174635-5 1	0/29/16 2	1:43		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	5470	5590	1	2		20
Fluoride	31.1	31.6	1	2	J	20

20







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

2

1200

(LCS) R3174635-3 10/29/16 20:16 • (LCSD) R3174635-4 10/29/16 20:31

1220

(200) 11017 1000 0 107207	0 200 (2002	,	.0,20,.020.0.							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Chloride	40000	40000	39400	100	99	90-110			1	20
Fluoride	8000	8330	8300	104	104	90-110			0	20
Nitrate	8000	8740	8630	109	108	90-110			1	20





L869272-01 Original Sample (OS) • Matrix Spike (MS)

/OC) | 060272 01 10/20/16 22:24 /MC) D217/62E 6 10/20/16 22:20

(OS) L869272-01 10/29/16	5 23:24 • (MS) R	31/4635-6 10/.	29/16 23:38				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Chloride	50000	17400	65700	97	1	80-120	
Fluoride	5000	720	5560	97	1	80-120	

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Wet Chemistry by Method 300.0

L869248-01,02,03

Method Blank (MB)

(MB) R3175800-1 11/03/16	10:43			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	88.8	<u>J</u>	51.9	1000
Fluorido	11		0.00	100







L869377-01 Original Sample (OS) • Duplicate (DUP)

(OS) L869377-01 11/03/16	13:53 • (DUP) R	3175800-4 11/	03/16 14:0	7		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	47300	47300	1	0		20
Fluoride	230	208	1	10		20









(OS) L869243-02 11/03/16 18:12 • (DUP) R3175800-6 11/03/16 18:26

(,	(=)			-		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	48700	47700	5	2		20
Fluoride	ND	430	5	0		20







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175800-2 11/03/16 10:58 • (LCSD) R3175800-3 11/03/16 11:12

(200) 11017 0000 2 11700/11	0 10.00 (2002	, 11017 0000 0	11/00/10 11.12							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Chloride	40000	38300	38400	96	96	90-110			0	20
Fluoride	8000	7810	7800	98	97	90-110			0	20

L869295-11 Original Sample (OS) • Matrix Spike (MS)

/OC) | 06020E 11 11/02/16 16:17 . (MC) D217E000 E 11/02/16 16:21

(OS) L869295-11 11/03/16	10:17 • (IVIS) R31	/5800-5 11/03/	16.31				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Fluoride	5000	80.9	4900	96	1	80-120	

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Wet Chemistry by Method 300.0

L869248-01,02,03

L869377-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869377-07 11/03/16 21:05 • (MS) R3175800-7 11/03/16 21:19 • (MSD) R3175800-8 11/03/16 21:34

• •	, ,		•	,								
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	44800	93000	93200	96	97	1	80-120			0	20
Fluoride	5000	220	5040	5050	96	97	1	80-120			0	20





















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Wet Chemistry by Method 350.1

L869248-01,02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R3175481-2	11/02/16	13:39	
		MD D	

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Ammonia Nitrogen	U		38.0	250





L868976-01 Original Sample (OS) • Duplicate (DUP)

(OS) L868976-01 11/02/16 13:47 • (DUP) R3175481-5 11/02/16 13:48	(OS) L868976-01	11/02/16 13:47 •	(DUP) R3175481-5	11/02/16 13:48
--	-----------------	------------------	------------------	----------------

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Ammonia Nitrogen	ND	0.000	1	0		20









(OS) L869245-01 11/02/16 14:47 • (DUP) R3175481-9 11/02/16 14:49

	Original Result			DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Ammonia Nitrogen	43800	43700	10	0		20







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) P3175481-3 11/02/16 13:40 • (LCSD) P3175481-4 11/02/16 13:42

, ,	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Ammonia Nitrogen	7500	7040	7110	94	95	90-110			1	20

L869242-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L 8692/12-01 11/02/16 13:50 • (MS) P3175/181-6 11/02/16 13:52

(03) 1809242-01 11/02/10	Spike Amount			MS Rec.	Dilution	Rec. Limits
Analyte	ug/l	ug/l	ug/l	%		%
Ammonia Nitrogen	10000	ND	9430	94	1	90-110

L869250-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) | 869250-01 11/02/16 14:20 • (MS) R3175481-7 11/02/16 14:22 • (MSD) R3175481-8 11/02/16 14:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Ammonia Nitrogen	10000	ND	9680	9640	97	96	1	90-110			0	20

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Mercury by Method 7470A

L869248-01,02,03,04,05,06,07,08,09

Method Blank (MB)

Analyte Mercury

(MB) R3175355-1 11/02/16 15:28

MB Result	MB Qualifier	MB MDL	MB RDL
ug/l		ug/l	ug/l
11		0.0490	0.200



¹Cp





Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175355-2 11/02/16 15:31 • (LCSD) R3175355-6 11/02/16 17:11

(/	,									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	2.78	2.75	93	92	80-120			1	20





⁶Qc



(OS) L868992-04 11/02/16 15:44 • (MS) R3175355-4 11/02/16 15:46 • (MSD) R3175355-5 11/02/16 15:49

(00) 2000332 04 11/02	./10 13.44 - (1413) 1	.517 5555 + 11/6	12/10 13.40 - ((MOD) (KO1) 0000	0 0 11/02/10 1	5.45							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	
Mercury	3.00	ND	2.80	2.85	93	95	1	75-125			2	20	







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Metals (ICP) by Method 6010C

L869248-01,02,03,04,05,06,07,08,09

Method Blank (MB)

Analyte	MB Result	MB Qualifier			
Analyte		WD Qualifier	MB MDL	MB RDL	
	ug/l		ug/l	ug/l	
Arsenic	U		6.50	10.0	
Barium	U		1.70	5.00	
Cadmium	U		0.700	2.00	
Chromium	U		1.40	10.0	
Lead	U		1.90	5.00	
Selenium	U		7.40	10.0	
Silver	U		2.80	5.00	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3174805-8 10/3	81/16 15:11 • (LCSD)	R3174805-9	10/31/16 15:13								·
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%	
Arsenic	1000	1010	991	101	99	80-120			2	20	
Barium	1000	1030	1010	103	101	80-120			2	20	
Cadmium	1000	1010	990	101	99	80-120			2	20	
Chromium	1000	1010	982	101	98	80-120			3	20	
Lead	1000	1010	990	101	99	80-120			2	20	l
Selenium	1000	1030	1010	103	101	80-120			2	20	
Silver	1000	989	962	99	96	80-120			3	20	

L869396-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869396-06	10/31/16 15:16 • (MS) R3	3174805-11 10/3	1/16 15:21 • (N	1SD) R3174805-	12 10/31/16 15:	24						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Arsenic	1000	U	1000	1010	100	101	1	75-125			0	20
Barium	1000	12.1	1020	1030	101	102	1	75-125			0	20
Cadmium	1000	U	1010	1010	101	101	1	75-125			0	20
Chromium	1000	U	990	988	99	99	1	75-125			0	20
Lead	1000	2.37	998	998	100	100	1	75-125			0	20
Selenium	1000	U	1020	1030	102	103	1	75-125			1	20
Silver	1000	П	973	978	97	98	1	75-125			1	20















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Metals (ICPMS) by Method 6020

L869248-01,02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R3175780-1	11/03/16 15	5:54
		MB Result

	MB Result	MB Qualifier	MB MDL	MB RDL
nalyte	ug/l		ug/l	ug/l
luminum	1.15		2.00	100







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Aluminum	5000	5340	5320	107	106	80-120			0	20







(OS) | 868992-04 11/03/16 16:04 • (MS) R3175780-5 11/03/16 16:10 • (MSD) R3175780-6 11/03/16 16:13

(,	Spike Amount	Original Result	,	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	
Aluminum	5000	ND	5150	5290	102	105	1	75-125			3	20	







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Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

L869248-01,02,03,04,05,06

Method Blank (MB)

(MB) R3175291-1 11/01/16 11:	:06			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Diesel Range Organics (DRO)	U		83.3	250
Residual Range Organics (RRO)	U		167	500
(S) o-Terphenyl	117			64.0-146







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175291-2 11/01/16 1	1:25 • (LCSD) F	23175291-3 11/	01/16 11:44							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	750	938	962	125	128	50.0-150			2.58	20
Residual Range Organics (RRO)	750	804	795	107	106	50.0-150			1.12	20
(S) o-Terphenyl				121	118	64.0-146				















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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

L869248-01,02,03,04,05,06

Method Blank (MB)

(MB) R3175309-3 11/02	2/16 04:35				1
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	ug/l		ug/l	ug/l	2
Anthracene	U		0.0140	0.0500	
Acenaphthene	U		0.0100	0.0500	3 5
Acenaphthylene	U		0.0120	0.0500	Ľ
Benzo(a)anthracene	U		0.00410	0.0500	4
Benzo(a)pyrene	U		0.0116	0.0500	
Benzo(b)fluoranthene	U		0.00212	0.0500	╘
Benzo(g,h,i)perylene	U		0.00227	0.0500	5
Benzo(k)fluoranthene	U		0.0136	0.0500	Ľ
Chrysene	U		0.0108	0.0500	6
Dibenz(a,h)anthracene	U		0.00396	0.0500	
Fluoranthene	U		0.0157	0.0500	
Fluorene	U		0.00850	0.0500	7
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	Ľ
Naphthalene	U		0.0198	0.250	8
Phenanthrene	U		0.00820	0.0500	1
Pyrene	U		0.0117	0.0500	
1-Methylnaphthalene	U		0.00821	0.250	9 5
2-Methylnaphthalene	U		0.00902	0.250	Ľ
2-Chloronaphthalene	U		0.00647	0.250	
(S) Nitrobenzene-d5	112			45.1-170	
(S) 2-Fluorobiphenyl	94.2			57.7-153	
(S) p-Terphenyl-d14	95.2			53.2-156	

${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

(LCS) R3175309-1 11/02/1	6 03:48 • (LCSD) R3175309-2	11/02/16 04:11							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Anthracene	2.00	2.09	2.07	105	103	68.9-153			1.24	20
Acenaphthene	2.00	2.12	2.05	106	102	67.7-141			3.26	20
Acenaphthylene	2.00	2.05	1.96	103	98.0	66.9-141			4.49	20
Benzo(a)anthracene	2.00	1.94	1.91	97.0	95.4	63.1-147			1.69	20
Benzo(a)pyrene	2.00	2.05	1.99	103	99.7	62.2-150			2.82	20
Benzo(b)fluoranthene	2.00	2.01	2.00	100	100	58.4-148			0.0900	20
Benzo(g,h,i)perylene	2.00	1.92	1.88	96.1	93.8	57.4-152			2.33	20
Benzo(k)fluoranthene	2.00	2.08	2.01	104	100	60.5-154			3.45	20
Chrysene	2.00	2.13	2.06	106	103	64.8-155			3.26	20
Dibenz(a,h)anthracene	2.00	1.91	1.85	95.3	92.7	53.5-153			2.70	20
Fluoranthene	2.00	1.97	1.93	98.5	96.4	68.6-153			2.20	20

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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

L869248-01,02,03,04,05,06

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(I CS) D3175309_	1 11/02/16 03:48	(LCSD) R3175309-2 11/02/16 04:1	1

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Fluorene	2.00	1.84	1.77	92.1	88.7	67.3-141			3.81	20
Indeno(1,2,3-cd)pyrene	2.00	1.95	1.88	97.6	94.2	57.0-155			3.52	20
Naphthalene	2.00	2.10	2.04	105	102	66.7-135			2.63	20
Phenanthrene	2.00	2.19	2.12	109	106	64.3-143			3.03	20
Pyrene	2.00	2.31	2.21	115	110	60.2-154			4.46	20
1-Methylnaphthalene	2.00	2.00	1.94	100	97.2	68.3-144			3.10	20
2-Methylnaphthalene	2.00	1.84	1.78	92.2	88.9	67.6-143			3.65	20
2-Chloronaphthalene	2.00	1.95	1.88	97.3	93.9	69.7-144			3.48	20
(S) Nitrobenzene-d5				113	118	45.1-170				
(S) 2-Fluorobiphenyl				94.0	94.5	<i>57.7-153</i>				
(S) p-Terphenyl-d14				94.6	94.7	53.2-156				



















GLOSSARY OF TERMS



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
В	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.





















ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.*** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
lowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee 14	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA - ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



















DATE/TIME:

11/04/16 18:10

			Billian Info	rmation & Quote N	webser -		-		-	Tax 1951	1	SNI WASTER STORY		Tenan de	-
Stantec- Bellevue, V 11130 NE 33rd PI, Suite 200 Bellevue, WA 98004			Accounts Payable- Phil Haberman 11130 NE 33rd Pl, Ste 200 Bellevue, WA 98004					27	事し	(UN HIS)	1-4+ th	er / Preservative		Chain of Custoe	ESC CHENCE
Report to:	s Gorm	en c	Email Tu: Chris.Gdak@stantec.com; (Cyrus.Gorman@stantec.com)					3/	ZZ Z	3	3 (M			12/165 cebaron Ri Mount laket, TN J Primmir R15-758-5 Photon 800-767-5	17122 ESN 2531-4175
roject Marxico, 7				City/State Collected: Key	t, WA		Nop	3	TE	W-sa	HNO3			Fac: 015-758-5850	
Phone: 425-289-7374 ax: 425-869-1190	e-425-289-7374 Client Project #			Lab Project # STANTECBWA			MIHDPE	Oalpre	nb-HCl-	b-Nopri	250mlHDPE			G00	7
Carol Shestag	Site/Facility II			P.O. # /8573	50/23		00 125	E-H2S	OmlAn	mlAm	AI 250r			Accumum: STA	ANTECBWA
Collected by (signature): CBM-6 mmediately Packed on Ice N Y X	Rush? (I	Day			No X_YesNoYes		F,NO3 by 300 125mlHDPE-NoPres	125miHDPE-H2SO4(prev	NWTPHDXLVI 40mlAmb-HCl-	PAHSIMLVID 40mlAmb-NoPres-WT	RCRA8+			Prelogin: P57 TSR: 110 - Brid PB:	73472
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	intra		NH3	NW	PAH	Total			Shipped Via	n Sample W (lab poly)
B-6-GW	Grab	GW	-	10/21/16	15:15	7	X	X	X	×	X		07	01	1
B-5-GW	11	GW	-	TI,	11:10	7	X	X	X	X	×		n	Medi	decan
B-4-GW	- 11	GW	-	11	09:30	7	X	X	X	X	X		03	water	(Sur By
B-3-6W	11	GW	-	"	12:20	7	X	X	x	X	X		M	from,	sed met
8-2-66	16	GW	-	H	13:25	7	x	K	×	X	X		ar	prior	tu
B-1-GW		GW	_	6 "	13:00	7	K	×	X	X	×		De.	arrly	sis to
5W-10	11	2 CM-	-	10/28/16	10:40	3	X	X			X		1	minin	wiso his
5W-11	11	SHEW	-	""	11:05	3	X	X		2	X		0	tu store	LA INT
SW-900	11	SHOW	-	II.	00:00	3	X	X			A		07	1000	11
		GW				1				1				The	18-
Matrix: S5-Soil GW-Groundwat demarks:*Nitrate has a 48 h lluminum by method 6020.	our hold time.		inking Wate	r OT Other						pH _ Flow _		TempOther	(fold) w	Car	of Shoty
delingsheetby (senature)			8/16	15:15	ceived by: (Signal	804	Ø.			□ Fe	dEx E	rd via: D UPS	Condition	DZ (lab	Sw 7
Relinquished by : (Signature) Belinquished by : (Signature) Date:					ceived by (Signal ceived for lab by.	90	3,4 5/ COC Seul Intact:							N ZNA	



C	ooler Receipt Form				
Client:	869				
Cooler Received/Opened On: 10/74/16	n Receipt:	34 %			
Received By: Rickey Mosley					
Signature: Mickey Merlo					
Recei	pt Check List		Yes	No	N/A
Were custody seals on outside of cooler a	nd intact?				V
Were custody papers properly filled out?			1		
Did all bottles arrive in good condition?			1		
Were correct bottles used for the analyses	requested?		V		
Was sufficient amount of sample sent in e	ach bottle?		1		
Were all applicable sample containers cor	rectly preserved and		W.		
checked for preservation? (Any not in acce	epted range noted on COC)				
If applicable, was an observable VOA head	Ispace present?				V
Non Conformance Generated. (If yes see a	ittached NCF)				

ESC Lab Sciences Non-Conformance Form

Login #L869248 Client		Client: STANTECBWA	Date:10/29	Evaluated by:Matt 5
N	on-Conformance (che	ck applicable items)		
	Sample Integrity	Chain of Custody Cl	arification	
x	Parameter(s) past holding time	Login Clarification N	eeded	If Broken Container:
	Improper temperature	Chain of custody is in	scomplete	Insufficient packing material around container
Ī	Improper container type	Please specify Metals	requested.	Insufficient packing material inside gooler
	Improper preservation	Please specify TCLP	requested.	Improper handling by carrier (FedEx / UPS / Cour
	Insufficient sample volume	Received additional	samples not listed on coc.	Sample was frozen
	Sample is biphasic.	Sample ids on contai	ners do not match ids on	Container lid not intact
	Vials received with headsp	ace. Trip Blank not receiv	red.	If no Chain of Custody:
	Broken container	Client did not "X" ana	ilysis.	Received by:
	Broken container:	Chain of Custody is n	nissing	Date/Time:
	Sufficient sample remains			Temp./Cont. Rec./pH:
				Carrier:
				Tracking#

Login Comments: Nitrate OOH for B-4GW

Client informed by:	Call	Email	X.	Voice Mail	Date:10/31/16	Time:1020	
TSR Initials:bjf	Client Con	tact: Cyrus Go	rma	n			
Laste Instantations							

Login Instructions:

Proceed and qualify as needed.

This E-mail and any attached files are confidential, and may be copyright protected. If you are not the addressee, any dissemination of this communication is strictly prohibited. If you have received this message in error, please contact the sender immediately and delete/destroy all information received.



ANALYTICAL REPORT

November 09, 2016



Stantec-Bellevue, WA

Sample Delivery Group: L870054

Samples Received: 11/03/2016

Project Number: 185750123A

Description: Maralco

Report To: Cyrus Gorman

11130 NE 33rd Pl, Suite 200

Bellevue, WA 98004

Entire Report Reviewed By:

Buar Ford

Brian Ford

Technical Service Representative Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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			Collected by	Collected date/time	Received date/time
MW-2 L870054-01 GW		Nathan Magnusson	11/02/16 14:05	11/03/16 09:00	
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7470A	WG923453	1	11/03/16 14:45	11/04/16 08:21	TRB
Metals (ICP) by Method 6010C	WG923492	1	11/03/16 14:09	11/03/16 21:03	ST
Metals (ICPMS) by Method 6020	WG923495	1	11/04/16 09:54	11/04/16 11:49	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG924187	1	11/06/16 20:35	11/07/16 13:31	FMB
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG923524	1	11/06/16 20:37	11/07/16 23:13	TRF
Wet Chemistry by Method 300.0	WG923421	1	11/03/16 11:57	11/03/16 11:57	SAM
Wet Chemistry by Method 350.1	WG923929	1	11/08/16 11:28	11/08/16 11:28	DR

SAMPLE SUMMARY





















All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the

³Ss













Buar Ford

SAMPLE RESULTS - 01

ONE LAB. NATIONWIDE.

Collected date/time: 11/02/16 14:05

L8700

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Chloride	3890		51.9	1000	1	11/03/2016 11:57	WG923421
Fluoride	80.7	<u>J</u>	9.90	100	1	11/03/2016 11:57	WG923421
Nitrate	U		22.7	100	1	11/03/2016 11:57	WG923421

²Tc

Ss

Wet Chemistry by Method 350.1

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Ammonia Nitrogen	U		38.0	250	1	11/08/2016 11:28	<u>WG923929</u>



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Mercury	U		0.0490	0.200	1	11/04/2016 08:21	WG923453



Gl

Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	<u>Batch</u>
Analyte	ug/l		ug/l	ug/l		date / time	
Arsenic	U		6.50	10.0	1	11/03/2016 21:03	WG923492
Barium	5.65		1.70	5.00	1	11/03/2016 21:03	WG923492
Cadmium	U		0.700	2.00	1	11/03/2016 21:03	WG923492
Chromium	U		1.40	10.0	1	11/03/2016 21:03	WG923492
Lead	2.59	<u>J</u>	1.90	5.00	1	11/03/2016 21:03	WG923492
Selenium	U		7.40	10.0	1	11/03/2016 21:03	WG923492
Silver	U		2.80	5.00	1	11/03/2016 21:03	WG923492



ΆΙ

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Aluminum	174		2.00	100	1	11/04/2016 11:49	WG923495

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Diesel Range Organics (DRO)	U		82.5	250	1	11/07/2016 23:13	WG923524
Residual Range Organics (RRO)	U		165	500	1	11/07/2016 23:13	WG923524
(S) o-Terphenyl	112			50.0-150		11/07/2016 23:13	WG923524

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0140	0.0500	1	11/07/2016 13:31	WG924187
Acenaphthene	U		0.0100	0.0500	1	11/07/2016 13:31	WG924187
Acenaphthylene	U		0.0120	0.0500	1	11/07/2016 13:31	WG924187
Benzo(a)anthracene	U		0.00410	0.0500	1	11/07/2016 13:31	WG924187
Benzo(a)pyrene	U		0.0116	0.0500	1	11/07/2016 13:31	WG924187
Benzo(b)fluoranthene	U		0.00212	0.0500	1	11/07/2016 13:31	WG924187
Benzo(g,h,i)perylene	U		0.00227	0.0500	1	11/07/2016 13:31	WG924187
Benzo(k)fluoranthene	U		0.0136	0.0500	1	11/07/2016 13:31	WG924187
Chrysene	U		0.0108	0.0500	1	11/07/2016 13:31	WG924187
Dibenz(a,h)anthracene	U		0.00396	0.0500	1	11/07/2016 13:31	WG924187
Fluoranthene	U		0.0157	0.0500	1	11/07/2016 13:31	WG924187
Fluorene	0.00874	<u>J</u>	0.00850	0.0500	1	11/07/2016 13:31	WG924187
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	1	11/07/2016 13:31	WG924187

MW-2

SAMPLE RESULTS - 01

ONE LAB. NATIONWIDE.

Collected date/time: 11/02/16 14:05

L870054

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Jenn Volatile Org	Jenn Volume Organic Compounds (Oction) by Method 627 62 Citi										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch				
Analyte	ug/l		ug/l	ug/l		date / time					
Naphthalene	0.131	ВJ	0.0198	0.250	1	11/07/2016 13:31	WG924187				
Phenanthrene	0.00915	<u>J</u>	0.00820	0.0500	1	11/07/2016 13:31	WG924187				
Pyrene	U		0.0117	0.0500	1	11/07/2016 13:31	WG924187				
1-Methylnaphthalene	0.0360	<u>J</u>	0.00821	0.250	1	11/07/2016 13:31	WG924187				
2-Methylnaphthalene	0.0646	<u>J</u>	0.00902	0.250	1	11/07/2016 13:31	WG924187				
2-Chloronaphthalene	U		0.00647	0.250	1	11/07/2016 13:31	WG924187				
(S) Nitrobenzene-d5	102			45.1-170		11/07/2016 13:31	WG924187				
(S) 2-Fluorobiphenyl	115			57.7-153		11/07/2016 13:31	WG924187				
(S) p-Terphenyl-d14	95.8			53.2-156		11/07/2016 13:31	WG924187				



















ONE LAB. NATIONWIDE.

Wet Chemistry by Method 300.0

L870054-01

Method Blank (MB)

(MB) R3175748-1 11/03/16 07:01							
	MB Result	MB Qualifier	MB MDL	MB RDL			
Analyte	ug/l		ug/l	ug/l			
Chloride	U		51.9	1000			
Fluoride	U		9.90	100			
Nitrate	U		22.7	100			







L870061-12 Original Sample (OS) • Duplicate (DUP)

(OS) L870061-12 11/03/16 1:	OS) L870061-12 11/03/16 13:44 • (DUP) R3175748-4 11/03/16 14:00										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits					
Analyte	ug/l	ug/l		%		%					
Chloride	14500	14600	1	0		20					
Fluoride	ND	19.8	1	0		20					
Nitrate	ND	0.000	1	0		20					







L870118-01 Original Sample (OS) • Duplicate (DUP)

(OS) L870118-01 11/03	s/16 16:34 • (DUP) R3	175748-6 11/0	03/16 17:00)			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	ug/l	ug/l		%		%	
Chloride	ND	253	1	0		20	
Fluoride	ND	0.000	1	0		20	
Nitrate	ND	0.000	1	0		20	





Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175748-2 11/03/1	6 07:16 • (LCSD)) R3175748-3	11/03/16 07:32								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%	
Chloride	40000	38900	38900	97	97	90-110			0	20	
Fluoride	8000	7920	7890	99	99	90-110			0	20	
Nitrate	8000	8020	8010	100	100	90-110			0	20	

L870061-13 Original Sample (OS) • Matrix Spike (MS)

(OS) L870061-13 11/03/16	OS) L870061-13 11/03/16 14:15 • (MS) R3175748-5 11/03/16 14:31										
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier				
Analyte	ug/l	ug/l	ug/l	%		%					
Chloride	50000	12100	62400	100	1	80-120					
Fluoride	5000	ND	4770	95	1	80-120					

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Wet Chemistry by Method 300.0

L870054-01

L870061-13 Original Sample (OS) • Matrix Spike (MS)

(OS) L870061-13 11/03/16 14:15 • (MS) R3175748-5 11/03/16 14:31

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Nitrate	5000	ND	4860	97	1	80-120	

Ср







(OS) L870118-02 11/03/16 17:15 • (MS) R3175748-7 11/03/16 17:30 • (MSD) R3175748-8 11/03/16 17:45

,	٠,		`	,								
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	ND	51000	51000	102	102	1	80-120			0	20
Fluoride	5000	ND	5200	5300	104	106	1	80-120			2	20
Nitrate	5000	ND	5160	4920	103	98	1	80-120			5	20













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Wet Chemistry by Method 350.1

L870054-01

Method Blank (MB)

(MB) R3176579-1 11/08/16 10:50										
	MB Result	MB Qualifier	MB MDL	MB RDL						
Analyte	ug/l		ug/l	ug/l						
Ammonia Nitrogen	U		38.0	250						









(OS) L869/15-02	11/08/16 10:58 • (DUP) R	31/65/9-4	11/08/16 10:5	9
	Original Result	DUP Result	Dilution	DU

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Ammonia Nitrogen	2830	2820	1	0		20





L870014-01 Original Sample (OS) • Duplicate (DUP)

(OS) L870014-01 11/08/16 11:20 • (DUP) R3176579-6 11/08/16 11:26

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Ammonia Nitrogen	3620	3550	1	2		20





Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3176579-2 11/08/16 10:51 • (LCSD) R3176579-3 11/08/16 10:53

(200) 11017 007 5 2 117 01	Spike Amount			LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Ammonia Nitrogen	7500	7390	7340	98	98	90-110			1	20

L869766-01 Original Sample (OS) • Matrix Spike (MS)

(OS) | 869766-01 11/08/16 11:01 • (MS) P3176579-5 11/08/16 11:03

(03) 2009/00-01 11/06/10	Spike Amount			MS Rec.	Dilution	Rec. Limits
Analyte	ug/l	ug/l	ug/l	%		%
Ammonia Nitrogen	10000	ND	10100	101	1	90-110

L870054-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OC) 1 0700E4 01	11/00/16 11:20	(MC) D2176E70 7	11/00/16 11:20	 (MSD) R3176579-8 11/08/16 11:31 	

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Ammonia Nitrogen	10000	U	9940	10000	99	100	1	90-110			1	20

ONE LAB. NATIONWIDE.

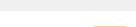
Mercury by Method 7470A

L870054-01

Method Blank (MB)

(MB) R3175809-1	11/04/16	07:53
		MB Resu

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200



²Tc



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

	Spike Amoun	t LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%	
Mercury	3.00	3.01	2.94	100	98	80-120			2	20	





⁶Qc



(OS) L869858-16 11/04/16 08:01 • (MS) R3175809-4 11/04/16 08:03 • (MSD) R3175809-5 11/04/16 08:06

(03) 2003030 10	(03) 2003000 10 11/04/10 00:01 - (11/04/10 00:05 4 11/04/10 00:05 5 11/04/10 00:00												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	
Mercury	3.00	U	3.12	3.05	104	102	1	75-125			2	20	







ONE LAB. NATIONWIDE.

Metals (ICP) by Method 6010C

L870054-01

Method Blank (MB)

Lead

Selenium Silver

(MB) R3175734-1 11/03/16 20:26											
	MB Result	MB Qualifier	MB MDL	MB RDL		Ē					
Analyte	ug/l		ug/l	ug/l		ľ					
Arsenic	U		6.50	10.0		_					
Barium	U		1.70	5.00		3					
Cadmium	U		0.700	2.00		L					
Chromium	U		1.40	10.0		I					











1.90

7.40

2.80

5.00

10.0

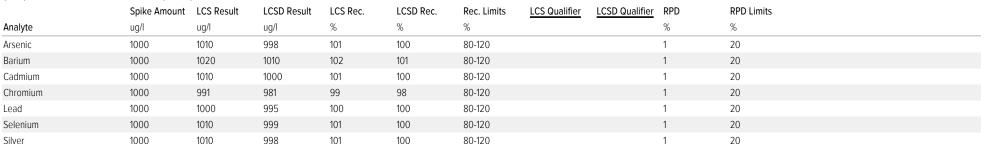
5.00

(LCS) R3175734-2 11/03/16 20:29 • (LCSD) R3175734-3 11/03/16 20:31

U

U

U











L869633-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) | 869633-03 11/03/16 20:34 • (MS) P3175734-5 11/03/16 20:39 • (MSD) P3175734-6 11/03/16 20:41

(03) 2003033-03 11	03) L003003-03 11/03/10 20:34 - (1413) 1/31/37-34-3 11/03/10 20:33 - (1413) 1/31/37-0 11/03/10 20:41												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%	
Arsenic	1000	U	1010	1010	101	101	1	75-125			0	20	
Barium	1000	7.55	1020	1020	101	102	1	75-125			0	20	
Cadmium	1000	U	1000	1010	100	101	1	75-125			0	20	
Chromium	1000	U	986	983	99	98	1	75-125			0	20	
Lead	1000	3.12	1000	1000	100	100	1	75-125			0	20	
Selenium	1000	U	1010	1010	101	101	1	75-125			0	20	
Silver	1000	U	998	1000	100	100	1	75-125			0	20	

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Metals (ICPMS) by Method 6020

L870054-01

Method Blank (MB)

(MB) R3175926-1 11/04/16 1	1:39			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Aluminum	14.0	J	2.00	100









(LCS) R31/5926-2 11/04/1	16 11:42 • (LCSD)	R31/5926-3 1	1/04/16 11:46								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%	
Aluminum	5000	4810	4860	96	97	80-120			1	20	







(OS) L 870054-01	11/04/16 11:49 . (MS) P3175926-5	11/04/16 11:55	(MSD) R3175926-6 11/04/16 11:58
(O3) L6/0034-01	11/04/10 11.49 • (IVIS) RS1/3920-3	11/04/10 11.55	(MSD) K31/3920-0 11/04/10 11.30

(OS) L8/0054-01 11/04/16	11:49 • (MS) R31	75926-5 11/04	/16 11:55 • (IVISL)) R31/5926-6	11/04/16 11:58							
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Aluminum	5000	174	4750	4850	92	93	1	75-125			2	20





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Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

L870054-01

Method Blank (MB)

(MB) R3176520-1 11/07/16 2	(MB) R3176520-1 11/07/16 22:23						
	MB Result	MB Qualifier	MB MDL	MB RDL			
Analyte	ug/l		ug/l	ug/l			
Diesel Range Organics (DRO)	U		83.3	250			
Residual Range Organics (RRO)	U		167	500			
(S) o-Terphenyl	122			64.0-146			







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3176520-2 11/07/16	22:40 • (LCSD) R3176520-3	11/07/16 22:57							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Diesel Range Organics (DRO)	750	889	908	119	121	50.0-150			2.07	20
Residual Range Organics (RRO)	750	785	790	105	105	50.0-150			0.610	20
(S) o-Terphenyl				118	118	64.0-146				













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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

L870054-01

Method Blank (MB)

(MB) R3176167-3 11/07/1	16 05:54				_
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	ug/l		ug/l	ug/l	ľ
Anthracene	U		0.0140	0.0500	- F
Acenaphthene	U		0.0100	0.0500	3
Acenaphthylene	0.0129	<u>J</u>	0.0120	0.0500	
Benzo(a)anthracene	0.00683	<u>J</u>	0.00410	0.0500	4
Benzo(a)pyrene	U		0.0116	0.0500	
Benzo(b)fluoranthene	U		0.00212	0.0500	Ļ
Benzo(g,h,i)perylene	U		0.00227	0.0500	
Benzo(k)fluoranthene	U		0.0136	0.0500	
Chrysene	U		0.0108	0.0500	
Dibenz(a,h)anthracene	U		0.00396	0.0500	
Fluoranthene	U		0.0157	0.0500	
Fluorene	U		0.00850	0.0500	
Indeno(1,2,3-cd)pyrene	U		0.0148	0.0500	
Naphthalene	0.0504	<u>J</u>	0.0198	0.250	П
Phenanthrene	U		0.00820	0.0500	
Pyrene	U		0.0117	0.0500	1 5
1-Methylnaphthalene	U		0.00821	0.250	
2-Methylnaphthalene	U		0.00902	0.250	
2-Chloronaphthalene	U		0.00647	0.250	
(S) Nitrobenzene-d5	116			33.8-179	
(S) 2-Fluorobiphenyl	117			55.5-150	
(S) p-Terphenyl-d14	107			46.2-163	

${\tt Laboratory\ Control\ Sample\ (LCS)} \bullet {\tt Laboratory\ Control\ Sample\ Duplicate\ (LCSD)}$

(LCS) R3176167-1 11/07/16	6 05:10 • (LCSD)	R3176167-2 11	/07/16 05:32								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%	
Anthracene	2.00	2.34	2.31	117	115	68.9-153			1.22	20	
Acenaphthene	2.00	2.22	2.22	111	111	67.7-141			0.270	20	
Acenaphthylene	2.00	2.19	2.15	109	108	66.9-141			1.62	20	
Benzo(a)anthracene	2.00	2.28	2.29	114	114	63.1-147			0.150	20	
Benzo(a)pyrene	2.00	2.61	2.61	131	130	62.2-150			0.150	20	
Benzo(b)fluoranthene	2.00	2.26	2.30	113	115	58.4-148			1.62	20	
Benzo(g,h,i)perylene	2.00	2.60	2.56	130	128	57.4-152			1.87	20	
Benzo(k)fluoranthene	2.00	2.55	2.50	128	125	60.5-154			2.34	20	
Chrysene	2.00	2.38	2.38	119	119	64.8-155			0.310	20	
Dibenz(a,h)anthracene	2.00	2.54	2.51	127	126	53.5-153			1.36	20	
Fluoranthene	2.00	2.41	2.38	121	119	68.6-153			1.26	20	

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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

L870054-01

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

/I CC\ D2176167.1	11/07/16 OE:10	(LCSD) R3176167-2	11/07/16 OE:22
TEC31 K31/010/-1	- II/U//Ib U5.IU •	- 1 COD KO / D D / - Z	11/07/10 03.32

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Fluorene	2.00	2.12	2.11	106	105	67.3-141			0.570	20
Indeno(1,2,3-cd)pyrene	2.00	2.59	2.54	129	127	57.0-155			1.94	20
Naphthalene	2.00	2.06	2.08	103	104	66.7-135			0.860	20
Phenanthrene	2.00	2.15	2.15	108	107	64.3-143			0.360	20
Pyrene	2.00	2.36	2.30	118	115	60.2-154			2.60	20
1-Methylnaphthalene	2.00	2.23	2.27	112	114	68.3-144			1.75	20
2-Methylnaphthalene	2.00	2.25	2.26	113	113	67.6-143			0.410	20
2-Chloronaphthalene	2.00	2.16	2.16	108	108	69.7-144			0.230	20
(S) Nitrobenzene-d5				120	119	33.8-179				
(S) 2-Fluorobiphenyl				118	118	55.5-150				
(S) p-Terphenyl-d14				107	105	46.2-163				



















GLOSSARY OF TERMS

ONE LAB. NATIONWIDE.

Abbreviations and Definitions

В

J

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
Qualifier	Description

The identification of the analyte is acceptable; the reported value is an estimate.

The same analyte is found in the associated blank.

SS
⁴ Cn













ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.*** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
daho	TN00003	Oklahoma	9915
Ilinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee 14	2006
ouisiana	Al30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA	100789	
A2LA - ISO 17025 ⁵	1461.02	DOD	1461.01	
Canada	1461.01	USDA	S-67674	
EPA-Crypto	TN00003			

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



















PAGE:

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The second second			Billing Information & Quote Number:				Analysis / Container / Preservative						rvative			Chain of Custody	Page of
Stantec- Bellevue, W 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004	Α		Accounts Payable- Phil Haberman 11130 NE 33rd Pl, Ste 200 Bellevue, WA 98004 Email To: Chris.Gdak@stantec.com;													E ST	ESC
Report to:	Corre		The state of the state of	Chris.Gdak@stante man@stantec.com			35				42					1/065 Lebarran Rd Mount runet, TN 37 Phone: ELS-758-585	
Project Description: Project			***** ****	City/State Kesk, WA					BT	es-WT	V (00)				d	Phone: 800-767-585 Fax: 515-758-5859	
Phone: 425-289-7374 Fax: 425-869-1190	Client Project		A	Lab Project # STANTECBW	Lab Project # STANTECBWA-KENT			√2 pc	1-HCH-Q	b-NaPre	250miHDPE-HNO3		N			A128	
Collected by (print): Nuthan Magnissian	Site/Facility ID	#		185750133			30 125	E-H2S	Omlan	milam	Al 250r	-1	11			Accthum: STA	
Collected by (signature): Immediately Packed on Ice N y	Rush? (L Same I Next D Two Di Three	ay	Notified) 200% 100% 50% 25%	Date Results Needed Email?No XYes FAX?NoYesof		F,NO3 by 300 125mlHDPE-NoPre	NH3 125mIHDPE-H2SO4	NWTPHDXLVI 40mlAmb-HGI-8T	PAHSIMLVID 40mlAmb-NaPres-WT	RCRA8+					Prelogin: P57 TSR: 110 - Brian PB:	3472	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Critrs		Z	MM	PAH	Total					Shipped Via:	Sample # (lab anly)
MW-7	G	GW	-	11/2/16	1405	7	×	×	×	8	×						-01
		GW				1											
747		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW				1	[
* Matrix: SS- Soll GW- Groundwate Remarks: *Nitrate has a 48 ho Aluminum by method 6020.			rinking Wat	er OT - Other						pH _ Flow_		Temp_ Other_		1 100	8Z	111095	768
Relinquished by : (Signature) Relinquished by : (Signature) Date: Relinquished by : (Signature) Date:		116	1550	received by (Sign	EX	d.			<u>5</u> 2 €	edEx. [ed via: E	D	0	19	(lab	use only)	
				eceived by: (Sign	72	sture)			Temp: 2.J Date:		Time		CO pH	COC Seal Intact: Y N NA pH Checked: NCF:			
and of					21	1				11.	3-1	6	2901	2		-	

×



Cooler	Receipt Form					
Client: STANT EC BWA	SDG#	187	1009	4		
Cooler Received/Opened On: 11/3/16	Temperature Upon Receipt:	eceipt: Z& °c				
Received By: Nikki Farmer		1 20				
Signature: Z						
Receipt Chec	k List	Yes	NQ	N/A		
Were custody seals on outside of cooler and intac	ct?	1		6		
Were custody papers properly filled out?		10		6		
Did all bottles arrive in good condition?		10				
Were correct bottles used for the analyses reque	sted?	10				
Was sufficient amount of sample sent in each bot	ttle?	1	1	1		
Were all applicable sample containers correctly p	reserved and	0				
checked for preservation? (Any not in accepted ra	ange noted on COC)					
If applicable, was an observable VOA headspace p	present?	150	1			
Non Conformance Generated. (If yes see attached	d NCF)					



ANALYTICAL REPORT

November 07, 2016



Stantec-Bellevue, WA

Sample Delivery Group: L869365

Samples Received: 10/29/2016

Project Number: 185750123A

Description: Maralco Phase II ESA

Report To: Cyrus Gorman

11130 NE 33rd PI, Suite 200

Bellevue, WA 98004

Entire Report Reviewed By:

Buar Ford

Brian Ford

Results relate only to the tens sested or calibrated are opened as rounded values. This est report shall not be reproduced, except in full, without written approval of the islocatory. Where applicable, sampling conducted by SSC is performed per guidance provided in islocatory standard operating procedures' 06/302, 06/303, and 06/304.



¹ Cp: Cover Page	1
² Tc: Table of Contents	2
³ Ss: Sample Summary	3
⁴ Cn: Case Narrative	4
⁵ Sr: Sample Results	5
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⁶ Qc: Quality Control Summary	8
Total Solids by Method 2540 G-2011	8
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⁷ Gl: Glossary of Terms	15
⁸ Al: Accreditations & Locations	16
⁹ Sc: Chain of Custody	17



















	SAMI EL SA		V 1		
SS-1 L869365-01 Solid			Collected by CS / NM	Collected date/time 10/28/16 11:30	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	ŕ
Mercury by Method 7471A	WG922674	1	11/01/16 16:50	11/02/16 11:53	NJB
Metals (ICP) by Method 6010C	WG922544	1	11/01/16 16:49	11/02/16 03:49	LTB
Metals (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19:23	VSS
Total Solids by Method 2540 G-2011	WG922653	1	11/02/16 07:58	11/02/16 08:22	MEL
Wet Chemistry by Method 350.1	WG922902	1	11/03/16 02:34	11/03/16 10:52	JER
Wet Chemistry by Method 9056A	WG923165	1	11/03/16 11:08	11/03/16 23:05	SAM
Wet Chemistry by Method 9056A	WG923852	5	11/05/16 11:19	11/05/16 21:39	CM
SS-2 L869365-02 Solid			Collected by CS / NM	Collected date/time 10/28/16 10:35	Received date/time 10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7471A	WG922674	1	11/01/16 16:50	11/02/16 11:56	NJB
Metals (ICP) by Method 6010C	WG922544	1	11/01/16 16:49	11/02/16 03:51	LTB
Metals (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19:26	VSS
Total Solids by Method 2540 G-2011	WG922653	1	11/02/16 07:58	11/02/16 08:22	MEL
Wet Chemistry by Method 350.1	WG922902	1	11/03/16 02:34	11/03/16 10:54	JER
Wet Chemistry by Method 9056A	WG923165	1	11/03/16 11:08	11/03/16 23:28	SAM
Wet Chemistry by Method 9056A	WG923165	20	11/03/16 11:08	11/03/16 23:51	SAM
			Collected by	Collected date/time	Received date/time
SS-900 L869365-03 Solid			CS / NM	10/28/16 00:00	10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Mercury by Method 7471A	WG922674	1	11/01/16 16:50	11/02/16 11:59	NJB
Metals (ICP) by Method 6010C	WG922544	1	11/01/16 16:49	11/02/16 03:59	LTB

WG922239

WG922653

WG922902

WG923165

WG923165

5

1

1

1

20

11/01/16 10:38

11/02/16 07:58

11/03/16 02:34

11/03/16 11:08

11/03/16 11:08

11/02/16 19:30

11/02/16 08:22

11/03/16 10:55

11/03/16 20:47

11/03/16 21:10

VSS

MEL

JER

SAM

SAM

SAMPLE SUMMARY





















Metals (ICPMS) by Method 6020

Wet Chemistry by Method 350.1

Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A

Total Solids by Method 2540 G-2011



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Ss 4Cn













Brian Ford Technical Service Representative

Buar Ford

SAMPLE RESULTS - 01

Total Solids by Method 2540 G-2011

Collected date/time: 10/28/16 11:30

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	63.5		1	11/02/2016 08:22	WG922653



ONE LAB. NATIONWIDE.

Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	4.26	<u>J P1</u>	2.47	7.87	1	11/03/2016 10:52	WG922902



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	82.3		1.25	15.7	1	11/03/2016 23:05	WG923165
Fluoride	226		2.05	7.87	5	11/05/2016 21:39	WG923852
Nitrate	3.62		0.0183	1.57	1	11/03/2016 23:05	WG923165



[°]Qc

Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0564		0.00441	0.0315	1	11/02/2016 11:53	WG922674



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Metals (ICP) by Method 6010C

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	6.78		1.02	3.15	1	11/02/2016 03:49	WG922544
Barium	58.5		0.268	0.787	1	11/02/2016 03:49	WG922544
Cadmium	0.619	<u>J</u>	0.110	0.787	1	11/02/2016 03:49	WG922544
Chromium	36.3		0.220	1.57	1	11/02/2016 03:49	WG922544
Lead	42.0		0.299	0.787	1	11/02/2016 03:49	WG922544
Selenium	1.87	<u>J</u>	1.16	3.15	1	11/02/2016 03:49	WG922544
Silver	U		0.441	1.57	1	11/02/2016 03:49	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	55500		26.0	78.7	5	11/02/2016 19:23	WG922239

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.

Collected date/time: 10/28/16 10:35

L869365

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	40.1		1	11/02/2016 08:22	WG922653



Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	6.65	<u>J</u>	3.91	12.5	1	11/03/2016 10:54	WG922902



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	26800		39.6	498	20	11/03/2016 23:51	WG923165
Fluoride	383		13.0	49.8	20	11/03/2016 23:51	WG923165
Nitrate	13.8		0.0289	2.49	1	11/03/2016 23:28	WG923165



Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.116		0.00697	0.0498	1	11/02/2016 11:56	WG922674



[°]Qc

Metals (ICP) by Method 6010C

(, , , , , , , , , , , , , , , , , , ,							
	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	4.30	<u>J</u>	1.62	4.98	1	11/02/2016 03:51	WG922544
Barium	60.2		0.423	1.25	1	11/02/2016 03:51	WG922544
Cadmium	2.74		0.174	1.25	1	11/02/2016 03:51	WG922544
Chromium	54.4		0.349	2.49	1	11/02/2016 03:51	WG922544
Lead	53.7		0.473	1.25	1	11/02/2016 03:51	WG922544
Selenium	U		1.84	4.98	1	11/02/2016 03:51	WG922544
Silver	0.776	J	0.697	2.49	1	11/02/2016 03:51	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	22200		41.1	125	5	11/02/2016 19:26	WG922239

SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE.

Collected date/time: 10/28/16 00:00

L869365

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Total Solids	32.0		1	11/02/2016 08:22	<u>WG922653</u>



Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	U		4.91	15.6	1	11/03/2016 10:55	WG922902



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloride	29900		49.8	626	20	11/03/2016 21:10	WG923165
Fluoride	579		16.3	62.6	20	11/03/2016 21:10	WG923165
Nitrate	8.21		0.0363	3.13	1	11/03/2016 20:47	WG923165



Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	<u>Batch</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.158		0.00876	0.0626	1	11/02/2016 11:59	WG922674



[°]Qc

Metals (ICP) by Method 6010C

(- / - /							
	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Arsenic	9.47		2.03	6.26	1	11/02/2016 03:59	WG922544
Barium	120		0.532	1.56	1	11/02/2016 03:59	WG922544
Cadmium	5.56		0.219	1.56	1	11/02/2016 03:59	WG922544
Chromium	112		0.438	3.13	1	11/02/2016 03:59	WG922544
Lead	113		0.595	1.56	1	11/02/2016 03:59	WG922544
Selenium	3.09	<u>J</u>	2.32	6.26	1	11/02/2016 03:59	WG922544
Silver	3 14		0.876	3 13	1	11/02/2016 03:59	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	81100		51.6	156	5	11/02/2016 19:30	WG922239

ONE LAB. NATIONWIDE.

Total Solids by Method 2540 G-2011

L869365-01,02,03

Method Blank (MB)

Total Solids

(MB) R3175456-1 11/O2/16 O8:22

MB Result MB Qualifier MB MDL MB RDL

Analyte % % % %

2____

3 Ss

L869363-07 Original Sample (OS) • Duplicate (DUP)

0.00110

(OS) L869363-07 11/02/16 08:22 • (DUP) R3175456-3 11/02/16 08:22

	Original Resu	lt DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	81.9	82.1	1	0.254		5







(LCS) R3175456-2 11/02/16 08:22

(200) ((0) 0 100 2 1002	-, .0 00.22				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	



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QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

L869365-01,02,03

Wet Chemistry by Method 350.1 Method Blank (MB)

(MB) R3175568-1 11/03/16 10:46

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Ammonia Nitrogen	U		1.57	5.00









(OS) L869365-01 11/03/16 10:52 • (DUP) R3175568-4 11/03/16 10:53

	Original Result (dry)	DUP Result (dry) Di	lution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Ammonia Nitrogen	4.26	ND 1		200	<u>P1</u>	20







(OS) L869697-01 11/03/16 11:18 • (DUP) R3175568-7 11/03/16 11:19

, ,	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Ammonia Nitrogen	ND	ND	1	0.000		20







Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175568-2 11/03/16 10:48 • (LCSD) R3175568-3 11/03/16 10:49

(===)	Spike Amount		LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Ammonia Nitrogen	2760	2180	2270	79.0	82.0	58.0-114			4.00	20

L869381-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) | 869381-09 11/03/16 11:04 - (MS) P3175568-5 11/03/16 11:05 - (MSD) P3175568-6 11/03/16 11:06

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Ammonia Nitrogen	500	6.70	260	262	51.0	51.0	1	80.0-120	<u>J6</u>	<u>J6</u>	1.00	20

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Wet Chemistry by Method 9056A

L869365-01,02,03

Method Blank (MB)

(IVID) K31/3/02-1 11/03	/10 11.50	
	MB Result	MB Q
Analyte	mg/kg	

(MB) R3175762-1 11/C	3/16 11:50			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	U		0.795	10.0
Fluoride	U		0.261	1.00
Nitrate	U		0.0116	1.00



L868989-21 Original Sample (OS) • Duplicate (DUP)

(OS) L868989-21 11/03/16	13:45 • (DUP) R	3175762-4 11/	/03/16 14:0	8		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	180	191	1	6		15
Fluoride	3.71	3.58	1	4		15
Nitrate	14.6	16.2	1	10		15





L869381-06 Original Sample (OS) • Duplicate (DUP)

01.46	11/04/16	D3175762 7	(DIID)	01.23 -	11/04/16) L869381-06	10001
(11/04/16	R31/5/62-/	(DUP)	U1:23 •	11/04/16	1 LX693XI-U6	(OS)

(,	(: ,			-			
	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/kg	mg/kg		%		%	
Fluoride	0.544	0.429	1	24	J P1	15	
Nitrate	U	0	1	0		15	



Sc

L869381-06 Original Sample (OS) • Duplicate (DUP)

(OS) L869381-06	11/04/16 02:09 •	(DUP) R3175762-8	11/04/16 02:32
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(03) 2003301-00 11/04/	10 02.03 (DOI) 1	(31/3/02-0 1	1/04/10 02	.52		
	Original Result (dry)	DUP Result (d	ry) Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	4280	4660	5	8		15

•						
Chloride	4280	4660	5	8	15	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175762-2 11/03/16	LCS) R3175762-2 11/03/16 12:13 • (LCSD) R3175762-3 11/03/16 12:36													
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits				
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%				
Chloride	200	215	214	108	107	80-120			1	15				
Fluoride	20.0	22.5	22.2	113	111	80-120			2	15				
Nitrate	20.0	22.5	22.5	113	112	80-120			0	15				

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Wet Chemistry by Method 9056A

L869365-01

Method Blank (MB)

Fluoride

(MB) R3176145-1 11/05/16 1	1:40			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Fluoride	U		0.261	1.00







L869858-04 Original Sample (OS) • Duplicate (DUP)

(OS) L869858-04 11/05/16	5 15:55 • (DUP) I	R31/6145-4 11/05	0/16 16:1	8		
	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Fluoride	U	0 1	1	0		15







2.21

(OS) L869858-18 11/06/16 00:20 • (DUP) R3176145-7 11/06/16 00:43											
	Original Result (dry)	DUP Result (dry) Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits						
Analyte	mg/kg	mg/kg	%		%						

2.39









(LCS) R3176145-2 11/05/16 12:03 • (LCSD) R3176145-3 11/05/16 12:26											
		Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
	Fluoride	20.0	19.9	21.6	100	108	80-120			8	15

15

L869858-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

/OSUL 960959 00 11/05/16 19:36 / MSD D2176145 5 11/05/16 19:50 / MSD) D2176145 6 11/05/16 19:21

(03) Lodao30-0a 11/03/10 16.30 • (M3) K31/0143-3 11/03/10 16.3a • (M3D) K31/0143-0 11/03/10 13.21												
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Fluoride	67.2	3.80	24 7	23.1	31	29	1	80-120	16	16	7	15

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L869365-01,02,03

Method Blank (MB)

Mercury

Mercury by Method 7471A

(MB) R3175352-1 11/O2/16 10:51

MB Result MB Qualifier MB MDL

Analyte mg/kg mg/kg

U





Ss

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175352-2 11/02/16 10:54 • (LCSD) R3175352-3 11/02/16 10:57 Spike Amount LCS Result LCSD Result LCS Rec. LCSD Rec. Rec. Limits LCSD Qualifier RPD LCS Qualifier RPD Limits % mg/kg mg/kg % % % Analyte mg/kg Mercury 0.300 0.279 0.281 93 94 80-120 1 20



L869282-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

0.0028

MB RDL

mg/kg

0.0200

(OS) I 869282-01 11/02/16 11:00 • (MS) R3175352-4 11/02/16 11:03 • (MSD) R3175352-5 11/02/16 11:15

(OS) L869282-01 11/02/16 11:00 • (MS) R31/5352-4 11/02/16 11:03 • (MSD) R31/5352-5 11/02/16 11:15													
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
Mercury	0.457	0.00550	0.339	0.339	73	73	1	75-125	J6	J6	0	20	









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Metals (ICP) by Method 6010C

L869365-01,02,03

Method Blank (MB)

(MB) R3175124-1 11/02	2/16 02:55					
	MB Result	MB Qualifier	MB MDL	MB RDL		
Analyte	mg/kg		mg/kg	mg/kg		
Arsenic	U		0.65	2.00		
Barium	U		0.17	0.500		
Cadmium	U		0.07	0.500		
Chromium	U		0.14	1.00		
Lead	U		0.19	0.500		
Selenium	U		0.74	2.00		
Silver	U		0.28	1.00		









Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175124-2 11/02	2/16 02:57 • (LCSD) R3175124-3	11/02/16 03:00								Б
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	_ L
Arsenic	100	102	103	102	103	80-120			2	20	8
Barium	100	105	106	105	106	80-120			1	20	
Cadmium	100	102	103	102	103	80-120			1	20	[
Chromium	100	101	102	101	102	80-120			1	20	
Lead	100	102	103	102	103	80-120			1	20	L
Selenium	100	101	103	101	103	80-120			1	20	
Silver	100	101	102	101	102	80-120			1	20	









L869107-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869107-05 11/02/16 03:02 • (MS) R3175124-6 11/02/16 03:10 • (MSD) R3175124-7 11/02/16 03:13												
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	117	8.20	115	118	91	94	1	75-125			3	20
Barium	117	92.3	238	242	125	128	1	75-125		<u>J5</u>	2	20
Cadmium	117	ND	113	117	97	100	1	75-125			3	20
Chromium	117	20.4	130	135	94	98	1	75-125			4	20
Lead	117	13.0	130	134	100	104	1	75-125			3	20
Selenium	117	ND	111	114	94	97	1	75-125			3	20
Silver	117	ND	113	116	97	100	1	75-125			3	20

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Metals (ICPMS) by Method 6020

L869365-01,02,03

Method Blank (MB)

Aluminum

(MB) R3175414-1 11/02/16 18:38 MB Result MB Qualifier MB MDL Analyte mg/kg mg/kg

4.96







2.3

MB RDL

mg/kg

50.0

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R31/5414-2	11/02/16 18:41 • (LCSD) F	31/5414-3	11/02/16 18:44
	Spike Amount	LCS Result	LCSD Result

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Δluminum	1000	1060	1100	106	110	80-120			4	20







(OS) | 869381-03 11/02/16 18:47 • (MS) R3175414-6 11/02/16 18:57 • (MSD) R3175414-7 11/02/16 19:00

(00) 2000001 00 11/0	(00) 2000001 00 11/02/10 101.17 (11/02/10 101.07 (11/02) (11/02/10 101.07 (11/02) (11/												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
Aluminum	200	8000	9480	9050	149	106	5	75-125	V		5	20	







GLOSSARY OF TERMS





SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.





















ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.*** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
daho	TN00003	Oklahoma	9915
Ilinois	200008	Oregon	TN200002
ndiana	C-TN-01	Pennsylvania	68-02979
owa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee 14	2006
ouisiana	Al30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789	
A2LA - ISO 17025 ⁵	1461.02	DOD	1461.01	
Canada	1461.01	USDA	S-67674	
EPA-Crvpto	TN00003			

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



















			Billing Info	rmation & Quote N	lumber:	7.5		_		Inalysis	/ Contai	ner / Pr	eservativ	/e		Ch	iain of Custody	Page Mf
Stantec- Bellevue, W 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004	/A	Accounts Payable-Phil Hoberttan- 11130 NE 33rd Pl, Ste 200 Bellevue, WA 98004					11130 NE 33rd PI, Ste 200							1	¥.	ESC		
Report to:	w Gorn	1	_	hris Gdak@stante man@stantec.com	Transfer of the second				MedH							12 Mis	065 Lebanon Rd bunt Julies, TN 37 one, 615-728-583	
Project Description Maralco	11		A	City/State Collected: La	t. VA	liner:			4/5yr/		Pres	S	50				1 611-758-5859	即發展
Phone: 425-289-7374 Fax: 425-869-1190	Client Project		4	Lab Project # STANTECBW			NoPres	res	NaHSO	50	CIr-No	-NoPre	TS ZozCh-Nopres			Įu.	86936 B224	
CARL SHESTHE N	Site/Facility IS	CNES	SON		50/23		fozdir-	CIT-NO	x 40ml/	Ir-NoP	tals 20	SozClr	S 202C			100	emplate:T11	
Collected by (signature): Immediately Packed on Ice NY	Rush? (L Same) Next 0 Two 0s Three	ay		Email?	No X_Yes	No.	CI,F,NH3,NO3 402CIT-NOPres	NWTPHDX 402Clr-NaPres	NWTPHGXBTEX 40ml/NaHSO4/Syr/MeOH	PAHSIMD 402Clr-NoPres	RCRA8 + Al metals 2ozCir-NoPres	TCLP RCRA8+AI 8ozClr-NoPres	Screen,				elogin; PS7 R: 110 - Brian	
Sample ID	Comp/Grab	Matrix.*	Depth	Date	Time	intre	CI,F,	N.	NN	PAH	RCR)	TCLP	VOCs			-	Mapped Via.	Sèmple # (740 ánlý)
55-1	Grab	S50 7	6"	10/28/16	11:30	13	X				X							01
55-2	"	SSOT	6"	10	10:35	1	X				x							82
55-900	- II	SOT	67	il.	00:00		-				X							03
		SS								7		11						
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		SS			-						-							
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* Matrix: 55 - Soil GW - Groundwat Remarks: Aluminum by Meti		ater DW - Drift	nking Wate	er OT - Other Se	direct					pH Flow		_ Ten			Hold	#		
Relinguished by : (Signature)		Date: 10/28/	2016	15:45	scelved by (Signa		ů,			1	edEx)	□ Coun	□ UPS		DI	B9	(lab)	use only)
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Relinquished by (Signature)		Date:		Time:	eterved for lan by	(Signa	iture)			Date:	29-	10	091	00		heckent	NCF:	



Cooler R	eceipt Form			
Client: STANTECBWA	SDG#	869	365	
Cooler Received/Opened On: 10/ 29 /16	Temperature Upon Receipt:	2.4	00	
Received By: Dakota Busby				
Signature: Das				
Receipt Check Li	st	Yes	No	N/A
Were custody seals on outside of cooler and intact?				1
Were custody papers properly filled out?		1		
Did all bottles arrive in good condition?		/		JL I
Were correct bottles used for the analyses requested	1?	1		
Was sufficient amount of sample sent in each bottle				
Were all applicable sample containers correctly prese	erved and			1
checked for preservation? (Any not in accepted range	e noted on COC)			
If applicable, was an observable VOA headspace pres	ent?		E	1
Non Conformance Generated. (If yes see attached No	CF)			

Appendix E

Data Validation Report

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	ESC Lab Sciences
Lab SDG/Project/Work Order:	L869381
Project Name:	City of Kent Brownfield (Cooperative Agreement BF-
	00J65701)
	Maralco Property
Stantec Project Number:	185750123
Client:	City of Kent
Validator Name:	Kim Vik
Date of Validation:	November 18, 2016

SAMPLE INFORMATION:

SAMPLE INFORMATION:							
Number of Samples:	20 submitted (2 sets of 2 have the same name; 17						
	unique submitted sample names)						
Matrix:	Soil						
Number of Trip Blanks:	None						
Number of Equipment Blanks:	None						
Number of Field Duplicates	None.						
(include duplicate							
information)							
Date of Sample Collection:	October 27, 2016						
Sample:	Analyses:	Batch:					
B-4-9'	TPH-G/BTEX (Method NWTPH-Gx)	WG923098					
B-4-15'	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A)	WG922813 WG922544 WG922239 WG922975 WG922902 WG923165					
B-4-7'	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A)	WG922813 WG922544 WG922239 WG922975 WG922902 WG923165					
B-5-10'	TPH-G/BTEX (Method NWTPH-Gx)	WG923098					
B-5-8'	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A)	WG922813 WG922544 WG922239 WG922975 WG922902 WG923165					

B-5-15'	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A)	WG922813 WG922544 WG922239 WG922975 WG922902 WG923165
B-6-9.5'-	TPH-G/BTEX (Method NWTPH-Gx)	WG923098
B-6-7.5'	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A)	WG922813 WG922544 WG922239 WG922975 WG922902 WG923183
B-6-15'	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A)	WG922813 WG922544 WG922239 WG922975 WG922902 WG923183
B-1-17'	TPH-G/BTEX (Method NWTPH-Gx)	WG923098
B-1-17' (sample submitted and analyzed as a separate sample)	SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Total Solids (Method 2540 G-2011)	WG922194 WG923175 WG922975
B-1-5′	SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Total Solids (Method 2540 G-2011)	WG922194 WG923175 WG922976
B-2-4'	SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Total Solids (Method 2540 G-2011)	WG922194 WG923175 WG922976
B-2-16.5′	SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Total Solids (Method 2540 G-2011)	WG922194 WG923175 WG922976
B-3-16'	TPH-G/BTEX (Method NWTPH-Gx)	WG923098
B-3-16' (sample submitted and analyzed as a separate sample)	SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Total Solids (Method 2540 G-2011)	WG922194 WG923175 WG922976
B-3-6'	SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Total Solids (Method 2540 G-2011)	WG922194 WG923175 WG922976

B-4-15'	Mercury (Method 7470A)	WG923664
(not on COC; lab labeled	ICP Metals (Method 6010C)	WG923644
"waste"; analyzed as a liquid)	Preparation (Method 1311)	WG923641
B-4-7' (not on COC; lab labeled "waste"; analyzed as a liquid)	Mercury (Method 7470A) ICP Metals (Method 6010C) Preparation (Method 1311)	WG923664 WG923644 WG923641
B-5-8'	Mercury (Method 7470A)	WG923721
(not on COC; lab labeled	ICP Metals (Method 6010C)	WG923732
"waste"; analyzed as a liquid)	Preparation (Method 1311)	WG923481
B-5-15'	Mercury (Method 7470A)	WG923664
(not on COC; lab labeled	ICP Metals (Method 6010C)	WG923644
"waste"; analyzed as a liquid)	Preparation (Method 1311)	WG923641
B-6-7.5'	Mercury (Method 7470A)	WG923721
(not on COC; lab labeled	ICP Metals (Method 6010C)	WG923732
"waste"; analyzed as a liquid)	Preparation (Method 1311)	WG923481
B-6-15'	Mercury (Method 7470A)	WG923664
(not on COC; lab labeled	ICP Metals (Method 6010C)	WG923644
"waste"; analyzed as a liquid)	Preparation (Method 1311)	WG923641

GENERAL DATA VALIDATION:

Chain of Custody:

COC is complete, with the Non-Conformance Form (NCF) from the lab. The NCF stated that there needed to be a login clarification. The original COC was revised where analyses were changed and/or omitted. All requested analyses were performed per the updated COC.

Holding Times:

All analyses were run within the required holding times. No qualifiers are needed.

Trip Blank Review:

No trip blanks were submitted with this SDG even though volatile organics were analyzed.

Surrogates:

All sample surrogates are within control. No qualifiers are needed.

QC Surrogates:

All QC surrogates were within control.

Lab Notes:

NCF indicated that a login clarification was needed. The original COC was revised.

Elevated Reporting Limits:

Aluminum (Method 6020) analyses were run on dilutions for sample B-6-7.5' and B-6-15'; the associated reporting limits were elevated.

PER ANALYSES:

Total Solids, Method 2540 G-2011 (Batches: WG922975, WG922976)

Method Blanks:

Total Solids method blank results were 0.000400% (Batch WG922975) and 0.00110% (Batch WG922976). No qualifiers are needed.

Lab Duplicates:

The relative percent difference (RPD) between the original sample and the lab duplicate sample was within the control limit of 5% for both batches. No qualifiers are needed.

<u>Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD):</u>

The LCS percent recovery was within the acceptance limits in both batches. An LCSD sample was not run in either batch. No qualifiers are needed.

Wet Chemistry: Ammonia Nitrogen, Method 350.1 (Batch: WG922902)

Method Blank:

Ammonia nitrogen was not detected above the Method Detection Limit (MDL) in the laboratory method blank. No qualifiers are needed.

Lab Duplicates:

Two laboratory duplicates were run. The RPDs between the original samples and the lab duplicate samples were within the control limit of 20%. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The

RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Wet Chemistry: Chloride, Fluoride, Nitrate, *Method 9056A* (Batches: WG923165, WG923183)

Method Blanks:

No analytes were detected above the MDL in the laboratory method blank in either batch. No qualifiers are needed.

Lab Duplicates:

Three laboratory duplicates were run in Batch WG923165 and two were run in Batch WG923183. The RPDs between the original samples and the lab duplicate samples were within the control limit of 15% for both batches with the exception of the RPD for fluoride in one lab duplicate. The lab noted that the RPD was not applicable for that sample. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits for both batches. The RPD between the LCS and LCSD was within the control limit of 15% for both batches. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries were within the specified acceptance limits in both batches except for fluoride and nitrate in Batch WG923165 and fluoride in Batch WG923183. The lab noted that due to the matrix interference, accurate spike values could not be determined. The RPD between the MS and MSD was within the control limit of 15% in both batches. Based on the review of the other data including the LCS/LCSD, no qualifiers are needed.

Mercury, Method 7470A (Batches: WG923664, WG923721, WG922813)

Method Blanks:

Mercury was not detected above the MDL in the laboratory method blank in any batch. No qualifiers are needed.

LCS/LCSC:

The LCS and LCSD percent recoveries were within the specified acceptance limits in all batches. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

Two MS/MSD samples were run for Batches WG923664 and WG923721, and one for Batch WG922813. The MS and MSD percent recoveries were within the specified acceptance limits for all batches. The RPD between the MS and MSD was within the control limit of 20% for all batches. No qualifiers are needed.

Metals (ICP), Method 6010C (Batches: WG922544, WG923732)

Method Blanks:

No analytes were detected above the MDLs in the laboratory method blank in either batch. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits for both batches. The RPDs between the LCS and LCSD were within the control limit of 20% for all analytes in both batches. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries for all analytes were within the specified acceptance limits for both batches. The RPDs between the MS and MSD were within the control limit of 20% for all analytes in both batches. No qualifiers are needed.

Metals (ICPMS): Aluminum only, Method 6020 (Batch: WG922239)

Method Blank:

Aluminum was detected at 4.96 mg/Kg which is between the MDL and the Reporting Detection Limit (RDL). Results for potentially affected samples were all greater than 10X the method blank result; therefore, no action is needed. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS percent recovery was higher than the upper acceptance limit (UAL), but the MSD percent recovery was within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. The lab noted that the sample concentration was too high to evaluate the spike recovery. It should be noted that the sample was run on a 5x dilution which could affect that recovery. No qualifiers are needed.

Volatile Organics: Gasoline Range Organics (GRO) and Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX), Method NWTPH-Gx/8021B (Batch: WG923098)

Method Blank:

Toluene was detected at 0.000193 mg/Kg which is between the MDL and the RDL. Affected samples include B-6-9.5′, B-1-17′ and B-3-16′. Toluene results for these samples will be qualified as "undetected at the RDL", or 0.00500 U. No other analytes were detected in the method blank. No other qualifiers are needed. The table in the last section of this memo ("Determination") lists the qualified data to be used.

LCS/LCSD:

Two LCS/LCSD samples were run for this batch. The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limits ranging from 20% to 44%. No qualifiers are needed.

MS/MSD:

Two MS/MSD samples were run for this batch. The MS and MSD percent recoveries were within the specified acceptance limits, except for GRO where the percent recovery for both the MS and MSD were slightly lower than the lower acceptance limit (LAL). The RPDs for toluene, ethylbenzene, total xylenes and GRO were outside the control limits ranging from 20% to 44%. The lab noted that there was matrix interference

which prevented accurate determinations. Based on the review of the other QC results and the fact that the sample matrix is soil, no action is needed due to the matrix interference. No qualifiers are needed.

Semi-Volatile Organics: Diesel Range Organics (DRO) and Residual Range Organics (RRO), *Method NWTPH-Dx* (Batch: WG923175)

Method Blank:

DRO and RRO were not detected above the MDL in the method blank. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for DRO and RRO were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries were within the specified acceptance limits, except for the MSD percent recovery for RRO which was slightly lower than the LAL. The RPDs for both DRO and RRO were outside the control limit of 20%. The lab noted that there was matrix interference which prevented accurate determinations. Based on the review of the other QC results and the fact that the sample matrix is soil, no action is needed due to the matrix interference. No qualifiers are needed

Semi-Volatile Organics: Polycyclic Aromatic Hydrocarbons (PAHs), Method 8270-SIM (Batch: WG922194)

Method Blank:

No analytes were detected above the MDLs in the laboratory method blank. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the LCS and LCSD for all analytes were within the control limit of 20%. No qualifiers are needed.

FIELD DUPLICATE REVIEW:

No field duplicates were collected or submitted for this SDG.

DETERMINATION:

The data in this work order have been validated and determined to be acceptable for use with the following qualifications:

		<u>Original</u>	Qualified	
Sample ID	Analyte (Method)	Result (mg/Kg)	Result (ma/Ka)	<u>Reason</u>
B-6-9.5'	Toluene (Method 8021B)	0.000765 J	0.00500 U	Method blank contamination.
B-1-17'	Toluene (Method 8021B)	0.000524 J	0.00500 U	Method blank contamination.
B-3-16′	Toluene (Method 8021B)	0.000619 J	0.00500 U	Method blank contamination.

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of J to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the Method Detection Limit (MDL) and Reporting Detection Limit (RDL), the resulting data was flagged with J to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). Based on the review of laboratory quality control data provided by the laboratory, the sample results may be qualified with:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (method reporting limit or MRL). Results assigned this qualifier are considered undetected at the MRL.
- UJ Indicates the analyte was not detected above the quantitation limit or MRL; however, the MRL is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL.
- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

SEE ATTACHED DATA QUALIFIER FORM FOR DATA VALIDATION AND LABORATORYASSIGNED QUALIFIERS (IF APPLICABLE) .

REFERENCES:

- CE. 2005. Environmental Quality Guidance for Evaluating Performance-Based Chemical Data (Engineering Manual), EM 200-1-10. US Corps of Engineers. June 30, 2005.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8. USEPA. November 2002.
- EPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008. USEPA. October 1999.
- EPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004. USEPA. October 2004.
- EPA. 2006. Tier I Data Validation Manual for the Ohio EPA, Division of Hazardous Waste Management. Ohio EPA. February 2006.
- TNI. 2009. Volume 1, Management and Technical Requirements for Laboratories Performing Environmental Analysis, Module 4: Quality System for Chemical Testing, TNI Standard. The NELAC Institute. September 2009.



ANALYTICAL REPORT



11/18/16

Stantec-Bellevue, WA

Sample Delivery Group:

1869381

Samples Received:

10/29/2016

Project Number:

185750123A

Description:

Maratco, Phase II ESA

Report To

Cyrus Gorman

11130 NE 33rd Pl, Suite 200

Bellevue, WA 98004

Entire Report Reviewed By:

Buar Ford

Brian Ford

Technical Service Representative

Results retate only to the news tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the experiency. Where applicable, sampling conducted by ESC of performed per guidance provided in liboratory standard operating procedures (660302, 060303, and 060304.)



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ONE	LAB	NATIONWIDE	
	-	Lucille Strategic	

B-4-9' L869381-01 Solid			Card Shestag	Collected date/time 10/27/16 09:02	Received date/time 10/29/16 09:00
nethod	Bajch	D wijn	Preparation date/limbe	Andlysis duteding	Analyst
abilile Organic Compounds (GC) by Method 8021B/NWTPKGX	WG923098	1	10/27/16 09:02	11/04/16 02 29	BMB
			Collected by	Collected date/ me	Received date/time
3-4-15' L869381-02 Solid			Çirol Shesting	10/27/15 09:10	10/29/46 09:00
Aethod	Balcli	Dilution	Preparation	Analysis	Analyst
			dare/time	dateAime	
Acreury by Method 74734	WG922813	1	11/02/16 11:36	11702/16 15 56	NIB
Motifis (ICP) by Method 6040C	WG922544	1	11/01/16 16 49	1402/16 04 02	LTB
Michails (IICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19 33	¥5S
folal Solids by Method 2\$40 G 2011	WG922975	1	11/03/16 08:20	11/03/16 08 30	KDW.
Wel Chemistry by Melliod 350 1	WG92290Z	1	11/03/16 02:34	1403/16 to 56	JER
Vel Chemistry by Melitod 9056A	WE923165	1	1403/16 11 08	1,403/16 21.56	SAM
5 4 7 4 DC0070 00 0 15 /			Collected by Carol Sheeting	Calleded date/linte 10/2745 09:00	Received date/time: 10/29/16 09-00
B-4-7' L869381-03 Solid	- 6.76	280% à 015	2 Court Proof		Adversion .
Method	Balch	Datus tim	Preparation date/time	Antifysis date/time	Analyst
Morcury by Method 7471A	WG922813	1	TV02/16 11:35	19/02/16 16 11	NJB
Morals (RCP) by Mittled 60/DIC	WG922544	1	1001/16 16/19	W02/16 04 05	138
Mutich (BCPMS) by Method 5020	WG922239	5	1V01/16 10:38	10/02/16 18:47	755
oral Solids by Midhad 2540 G-2011	WG922975	1	1403/16 OB 20	11/03/16 08 30	KDM
Ver Chemistry by Method 350 1	WG922902	1	13/03/16 02 34	1703/16 11 00	.u∈R
	2.45.46.7.78	7	11/03/16/11/08	1/03/16 22 19	SAM
Wei Chemistry by Melhod 9056A	WG973165		1003/10 11 03	1003/16 22 49	2804
B-5-10' L869381-04 Solid			Callected by Carol Shestag	Collected directions (0/27/16 (0:32	Received date/filme 50/29/16 09:00
Mothed	Baleh	Dilaton	Preparation	Analysis	Aniifysi
netico	Date	Lindigit	date/fine	distelline.	AHIIIAZI
Abtrille Organic Compounds (GC) by Method 80218/NWTPHGX	8e0ESepw	1.	10/27/16 10:32	1/04/16 D2 50	BMB
			Walle at our late	Faria and a presidence	Received date/lime.
B-5-8' L869381-05 Solid			Coffected by Carp Shestag	Eddle sted date/filme 10/27/16 10:30	10/29/16 09:00
Wellind	Batch	Diulos	Preparation	Analysis	Anayst
			date/linie	date/time	
Morcury by Method 747IA	WG922B13	1	11/02/16 11 36	11/02/16 16 14	NJB
Mutals (PCP) by Method 6010C	WG922544	Y	11/01/46 16 49	11/02/16 04:07	LTB
Morris (ICPMS) by Method 6020	WG922239	5	11/01/46 10:38	11/02/16 19 36	V55
ola: Solids by Method 2540 G-2011	WG922975	1	11/03/16 09 20	11/03/45 OB 30	WOW
Voi Chemistry by Method 350.1	WG922902	Y	11/03/16 02:34	11/03/16 11:01	JER
Vel Chemistry by Method 9056A	WG923165	T	11/03/16 11 OB	11/04/16 01:00	SAM
			Collected by	Collected distrollime	Received date/lime
B-5-15' L869381-06 Solid			Carol Shirstog	10/27/16 10:40	10/29/16 09:00
Mothad	Bitch	Dilution	Preparation	Analysis	Analyst
		- harrieft	datertime	date/time	
Muccury by Method 7471A	WG922813		11/02/16 11:36	11/02/16 to 23	NJB
Metals (ICP) by Method 6010C	WG922544	t	11/01/16 16:49	11/02/16 04 10	LTB
Metal's (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19 39	455
folal Solids by Method 2540 G-2011	WG922975	1	11/03/16 OB:20	11/03/16 08 30	KDW
Vej Chemistry by Method 350.1	WG922902	1	11/03/16 02:34	11/03/16 11/02	JER
Net Chemistry by Method 9056A	WG923165	1	11/03/16 11 08	11/04/16 01 23	SAM
ACCOUNT:	PROJECT:		SDG:	OATE/TIME:	
Statted: Bollevier, WA	1857501234		1869381	11/09/16 13:16	4

185750123A

Started Bellevue, WA

1869381

SAMPLE SUMMARY



















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11/09/16 13:16

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B-5-15' L869381-06 Solid			Collected by Carol Shrsta	Collected date/time 10/27/16 40:40	Received date/time 10/79/16 09:00
Method	Gmch	Diluwan	Ргерагатіол	Analysis	Analyst
			datellime	date/bine	
Wel Chemistry by Minhod 9056A	WG923165	5	N/03/16 11:08	11/04/16 02:09	SAM
B-6-9.5' L869381-07 Solid			Collected by Carol Shestag	Collected datefulle 40/27/16 14/38	Received date/hime 10/29/16 09/00
Method	Batch	Πομίσχο	Preparation	Analysis	Analysa
			date/time	dateAlme	
Volatile Organic Compounds (GC) by Method 80219/NWTPHGX	WG923098	T	10/27/16 14 38	1004/05 03:11	EWE
			Collected by	Collected datestime	Received date/time
8-6-7.5' L869381-08 Solid			Carol Sheslag	10,07/1614/95	10/29/16 09:00
Method	Batch	Эниноп	Preparation.	Analysis	Алаһуşі
			date/time	dateAime	
Mercony by Westod 7471A	W6922813	T)	11/02/15 10:36	11/02/16 16 26	N)8
Metals (ECP) by Method 6010C	W6922544	1	11/01/16 16:49	11/02/16 04:13	LTB
Motals (CPMS) by Method 6020	WG922239	2	11/01/16 10 38	11/02/16 19:42	V55
Total Solids by Mentod 2540 G 2011	WG922975	9	11/03/16 08/20	11/03/16 08 30	WDW/
Wet Chemistry by Method 350 I	WG922902	97	1//03/16 02:34	11/03/16 11/03	JED
Wel Chemistry by Melstod 9056A	WG923183	17	W0346 14 119	10/4/16/06:44	MAZ
B-6-15' L869381-09 Solid			Collected by Carol Shesteg	Collection date: Collection (Collection)	Reseived date/line 10/29/16 09:00
Method	Batch	Diring	Preparation	Analysis	Analysi
			date/ilme	dateh ma	
Mercury by Method 7471A.	WG92Z813	1	11/02/16 11:36	11/02/16 15:29	NJB
Metals (ICP) by Method 5010C	WG922844	1	11/01/16 16:49	100275 0416	LYB
Metals (ICPMS) by Method 5020	WG922239	5	11/01/16 10:38	19/02/16/19/45	V55
Fotal Solids by Method 2540 G-2011	WG922975	1	11/03/16 68 20	1003/16 OB 30	RDM
Wel Chemistry by Method 350 1	WG92290Z	1	11/03/16 02:34	10/03/16 11:04	JER
Wel Chemistry by Method 90564	WG923183	T.	11/03/16 14-09	10/04/16/07/20	SAM
			Collected by	Collected dat /timi	Received date/lime
B-1-17' L869381-10' Solid			Carol Shestag	10/27/16 17:10	10/29/15 09:00
Method.	Balen	Ollution	Preparation date/lime	Analysis data/time	Analyst
Votable Organic Compounds (GC) by Method 90218/NWTPHGX	WG923098	1	10/27/16 12:10	11/04/16 03 32	BMB
			Coloneste	Compatible	Ruceived bare/lime
B-1-17' L869381-11 Solid			Carol Shestag	Collected day/v/ism 10/27/16/12:10	x0/29/16/09/00
Method	Baich	Dila)(00	Preparation	Analysis	Analyst
			datetime	date/tune	
Semi Volatile Organic Compaunds (GC/MS) by Method 82700 SIM	WG922194	1	17/02/16 17:53	11/03/16 11:18	KMP
Semi-Volable Organic Compounds. [GC) by Method NWTPHDX	WG923175	1	1005/16 16:44	11/07/16 14:37	DMG

Total Solids by Method 2540 6-2011

WG922975

11/03/16 08:20

11/03/16 09 3/0

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B-1-5' L869381-12 Solid			Collected by Carol Shestag	Collected date/i me 10/27/16 12:00	Received date/filme 10/29/16 09:00
Method	Baich	Dilution	Preparation date/time	Analysis datehine	Analyst
Senti Valattic Organic Compounds (SC/MS) by Method 8270D-SIM	WG9ZZ194	1	11/02/16 17:53	1903/16 (1/39	KMP
ienii Volatile Organic Compounds (GC) by Method NWTPHDX	WG923175	1	11/05/16 16:44	19/07/06 14 54	DMG
otal Solids by McBlod 2540-6-7011	WG922976	1	11/03/16 08:06	100306 08 17	KDW
3-2-4' L869381-13 Solid			Collected by Carol Shester	Collected date/time 10/27/16 12:50	Received date/lume 10/29/16 09:00
		Bita			Assistan
ellod	Batch	Dilyt on	Preparation date/ime	Analysis datel/time	Analyst
iemi Volane Organic Compounds (GC/MS) by Meshod 82700-SiM	WG922194	- 1	11/02/16 17:53	11/03/16 12 01	KWb
em Valatile Organic Compounds (GC) by Method NWTPHDX	WG923175	- 1	11/05/16 16:44	11/07/16 16 58	DMG
cial Solids by Methou 2540 G 2011	WG922976	4	1703/16 08:06	11/03/46 08:17	KDW
			Cottected by	Collected date/time	Recoved date/time
3-2-16,5' L869381-14 Solid			Darol Shostag	10/27/16 12 58	10/29/16 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
	30.00		date/isme	date/time	
emi Votatilo Organia Conspounds. (GC/MS) by Melhod 82700-SIM	WG922194	1	11/02/46 17 53	11/03/16 12:22	KMP
emi-Yolmike Olganic Compounds (GC) by Method NWTPHDX	WG923175	1	11/05/16 16:44	11/07/16 17 15	DMG
oral Solids by Method 2540 G 2011	W6922976	1	11/03/15 08 06	11/03/16 08 17	KDW
10-20-0			1020 27737	2.000 May 20.00	
3-3-16' L869381-15 Solid			Collected by Casol Shestag	Collected dute/time: 10/29/16 (1-40)	Received date/rape 10/29/15 09:00
fethod	Entch	Dámlan	Preparation	Annlysis	Analyst
			date/time	datenime	
olatile Organic Compounds (GC) by Menhad 80218/NV/TEHGX	WG923098	1	10/27/16 11:40	11/08/16 14:05	DWR
			Collected by	Collected date/time	Received date/time
B-3-16' L869381-16 Solid			Carol Shestag	10/27/16 11:40	10/79/15 09:00
Method	Black	Diluton	Preparation	Analysis	Amilyst
			dace/nme	date/line	
enti Volmile Organic Compounds (GC/MS) by Method 8270D SIM	WG922194	1	11/02/16 17:53	11/03/16 12 43	KMP
ensi Volatile Organic Compounds. (GC) by Method NWTPHDX	VVG923175	1	1005/16 16 44	11/07/16 17 32	DAAG
otal Solles by Mothod 2540 G-2014	WG922976	1	1/03/16 08:06	11/03/15 OB:17	KDW
			Cottacted by	Callected datenine	Received date/dime:
3-3-6' L869381-17 Solid			Carol Shestag	10/27/16 11:25	10/29/16 09:00
Actual	Bai¢h	Dation	Preparation	Analysis	Analyst
			date/time	dateitime	
emi Volatile Organic Compounds (GC/MS) by Method 82700 StM	WG922194	1	11/02/16 17:53	11/03/16 13:25	KMP
emi-Volatile Organic Compounds. (GC) by Method NWTPILDX	WG923175	10	11/05/16 16:44	11/07/16/21 20	DMG
ata Solids by Merinad 2540 G 2011	WG922976	t	11/03/46 08:06	11/03/16 08 17	KDW
			Gallected by	Callegred dissellines	Percived thicking
8-4-15' L869381-18 Waste			Corol Shestag	10/27/16 09:10	±0/29/16 09:00
Method	Bitch	Diluton	Preparation	Analysis	Analyst
e de la companya del companya de la companya de la companya del companya de la co	(nexase)		Mate/time	distelline	
Aercury by Methaul 7470A	WG923664	1	104/16 05 28	1//04/16 09:53	TRB
Meta's (ICP) by Method 60°9C	WG923644	1	1V03/16 23-22	170446 02 46	CCE
Preparation by Method #311	WG923641	1	1703/16 21:03	11/03/16 21:03	ΓΊΝ
ACCOUNT,	PROJECT:		SDG:	DATE/TIME:	
RIAMOR FOROVOR WA	1857576234		1,969391	U/09/16 13:16	

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L869381

11/09/16 13:16

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B-4-7' L869381-19 Waste			Collected by Caros Shestag	Collected daje/time 10/27/16 09:50	Received date/ornic 10/29/16 09:00
Melhod	Baich	Ollujian	Preparation	Analysis	Analyst
			dale/lime	datellime	
Mexiculy by Method 7470A	WG923664	1	11/04/16 05:28	11/04/16 09 55	TRE
Metals (ICP) by Method 6010C	WG923644	1	11/03/16 23 22	11/04/16 02 57	CCE
Preparation by Method 1311	WG923641		10/03/16 21/03	1903/16 21 03	Пи
B-5-8' L869381-20 Waste			Codecaed by Caral Shestag	Collected date/time +0/27/16 10:30	Received date/lime 10/29/16 09:00
Method	Batch	Dilinion	Preparation	Analysis	Analyst
			автейте	datehme	
Mercury by Method 7470A	WG9Z3721	T	17/04/16 09:42	1004/16 12:04	TRE
Meta's (ICP) by Method 6010C	WG92373Z		11/04/15 10:23	100476 15:05	CCE
Preparation by Method 1311	WG9Z3480	. 1	11/03/16 12:50	m/03/16 12 50	85
8-5-15' L869381-21 Waste			Collected by Carol Shesting	Collected databline	Received date/time 10/29/16 09/00
Metilod	Basch	Qausion	Preparation datedime	Anulysis dateitime	Analyst.
Mercury by Method 7470A	WG923664	1	TV04/16 05:28	1004/16 09 58	TRB
Metals (ICP) by Method 5010C	WG923644	3	1403/16 23:22	19/04/56 03:00	CCE
Preparation by Method 1311	WG923641	Y	103/16 21:03	1903/16 21:03	LIN
B-6-7.5' L869381-22 Waste			Calected by Carol Shesting	Collected data (Ime 10/23/16 14/35	Received date/1799 10/29/16 (19:00
Method	Đạtch	CHOUGH	Preparation date/fime	Analysis dateAlme	Apalyst.
Mercury by Method 7470A	W6923721	1	10047E 09:42	10/04/18 12:19	TRB
Metals (ICP) by Metriod 6010C	WG923732	1.0	1W04/16 10 23	1004/66 14 S3	CCE
Preparation by Method 1311	WE973481		10/03/16/17:50	1903/16 12:50	BG
B-6-15' L869381-23 Waste			Collected by Garof Shestag	Collected date/time 19/27/16/14/45	Received datenime 10/29/16 09:00
Method	Batch	Didution	Preparation datehine	Analysis datekime	Analyst
Mercury by Method 7470A.	W6923664	.4.	11/04/16 05:28	10/04/15 10:01	TRE
Merals (ICP) by Method 5010C	W6923644	Ä	1003/16 23:22	1004/15 03/02	CCE
margin heat physicians priese	110923014		140310 23/22	INDANG GO GZ	CCC





















Preparation by Method 1311

WG923641

1003/16 21 03

1003/16 21:03

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOO) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

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Brian Ford Technical Service Representative

Buar Ford

B-4-9'

Collected date/time: 18/27/16 09:02

SAMPLE RESULTS - 01

ONE LAB. NATIONWIDE.

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	Qualifier MDL RDL Dilution Analysis	Analysis	Botch		
Analyse	mg/kg		mg/kg	mg/kg		date / time	
Gaspline Range Organics-NWTPH	0		0.0339	0 100	1	11/04/2016 02 29	WG923098
Велгеле	0.00132		0.000120	0.000500	1	1004/2016-02-29	W/G9/23088
Toluene	0.000476	81	0.000150	0.06500	1	11/04/2016 02 29	WG9/3096
Einythenzene	U		0.00000	0.000500	1	11/04/2016 02 29	WG92309B
Total Xylene	U		0.000460	0.00150	1	11/04/2016 02:29	WG923098
(5) a.a.a-frifivorardinene(PlD)	112 /			54.0-114		11/04/2016 02:29	WG923098
(5) a.a.a-Trifluorataluene(FID)	m /			59 0-128		10/04/2016 02:29	WG923056





















B-4-15

SAMPLE RESULTS - 02

ONE LAB NATIONWIDE

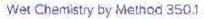
Collected date/time: 10/27/15 09:10

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	-
Total Solids	73.2		7	1003/2016 08 30	WG922978

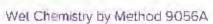






	Result (dry)	Qualifier	MDL (dry)	RDL [dry]	Didution	Analysis	Batch
Analyle	mg/kg		mg/kg	mg/kg		date / time	
Aminusia Niirogen	592	1	2.15	6.83	1	11/03/2016 10 56	WG972902





	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chkelde	309		1.09	13.7	1	11/03/2016 21 56	WG923165	
Fluoride	275		0.357	137	1	11/03/2016 21:56	WG923165	
Nitrate	J.		0.0459	137	1	11/03/2016 2156	WG923165	





	Result (dry)	Quairfier	MDL (dry)	RDL (dry)	Dilution	Anniysis	Batch
Analyte	mg/kg		тойд	rig/kg		date / time	
Morcay.	0.0288 /		0.00383	0.0273	1	11/02/2016 15 56	WG927813



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	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyle	mg/kg		mg/kg	mg/kg		date / Lime	
Assenic	273 💉		8880	273	1	11/02/2016 04 02	WG922544
Bantum	55.7		0 732	0,583	1	11/02/2016 04:02	WG922544
Cildmium	0 128	2.4	0 0957	0.683	1	11/02/2016 04:02	W6922544
Lhramium .	14.5 t		0 191	1.37	1	11/02/2016 04:02	WG922544
Curl	326		0.260	0 683	1	11/02/2016 04 02	WG922544
Selenium	141	2	1,04	2 73	1	11/02/2016 04-02	WG922544
Siver	U		0 333	137	1-	11/02/2016 04 02	WG922544

Metals (ICPMS) by M	lethod 6020
---------------------	-------------

	Result (dry)	Dualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyto	mg/kg		mg/kg	mg/kg		date / time	
Alontia.cm	12200 /		72.5	68.3	5	(V02/2016 19:33	Wildiggar

ONE LAB, NATIONWIDE

Collected date/time: 10/27/16 05:00

Total Solids by Method 2540 G-2011

	Result	Qualifier	Distion	Analysis	Batch	
Analyte	76			date frime		
Total Solids	65 3		4	11/03/2016 08:30	VIGST1915	



Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Ammonia Nitrogen	15.2 /		1.84	5 86	1	1003/2016 11 00	W6922902	



Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	nig/lig		date/time		
Entorede:	44.4 /		0 932	11.7	1	11/03/2016 22:19	WG923165	
Flooride	5.03/		0.306	1.17	0	11/03/2016 22:19	WG923/55	
Nitrate	2.25		0.0136	1.17	-1	1003/2016 22 19	WG923165	



Mercury by Method 7471A

Lake a	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		HIG/KG	mg/kg		date/time		
Mercury	0.0230	71	0 00328	0 0234	1	11/02/2016 16.31	WG92284S	



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Metals (ICP) by Method 6010C

Sedhar.	Result (diy)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Baich
Analyte	mg/kg		mg/kg	mg/kgr		date/time	
Arsenic	U		0.762	2 34	1	11/02/2016 04:05	WG922544
Barlum	39.8		0 199	0.586	1	11/02/2016 04:05	WG92254A
Cadmium	0115	J. W.	0.0821	0.586	1	11/02/2016 04 05	VIG922544
Chromlum	13.0		0 (64	117	1	11/02/2016 04:05	WG922544
Lead	2.37 *		0 223	0.586	1	11/02/2016 04:05	V/G922544
Selenium	U		0.868	234	1	11/02/2016 04:05	WG922544
Silver	U		0.328	117	1	11/02/2016 04 05	WG922544

4:05	V/G922544	
4705	WG922544	
4 05	WG922544	
4.05	WG922544	
4.05	V/G922544	
4:05	WG922544	

Metals (ICPMS) by Method 6020

	Result (dry)	Dualifier	MOL (dry)	ROL Idry!	Dilution	Analysis	Balch	
Analyte	mg/kg		mg/kg	mg/kg	-	date / time		
Aumirum	9370	(DIV)	19.3	58 6	/ 5	11/02/2016 18 47	WG972239	

operlate, sample concentration too high to evaluate accurate spike recoveres matrix in terference noted.

B-5-10"

SAMPLE RESULTS - 04

ONE LAB NATIONWIDE

Collected date/time: 10/27/16 10:32

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	MOL	RDL	Dilution	Analysis	Balch
Analyte	mg/kg		mg/kg	mgrkg		date / time	
Gaspline Range Organics-NWTPH	U		0.0339	0.100	1	11/04/2016 02 50	WG923098
Benzene	0,000604		0.000\$20	0.000500	Y	11/04/2016 02:50	WG923098
foluente	0.000557	BTA	0.000150	0.00500	1	17/04/2016 02 50	WG923098
Euhylbianzenie	U		0.000110	0.000500	1	17/04/2016 02:50	WG923098
Total Xylene	U		0.000460	0.00150	1	11/04/2016 02:50	WG92309B
(S) a, n, n-Trifluora/ofirene(PID)	m f			54,0-114		11/04/2016 02:50	WG923098
(S) a, b, a-Trifluoratal (jene(FiD)	110 /			59.0-128		11/04/2016 02:50	WG92309B





















ONE LAB. NATIONWIDE



Collected date/time: 10/27/16 10:30

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	16	,,,		date / time		
Total Solids	949 /		1	11/03/2016 08:30	WG922975	





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	4.
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,	Result (dry)	Qualifier	MDL (dry)	ROL (dry)	Disting	Analysis	Batch	
Analyte	rng/kg		angleg	mg/kg		date filme		
Ammonia Nitrogen	Ц		1.65	5,27	Ť	11/03/2016 11 01	WG922902	



Wet Chemistry by Method 9056A

Analyte	Result (day)	Qualifier	MDL (dry) mg/kg	RDL (dry) marka	Dilution	Analysis date / time	Batch
Chloride	41.4 /		0.838	10.5	1	12/04/2016 01:00	W6923/65
Fluoride.	31.8		0.275	1.05	1	11/04/2016 81:00	V#3923265
Nilrale	0.954	14	0.0122	1.05	1	12/04/2016 01:00	WG923465



Mercury by Method 7471A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyse	mg/kg		mg/kg	m-gr/kg		date / time		
Morcury	U.		0.00295	0.02#	1	10/02/2016 16 14	WG9228t3	

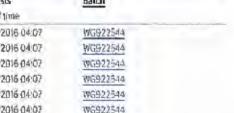


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Metals (ICP) by Method 6010C.

	Result (dry)	Qualifier	MOL (dry)	RDL (dry)	Dilution	Analysis	Batch
Anniyte	politien	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	mg/kg	mg/kg		date / time	
Arsenic	3 46		0.685	211	ŧ	11/02/2016 04:07	WG922544
Barlum	19.1		0.179	0.527	Ť.	11/02/2016 04:07	WG922544
Cacimium	0.0759	18	0 0737	0.527	1	11/02/2016 04:07	WG922544
Chromlum	8.32 -		0.147	105	1	11/02/2016 04:07	WG922544
Lead	24		0 200	0.527	1	11/02/2016 04:07	WG922544
Selenium	.u		0.780	211	1	11/02/2016 04:07	WG922544
Silver	.Ū		0 295	1.05	- 0	11/02/2016 04:07	WG922544



Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	ROL (dry)	Dilution	Analysis	Batch
Analyto	mg/kg		mg/kg	mg/kg		date / i me	
Aumoun	5730		12.4	52.7	3	11/02/2016 19:36	Medauage

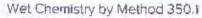
ONE LAB NATIONWIDE

Collected date/lime: 10/27/16 10:40

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilutton		Batch
Analyte	%			date / time	1.7
Total Solids	723 /		1	11/03/2016 08:30	WG922975





77.5	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Didution	Analysis	Batch
Analyte	mgakg		mg/kg	mg/kg		date / time	
Ammonia Nitrogen	331/		217	6 92	1	11/03/2016 11/02	W3922902



Wet Chemistry by Method 9056A

	Résult (dry)	Qualifier	MDL (dryl	ROL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date/lime	
Chloride	4280 /		5 51	69 7	5	11/04/2016 02:09	WG923165
Flug*kle-	Q 544 Z	1P1)	0.360	138	1	11/04/2016 01:23	WG923165
Nilsale	W		0.0161	138	1	11/04/2016 01 23	WG923165
Mercury by Metho	od 7471A		RPDne	ix regid			



Mercury by Method 7471A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	ROL (dry) mg/kg	Dilution	Analysis date / time	Batch	
Metznik	:0.028t V		0 00387	0 0277	1	11/0 2/2016 16 23	WG922813	



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Metals (ICP) by Method 6010C

	Result (dry)	Qualifler	MOL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		ing/kg	mg/kg		date / Nime	
Arvenic	II		0.899	271	1	11/02/2016 04:10	WG922544
Banum	421 /		0.235	0.697	1	10/02/2016 04:10	WG922544
Cridmium	U,		H 1989	0 692	1	11/02/2016 04 10	WE972544
Chromium	11.4		0 194	138	1	11/02/2016 04/10	W6922544
tread	257		0.263	0.692	1	11/02/2016 04 10	WE922544
Selenium	(U)		1.02	271	1	11/02/2016 04:10	WG922544
Silver	U		0.387	138	1	11/02/2015 04 10	WG972544

Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		itate / lumo		
Asim unit	DARE		228	69 2	ş	11/02/2015 19:39	WESTER	

ONE LAB. NATIONWIDE

B-6-9.5' Collected date/sime: 10/27/16 14:38

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

	Result	Qualifier	MOL	RDL	Diluitan	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time:		
Gasoline Range Organics-NWTPH	·U		0.0339	0.100	1	12/04/2016 03:11	WG923098	
Benzene	0.000140	5 ×	0.000120	0.000500	1	11/04/2016 03:11	W6923098	
Toluenc 0.00500U	0.000765	B1 ×	0.000150	0.00500	H	1904/2016 03:11	WG923098	
Ethylbenzene	Ш		0.000110	0.000500	1	11/04/2016 03:11	WG923098	
Total Xylene	L.		0.000460	0.00150	1	11/04/2016 03:11	WG923098	
(S) a.a.q-Triffugratafuene(PID)	111			54.0-114		11/04/2016 03:11	W6923098	
(5) a.a.aTrifluprotoluene(FID)	200			59 0-128		10/04/2016 03:11	WG923098	





















ONE LAB NATIONWIDE

Collected date/sime 10/27/16 14:35

Total Solids by Method 2540 G-2011

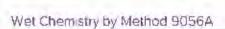
Total Dollas by I	161100 2010 0 2	2011				
	Result	Qualifier	Dilution	Analysis	Botch	
Analyte	16			date / time		
Fotal Solids	763 /		1	10/03/2045 08 30	WG922975	





	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Oilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Ammania Nitrogen	27.7		2.06	5.55	4	11/03/2016 11:03	W692290Z

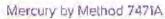






	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mgrkg		mg/kg	mg/kg		date / time	
Chlar de	212 /		1.04	43.1	1	1004/2016 06:44	WG923163
Fluoride	772 *		0.342	131	1	1004/2016 06:44	WG923183
Militate	U		0.0152	131	5	10/04/2016 06:44	WG923183

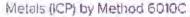




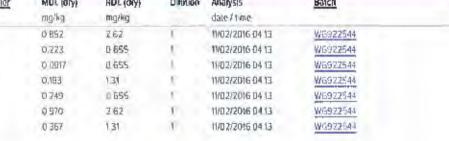


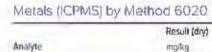
	Result (dry)	Qualifier	MDt (dry)	ROL (dry)	Dilution	Analysis	Baich	
Analyte	rng/kg		mg/kg	mg/kg		date / I/me		
Marcury	0 141		0.00367	0.0262	1	11/02/2016 16:26	V/G922813	





702 /	121	mg/kg				
702 /		O B52	7.62	1	11/02/2016 04 13	W6922544
and the same of		0,223	0.655	T.	TV02/2016-04-13	W6922544
0 153	1	0.0917	0.655	1	11/02/2016 D4 13	W6922544
18.0 >		0.183	131	Y	11/02/2016 04 13	W6922544
435		0.749	0 655	T	11/02/2016 04 13	W69ZZ544
U.		0.970	2 62	T	11/02/2016 04:13	WG922544
U.		0 367	1.31	T	11/02/2015 04 13	WG922544
	U.	Ų.	U. 0 970	Ų. 0 970 2 62	U. 0.970 2.62 1	U. 0 970 2 62 1 11/02/2016 04.13





Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
mg/kg	-3	mg/kg	ntg/kg		date / time		
16600 /		21.6	655	8	1002/2016 19 42	WE022239	

B-6-151

Collected date/time: 10/27/16 14:45

SAMPLE RESULTS - 09

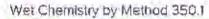




Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilutian	Analysis	Batch	
Analyte	%			dake / time		
Total Solids	68.9		1	1003/2016 08:30	V/G922975	





	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Baich
Analyte	mg/kg	0	mg/kg	mg/kg		date / isime	
Ammonia Mikogen	9 72	(E)	2,28	7.26	1	11/03/2016 11 04	WG922902



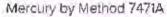
Wet Chemistry by Method 9056A

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3	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		regulag	mg/kg		date / time		
Chloride	183 7		145	14.5	1	11/04/2016 07:30	WG923163	
Fluoride	35.9		0.379	1.45	1	11/04/2016 07:30	WG923183	
Narate	U		0.0168	145	.1	11/04/2016 07:30	WG923183	





	Result (dry)	Outlifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		ту/ку	mgAtg		date Etime.		
Mercury	0.0163	1	0 00406	0.0290	1	1002/2016 16:29	W5922813	



Metals (ICP) by Method 6010C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Botch
Arsenic	2.88	1	£1 943	290	1	11/02/2015 04 15	V/G922544
Barleim	522 /		0 247	0.726	T	11/02/2016 04:16	WEG22544
Catmiun	0 Z34 /	4	0102	0.726	Ţ	11/02/2016 04:16	YIG922544
Etistentiunt	20.1	130	0 203	1.45	T	10/02/2016 04:16	Y/G922544
Lead	500		0.276	0 726	I	1002/2016 04:16	VIG922544
Selenium	10	1	1.07	2 90	T	1002/2016 04:16	VIG922544
Silver	U	3	0/406	1.45	1	11/02/2016 04 16	V/G922544

Metals (ICPMS) by Method 6020

	Result (dry)	Qualifier	MDL (dry)	ROL (dry)	Dilution	Anatysis	Baich
Analyte	mg/kg		ang/kg	mg/kg		date / time	
Аштпит	19800		23.9	72.6	- 5	11/02/2016 19:45	<u>med355338</u>

B-1-171

SAMPLE RESULTS - 10

ONE LAB NATIONWIDE

Collected date/sime: 10/27/15 12:10

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX.

	Result	Qualifier	MOL	RDL	Didution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date/ime	
Gasoline Range Organics-NWTPH	11		0.0339	0.100	4	11/04/2016 03:32	WG923098
Benzene	0.000522 /	-	0.000120	0.000500	1	11/04/2016 03:32	WG923098
D.005004	0.000524	B17	0.000150	0.00500	1	11/04/2016 03:32	WG973098
Ejhylbenzene	U		0.000110	0.000500	1	11/04/2016 03:32	WG923098
Total Xylend	D .		0.000460	0.00150	1	11/04/2016 03:32	WG923098
(5) a.a.a. Trifluorataluene(PID)	m /			54.0-114		11/04/2016 03:32	WG923098
(5) a.a.a-TriflusyatalvenesFID)	109			59 0-128		11/04/2016 03:32	WG923098





















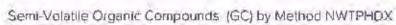
ONE LAB, NATIONWIDE

Collected date/time 10/27/16 12:10

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	8			date / time		
Total Solids	743 /		1	17/03/2016 08:30	WG522975	





	Result (dry)	Qualifier	MOL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyle	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		178	5.38	1	11/07/20% 14:37	WG923175
Residual Range Organics (RRO)	Ш		4 44	13.5	1	11/07/2016 14:37	WG973175
(S) o-Terphenyl	75.3 1			50,0-150		1007/2016 M.37	W6973175
(S) a-Terphenyl	75.3 /			50,0-150		1007/2016 14.37	W6973175



	Result (dry)	Qualifier	MDL (diry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg.	mg/kg		date / time	
Anthraceae	U		8080000	0.00808	1	11/03/2016 11 18	WG922(94
Acenaphthene	U		808000.0	80800.0	0	11/03/2016 11:18	WG922194
Acenaphinytene	,U		908000.0	0.00008	1	11/03/2016 11 IB	W5922194
Berizo(ajanthracene	, Li		808000.0	80800.0	1	1003/2016 11:18	WG922194
Benzo[a]pyrene	Th.		B08000.0	0.00808	1	11/03/2016 11 18	WG922194
Senzo(b)fluoronthene	LL.		0.000008	80B00 O	70	11/03/2016 11:18	WG922194
Benzo(g,h.i)perylene	,U		0.000808	0 00008	A	11/03/2016 11:18	WG922194
Senzo[k]fluoranthene	.U		806000.0	0.00904	A	17/03/2016 11:18	WG922194
Thrysene	AL.		808000.0	0.00908	1	1/03/2016 11 18	WG922194
Olbenzia.hjanthracene	U		908000.0	0.00808	1	1/03/2016 11:18	WG922194
luovanisiene	U		a decode o	0.00808	1	11/03/2016 11 18	WG922194
luorene	U		908000.0	0.00808	1	11/03/2016 11 18	WG922194
ndero(1,2,3-cd)pyrene	.u		808000 0	0.00808	1	11/03/2016 11 18	WG922194
Naphthalene	0.00473	1-	0.00269	0.0269	Y	10/03/2016 11 18	WG922194
henamhrene	0.000954	1-	0.000808	60300.0	1.	11/03/2015 11 18	WG922194
yrene	AL .		8.00000.0	0.00808	0.0	N/03/2016 11 18	WG922194
-Methylnapinhalene	M.		0.00269	0.0269	1	11/03/2016 11 18	WG922194
2-Methylnaphthalene	XI		D.00269	0.0269	1	1003/2016 11 18	AVG922194
2 Chloronaphtliatene	D.		0.00269	0.0269	15	10/03/2016 11 18	AVG922194
(5) Nitrobentene-d5	84.1 -			22.1-146		11/03/2016 11:18	WG922194
(5) 2-Floorabiphenyl	92.3			40 6-127		1003/2016 11:18	AVG922194
(5) a-Tesphenyl-dW	92.0			32.2-131		IV03/2016 TL18	AVG922194



Total Solids

SAMPLE RESULTS - 12

ONE LAB. NATIONWIDE

Collected date/time: 19/27/16 12 00

Total Solids by Method 2540 G-2011

11/03/2016-09:17

WG922976

	mondo ed to b				100	-
*	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	9.			date/time	7-2-2	





Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Dualifier	MOL [dry)	RDL (dry)	Dilution	Analysis .	Batch
Analyte	mg/kg	~	mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	N	(33)	1.45	4.40	1	11/07/2016 14:54	WG923175
Residual Range Organics (RRO)	U	(J3(J6)	3.63	11.0	1	11/07/2016 14:54	W6923175
(5) a-Terphonyl	103		nnal i a	50.0-150	70	11/07/2016 14.54	W6923175
		1	horns wi	ex Ceren	ce wy	Path DIOD	ems



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	Result (dry)	Qualifier	MDL (dry)	ROL (dry)	Distion	Analysis	Batch
Analyto	rugikg		mg/kg	mg/kg		date / time	
Anminicene	U		D.000560	0.00560	1	11/03/2016 11:39	WG972194
Acenaphtheae	U.		0.000660	0.00650	1	1003/2016 11 39	WG922194
Accomphibylene	U.		D 000860	0.00560	1	14/03/2016 11:39	WG922194
Benzo(a)anthracene	U.		0.000860	0.00660	2	1003/2016 11:39	WG972194
Benzo(a)pyrene	U.		0.000660	0 00660	1	1003/2016 11:39	WG972194
Benzo(b)fluoranthene	II.		D.000860	0.00660	1	1003/2016 11-39	WG922194
Benzo(g,h,llperytane	LI.		D.000860	0.00660	1	11/03/2016 11:39	WG9ZZ194
Benzo(k)fluoranthene	ti.		D.000660	0.00660	2	12/03/2016 11:39	WG9ZZ194
Chrysono	M		0.000650	0 00660	1	12/03/2016 11:39	WG922194
Dibenz(a,h)anthracene	U.		0.000560	0 00660	2	1703/2016 11:39	WGB22194
Fluoramhene	VI.		0 000560	0.00660	1	13/03/2016 11:39	WG922194
Fluorene	U		0,000660	0.00660	1	tV03/2016 11:39	WG922194
ndenoff,2,3-cd/pyrene	U		0.000660	0.00660	3	FV03/2016 11:39	WG922194
Naphilialeise	U		0 00220	0.0220	1	17/03/2016 11:39	WG922194
Plienauthrene	U		0.000660	0.00660	1	17/03/2016 11:39	WG922194
Pyrene	U		0 000660	0.00660	- 1	17/03/2016 11:39	WG922194
Methylnaphthalene	U		0.00220	0.0220	1	10/03/2016 11:39	WG922194
Z-Meithylnaphtlialene	N/U		0.00220	0.0220	1	1003/2016 11:39	WG922194
Z-ÉhlőrőitaphWaleike	V		0 00220	0.0220	1	1/03/2016 11:39	WG922194
(S) Nitrobertzene-d5	81.3 -			22,1-146		11/03/2016 11:39	WG922194
(5) 2-Fluorobiphlenys	943 /			40.8-122		11/03/2016 # 39	WG922194
(S) p-Terphényt-d14	80.2			32.2-131		1003/2016 11:39	WG922194



ONE LAB. NATIONWIDE.

Callected date/filme: 10/27/16 12:50

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	%			date/1me	-	
Total Solida	867		4	11/03/2016 OE:17	WG922976	





	Pesult (dry)	Qualifier	MDL (dry)	RDL (dry)	DBution	Arrahysis	Batch	
Analyto	mg/kg		mg/kg	mgtkg		date / time		
Diesel Range Organics (DRO)	U		152	4.61	1	11/07/2016 16:58	WG923175	
Residual Range Diganics (RRD)	U		78,E	11.5	1	11/07/20% 16:58	WG923175	
(5) a-Terphenyl	97.5			50 0-150		11/07/2016 16:58	WG923175	



	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Difution	Analysis.	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / Ilme		- G
Anthracene	Ţī.		0.000692	0.00692	1	11/03/2016 12:01	W6922:94	
Acenaphthene	, U		0.000692	0.00692	1	11/03/2016 12:01	WG922194	E v
Acenaphlhylene	Ti		0.000692	0.00692	1	11/03/2016 12:01	W5922154	P
Benzo(a)anthracene	, U		0.000692	0.00692	1	11/03/2016 12:01	W5922194	
Senzo(alpyrene	U		0.000692	0.00692	1	11/03/2016 12:01	WS922194	9 9
senzo(b)fluoranihene	U		0.000692	0.00692	1	11/03/2016 12:01	WGG22194	
Benzo(g,h,i)perylene	.U		0.000692	0 00692	1	11/03/2016 12:01	VA3922194	
senzo[k]fluoranthene	U		0.000692	0.00692	1	1003/2016 12:01	W3922194	
Chrysene	D.		0.000692	0 00692	1	10/03/2016 12:01	WG922194	
ilbenzja,hjombracene	U		0.000692	0 00692	1	1003/2016 12:01	WG922194	
laoranthene	All .		0.000692	0 00692	1	1003/2016 12:01	WG922194	
luorene	45		0.000692	0.00692	1	11/03/2016 12:01	WG922194	
ndenol1,2.3 cd/pyrene	11		0.000692	0 00692	1	1/03/2016 12:01	V/G922194	
laphthalene	AF		0.00231	0.0231	1	17/03/2016 12:01	WG922194	
henanthrene	0.00132	4	0.000692	0.00692	10	9/03/2016 12:01	W5922194	
yrene	All .		0.000692	0.00692	4.0	1003/2016 12:01	¥4G922194	
Methymaphthalene	All .		0.00231	0 0231	b	41/03/2016 12:01	WG922194	
-Methylnaphistalene	t)		0.00231	0.0231	1	10/03/2016 12:01	WG972194	
-Chloronaphthalene	U		0 00231	0 0231	1	19/03/2016 12:01	V/G922194	
(5) Nürodenzene-d5	84.3			22,1-145		11/03/2016 12:01	WG972194	
(5) 2-Auambiphenyl	90.5 -			40 B-122		11/03/2016 12:01	VIG922(94	
(5) p-Terphenyl-dia	96.9			32 2-131		11/03/2016 12:01	WG922194	



(5) 2 Fluorobighenyl

(SEp-Terphenyl-dM

SAMPLE RESULTS - 14

ONE LAB NATIONWIDE.



Collected date/time: 10/27/16 12.58

Total Solids by Method 2540 G-2011

	Result	Qualifier	Digution	Analysis	Batch	
Analyte	16.			date / time		
Total Solids	79.4 ,		1	11/03/2016 08:17	WG922976	



Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (táry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mig/kg		mg/kg	mg/kg		date filme		
Dinsel Range Organics (DRO)	U		1.66	5.04	1	11/07/2016 17:15	WG923175	
Residual Range Diganics (RRO)	U		4.15	12.6	1	1007/2016 17:15	WG923175	
(S) o-Terphonyl	57.5 /			50 0 150		11/07/2016 17:15	WG923175	



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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Anthargene	Ц		0.000756	0 00756	1	11/03/2016 12:22	WG922394
Acenaphthene	₩.		0.000756	0 00756	1	11/03/2016 12:22	WG927194
Aconaphthysené	TI.		0.000755	0 00756	1	11/03/2016 12:22	WG922194
Benzolalantinacene	U		0 000756	0 00756	1	11/03/2016 12:22	WG922594
Benzolalpyrene	Ш		0 000756	0 00756	1	11/03/2016 12:22	WG922394
Benzolb/fluoranthene	TI.		0.000755	0 00756	1	11/03/2016 12:22	WG9 22194
Benzolg ti Operylona	U.		0.000756	0 00756	1	11/03/2046 12 22	WG922194
Benzolk)Nuovaninene	EJ.		0.000756	0 00756	1	11/03/2016 12:22	WG922194
Chrysene	£		0 000756	0 00756	4	11/03/2016 12 22	WG922194
Dibenz(a, h)anthracenii	T.I.		0.000756	0 00756	4	11/03/2016 12:22	WG922594
Fluotammene	u		0.000755	0 00756	1	11/03/2016 12 22	WG922194
Fruarene	U		0 000756	0 00756	1	11/03/2016 12:22	WG922194
Indeno(1,2,3-cd)pyrene	·U		0 000756	0 00756	1	11/03/2016 12:22	WC422194
Naphtilalene	U		0.00252	0 0252	1	11/03/2016 12:22	WG922194
Prichalthrene	·U		0.000756	0 00756	1	11/03/2016 12 22	WG922194
Pyrone	U		0.000756	0.00756	1	11/03/2016 12:22	WG922194
t Mennylnaphthalene	·U		0 00252	0 0252	1.	11/03/20% 12 22	WG922494
2 Methylaaphlhalkau	U		0.00252	0.0252	1	11/03/2016 12:22	WG922194
2 Chloronii phthirlene	-0		0.00252	0 0252	1	11/03/20% 12 22	WG922194
(S) Nitrotichtzehe-d5	86.5			22.1-146		1003/2016 12 22	WG922194

40.6 122

32.2-131











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1003/2016 12 22

11/03/2016 12:22

WG922194

WG922134

B-3-16"

SAMPLE RESULTS - 15

ONE LAB NATIONWIDE.

Collected date/time: 10/27/15 11:40

Volatile Organic Compounds (GC) by Method 8021B/NWTPHGX

4.7	Result	Qualifier	MDL	NOL	Dilution	Analysis	Batch	
Analyte	mg/kg:		mg/kg	mg/kg		date / time		
Gasoline Bange Organics-NWTPH	0		0.0339	0 100	1	11/08/2016 14:06	WG923098	
Benzene	0.000205	-11	0.000120	0.000500	1	TV08/2016 14:06	WG923098	
Jaluene 0.00500U	0.00000	BJ	0.000150	0.00500	4	12/08/2016 14:05	W6923098	
Ethylberzene	U		0.000110	0.000500	1	1908/2016 14:06	WG92309B	
Total Xylene	u		0.000460	0.00150	1	1008/2016 14:05	WG92309B	
(S) a.a.a. Frifluorataluene(P1D)	90.8 -			34.0-114		1008/2016 14:06	WG923098	
(S) a.a.o Trifluorotolvene(FID)	979			59.0-128		11/08/2016 14:06	WG923098	























B-3-16"

SAMPLE RESULTS - 16

Collected date/lime: 10/27/16 11:40

ONE LAB NATIONWIDE

Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	
Analyte	No.			date/time		
Total Solids	72.7		1	11/03/2016 08:17	WG922978	



Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Anatysis	9atch .
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Diesel Rango Organics (DRO)	.LI		182	5 50	1	11/07/2016 17 32	W6923175
Residual Range Organics (RRO)	U		454	13.8	1	1007/2016-17.32	WG973175
(5) a Telphonyl	61.7 1			50 0-150		1V07/2016 11:32	WG923175



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	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg	1	mg/kg	mg/kg		dale / time	
Anthrocess	D:		0 000926	0 00826	1	11/03/2016 12 43	WG922394
Acenaphthene	D.		0.000926	0.00826	1	11/03/2015 12 43	WG922194
Acena phthylene	D.		U 000926	0.00826	1	11/03/2016 12 43	WG922134
Benzola)anthisicene	Ш		0.000926	0.00826	1	11/03/2016 12 43	WG922194
Benzola)pyrene	Ш		0.000926	000826	1	11/03/2006 12 43	WG922194
Benzolb Mioranthenel	U		0.000826	0.00826	1	11/03/2016 12-43	WG922194
Benzolg,h,llperylene	U		0.000826	0,00826	1	11/03/2016 12-43	WG922194
Benzekkillsomnthene	U		0.000826	0.00826	1	TV03/2016 12-43	WG922194
Chrysene	U		0 000826	0,00826	1	10/03/2016 12 43	97G922194
Dabenz(a,hlanimracent-	U		0 000826	0,00826	1	11/03/2016 12:43	VKG922194
Faudranthene	U		0.000826	0,00826	1	10/03/2016 12 43	WG922194
Fluarene	U		0 000626	0,00826	1	11/03/2016 12:43	WG922194
Indena(1.2,3 ed)pyrene	U		0.000826	0.00826	1	10/03/2016 17:43	WG922194
Naphthalene	Ü		0.00275	0.0275	1	11/03/2016 12:43	WG922194
Phonamhreno	U		0 000826	0 00826	1	10/03/2016 12 43	WG922194
Pyrene	U		0.000826	0.00826	1	1003/2016 12:43	WG922194
Methylnaphthaliste	U		0 00275	0 0275	Y	14/03/2016 17 43	WG922194
2 Methylnaphthalene	Ų.		0.00275	0.0275	Y	10/03/2016 12:43	WG922194
2-Chloronaphinaiene	Ų		0 00275	0.0275	Y	1003/2016 12 43	WG922194
(5) Nitrobenzene-d5	75.9 1			22.1.146		1403/2016 12:43	WG922194
(S) 2-Fluorobiphenyl	89 2			40.6 122		11/03/2016 12:43	V#5522194
(S) à Terphenyl d'14	76.2 /			32 2 131		11/03/2016 12:43	WG972194











8-3-6"

SAMPLE RESULTS - 17

ONE LAB. NATIONWIDE

Collected date/films: 10/27/16 11:25

Total Sollds by Method 2540 G-2011

	Rosult	Qualifier	Dilution	Analysis	Batch
Analyte	%			date / time	
Tatril Sallds	888		1	1003/2016 08:17	WG922976





Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result (dry)	Outlifier	MOL (dry)	ROI (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/lag	mg/kg		date / time	
Dieset Range Organics (DRO)	U		14.5	451	10"	11/07/2016 21 20	WG923175
Residual Range Organics (RRO)	0		37.2	113	10	11/07/2016 21:20	WG929175
(S) a-Terphenyl	120			50 0-150		11/07/2016 21:20	WG923175





Sample Nanotive:

NWTPHOX (869381-17 WG923175) Dilution due to malife

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	Result (dry)	Qualifier	MOL (dry)	RDL (dry)	Dilution	Annlysis	Batch	
Analyte	mg/kg	1	mg/kg	mg/kg		date / time		
Anthracene	U		0.000676	0.00676	1	11/03/2016 13 25	WG922194	
Acenephthene	U.		0.000676	0.00676	1	11/03/2016 13 25	WG9ZZ194	
Acenaphthylene	U.		0.000676	0.00676	1	11/03/2016 13:25	WG922194	
Benzola)anthracene	0.000687	12-	0,000676	0.00676	1	11/03/2016 13:25	WG922194	
Велго(а)ругеле	0.000855	1-	0.000676	0.00676	1	11/03/2016 13 25	WG922194	
Benzo(b)Ruwanthene	6.00114	1 -	0.000676	0.00676	1	11/03/2016 13:25	WG922194	
Benzo(g.h.t)perylene	0.00184	1-	0.000676	0.00676	1	11/03/2016 13 25	WG922194	
Benzo(kkliuoranthene	U.		0.000676	0.00676	10	10/03/2016 19:25	WG922194	
Chrysene	0.00153	1 -	0.000676	0.00676	T	11/03/2016 13 25	WG922194	
Dibenz(a,h)anthracene	Ų.		0 000676	0.00676	Ü	11/03/2016 13:25	WG922194	
Elboranthene	0.00111	1 =	0 000675	0.00676	A	11/03/2016 13:25	WE972194	
Flistrene	U.		0 000676	0.00676	A	1003/2016 13:25	WG9ZZ194	
Indena(1,2,3-cd)pyrene	108000.0	2 -	0 000675	0.00676	1	11/03/2016 13:25	WG922194	
Naphthalene	U.		U 00225	0.0225	1	1003/2016 13:25	WG922194	
Phenanthrepe	0.00198	<u>, j</u> ×	0.000676	0.00676	1	11/03/2016 13:25	WG922194	
Pyrene	0.00159	<u>1</u> >	0.000676	0.00676	1	11/03/2016 13:25	W6922194	
1-Methylnaphthalene	U		0 00225	0.0225	. 1	11/03/2016 13:25	WG922194	
2-Methylnaphthalene	0.00249	1-	0.00225	0.0225	1	11/03/2016 13:25	WG922194	
Z-Chimonophthalenc	U		0.00225	0.0225	1	11/03/2016 13:25	WG922194	
(5) Mitrobenzene d5	89.2 -			22.1-MG		18/03/2016 13:25	WG922194	
(5) 2-Fluorobiphenyl	94.5 -			40 8 122		11/03/2016 13 25	WG922134	
(5) p-TemberlyEdW	953			32 2-137		1003/2016 13:25	WG922194	





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SAMPLE RESULTS - 18



ONE LAB NATIONWIDE



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Collected date/time: 10/27/16 09:10 Preparation by Method 1311

	Result	Qualifler	Prep	Batch	
Analyte			date / time		
TC LP Extraction			18/3/2016 9 03:14 PM	WG923641	
Fuid	1		103/2016 B-03:14 PM	WG923641	
Malat pH	709		N/3/2016 9 03:14 PM	WG923641	
Emal pH	4 00		IV3/2016 9 03 M PM	WG923641	

Mercury by Method 7470A

Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	
(mg/l)		nigh	mg//		date/1mi		
NU		0.0400	0.50	1	11/04/2016 09 53	WE323E64	
	(mg/l)	(mg/l)	(mg/l) nigh	(mg/l) nign mg/l	(mg/l mg/l mg/l	(mg/l) night mg/l date/films	(mg/l) night mg/l date/1/mic

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	Result	Qualifier	RDL	Limit	Dilution	Analysis	Balch	
Analyte	mg/I		mg/l	mg/l		date / time		
Assenic	ND		0 100	5	1	11/04/2016 02:46	WG923644	1
Barlum	D-127		0.0500	100	U	11/04/2016 02:46	WG929644	
Codm um	ND		0.0200	1	4	11/04/2016 02:46	WG923644	
Chromium	ND		0.100	5	1	11/04/2016 02:46	WG923644	
Lead	ND		0.0500	5	-	11/04/20% 02:45	WG923644	
Selerium	ND		0.100	1	1	11/04/2016 02:46	W0923644	
5 (vc)	ND		0.0500	5	1	1004/2016 02:46	WG923644	

B-4-7"

SAMPLE RESULTS - 19

ONE LAB. NATIONWIDE.



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Collected date/time: 10/27/16 09:00

Preparation by Method 1311

	Result	Qualifier	Prep	Balch	
Analyte-			date / tune		
TCLP Extraction	-		11/3/2016 9:03 14 PM	WG923641	
Fluid	. 1		11/3/2016 9:03:14 PM	VIG923641	
nitlal pH	7.12		11/3/2016 9 0914 PM	WG923641	
Final pH	4.91		11/3/2016 9:03/14 PM	WG923641	

Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	mg/l		date / lime	
Mercury	ND		0.0100	0.20	1	10/04/2016 09:55	WG923664

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	ing/l		mg/t	mg/l		date / time	
Arsenic	ND		0 100	9	1	1004/2016 02 57	W6923644
Barium	0.0560		0.0500	100	1	11/04/2016 07:57	W6923644
Cadmium	ND		0.0200	1	1	11/04/2015 02:57	WG925644
Chromium	ND		0.100	5	1	11/04/2016 02:57	W6923644
Lead	NO		0.0500	5	1	11/04/2016 02:57	WG923544
Selenium	NO		0.100	1	1	11/04/2016 02:57	WG923644
Sliver	NO		0.0500	5	1	11/04/2016 02:57	WG923644



B-5-8"

SAMPLE RESULTS - 20

DNE LAB NATIONWIDE.

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Collected date/time: 10/27/16 10:30

Preparation by Method 1311

	Result	Qualifier	Prep	Balch	
Analyte		1-1000	date/4nie		
TCLP Expection			11/3/2016 12:50:25 PM	WG9234B1	
Fluid	1		11/3/2016 12:50:25 PM	WG923461	L
Netlal pH	658		11/3/2016 12:50:25 PM	WG923481	3
Finalish	4.85		11/3/2016 12:50 25 PM	WG923481	



Mercury by Method 7470A

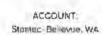
	Result	Qualifier	RDL	Limit	Offiction	Analysis	Batch	
Anatyte	mg/l		mg/l	mg#		date / time		
Mercury	ND		0 0100	0.70	1	11/04/2016 12:04	WG923721	



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	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/l	prig/l		date / time	
Arsenić	ND		0.100	6	1	11/04/2016 15:05	WG923732
Hamura	0.0539		0.0500	100	1	11/04/2016 15:05	WG923732
Cadmium	ND		0.0200	17	1	11/04/2016 15:05	WG923/32
Chromium	ND		0.100	5	1	11/04/2016 15:05	WG923732
Load	ND		0.0500	5	1	11/04/2016 15:05	W3923/32
Selenium	ND		0.100	4	1	11/04/2016 15:05	WG92373Z
Silver	ND		0.0500	5	- 1	11/04/2016 15:05	W5923737



B-5-15' Collected date/lime: 10/27/16 10:46

SAMPLE RESULTS - 21

ONE LAB NATIONWIDE



Preparation by Method 1311

	Result	Qualifier	Prep	Satch	
Amelyte			date i time		
ICLP Extraction	1		11/3/2016 9:03 14 PM	WG973541	
lyid	T		11/3/2016 9:03 14 FM	WG923641	
nițial pH	H OS		103/2016 9 03:14 PM	WG973641	
Final pH	4.93		1V3V2016 9:03:14 FM	WG973641	



Mercury by Method 7470A

	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch
Analyte	mgr		mg/l	mg/l		date / time	
Mercury	NIZ		0.000	0.20	- 1	10/04/2016 09:58	WS923564



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	Result	Qualifler	RDL	Limit	Odution	Analysis	Batch
Analyte	Tgm		mg/l	mg/l		date / Lime	
Arsenie	ND		0.100	5	1	11/04/2016 03:00	WG923644
Banuna	0.0736		0.0500	100	1	11/04/2016 03:00	WG923644
Cadmium	NO		0.0200	ì	1	11/04/2016 03:00	V/G923644
Chromium	NO		0.100	5	1	11/04/2016 03:00	WG923644
Lead	ND		0.0500	5	1	11/04/2016 03:00	WG923644
Selenium	NO		0.100	1	3	11/04/2016 03:00	WG923644
Silver	NO		0.0500	5	3	11/04/2016 03 00	WG923644



B-6-7.5'

Fluid

Initial pH

Final pH

SAMPLE RESULTS - 22

WG923481

WG923481

WG923481

ONE LAB NATIONWIDE

Collected date/time: 10/27/16 14:35

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Preparation by M	ethod 1311				
7.6	Result	Qualifler	Prep	Balch	
Analyte			date / time		
TCLP Extraction			11/3/2016 12:50:25 PM	WG923481	

11/3/2016 12:50:25 PM

1/3/2016 12 50:25 PM

11/3/2016 12:50:25 PM









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4.89

	Result	Qualifler	RDL	Limit	Dilution	Analysis	Batch
Analyte	mg/l		mg/t	mg//		date/time	C-10-10-10-10-10-10-10-10-10-10-10-10-10-
Moretry	ND		0.000	0.20	1	11/04/2016 12 19	W697372



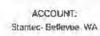


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Analyte Assenic Bartum	mg/l dN	Flight	mg/I			Baich	
	ND		11.755.0		date / time		
Bartom	0.380	0 100	5	1	11/04/2016 14 53	WG923732	
major (may)	U 177	0.0500	HDO:	4	11/04/2016 14:53	WG923732	
Cadeliuni	ND	0 0200	1	7	11/04/2016 14 53	WG923732	
Clutentium	ND	0 100	5	4	14/04/2016 14 53	WG923732	
Load	ND	0,0500	5	1	14/04/2016 14 53	WG923732	
Mulipalez	ND	0.100	4	7	14/04/2016 14:53	WG923732	
Silver	ND	0.0500	5	1	14/04/2016 14:53	WG923732	



ONE LAB NATIONWIDE







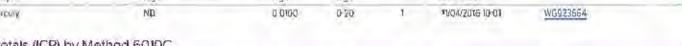




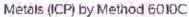


	Result	Qualifier	ROL	Limit	Dilution	Analysis	Balch	
Analyte	क्रम		मापुरी	mg/l		date / time		
Mercury	Ф		0 0100	0.70	Ţ	*VOA/2016 10:01	WG923664	









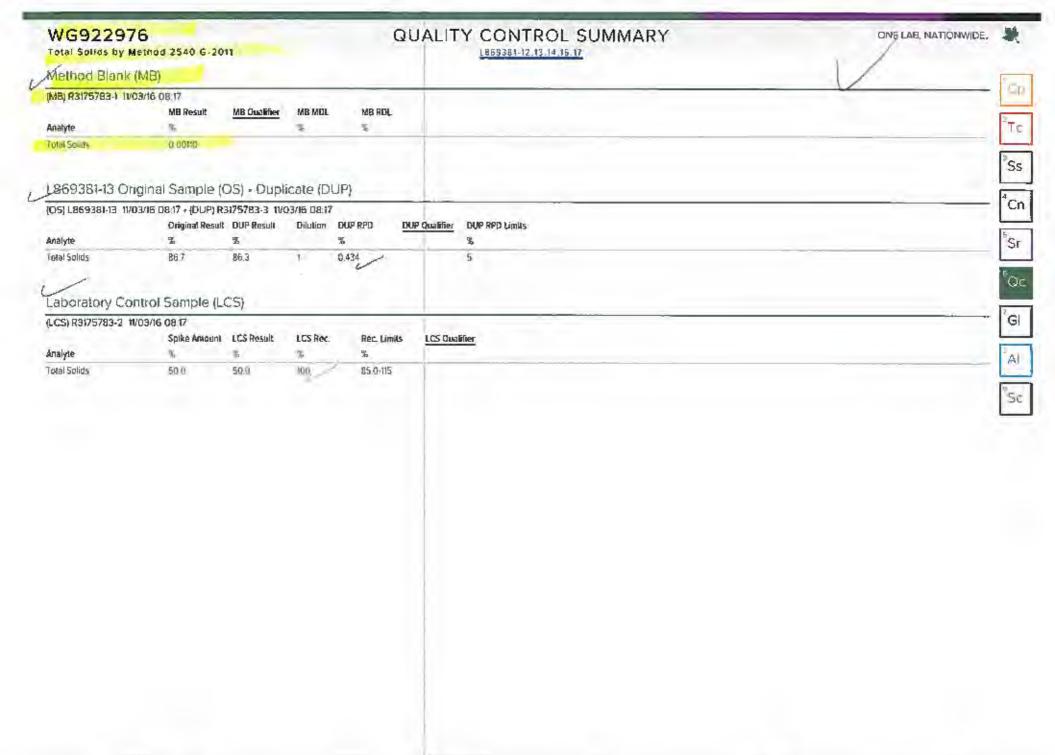
	Result	Qualifier	RDL	Limit	Dilution	Analysis	Batch	_
Analyte	mg/l		mg/l	mg/l		date / time		
Arsenic	ND		0000	5	1	11/04/2016 03:02	W6923644	
Barlum	0.0939		0.0500	100:	1	11/04/2016 03 02	WG923644	
Cadmium	NO		0.0200	1	1	11/04/2016 03:02	W6923644	
Chromium	NO		0.100	5	1	10/04/2016 03:02	WG923544	
Lead	NO		0.0500	5	1	11/04/2016 03:02	WE923644	
Selenium	NO		0 100	1	1	11/04/2016 03:02	W5923644	
Silver	ND		n osno	5	1	18/04/2016 03 (12	WE973544	











WG922902

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 350 1

L869381-02 03 05.06.08 05

Method Blank (MB)

Analyte Ammonia Narogen

(MB) R3175558-1 1VO	3/16 10,46			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Ammonia Narogen	U ./		157	5.00



869365-01 Original Sample (OS) • Duplicate (DUP)

	[05] 1859365-01	11/03/16 10:52	(DUP) R3175568-4	11/03/16 10:53
--	-----------------	----------------	------------------	----------------

Original Result (dry)	DUP Result (dry) Oilulian	DUP RPD	DUP Qualifier	DUP RPD Limi
mg/kg	mgrkg			10
8.25	ND ±	200-	7 pr *-	70



* note Romlab RPD is not applicable



869697-01 Original Sample (OS) - Duplicate (DUP)

	Original Result (dry)	OUP Result (dry) O	Hullon	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	galga	ingikg		%	6	4
Arimonia Nitrogen	ир	ND I	ř.	0.000		-20



Sc

Laboratory Control Sample (LCS) + Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175568-2 11/03/16 10/4B - (LCSD) R3175568-3 11/03/16 10/49

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LC5D Qualifier	RPD	RPD Limits
Analyte	massg	mg/kg	тэдіжді	%	%	%			%	%
Ammonia Nurogen	2760	2180	2270	79.0	82 0 L	58,0 114 2			400	20

869381-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

IOST 369381 OF 1/03/16 1/04 - IMS 93/75568 5 1/03/16 1/05 - IMSD 93/7558-6 1/03/16 1/16

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Ollution	Rec. Limits	MS Qualifier	MSD Quatrier	RPD	RPO Limits
Analyte	rrig/kg	mg/kg	mguleg	mg/kg	1	*		1	20		96	W.
Ammunia Narogen	726	9.72	377	380	51.0	51,0	1	80 / 120	16	<u>J5</u>	100	20

* The sample concentration matrix interfered withe ability to make any accurate determination:

WG923165

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

Wat Chemistry by Method 9056A

1859381-07-03-05,06



_			
(MB)	R3175762-1	11/03/16	1150

	MB Result	MB Qualifier	MB MDL	MB ROL
Analyte	mg/kg		mg/kg	mgikg
Chloride	سملا		0.795	10:0
Flueride	U -		0.261	1.00
Nibile	مميدا لا		0.0115	100







Cn

L868989-21 Original Sample (OS) - Duplicate (DUP)

-	(O5) L868989-21	11/03/(5 13:45	· (OUP) R3175762-4	11/03/16 14:08	
---	-----------------	----------------	--------------------	----------------	--

	Original Result	DUP Result	Dilution	DUP RPD	OUP Qualifier	DUP RPD Limits
Analyte	mg/kg	nig/kg		%		1/2
Ottowie	180	191	1	6,0		15
Fluoride	3.71	3,58	0	4 _		15
Nitrale	14.6	15 2	1	10		15



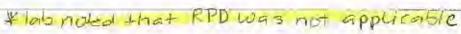


(2869381-06 Original Sample (OS) - Duplicate (DUP)

(O5) L869381-06 11/04/16 01:23 - (DUP) R3175762-7 11/04/16 01:46

	Original Result: (dry)	DUP Result	(dry) Dilution	OUP RPD
Analyte.	mg/kg	mg/kg		30
Fluoridé	0.544	0.429	1 (24
Nitrale	U	-O	1	0

OUP Qualifier	DUP RPD LIMITS	
	%	
	La a I	





1869381-06 Original Sample (OS) - Duplicate (DUP)

(OS) L869381-06 11/04/16 02:09 - IDUP: R3175762-8 11/04/16 02:32

	Original Result (dry)	DUP Result	(dry) Dilution	OUP RPD	OUP Qualifier	DUP RPD Limits
Analyte	mgArg	mg/kg		%		16
Chaoride	4280	4660	5	B		15



Kaboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

	7000	
(LCS) R3175762-2	1V03/16 12:13 - (LCSD) P3175762-3	11/03/16 12:36

	Spike Amount	LCS Result	LCSD Result	LCS Rec	LCSD Rec.	Rec. Umits	LCS Qualifier	LCSD Qualifier	RPO	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			*	%
Chloride	200	215	214	108	107	E0-120			1	15
Fluoride	20.0	22.5	22.2	113 -	311-	80-120			2	15
Nitrate	20.0	22.5	22.5	113_	112	80-120			0 -	15



QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE,

Wet Chamistry by Method 9056A

1869381-02.03.05.06

L869121-03 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg@g	тэржд	9.	99		%			@	1	
Chlonde	500	39.3	523	524	97	97	1	80-120		D-	0	15	
Flixoriere	50.0	3.58	38.9	39.9	(11)	(B)	1.	80-120	(10)	(15)	3	15	
Nitrate	50.0	ND:	27.0	26.0	34	752	1	80-120	150	(16)	4.	15	

per lab, mains interference prevented accurate apilce value determination



















WG923183

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

Wel Chemistry by Method 9056A

1859381-08,09

Method Blank (MB)

IMBI D3175933.1 11/04/16 04/26

Analyte	MB Result mysky	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	u -		0.795	10.0
Fluaride	U -		0.261	1.00
Militale	U		0.046	1.00







.869381-08 Original Sample (OS) - Duplicate (DUP)

(OS) LB69381-08	1V04/16 06;44 • (DUP) R3175B33-4	10/04/16 07:07
	Acces on No. 1 to	

	Original Result (dry)	DUP Resi	ill (dryf Dilubian	DUP RPO	DUP Qualifier	DUP 8PO Limit
Analyte	nigifikg	mg/kg		%		%
Chloride	212	210	1	1		15
Fluoride	7.72	7.6	1	2-00		15
Narate	0	σ	1	0 -		15











(OS) L869816-01 11/04/16 18:52 - (OUP) R3175833-7 11/04/16 19:15

14.	(dry)	DUP Resu	it (dry) Dilution	DUP RPD	DUP Qualifier	DUP RPD LYMIS
Analyte	терлед	mg/kg		5		9,
Chloride	42.4	43.4	1	2		15
Fluoride	11.7	11.7	1	D		15

Kaboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

Carlo America	LCS Rosett	LCSD Result	
(LCS) R3175B33-2 1904/16 04:49 - (LCS)	D) R9175839-3	11/04/16 05:12	

Soika émount	LCS Result	LCSO Result	1CS Por	1750 Rec	Por Limits	LCS Outstiller	IPSD Onalities	pers .	RPD Limits
тулед	mg/kg	mgAvg	%	%	%	PAN MICHIEF	Erron adelales	7.	%
200	214	213	107 -	107	80-120			0-	15
20.D	22.0	22,0	110	110	80-120			0 -	15
20,0	22.1	72.2	111	111	80-120			0 -	15
	лідлюў 200 20.D	200 214 20.0 22.0	mg/kg mg/kg mg/kg 200 214 213 20.0 22,0 22,0	mg/kg mg/kg mg/kg % % 200 214 213 107 — 20.0 22.0 22.0 110 —	rig/kg mg/kg mg/kg % % 200 214 213 107 107 20.0 22.0 22.0 110 110	rig/kg rig/kg rig/kg % % % % 200 214 213 107 107 80-120 20.0 22.0 110 110 80-120	mg/kg mg/kg mg/kg % % % 200 214 213 107 107 80-120 20.0 22.0 110 110 80-120	rig/kg rig/kg rig/kg % % % 200 214 213 107 107 80-120 20.0 22.0 22.0 110 100 80-120	rig/kg rig/kg rig/kg %

L869587-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

	100	
		<u></u>
7 -	1	15
<u>J5</u>	.9	15
) (19	<u>1</u>

ACCOUNT: Stantec-Belleville, WA

PAGE 37 of 59 WG923183

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE

Wet Chemistry by Method 9056A

£959981-08 09

L869587-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(05) 1.869587-04	10/04/16 15:26 -	(MS) R3175B33-5	11/04/16 15.48	(MSD) R3175833-6	11/04/16 16:11

	Spike Amount	Onginal Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualdier	MSD Qualifier	RPD	RPD Limits
Anályte	rog/kg	тауку	mg/kgr	mg/kg	25	34		3.			3	%
Winate	50,0	0.509	95.0	53.5	10.9	208 -	1	80-120			3	15



















WG923664 Mercury by Method 7470A

QUALITY CONTROL SUMMARY

ONE LAB, NATIONWIDE.

LCS Qualifier

LCSD Cualifier

RPD Limits

Method Blank (MB)

Mercury

(MB) R3175877-1	11/04/16 09:02	- 500	70.00	
	MB Result	MB Qualifier	MB MDL	MBRDL
Analyte	mgh		mg/l	пол
Mercury	10		0.00333	0.000

0.0300







Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) H31/58/7-2 1	MOAUR DAIOR - (CC20	J H31/281/-3	1004/16 09:07			
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSO Rec.	Rec Limits
Analyto	ហង្គក	mg/r	mg/i	25	%	26









0.0327

(OS) LB69947-04	1004/16 09:10	· (MS) R3175B77-4	11/04/16 09 20 - (MSD) P3175877-5 11/04/16 09:22

0.0305

	Spike Amount	Original Resolt	MS Result	MSD Result	MS Rec.	MSD Rec.	Déution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	rog/l	mg/t	mg/t	mg#	%	*6		2			3.	3
Mercury	0.0300	NO	0.0308	0.0300	103	100	1	75-125			1-	20

80-120







∠869023-02 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

CAPE - APARAGE AN	WAR SHE ARISE WARE BUTTONER A	ALIA LINE AA. MY INVESTIGATION OF	CONTRACTOR CONTRACTOR
(C)511.009025402	11/04/16 09:25 - (MS) R3175877-6	10014010 DH 27 × MASU RAIZSHZZ-2	100134010541143404
Local management	The title of the land of the land of the land	the desired free and the second	a market to the recognition

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec		MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mga	mgvi	тол	1%		8.		2			90	16
Mercury	0.0300	ND	0.0294	0.0321	98	-	107 -	1	75425			9	70

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

LB69781 70 22

Method Blank (MB)

(MB) R3175922-L 1V04/16 II 57

Mercury by Method 7470A

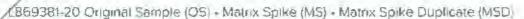
	DO NING BI DI			
	MB Result	MB Qualifier	MB MDL	MB RDL
te	mg/l		mg/li	ntgr
ary.	the state of		0.00333	0.0100





CCS) R3175922-2 11/04/16 11:59 • (LCSO) R3175922-3 11/04/16 12:02

	Spike Amount	LCS Result	LCSO Result	LCS Rec.	LCSD Rec.	Rec Limits	LCS Qualifier	LCSD Qualifler	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/i	18	%	10			4	%.
Mercury	0.0300	0.0309	D.D310	103 V	103 /	80-120			0 /	20



(OS) L869381-20, 2004/J6 12 04 - (MS) R3175922-4, 1/(04/J6 12/07 - (MSD) R3175922-5, 1/(04/J6 12/09

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Diberton	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	PPD Limits	
Anstyle	mg/l	mg/l	mgd	mgn	%	%		un di			96		
Mercury	0.0300	NO	0.0301	0.0298	100: _	29-	T	75-125			1	20	

L869871-02 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

(OS) L869871-02 1V04/1612:12 · (MS) R3175922-6 1V04/1612:14 · (MSD) R3175922-7 1V04/1612:17

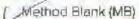
	Spike Amount	Original Pesult	M5 Result	MSD Result	MS Rec.	MSD Rec.	Diaution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/i	.mg/l	mg/I.	%	%		96			%	%
Mercury	0.0200	ND	0.0299	0.0301	100	100	1	75-175			0 -	20

Sc

WG922813

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

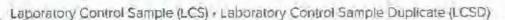


Mercury by Method 7471A

	MB Result	MB Qualifier	MB MDL	MBROL
Analyte	mg/kg		matka	mg/kg
Mercury	Di-		0 0028	0 0200







(LCS) R3175402-2 11/	02/16/15:51 - [LCSD]	R3175402-3	11/02/16 15:53								
- 37 - 2 - 2 - 2 - 2 - 2	Spike Amount	LCS Result	LCSO Result	LCS Rec	LCSD Rec.	Rec. Umits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	ing/kg	ing/kg	79	Tio	95			75	96	
Mercury	0.300	0,274	0.283	91	94	80-120			3 -	20	





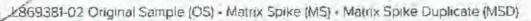




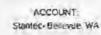








(OS) L869381-02 11/02/1	6 15:56 - (MS) R3	3175402-4 IVO	2/16 15:59 - (M:	D) R3175402	-5 1V02/IB 16:0	02	-					
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	M5 Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mgdkg	mg/kg	тулка	mg/kg	96	%		%			%	%
Mercury	0.410	0.0288	0.474	0.484	109	III	1	75-125			1	20



QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

Metals (ICP) by Method 6010C 1869381-07.03.05.06.08.09

Method Blank (MB)

(MB) R3175124-1	1002/16 02:55
de sent viscous and a se	A-M-11-4-1-

Analyte	M8 Result rag/kg	MB Qualifier	MB MDL Mg/kg	MB RDL mg/kg
Alsenic	U		0.65	2.00
Barreim	4		0.17	0.500
Cadmium	U.		0.07	0.500
Chromium	40		0.14	1.00
Lead	40		0.19	0.500
Selenium	u d		0.74	2.00
Silver	11 -		0.28	3.00





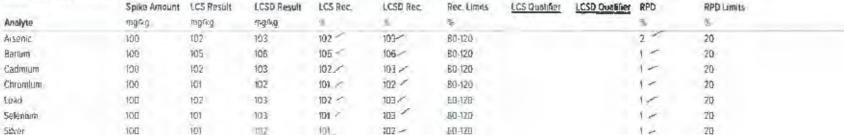




Qc.

Laboratory Control Sample (LCS) . Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175124-2 1002	10 05:21 • [CC20]	R31/6124-3	11/02/16 03.00	
	Spike Amount	LCS Result	LCSD Result	
Analyte	mgrkg	mgrkg	riging	
Aisenic	100	102	103	







L869107-05 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

(OS) L869107-05 11/02/16 03:02	· (MS) R3175124-6	11/02/16 03:10 - (MSD) R3175124-7 11/0	2/16 03:13

	Spike Amount (dry)	Oviginal Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	District	Rec. Limits	MS Qualifler	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mgArg	mg/kg	mg/kg	%	8.		35			8	4
Aisena	117	8.20	115	119	91-	94 _	- 1	75-125			3	20
Barlum	117	92.3	238	242	125	128	1	75-125		(E)	2	20
Cadmium	117	ND	113	117	57/	100-	1	75-125			â	20
Chromium	117	20.4	130	135	94-	98 -	1	75-125			4	20
Lead	117	13.0	130	134	100-	104-	1	75-125			3	20
Selenium	117	ND	711	114	94 -	37 -	1	75-125			3	20
Silver	117	ND	113	115	97	100-	1	75-125			3	20

* perlab matrix into Courace prevented accurate spire value

QUALITY CONTROL SUMMARY

ONE LAB, NATIONWIDE.

Metals (ICP) by Method 6010C

1869381-18,19.21.23

Melhod Blank (MB)

Lead

Silver

Selenium

IMBI R3175759-1 1V04/16 02:39

	MB Result	MB Qualifier	MB MDL	MBRDL
Analyte	mg/i		MQH	пдл
Arsenic	U.		0.0333	0.190
Barium	111 -		0.0167	0.0500
Cadonium	U		0.00667	0.0200
Chromium	U sain		0,0333	0,100
Lead	U.		0.0157	0.0500
Selenium	11 -		0.0333	0.100
Silver	Uv		0.0167	0.0500



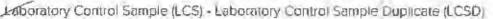








Cc



	Spille Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mgA	mg/l	тдЯ	%	56	%	-	-	%	%
Arsenic	10.0	9.27	9.35	93	544	ED-120			1-	20
Barium-	10.0	937	9,40	94 -	94-	80-120			0-	20
Cadmium	10.0	9.20	9.25	92	92-	80-120			0-	20
Chronilian	10.0	9.21	9.15	92	91	80-120			1-	20
Lead	10.0	9 23	9.23	92_	92 -	80-120			1) -	20
Selenium	10.0	9.34	9.39	93 -	94	80-120			1-	20
Silver	10:0	913	921	91	92	60-120			T	20







X869381-18 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

950

981

9.27

931

9.65

9.14

(OS) L86938148 1004/16 02:46 - (MS) R3175759-5 1004/16 02:52 - (MSD) R3175759-6 10/04/16 02:54

ND

MD

MD

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifler	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/).	mg#I	%	%		90			3	**
Arsenic	10.0	ND	9.70	947	97-	95-	1	75-175			2-	20
Barlum	10.0	0.127	9.49	9.32	94 -	92-	T.	75-125			2-	20
Cadmium	10.0	ND	9.46	9.28	95	93	Ť	75-125			2-	20
Chromium	10.0	ND	9.20	9.02	92 -	90	0.	75-125			2-	20

95 -

98 -

93 -

93 _

96 _

91_

ACCOUNT: Stantec-Bellevue, WA

10.0

10.0

10.0

75-125

75-125

75-125

20.

20

20

QUALITY CONTROL SUMMARY

ONE LAR NATIONWIDE

1869381-20.22

Method Blank (MB)

5	
	5

Metals (ICP) by Method 6010C

Contract of	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		rig/I	mgra	
Aisenic	U		0.0333	0.100	
Barium	Ux		0.0167	0.0500	
Cadmium	15/		0.00667	0.0200	
Chromium	(9)		0.0333	0.100	
Lead	ti y		0.0167	0.0500	
Selenium	u ,		0.0333	0.100	
Silver	0		0.0167	0,0500	









Gc.



(LCS) R3175962-2	11/04/16 14 45	9+(LCSD) R3175962-3	11/04/16 14 50
	1.00	Annual Transaction	100000000000000000000000000000000000000

	Spike Amount	LCS Result	LCSD Result	LCS Rec	LCSD Rec	Rec. Limits	LCS Quotifier	LCSD Qualifier	RPD	RPD Limits
Analyte	สาดูสา	mga	mgri	%	q,	%		V	%	76
Arsenic	TO.0	8.91	8.80	89 -	83 ~	80-120			1	20.
Barium	10,0	9.16	9.09	92 -	91	EQ-12D			1	20
Cadm um	10.0	9.00	8 92	90 -	89 -	80-120			1-	20
Chromlum	10.0	8.86	8.82	89 -	BB	80 120			11 -	20
Lead	10.0	8.91	3.81	89 _	88	£0-120			1-	20
Selenium	10.0	8.94	8.85	99 -	89	80-120			1/	20
Saver	10.0	3.61	8.54	86	85	80 120			1	20







69381-22 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

	Spike Amount	Original Result	MS Result	MSD Result	M5 Rec	MSD Rec.	Dillution	Rec, Limits	MS Qualifler	MSD Qualifier	RPD	RPD Limits
Analyte	RIG/	nig/i	mg/l	mg/l	16	%		%			%	%
Arsen	10.0	ND.	9 29	9.32	93 -	93_	1	75-125			0	20
Barism	10.0	ū 177	9.26	9.25	91 /	91	1	75-125			0-	20
Cadquagn	10.0	ND	9 21	9.21	97	97	1	75-125			0 ~	20
Chromium	10.0	ND.	8.96	9.03	50	90 -	1	75-125			1-	20
Lead	10.0	ND	9 01	9.02	90	90 -	7	75.125			0 >	20
Selenium	10.0	ND.	9.44	9.47	94	95	1	75-125			0 -	20
Silver	10:0	ND	8 39	B.95	89	39	1	75.125			10	20

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE

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Al

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1869381 02.03.05.06.08.09

Method Blank (MB)

Metals (ICPMS) by Method 5020

(MB) R3175414-1 11/02/16 18:38

MB Result MB Qualifier MB MDL MB ROL

Analyte mg/kg mg/kg mg/kg 50.0

B-11-15 al= 42200 >10x blank NO ACTION

B-11-15 al= 9370 > 10x blank NO ACTION

B-15-8 al= 5730 > 10x blank NO ACTION

B-5-15 al= 8840 > 10x blank NO ACTION

Caboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175414-2	11/02/16	18,41 - [CSD)	R3175414-3	1002/16	18:44

	Spike Amount	LCS Result	LCSD Result	LCS Pec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPO	RPO Limits
Analyte	nugAkg	mg/kg	pry/kg	4	8	%			4	9h
Aluminum	1000	1060	1100	106	no /	ED-120			4 -	20

MS Rec

MSD Rec

Ollution Rec. Limits

£869381-03 Original Sample (OS) - Matrix Spike (MS) - Matrix ≸pike Duplicate (MSD)

MORE INCOMES OF	ARREST COMPANY THAT ARE	CARRY TRUBETT RAGE F	11/02/16 18:57 - (MSD) R3175414-7	A SERVICE OF MARTINESS AND ASSESSMENT
18 POST 1 2482 M 4 PS 1-11 4	A REPORT OF THE REPORT OF THE	100 0 10 10 10 10 10 10 10 10 10 10 10 1	THE RESERVE THE PERSON OF THE	A TOTAL PARTY THAT IS NOT
Long Sept March Sept Sept Sept.	manufacture and the land	Character and seek and the second office	THE PROPERTY OF THE PROPERTY O	I HILLER IN TOUR TOUR

N/	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)
Analyte	mg/kg	mg/kg	mg/kg	mg/kg
Aleeningm	234	9370	mon	10600

to evaluate spike recovered

MS Ovalifier MSD Qualifier RPD RPD Limits (4) Luch Viv

B 6-7.5 | al = 16600 > 10× blank NO ACTION B-6-15 | al = 19800 > 10× blank NO ACTION

NO BURL MERS NEEDED

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE

Volattle Organic Compounds (GC) by Method 8021B/NWTPHGX

1869381 01 04,07,10.15

Met	hód	Blank	(MB)
-----	-----	-------	------

(5) a.a.a-Trifluoratokiens(FID) 111

(5) a.a.o Trillogrataluene(PID) 110

(MB) R3175319-5 IVO	3/16 20.11			
Analyte	M8 Result mg/kg	M8 Qualifier	MB MOL mg/kg	MB RDL mg/kg
Senzene	U		0.000320	0.000500
Gasoline Range Ovganics-NWTPH	.U.	0	0.0339	0.100
Tolum:	0,000197	(2)	0.000150	0,00500
Ethylbenzene	U.		0.000010	0.000500
Total Xylene	U		0.000460	0.00150

potentially affected samples.

B-6-9.5 tolucne = 0.0007655 -> report as < RDL (0.005000) B-1-17 tolucne = 0.0005a45 > report as < RDL (0.005000) B-3-16' toluene = 0.0006195 > report as < RDL (0.005000)

RPD Limits

39

4 DUMUFIERS MISSIGNED.

LCSD Qualifier

3

0.580 0.590

0570-



'Oc

Ss

Caboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec, Linuts	LCS
Analyte	mg/kg	mg/kg	mg/kg	16.	%	%	
Benzene	0.0500	0.0539	0.0536	108 BCf	107	70.0 (30	
Тошене	0.0500	0.0551	0.0548	180	110-	70.0-130	
Ethylbenzene	0.0500	0.0534	0.0537	107-	105	Fa D 130	
Total Xylene	0.450	0.968	0 167	112-	111	70,0-130	
(S) a.a.a.Trifluorotak	rene(FID)		110-	110-	59.0-128		
(S) a.a.o.Triffuorotak	rene(PID)		154 -	19.3	54,0-144		

⁷GI

A

Sc

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

D.CS) R3176319-3 1403	7/16 19:08 - (LCSD)	R3176319-4	1/03/16 19:29							
	Spike Amount	LCS Pesult	LC5D Result	LCS Rec.	LCSD Rec	Rec. Limits	LCS Qualifier	TC2D Ongliter	RPD	RPD LIMES
Analyte	mg/kg	mg/kg	mgrkg	%	%	%			5)	76
Gasoline Range Organics-NWTPH	550	5 90	5 89	107 -	107 -	67 0 135			0130	20
(5) p.a.a-Trilluovataluene	(FID)			112	113 -	59 0 128				
(5) a.a.p-Trilluorotaluene	(PID)			779 _	116 .	54.0-144				

59.0-128

54.0.144

£869639-01 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

(OS) L869639-01 I	1/08/16 14 28 · (MS) R3	176600-1 11/08	17 03 - (A	MSD) R3176600-	2 11/08/16 17	.25			0040	if contr	UC Ibu	7-1-	LCSISOK
	Spike Amount	Original Result	MS_Result	M5D Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Goalder	RPD	HPD	Lumits
Anatyte	mg/kg	mg/kg	(maguikg)	mg/kg	9	4		10			%	60) 70)	NO action
Benzene	0.0500	0.000550	0 0337	0.0228	66.3	44.5	1	32.0-137			385	39	necdea
Toluene	0.0500	ND	0.0261	0.0150	50.8	28.5	1	20.0-142		13	(54.2)	42	matrix 15
Ethylbenzene	0.0500	ND	0.0190	0.00901	37.6	17-7	1	10.0.150		_B	(11)	44	SOIL
Total Xylene	0.150	ND	0.0600	O.D287	397	18 8	1	12.0-149		43	70.5	44	2012

ACCOUNT: Stantec-Beflevse WA PROJECT: 185750123A SOG: L869381 DATE/TIME: 11/09/15 13:16 PAGE: 46 of 59

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Volatile Organic Compounds (GC) by Method 80218/NWTPHGX

1869381-01,04,07,10,15

L869639-01 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

					+
(05) 1869639-01	11/08/16 14:28 + IMSI	R3176600-1	11/08/16 17:03	JMSD) R3176600-2	11/08/06 17:25

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RFD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	4		17			X.	- 1
(S) a.a.a-Truluoroi	totuene(FID)				925 -	89.2	*	59.0-128				
(S) a.a.a-Trifluoros	toluene(PID)				89.7 -	84.7	_	54.0-144				



Ss

/ 869639-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OSI L869639-01	1V08/16 14:28 - (MS) R3176600-3	17/08/16 17:47	(MSD) R3176600-4 11/09/16 18:10	
THE OF THE COLUMN TO		Excellent will be	MARKET AND A SECTION OF STREET	

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSO Rosult mg/kg	MS Rec.	MSD Rec:	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD LIMIES	
Gasoline Bange Omanos-NWTPH	5,50	ND	147	0,405	26.7	7.36	1	55.0-109	(10)	13.16	113	26	
(S) a,a,a-friffuorolatuene	T/D)				88.4	876		59.0-128					
(S) a,a, a-Trilloprotolueriel	PID)				86.9	82.6		54.0-144					

* note from lab, matrix interference





QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

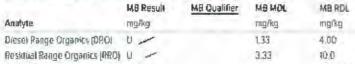
1869361.11 12.13.14 16 17

Method Blank (MB)

(Sto-Terphenyl

(MB) R3176262-3 11/07/16	16:07		
	M8 Result	MB Qualifier	MB
Analyte	mg/kg		mg
	**		0.00

105 -









Eaboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

50.0-150

(LCS) R3176262-4 11/07/16	15.24 - (LCSD)	R3176262-5	10/07/16 16:41								
4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	Spike Amount	LCS Result	LCSD Result	LC5 Rec.	LCSD Rec.	Rec Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			9/3	х.	
Diesel Range Organics (DRO)	30 0	76.5	30 7	86,9 -	102 -	50 D-150			154	20	
Residual Range Organics (RRO)	30.0	17.5	21,2	58,4	70,7 -	50 0-150			19.0_	20	
(S) a-Terphenyl				110 -	122 -	50.0-150					



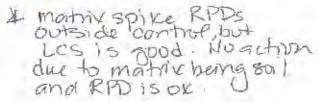






(OS) L869381-12 10/07/16 1	4.54 - (MS) R31	76262-1 11/07/	16 15:11 - (MSD)	R3176262-2	1V07/16 15:2B							
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Umits	M5 Qualifier	MSD Qualifier	RPD	RPO Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		16			%	%
Diesel Ränge Dyganics (DRO)	33.0	XI.	29.2	23.4	88.t -	70.5	1	50 0-150		J2 (21.9	ZD
Residual Range Organics (RRO)	33.0	0	20.0	15.6	50.4	(47.1)	1	\$0.0-150		DE JE	24.8	20
ISLA Frentinava					109	905		50 0 150				





QUALITY CONTROL SUMMARY

ONE LAB, NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method B2700-SIM

L869381-11,12,13,14,16,17

Method Blank (MB)

(S) p-Terphenyl-d14

(5) Hitrobenzene-d5

(S) 2-Fluorabiphenyl

(MB) R3175501-3	11/03/16	07:05	
-----------------	----------	-------	--

	MB Result	MB Qualifier	M8 MDL	MBRDL
Analyte	mg/log		mg/kg	mg/kg
Anthracene	U-		0.000600	0.00600
Acenaphthene	u-		0.000600	0.00800
Acenaphthylepe	U-		0.000600	0.00600
Benzo(a)anthracene	U.		0.000000	0.00600
Benze(a)pyrene	Um		0.0000500	0,00000
Benzo(b)Ruorantisens	U		0.000600	0.00600
Benzo(g.h.l)perylene	U		0.000600	0.00600
Benzo(khilupranthene	U.		0.000600	0.00600
Chrysene	U-		0.000000	0,00600
Dibenzja, hjanjhracene	U		0.000600	0.00600
Fluoranthene	to		0.000600	0.00600
Fluorene	U-		0.000600	0.00600
Indenof).2,3-cd/pyrene	0-		0.000600	0.00600
Naphthalene	0.		0.00200	0.0200
Phenanthrene	10-		0.000600	0.00600
Pyrene	11-		0.000600	0.00600
1-Methylnaplithalene	u		0.00200	D 0200
Z-Methylnaphthalene	U		0.00200	0.0200
2-Chioronaphihalene	4		0.00200	0.0200



















Laboratory Control Sample	(LCS) - Laboratory Control	Sample Duplicate (LCSD)
---------------------------	----------------------------	-------------------------

32.2-131

22.1-146

40.6-122

	Spille Amount	LCS Result	LCSD Result	LES Rec	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPO	RPO Limits
Anolyle	mg/kg	mg/kg	mg/lig	96	%	9%			%	8
Anthräsere	DORD.O	D.0640	0.0655	80.0	819 -	503-60			234-	20
cepaphthene	0.080.0	0,0627	0.0637	78.A	79.7.	52.4-120			1.66-	20
Acenaphthylene	0.0800	0.0678	0.0643	78.5	60 3	49.6 120			2.25	20
Benzo(a)anthracene	0.0800	0.0633	0.0660	79.1 ,-	82.5	46.7-125			412-	20
lenzo(a)pyrene	0.080.0	D 0545	0.0666	80.6	83.2	42,3-119			301-	20
Senzo(b)Buoramherre	0.0800	0.0568	0.0544	71.0	681	43.6-124			4.19-	20
Benzo(g.h.) perylene	0.080,0	0.0633.	0.0634	79.2	193	45.1-132			0 139*	20
Benzollollogranithene	0,0800	D.0530	0.0561	55.3	70.1	46,1-131			5.67	20
hrysene	0.080,0	0.0648	0.0667	B1.0	BIN	49.5.131			296-	20
Olbenz(a,h)anthracene	0.0800	0.0720	0.0712	90.0 _	89.0 -	44.8-133			1.09_	20
Fluoramhere	0.0800	0.0637	0.0644	79 6	80.5	49.3-128			116_	20

104

101 -

89.7

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 82700-SIM

1869381-11 12.13.14 16.17

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175501-1 11/03/1	6 06:23 - (LCSD)	R3175501-2	11/03/16 06:44					THE TAX A			
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Ret.	Rec. Limits	LCS Qualifier	LCSO Qualifier	RPD	RPD Limits	
Analyje	mg/kg	търлед	mg/kg	1.	10	%			4	%.	
Fluorene	D080.0	0.0637	0,0645	79.6	80.6 -	50.6-121			1.21	20	
Indeno(1,2,3-cd)pyrene	O.DBOD	0.0571	0.0667	83.9 -	83.3 -	46.1-135			0.710	20	
Naphthalene	0.0800	0.D62B	0.0638	78.5	79.7	49.6-115			1.48 -	20	
Phenarchrene	0.0800	0.0624	0.0649	780-	B11_	48 B.121			3.97 -	20	
Pyrene	0.0800	0.0672	0.0684	B4.0 ,-	85.5	44.7-130			178_	20	
1-Methylnaphthasene	0.080.0	0.0648	0.0672	B11 _	B4 (I _	50.6-122			3.50	20	
2-Methylnaphthalene	0.080.0	0.0621	0.0638	77 7 yr	798	50,4-120			2,57	20	
2-Chloronaphthalene	0,080,0	0.0657	0.0676	B21-	845_	53.9-121			782	20	
(S) p-Terphenyl-dl4				95.6 -	94.1	32.2 131					
(5) Nitrobenzene-d5				88.0 -	83.2	22.1-146					
(S) 2-Fluorobjohenyl				94.8	94.4	40.6-122					





















Abbreviations and Definitions

SDG	Sample Delivery Group
MDL	Method Detection Limit
ROL	Reported Detection Limit.
NO	Not detected at the Reporting Limit (or MDL where applicable)
U	Not detected at the Reporting Limit (or MDL where applicable)
RPD	Relative Percent Difference,
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec	Recovery.

Qualifier	Description
B	The same analyte is found in the associated blank
1	The identification of the analyte is acceptable, the reported value is an estimate.
13	The associated batch QC was outside the established quality control range for precision
15	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
16	The sample matrix interfered with the ability to make any accurate determination, spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
W.	The sample concentration is loo high to evaluate accurate spike recovertes.



















ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE



ESC Lab Sciences is the only enterprintential laboratory according to Clorified to support your work nationwide from one location. One phone call, one point of contact, one laboratory to occup the laboratory of the laboratory of prepared to handle your need it throughout the country. Our capacity and capacity from our single location blob activities controlled to the defective totals of the network bacetaces in our industry. The main significant benefit to our "one location" design is the design of our laboratory compast. The model is conductive to accelerated productively, discretizing furn-around time, and preventing creat contamination, thus projecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

* Not all certifications held by the laboratory are inputional to the results reported in the lattached report.

State Accreditations

Alaska UST 080 New Hampshile Arizone AZ0612 New Jersey-NELAP Alkansas 88-0469 New Mexico California 01157CA New York Colorado IN00003 North Carolina Conneticut PH-0197 North Carolina	2975 7N002 1N00003 11742 Env375 DW21704 41
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Georgia NELAP North Dakora	R-140
Georgia 923 Oliko-YAP	CLOGES
(dalvo TNOODO3 Oklahoma	9915
Illinois 200008 Gregon	TN200002
Indiana C-TN 01 Pennsylvania	68-02979
lowa 364 Rilode Island	221
Kansas E-10277 South Carolina	84004
Kentucky 90010 South Dakota	n/a
Kentucky 16 Tennessee 11	2006
Louisiana Al30792 Texas	T 104704245-07-TX
Maine TM0002 Texas *	LABD15Z
Maryland 324 Utah	6157585858
Massachusoils M.TNOO3 Vermon	¥T2006
Michigan 9958 Virginia	109
Minnesota 047 999 395 Washington	C1915
Mississippi TN00003 West Virginia	233
Missouri 340 Wistonsin	9980939910
Montana CERTDD86 Wyoming	ÁZLA
Nebraska NE OS 15-05	

Third Party & Federal Accreditations

A2LA - ISO 17025	1461.01	AHA	100789	
A2LA - ISO 17025	1461 02	DOD	1461.01	
Canada	1461 01	USDA	5 67674	
EPA-Crypto	TN00003			

Our Locations

ESC Life Sciences has many-four creen support certains that provide sample pickup and/or the delivery of sampling supplies. If you would live assistance from one of our support offices, planes contact our man office. ESC Lab Sciences performs all testing at our contral laboratory.



















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Reports:	Gorn	van (Email In: C	hris Gdak@stante nan@stantec.com	c.com;				MeO							LICHA LIBERTANIA Meneral syllen, 15 Pricence 615-FSA	MANUAL TO A STATE OF THE STATE
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Report to,	s Gorma	~	Ensail To: C	brit Gdake stants nane stantsc.com					Medi							S2005 Letterner Mapping School, 11 Platency 815-751	in Daniel
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Phone: 425-289-7374 Fax: 425-869-1190	Charac Project			STANTECHW	A-KENT		VoPres	res	NeHSC	25	ChrNo	Napre	r-NuPr	Extection		Table #	5391
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Cooler R	eceipt Form			
Client: CTANTECBUA	SDG#	2693	181	
Cooler Received/Opened On: 10/ 29/16	Temperature Upon Receipt:	2.9		
Received By: Dakota Busby				
Signature:				
Receipt Check L	ist	Yes	No	N/A
Were custody seals on outside of cooler and intact?				
Were custody papers properly filled out?		-		
Did all bottles arrive in good condition?		-		
Were correct bottles used for the analyses requested	4?	-		-
Was sufficient amount of sample sent in each bottle	?	1		
Were all applicable sample containers correctly pres	erved and			
checked for preservation? (Any not in accepted rang	e noted on COC)			
If applicable, was an observable VOA headspace pre-	sent?	100		-
Non Conformance Generated. (If yes see attached N	CF)	X		

ESC Lab Sciences Non-Conformance Form

ogin #1869381	Client: 5	TANTECBWA	Date:10/29	Evaluated by:Dakota
Non-Conforman	ice (che	ck applicable item	s)	
Sample Integrity		Chain of Custody Clas	ification	
Parameter(s) past holding time	8	Login Clarification Nes	ded	If Broken Container:
Improper temperature		Chain of custody is inco	omplete	insufficient packing material around container
Improper container type		Please specify Metals r	equested.	insufficient packing material inside cooler
Improper preservation		Please specify TCLP re-	questrd	Improper handling by carrier (FedEx / UPS / Con
Insufficient sample volume	,	Received additional sa	roples not listed on poc.	Sample was frozen
Sample is hiphasic.		Sample ids on containe coc	ers de not march ids on	Container lid por intert
Vials received with headsp	ace	Trip Blank not received	d)	If no Chain of Custody:
Broken container		Client did not 'X" analy	75ts.	Received by:
Broken container:		Chain of Custody is mis	ssing	Date/Time;
Sufficient sample remains				Temp./Cont. Rec./pH:
				Carriers
				Tracking#

Login Comments:

- 1. Received B-4-16.5 instead of B-2-16.5. Same date and time, Logged per COC
- 2. Please clarify TCLP Extraction

Client informed by:	Call	Email	8	Voice Mail	Date:10/31/16	Time:1300	
TSR Initials:bif	Client Con	tace Cyrus Go	ismi	1-			

Login instructions:

- 1) Log per COC
- Z) M6010TCLP (RCRA8) and TCLP ALICP

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Brian Ford

From: Brian Ford

Sent: Monday, October 31, 2016 6:49 PM

To: Brian Ford

Subject: FW: ESC Lab Sciences Maralco L869248

L869381. Cancelling TCLP ALICP.

Thanks, Brian Ford ESC Lab Sciences

Direct: (615)773-9772 Mobile: (931)510-2229 bford@esclabsciences.com

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From: Gorman, Cyrus [mailto:Cyrus.Gorman@stantec.com]

Sent: Monday, October 31, 2016 5:29 PM

To: Brian Ford

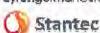
Subject: RE: ESC Lab Sciences Maralco 1869248

Sorry for the confusion. For the TCLP sample, we only want to run the RCRA 8 metals.

Thank you.

Cyrus Garman, L.G.

Project Manager Stantec 4100 194th Street SW Suite 400 Lynnwood WA 98036-4613 Cell Phone: 425-599-9302 Direct: 206-494-5029 cyrus.gorman@stantec.com



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🙀 Please consider the environment before punling this email.

From: Brian Ford [mailto:BFord@esclabsciences.com]

Sent: Monday, October 31, 2016 3:28 PM

To: Gorman, Cyrus < Cyrus.Gorman@stantec.com> Subject: RE: ESC Lab Sciences Maralco L869248

Cyrus,

Are we cancelling aluminum on just the Maralco groundwaters only? Or also cancel for the Maralco soils as well.

Thanks, Brian Ford ESC Lab Sciences Office: (615)773-9772 Cell: (931)510-2229

bford@esclabsciences.com

Notice: This communication and any attached files may contain privileged or other confidential information. If you have received this in error, please contact the sender immediately via reply email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you

From: Gorman, Cyrus [mailto:Cyrus.Gorman@stantec.com]

Sent: Monday, October 31, 2016 5:14 PM

To: Brian Ford

Subject: RE: ESC Lab Sciences Marako L869248

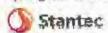
Brian,

Please skip the aluminum analysis. Sorry for the late notice.

Thank you.

Cyrus Gorman, L.G.

Project Manager Stantec 4100 194th Street SW Suite 400 Lynnwood WA 98036-4613 Cell Phone: 425-599-9302 Direct: 206-494-5029



cyrus.gorman@stanlec.com

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Please consider the environment balara printing this email.

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	ESC Lab Sciences
Lab SDG/Project/Work Order:	L869248
Project Name:	City of Kent Brownfield (Cooperative Agreement BF-
	00J65701)
	Maralco Property
Stantec Project Number:	185750123
Client:	City of Kent
Validator Name:	Kim Vik
Date of Validation:	November 18, 2016

SAMPLE INFORMATION:

SAMPLE INFORMATION:	<u> </u>	
Number of Samples:	9	
Matrix:	Water	
Number of Trip Blanks:	None	
Number of Equipment Blanks:	None	
Number of Field Duplicates (include duplicate information)	1 (sample SW-900 is a field duplicate of SN that the sample times for the original and were not recorded as the same on the C resulted in the duplicate sample being ar the holding time.	the duplicate OC which
Date of Sample Collection:	October 27 and 28, 2016	
Sample: B-6-GW	Analyses: Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Wet Chemistry (Method 300.0) Wet Chemistry (Method 300.0) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	Batch: WG922404 WG922127 WG922947 WG922800 WG922176 WG922052 WG922052 WG923169 WG922833
B-5-GW	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Wet Chemistry (Method 300.0) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	WG922404 WG922127 WG922947 WG922800 WG922176 WG922052 WG923169 WG922833

B-4-GW	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	WG922404 WG922127 WG922947 WG922800 WG922176 WG922052 WG923169 WG922833
B-3-GW	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	WG922404 WG922127 WG922947 WG922800 WG922176 WG922052 WG922052 WG922833
B-2-GW	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	WG922404 WG922127 WG922947 WG922800 WG922176 WG922052 WG922052 WG922833
B-1-GW	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	WG922404 WG922127 WG922947 WG922800 WG922176 WG922052 WG922052 WG922833
SW-10	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Wet Chemistry (Method 300.0) Wet Chemistry (Method 300.0) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	WG922404 WG922127 WG922947 WG922071 WG922071 WG922071 WG922833
SW-11	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Wet Chemistry (Method 300.0) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	WG922404 WG922127 WG922947 WG922071 WG922071 WG922833

SW-900	Mercury (Method 7470A)	WG922404
(duplicate of SW-11)	ICP Metals (Method 6010C)	WG922127
,	ICPMS Metals (Method 6020)	WG922947
	Wet Chemistry (Method 300.0)	WG922071
	Wet Chemistry (Method 300.0)	WG922071
	Wet Chemistry (Method 350.1)	WG922833
	·	

GENERAL DATA VALIDATION:

Chain of Custody:

COC is complete, with the Non-Conformance Form (NCF) from the lab. The NCF stated that there was a holding time exceedance in one of the samples. All requested analyses were performed per the COC.

Holding Times:

All analyses were run within the required holding times except for Nitrate for sample B-4-GW and SW-900. No qualifiers are needed.

Trip Blank Review:

No trip blanks were submitted with this SDG even though volatile organics were analyzed.

Surrogates:

All sample surrogates are within control. No qualifiers are needed.

QC Surrogates:

All QC surrogates were within control.

Lab Notes:

The lab noted that samples B-4-GW and SW-900 were analyzed past the holding time for Method 300.0 (Nitrate).

Elevated Reporting Limits:

Samples run on dilutions cause the reporting limits to be elevated. The following samples (and analyte) was noted as having been diluted:

Sample B-6-GW (Chloride at 5x dilution, Fluoride at 10x dilution, all PAHs at 2x dilution)
Sample B-5-GW (Chloride at 500x dilution, Ammonia Nitrogen at 10x dilution, all PAHs at 2x dilution)

Sample B-4-BW (Chloride at 5x dilution, Aluminum at 10x dilution, all PAHs at 2x dilution)

Sample B-3-GW (Chloride at 5x dilution, all PAHs at 2x dilution)

Sample B-2-GW (Chloride at 5x dilution, Aluminum at 10x dilution)

Sample B-1GW (Chloride at 5x dilution, Aluminum at 10x dilution)

Sample SW-10 (Chloride at 100x dilution, Nitrate at 5x dilution)

Sample SW-11 (Chloride at 5x dilution)

Sample SW-900 (Chloride at 5x dilution)

PER ANALYSES:

Wet Chemistry: Chloride, Fluoride, NItrate, *Method 300.0* (Batches: WG922052, WG922071, WG923169)

Method Blank:

Chloride was detected above the Method Detection Limit (MDL) in the laboratory method blank in all three batches at concentrations ranging from 88.8 ug/L to 187 ug/L. All of these detections were less than the Reporting Detection Limits (RDLs). All the samples were potentially affected; however, all of the sample results were greater than 10x the method blank concentration, so no action is needed. Nitrate was detected at

36.0 ug/L in the method blank in Batch WG922071 only. The potentially affected samples include SW-10, SW-11 and SW-900. The result for SW-10 was greater than 10x the method blank concentration, so no action is needed. The results for SW-11 and SW-900 will be qualified with a J. No other qualifiers are needed. The table in the "Determination" section below summarizes the qualified data.

Lab Duplicates:

Two laboratory duplicates were run for Batches WG922952 and WG923169, and one was run for Batch WG922971. The RPDs between the original samples and the lab duplicate samples were within the control limit of 20% for all batches. No qualifiers are needed.

<u>Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD):</u>

The LCS and LCSD percent recoveries were within the specified acceptance limits for all batches. The RPD between the LCS and LCSD was within the control limit of 20% for all batches. No qualifiers are needed.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

The MS and MSD percent recoveries were within the specified acceptance limits for all batches. The RPD between the MS and MSD was within the control limit of 20% for all batches. No qualifiers are needed.

Wet Chemistry: Ammonia Nitrogen, Method 350.1 (Batch: WG922833)

Method Blanks:

Ammonia nitrogen was not detected above the MDL in the laboratory method blank. No qualifiers are needed.

Lab Duplicates:

Two laboratory duplicates were run. The RPDs between the original samples and the lab duplicate samples were within the control limit of 20%. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

Two MS samples were run and one MSD was run in this batch. The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Mercury, Method 7470A (Batch: WG922404)

Method Blanks:

Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.

LCS/LCSC:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Metals (ICP), Method 6010C (Batch: WG922127)

Method Blanks:

No analytes were detected above the MDLs in the laboratory method blank. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the LCS and LCSD were within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the MS and MSD were within the control limit of 20%. No qualifiers are needed.

Metals (ICPMS): Aluminum only, Method 6020 (Batch: WG922947)

Method Blank:

Aluminum was detected at 4.45 ug/L which is between the MDL and the RDL. Results for potentially affected samples (all samples in this SDG) were all greater than 10X the method blank result; therefore, no action is needed. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Semi-Volatile Organics: Diesel Range Organics (DRO) and Residual Range Organics (RRO), Method NWTPH-Dx (Batch: WG922176)

Method Blank:

DRO and RRO were not detected above the MDL in the method blank. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for DRO and RRO were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

Semi-Volatile Organics: Polycyclic Aromatic Hydrocarbons (PAHs), Method 8270-SIM (Batch: WG922800)

Method Blank:

No analytes were detected above the MDLs in the laboratory method blank. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the LCS and LCSD for all analytes were within the control limit of 20%. No qualifiers are needed.

FIELD DUPLICATE REVIEW:

One field duplicate was collected with this sample delivery group (SDG). Sample SW-900 is a field duplicate of sample SW-11. RPDs were calculated between the results of the original sample (SW-11) and the field duplicate sample (SW-900). Discrepancies were found for Aluminum, where the RPD between the original sample result and the field duplicate result was greater than 20%, the EPA-specified RPD for water samples and/or 35% specified in the QAPP. The RPD between the two samples was 49.4%. The results for Aluminum for both SW-11 and SW-900 will be qualified with J. The calculation worksheet is attached. The qualified data is presented in the table under "Determination" below.

DETERMINATION:

The data in this work order have been validated and determined to be acceptable for use with the following qualifications:

Sample ID		<u>Original</u> esult (ug/L)	Qualified Result (ug/L)	Reason
SW-11	Aluminum (Method 6020)	618	618 J	Field duplicate
				discrepancy/RPD>20%.
SW-11	Nitrate (Method 300.0)	288	288 J	Method blank contamination
SW-900	Aluminum (Method 6020)	373	373 J	Field duplicate
				discrepancy/RPD>20%.
SW-900	Nitrate (Method 300.0)	288	288 J	Method blank contamination/
				holding time exceedance
B-4-GW	Nitrate (Method 300.0)	363	363 J	Holding time exceedance

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of J to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the Method Detection Limit (MDL) and Reporting Detection Limit (RDL), the resulting data was flagged with J to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). Based on the review of laboratory quality control data provided by the laboratory, the sample results may be qualified with:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (method reporting limit or MRL). Results assigned this qualifier are considered undetected at the MRL.
- UJ Indicates the analyte was not detected above the quantitation limit or MRL; however, the MRL is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL.
- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

SEE ATTACHED DATA QUALIFIER FORM FOR DATA VALIDATION AND LABORATORYASSIGNED QUALIFIERS (IF APPLICABLE) .

REFERENCES:

- CE. 2005. Environmental Quality Guidance for Evaluating Performance-Based Chemical Data (Engineering Manual), EM 200-1-10. US Corps of Engineers. June 30, 2005.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8. USEPA. November 2002.
- EPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008. USEPA. October 1999.
- EPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004. USEPA. October 2004.
- EPA. 2006. Tier I Data Validation Manual for the Ohio EPA, Division of Hazardous Waste Management. Ohio EPA. February 2006.
- TNI. 2009. Volume 1, Management and Technical Requirements for Laboratories Performing Environmental Analysis, Module 4: Quality System for Chemical Testing, TNI Standard. The NELAC Institute. September 2009.

Data Validation Attachment Field Duplicate Sample Worksheet (list all detected sample/field duplicate results)

DV Date:	11	1	8	16
	-	_	_	-

Stantec Project No: 185750123

Data Validator: 16-V16

Work Order/SDG Number: ESC L869248

							Applicable	8PD) (3"	3/0 GA1	(90)
Matrix (check one):	: D5oil ,	Water D Sediment D Other	Sample ID	Duplicate Sample ID			If Concentrations A and B In Concentrations > 5X MRL < or = 5X M			
		Enter Sample ID Here ->	SW-11	SW-900	Reporting Limits	5 X Reporting	RPD	QUALIFIERS Gentral Umir = 20% (wroter) or 35%	Conc A - Conc	QUALIFIERS If difference > AMIL then add)
Analyses	Units	List Analytes	List Concentration A	List Concentration B	(MRL) (vemple/duplicate)	Dmit (MRL)	(%)	(sail)*. If RPD > then Control Smit then and I flog or UI flog.	B = Difference	flag to cone A und B.
method 300 o	15/1	chlonde	379000	367000	54/360		3,2	1		
300.0	ug	Pluonde	4170	4210	9/90/990		1.0			
300.0	USIL	Nitrale #	283	288(41)	397/2007		0			
Melhod 350.1	9/	Ammonice Witnesen	62, D (3)		38/38		3.3			
mahod Gold C		Barium	15.5	14.4	170/1.70		7.4			
GOIDC		Chromicum	1.41 (3)	21.40 (ND)	1,40/1,40		0.7			
6010C		Lead	2.00 (3)	41.90f(NO)			511			
Method 10020		Dluminum	618	373	ap /2:00		49,4	3		

H/A . Does not apply



ANALYTICAL REPORT myESC



Stantec-Bellevue, WA

Sample Delivery Group:

L869248

Samples Received:

10/29/2016

Project Number:

185750123A

Description:

Maralco, Phase II ESA

Report To:

Cyrus Gorman

11130 NE 33rd Pl. Suite 200

Bellevue, WA 98004

Entire Report Reviewed By: Buran Ford

Brian Ford

Technical Service Representative

Results relate only to the items tested or coldinated and are reported as rounded values. This test report shall not be reproducted, eucept in full without written approvab of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 050303, and 050304.





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9 water Sampling i Clarent, between original & Oficed dop i Sw 900 is a dop of Sw-11 field duplicate no velatile; should be I paromer?

Non-conformance parameters past holding time.

nitrale for 84-6W (48 hours).

fluoride 28days /

chloride 28days /

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B-6-GW L869248-01 GW			Carel Sliesting	10/27/16 15:15	10/29/16 09:00
Mellidal	Barch	Dilbuan	Preparation	Analysis	Analyst
			datedume	date/ume	
Mercury by Method 7470A	WG922404	1	11/02/16 11:14	11/02/16 16 19	NJB
Metals (ICP) by Method 6010C	WG922127	Y	(0/31/16 08 58	10/31/16 15:32	ST.
Metals (ICPMS) by Methou 6020	WG922947	Y	11/02/16 11:09	11/03/16 16:56	LAT
Semi Volatilo Organic Compounds (GOMS) by Method 82700-SIM 🦟	WG922800	2	W0t/16 20:30	10/02/16 05:21	FMB:
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX	WG922175	1	10/31/16 09 39	100016 17/06	TRE
Wel Enemistry by Method 300 0 -	WG922052	1	10/29/16 12 28	10/29/16 12:28	SAM
Well Chemistry by Method 300 0	W6922052	5	10/29/16 14:37	10/29/16 14:37	SAM
Wet Chemistry by Method 300 0	W6923169	10	1003/15 (6/4)	10/03/16 18:41	EM
Wet Chemistry by Method 350 1	W6927833	1	1002/15 14:01	1002/16 (4:01	DR
B-5-GW L869248-02 GW			Collected by Carol Shestag	Colleged date/sine 10/27/16 11:10	Received distertime W/79/16 09:00
Method	Baich	Daution	Preparation	Analysis	Analyst
			date/timé	date/time	
Mercury by Method 7470A	V/G922404	1	1002/16 11:14	1002/16 16:22	BLM
Metals (KCP) by Method 6010 C.	VIG922127	1	10/31/45 OB 58	10/31/16 15:40	51
Motals (ICPMS) by Method 6020	WG922947	4	11/02/16 19:09	11/03/16 16:59	LAT
Semi-Volable Organic Compounds. (GCMIS) by Method 82700-SIM	WG922800	2	Worde 20.30	11/02/16 05 46	FMB
Semi-Volatile Organic Compounds (GC) by Memod NWTPHOX	WG922176	K.	10/31/46 09 39	11/01/16 17:26	TRE
Ver Chemistry by Method 300 0	WG922052	ŧ	10/29/16 10:02	10/29/16 10:02	SAM
Ver Chemistry by Method 300 0	WG923(69	500	11/03/96 18/85	11/03/16 18 55	CM
Vgi Chemistry by Method 350 1	WG922833	10	11/02/16 14 51	11/02/16 14:51	DR
B-4-GW L869248-03 GW			Collected by Corol Siyesting	Collected date/filing 10/27/16 09:30	Received distelland 10/29/16 09:00
Mathed	Balch	Q attion	Ргерагалон	Analysis	Analyst
			date/time	date/time	
dercury by Method 747DA	WG922404	1	11/02/15 19:14	11/02/16 16:24	NJB
Aerals (CP) by Method 5010-0	WG922121	1	10/31/16 06:58	10/31/16 15 43	57
AgraS (ICPMS) by Method 6020.	WG922947	מנ	11/02/15 12:09	11/04/16 14:02	LAT
emi Volat - Organic Compounds (GCMS) by Method 82700-SIM	W6932800	- 1	11/01/16 20:30	1902/16/06:08	EMB
em - Volatile Organic Compounds (GC) by Method NWTPHDX	WG922176	0	10/31/16 09:39	11/01/16 17:45	TRE
Vei Chemistry by Mathod 360 0	WG922052	- 0	10/29/16/12:42	10/29/16 12:42	SAM
Vei Chemistry by Mothod 300 O	WG923169	5	11/03/16.19:10	11/03/16 19:10	CM
Vet Chemistry by Method 350 1	WG922833	1	11/02/16 14:04	11/02/16 14:04	DR
B-3-GW L869248-04 GW			Collected by Catch Streston	Collected date/rime 13/27/16 12:70	Received case/sine 10/29/16 09 00
Method	Balçli	D Wilder	Preparation	Analysis	Analyst
	manage		date/lyine	date/films	Non
Nectury by Method 7470A	WG922404	1	11/02/16 11:14	1002/16/16:27	NTB
Asiats (ICP) by Method 601DC	WG922127	1	10/31/16 08:53	10/31/16 15:46	ST
Aelais (ICPMS) by Method 6020	WG922947	1	1002/16 11:09	11/03/16 17:12	LAT
em Volat e Organic Compounds (GCMS) by Method 8270D S.M.	WG92280D	1	11/01/46 20 30	1002/16/06:31	FMB
emi-Volatile Organic Compounds (GC) by Method NWTPHDX.	WG922176		10/31/16 09:39	11/02/16 13 40	TRE
Ver Chemistry by Method 300 0	WG922052	1	10/29/16 19:16	10/29/16 19:16	SAM
Vei Chemistry by Method 300 C	WG922052	- 5	10/29/16/16:04	10/29/16 tG:D4	SAM
Wes Chemistry by Method 350 1	V/G922B33	7.	11/02/15 14-05	1002/16 14 06	SQ.

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B-2-GW L869248-D5 GW			Cozecied by Carol Shestag	Collected datelvine (0/27/16/13:25)	Received date/lime 10/29/16 09 00
Method	Balth	Dilution	Preparation	Aixintysis	Analyst
	444		date/lime	dáte/time	
Meicury by Meihod 7470A	WG922404	1	11/02/16 11 t4	1002/16 16:29	HJB.
Metals (ICA) by Method 6010C	WG922127	11	10/31/16 08:58	10/31/16 15:49	51
Metals (ICPMS) by Method 6020	WG922947	10	1002/16 11 09	10/04/16 14:05	LAT
Sensi Yazake Organic Compounds (GCMS) by Melliod B270D-SIM	WG922800	1	11/01/16 20:30	12/02/16 06:54	FMB
Sensi-Volatile Organic Compounds (GE) by Method NWTPHDX	WG922176	1	10/31/16 09:39	11/02/16 13 56	TRE
Wal Chemistry by Method 300 0	WG922052	1	10/29/46 12 13	10/29/16 12:13	SAM
//el Chemistry by Mothod 300-0	WG922052	5	10/29/16 14 52	10/29/16 14 52	SAM
Wel Ellentistry by Method 350.5	WG922833	9	11/02/16 14:07	12/02/16 14 07	DR
and the shall be a second of the second of t	174722033		11102130 19 04	1402110 14 07	UN
B-1-GW L869248-06 GW			Collected by Carol Shoslag	Collected date/time t0/27/16 13:00	Received date/time 40/29/16-09:00
Melhod	Hatch	Dilujon	Preparation	Analysis	Analyst
7. A. C.			daje/lime	date/time	7. 4.4
MolEury by Michod 74/IGA	WG922404	1	11/02/16 11:14	11/02/16 16:32	BLN
Metals (ICP) by Method 60 HIV.	WG922127	1	10/31/46 08:58	10/31/16 15:52	ST
Mobils (ICPMS) by Molliad BNZD	WG922947	10	11/02/16 11:09	11/04/15 14 08	LAT
iskini Valable Organic Compounds (GC/MS) by Method 8270D-SIM	\VG922800	1	11/01/16 20 30	11/02/16 07:18	FME
emi Valitile Organic Compounds (GC) by Method NWTPHDX	WG922176	1	10/31/46 09 39	11/02/16 14 13	THE
Net Ellentistry by Method 300 B	WG922052	1	10/29/16 11:59	10/29/16 11 59	SAM
Net Chenistry by Method 300 0	WG922052	5	10/29/16 16:18	10/29/16 16 18	SAM
Well Chemistry by Melhod 350 (WG922833	1	11/02/16 14 09	10/02/16 14 09	DR
SW-10 L869248-07 GW			Collected by Circol Shasting	Collected date(fine 10728/16 10.40	Received date/line 10/29/16 09:00
Mothad	Brigh	Dilufton	Preparation	Analysis	Analyst
			date/time	diste/time	
Fercusy by Melliad 7470A	WG922404	1	11/02/16 11.14	11/02/16 16 34	NIB
Agials (ICP) by Method 5010C	WG922127	1	10/21/16 08:58	10/31/16 15 55	\$7
Metals (ICPMS) by Method 5020	WG922947	1	11/02/16 11:09	11/03/16 17 21	LAT
Wit Chemistry by Method 300.0	WG922071	1	10/29/16 23:09	10/29/16 23:09	CM
Wes Chemistry by Method 300 0	WG922071	100	10/30/16 00:07	10/30/16 00:07	CM
Wit Chemistry by Method 300.0	WG922071	5	10/29/16 23:52	10/29/16 23:52	CM
Wit Chemistry by Method 350 1	WG922833	1	11/02/16 14 15	11/02/16 14:15	DR
a www.hazes.wewte.com			Collected by Carol Shestag	Collected date/ime 10/78/16 N 05	Received date/films 10/29/46 09:00
SW-11 L869248-08 GW					
Aethod	Barch	Diulian	Preparation date/time	Analysis date/lime	Arralyst
Marcury by Metiliad 7470A	WGB22404	rt.	11/02/16 11/14	11/02/16 16:42	N/B
Aelals (ICP) by Muthod 6010C	WG922127	1	A STATE OF THE STA		N/B SV
			10/31/16 08 58	10/31/16 16 57	
Millals (ICPMS) by Mighted 6020	WG922947	7	11/02/16 11:09	11/03/16 17 24	LAT
Wet Chemistry by Method 300,0	WG922071	1	10/30/16 00:21	10/30/16 00/21	CM
Mat Chemistry by Method 300,0	WG922071	5	10/30/16 00:36	10/30/16 00/36	CM
Vet Chemistry by Method 350 1	WG922833	-1	11/02/16 14:17	11/02/16 14 17	DR .
200.000 10000 10000 1000			Collected by Carol Shestag	Collected date/lime	Received date/films
SW-900 L869248-09 GW					0.40.00.00.00
Metilad	Batch	Davtion	Preparation date/rime	Aratysis dateriare	Analyst
Mercury by Method 7470A	WG922404	41	12/02/16 11 14	11/02/16 16:45	N1B-
Metals (ICP) by Method 60t0C	WG922127	()	10/31/16 08 58	10/31/16 16 00	-51
ACCOUNT: Steelers Belleving We	PROJECT:		SDG:	DATE/TIME:	

LB69248

185750123A

11/04/16 18:10

4 of 37

Stantec-Bellevue WA

Conserved by

Collected date(time Received date/time



		Carol Sirestag	10/26/16 00:00	10/29/16 09:00	
Batch	Dieution	Preparation	Analysis	Analysi	_
		date/time	date/linte		
WG922947	T	11/02/16 10:09	11/03/16 17:27	LAT	
WG927071	T	10/30/16 00:50	10/30/16 00:50	CM	
WG922071	5	10/30/16 01.33	10/30/16 01:33	CW.	
WG922833	1	11/02/16 14:18	11/02/16 14:18:	DR	
	WG922947 WG922071 WG922071	WG922947 1 WG922071 1 WG922071 5	Batch Dilution Preparation date/time WG922947 1 11/02/16 19:09 WG922071 1 10/30/16 00:50 WG922071 5 10/30/16 01:33	8atch Dilution Preparation Analysis date/time date/time date/time WG922947 1 1/02/16 17:27 WG922947 1 10/20/16 00:50 10/20/16 00:50 WG922071 5 10/20/16 01:33 10/20/16 01:33	Batch Dilation Preparation Analysis Analysis Analysis determine date/time date/time LAT W6922947 1 11/02/16 1/109 11/03/16 17/27 LAT W6922071 1 10/30/16 00:50 10/30/16 00:50 CM W6922071 5 10/30/16 01:33 10/30/16 01:33 CM























All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowlingly withheld that would affect the quality of the data.



















Buan Ford



Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID
1869248-03
L669248-09

Project Sample ID

Method 300.0 300.0

ONE LAB NATIONWIDE

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Collected date/time: 10/27/16 15.15

Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	FIDL	Dilution	Analysis	Batch
Analyte	ug/l		ligit.	ng/l		date /1 m=	
Disalo	MODEL		750	5000	T	10/29/2016 14:37	W007/2087
Fluoride	52900		99.0	000	- 10	1003/2016 18:41	WG923169
Natale	U		22.7	too	1	10/29/2016 12 28	W6922052



Wet Chemistry by Method 350.1

	Result	Qualifier	MOL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		MSVT	197		date / fine		
Amnyonia Nüragen	516		38.0	250	1	11/02/2016 14:01	WG972833	



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		uġ/l	ug/l		date / time	
Mercury	0.33B		0.0490	0.200	1	11/02/2016 15 19	W6922404



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Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug#		.ug/l	ug#l		date / time	7
Arsenit	64.0		6.50	too	1	10/31/2016 15:32	WG922127
Barrum	325		170	\$.00	Î.	10/31/2016 15:32	W6922127
Cadmigor	Ц		0.700	2.00	1	10/31/2016 15:32	WG922127
Chromaum	44.3		140	10.0	0.	10/31/2016 15:32	W6922127
Lead	40 3		190	5.00	1.0	10/302016 15:32	W6922127
Selenten	D.		7,40	80.0	1	10/39/2016 15:32	W6522127
Silver	0		2.80	5.00	1	10/30/2016 15:32	W6922127



Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	ROL	Dilutton	Analysis	Batch
Analyte	AB/s	/	nga	ugh		dine / ilme	
Alun num	43500 1/		2,00	100	1	11/03/2016 16:56	W0020317

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MOL	ROL	Dilution	Analysis	Batch
Analyte	ид/1		ing/l	ug/i		date / time	
Diesel Range Organics (DRO)	U		82.5	250	+ 0	11/01/2016 17 06	WG922176
Residual Range Organics (RRO)	U		165	500	1	11/07/2018 17:06	W6922176
(5) a-Terphenyt	127			50:0-150		10002016 17:06	WG922176

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Dualdier	MOL	ROL	Dilution	Analysis	Batch
Analyte	ug/		идЛ	மத்சி		date / time	
Anthracene	Ð		0.0280	0.100	7	11/02/2016 05:21	WG922800
Arenaphinene	0		0.0200	0.100	2	11/02/2016 05:21	WGBZ2800
Aceraphtilyiere	U.		0.0240	0.100	2	11/02/2016 05:21	WG9Z2800
Benzo(a)anthacene	U		0.00820	0.100	2	11/02/2016 05:21	WG9Z2800
Benzo(a)pyrene	D.		0 0232	0.100	2	11/02/2016 05:21	WG922800
Benzo(b)Ruoranthene	U		0.00424	0 t00	2	11/02/2016 05:21	WG927800
Benzo(g.h.i)perylene	U		0.00454	0010	2	11/02/2016 05:21	WG927800
Bengo(k)/lluoran/hene	U		0.0272	0 100	2	11/02/2016 05:21	WG92780D
Chrysene	U		0.0216	0.00	2	0/02/2016 05:21	WG922800
Dibenz(a,h)anthracene	U		0.00792	0.100	2	D/D2/2016 05:21	WG922500
Fluoranthene	U		0.0314	0.400	2	N/D2/2016 05:21	WG922500
Fluorene	U		0.0770	0.100	Ž	17/02/2016 05:21	WG922800
Indeno(1,2,3-cd)pyrene	Ú		0 0296	0.100	2	9/D2/2016 05 21	WG922800

B-6-GW

SAMPLE RESULTS - 01

ONE LAB MATIONWIDE

Collected dato/time: 10/27/16 15:15

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifler	MDL	RDL	Dilution	Analysis	Batch
Analyte	4g/l		ugh	ug/l		date/time	
Naphihatene	U.		0.0396	0.500	2	11/02/2016 05:21	WG922B00
Phenanthrene	41.		0.0164	0.100	2	11/02/2016 05:21	WG922800
Pyrene	U.		0 0234	0.100	21	11/02/2016 05:21	WG927800
i-Methylmaphthidene	U		0.0164	0.500	-21	11/02/2016 05 21	WG922800
2-Methylnaphthalene	U.		0.0180	0.500	2	11/02/2016 05:21	WG922800
Z Chlerannohthalene	U.		0.0129	0.500	2	11/02/2016 05:21	WG922800
(S) Nitrobenzene-d5	45.4			45.1-170		11/02/2016 05:21	WG922600
(5) 2 Fluoratiphenyl	241	32		57.7.153		14/02/2016 05:21	WG922800
(5) p-Terphenyl-dM	16.5	22		53.2 156		11/02/2016 05:21	WG922800





















ONE LAB NATIONWIDE

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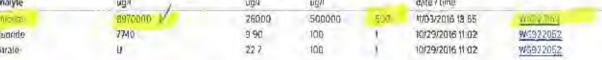
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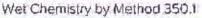
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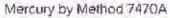
Wet Chemistry by Method 300.0

	Result	Oualifier	MDL	RDL	Dilution	Analysis	Batch	_
Analyte	vg/(ug/I	hālu		date / time		
Etioopi	8970000 1		26000	500000	500	17/03/2016 18 65	115 (7.35)	
Fluoride	7740		9 90	100	1	10/29/2016 11:02	WS922052	
Nurale-	li .		227	100	1	10/29/2016 11:02	WG922052	





	Result	Qualifler	MDL	RDL	Dilution	Analysis	Batch	
Analyte	NgA		um	ug/l		pate / time		
Aremonia Nibógen	39800		380	2500	19	11/02/2015 14:51	W3322833	



	Result	Qualifier	MDL	RDL	Dihrion	Analysis	flatch	
Analyte	ugil		ug/l	Vg/I		date / time		
Mercury	0.0502	1	0.0490	0.200	1	11/02/2016 16 22	W6922404	

Metals (ICP) by Method 6010C

	Result	Qualifier	MD.	RDL	Dikitian	Analysis	Batch	
Analyte	Lig/l		rugtl	light.		वंगर मानर	- 1	
Arsenic	43 9		6.50.	10.0	1	10/32/2016 15:40	WG922127	
Barium	3850		1.70	5.00	1	10/31/2016 15:40	WE922127	
Cadmlum	U		0.700	2.00	1	10/38/2016 15:40	WG972127	
Chromium	18.7		1.40	10.0	1	10/31/2016 15:40	WG922127	
Lead	9.40		1.90	5.00	1	10/31/2016 15:40	WG922127	
Selenium	Ū.		7.40	10 0	1	HV31/2016 15:40	WGG22127	
Silver	Ū		2 BD	5.00	1	10/31/2016 15 40	WGG22127	
SHAFL	9.		E DU	in thu	Th.	400 28 2010 13 412	110322127	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	ROL	Ollution	Analysis	Batch	
Analyté	ugh.		ug/l	09/1		date Filme		
Aumoum	7880		200	100	1.	1003/2016 16:59	West Lines	

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MOL	RDL	Dilution	Analysis	Batch
Analyte	ug/		ugň	nāţ		date I time	
Diesel Range Organics (DRQ)	,tu		82.5	250	1	1001/2016 17:26	WG922176
Residual Range Organics (PRO)	U		165	500	1	11/01/2016 17:26	WG922176
(S) a-Terphenyl	93.8			50,0450		1000/2015 17:26	WG92206

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ugri		nBq.	ugit		date / time		
Arithracene	u		0.0280	0.100	2	11/02/2016 05:44	WG922600	
Аселарынене	u		G 0200	0.100	2	11/02/2016 05:44	WG927800	
Acenaphinylene	u		B 0240	0.100	2	11/02/2016 05:44	WG922600	
Benzo(alanthiacene	u		0.00820	0.100	2	11/02/2016 05:44	WG927800	
Велго(лірутеле	U,		0.0232	0 100	7	11/07/2016 05:44	WG927800	
Benzo(b)Nuoranthene	U		0.00424	0.100	7	11/02/2016 05:44	WG922800	
Benzo(g.h.i perylene	U		0.09454	0 100	7	11/07/2016 05:44	WG927B00	
Benzo(k Augranthene	U		0.0272	0.100	7	11/02/2016 05:44	WG922800	
Chrysene	(I		0.0216	0 100	2	11/02/2016 05:44	WG972B00-	
Diberiz[a _i h anthracene	U		0.00792	0.100	2	11/02/2016 05:44	WG922800	
Fluoranthene	u		0 0314	0.100	2	11/02/2016 05:44	WG922800	
Fluorene	U		0.0170	0.100	2	11/02/2016 05:44	WG972B00	
Indenoli,2,3-cdloyrene	D.		0.0296	0.000	2	11/02/2016 05:44	WG922800	

ACCOUNT: Statter-Bellevue, WA

PROJECT-185750123A

SDG: L869248

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SAMPLE RESULTS - 02

ONE LAB NATIONWIDE

Collected date/time: 10/27/16 11:10

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MDL	RDL	Distribution	Analysis	Batch
Analyte	agill		ug/	ugil		date/lane	
Naphthalepe	Ü		0.0396	0.500	2	11/02/2016 05:44	WG972800
Phenasihrenc	U		0.0164	0.100	7	11/02/2016 05:44	WG922800
Рузеле	U		0 0234	0 400	2	10/02/2016 05:44	WG972800
I Melhylnaphlhalene	î.i		0.0164	0.500	2	11/02/2016 05:44	WG972800
2-Mejhylnaphinalene	U		D-0180	0.500	2	10/02/2016 05:44	W6922800
7 Chlorosaphthaleno	u		0.0129	0.500	2	1002/2016 05:44	W6972800
(5) Nitrobenzene-d5	97.1			45,1-170		1/02/2016 05:41	WG927800
(5) 2 Fluorobyphonyl	71.9			57.7.153		1VOZ/2016 DS:44	WG977800
(5) p-Terphonys-d14	59,2			53.2-156		10/02/2015 05:44	WG9Z7800

















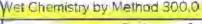


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SAMPLE RESULTS - 03

ONE LAB, NATIONWIDE

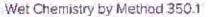
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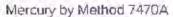






	Result	Qualifier	MOL	RDL	Disusion	Analysis	Batch
Analyte	ปฏิก		ug/l	ug/l		date / time	
Ammonia Nitrogen	4150		38.0	250	1	11/02/2016 14:04	W5922833

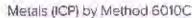




	Result	Qualifier	MDL	RDL	Ditation	Analysis	Batch	1.00-20
Analyte	идЛ		ugiA	ngh		date / time		
Mercury	0.0661	J	0.0480	0.200	1	11/02/2016 16:24	WG922404	



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	Pesult	Qualifier	MOL	RDL	Dilution	Analysis	Batch
Analyte	ug/l		USAT .	ugri		date I time	
Arsenic	65.9		5.50	10:0	1	10/31/2016 15:43	WG922127
Barlum	676		170	5 00	1	10/31/2016 15:43	WG922127
Cadmaum	1.56	11	E 700	2 00	1:	10/31/2016 15:43	WG922127
Chromium	108		140	10.0	1:	10/31/2016 15:43	WG922(27
Lead	285		190	500	1	10/31/2016 15:43	WG922127
Selenium	U		7.40	10 0	1	10/31/2016 15:43	WG922127
SINCE	V		2.80	5 00	1	10/31/2016 15.43	W6972127



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Metals (ICPMS) by Method 6020

	Result	Qualifier	MDE	RDL	D Mutican	Analysis	Batch	
Analyte	ug/r		ugn	ug/l		date / time		
Your tare	363000		20.0	100G	10	11/04/2016 14:02	VATT1, 147	

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifler	MDL	RDL	D Aution	Analysis	Batch
Analyte	ug/i		113/1	ngh		date / time	
Diesel Range Organics (DRO)	U		82.5	250	1	11/00/2016 17:45	WG922176
Residual Range Organics (RRD)	U		165	500	Ţ	1000/2016 17:45	\VG922176
(S) a-Terphenyl	#3			50.0-150		11/01/2016 17:45	WG922175

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MDL	RD4.	Diletion	Analysis	Batch
Analyte	គណីក្		ugh	ug/I		date / time	
Anttraceste	ц		0.0280	0 100	2	11/02/2016 06:08	WG922800
Acenaphthene	u		0.0200	0.00	2	10/02/2015 06:08	WG922500
Acenaphibyleric	u		0.0240	D 100	2	tb/02/2016 06:08	WG922800
Benzo(a)amhracene	u		0.00820	0.300	2	11/02/2016 06:08	\vG922800
Вепго(а)ругел є	u		□ 0232	D 100	2	TM02/2016 06:08	WG922500
Benzo(b)fluorarihene	u		0 00424	0.300	2	11/02/2016 05:08	WG922800
Benzo(g,b,llpery/lene	U		0.00454	D 100	2	75/02/2016 06 08	WG522800
Benzo(kj/luoranthene	U		0.0272	D 100	2	10/02/2018 06:08	WG922800
Chrysene	U		0 0216	0 100	2	11/02/2016 QE QB	WG922800
Dibenzia,hjanthracene	U		0.00792	0.100	2	11/02/2016 06:08	WG922800
Fluoranthene	U		0.0314	0 100	2	TV02/2016 DE DB	WG922800
Fluorene	U		0.0170	0.100	2	1V02/2016 05:08	WG922800
Indeno(1,2,3-cd/pyrene	n		0.0296	0 100	2	11/02/2016 05 08	W592280Q

ACCOUNT: Stantec Belevue, WA

PROJECT: 185750123A

SDG: 1869248

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SAMPLE RESULTS - 03

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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MOL	RDL	Didution	Analysis	Batch
Analyte	ng/l		ugh	ug/l		date / Lime	
Naphthalene	U		0.0396	0.500	2	11/02/2016 06:08	WG922800
Phenalibretie	TI.		0.0154	0.100	2.	11/02/2016 06 08	WG972600
Pyrese	U		0.0234	0.100	2	11/02/2016 06:08	WG922800
I Methylmapilithalene	U		0.0164	0.500	2	11/02/2016 06 08	WG922800
2 Methythauththallene	U		0.0180	0.500	2	11/02/2016 06:08	WG927800
2-Chloronaphthalene	U		0.0129	0.500	2	11/02/2016 06:08	WG922800
(S) Nuobenzen+ d5	716			45.1.170		10/02/2016 06:08	WG922800
(S) 2-Fluoratiphenyl	398	32		577-153		18/02/2015 06:08	WG922800
(5) piterphenyl-d14	29,5	12		53.2 156		1002/2015 06-08	WG922800























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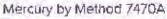
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Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Balch	
Analyte	uģ/li		og/i	ug/l		dase / time		
(Maria)	341000 ₹		260	5000	5	10/79/2016 16:04	WG57/72.5	
Phrotide	495		9 90	100	T	10/29/2016 11:16	WG922052	
Nitrate	55.6	1	227	100	Ť	to/29/2016 11 16	WGB22052	



	Result	Qualifier	MDL	RDL	Dautlou	Analysis	Batch
Analyte	ugli		ug/l	ug3		date / time	
Ammonta Nitrogeri	7030		38 0	250	1	11/02/2016 14:06	WG922833



	Result	Dualifier	MOL	RDL	Ditution	Anatysis	Batch	
Analyte	ugo		иол	ug/l		date / lime		
Mercuty	U		0 0490	0.709	1	11/02/2016 16:27	W6922404	

Metals (ICP) by Method 6010C

	Result	Qualifier	JOM	RDL	Dilution	Analysis	Batch
Analyte	Ngtr		व्यूप	ug/l		date / tone	
Arsenic	33B		6.50	10.0	1	10/31/2016 15:46	VMS922127
Banium	164		1.70	5 00	1	10/31/2016 15:46	W/3922127
Cadmisn	U		0.700	200	1	10/91/2016 15/46	V/G922127
Chromlen	154		1.40	10.0	1	10/91/2015 15:45	W(5972177
Lead	6.73		190	500	1	10/91/2015 15 45	WG922171
Selenium	U		7.40	10 0	1	10/31/2016 15:46	WE922123
Silver	U		2.80	5 00	1	10/31/2016 15 46	VIG977127

Metals (ICPMS) by Method 6020

	Result	Qualifier	MOL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l /		ugil	eg/i		date / time		
Alumingati	19060		2.00	100	1	11/03/2016 (7:12	Wisca 2 167	

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MOL	ROL	Dilution	Analysis	Botch
Analyte	ug/l		ugri	ug/I		date / time	2.11
Diese Range Organics (DRO)	235	- Z	87,5	250	1	11/02/2016 13:40	WG922176
Residual Range Organics (RRO)	U		765	500	1	11/02/2016 13:40	916922176
(5) a-Terphenyl	121			50 0-150		11/02/2016 13:40	970922176

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		цдЛ	ug/l		date/time		
Anthracene	U		0.0280	0100	2	1802/2016 06 31	WG922800	
Acenaphthene	0.459		0,0200	0.100	3	11/02/2016 08:31	WG522500	
Acenaphilhylene	0.0735	2	0.0240	0100	2	11/02/2016 06 31	WG522800	
Benzo(a)anthracene	U		0.00820	0.100	2	11/02/2016 05:31	V/G522800	
Benzo(a)pyrene	U		0.0232	0100	7	11/02/2016 06 31	WG922800	
Benzo(b)fluoranthene	U		0.00424	0.100	2	11/02/2016 06:31	W\$922800	
Benzo(g.h.ilperykere	U		0.00454	0100	2	11/02/2016 06 31	W6922800	
Benzo(k)Nuoranthene	U		0.0272	0.100	2	11/02/2016 06:31	WG922800	
Chrysene	U		0.0216	0.000	7	1702/2016 06:31	WE922800	
Dibenzla,hlanthracene	U		0.00792	0.100	7	11/02/2016 06:31	WG922800	
Flooranthone	U		0.0314	0.100	7	11/02/2016 06:31	WG92280D	
fluorene	0 483		0.0170	0.000	2	11/02/2016 06:31	W5922800	
Indentifi 2,3-Edipyrens	U		0.0296	0.000	2	11/02/2016 06 31	WG922801	
			-					-

ACCOUNT: Signted-Bellevue, WA

PROJECT: 185750123A

SDG: L869248

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tSt a Terphenyl 4114

SAMPLE RESULTS - 04

ONE LAB NATIONWIDE

WG922800

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Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MDL	ROL	Dilution	Analysis	Batch
Analyte	นฐก		lig/l	ugh		date / time	
Naphthalena	0.614		0.0395	0.500	2	11/02/2016 06:31	W6922800
Phenasibrene	0.0249	7	0.0154	0.100	2	11/02/2016 06:31	WG922800
Pyrene-	U		0.0234	0.100	2	11/02/2016 (%:31	WG922800
i-Methylnaphtbalene	2.38		0.0164	0.500	- 2	11/02/2016 06:31	WG927800
2-Melhylnaphthalepe	0 226	2	O OTED	0.500	2	11/02/2016 05:31	WG927800
2 Chloronaphinalene	W.		0.0129	0 500	2	11/02/2016 06:31	WG922800
(S) Nimbenzene d5	108			45.1-170		11/02/2016 06:31	WG922800
1St 2 Fluorobjahooyi	20,5			57.7-153		11/02/2016 05 31	WG922800

53.2 156





















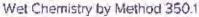
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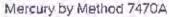
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Wet Chemistry by Method 300.0

	Result	Qualifler	MDL	RDL	Dilution	Analysis	Batch	
Analyte	757		ug/l	right		dine / time		
Chloride	177801	-	260	5000	8	10/29/2016 14:52	WSakkida	
Fluoride	E5(1		9,90	100	1	10/29/2016 12:13	WG922052	
Nitrate	177		22.7	100	1	10/29/2016 17:13	WG922052	



	Result	Qualifier	MDL	RDL	Otlution	Analysis	Batch	
Analyte	rgr		ug/l	69/1		date / time		
Ammonia Nitrogen	4570		38.0	250	1	10/02/2046 15/07	WG92Z833	



	Result	Outstiffer	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ngn	-	ug/l	ug/i		date / time		
Meirany	0.234		0.0490	0.200	1	11/02/2016 16:29	WG922404	

Metals (ICP) by Method 6010C

-	Result	Qualifier	MDL	RDL	Dilutton	Analysis	Batch	
Analyte	ug/l		ugA	ug/l		date / ilme		
Arsenic	45.2		\$ 50	10.0	1	10/302016 15 49	VIG022*27	
Barluat	590		1.70	5.00	1	10/31/2016 15:49	Yt5922127	
Cadnlium	1.50	.2	0.700	Z.00	1	10/30/2016 15:49	WG922127	
Chromhim	124		1,40	20.0	1	10/34/2016 15:49	WG972127	
Lead	493		190	5,00	1	10/34/2016 15:49	\vG922127	
Selenton	U		7,40	10.0	1	10/31/2016 15:49	VrG972127	
Silver	Ų		2,80	5.00	1	10/34/2016 15:49	WG972127	

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	μg/l		ug/l	ug/T		date / time	
Alumbum	159000		20.0	1000	-10	1004/7016 14:05	$V_{I} \approx L_{E} = 4T$

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Odution	Analysis	Batch
Analyte	trgri		ug/l	ug#		date / time	
Diesel Range Organics (DRO)	U		82.5	250	1	11/02/2016 13:56	WG922175
Residual Range Organics (MRD)	0		165	500	1	11/02/2016 13:56	WG922175
(S) a Terphenyl	125			50 0-150		#/02/2016 13:56	WG922176

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MOL	RDL	Odution	Analysis	Batch
Analyte	идл		ugh	ugit		date/time	
Anthracere	U		0.0140	0.0500	1	10/02/2016 06:54	WG922800
Aceraphthene	0		0.0100	0.0500	1:	1002/2016 05:54	WG92280Q
Acenaphthylene	Ü.		0.0120	0.0500	1	W/02/2016 06:54	WG922800-
Benzolalanthracene	0		B.00410	0.0500	1	1002/2016 05:54	WG922800-
Benzolnjoyrene	0		0.005	0.0500	1	11/02/2016 06:54	W9922800
Benzo(b)/Buoranthena	0		0.00212	0.0500	1	11/02/2016 06:54	WG922800
Benzo(g,h i)perytene	O.		8,00227	0.0500	1	11/07/2016 06:54	WG922800
Benzo(k Hupranthene	O.		0.0135	0,0500	1	11/02/2016 06:54	WG922800
Dhrysene	.0:		8010,0	0.0500	1	14/02/2016 06 54	WG922800
Dibenz[a,hjánjhracene	U		0,00396	0.0500	1	14/02/2015 06:54	WG922800
Fluoranthene	U		0,0157	0.0500	100	0/02/2016 06 54	WG922802
Fluorene	U.		0,00850	0.0500	3	14/02/2016 06:54	WG922800
Indeno(1, 2.3-cd/pyren-	0		0.0148	0.0500	100	11/02/2016 06:54	WG922880

ACCOUNT: Slantec-Bellevue WAL

PROJECT 185750123A

SDG. LB69248

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ONE LAB NATIONWIDE

B-2-GW Collected date/time: 16/27/16 13:25

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualifier	MDL	RDL	Dihrhon	Analysis	Batch	
Analyte	Ngu		ug/I	บญา		date / Lime		
Näphthalene	0.0429	Ī	0.0198	0.250	1	11/02/2016 06:5%	WG922800	
Phenanthrene	.0.		0.00820	0.0500	7	11/02/2016 05 54	AR235300	
Pyrene	.0.		0.047	0.0500	A	1902/2016 06:54	M2855800	
1 Methylmophthalene	0.0167	7	0.00821	0 250	1.0	11/02/2016 05:54	WG922800	
2 Methylnaphthalane	0.0165	7	0.00902	0.250	A:	11/02/20% 06:\$4	WG922800	
2 Chloronaphthalene	.0.		0.00647	D 250	t	11/02/2016 06 54	WG922800	
(S) Nitrobenzene-d5	112			45.1-170		18/02/7/016 06:54	WG922800	
(5) 2-Fluorobiphimyl	843			57.7-153		10/02/2016 06,54	WG927800	
(S) p-Terphenyl-dl4	.72.3			51.7-156		12/02/2016 06:54	WG922800	



















B-1-GW

SAMPLE RESULTS - 06

ONE LAB MATIONWIDE

Collected date/time 10/27/16 13 00

Wet Chemistry by Method 300.0

	Result	Qualifies	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ขฐก		ug/l	ugA		date / time		
Chiarid	265000 p		260	5000	4	(0/29/2016 16:18	W1927192	
Fluoride	428		9.90	100	1	10/29/2016 11:59	WG922052	
Hilrare	488		227	100	1	10/29/2016 11 59	WG922052	



Wet Chemistry by Method 350.1

100	Result	Qualifler	MOL	RDL	Didution	Analysis	Balch	
Analyte	ug/i		ug/l	ugh		date / Lime		
Ammonia Naragen	4070		38.0	250	Ť	11/02/2016 14:09	WG922833	



Mercury by Method 7470A

	Result	Qualifier	MDL	ROL	Dilution	Analysis	Batch	
Analyte	បញ្ញា		ug/l	ng/l		date / time		
Mercury	0.0726	٨	0.0490	0.200	- 1	11/02/2016 16 32	WG922404	



Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	ROL	Dibition	Anatysis	Batch
Analyte	ugh		og#	ugil		date/fime	
Arsenic	68.6		6 50	10.0	1	10/31/2016 15:52	VIG922127
Basium	508		170	5,00	1	10/31/2016 15:52	Y/5922127
Cadmium	113	J.	0 700	2 00	1	10/31/2016 15:52	VI6972127
Chromium	86.6		140	10.0	1	10/31/2016 15:52	WG922127
Lead	41.9		190	5.00	1	10/31/2016 15:52	VIG922127
Selenium	υ		7.40	10.0	1	10/31/2016 15:52	WG922127
Sliver	Ú		2 80	5.00	T	10/31/2016 15:52	WG922127



GI

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilutian	Analysis	Batch	
Analyte	420 7		цда	ugil		date filme		
Aluminum	15(000 V		20 0	1000	10	11/04/2015 14 08	W6922947	

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Anatyte	ng/i		ng/i	ugh		date / time	
Diesel Range Organics (DRO)	160	1	B2.5	250	1	11/02/2016 14 13	WG922176
Residua Range Organics (RRO)	u		165	500	1	11/02/2016 14:13	WG922176
(S) c-Terphenyl	179			50.0-150		11/02/2016 14:13	WG922176

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-StM

	Result	Qualifler	MOL	ROL	Dilution	Analysis	Batch
Analyte	ngil		r-display	иди		date / time	
Anthracene	U.		0.0140	0.0500	1	1/02/2016 07 18	WG52280B
Atenaphinene	0.112		0.000	0.0500	1	10/02/2016 07:18	WG922850
Acenaphiliyiene	0.096	4	0.0120	0 0500	2	10/02/2016 07 18	WG922E00
Bonzo(a)anthacene	EL.		0.08410	0.0500	1	1002/2016 07:18	WG922E00
Benzola/pyrene	0.0812		0.0115	0 0500	7	11/02/2016 07:18	WG921500
Benzo(b)Ruoranthene	U		0.00212	0.0500	1	11/02/2016 07:18	W3922800
Benza(g.h.ilperylene	N.		0 00227	0.0500	1	11/02/2016 07:18	WG922600
Benzo(k)Booranthene	U.		0.0135	0.0500	1	1002/2016 07:18	WG922800
Chrysene	0		0.0108	0.0500	1	11/02/2016 07:18	WG922800
Dibert[a,hlanthracene	0		0.00396	0.0500	1	1002/2016 07:18	V/G922B00
Fluoranthene	N.		0.0157	0.0500	1	11/02/2016 07 18	\VG922800
Fluorene	0.0431	4	0.00850	0.0500	1	11/02/2016 07:18	WG922800
Indenoit, 2,3-cd pyrepe	Ø.	-	0.0148	0.0500	4	11/02/2016 07 18	y/5922800

ACCOUNT: Stantec-Bellevue, WA.

PROJECT! AES1027281

SDG: L869248

DATE/TIME: 1004/16 18:10

PAGE 17 of 37 B-1-GW

Collected date/time: 10/27/16 13:00

SAMPLE RESULTS - 06

Semi Volatile Organic Compounds. (GC/MS) by Method 8270D-SIM.

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	Irg/I		ng/l	ug/l		date/time		
Naphtisalene	0.167	Ī	0.0198	0.250	1	11/02/2016 07 18	WG922800	
Plienamhrene	0.0124	<u>a</u>	0.00820	0.0500	1	11/02/2016 07 18	WG922800	
Pyrene	.U		0.0117	0.0500	1	17/02/2016 07:18	WG922800	
1 Melhylnaphihalene	D 147	1	0.00821	0.250	1	tt/02/2016 07:18	WG922800	
2-Methylnaphthalene	@ 0585	2	0.00902	0.250	1	10/02/2016 07 18	WG922B00	
2-Ehlorompinhalene	.Lg		0.00647	0.250	t	11/02/2016 07:18	W6922800	
(S) Natioberizone d5	111			45,1.170		11/02/2016 07:18	W6922800	
(S) 2 Fluorationenyl	85.2			57.7.153		11/02/2016 07 18	WG922800	
(S) p. Ferphenyl-d14	87.8			532 156		11/02/2016 07:18	W6922800	



ONE LAB NATIONWIDE

















SW-11

SAMPLE RESULTS - 08

ONE LAB, NATIONWIDE



Collected date/lime: 10/28/16 11:05

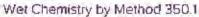
Wet Chemistry by Method 300.0





	Result	Qualifler	MDL	RDL	Dilution	Analysis	Batch
Anatyre	ug/l		ug/l	ug/i		date / time	
Chlories	379000		260	5000	3	10/30/2016 00 36	W692207F
Fluoride	4170		9 90	10.0	1	10/30/2016 00 21	WG922071
Nirate	288	B	22.7	0.00	0	10/30/2016 00 21	WS972071





	Result	Qualdier	MDL	RDL	Dilution	Analysis	Botch	-
Analyze	100		ugh	ugli		date / time	- T- T- O	
Ammonia Nipogen	62.0	Į.	38,0	250	1	11/02/2016 14:17	WS842833	



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilation	Analysis	Batch	
Analyte	ug/I		ug/l	ugh		date / time	11-47	
Mescary	U.		0 0490	0.700	.4	11/02/2016 16:42	WG922404	



55

Metals (ICP) by Method 6010C

	Result.	Dodlifier	MOL	RDL	Disution	Analysis	Batch
Analyte	arg-		ugh	[tgaj		dato / time	
Arsenic	lt.		6.50	10.0	1	10/31/2016 15:57	WG93222
Barlum	15.5		170	5.00	1	10/31/2016 15:57	W6972727
Cadm um	U		0.700	5.00	1	10/31/2016/15:57	W3922127
Chramium	1.41	2	140	m q	1	10/31/2016 15:57	WG972127
Lead	2.00	2.1	190	5.00	1	10/31/2016 15:57	WG922f27
Sescoum	W		7.40	10,0	1	10/31/2016 15,57	WG922127
Silver	6		2 80	5.00	1	10/31/2016 15 57	WG972127



GI

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	sign.	0.0	ug/I	99/1		date / time		
Alemoun	518		207	826	t	11/03/2016 17:24	49.3821347	



ONE LAB NATIONWIDE.

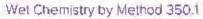
果

Wet Chemistry by Method 300,0

Collected date/Lime 10/28/16 10:40

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	119/1		ugh	Ngai		date / turse		
PASSAT	8940000 🗸		S190	100000	F30:	10/30/2016 00:07	W(5972.W)	
Fluorido	6630		9.90	1DO-	-1	10/29/20% 23:09	WG922071	
Виняс	10200	-	114	500	6	10/29/2016 23 52	Morestill	
	V							





	Result	Qualiflor	MOL	RDI.	Dilution	Analysis	Batch	
Analyte	ngh		09/1	ug/l		date / time		
Ammono Nitregen	2680		38.0	250	1	11/02/2016 14 15	WG922833	



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/i		ug/l	ing/l		diste / time		
Moreog	- 0		0.0490	0.500	15	1002/2016 16:34	WG922404	



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Metals (ICP) by Method 5010C.

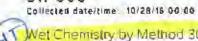
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ugn		((g/l)	rig/l		date / time	
Ausenic	J.		6 50	10.0	17	10/31/2016 15:55	WG922127
Barlom	481		170	5,00	11	10/31/2016 19:55	WG922127
Çadmiym	2.13		0.700	2 00	(1)	10/31/2016 15 55	WG922127
Chromlum	1.91	4	1.40	10.0	Tr.	10/31/2016 15 55	WG922127
Lead	LU		190	5,00	1	10/31/2016 15 55	WG922127
Selenium .	Jd		7.40	100	10	10/91/2016 15:55	WG922127
5llvet	D.		7.80	5.00	4	10/31/2016 15 55	WG922127



Metals (ICPMS) by Method 6020

1 7	Result	Qualifier	MDL	ROL	Dilution	Analysis	Batch	
Analyte	ug/I		Og/i	шди		date / time		
A-1-1-	730		2.00	100	9	11/03/2016 17:21	WG222947	

ONE LAB NATIONWIDE



Wet Chemistry by Method 300.0

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	ug/li	-	ugA	hgtl		date / time	
Choude	36700O		260	5000	1 2	t0/30/2016 01:33	WG927071
Fluoride	4210		9.90	too	1	10/30/2016 00:50	WG922071
Mitah	288 5	8	227	700	1	10/30/2016 00:50	WG922071





Wet Chemistry by Method 350.1

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyse	मविप्		ug/l	ug/I		date / time		
Ammania Nitrogen	600	7	360	250	1	11/02/2016 14:18	WG922830	



Mercury by Method 7470A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
Analyte	вді		Нди	ug/l		date / time	
Mercury	U		0.0490	0.200	1	11/02/2016 16:45	WG972404



Metals (ICP) by Method 6010C

	Result	Qualifier	MOL	RDL	DHution	Analysis	Batch
Analyte	ag/i	-	ugil	ng4		date / tene	
Alsenic	U		6.50	10.0	1	10/31/2016/16:00	WG922127
Batitum	14.4		1.70	5.00	1	10/31/2016 16:00	WG922127
Cadmium	Ŋ.		0.700	2 00	1	10/31/2016 16:00	WEG22127
Chromium	U.		1,40	10.0	1	10/31/2016 16:00	W6972127
Ļead	LI)		190	5.00	1	10/31/2016 16:00	WG922127
Selenium	LI.		7.40	10.0	1	10/31/2016 16:00	W6922127
5ilver	la:		2.80	5.00	1	10/31/2016 16:00	W6922127



Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ид/		ug/l	0g/l		date / time		
Aluminum.	3/3		2.00	100	1	1003/2016 17 27	W6922947	



QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

Method Blank (MB)

Well Chemistry by Method 300 0

potentially affected samples:

(M8) R3174914-1	10/29/16 08:51				B-6-OW d= 111000 n/a - >10x blank contamination
Analyte	MB Result	MB Qualifier	MB MDL	MB RDL	B-3-6W cl = 341000 n/a + Diox blank contamination.
higrido	(167	4	519	1000	B-2-6W Cl = 177000 n/a - > 10xblank contamination
Fluoride	U		9.90	100	0 1 6 1 1 2 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Alibeates	11		227	100	B-1-6W cl = 265000 n/a- Dipubling and amination

Ss

TC

NO QUALITIERS NEEDED

Cn

L869248-03 Original Sample (OS) - Duplicate (DUP)

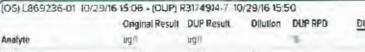
Sr

OS11869248-03 10/	29/16 12:42 - (DUP)	R3174914-4 1	0/29/16 13:	54		
	Original Result	DUP Result	Diution	DUP RPD	DUP Qualifier	OUP RPD Limits
Analyte	ugil	ug/l		N.		%
Fluoride	5090	5220	11	3		20
Nigrate	363	370	11	2		20



L869236-01 Original Sample (OS) - Duplicate (DUP)





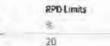


Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
irg/l	irg/l		4		4
6390	E350	+	0 -		20
27.4	27,0	1	0	7	20
215	207	1	4 -		20
	ug/l 6390 27.4	ug/l ug/l 8390 8360 27.4 27,0	ug/l ug/l 6390 6360 † 27.4 27,0 †	ug/1 ug/1 B390 8380 t 0 = 27.4 27,0 t 0 =	ug/l ug/l B390 B380 t 0 = 27.4 27,0 t 0 = 1

raboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3174914-2	10/29/16 0	9:05	LCSD) R3174914-3	10/29/16 09:20

feed, many	Soike Amount	LCS Result	LCSD Result	LCS Rec	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	Иди	ngri	ng/I	9		a)	-		46	*
Chloride	40000	39200	39300	98	98	90-110			0	20
Fluoride	0008	8210	8230	103	103 -	90/00			0	20
Nitrate	8000	8500	8540	106 -	107	90 tto			1-	20



869248-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(0\$) 869248-06 10/29/16 11-59 (MS) PRITADIA 5 10/29/16 15-21 (MSD) PRITADIA 6 10/20/16 15-26

	Spike Amount	Onginal Result	MS Result	MSD Result	MS Rec	MSDRec	Dilution	Rec, Limits	MS Qualifier	MSD Qualifier	RPD	RPO Limits
nalyle	ug/i	ugii	ug/I	ug/l	%	16		No.			1/4	PKs
luor de	5000	428	5570	5640	103 -	104	Ť	80420			1-	70
Mitrate	5000	488	5660	5820	103	107	- 1	80-120			3 -	20

ACCOUNT Stamec Bellevue WA PROJECT (85750123A

SDG: 1859248 DATE/TIME 10/04/16 12:10

PAGE: 22 of 37

QUALITY CONTROL SUMMARY

1869248-07.08.09 Wet Chemistry by Method 300.0

ONE LAB NATIONWIDE.

Ss

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* QUAUFIERS

(MB) R3174635-2 10	M8 Result	MB Qualifier	MB MOL	MB ROL
Analyte	ag/I		ug/4	цал
Chloride	(161)	1	51.9	1000
Fluoride	D		9.90	100
Nimie	36.0	1	22.7	100

potentially affected samples:

Sw10 (1: 8940000, NHrate: 10200 -1/a - >10x blank Contam Sw 11 cl = 379000, nHrate: 288 qualify W/J

MS Qualifier

540.900 -cl = 367000 -n/a - 710x blank. - nitrate = 288 qualify w/5



Account of	1.30	Oluve Innet	Event ()	
IDS11860236.03	inmolie otios.	IN IDI 03174635.5	EN-IC SINDOVAL	١

	Orlginal Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ugil	tigA		%		96
Chloride	5470	5590	1	2 -		20
Fluoride	31.1	31.6	1	2 -	7	20
Narate	1220	1200	1	2		20



(LCS) R3174635-3 10/29/16 20:16 · (LCSD) R3174635-4 10/29/16 20:31

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec Limits	LCS Qualifier	LCSO Qualifier	RPD	RPDI
Analyte	ugil	ug/l	rug#I	%	8	%			8	36
Chloride	400D0	40000	39400	100 -	39	90-110			1-	20
Flignide	8000	8330	8300	104	104	90-110			0-	20
Mirate	8000	8740	8630	109	108	90-110			1-	20

269272-01 Original Sample (OS) - Matrix Spike (MS)

(OS) L869272-01 10/29/16 23:24 - (MS) R3174635-6 10/29/16 23:38

	Spike Amount	Original Result	MS Result	MS Rec	Dilution	Rec. Limits
Analyte	Legis .	wg/l	Maly)	16		25
Chloride	50000	17400	65700	97	1	80-120
Fluoride	5000	720	5560	97	.1	80-120

Limits

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

1869248-01 07.03

Method Blank (MB)

Wes Chemistry by Mothod 300 0

(MB) R3175800-1	11/03/16 10,43			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	eg/l		ug/I	ng/i
nicoros	88 8	1	519	1000
Fluoride	U		9.90	100

B 5-6W cl = 8970000 nla 710x blank contamination B-4-6W cl = 109000- nla 710x blank contamination



Ss

NO QUALIFIELS

L869377-01 Original Sample (OS) - Duplicate (DUP)

(OS) LB69377-0	11/03/16	13:53 - (DUP) R3175800-4	11/03/16 14 07
----------------	----------	-----------	-----------------	----------------

	Original Result	DUP Result	Distron	DUPRPD	DUP Qualifier	DUP RPD Limits
Analyte	4g//	ugłl		9:		4
Chloride	47300	47300	1	0 -		.20
Fluoride	230	208	1	10.		20

Cn SI



L869243-02 Original Sample (OS) - Duplicate (DUP)

(OS) L869243-02 11/03/16 18:12 • (DUP) R3175800-5 17/03/16 18:26

CANADA SERVICE	Original Result	DUP Result	Diluban	DUP RPD	DUP Qualifler	DUP RPD LIMITS
Analyte	ug/l	Hgu		76	-	80.
Chloride	48700	47700	S	2 -		20
Fluoride	ND	430	5	0		20



Sc

Laboratory Control Sample (LCS) . Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175800-2	11/03/16 10 58 .	(LCSD) R3175800-3	11/03/16 11:12
------------------	------------------	-------------------	----------------

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug//	Irgu	ug/i	9	*	%.			50	%
Chlande	40000	38300	38400	96	96	90 110			0 -	20
Fluonde	8000	7810	7800	98 -	97 _	90-110			0	20

L889295 11 Original Sample (OS) - Matrix Spike (MS)

(OS) L869295-11 11/03/16 I6 17 • [MS] R3175800-5 11/03/16 16:31

	Spike Antount	Original Result	MS Result	MS Rec	Dilution	Rec Limits
Analyte	ugti	ugfi	ug/l	1/6		%
Fluoride	5000	80 9	4900	96	1	80-170

MS Qualifier

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

869248-01,02,03

Wel Chemistry by Method 300.0

L869377-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L869377-07	11/03/16 21:05	(MS) R3175800-7	11/03/16 21:19 -	(MSD) R3175800-8 11/03/16 21:34	

	Spike Amount	Original Rosult	MS Rosult	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	Mg/l	50	95,		46.			18	1
Chloride	50000	44800	93000	93200	96 -	97 —	1	80-120			0	20
Fluaride	5000	220	5040	5050	96 -	97 -	1	80-120			0	20

















QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

185924E-01 02 03.04 05.06 07 08 09

Method Blank (MB)



Wet Chemistry by Method 350 1

	MB Result	MB Qualdier	MB MDL	MB RDL
Analyte	ug/i		ug/l	ugri
Ammonia Nitenana	11		38.0	250



L868976-01 Original Sample (OS) - Duplicate (DUP)

(OS) L868976-01 11/02/16 13:47 • (DUP) R3175481-5 11/02/16 13:48

	Original Result	DUP Result	Difution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ugł	ngłl		4		*
Ammunia Nitrogen	NO	0.000	1	0 1		20



L869245-01 Original Sample (OS) - Duplicate (DUP)

(OS) L869245-01 1V02/16	14:47 • (DUP) R.	3175481-9 W	02/16 14:49	1					
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	ug/4	Lig4		%		3,			
Ammonia Nilrogen	43800	43700	ta	2		20			



Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175481-3 10/02/16 13:40 + (LCSD) R3175481-4 11/02/16 13:42

E-Ch-101-B-0-F	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSO Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifler	RPD	RPD Limits
Analyte	ug/1	Men	moti	% -	8	8.			%	96.
Ammonia Nilrogen	7500	7040	7110	94	95	90.410			11	20



L869242-01 Original Sample (OS) - Matrix Spike (MS)

(OS) L869242-01 11/02/16 13:50 + (MS) R3175481-6 11/02/16 13:52

	Spike Amount	Original Result	MS Result	MS Rec	Ovlution	Rec Limits	MS Qualifler
Analyte	ugfl	ug#:	ugit	8		5	
Ammonia Miliagen	10000	NII	9430	29	1	90-110	



£869250-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(O5) L869250-01 11/02/16 14:20 · (M5) R3175481-7 1V02/16 14:22 · (M5D) R31754B1-8 1V02/16 14:23

	Spike Amount	Original Result	MS Result	MSD Result	M5 Rec.	MSD Rec.	Dilution	Roc. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/I	LegIJ	ug/I	X	16	1	%			12	46	
Ammonia Miliogen	10000	ND	9680	9640	97	95	-1	90,400			0	20	

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

1869248-01.02.03,04.05.06.07,08.09

Method Blank (MB)

(MB) R3175355-1	11/02/16 15:28
-----------------	----------------

Mercury by Method 7470A

(MB) R3175355-1 11/02	2/16 15.28			
	MB Result	MB Qualifier	MB MOL	MB ROL
Analyte	100/1		vg/i	ug/l
Mercury	U 1/		0.0490	0.200





Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175355-2	1002/16 15:31 + (LCSD)	R3175355-6	10/02/16 17:11								
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	100/1	seg/li	%	%	%			%	%	
Mercury	3.00	2.78	2.75	93	92 _	80-120			1-	20	





(OS) L868992-04 1V02/	(6 15:44 + (MS) R:	3175355-4 1VO	2/16 15 46 - [MSD) R3175355	·5 1V02/16 15:4	19							
	Spike Amount	Original Result	MS Result	M\$D Result	MS Rec.	MSD Rec.	Dilution	Rec Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	(April	119/1	rig/l	ug/I	PIL			9.			36	%	
Mercury	3.00	MD	2.80	2.85	93 :-	98	4	75-125			14	20	



GI



QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

£869748-01.02.03.04.05.06.07.08.09

Method Blank (MB)

Methis (ICP) by Method 60100

	MO Result	MB Qualifier	MB MOL	ME RDL
Analyte	nitt		DQJI	ועפט
Ausenic	0 -		550	10.0
Barium	u -		170	5.00
Cadmium	0 -		0.700	200
Chromium	U -		1,4□	10,0
Lead	0 -		190	5.00
Selenium .	0 -		740	10.D
Silver			2.60	5.00



ΤĒ







Laboratory Control Sample (LCS) · Laboratory Control Sample Duplicate (LCSD)

(LCS) R3174805-8	10/31/16/15:11 .	(LCSD) R3	174805-9	10/31/16 15:13

	Spike Amount	LCS Result	LCSO Result	LCS Rec.	LCSD Rec.	Rec Limits	LES Qualifier	LCSD Qualifier	CAN	RPO Liquits
Analyte	шдН	ugil	ngri	%	96	36			96	%
Arsenst:	10:00	1010	991	161	99	80-120			2 -	20
Bansim	1000	1030	1010	103 -	WL	80.420			2	240
Cadinium	1000	1010	990	101	99	80-320			2-	20
Chromium	1000	lata	982	101	98_	30-120			3 -	20
Lead	1000	1010	990	101	99	30-120			7 -	20
Selenium	1000	1030	1010	103	101	80-120			2 -	20
Silver	1000	989	952	99	96	80-120			3 -	20







L869396-06 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

(OS) L869395-06	10/31/16 15:16 · (MS) R	23174805-11 1	0/31/16 15:21 - (MSD)	R3174805-12	10/31/16 15:24
A Comment of the comm					

	Spike Amount	Original Result	M5 Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ti ā //	elg/	ugil	ugfi	91	%		56			%	5/4
Arsenic	1000	41	1000	1010	100	101	1	75-125			0-	20
Banum	1000	12.1	1020	1030	101 -	102	1	75-125			0	20
Cadmium	1000	U	1010	1010	101	101_	3	75-125			0-	20
Chromlum	1000	U	990	988	99	99	11	75-125			0-	20
Lead	1000	2.37	998	998	100	100	1	75-125			0-	20
Setentum	1000	U	1020	1030	:02 -	103	15	75-125			1-	20
Silver	1000	U	973	978	97	98	1	75-125			1-	20

Analyte

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

Sr

Qc.

GI

Al

Sc

Metals (ICPM5) by Method 6020

£869248 01.02.03.04.05.05.07.08.09

Wethod Blank (MB) (MB) R3175780-1 1V03/16 15:54

M8 Result MB Qualifier MB MDL MB ROL MOL ugti Nou 5 # 45 2:00 100 Aluminum

potentially affected Samoles: nla 710x Wank Contamination B.5-OW Al= 7880 Ma >10x blank contamination 8-4-6W A1 = 363000 nla 710x blank contomination B-3-0W A1 = 11000 n a 710x blank contamination

Leboratory Control Sample (LCS) . Laboratory Control Sample Duplicate (LCSDQ-OW A 1 = 155000 nla 710x blank contaminal

(LCSD) R31757BD-2 11/03/16 15:57 - (LCSD) R3175780-3 11/03/16 16:00 Spike Amount LCS Result LCSD Result LCS Rec. LCSD Rec. **RPD Limits** Rec. Limits LCS Qualifier LCSD Qualifier 2 Anolyte Noci HOUT DOM 5000 5340 5320 106 -80-120 20 Abumanum

268992-04 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

(OS) L868992-04 1V03/I6 16:04 (MS) R3175780-5 1V03/I6 16:10 (MSD) R3175780-6 1V03/I6 16:13

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec Limits	MS Qualifier	MSD Qualifier	RPD	RPO Limits
Analyte	одЛ	При	ифЛ	ing/Ti	Th.	96		%			%	46
Arumenum	5000	ND	5150	5290	102	105 /	1	75-125			3	20

B-1-GW Al = 157000 n/a >10x blank contermination SW-10 Al=730 >10x blank contamination SW-11 A1 = 618 > 10x blank contamination AU-900 A1 = 373 >10x blank contamination all results are 210+ blank antomination TO QUALIFIERS MEDICA

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

Semi-Volatila Organic Compounds | GC | by Method NWTPHOX

LB69748-D1.02,03.04-D5.06

Method Blank (MB)

(MB) R3175291-1	TUDVIE TLOS	
-----------------	-------------	--

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/i		ug/l	ug/l
bioset Range Organics (DRO)	u		83.3	250
Residual Range Organics (RRO)	u /		167	500
(S) o Terpheny!	117			64.0 146





4

Caboratory Control Sample (LCS) . Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175291-2 11/09/16 11:25 - (LCSD) R3175291-3 19/01/16 11:44

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Prec. Limits	LCS Qualifler	LCSD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ugdi	महो।।	7.	%				%	8.	
Diesel Range Organics (DRO)	750	938	962	125	128	90,0-190			7.5B	20	
Residual Range Organics (RRO)	750	804	795	:07	105	50,0-150			1.12	20	
(S) o-Terphenyl				721	7/2 -	64.0.146					











QUALITY CONTROL SUMMARY

ONE LAB, NATIONWIDE.

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

1869248-01,07,03,04.05,06

Method Blank (MB)

Pyrene

Naphibalene

Phenanthiere

Indeno(1,2,3-cd)pyrene

1-Meinytnaphunalene

Z #Aejhyloaphthalene

2-Chloronaphthalens

(5) Nitrobenzene-dS

(5) 2 Ekrorobiohenyt

(5) p-Terphenyl-d14

(MB) R3175309-3 11/02	/16 04:35			
	MB Result	MB Qualdier	ME MOL	ME RDL
Arralyte	ugit		ug/I	ag#
Ammratene	U -		0.040	0.0500
Acenaphshene	U -		0.0100	0.0500
Acenaphinylene	U-		0.0120	0.0500
Benzo(a)anthracene	0 -		0.00410	0.0500
Benzo[a]pyrene	0 -		0.0115	0.0500
Benzolbkiloorankhene	0 -		0.00212	0,0500
Benzolg,hujperylene	0 =		0.00227	0.0500
Benzo(k)Ruoranthene	0 -		0.0136	0.0500
Chrysene	0 -		0.0108	0.0500
Dibenz(a,h)anthracene	0.7		0.00396	0,0500
Fluoranthene	U		0.0157	0.0900
Fluorene	0 >		0.00850	0.0500

110

11/

110

110

11 -

Ur

U 112 -

94.2

95.2





















ĺ	Laboratory Control	Sample (LCS) .	Laboratory Control	Sample Duplicate (LCSD)
п	Being brail - course	In-	The designation of the second	American Company of the same

0.0148

0.0198

0.0117

0.00821

0.00902

0.00547

0.00820

0.0500

0.250

0.0500

0.0500

0.250

0.250

0.250

45.1-170

57,7-153

53.2-156

(LC5) R3175309-1 11/02	л6 03:48 - (LCSD)	R3175309-2	1/02/16 04:11		10.00		. Y. O. W. Y	-A.7			
	Spike Amount	LC5 Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Links	LCS Qualifier	LESD Qualifier	RPD	RPD Limits	
Analyte	ug/l	ug/I	идЛ	%	79	%			36	2.	
Anjhracene	Z,00	2.09	Z.D7	105	103 -	GB 9-153			124 -	20	
kcenaphthene	2.00	2.12	2,05	MB -	102-	67.7-141			3.25 -	20	
Acenaphthylene	7.00	2.05	1.96	103 -	98.0	66 9-141			449	20	
Benzo(a)anthracene	2.00	1,94	1,91	97,0 _	95.4	63.1-147			1,59 -	20	
Benzo(alpyrene	7.00	7.05	1.99	HD3 -	99.7	62 2-150			782-	20	
Benzo(b)llugranthene	2.00	7.01	2.00	100	1000 -	58.4-14B			0.0900 -	20	
Benzolg.h.i perylene	2.00	192	188	961	93.6	57 4-152			2.33 -	20	
Senzo(k)fluoranthene	2.00	2.08	2.01	104 _	100	60.5-154			3.45-	20	
Chrysone	2 00	213	2.06	108 -	103 -	64.8 155			3.26	20	
Dibenz(a,hjanthiacene	2.00	1.91	1,85	95.3 -	92.7 _	53,5-153			2,70_	20	
Fluoranthene	2.00	1.97	1.93	99.5	964 -	68 6-153			220-	20	

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

Semi Volatile Organic Compounds (GC/MS) by Method 82700-SIM

1869248-01.07.03.04.05.05

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

a por propose (Was		- BANKERAAA	manuel had							
ALCSI R3175309-1 11/02										
	Spike Amount	LC5 Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/)	ug/l	- 1097	ls.	- 30	8			6	Ya.
Fluorene	2.00	1.84	177	921-	887 _	67.3-141			3.81 -	20
Indeno(1.2.3-cd)pyrene	2.00	195	166	976-	94.2 -	57.0-155			3.52	20
Naphthalene	2.00	2.10	2.04	105 -	102 _	66.7-135			2,53	70
Phenanthrene	2.00	2.19	212	109_	106 -	64 3.143			303 -	20
Pyrene	2.00	2.31	2.21	115 _	110	60.2-154			4.46	20
1-Methylnapathalene	200	2.00	194	:00	97.2	68.3-144			3.10	20
2-Methylnaphthalene	2.00	1.54	178	92.2	88.9 -	67 E-143			3.65 _	20
2-Chdoronaphthalene	200	195	188	97.3	93.9 -	69 7 144			3.48 -	20
(S) Nitrobenzene-d5				113	118 -	45.1170				
(5) 2-Flugrobiphenyl				94.0	94.5	577-153				
(5) p-Terphenyl-d14				94.6	94.7	53.2 156				





















Abbreviations and Definitions

SDG	Sample Delivery Group.
MOL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Olfference.
Orlginai Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery, Surrogates are not expected to be detected in all environmental media.
Rec	Recovery.
Qualifier	Description
В	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
12.	Surrogate recovery limits have been exceeded; values are outside lower control limits















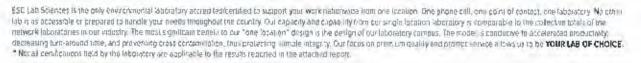






ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.



State Accreditations

Alabama	40660	Nevaua	TN-03 2002-34
Alaska	080 120	New Hampshire	2975
Arizona	AZOG12	New Jersey-NELAP	18002
Arkansas	86-0469	New Mexico	TN00003
California	Q1157CA	New York	11742
Colorado	EOODONT	North Carolina	Env375
Conneticut	PH-0397	North Carollina	DW21704
Fiorida	E87487	North Carollna	41
Georgia	NELAP	North Dakota	R-140
Georgia	923	ONO-VAP	CL0069
Idatio	ECOCONT	Oklanoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-Ini-Oi	Pennsylvania	68 02979
lowa	364	Rhode Island	221
Kansas.	E-10277	South Carolina	84004
Kentucky !	90010	South Dakota	n/a
Kentucky ¹	16	Tepmosseo!"	2006
Louistana	A/30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas 1	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TNG03	Varmont	V12006
Michigan	9958	Virginia	109
Minnesota	7047 999 395	Washington	C1915
Mississipp	TH00003	West Virginia	233
Missouri	340	Wisconsen	9980939910
Montana	CER10086	Wyom:ng	AZLA
Hebraska	NE 05 15-05	10.34	
Third Party & Federa	d As acceptationers		

Third Party & Federal Accordinations

A2LA - 150 17025	1461 01	AlHA	100789	
AZLA - ISO 17075	1461 02	DOD	1461 01	
Canada	1461.01	USDA	5 67674	
EPA Cryplo	1N00003			

Onking Water - Underground Storage fanks - Assault Textory "Chemical Microbiological "Mala - Appadication act applicable

Our Locations

ESC Lad Sciences has sixty-four client support centers that provide sample pickup wid/or the gravery of sampling supplies if you would like assistance from one of our support offices, please clonant out man affice ESC Lab Sciences performs all feeling at out central laboratory.





















Stantec- Bellevue, WA			Accounts Payabl LILISG NE 33rd P Bellevue, WA 58	Mittig information & Quore Num Light J. Accounts Payable: Philthia IIII NE 33rd Pl, Ste 200 Bellevue, WA 98004	Chris Salak e-Phikhabennan i, ste zoo		-61	79	(A) HAC	P+ +9-			David Lington	S
Report to:	Const Contact	110	Cynes. Gen	Email To: Chris.664-supstanter.	Stanteccom:		\$2	(11)	7(1)	p2)		1831	7055 kesternan dal Alconi fisher, ile 33572 meneri 845, Per Secul	
miles Agrafa Ph	Phu I Est	X	And the second	4	Kat WA	1	HON-	7/3	1M-58	EONH		£ £]	NEW LOS	福。
Phone: 925-289-7374 Fax: 425-869-1190	Chent Project 1	185750123A	4	STANTECBM	ECBWA-KENT		ROHIM	a - E-	1	запни		<u>a</u>	G007	i i
Colected by Iprint:	Sheff willy ID #	90		1857	85750123				CONT.	105Z		13 3	COLUMN STANTECHWA	ECHWA
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Control of the North Annual States on the North	Sense Day Nest flay. Two Day Harte Day	15 A	100% 100% 100%	Emisi? FAK?	No X Yes	No Je		IMSST	PINTAIL	IANDA U		7 2		2
Di aligi	Comp/Grats	Mastin *	Depth	Date	Time	(June)	-		-	noī		E I	Shipped Via:	Cornective M.P. Sept. (1994)
B-6-GW	Gab	GW	1	10/20/16	15:15	1	×	×	×	×		11	-	-
8-5-64	17	MS	1	. 177	01:11	7	X	×	X	X		4	100	MECAL!
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B-3-4W	11	MS	1	310	12:20	7	×	1	×	×		1	From A	dien.
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1-1	11	200	1	138	Oh:01 %	50	×	×		×		5	menin	ie hick
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SW-900	11	\$5	1	,,,	00:00	3	×	×		4		10		
		WS)								Then	1
* Matrin 52 - Soil GW Groundwater WW WasteWater DW Drinking Water OT - OU Bennaries, "Nitrate has a 48 hoor bold time."	www.westely	alec Div Dri	Wing Water	r OT Other					£	Temp	1		Can	Shoth
Aluminum by method 6020.									Flore	Other	1	Hold it		
Resingened by Ashanire		10/2	28/16	Thre /5:75	Kacelved by: [Significate]	(age)	-31		Samp	Samples returned wa UPS	£ 0	Contilion.	The one only	しるか
Relingualized by 1500 and		Bate		ime	Received by (Signature)	terral.			EM.	Tanon J.	pakkon	CDC(Seal Interes	W	1
Relinquished by The search		Date.		Time	Recognidate Lab. Dr.	1	-	100	200	But 11 an	100	9H Checked	WO	



C	ooler Receipt Form				
Chent:	STANTER BUY	SDG#	869	248	
Cooler Received/Opened On: 10/24/16	Temperature Upor	Receipt:	3.4	FE	
Received By: Rickey Mosley	-		1.2		
Signature Muchylles	- M3 5				
Recei	pt Check List		Yes	No	N/A
Were custody seals on outside of cooler at	nd intact?			1	1/
Were custody papers properly filled out?		Air	1		
Did all bottles arrive in good condition?			1	115	
Were correct bottles used for the analyses	requested?		V		
Was sufficient amount of sample sent in e	ach bottle?		1		
Were all applicable sample containers cor-	rectly preserved and		11		
checked for preservation? (Any not in acce	epted range noted on COC)				
If applicable, was an observable VOA head	Ispace present?				1
Non Conformance Generated. (If yes see a	ittached NCF)			1	

ESC Lab Sciences Non-Conformance Form

Lo	gin #L869248 C	Tient: STANTECBWA	Date:10/29	Evaluated by:Matt S
N	on-Conformance (che	ck applicable items)		
	Sample integrity	Chain of Custody Cl	arlfication	
	Parameter(s) past holding time	Login Clarification N	eeded	If Broken Container:
	Improper température	Chain of custody is in	complete	insufficient packing material around container
	Improper container	Please specify Metals	requested.	Instifficient packing material inside
Ī	Improper preservation	Please specify TCLP	equested	Improper handling by carrier (FedEx / UPS / Com
	Insufficient sample volume	Received additional s	samples not listed on coc	Sample was frozen
	Sample is biphasic	Sample ids on contain	ners do not match (ds on	Container lid not intact
	Vials received with headsp	ace Trip Blank not receiv	ed.	If no Chain of Custody:
	Broken container	Client did not "X" and	ilysis.	Received by:
	Broken container:	Chain of Custody is in	oissing	Date/Time:
ij	Sufficient sample remains			Temp./Cont. Rec./pH:
Ţ				Carrier:
1				Tracking#

Login Comments: Nitrate OOH for B-4GW

Client informed by:	Call	Email	X	Voice Mail	Date:10/31/16	Time:1020	
TSR Initials:bjf	Client Con	tact: Cyrus Go	rmar	1			

Login Instructions:

Proceed and qualify as needed

This E-mail and any attached files are confidential, and may be copyright protected. If you are not the addressee, any discontinuion of this communication is strictly prohibited. If you have received this message in ervor, please contact the sender immediately and delete/destroy all information received.

		ŧ
4		

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	ESC Lab Sciences
Lab SDG/Project/Work Order:	L869365
Project Name:	City of Kent Brownfield (Cooperative Agreement BF-
	00J65701)
	Maralco Property
Stantec Project Number:	185750123
Client:	City of Kent
Validator Name:	Kim Vik
Date of Validation:	November 18, 2016

SAMPLE INFORMATION:

SAMPLE INFORMATION:						
Number of Samples:	3	3				
Matrix:	Soil/Sediment					
Number of Trip Blanks:	None					
Number of Equipment Blanks:	None					
Number of Field Duplicates (include duplicate information)	1 (sample SS-900 is a field duplicate of sa	mple SS-2).				
Date of Sample Collection:	October 28, 2016					
Sample: SS-1	Analyses: Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A) Wet Chemistry (Method 9056A)	Batch: WG922674 WG922544 WG922239 WG922653 WG922902 WG923165 WG923852				
SS-2	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A) Wet Chemistry (Method 9056A)	WG922674 WG922544 WG922239 WG922653 WG922902 WG923165 WG923165				
SS-900 (duplicate of SS-2)	Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) Total Solids (Method 2540 G-2011) Wet Chemistry (Method 350.1) Wet Chemistry (Method 9056A) Wet Chemistry (Method 9056A)	WG922674 WG922544 WG922239 WG922653 WG922902 WG923165 WG923165				

GENERAL DATA VALIDATION:

Chain of Custody:

All requested analyses were performed per the COC.

Holding Times:

All analyses were run within the required holding times. No qualifiers are needed.

Trip Blank Review:

No trip blanks were submitted with this SDG. No volatile analyses were included in this SDG.

Surrogates:

All sample surrogates are within control. No qualifiers are needed.

QC Surrogates:

All QC surrogates were within control.

Lab Notes:

None.

Elevated Reporting Limits:

Fluoride (Method 9056A) analysis was run at a 5x dilution for sample SS-1 and at a 20x dilution for samples SS-2 and SS-900. Chloride (Method 9056A) was also run at a 20x dilution for samples SS-2 and SS-900. Aluminum (Method 6020) was run at a 5x dilution for all three samples. As a result of the dilutions, the reporting limits for these samples and analytes were elevated.

PER ANALYSES:

Total Solids, Method 2540 G-2011 (Batch: WG922653)

Method Blanks:

Total Solids method blank result was 0.00110%. No qualifiers are needed.

Lab Duplicates:

The relative percent difference (RPD) between the original sample and the lab duplicate sample was within the control limit of 5%. No qualifiers are needed.

<u>Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD):</u>

The LCS percent recovery was within the acceptance limits. An LCSD sample was not run. No qualifiers are needed.

Wet Chemistry: Ammonia Nitrogen, Method 350.1 (Batch: WG922902)

Method Blank:

Ammonia nitrogen was not detected above the Method Detection Limit (MDL) in the laboratory method blank. No qualifiers are needed.

Lab Duplicates:

Two laboratory duplicates were run. The RPDs between the original samples and the lab duplicate samples were within the control limit of 20%. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

11/21/2016 Page 2

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Wet Chemistry: Chloride, Fluoride, Nitrate, *Method 9056A* (Batches: WG923165, WG923852)

Method Blanks:

No analytes were detected above the MDL in the laboratory method blank in either batch. No qualifiers are needed.

Lab Duplicates:

Three laboratory duplicates were run in Batch WG923165 and two were run in Batch WG928852. The RPDs between the original samples and the lab duplicate samples were within the control limit of 15% for both batches with the exception of the RPD for fluoride in one lab duplicate in Batch WG923165. The lab noted that the RPD was not applicable for that sample. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits for both batches. The RPD between the LCS and LCSD was within the control limit of 15% for both batches. No qualifiers are needed.

MS/MSD:

An MS/MSD was only reported for Batch WG923852. The MS and MSD percent recoveries for fluoride were lower than the lower acceptance limit (LAL). The lab noted that due to the matrix interference, accurate spike values could not be determined. The RPD between the MS and MSD was within the control limit of 15%. Based on the review of the other data including the LCS/LCSD, no qualifiers are needed.

Mercury, Method 7470A (Batch: WG922674)

Method Blanks:

Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.

LCS/LCSC:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries were slightly lower than the LAL. The RPD between the MS and MSD was within the control limit of 20%. The lab noted that due to the matrix interference, accurate spike values could not be determined. Based on the review of the other data including the LCS/LSCS, no qualifiers are needed.

Metals (ICP), Method 6010C (Batch: WG922544)

Method Blanks:

No analytes were detected above the MDLs in the laboratory method blank. No qualifiers are needed.

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LCS/LCSD:

The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the LCS and LCSD were within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries for all analytes were within the specified acceptance limits, except for the MS and MSD percent recoveries for barium which was slightly higher than the upper acceptance limit (UAL). The RPDs between the MS and MSD were within the control limit of 20%. The lab noted a problem with matrix interference. Based on the review of the other data including the LCS/LSCS, no qualifiers are needed.

Metals (ICPMS): Aluminum only, Method 6020 (Batch: WG922239)

Method Blank:

Aluminum was detected at 4.96 mg/Kg which is between the MDL and the Reporting Detection Limit (RDL). Results for potentially affected samples were all greater than 10X the method blank result; therefore, no action is needed. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS percent recovery was higher than the UAL, but the MSD percent recovery was within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. The lab noted that the sample concentration was too high to evaluate the spike recovery. It should be noted that the sample was run on a 5x dilution which could affect that recovery. No qualifiers are needed.

FIELD DUPLICATE REVIEW:

One field duplicate was collected with this sample delivery group (SDG). Sample SS-900 is a field duplicate of sample SS-2. RPDs were calculated between the results of the original sample (SS-2) and the field duplicate sample (SS-900). Discrepancies were found for the following analytes, where the RPD between the original sample result and the field duplicate result was greater than 35%, the EPA-specified RPD for soil samples and/or 50% specified in the QAPP: Nitrate (RPD=50.8%), Arsenic (RPD= 75.1%), Barium (RPD=66.4%), Cadmium (RPD=68%), Chromium (RPD=69.2%), Lead (RPD=71.5%), Silver (RPD=120%), Aluminum (RPD=114%), and Selenium (RPD=50.8%). The results for these analytes for both SS-2 and SS-900 will be qualified with J, or UJ if the original result was non-detect. The calculation worksheet is attached. The qualified data is presented in the table under "Determination" below.

11/21/2016 Page 4

DETERMINATION:

The data in this work order have been validated and determined to be acceptable for use with the following qualifications:

Sample ID SS-2	Analyte (Method) Nitrate (Method 9056A)	Original Result (mg/Kg) 13.8	<u>Oualified</u> <u>Result (mg/Kg)</u> 13.8 J	Reason Field duplicate discrepancy/RPD>35%.
SS-2	Arsenic (Method 6010C)	4.30	4.30 J	Field duplicate
SS-2	Barium (Method 6010C)	60.2	60.2 J	discrepancy/RPD>35%. Field duplicate
SS-2	Cadmium (Method 6010C)	2.74	2.74 J	discrepancy/RPD>35%. Field duplicate discrepancy/RPD>35%.
SS-2	Chromium (Method 6010C)	5.44	5.44 J	Field duplicate discrepancy/RPD>35%.
SS-2	Lead (Method 6010C)	53.7	53.7 J	Field duplicate discrepancy/RPD>35%.
SS-2	Silver (Method 6010C)	0.776	0.776 J	Field duplicate discrepancy/RPD>35%.
SS-2	Aluminum (Method 6020)	22200	22200 J	Field duplicate discrepancy/RPD>35%.
SS-2	Selenium (Method 6010C)	1.84 U	1.84 UJ	Field duplicate discrepancy/RPD>35%.
SS-900	Nitrate (Method 9056A)	8.21	8.21 J	Field duplicate discrepancy/RPD>35%.
SS-900	Arsenic (Method 6010C)	9.47	9.47 J	Field duplicate discrepancy/RPD>35%.
SS-900	Barium (Method 6010C)	120	120 J	Field duplicate discrepancy/RPD>35%.
SS-900	Cadmium (Method 6010C)	5.56	5.56 J	Field duplicate discrepancy/RPD>35%.
SS-900	Chromium (Method 6010C)	112	112 J	Field duplicate discrepancy/RPD>35%.
SS-900	Lead (Method 6010C)	113	113 J	Field duplicate discrepancy/RPD>35%.
SS-900	Silver (Method 6010C)	3.14	3.14 J	Field duplicate discrepancy/RPD>35%.
SS-900	Aluminum (Method 6020)	81100	81100 J	Field duplicate discrepancy/RPD>35%.
SS-900	Selenium (Method 6010C)	3.09	3.09 J	Field duplicate discrepancy/RPD>35%.

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of J to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the Method Detection Limit (MDL) and Reporting Detection Limit (RDL), the resulting data was flagged with J to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). Based on the review of laboratory quality control data provided by the laboratory, the sample results may be qualified with:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (method reporting limit or MRL). Results assigned this qualifier are considered undetected at the MRL.
- UJ Indicates the analyte was not detected above the quantitation limit or MRL; however, the MRL is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL.
- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

SEE ATTACHED DATA QUALIFIER FORM FOR DATA VALIDATION AND LABORATORYASSIGNED QUALIFIERS (IF APPLICABLE) .

REFERENCES:

- CE. 2005. Environmental Quality Guidance for Evaluating Performance-Based Chemical Data (Engineering Manual), EM 200-1-10. US Corps of Engineers. June 30, 2005.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8. USEPA. November 2002.
- EPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008. USEPA. October 1999.
- EPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004. USEPA. October 2004.
- EPA. 2006. Tier I Data Validation Manual for the Ohio EPA, Division of Hazardous Waste Management. Ohio EPA. February 2006.
- TNI. 2009. Volume 1, Management and Technical Requirements for Laboratories Performing Environmental Analysis, Module 4: Quality System for Chemical Testing, TNI Standard. The NELAC Institute. September 2009.

Data Validation Attachment Field Duplicate Sample Worksheet (list oil detected sample/field duplicate results)

Stantec Project No:

Applicable RPD:

DV Date: 1/16/16

185750123

Data Validator: Y.VIIC

Page:

							Applicable	BP/D (写	20CAPP)
Matrix (check one)	Kson 1	O Water O Sediment O Other	Sample Duplicate 1D Sample ID				100000000000000000000000000000000000000	ntrations A and B > 5X MRL	In Concentral	
		Enter Sample ID Here->	55-2	55-900	Reporting Limits	5 X Reporting	RPD	QUALIFIERS Loutrol Limit = 2016 [water] or 35%	Conc A - Conc	QUALIFIERS # difference > MR. then add !
Analyses	Units	List Analytes	List Concentration A	Ust Concentration B	(MRL) (sample/duplicate)	Umit (MRL)	(%)	(rail)*. If RPB > then Control (Init then add I flog or LLI flog.	8 = Officence	flag to cone A and B.
Mithod as40	0/0	total solids	40.1	32.0	nla		12.5			
Mithod 350.1	ng	Ammonia Nitrogen	6.65 J	24.91 (ND)	3.91/491		30.1			
Mc Hood 9050A	1	Chloride	26800	19900	36/6/		10.9	1		
h	-15	Hupnde	383	579	13.0/16.3		40.7			
Te .	4	Mitrate	13.8	8.21	0.0289		50.8	5		
Menuny 包7471A	4	Mercuny	0.116	0.158	6.01876		30.6			
Metals MEDIOC	14.	Avsenic	4.30	9.47	1.62/		75.1	5		
11	J4.	Banum	60.2	120	04123/		66.4	5		
11	I,	Codmium	2.74	5.56	0.174/		68.0	5		
3.0	16	Chromium	54.4	112	0.349/		69.2	5		
34	10	Lead	53.7	113	0.473/		71.5	7		
o	7.1	Silver	0.776	3.14	0.069/		120	3		
m 6000	(0)	Aluminum	22200	81100	4/11/5/16		114	5,		
M6010C	-35	Selenium	(1.84 (ND)	3.09 5	1.84/2.32		50.8	7/U		

Buf A = Does not apply

* Pet USEPA Guidance, RPD for water samples is 20% and RPD for soil samples is 35%.

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Work Order/SDG Number: ESC L869365



ANALYTICAL REPORT my ESC



Stantec- Bellevue, WA

Sample Delivery Group:

L869365

Samples Received:

10/29/2016

Project Number:

185750123A

Description:

Maraico Phase II ESA

Report To:

Cyrus Gorman

11130 NE 33rd Pl, Suite 200

Bellevue, WA 98004

Entire Report Reviewed By:

Buar Ford

Brian Ford

Technical Service Representative

Results relate only to the items tested or calcitated and are reported as rounded values. This test report shall not be reproduced, except in full, writings writing approval of the taboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures, 060302, 060303, and 060304.





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¹ Cp: Cover Page	i i
² Tc; Table of Contents	2
³ Ss: Sample Summary	3
⁴ Cn: Case Narrative	4
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\$\$-900 L869365-03	7
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⁷ Gl: Glossary of Terms	15
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3 sediment

one duplicate:

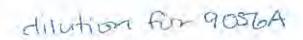
55-900 is a duplicate of 55-2 - delevated Rhaldilutions (SS-D)(SS-900)

SAMPLE SUMMARY

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SS-1 L869365-01 Solid			Callected by CS+NM	Collected disjentine 10728/16 10:30	Received date/time 10/29/16 09:00
	Balth	Dilpilan	Preparation	Analysis	Analyst
			date/tline	date/ilme	
Mercury by Methou 7471A	WG922674	1	11/01/16 16 50	1/02/16 9:53	NJB
Metals (ICP) by Method 6010C	V/G922544	1	11/01/36 15 49	10/02/16 03:49	LTB
Metals RCPMS) by Method 6020	WG922239	5	11/01/86 10 3-8	10020619:23	₩SS
Toral Solids by Method 2540 G-2011	WG922653	3	11/02/16 07:58	1902/16 08:22	MEL
Wel Chemistry by Method 350 1	WG922902	y-	1003/16 02 34	11/03/16 10:52	1ES
Wel Chemistry by Method 9056A	WG923165	7_	1003/16 11/08	11/03/16 23:05	SAM
Wet Chemistry by Mathod 9056A	WG923852	5	1005/16 1019	11/05/16 21:39	CM
SS-2 L869365-02 Solid			Collected by CS FNM	Collected datentine 10/28/16 10:35	Received date/time
33-2 E003303-02 30110 Mellipd	Batch	Dilujuan	Preparation	Arradysis	Analysi
welligo.	patell	Direlitati	datektime	date/ime	Paranyar
Mercury by Method 7471A	V/G922674	d)	11/01/16 16 50	1002/16 11:56	NJB
Metals (RCP) by Method 6010C	WG922544	16	11/01/16 16:49	1002/16 03:51	LTE
Metals (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	11/02/16 19:26	VSS
Total Salids by Method 2540 G-2011	WG922653	1	11/02/16 07 58	11/02/16 OB:22	MEL
Wel Chemistry by Method 350.1	WG9229D2	7	19/03/16 02:34	11/03/16 10:54	JER
Wei Chemistry by Method 9056A	WG923865	1	19/03/16 11:08	11/03/16 23:28	5AM
Wet Chemistry by Method 9056A	WG92365	20	. 11/03/ne n ós	11/03/16 23:51	SAM
SS-900 L869365-03 Solid (dup to SS-2-)			Collected by CS / NM	Collected date/films 10/28/45 00:00	Received date/time 10/28/16 09:00
Metrod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/isne	
Researy by Method 7471A	WG922674	T.	11/01/16 16 50	1002/16 11:59	N.B
Aetals (ICP) by Method 6010C	WG922544	1	11/01/96 16:49	1002/16 03:59	LTB
Metals (ICPMS) by Method 6020	WG922239	5	11/01/16 10:38	1002/16 19:30	VSS
Total Solids by Method 2540 G-2011	WG922653	1	11/02/16 07 58	1002/16/08:22	MEL
Wel Chemistry by Method 350 1	WG922902	1	11/03/16 07 94	11/03/16 10:55	JER
Wet Cliemistry by Method 9056A	WG923165	1m	11/03/16 19:08	11/03/16 20:47	5AM
Co. C. Lanco - Chial. Sec. 10 Co. Sail. 4.2. 1 Co.	111 min. or b. const	/ mm	Automore Mann	AN INCH OUT THE ARE	****



WG923165

Wet Chemistry by Method 9056A

11/03/16 11/08

D1-15 9VED/IL

SAM



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOO) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalles observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the rate.

y.

Buar Ford

Brian Ford Technical Service Representative Cp.

















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SAMPLE RESULTS - 01

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Collegies detellime 10/28/16 17:30

Total Solids by Method 2540 G-2011

_	Result	Qualifier	Dilution	Analysis	Batch	
(1)	16,			date / time		
co-polids	63.5		1	11/02/2016 08 22	WG922653	

Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	ROL (dry)	Oilution	Analysis	Batch
analyte	mg/kg	- /	mg/kg	ागपु/kg		date/lime	
Ammonia Narpgen	4,26	MPI V	2.47	787	1	1403/2016 10 52	WG922902

Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RIDE (dry)	Daution	Analysis	Batch	
Analy(e	mg/kg		тожа	mg/kg		date / func		
Chorlde	823		1.25	15.7	1	10/03/2016 23:05	WG923165	
Fluoride	226		2.05	7.87	5	11/05/2016 21:39	WG923852	
Nitrate	3.62		0.0183	1.57	1	11/03/2016 23 05	WG923165	

Mercury by Method 7471A

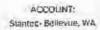
	Result (dry)	Qualifier	MOL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/leg		date / time	
Melculy	0.0564		0.00441	0.0315	1	1002/2016 11 53	WG922674

Metals (ICP) by Method 6010C

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	ROL (dry) mg/kg	Dilutton	Analysis date / time	Batch	
Arsenic	678		102	315	(1)	10/02/2016 03 49	VAG922544	
P .	58.5		0.268	D 787	111	1902/20% 03 49	V/G922544	
m	0.619	20	O WO	D 787	1	1002/2016 03 49	W5922544	
Chromium	363		0 220	157	1	11/02/2016 03:49	WG92Z544	
Lead	420 0		0 299	0 787	1.8	11/02/2015 03:49	WG922544	
Selenium	1.87	20	116	3.15	11	11/02/2016 03:49	WG922544	
Silver	U		0.441	157	1.1	11/02/2016 03:49	WG922544	

Metals (ICPMS) by Method 6020

	Result (dry)	Qualifler	MDL (dry)	RDL (dry)	Diluuon	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Aluminum	55500 0		26.0	787	14	10/02/2016 19:23	WG927239	



SAMPLE RESULTS - 02

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Collected date/time: 10/28/16 10 35

Total Solids by Method 2540 G-2011

airle.	Result	Qualifier	Dibution	Analysis	Batch	
	%			date / time		
and solids	401		1	t1/02/2016 08:22	WG922653	

Wet Chemistry by Method 350.1

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	тдля		mg/kg	mg/kg		date / time	- X
Ammonia Nitrogen	6.65	71	3.91	12.5	1.	11/03/2016 10 54	WG9223112

Wet Chemistry by Method 9056A

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis:	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chlaride	26800		39.6	498	20	11/03/2016 23:51	WG923165	
Fluoride	383 ₺		13.0	49 B	20	1003/2016 23:51	WG923165	
Nitrate (P)	13.8		0.0289	2 49	T.	11/03/2016 23 28	WG923165	

Mercury by Method 7471A

	Result (dry)	Qualifler	MDL (dry)	RDL (dry)	Dilution	Anolysis	Batch	
Analyte	mgłkġ		mg/kg	mg/kg.		date/fime		
Mercury	0.116		0.00697	0.0498	t	11/02/2016 11 56	V/G922674	

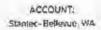
Metals (ICP) by Method 6010C

Analyte	0	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1	4.30 - 3	1 5	1.62	4.98	1	1002/2016 03:51	WG922544
-	(B) Banz	IMY 602 - J		0 423	125	1	17/02/2015 03:51	WG922544
111	(mem	Von 274 - J		D-174	125	1	17/02/2016 03:51	WG922544
moinlain	(80)	54.4 3		0.349	2 49	1	1002/2016 03:51	WG922544
ead	600	537		0.473	125	FF.	19/02/2016 03:51	WG922544
Selenium	(8)	ט - ע		184	4.9B	1	10/02/2016 03:51	WG922544
Stree	NO.	07/6	1 15	0 697	2.49	. 0	10/02/2016 03:51	WG922544

Metals (ICPMS) by Method 6020

Analyte		Result (dry) mg/kg	Qualifier	MDL (dry) marka	RDL (dby) mg/kg	Odution	Analysis date / time	Hatch	
Aluminum	(82)	22700		41/1	125	-5	1002/2016 19:26	WG922239	

elevated RDLs



SAMPLE RESULTS - 03

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Collected date/lime: 10/28/16 00.00

Total Solids by Method 2540 G-2011

0	Result	Qualifier	Diletion	Analysis	Botch	C.D.
	%			date / time		3
1)olkis	32 0		. 1	11/02/2016 08 22	WG972653	Tc
Wet Chemistry t	y Method 350.1					3 S5

Wel Chemistry by Method 350.1

Analyle	Résult (dry)	Qualifier	MDL (dry)	RDL (dry) ma/ka	Dilution	Analysis date / time	Botch	
Ammonia Nibogen	U		491	15 6	1	10/03/2016 10:55	WG922902	

Wet Chemistry by Method 9056A

Analyte		Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch	
Chloride		29900		49.8	525	20	1003/2016 21 10	WG923165	
Fluande	-	579		16.3	62.6	20	1903/2016/21 10	WG923165	
Nitrite	(6)	821 -5		0 0363	3.13	1	1003/2016 20 47	WG923165	

Mercury by Method 7471A

No. Ass.	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Delution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / Ime	
Mercury	0.151		0.00876	0.0626	1	11/02/2016 11 59	WG9226JA

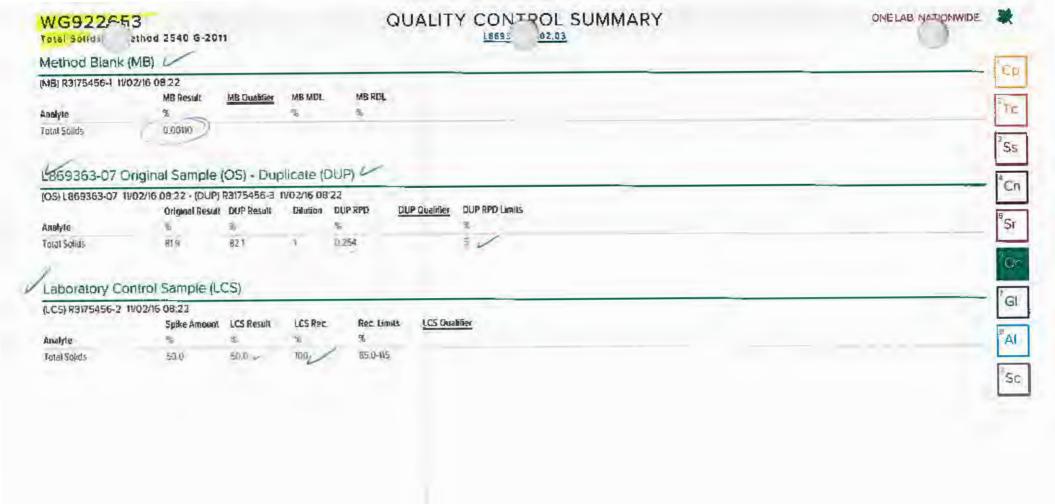
Metals (ICP) by Method 6010C

Analyte	Result (dry)	Qualifier	MDL (dry) mg/kg	mg/kg	Dilution	Analysis date / time	Batch
Ausenic (SO)	9.47 1		2 03	E 26	1	11/02/2016 03:59	WG922544
	120 3	darium	0 532	156	1	1002/2016 03:59	WG922544
in (Ex)	8.07 - N	admium	0 219	156	1	1002/2016 03:59	WG922544
Chromium	112 5	Delianta.	0 438	313	+	1002/2016 03:59	WG922544
Lead (5)	18 🐠		0 595	156	1	10/02/2016 03:59	WG922544
Selen um 🚳	3.09 J	1	2 32	6 26	3	1002/2016 03.59	WG922544
SWei (PD)	JA J		0 876	313	1	11/02/2016 03:59	WG922544

Metals (ICPMS) by Method 6020

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dalution	Analysis date/june	Batch
Aliminim (8)	8100 5		51,6	156	1	11/02/2016 19 30	WG922239





QUALITY CONTROL SUMMARY ONE LAB. NALIONWIDE WG9222902 Method 350 I 02.03 Wet Chemis Ammorua Nitrogen Method Blank (MB) (MB) R317556B-1 1V03/16 10 46 MB MDL MB RDL MB Result MB Qualifier Analyte mg/kg. riigłkg तम्बुगैख 1.57 5.00 Ammania Milrogen L869365-01 Original Sample (OS) - Duplicate (DUP) (QS) LB69365-01 11/03/16 10:52 - (DUP) R3175568-4 11/03/16 10:53 Original Result DUP Result (dry) Dilution DUP RPD DUP Qualifler **DUP RPD Limits** Analyte mg/kg ppg/kg note from late. RPD NOT APPLICABE 4 26 _ Ammonus Mniogen L869697-01 Original Sample (OS) · Duplicate (DUP)

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPO Limits	
hnelyte	mg/kg	mg/kg		%		6	
иштолія Кінорел	ND	ND	1	0.000		20 🗠	

Caboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD) (LCS) R3175568-2 (1/03/16 t0:48 + (LCSD) R3175568-3 (1/03/16 t0:49 RPD Limits Spike Amount LCS Result LCSD Result LCS Rec. LCSD Rec. Rec. Limits LCS Qualifier LCSD Qualifier RPO Analyte mg/kg 艺 S. matica mg/kg 79.0. 20 -58 0-114 4.00 Ammunia Milrogen 2760 2180 2270 82.0

(OS) L669381-09 1V03	1/16 11:04 - (MS) R3	175568-5 11/03	/16 11:05 · [M	SDJ R3175569-	DIT BINEDAN 6	06						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	26	1/2		4			197	25
Ammonia Nikogen	50D	6,70	260	262	(510)	(510)	7	80.0-120	26	JE	190	20

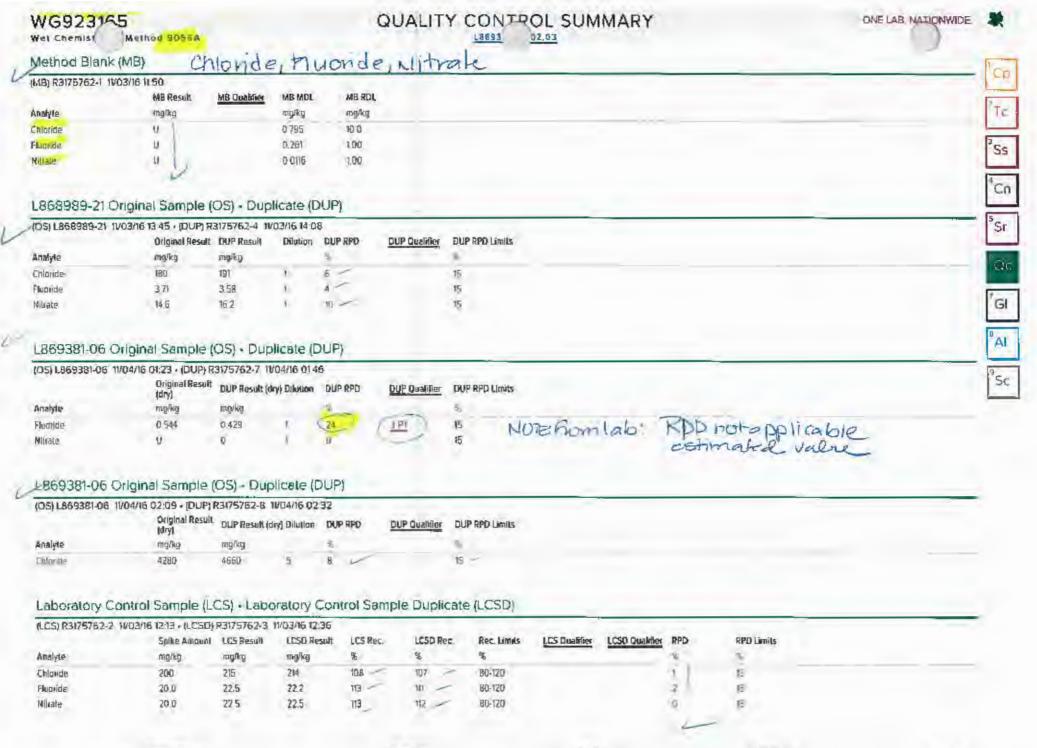
Not from lab: matrix interference

FP

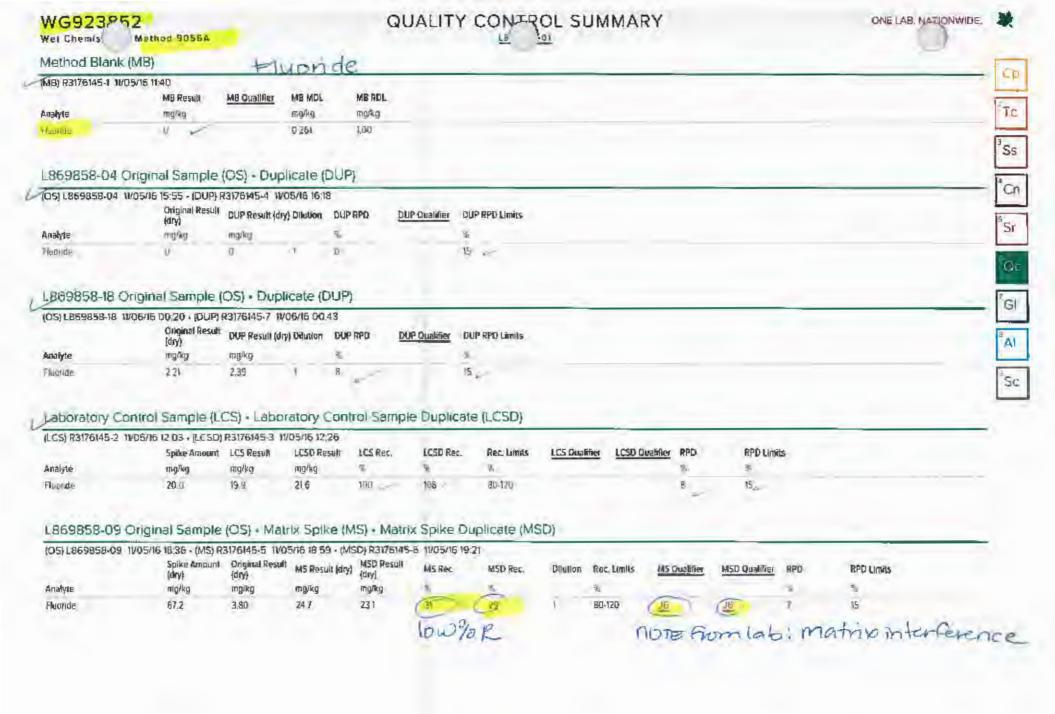
Cn

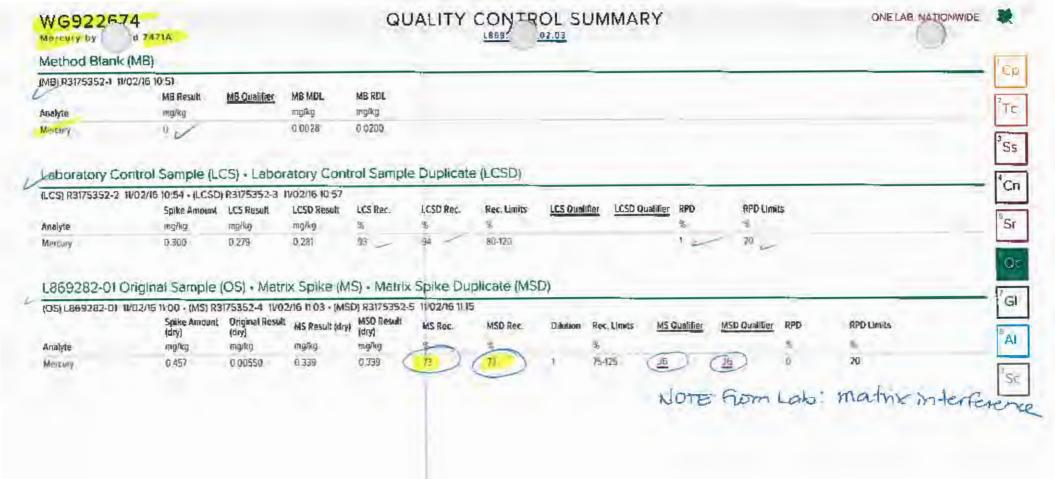
Sr

ac



ACCOUNT:	
Stanted Bellevue	WA





QUALITY CONTROL SUMMARY

験

Method Blank (MB)

(MB) R3175124-1 1V	02/16 02:55			
Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.65	2.00
Barlum	U ~		0.17	0.500
Cadmium	U		0.07	0.500
Chromium	U		0.14	100
Lead	U		0.19	0.500
Selenium	v _		0.74	2,00
Silver	L)		0.28	3,EO

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LC5 Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			8.	36	
Ausenic	190	10.2	103	102 -	103	80-120			Z-	20	
Baxwin	100	105	106	105-	06	80-120			1-	20	
Cadinluin	100	102	103	102-	103	80-120			1-	20	
Chromium	100	101	102	101_	07 -	80-120			10	20	
Lead	VOO:	102	103	102-	103-	80-120			1-	20	
Selenium	100	101	103	101-	03-	80-120			1-	20	
Silver	100	101	102	101_	103	80-120			1-	20	

L869107-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

	Spike Amount (dry)	Original Result (diy)	MS Result (dry)	(dry)	MS Rec.	MSD Rec.	Diagion	Rec. Limits	MS Outlifier	MSD Qualifier	RPD	RPO Limits
Analyte	mg/kg	Inguka	педЛюд	mg/kg	16	%		5				96
Arsenic	117	B.20	115	DE	91	94	1	75-175			3-	20.
Barhim .	117	92.3	238	242	175	128	1	75-125		US.	2-	20
Cadmium	117	RD	113	37	97	100	1	75-125		A	1 -	20
Chromium	117	20.4	130	135	94	98 -	T	75-125	/	1	4	20
Lean	117	13.0	130	134	100	104	1	75-125	1		3-	20
Selenium	117	HD	m	134	94	97-	i.	75-125	7		3-	20
Silver	117	ND.	113	R5	97	100	i	75-125	17.		3	20

Note From LAB: Martix interference

QUALITY CONTROL SUMMARY ONE LAB. NATIONWIDE. WG922739 Metals (ICPF Method 6020 02.63 Method Blank (MB) potentially offected samples: Cp (MB) R3175414-1 1V02/16 18:38 55-1 A1:55,500 mg/kg 55-2 A1:22,200 mg/kg all results MB ROL MB Result MB Qualifier MB MDL Jak well To marka. mg/kg Analyte mg/kg estimated value. 50.0 4.96 2.3 Aluminum 85-900 Al= 81,100 mg/tg Ss Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD) * NO BUALIFIER Cn ILEST R3175414-2 11/02/16 18:41 - (LCSD) R3175414-3 11/02/16 18:44 LCSO Result LCS Rec. LCSD Rec. Rec. Limits LCS Qualifier LCSD Qualifier RPD **RPO Limits** Spike Amount LCS Result Sr 16 36 Ħ, mgAg Analyte mg/kg mg/kg 1101 -80-120 20 -1060 1100 105 .-1000 Afuminum Oc L869381-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD) GI (OS) L869381-D3 1V02/16 18:47 - (MS) R3175414-6 1V02/16 18:57 - (MSD) R3175414-7 1V02/16 19:00 MS Rec. MSD Rec. Dilution Rec. Limits MS Qualifier MSD Qualifier RPD **RPD Limits** Spike Amount Ongmai Result MS Result MSD Result 生 % Analyte mg@gr mg/kg mg/kg mg/kg Al

> NOTE From lab: Sample to high to determine accurate spike rerovenes -> DILLITON

200

Aluminum

9480

BDOO

9050

149

75-125

Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit for MDL where applicable).
U	Not detected at the Reporting Limit for MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
1	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high,
J6	The sample matrix interiered with the ability to make any accurate determination; spike value is low.
ė1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries



















		8	illing kalor	mation & Questo N	imber:	O I			A	mulysis/	Contain	er/Pre	Henvatin	2		Chain of Cir	stody	10.10
Stanti Bellevue, W 11130 NE 33rd Pl, Suite 200 Bellevue, WA 98004	A	12	1730 M	Payable- Phili 33rd Pl, Ste 20 , WA 98004	Note that											*	Ę	SC
Report to	7	-		hris Gdzk@stanter					AeOH.							(30%) to been	m Ra 1H 17122	回修理
	U GOTA	an 4	Yrus Gori	transport of the property of the party	- nepatral trans	laws.			A.				1			PERMIT ALS 2	57 MW	Re Co
Project Description Manualco!		I ES	A	Collected.	+, WA				34/5		Pres	MT DS	SEZ			La 766	7766	回蒙沙滩
Phone 425-289-7874 Fan. 423-869-1190	425-289-7874 Clent Project #		STANTECEWA-KENT				lapres	res	NaHS	2	Al metals 2020tr-Napres	Nopu	Nob	1		B2	24	
Collected by [print]	5/te/Facility in			PO. #	_	-	I	90	5	il.	202	Ü	D	1		Tarana a	Car a a Per	remass -
CARAL SHESTAS/NI			lad	1857	50/23		220	1	40	Z	S	802	20	1		Accinum	DEMONS	
Collected by (signature)		ob MUST Be N			mults Reeded		3 45	4ozClt-Nopres	M	SCI	lete	4	2			Tomplate		
immediately X	Nest 0	ty.	700% 100% 50% 24%		No X Tes	Vo.	CI,F,NH3,NO3 402Cfr-NoPres	NWTPHDX 4	NWTPHGXBTEX 40ml/NaHSO4/Syr/MeDH	PAHSIMD 402Clr-NaPres	RCRAS + AI T	CLP RCRA8+Al Bozcir-NoPres	Screen, TS 202Gr-NoPres			Pre ogo: 15%: 110 - Pä.		
Pached on the N + X	1	1				Oall	11.	MT	5	HS	A	2	VOCS			Safepad V	Ta .	
Sample 10	Comp/Grati	Matrix."	Oepti	Davi:	Time	1	Ű	ź	ž	d	_	2	2			Dam /Cents	THERANTE 5	emple a (March)
55-1	Grab	Selfo 7	6"	10/15/10	11:30	3	X				X							01
55-2	H	8507	6"	11	10:35	الإ	X				X							02
55 900	11	SOT	6"	11	00:00	R	X			-	X							03
		SS							T									
		55				1												
		55																
		SS																-
		SS									100							
		SS				1												
		SS				T												
Matrix: 55 Soul GW Groundwat	ne WW Waster	aier DW - Dri	nking Wat	er at - Other S	diest	-	100	1	-	-	-		1				-	
Remarks: Aluminum by Meti	od 6020.									pH	_	_ Tea	TEST	_	-		_	
										Flow		00	ier	-	Hold R			
Relanguished by . (5)gnature)		Date:			eceived by [Sign:	la of				1	1		DUP		Condi		llab osa	
18/1/2		10/28/	2016	15:45						1 PM	redf.		iles D	_	DE	14	6.	-
prinquis day (Samue)	7	Date		Firme R	eceived by (Signi	MILITAN .				(mmp	31	4C 8	enter Jo	ceived:				. 2
6. Automobile Melicontal		Fisher		Territe R	princed for lab to	e Klan	laurel	_	-	2	-4		Ima:		COC 5	col tract	NCP.	N_MA
Belinquished by [Separtire)		Date		TE/TIE	1 2 aux His Ci	- ladie	-ture!	-		10	20	11		an	Burn	ELECTION .	114	
				1	LA		-		_	300	47	10	109	1.0	1		11	



Cooler F	Receipt Form			
Client: STANTECRWA	STANTECBWA SDG#			
Cooler Received/Opened On: 10/ 29/16	Temperature Upon Receipt:	2.4 %		
Received By: Dakota Bushy		-		
Signature: Das				
Receipt Check	Ust	Yes	No	N/A
Were custody seals on outside of cooler and intact?				1
Were custody papers properly filled out?		100		
Did all bottles arrive in good condition?		/	1-9	
Were correct bottles used for the analyses requests	ed?	/		
Was sufficient amount of sample sent in each bottle	e?	lane.	1 1	
Were all applicable sample containers correctly pre	served and			1
checked for preservation? (Any not in accepted ran	ge noted on COC)			
If applicable, was an observable VOA headspace pro	esent?	1 -01		1
Non Conformance Generated. (If yes see attached I	NCF)			

DATA VALIDATION WORKSHEET

GENERAL INFORMATION:

Lab Name:	ESC Lab Sciences
Lab SDG/Project/Work Order:	L880054
Project Name:	City of Kent Brownfield (Cooperative Agreement BF-
	00J65701)
	Maralco Property
Stantec Project Number:	185750123
Client:	City of Kent
Validator Name:	Kim Vik
Date of Validation:	November 18, 2016

SAMPLE INFORMATION:

SAIVIPLE INFORIVIATION.	T	
Number of Samples:	1	
Matrix:	Water	
Number of Trip Blanks:	None	
Number of Equipment Blanks:	None	
Number of Field Duplicates (include duplicate information)	None	
Date of Sample Collection:	November 2, 2016	
Sample: MW-2	Analyses: Mercury (Method 7470A) ICP Metals (Method 6010C) ICPMS Metals (Method 6020) SVOCs (Method 8270D-SIM) TPH-D/TPH-O (Method NWTPH-Dx) Wet Chemistry (Method 300.0) Wet Chemistry (Method 350.1)	Batch: WG923453 WG923492 WG923495 WG924187 WG923524 WG923421 WG923929

GENERAL DATA VALIDATION:

Chain of Custody:

All requested analyses were performed per the COC.

Holding Times:

All analyses were run within the required holding. No qualifiers are needed.

Trip Blank Review:

No trip blanks were submitted with this.

Surrogates:

All sample surrogates are within control. No qualifiers are needed.

QC Surrogates:

All QC surrogates were within control.

Lab Notes:

None.

Elevated Reporting Limits:

There were no reported dilutions or elevated reporting limits.

PER ANALYSES:

Wet Chemistry: Chloride, Fluoride, NItrate, Method 300.0 (Batches: WG923421)

Method Blank:

No analytes were detected in the laboratory method blank. No qualifiers are needed.

Lab Duplicates:

Two laboratory duplicates were run. The RPDs between the original samples and the lab duplicate samples were within the control limit of 20%. No qualifiers are needed.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD):

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Two MS and one MSD were run for this batch. The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Wet Chemistry: Ammonia Nitrogen, Method 350.1 (Batch: WG923929)

Method Blanks:

Ammonia nitrogen was not detected above the MDL in the laboratory method blank. No qualifiers are needed.

Lab Duplicates:

Two laboratory duplicates were run. The RPDs between the original samples and the lab duplicate samples were within the control limit of 20%. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limit. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

Two MS samples and one MSD was run in this batch. The MS and MSD percent recoveries were within the specified acceptance limits. No qualifiers are needed.

Mercury, Method 7470A (Batch: WG923453)

Method Blanks:

Mercury was not detected above the MDL in the laboratory method blank. No qualifiers are needed.

LCS/LCSC:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Metals (ICP), Method 6010C (Batch: WG923492)

Method Blanks:

No analytes were detected above the MDLs in the laboratory method blank. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the LCS and LCSD were within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the MS and MSD were within the control limit of 20%. No qualifiers are needed.

Metals (ICPMS): Aluminum only, Method 6020 (Batch: WG923495)

Method Blank:

Aluminum was detected at 14.0 ug/L which is between the MDL and the RDL. The results for potentially affected sample (MW-2) was greater than 10X the method blank result; therefore, no action is needed. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

MS/MSD:

The MS and MSD percent recoveries were within the specified acceptance limits. The RPD between the MS and MSD was within the control limit of 20%. No qualifiers are needed.

Semi-Volatile Organics: Diesel Range Organics (DRO) and Residual Range Organics (RRO), Method NWTPH-Dx (Batch: WG923524)

Method Blank:

DRO and RRO were not detected above the MDL in the method blank. No qualifiers are needed.

LCS/LCSD:

The LCS and LCSD percent recoveries for DRO and RRO were within the specified acceptance limits. The RPD between the LCS and LCSD was within the control limit of 20%. No qualifiers are needed.

Semi-Volatile Organics: Polycyclic Aromatic Hydrocarbons (PAHs), Method 8270-SIM (Batch: WG924187)

Method Blank:

Acenapthylene (0.0129 ug/L), Benzo(a)anthracene (0.00683 ug/L) and Naphthalene (0,0504 ug/L) were detected in the laboratory method blank. The results for MW-2 are not affected by the Acenaphthylene and Benzo(a)anthracene blank contamination because the sample results were both greater than 10x the method blank detection; therefore, no action is needed. However, the Naphthalene result for the sample will be qualified as not detected at the Reporting Detection Limit (RDL) or 0.250 U. The table in the "Determination" section below summarizes the qualified data.

LCS/LCSD:

The LCS and LCSD percent recoveries for all analytes were within the specified acceptance limits. The RPDs between the LCS and LCSD for all analytes were within the control limit of 20%. No qualifiers are needed.

FIELD DUPLICATE REVIEW:

No field duplicates were collected or submitted for this SDG.

8270D-SIM)

DETERMINATION:

The data in this work order have been validated and determined to be acceptable for use with the following qualifications:

Sample ID Result (ua/L) Result (ug/L) Reason

Original

Analyte (Method) Naphthalene (Method MW-2 0.131 0.250 U Method Blank Contamination

Qualified

NOTES:

Laboratory assigned flags (J). Analytical results flagged by the laboratory as estimated values in the final laboratory report are assigned a qualifier of J to denote that the result is an estimated value based on the analyses. This qualifier is not one that is assigned based on data validation review or quality of data. In the case where the laboratory reports sample results between the Method Detection Limit (MDL) and Reporting Detection Limit (RDL), the resulting data was flagged with J to denote that the result is estimated; the result is considered non-detect at the MRL because it falls below the MRL.

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). Based on the review of laboratory quality control data provided by the laboratory, the sample results may be qualified with:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (method reporting limit or MRL). Results assigned this qualifier are considered undetected at the MRL.
- UJ Indicates the analyte was not detected above the quantitation limit or MRL; however, the MRL is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL.
- J Indicates the analyte was positively indentified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value.
- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

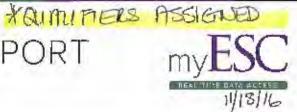
SEE ATTACHED DATA QUALIFIER FORM FOR DATA VALIDATION AND LABORATORYASSIGNED QUALIFIERS (IF APPLICABLE) .

REFERENCES:

- CE. 2005. Environmental Quality Guidance for Evaluating Performance-Based Chemical Data (Engineering Manual), EM 200-1-10. US Corps of Engineers. June 30, 2005.
- EPA. 2002. Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8. USEPA. November 2002.
- EPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008. USEPA. October 1999.
- EPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004. USEPA. October 2004.
- EPA. 2006. Tier I Data Validation Manual for the Ohio EPA, Division of Hazardous Waste Management. Ohio EPA. February 2006.
- TNI. 2009. Volume 1, Management and Technical Requirements for Laboratories Performing Environmental Analysis, Module 4: Quality System for Chemical Testing, TNI Standard. The NELAC Institute. September 2009.



ANALYTICAL REPORT



Stantec-Bellevue, WA

Sample Delivery Group:

L870054

Samples Received

11/03/2016

Project Number.

185750123A

Description:

Maraico

Report To:

Cyrus Gorman

11130 NE 33rd Pl, Suite 200

Bellevue, WA 98004

Entire Report Reviewed By:

Buar Ford

Brian Ford

Technical Service Representative

Results relate poly to the nems tossed or cabbiated and me reported as igunded values. This test report shall not be reproduced, except or full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





Cp: Cover Page	1
² Tc: Table of Contents	2
³ Ss: Sample Summary	3
*Cn: Case Narrative	4
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Al: Accreditations & Locations	17
⁹ Sc: Chain of Custody	18























Owaler sample

Ø doplicates

Ø tapbonks (NO VOLATLES)

Edlected by

Naihan Magpusson

Received date/lime

1003/16/09 00

Collected date/time

11/02/16 14:05



MW-2 L870054-01 GW

Method	Batch	Dilpion	Preparation	Analysis	Analyst
			date/time	date/ilme	
Mexicury by Method 7470A	WG923453	- 1	PV03/46 14:45	1004/16 08:21	TRB
Metals (RCP) by Method 6010C	WG923492	T.	1003/16 14:09	17/09/16 21:03	51
Metals (ICPMS) by Method 6020	WG923495	1	1004/16 09:54	10/04/16 11:49	LAT
Semi Yolaide Organic Compounds (GC/MS) by Method 8270D-SIM	WG924187	1	W0646 20:35	11/07/16 13:31	FME
Semi-Vocatile Organic Compounds (GC) by Method NWTPHDX	W6923524	+	1005/16 20:37	10/07/16 23:13	TRE
Wet Chemistry by Mellrod 300,0	4/6923421	à.	1003/16 11 57	11703/16 11/57	SAME
Wer Chemistry by Mellind 350 f.	WG923929	à.	1008/16 11 28	1908/1511/28	DR























All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOO) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowledgy withheld that would affect the quality of the data.



















Brian Ford Technical Service Representative

Buar Ford

SAMPLE RESULTS - 01

ONE LAB NATIONWIDE

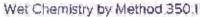
\$5

GI

Collected date/time 11/02/16 14:05

Wet Chemistry by Method 300.0

	Result	Qualifier	MOL	RDL	Dilution	Analysis	Batch	
Analyte	ug#		ug/l	ugit		date / time	7	
Chloride	3890		51.9	1000	J	12/03/2016 11 57	WG923421	
Fluoride	80.7	1	9.90	LOD	1	11/03/2016 11 57	WG923421	
Sitrate-	u		22.7	700	1	10/03/2016 11 57	WG9/23421	



	Result	Quatriler	MOL	RDL	Dilution	Analysis	Batch
Analyte	ពិធីប		ug/l	1/0/		date / lime	
Ammonia Nitroger	U		38.0	750	1	1708/2016 11 28	WG823929

Mercury by Method 7470A

	Result	Qualifier	MDL	ROL	Däution	Analysis	Batch	
Analyte	ug/l		ugit	ug/I		date / ilme		
Mercury	n		0.0490	0,200	Y	11/04/2016 08 21	W8823453	

Metals (ICP) by Method 6010C

	Result	Qualifier	MDL	RDL	Dittution	Anatysis	Batch	
Analyté	ugli	, , , , , ,	ugal	ugn		date Filme		
Arsenic	U		6.50	10.0	1	11/03/2015 21:03	WG923492	
Barium	5.65		1,70	5.00	1	11/03/2016 21:03	WG923492	
Cadmium	U		0700	2.00	1	11/03/2016 21:03	WG923492	
Chromium	U		1.40	10.0	1	11/03/2016 21:03	WG923492	
Lead	2.59	1	190	5.00	1	11/03/2016 21:03	WG923492	
Selenium	U		7.40	10.0	1	11/03/2016 21:03	WG923492	
Silver	Ü		2.80	500	1	11/03/2016 21 03	WG923492	

Metals (ICPMS) by Method 6020

	Rosult	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyle	ug/l		ugil	ugl		date / time		
Autmmon	174		3.00	100	1	11/04/2016 11 49	WG923495	

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX

	Result	Qualifier	MDL	ROL	Diluiton	Analysis.	Batch	
Analyse	ugń		ugil	лаул		date / time		
Diesel Range Organics (DRO)	U		82.5	250.	1	9/07/2016 23:13	W6923524	
Residual Range Organics (PRO)	U		165	500	Ť	11/07/2016 23:13	WS923524	
ISI a Terphenyl	112			50.0-150		11/01/2016 23 13	W6923524	

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

	Result	Qualder	MOL	RDL	Diluitan	Analysis	Batch
Amalyte	ugA		ug/l	agil		date / time	
Amhracene	U		D-014D	0.0500	1	10/07/2016 13:31	W6974157
Acenaphthene	U		0.0100	0.0500	1	10/07/2016 13:31	WG924187
Aceraphthylene	.0		0.0120	0 0500	1	10/07/2016 13:31	WG974157
Benzo(a)anthracene	U		0.00410	0.0500	1	10/07/2016 13:31	WG974187
Benzo(a)pyrene	0.		0.0116	0.0500	1	11/07/2016 13:31	WG924157
Benzo(b)fluoranthena	U		0.00212	0.0500	1	10/07/2016 13:31	WG924157
Benzo(g.h.l/perylene	.0		0.00227	0.0500	1	16/07/2016 13:31	WG924187
Benzo(k Augranthene	.0		0.0136	0.0500	1	10/07/2016 13:31	WG924187
Chrysene	LI)		0.0108	0.0500	1	1607/2016 13 31	VPG924187
Dibenz(a,n)anthracene	D.		0.00396	0.0500	1	10/07/2016 13:31	9/6924187
Fluoranthene	LT.		0.0157	0.0500	1	10/07/2016 13:31	WG924187
Fluorene	0.00874	1	0.00850	0.0500	1	16/07/2016 13:31	WGG-24187
inceno(1,2,3-cd/pytene	U	2	0.0148	0.0500	ī	1007/2016 13-31	WG924187

ACCOUNT: Slutter Be Evel. WA PROJECT-18575D123A

SOG: LB70054

DATE/TIME 11/89/16 21:34 PAGE 5 of 19 MW-2 Collected dateftime: \$1/02/16 14:05

SAMPLE RESULTS - 01

ONE LAB NATIONWIDE

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result ug/l	Outdiffer O . 850 U	MEX. ug/l	60/1 50)	Dilution	Analysis date / time	Batch
Napathajeac	O Harris	Bu-	8910.0	0.250	1	11/07/2016 13:31	WG274187
Phenanthrene -	0.00915	1-	0.00820	0.0500	1	11/07/2016 13 31	W59241ET
Ругеле	U		0 0117	0.0500	i.	11/07/2016 19:31	W69741B7
1 Mithylmphthalepe	0.0360	4	0.00821	0 250	ă.	11/07/2016 13:31	WG974187
2-Methylnaphinalone	0.0646	1 -	0.00902	0 250	i.	11/07/2016 13:31	WG9241B7
2-Chloronaphthalene	Ш		0.00547	0 250	1	11/07/2016 13 37	WG924887
(S) Mitrobenzene d5	102 -			45.1-170		1007/2016 13:31	WG924867
(S) 2 Fluorobjohenyl	115 -			57.7.153		1007/2015 13:31	WG924/87
(S) p-Terphenys-ds4	95.8 -			53.2-156		1007/2016 13:31	WG924967





















WG923421

Flugride

Nitrate

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

Method Blank (MB)

Wel Chemistry by Method 300.0

(MB) H317574B-1	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	Ngu.	one or second income.	99.7	ъдл
Chlonde	0 -		51.9	1000
Fluoride	G -		9.90	100
Nitrale	U		72.7	100









Sr



(O5) L87(06):12 1V03(16 13:44 - (DLIP) R3175748-4 1V03(16 14 00

	Original Result	DUP Result	Dilution	DUPRPD	DUP Qualifier	DUP RPD Limits
Analyte	ugill	ug/I		95		%
Chloride	14500	14600	1	n ~		20
Fluoride	ND	19.B	1	0 -		20
Nitrate	ND	0.000	1	0 -		20









(OSU 9701/8-01 17/03/16 16-34 - (E) IPI P3/75749-6-17/03/16 17:00

ND.

Original Result	DUP Result	Ditution	DUP RPD
ugfl	HgH		%
ŃĎ	253	1	0 -
	ug#		ugil ugil

0.000

0 000

DUP Qualifier	DUP RPD Limits		
	%		
	20		
	20		
	20		



Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3175748-2	11/03/16 07:16 - [LCSD]	R3175748-3	11/03/16 07:32	
	Snike Amound	LCS Recoll	LCSD Result	

	Spike Amount	LCS Result	LCSD Result	LCS Rec	LCSD Rec.	Rec Limits	LCS Qualifier	LCSD Qualifier	RPD	RPO Limits
Analyto	ug/(ng//	មព្រា	N	%	%			2.	45
Chloride	40000	38900	38900	97	97 -	90-110			0 -	20
Fluoride	8000	7920	7890	99 -	99 —	90-110			0-	20
Nitraje	8000	9070	8010	100	10:0	90-110			0-	20

MS Qualifier

SDG:

L870054

VL870061-13 Original Sample (OS) . Matrix Spike (MS)

(05) L870061-13	11/03/16 (4:1)	5 - [MS]	R3175748-5	(1/03/16 14:3)
		1 G	THE PARTY OF THE P	and the second second

	Spike Antount	Original Besult	MS Result	MS Rec.	Dilution	Rec Limits	
Analyte	ug/i	ugil	ugil	%		16	
Chloride	50000	12000	62400	100 -	1	80-120	
Flooride	5000	NO	4770	95	1	80-120	

DATE/TIME:
11/09/16 21:34

Analyte

Chicolde

Fluoride

Nitrate.

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE,

L970054-DL

MSD Rec.

46

102 -

106 -

98

Rec. Limits

80-120

20-120

80-120

Delution

MS Qualifier

MSD Qualifier

RPD

11 >

7-

5 -

%

RPD Limits

20

20

20

Wet Chemistry by Method 300.0

L870061-13 Onginal Sample (OS) - Matrix Spike (MS)

(OSI L87006)-13 W03/16 14:15 - (MS) R3175748-5 11/03/15 14:31

Hgo

50000

5000

5000

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Umits	MS Qualifier
Analyte	in gota	hg/i	mg/l	1		*	
Nitrate	5000	ND	4860	97-	12	80.120	

MSD Result

Man

51000

5300

4970

MS Rec.

102 -

104

:03

96

270f18-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Dublicate (MSD)

ug/l

51000

5200

5160

(O5) L870118-02 1V03/16 17:15 · (MS) R3175748-7 11/03/16 17:30 · (MSD) R3175748-8 1V03/16 17:45

Spike Amount Original Result MS Result

ug/I

NO

ND

ND



















ACCOUNT

Stanter-Bellevira WA

PROJECT: 185750123A

5DG: LB70054

DATE/TIME: IM09/16 21:34 PAGE

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE

Method Blank (MB)

IMB)	R3176579-1	11/08/16	10.50

Wel Chemistry by Method 350 1

HIDY INGTO DAY D. A. IN OC	CAL SELECT			
	MB Rosult	MB Qualifier	MB MDL	MB RDL

Analys	ngri	ug/l	ngri
Ammania Nitrogea	UV	38.0	250



£869715-02 Original Sample (OS) - Duplicate (DUP)

(OS) L869715-02	11/08/16 10:58 -	(DUP) R3176579-4	1708/16 (0:59

	Original Result	DUP Result	Dilution	DUP RPO	DUP Qualifier	DUP RPO LIMITS
Analyte	ugt	ug/l		%		96
Amendia Nikogea	2830	2820	1	0		20 r





L870014-01 Original Sample (OS) • Duplicate (DUP)

(O5) L870014-01 11/08/16 11:20 - (DUP) R3176579-8 11/08/16 11:26

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ugH	ug/l		26		*)
Ammunia Nitrogen	3620	3550	1	71		20-



Caboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

CS1 83176579-2 11/08/16 10:51 - IL CSDI 93176579-3 11/08/16 10:53

	Spike Amount	LCS Result	LCSD Result	LCS Rec	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD		RPD Limits
Analyte	ugit	ug/I	ugili	*	%	%			3/2		96
Ammonia Nitrogen	7500	7.190	7340	98	98	90.110			T	1	20



. L869766-01 Original Sample (OS) • Matrix Spike (MS)

(O5) L869765-01 11/08/16 11:01 • (MS) R3176579-5 11/08/16 11:03

	Spike Amount	Original Result	MS Result	M5 Rec.	Dilution	Rec. Limits	M5 Qualifier
Analyte	нд/	ug/l	ug#	%	- 6	%	
Ammonia Nitrogen	10000	ND	10100	101	1	90-110	



1 X870054-01 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

(OSEL 870054-01	1008/16 1028 - JMSI PRIZESZ9.7	1V08/16 11:29 - (MSD) R3176879-8	100205 113

	Spike Amount	Original Result	MS Resolt	MSD Result	MS Rec.	MSO Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	ugfl	ugfl	ug#	ug/l	1/2	16		90	1		%	76	
Ammonia Nitrogen	10000	U	9940	10000	99	100	1	30.410		-	1	20	

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

1810054-01

Method Blank (MB)

MB) R3175809-1 11/04/16 07:53

Mercury by Melhod 7470A

	MB Result	MB Qualifier	MB MDL	ME RDL
Analyte	Li(g/)		ugil	ug/I
Mercury	-0		0,0490	0.200







0.C51 R3175809-2	11/04/16 07:55	(LCSD) R3175809-3	11/04/16 07 58
The Control of Tax bear 1 is not play the William	all models and make made.	I The second sec	The loss that Loss in realiza-

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPO	RPD Limits
Analyte	ug/l	agn.	ug/l.	8	%	1			16	%
Mercury	3 00	3.01	2.94	100 -	98 🗸	80-120			1-	20











1869858-16 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

	1V04/16 08:03 + (MSE	

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyle	ugil	High	ug/I	Wg/I	%	*		%	-		16	3	
Mirrowy -	3 90	M	3 17	3.05	194	10.2	T.	/5-125			2	20	

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

L870054-01

Method Blank (MB)

Metals (ICP) by Method 5010C

(MB) R3175734-1 1	MB Result	MB Qualifier	MB MDL	MB ROL
Analyte	Typei		Hgas	vg/l
Assenic	y-		G.50	10.0
Barlum	U.		1.70	5.00
Cadmain	U		0 700	2.00
Chromium	U		140	10.0
Lead	U.		1,90	5.00
Selenken	U		7.40	10.0
5llyer	U ·		2.80	5:00



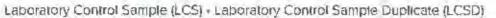
TC







٥C



	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LC5D Qualifier	RPD	RPD Limits
Analyte	sg/l	ug/i	ug/I	%	%	%		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	%	%
Arsenic	1000	1010	998	101 -	100 -	80-120			1	50
Barlum	1000	1020	1010	102	101 -	80-120			1	20
Cadmium	1000	1010	1000	101	100	80-120			100	50
Chromium	1000	991	984	99	36	80-120			10	20
Lead	1000	60D0	995	100	100	80 120			1-	20
Selenium	1000	1010	999	101	100	80 120			1	20
Silver	1000	1010	998	101	100	80-120			1	20







1869633-03 Original Sample (OS) - Matrix Spike (MS) - Matrix Spike Duplicate (MSD)

(OS) L869633-O3 11/03/16 20/34 • (MS) R3175734-5 11/03/16 20	0.39 · (MSD) R3175734-6 11/03/16 20/41
--	--

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	M5D Rec	Dilution	Rec Limits	M5 Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte ug/	seg#I	ug/l	ug/l	ng/l	%	%		%			%	No.
Arsenic	1000	U	1010	1010	101	101	11	75-125			0 -	20
Barlum	1000	7.55	1020	1020	101 -	102	1	75-125			0-	20
Cadmium	1000	U	1000	1010	100	101	4	75-125			0-	.20
Chromium	1000	U	986	983	99	98	1	75-125			0_	20
Lead	1000	3.12	1000	1000	100	100 "	-1	75-125			0 -	20
Selenium	1000	U	1010	3010	101	101	1	75-125			0-	20
Silver	1000	U	998	1000	100	100	-1	75-125			O	20
					-							

QUALITY CONTROL SUMMARY 1870094/91

DNE LAB NATIONWIDE

Method Blank (MB)

Analyte

(MB) R3175926-1 11/04/15 11:39

Metals (ICPMS) by Mothod 6020

MB Result Day.

14.0

MB Qualifier MB MDL iğ.

MB ROL

130

after

RPD

710x blank Brownt no action needed.

RPD Limits

%

20

TC \$5

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(CS) R3175926-2 11/04/16 11.42 (LCSD) R3175926-3 10/04/16 11.46

Co. Los ministras	Spike Amount	LC5 Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limas	LCS Qualifier	LCSD Qualifier	
Analyte	Ngu	ag/	ugil	*	W.	9			
Aluminum	5000	4810	4860	96	97	80.120			

Sr

"Oc

GI

Cn

€870054-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L870054-01 11/04/16 11:49 • (M5) R3175926-5 11/04/16 11:55 • (AISD) R3175926-6 11/04/16 11:58

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Drhution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Anatyle	ug/l	ug/1	HQ/?	ид#	96	6		8			1.	180
Aluminum	5000	174	4750	4850	92	95	1	75-125			2/	20





QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE.

Semi-Valatile Organic Compounds (GC) by Method NWTPHDX

1870054-01

Method Blank (MB)

HMB)	R3176520-1	11/07/16	22:23
			BATT IN

	MB	Result	MB Qualifier	MB MDL	MB RDL
Analyto	ug/			ug/l	ug/I
Diesel Range Drganics (DRD)	0	-		83.3	250
Residual Range Organics (PRO)	U	1		167	500
(5) o-Terphenyl	122	1			54.0-145







*Cn

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

(LCS) R3176520-2	11/07/16 22:40 -	(LCSD) R3176520-3	11/07/16 22:57
Act and Victorian and an in-	1110-1111-1111-1111-1111-1111-1111-1111-1111	Produced the contract of the	Target Co. See Section Section 1

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSO Qualifier	RPD	RPD Limits
Analyte	ng/l	ug/l	ug#l	%	36	76			%	%
Oveset Range Organics (OPO)	750	889	908	119 -	121 -	50.0-150			2.07 -	20
Residual Range Organics (PRO)	750	785	790	105	105	50.0450			0.610	20
(S) a Terphenyl				118 -	118	64.0-146				











Pyrene

1-Methylnaphthalene

2.Methylnaphthalene

2-Chloronaphthaiene

(S) Nitrobenzene-d5

19) 2-Fluorabiohenys

(5) p-Terphenyl-014

QUALITY CONTROL SUMMARY

ONE LAB NATIONWIDE

L870054-01

Method Blank (MB)

potentially affected sample:

(MB) R3176167-3 1VQ7/1	6 05:54			
	MB Result	MB Qualifier	WB WDT	MB RDL
Analyte	ug/l		lig/T	ug/
Anthracene	U		0.0140	0.0500
Acenaphthene	U		0.000.0	0.0500
Асспарнитуши	0.0123	-2	0.0120	0.0500
Benzo(a)anunacene	0.00683	1	0.00410	0.0500
Benzolalpyvene	U		0.096	0.0500
Benzo(b)huoramhene	U		0.00212	0.0500
Benzalg huperylane	W.		0.00227	0.0500
Benzo[k]Buoranthene	U		0.0136	0.0500
Chrysene	-U		8000,0	0.0500
Dibenz(a,h)anthracene	· U		0.00396	0.0500
Fluoranthene	U		0.0157	0.0500
Photene	U		0,00850	0.0500
Indeno(1,2,3 cd)pyrene	U		0,0148	0.0500
Nagarhalene	0.0504	3 1	0.0198	0.250
Phonanthiene	Ll.		0.00820	0.0500

Semi Volatile Organic Compounds (GC/MS) by Method 82700-SIM

mw-2 Acenaphthylone = < MPL (ND) NO ACTION

mw-2 benzola)anthracene = < mpl (ND) NO ACTION

mw-2 Naphthalene = 0.131 J (between mol & el)

GReport Result as EMPL (0.350 W)















Laboratory Control Sample (LCS) · Laboratory Control Sample Duplicate (LCSD)

19.0117

0.00621

0.00902

0.00647

0.0500

0.250

0.250

0.250

33.8-179

55.5.150

45.2-163

(LCS) R3176167-1 11/07/	16 05 10 - (LCSD)	R3176167-2 1	V07/16 05:32		,						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec	Rec Limits	LCS Qualifier	LCSD Qualifier	RPD	RPO Limits	
Analyte	ugfl	ug/i	ug/i	8	19)	78.			%	Sku	
Ambracene	2 00	2.34	2,31	117 -	-815	68,9 153			1.22	20	
Acenaphthene	2,00	2.22	2.22	111 <	111	67.7-141			0,270	20	
Acenaphthylene	2,00	2.19	2 15	109-	80F	66,9,141			162	20	
Benzolajanthracene	2.00	2.28	2.29	114 -	114 /	63.1-147			0.150	20-	
Benzo(a)pyrene	2 00	2.61	2.61	131 -	130 /	62,2-150			0.150~	20	
Benzo(b)Buoranthene	2.00	2.26	2.30	113 _	R5 *	58.4-148			1.62-	20	
Benzo(g.h.ilperylene	2.00	2.60	2.56	130	17B /	57 4-152			187_	20	
Benzo(k)fluoranthene	2.00	2.55	2,50	128 -	125	60 5-154			2.34	20	
Chrysene	2.00	2,38	2 38	119	119 ×	64 & 155			0.310	20	
Dibenz[a,h anthracene	2.00	2.54	2.51	127 -	126 <	53.5/153			1.36	20	
Fluoranthene	2 00	2 41	2.38	121	119	68.6-153			1 26	20	

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(S) p-Terphenyl-dM

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Somi Voletile Organic Compounds (GC/MS) by Method 8270D-SIM

LB70054-01

Laboratory Control Sample (LCS) - Laboratory Control Sample Duplicate (LCSD)

107

(LCS) R3176167-1 11/07/				33.6	437.5.5					
	Spike Amount	LCS Result	LCSD Result.	LCS Rec.	LCSD Rec	Rec. Limits	LC5 Qualifier	LCSD Qualifier	RPD	RPD Limus
Analyte	ug/l	ugil	ug/l	%	%	X			76	76
Fluorene	2,00	2.12	2.11	106 -	105	67.3.141			0.570 -	20
Indeno(1.2.3-cd)pyrene	2.00	2.59	2,54	129-	127	57 0-155			194 -	20
Naphthalene	2,00	2.05	3 08	103-	104	66,7-135			0.860-	20
Phenanthrene	2.00	2 15	2.15	10B	107	64 3 143			D.360 -	20
Pyrene	2.00	2.36	2,30	118 -	115	60.2-154			2.60-	20
1 Methylnaphthalene	2.00	2.23	2.27	112	114 -	68.3-144			1.75 -	20
2-Merhylnophthalene	2.00	2.25	2.26	113	113.	67.6-143			D.410 -	20-
2-Chloronaphthalene	2.00	3 15	16	10B	108	69.7.144			0.230~	20
(S) Nicrobenzene dS				120 -	119-	33.8-179				
(S) 2 Fluorobiphenyl				118	118 -	55.5-150				

46.2-163

105





















Abbreviations and Definitions

SDG	Sample Delivery Group
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND:	Not detected at the Reporting Limit (or MDL where applicable).
ป	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media
Rec.	Recovery
Qualifier	Description
В	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.















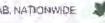






ACCREDITATIONS & LOCATIONS

ONE LAB, NATIONWIDE



ESC Lab Sources is the only environmental laboratory accredited/cet/ded to sapport your work nationwide from one location. One phone call one point of contact, one laboratory. No other lab is as accessible or prepared to handle your reads throughout nie country. Our capacity and capability from our single focusion laboratory is comparable to the collective location flow in the posture is a contact of the region of our laboratories in our industry. The most significant densities on our force location flowing it the design of our laboratory comparable to the contact of the most significant densities on our flow locations. decreasing turn-around fine and preventing cross confidentiation, thus protecting sample integrity. Our financian premium quality and around service allows us to be YOUR LAB OF CHOICE.

*Not all certifications held by the laboratory are approached to the results reported in the attached report.

State Accreditations

Alabama	40660	
Alaska	UST 0B0	
Afficona	AZ0612	
Arkansas	88-0459	
California	01157CA	
Colorado	TN00003	
Conneticut	PH-0197	
Florida	EB7487	
Georgia	NELAP	
Georgia	923	
Idaho	1N00003	
Hilmais	200008	
Indiana	C TN 01	
lowa	364	
Kansas	E-10277	
Kentucky*	90010	
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Maine	TN0902	
Maryland	324	
Massachusetts	M-TNOQ3	
Michigan	9958	
Minnesota	047-999-395	
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Missouri	340	
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Nebraska	NE-05-15-05	

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A2LA - ISO 17025	1461 01	ARIA	100789
AZLA - 150 17D251	1461.02	DOD	1461 01
Canada	1461 01	USDA	5-67674
WHAT WE ARE	Trippedi		

^{*}Dimiking Water ** Linderground Storage Tanks ** Aqualic Textsuy ** Enemgal/Morebiological ** Mold | Accreditation not applicable

Our Locations

ESCLad Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supples. If you would the assistance from poer of our support clients, playing contact our main critice. ESC Lab Sciences performs all testing at our central laboratory.



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A. A.



Cooler	Receipt Form			
Client: STANT EC BUNA	SDG#	L870094		
Cooler Received/Opened On: 11/3/16	Temperature Upon Receipt:	58 %		
Received By: Nikki Farmer				
Signature: 7				
Receipt Check Ust		Yes.	Nq	N/A
Were custody seals on outside of cooler and intact?		1V		1
Were custody papers properly filled out?		10	6.1	
Did all bottles arrive in good condition?		10	44.	
Were correct bottles used for the analyses reque:	sted?	10		
Was sufficient amount of sample sent in each bot	tle?	1		
Were all applicable sample containers correctly p	reserved and	0		
checked for preservation? (Any not in accepted re	ange noted on COC)			
If applicable, was an observable VOA headspace (11.2	1	
Non Conformance Generated (If yes see attached	d NCF)			

