# REMEDIAL INVESTIGATION/
# SITE CHARACTERIZATION

# FORMER CASCADE LAUNDRY
# 205 PROSPECT STREET
# WHATCOM COUNTY PARCEL 380330111249
# BELLINGHAM, WASHINGTON 98225
# ECOLOGY FS ID: 21786898

*For:*
Sonja Max and Oliver Max
914 12th Street
Bellingham, Washington 98225

*By:*

STRATUM GROUP
PO Box 2546
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December 11, 2019

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STRATUM GROUP

PO Box 2546
Bellingham, Washington 98227

December 11, 2019

Sonja Max and Oliver Max
914 12th Street
Bellingham, Washington 98225

**Re: Remedial Investigation / Site Characterization**
Former Cascade Laundry
205 Prospect Street
Whatcom County Parcel 380330111249
Bellingham, Washington 98225
Ecology FS ID: 21786898

Dear Ms. Max and Mr. Max:

We herein present the results of our soil and groundwater sampling in association with sampling from four environmental borings, three of which were completed as groundwater monitoring wells, at 205 Prospect Street in Bellingham, Washington. The purpose of the investigation was to more fully characterize the soil and groundwater conditions at the site, determine the vertical extent of contamination, and develop cleanup standards for the site.

Should you have any questions concerning this Environmental Site Assessment, please do not hesitate to contact us at (360) 714-9409.

Sincerely,
Stratum Group

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Licensed Geologist

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State of Washington
2690
Licensed Geologist
KIM N NINNEMANN

December 11, 2019
205 Prospect Street, Bellingham, WA
**REPORT: Well Installation and Sampling**

# 1.0 EXECUTIVE SUMMARY

Five environmental borings, three of which were completed as monitoring wells, were advanced on the former Cascade Laundry property at 205 Prospect Street in Bellingham, Washington in June 2018. The purpose of the investigation was to evaluate for the presence of dry cleaning solvent and petroleum contamination in the soil and groundwater at the site, identify the vertical extent of the contamination and to develop cleanup standards for the site. The work is based upon recommendations for further investigation within a report titled *Remedial Investigation and Feasibility Study Work Plan* completed by Stratum Group in May 2016.

Samples were collected from four of the borings SB1, SB3, SB4 and SB5 between June 19 and June 21, 2018. Borings were drilled until bedrock was encountered, between 26 and 32 feet below the ground surface (bgs). Borings SB1, SB3, and SB5 were completed as groundwater monitoring wells MW-1, MW-2, and MW-3, respectively. Soil samples were collected at approximately five-foot intervals from each boring.

Twenty-three soil samples were collected during the investigation and were compared to the proposed cleanup standards developed for the Cascade Laundry site. All samples met the cleanup standards, except for one sample that exceeded for gasoline-range petroleum and one sample that exceeded for diesel and oil-range petroleum. Dry cleaning solvents including PCE and breakdown products of TCE and vinyl chloride were detected in the soil, but none exceeded the standards.

Groundwater was encountered in discontinuous lenses of sandy soil at within the borings. Shallow and deep wells were initially planned at the site, but due to the presence of bedrock between 26 and 31 foot depth, the regional groundwater table could not be reached. Therefore, wells were installed to evaluate the site's perched water zones. Following well development, only MW-1 possessed a flow and recharge rate sufficient to provide a groundwater sample. One groundwater sample was collected from MW-1 in July 2018. The water sample contained concentrations of gasoline and diesel-range petroleum, benzene, vinyl chloride, and three other halogenated VOCs above MTCA Method A cleanup standards, for protection of groundwater.

# 2.0 GENERAL PROJECT INFORMATION

The project's goals were to better characterize the site's soil and groundwater quality.

## Project Address

205 Prospect Street
Bellingham, Washington 98225

Contact information about the project operations including property owner and environmental consultant are provided below.

## Property Owner and Project Requestor

Eco Bloom LLC
914 12th Street
Bellingham, Washington 98225
Contact: Sonja Max

## Environmental Consultant

Stratum Group
PO Box 2546
Bellingham, WA 98227
Contact: Kim Ninnemann
360-714-9409
kim@stratumgroup.net

# 3.0 SITE DESCRIPTION

## 3.1 Site Location

The Cascade Laundry site is located along the west side of Prospect Street between Flora Street and Central Avenue in the downtown area of Bellingham, Washington. The site occupies one tax parcel that utilizes the address of 205 Prospect Street. The property is located in the northwest quarter of the southwest quarter Section 30, Township 33 North, Range 3 West of the Willamette Meridian. The location of the subject property is presented in Figure 1, below.

## 3.2 Site and Vicinity Characteristics

The site is developed with a two-story building with a daylight basement. The site has undergone a significant interior renovation and has been utilized as an art/furniture gallery since approximately 2015, a hard cider press and restaurant since 2018, and a performing arts theater since 2019. The subject property is surrounded by commercial properties along Prospect Street and Maritime Heritage Park (former landfill) to the west.

An aerial photograph of the site and vicinity is provided in Figure 2.

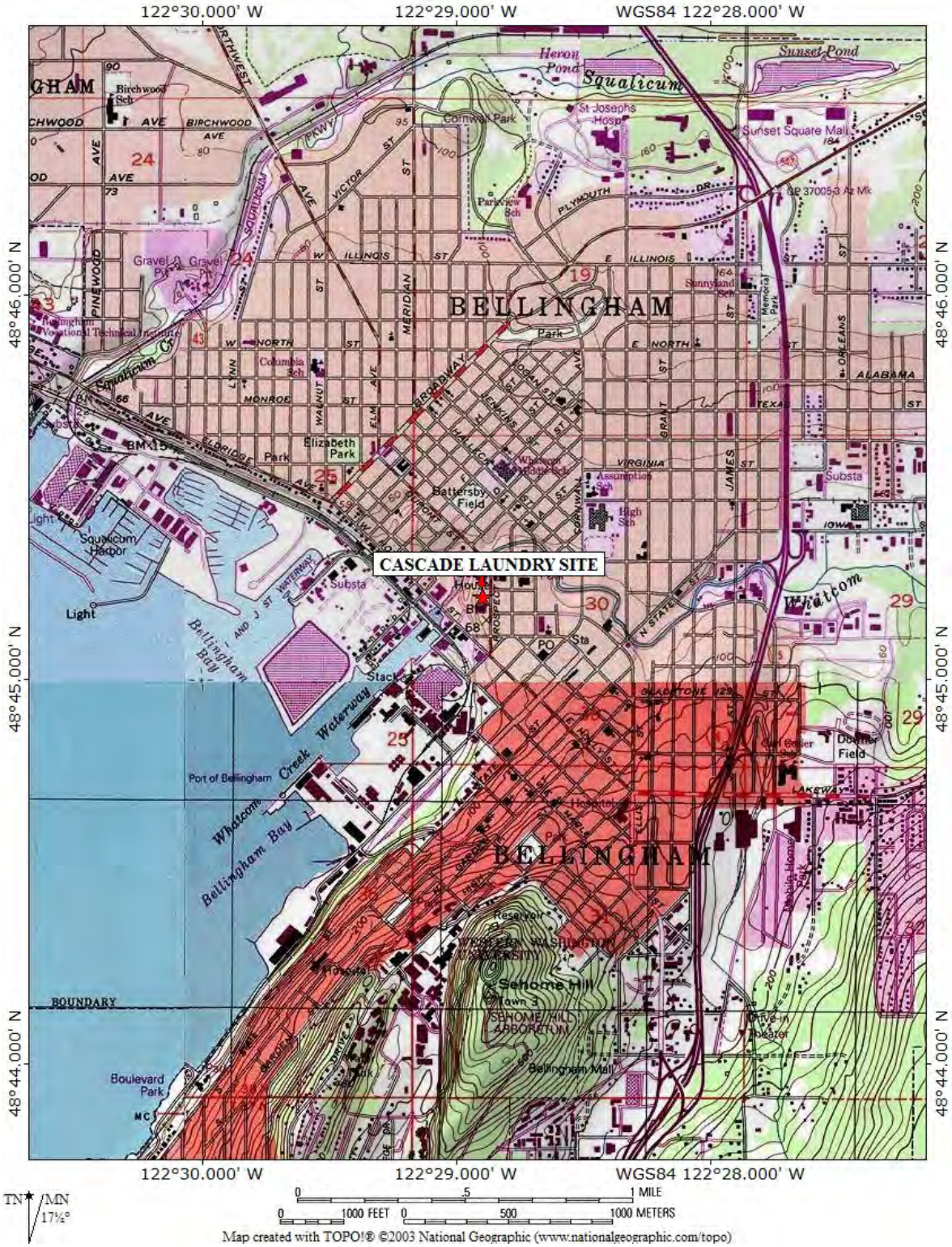



**Figure 1.** Site Vicinity Map


**Figure 2.** Aerial photograph of site and vicinity (GoogleEarth, 2018)

## 3.3 Physical Characteristics of Site

The subject property slopes gently to the west. The slope of the property increases toward the western property boundary, with a steep former shoreline slope along and adjacent to the western property boundary. The slope is vegetated and is approximately 35 feet high. The site has an elevation of approximately 65 feet above mean sea level along Prospect Street and approximately 55 feet along its western boundary. The Whatcom Creek estuary is located approximately 320 feet to the northwest and the Whatcom Waterway is located approximately 500 feet west of the subject property.

### *3.3.1 Site Geology and Soils*

The following descriptions of the surficial deposits in the vicinity of the subject property were interpreted from the *Geologic Map of the Bellingham 1:100,000 Quadrangle, Washington* (Lapen, 2000). According to Lapen (2000), the subject property is underlain by Bellingham glaciomarine drift. The Bellingham drift was deposited by melting glacial ice near the end of the last glacial period when the area was submerged below sea level. The Bellingham drift generally consists of silty clay.

Numerous environmental borings have been completed on the subject property to depths of up to 32 feet. In addition, the Department of Ecology indicates that one well log is on file for the

property. Based upon these boring logs and the borings conducted for this investigation, the underlying geology generally consists of silty clay, clayey silt, sandy clay and sandy silt to depths of up to 32 feet. Chuckanut sandstone bedrock was encountered between 26 and 32 feet bgs. Layers of sand were identified in numerous borings. The sand units vary from 1 to 10 feet thick and some sandy zones have lenses of clay.

Fill material was identified in some of the borings on the west side of the property and included organic material and pieces of glass and charcoal. Fill is also located at the southwestern corner of the building, east of a concrete retaining wall. The fill material at this location was largely comprised of loose brown silty sand. Some bricks, pipes, and other miscellaneous debris were observed within the fill material. Organic material, woody debris, and some brick fragments were identified in the upper 7 feet along the top of the slope, near the western property boundary.

Representative logs of the borings completed for this investigation are provided in Appendix II.

### *3.3.2 Site Hydrology*

No surface water features are located on the subject property. The property is located approximately 550 feet east of the Whatcom Waterway and includes the upper portion of the original shoreline bluff above the historical estuary. No groundwater seeps have been observed along the bluff.

The direction of shallow groundwater flow is generally a function of topography. The property is located on topography that slopes moderately to the west-southwest, toward Bellingham Bay. Based on topography, shallow groundwater beneath the subject property is expected to flow to the west, toward Bellingham Bay and Whatcom Creek.

Previously completed environmental investigations on the property identified groundwater to be present in discontinuous and inconsistent lenses of sandy soil below approximately 12 feet bgs. This groundwater is not likely representative of a regional groundwater table. Groundwater was identified in three of the borings completed for this investigation in narrow sandy lenses that ranged between 12 and 28 feet bgs. Recharge rates were very low for two of the three wells.

Our review of groundwater sampling reports for the adjacent Maritime Heritage Park site, located on the adjacent property to the west (also known as Holly Street landfill) indicates that groundwater is present on the park site at 12 to 13 feet below the ground surface. These groundwater levels correspond with a groundwater depth of approximately 43 feet below the ground surface at the subject property. Groundwater flow direction of groundwater at the monitoring wells within the park indicates flow to the northwest, toward Whatcom Creek (Landau, 1993).

# 4.0 ENVIRONMENTAL HISTORY

The subject property and vicinity were initially developed as a sawmill in approximately the 1850s as part of the earliest area of development along Bellingham Bay. An 1892 photograph of the site and vicinity indicates that a home was located on the subject property at that time.

The main structure of the existing building on the site was constructed on the site in 1922. The southern portion of the subject property was utilized as a car sales lot until approximately 1935.

Cascade Laundry began to utilize the subject property by at least 1932. An addition was added to the south side of the building in the 1966. Cascade Laundry utilized the building for cleaning clothing, rugs, and miscellaneous goods, dry cleaning, and dyeing fabric. The year that the dry cleaning operation began is unknown but is believed to have ended by 1971. The site remained in use as a commercial laundry facility through the early 2000s.

Several environmental investigations have taken place on the site, including tank removals, soil and groundwater investigations, and indoor air quality sampling. The site's environmental history is described in the following documents in chronological order:

- **1992:** *Underground Storage Tank Site Check/Site Assessment Checklist (Welch)*
  Documents the removal of a 500-gallon gasoline UST. No contamination identified.

- **2006:** *Phase I and Phase II Environmental Site Assessment (Stratum Group)*
  Phase I report identified site's former use as a dry cleaner as a recognized environmental condition. Five test pits were completed around the south and west sides of the building. One underground dry cleaning tank and PCE contaminated soil identified near the southwest corner of the building.

- **2007:** *Phase II Environmental Borings (GeoEngineers)*
  Four borings were completed to depths of 29 feet. No petroleum contamination found in the soil or groundwater of the southeast corner of the property, near Prospect Street and closest to the adjacent former gasoline station. Gasoline-range petroleum, diesel/oil, and PCE was found in soil above the MTCA Method A cleanup standards between 15 and 29 feet deep along the top of the slope, west of the building.

- ***2010**: Tank Removal Report (Whatcom Environmental Services)*
  Documents the removal of a 3,200-gallon heating oil tank and a 300-gallon dry cleaning tank. No contamination was identified around the heating oil tank. Gasoline range petroleum, xylenes, and PCE at concentrations that exceed the MTCA Method A cleanup standards were identified in the bottom and sidewalls of the excavation around the dry cleaning tank.

- **2011:** *Site Characterization Report (Whatcom Environmental Services)*
  Five borings completed around the exterior of the building to depths of up 30 feet depth. Gasoline-range petroleum, benzene, xylene and PCE were identified in the fill soil near the southwestern corner of the property at depths between 14 and 25 feet. Groundwater was encountered between 12 and 17 feet. Gasoline-range petroleum, benzene, and PCE were detected above the MTCA Method A cleanup standards.

- **2012:** *Site Characterization Report – Building Interior Soil Borings (Whatcom Environmental Services)*
  Four borings were extended through the floor of the Cascade Laundry building. One boring, located in the southern building addition, had exceedences of gasoline-range petroleum, benzene, ethylbenzene, and xylenes in the soil at 14.5-15.5 feet depth. PCE was detected above the cleanup standard in the groundwater within the two borings in the southern building addition.

- **2015:** *Environmental Baseline (Stratum Group*)
  Compilation of soil and groundwater data and maps completed for the Cascade Laundry site. Report includes samples of soil and water within an interior sump and results from an indoor air quality test. Soil in bottom of sump in the southwestern corner of the building had diesel and oil concentrations above the state cleanup standards. Some volatile organic compounds (VOCs) were detected in the air quality within the building. The report found the air quality to be protective of workers during an 8-hour work shift, per Washington State Labor and Industries permissible exposure limits; however, the data is inconclusive as to the source of the VOCs.

- **2018:** *Underground Storage Tank Removal and Hazardous Waste Generator Identification (Stratum Group)*
  Documents the removal of one 600-gallon Stoddard solvent UST previously located near the southwest corner of the building. Approximately 300 gallons of fluid was pumped out of the tank prior to removal. Disposal of the fluid required registering the property as a Hazardous Waste Generator with the Department of Ecology. The site was assigned the RCRA Site ID of WAH000054560. Gasoline contamination was identified at concentrations above MTCA cleanup standards in the base of the tank excavation. VOCs were detected but at levels below state cleanup standards.

- **2018 & 2019**: *Sub-slab and Indoor Air Sampling* (Stratum Group)
  Stratum Group oversaw the installation of four vapor pins through the concrete floor of the building's main floor and basement in January 2017.

Air samples were collected from the four vapor pin ports and seven indoor air locations in January 2017. Follow up sampling was completed from two of the vapor pin ports in April 2019. The report was completed concurrently with this remedial investigation report.

# 5.0 CONTAMINANTS OF CONCERN

Based upon the site's historical use as dry cleaner and results from previous sampling events, halogenated volatile solvents (VOCs) and petroleum products are the primary contaminants of concern. The gasoline-range petroleum at the site is identified in the laboratory reports as mineral spirits (aka Stoddard solvent), which is a historically common dry cleaning solvent.

Table 1 identifies the contaminants of concern at the Cascade Laundry site based upon previous detections or potential to impact soil, groundwater or indoor air quality.

**Table 1.**Cleanup standards for protection wildlife and human health

| Analyte |
|---|
| **Gasoline** |
| **Diesel** |
| **Oil** |
| **Benzene** |
| **Ethylbenzene** |
| **Xylenes** |
| **Tetracholorethene (PCE)** |
| **Trichloroethylene (TCE)** |
| **Vinyl Chloride** |

## 5.1 Cleanup Standard Development

Department of Ecology offers three options for cleanup standards: Method A, Method B, and Method C.

Method A cleanup standards have been developed for the most common contaminants for protection of human health. Method A standards are used at sites where relatively few hazardous substances are present and cleanup actions are routine. Terrestrial ecological evaluations must be conducted as part of the Method A process. Protection of ecological receptors may result in more stringent soil cleanup standards than the Method A. Site cleaned up to Method A cleanup standards can be used without further restrictions.

Method B is considered the universal method for determining cleanup standards for all media on a site and is applicable to all sites. Risk assessment equations were developed to calculate Method B cleanup standards using standard default formulas and assumptions. The Method B risk assessments can also be modified using site-specific information to develop modified Method B cleanup standards. Method B cleanup standards must be at least as stringent as: a) concentrations developed under state and federal law; b) cause no adverse effects to protection and propagation of aquatic life or terrestrial ecological receptors; c) cause no acute or chronic toxic effects on humans, such that additive health effects do not cause a total excess lifetime cancer risk of one in one hundred thousand (hazard index ≤ 1); d) does not include individual contaminant standards that pose a lifetime cancer risk of one in one million in humans; and e) eliminates or minimizes potential for food chain contamination for humans. Site cleaned up to Method B cleanup standards can be used without further restrictions.

Method C cleanup standards are utilized on industrial sites and typically require an institutional control to maintain protection for human and ecological health. Based upon the site being in commercial use, Method C standards will not be developed or utilized for the Cascade Laundry site.

Numerous environmental studies have been completed on the site and have utilized MTCA Method A cleanup standards (Chapter 173-340 WAC) as screening levels. The site has exceeded the Method A screening levels for numerous halogenated VOCs and petroleum products in both soil and groundwater.

Cleanup standards for the Cascade Laundry site need to be protective of human health and the environment and can be determined through comparison of Method A standards, standard or site-specific Method B standards, standards that are protective of the environment (i.e. plants, soil biota and/or wildlife), and standards that protect contaminants from migrating between media such as through leaching or vapor intrusion.

Section 5.1.1 and Section 5.1.2 provide background for development of standards for the terrestrial ecological evaluation and site-specific petroleum concentrations. Section 5.1.3 provides a table with all the cleanup standards for each contaminant, followed by the proposed cleanup standards for the site in Section 5.1.4.

### *5.1.1 Terrestrial Ecological Evaluation*

A Terrestrial Ecological Evaluation (TEE) is required if hazardous substances are released to the soil at a site. The TEE is conducted to determine if cleanup standards for the site are required to be protective of soil biota, plants and/or wildlife.

The MTCA cleanup regulations (Chapter 173-340 WAC) require that the potential impact of hazardous substances be evaluated for terrestrial ecological receptors when soil contamination is present (WAC 173-340-7490 through 173-340-7494). The regulation requires that the site meet requirements for an exclusion or a terrestrial ecological evaluation (TEE) must be completed that determines cleanup standards for protection of wildlife, plants and soil biota.

#### *5.1.1.1 Ecological Characterization of Site*

The U.S. Fish and Wildlife mapping system IPaC and Washington Department of Fish and Wildlife Priority Habitats and Species Reports were used to determine if critical habitat and endangered species utilize the subject property and vicinity. A list of habitats and species provided by the both programs are provided in Appendix III.

No state-level priority habitats or federal critical habitats were identified on the subject property; however, the big brown bat (eptesicus fuscus) has a breeding area in the vicinity according to the Washington Fish and Wildlife. The closest bid brown bat breeding area is along the Whatcom Creek estuary. No critical habitats are mapped within the vicinity according to the US Fish and Wildlife.

No threatened or priority species were listed in the area through the Washington State Fish and Wildlife report.

The US Fish and Wildlife report indicates that two mammals (grey wolf and North American wolverine), three birds (marbled murrelet, streaked horned lark and yellow-billed cuckoo) were identified as potential Federal priority species that may be located in the vicinity of the subject property. Additionally, two fish (bull trout and dolly varden) are mapped as species in the area.

#### *5.1.1.2 Exclusion Evaluation*

A site is excluded from the TEE evaluation if:

1. All of the contamination at the site is located deep in the soil and will not reach the ecological receptors **(Exclusion 1; requires a restrictive covenant)**; OR
2. All of the contamination at the site is covered by physical barriers **(Exclusion 2; requires a restrictive covenant)**; OR
3. There is insufficient habitat surrounding the site (depending on the type of contaminant) to endanger ecological receptors **(Exclusion 3)**; OR
4. The contaminant levels at the site are lower than natural background levels **(Exclusion 4)**

Based upon our review of the Cascade Laundry site, the property does **not** meet the requirements of an exclusion.

#### *5.1.1.3 Simplified TEE*

To determine if the site can use the simplified TEE, the site must be evaluated for natural areas, vulnerable species, extensive habitat and risk to significant wildlife populations. Table 2 summarizes the information to determine if a simplified TEE is possible for the site.

**Table 2.** Applicability of Simplified TEE

| Sensitive Areas | Description | Response |
|---|---|---|
| **Natural Areas** | Is site located on or directly adjacent to areas where native or semi-native vegetation will be maintained or restored (i.e. green belts, forest, open space, riparian areas)? | Yes.<br>Site is adjacent to a park with some native vegetation landscaping on the slope adjacent to the site. Remainder of park is maintained lawn. |
| **Vulnerable Species** | Is the site used by vulnerable species such as threatened, endangered, priority species or species of concern for wildlife or plants? | No.<br>None of the species identified by Washington State or US Fish and Wildlife utilize the subject property. |
| **Extensive Habitat** | Is the site located on a property that contains at least 10 acres of native vegetation within 500 feet of site? | No |
| **Risk to Significant Wildlife Populations** | Department of Ecology staff determine if significant wildlife populations may be impacted | Unknown |
| **Can the site use the simplified TEE?** | | **No** |

Stratum Group had to use some discretion regarding the determination of whether the adjacent Maritime Park is considered a "natural area" for purposes of the TEE. The park was determined to be a natural area, as a conservative evaluation, and therefore the simplified TEE could not be used. A site-specific TEE is required for the Cascade Laundry site, based upon our review.

*5.1.1.4 Site-Specific TEE*

The site-specific TEE procedures require 1) problem formulation; 2) selection of an appropriate evaluation method; and 3) establishment of ecologically protective soil concentrations. An uncertainty analysis can be completed, if needed.

The TEE Evaluation Form that documents the TEE evaluation is provided in Appendix III.

5.1.1.4.1 Problem Formulation

The contaminants of ecological concern at the site are gasoline, diesel and oil-range petroleum, benzene, ethylbenzene, xylenes, PCE, and vinyl chloride. Wildlife at the Cascade Laundry site has two potential exposure pathways: direct contact and ingestion. The primary exposure pathway at the site is via direct contact; however much of the contamination is located below pavement and buildings or lower than 6 foot depth. The secondary exposure pathway is through ingestion of vegetation, soil and/or soil biota.

5.1.1.4.2 Selection of an Appropriate Evaluation Method

The Cascade Laundry site is currently utilized as a commercial property and is zoned Commercial. Based upon WAC 173-360-7490, industrial and commercial properties need only to be evaluated for terrestrial wildlife protection. Plants and soil biota do not need to be evaluated at the site because of its commercial/industrial use.

We propose that the concentrations presented in MTCA Table 749-3 be used for the contaminants of concern for protection of wildlife.

5.1.1.4.3 Ecologically Protective Soil Concentrations

The cleanup standards for protection of wildlife, based upon MTCA Table 749-3 for the contaminants of concern are presented in Table 3.

**Table 3.**Cleanup standards for protection wildlife and human health

| Analyte | Ecological Indicator Concentrations for Wildlife, TEE Table 749-3 (mg/kg) |
|---|---|
| **Gasoline** | 5,000 |
| **Diesel** | 6,000 |
| **Oil** | |
| **Benzene** | not available |
| **Ethylbenzene** | not available |
| **Xylenes** | not available |
| **Tetracholorethene (PCE)** | not available |
| **Ttrichloroethylene (TCE)** | not available |
| **Vinyl Chloride** | not available |

Gasoline and diesel/oil-range petroleum are the only contaminants identified in the site soils that have wildlife protection values in the MTCA regulation. The concentrations are 5,000 mg/kg for gasoline and 6,000 mg/kg for combined concentration of diesel and oil. These concentrations are greater than the site-specific MTCA Method B concentrations calculated for petroleum and therefore the wildlife will be protected under the site-specific cleanup standard.

### *5.1.2 Site-Specific Method B Cleanup Standard for Petroleum*

Additional analytical analyses were completed on four soil samples including samples that had exceedences for gasoline-range petroleum, as well as samples that exceeded MTCA Method A standards for benzene, ethylbenzene, and/or diesel and oil-range petroleum from the July 2018 sampling event. The sample analyses were needed to utilize Ecology's Method B risk calculator worksheets for petroleum. The analyses for the worksheet included NWPTH-GX, BTEX, hexane

and carbon fractions using Method NWVHP. The sample where diesel and oil-range petroleum was detected was also analyzed for NWEPH.

The results for the samples are provided below in Table 4. The site specific carbon fraction data was entered into Ecology's MTCATPH11.1 Version 11.1 *Workbook for Calculating Cleanup Levels for Petroleum Contaminated Sites*. No changes were made to default parameters within the worksheet. Copies of the Method B worksheets are provided in Appendix III.

**Table 4.** Carbon Range Petroleum Fraction Results

| Analytes (methodology) | | Concentration of Contaminants (mg/kg) | | | |
|---|---|---|---|---|---|
| | | **SB1-17** | **SB3-21** | **SB3-25** | **SB4-15** |
| **Gasoline** | **NWTPH-GX** | **2,200** | **3,500** | **490** | **570** |
| **Benzene** | | U<0.3 | U<0.3 | **0.51** | U<0.3 |
| **Toluene** | | U<0.5 | U<0.5 | U<0.5 | U<0.5 |
| **Ethylbenzene** | | **5.0** | **9.9** | **3.3** | U<0.5 |
| **Xylenes** | | **6.8** | **7.0** | U<2.0 | U<2.0 |
| **C5-C6 Aliphatics** | **NWVHP** | U<500 | U<500 | U<100 | U<40 |
| **C6-C8 Aliphatics** | | U<500 | U<500 | U<100 | U<40 |
| **C8-C10 Aliphatics** | | **1,200** | **1,200** | **140** | **310** |
| **C10-C12 Aliphatics** | | **1,300** | **960** | **150** | -- |
| **C8-C10 Aromatics** | | **1,300** | **1,200** | **170** | **81** |
| **C10-12 Aromatics** | | U<500 | U<500 | U<100 | -- |
| **C12-C13 Aromatics** | | U<500 | U<500 | U<100 | -- |
| **Hexane** | | U<20 | U<20 | U<4.0 | U<1.6 |
| **>C8-C10 Alphiatics** | **NWEPH** | -- | -- | -- | **11,000** |
| **>C10-C12 Alphiatics** | | -- | -- | -- | **6,900** |
| **>C12-C16 Alphiatics** | | -- | -- | -- | **310** |
| **>C16-C21 Alphiatics** | | -- | -- | -- | **3,200** |
| **>C21-C34 Alphiatics** | | -- | -- | -- | **17,000** |
| **>C8-C10 Aromatics** | | -- | -- | -- | **5,500** |
| **>C10-C12 Aromatics** | | -- | -- | -- | **1,300** |
| **>C12-C16 Aromatics** | | -- | -- | -- | **120** |
| **>C16-C21 Aromatics** | | -- | -- | -- | **2,400** |
| **>C21-C34 Aromatics** | | -- | -- | -- | **10,000** |
| **Total TPH concentration from carbon fractions** | | **3811.8** | **3,369.90** | **463.81** | **57,730** |
| **Calculated Method B soil cleanup standard** | | **2,922** | **2,966** | **1,975** | **3,597** |
| **Mean Method B cleanup standard** | | **2,865** | | | |

The calculated Method B soil cleanup standard for direct contact, based upon site-specific data ranged from 1,975 mg/kg to 3,597 mg/kg. The mean (average) of this data was used as a representative cleanup value for total petroleum hydrocarbons on the site.

Based upon these values, which are protective of human health for direct contact with the soil, the cleanup standard on the site is 2,865 mg/kg.

### *5.1.3 Cleanup Standard Comparisons*

Cleanup standards will need to be developed for soil concentrations on the site. Soil cleanup standards are set to be protective of direct interaction with the soil from humans and wildlife as well as protection of surface water quality and groundwater quality.

We recommend that the site utilize the Method B cleanup standards on the Cascade Laundry site. Sites that meet Method B cleanup standards have unrestricted land use. To provide a point of comparison, the highest concentration of the contaminant detected in the soil, throughout all the onsite sampling events, is provided in Table 5, below.

**Table 5.** Soil Cleanup Standard Comparison

| Contaminant | MTCA Method A Cleanup Standard (mg/kg) | MTCA Method B Cleanup Standard (mg/kg)[5] | Cleanup Standards for Protection of Wildlife[1] (mg/kg) | Highest Concentration Detected Onsite (mg/kg) |
|---|---|---|---|---|
| **Gasoline** | 30/100[2] | 2,865[6] | 5,000 | 3,500 |
| **Diesel** | 2,000 | | 6,000[3] | 13,000 |
| **Oil** | | | | 13,000 |
| **Benzene** | 0.03 | 18 | not available | 7.2 |
| **Ethylbenzene** | 6 | 800 | not available | 9.9 |
| **Xylenes** | 9 | 13[7] | not available | 16 |
| **Tetracholorethene (PCE)** | 0.03 | 480 | not available | 45 |
| **Trichloroethylene (TCE)** | 0.03 | 12 | not available | 0.018 |
| **Vinyl Chloride** | -- | 0.67 | not available | 1.3 |

1 = the wildlife protection levels are based upon Table 749-3 for sites that conduct a site specific TEE; 2 = cleanup standard for gasoline is 30 if benzene is present and 100 if benzene is not present; 3 = sample cannot have concentration at the surface soil that exceeds residual saturation concentrations; 4 = Ecology provides specific guidance regarding vinyl chloride, due to higher cancer risks from exposure in early life versus adulthood and cancer versus non-cancer cleanup standards; 5 = Method B values taken from Ecology's CLARC database; 6 = see section 5.1.2 for site-specific calculation of standard; 7 = CLARC database has cleanup standards for m-,o-, and p-xylenes. The strictest cleanup value (equal to m-xylene standard) was chosen as a protective concentration for total xylenes at the site.

### *5.1.4 Proposed Soil Cleanup Standard for Cascade Laundry*

MTCA Method B cleanup standards are recommended for the Cascade Laundry site. Table 6 shows the proposed cleanup standards for the site.

**Table 6.** Proposed Soil Cleanup Standards

| Contaminant | Site-Specific Cleanup Standard (mg/kg) |
|---|---|
| **Gasoline** | 2,865 |
| **Diesel** | |
| **Oil** | |
| **Benzene** | 18 |
| **Ethylbenzene** | 800 |
| **Xylenes** | 13 |
| **Tetracholorethene (PCE)** | 480 |
| **Vinyl Chloride** | 0.67 |

### *5.1.5 Proposed Groundwater Cleanup Standard for Cascade Laundry*

Groundwater cleanup standards are generally developed to be protective of groundwater for drinking water purposes. Groundwater cleanup values are the same for MTCA Method A and Method B, for protection of drinking water. For this report, the values were compared to the Method A standard.

However, if the groundwater does not need to be cleaned up to meet drinking water standards, if the water is considered non-potable. A decision regarding whether groundwater is potable or non-potable is determined by Department of Ecology. Water is considered non-potable if the groundwater is not used for drinking water purposes, will not ever be used for drinking water purposes and no potential down gradient properties will utilize the groundwater for drinking water purposes.

MTCA regulations require that the following information be documented in order to eliminate groundwater as a requirement for cleanup (WAC 173-340-720 (2)):

- Groundwater does not currently serve as a drinking water source
- Groundwater is not a potential future source of drinking water (must meet one of the following reasons)
    - Low yield (≤ 0.5 gal/min)
    - Natural background levels of organic or inorganic constituents are high (ie total dissolved solids at ≥10,000 mg/L)
    - Recovery of groundwater for drinking purposes is technically impossible (depth or location)
- Department of Ecology determines it is unlikely for contaminated water to travel to groundwater that may be used as drinking water

Based upon our understanding of the site's groundwater, it is likely that the groundwater at the site will be considered to be non-potable based upon the site not being used as a drinking water source, no down gradient receptors based upon the down gradient site being a landfill, and the likely low yield of any onsite wells.

If groundwater is determined to be non-potable, the groundwater does not need to be remediated; however, the concentrations of contaminants in the groundwater cannot impact air quality through vapor intrusion or have other pathways of impacts to human health or ecological health.

Until water is determined to be non-potable, the proposed cleanup standards for groundwater quality at the site will be MTCA Method A standards (see Table 7).

**Table 7.** Groundwater Cleanup Standards

| Contaminant | MTCA Method A Cleanup Standard (µg/L) |
|---|---|
| **Gasoline** | 800/1,000[1] |
| **Benzene** | 5 |
| **Tetracholorethlyene (PCE)** | 5 |

1 = gasoline cleanup standard is lower if benzene is present

### *5.1.6 Points of Compliance*

The point of compliance at Cascade Laundry is throughout the site.

# 6.0 2018 SUBSURFACE INVESTIGATION

A ground penetrating radar survey and environmental borings were completed prior to installation of groundwater monitoring wells in June 2018. Public and private utility locates were completed to determine locations of underground utility lines prior to subsurface work.

## 6.1 Ground Penetrating Radar

A ground penetrating radar (GPR) survey was conducted on the property by CNI Locates of Bonney Lake, Washington on June 18, 2018. The survey was completed around the exterior of the western side of the property.

GPR provides non-destructive, detailed cross-sectional imagery of underground conditions and can be used to detect utility lines, tanks, changes in subsurface materials, or buried objects. The GPR unit consists of a sending antenna, which sends out pulses of radio waves (electromagnetic radiation), and a receiving antenna, which picks up those pulses as they reflect off underground objects. CNI Locates Inc conducted the survey using a portable GPR unit.

The only anomalies identified by GPR were utility lines and drains. No anomalies indicative of buried tanks or underground equipment were observed.

## 6.2 Boring Locations and Identification

The environmental drilling was completed by ESN Northwest of Olympia, Washington on June 19, 20 and 21, 2019. Samples were collected from four borings. A fifth boring was completed to determine whether a deeper boring/well could be installed, but the boring hit refusal at 32 foot depth and no samples were collected. The borings were completed with a truck mounted Geoprobe 7800 push probe drill rig. Three of the borings were completed as monitoring wells using hollow-stem auger drilling techniques, after soil samples had been collected with a push probe.

The locations of the borings are indicated on Figure 3, below.

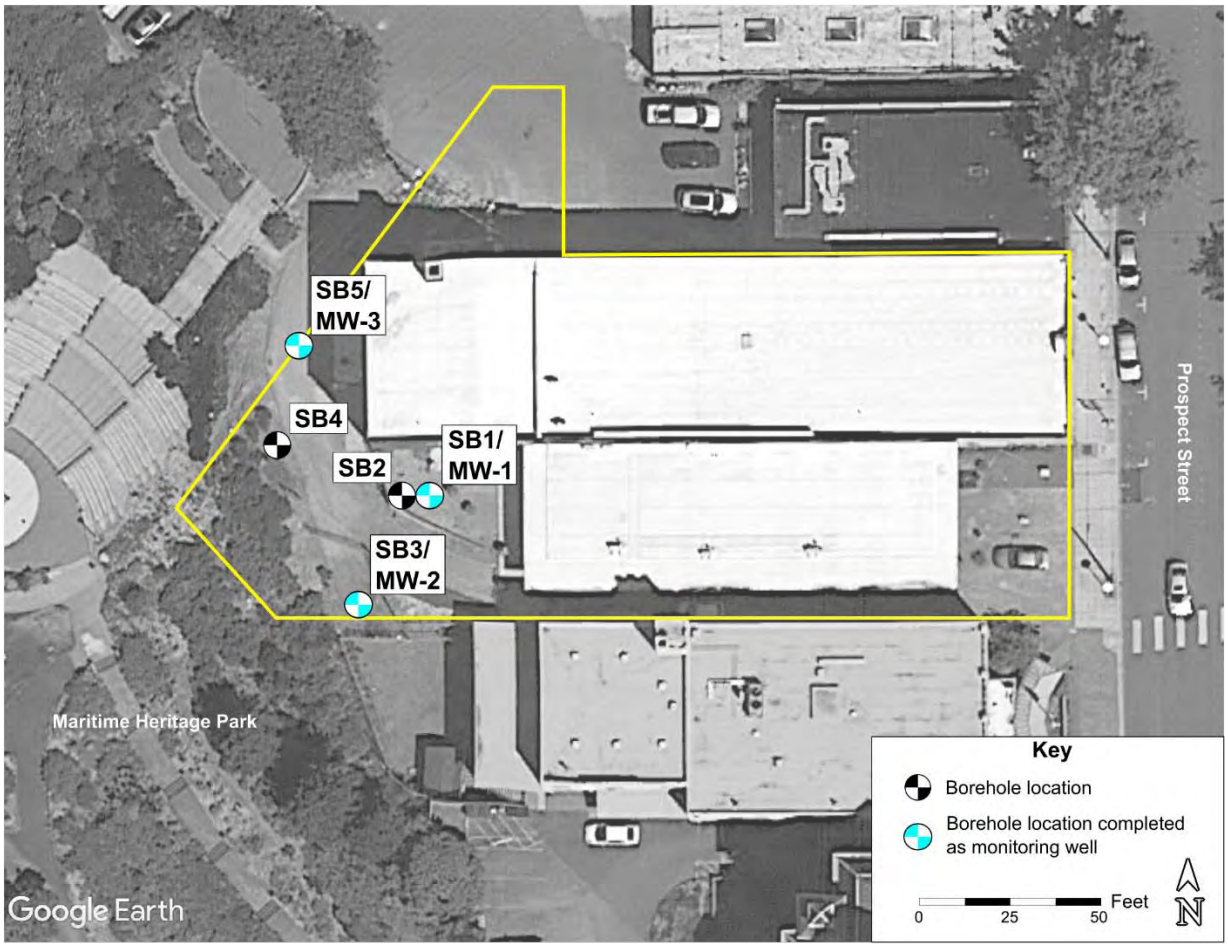



**Figure 3.** Environmental boring locations

## 6.3 Soil Samples

### *6.3.1 Soil Sampling Methods*

The push probe drill rig provided continuous soil samples using five foot long, two-inch diameter plastic tubing. The soil was field screened for odor, hydrocarbon sheen and soil discoloration at each sample location.

Soil was also field tested for vapors using a hand-held photoionization detector (PID). The PID used onsite was a RKI Eagle 2 with a 10.6eV lamp. Soil samples were placed in a sealable plastic bag and allowed to rest for approximately five minutes. The PID readings were collected from within the empty headspace of the plastic bag. Soil samples were collected with a stainless steel spoon from the soil tubes. Sampling equipment was disposable and/or was cleaned with Alconox and triple rinsed between each use.

Soil samples were generally collected at five foot depth intervals, unless rocks or other disturbances were encountered in the soil column. Additional soil samples were also collected from locations where contaminants were determined to be most likely, such as where discoloration or odors were present, at the top of the groundwater table, or where PID readings indicated elevated levels of volatile compounds. Soil samples were labeled with the boring number followed by the depth of the sample. For example, sample SB1-5 was collected from boring SB1 at five feet bgs.

Soil samples were placed into labeled, laboratory supplied four-ounce glass jars with a Teflon lined lid. A 10-gram soil sample was also collected using a syringe tube sampler and placed in a VOA container with methanol preservative and 10-grams of soil was placed into two VOAs with stir bars at each depth. Samples were placed into an ice-chilled cooler immediately after sampling.

Twenty-three (23) soil samples were collected from four borings between June 19 and June 21, 2018. The samples were delivered to ALS Laboratory Group in Everett, Washington on June 22, 2018.

### *6.3.2 Soil Sample Descriptions*

Five borings were completed on the subject property during drilling activities for this project; however, samples were only collected from four of the borings. Borings were advanced to between 26 and 32 feet bgs. Representative boring logs for each of the borings are provided in Appendix II. Boring logs include PID readings from each sample location.

Boring SB1 was completed south of the westernmost portion of the building, within an area of fill material. The fill material is supported by a retaining wall. The soil in the boring consisted of a mix of dark brown silt with concrete, metal and glass debris, and brown sand fill materials to approximately 10 feet bgs, underlain by alternating layers of relatively dense gray to brown silty sand, silt, and silty clay to 31 feet bgs. Soils were wet from approximately 17 to 19 feet bgs, approximately coincident with a zone of sandier soil. Elevated PID readings (420 to 1,744 ppm)

were encountered in samples from 12 to 20 feet bgs. Petroleum odors were encountered between approximately 12 and 24 feet bgs and a whiteish sheen was observed on soils from 12 to 17 feet bgs. Boring SB1 was terminated at 31 feet bgs after the drill rig hit refusal, due to bedrock. The boring was completed as monitoring well MW-1.

Boring SB2 was completed adjacent to SB1 in an attempt to drill deeper than 31 feet bgs. The boring was advanced using a hollow-stem auger to 30 feet bgs without collecting samples. A push probe was advanced from 30 feet bgs and encountered refusal at sandstone bedrock at 32 feet bgs. No samples were collected from SB2. The boring was backfilled with bentonite to the surface.

Boring SB3 was completed through the asphalt along the southwest edge of the subject property. The soil in the boring consisted of sandy gravel fill beneath the asphalt to approximately 1 foot bgs underlain by dark brown to reddish tan sandy and gravelly silt with few chunks of weathered sandstone to approximately 12 feet bgs; red-brown sand to 13.5 feet bgs; relatively dense, dark gray to black silty clay with trace organics to approximately 20.5 feet bgs; dark gray wet sand to 21.5 feet bgs; and dark gray clay to 28 feet bgs. Elevated PID readings (257 to 1,685 ppm) were encountered in samples from 20 to 28 feet bgs and a whiteish sheen was observed on samples from 21 to 28 feet bgs. A strong petroleum odor was noted at approximately 21 feet bgs. Boring SB3 was terminated at 28 feet due to drill rig refusal at sandstone bedrock. The boring was completed as monitoring well MW-2.

Boring SB4 was completed west of the southwest corner of the north portion of the building. Soil in the boring consisted of brown silt and silty gravel fill materials with trace glass, ceramic, and fiber debris and few thin sand lenses to approximately 17 feet bgs underlain by greenish gray silt and silty clay to 29 feet bgs. A narrow zone of wet soils was encountered in the bottom three inches of the boring. Elevated PID reading (389 to 788 ppm) were encountered in samples from 15 and 29 feet bgs with lower readings (11 to 28 ppm) encountered at 20 and 25 feet bgs. Dark black discoloration and a strong oil odor was encountered at approximately 15 feet bgs. The boring was terminated at 29 feet bgs due to drill rig refusal at sandstone bedrock. The boring was backfilled with bentonite to the surface. Due to less than three inches of wet soils at the soil-bedrock interface and lack of indicators of productive water zones higher in the soil column, the boring was not completed as a monitoring well.

Boring SB5 was completed along the northwest property boundary in the middle of an asphalt access road. The soil in the boring consisted of approximately three inches of asphalt underlain by sandy gravel to approximately 1-foot bgs and brown to gray silt to silty clay to 26 feet bgs. Narrow wetter zones of soil were encountered around 14 and 20 feet bgs. An elevated PID reading (274 ppm) was encountered in the sample at 20 feet bgs. No other indications of contamination were encountered. The boring was terminated at 26 feet bgs due to drill rig refusal due to sandstone bedrock. The boring was completed as monitoring well MW-3.

## 6.4 Soil Sample Results

Samples were delivered to ALS Laboratory Group in Everett, Washington for analysis. A complete copy of the analytical laboratory report and chain-of-custody is provided in Appendix II.

All twenty-three (23) soil samples were analyzed for halogenated solvents. Twelve of the 44 halogenated VOCs tested were detected within the soil samples. The concentrations of detected halogenated VOCs is provided in Table 8. Additional samples were analyzed for petroleum including gasoline, diesel, and oil-range organics, and BTEX constituents. BTEX was only analyzed within samples where gasoline was also detected. A summary of the soil sample results is presented in Table 9. The concentrations of the contaminants of concern are presented in Figure 4.

**Table 8.** Soil Sample Results
Halogenated VOCs

| Boring ID | Sample ID | Concentration of Contaminants (mg/kg) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **PCE** | **TCE** | **Vinyl Chloride** | **Bromo-methane** | **1,2-DCB** | **1,3-DCB** | **1,4-DCB** | **Trans 1,2-DCE** | **Cis 1,2-DCE** | **1,2,4-TCB** | **1,2,3-TCB** |
| SB1 | SB1-5 | **0.013** | U | U | U | U | U | U | U | U | U | U |
| | SB1-10 | **12** | **0.018** | U | U | U | U | U | U | U | U | U |
| | SB1-15 | U | U | **0.11** | **0.18** | **0.71** | **0.096** | **0.2** | U | U | U | U |
| | SB1-17 | U | U | **0.28** | U | **6** | **0.67** | **1.5** | **0.075** | U | **0.19** | **0.077** |
| | SB1-20 | U | U | **0.32** | U | **0.71** | U | **0.2** | U | U | U | U |
| | SB1-25 | U | U | **0.016** | U | U | U | U | U | **0.55** | U | U |
| | SB1-30 | U | U | U | U | U | U | U | U | U | U | U |
| SB3 | SB3-5 | **0.026** | U | U | U | U | U | U | U | U | U | U |
| | SB3-10 | U | U | U | U | U | U | U | U | U | U | U |
| | SB3-15 | U | U | **0.011** | U | U | U | U | U | U | U | U |
| | SB3-20 | U | U | U | U | U | U | U | U | U | U | U |
| | SB3-21 | U | U | **0.052** | U | **0.44** | U | U | U | U | U | U |
| | SB3-25 | U | U | U | U | **0.15** | U | U | U | U | U | U |
| SB4 | SB4-5 | **0.046** | U | U | U | U | U | U | U | U | U | U |
| | SB4-10 | **0.031** | U | U | U | U | U | U | U | U | U | U |
| | SB4-15 | **0.085** | **0.026** | **0.049** | U | **1.4** | U | U | U | **0.65** | **0.16** | **0.22** |
| | SB4-20 | U | U | U | U | U | U | U | U | U | U | U |
| | SB4-25 | U | U | U | U | **0.032** | U | U | U | U | U | U |
| | SB4-29 | U | U | U | U | **0.029** | U | U | U | U | U | U |
| SB5 | SB5-10 | U | U | U | U | U | U | U | U | U | U | U |
| | SB5-15 | U | U | U | U | U | U | U | U | U | U | U |
| | SB5-20 | U | U | U | U | U | U | U | U | U | U | U |
| | SB5-25 | U | U | U | U | U | U | U | U | **0.023** | U | U |
| ***Method B Cleanup Levels (mg/kg)*** | | ***480*** | ***12*** | ***0.67*** | ***110*** | ***7,200*** | ***Not available*** | ***190*** | ***1,600*** | ***160*** | ***34*** | ***Not available*** |

U = sample analyzed, but not detected at laboratory provided reporting limits;

**Table 9.** Soil Sample Results
Petroleum

| Boring ID | Sample ID | Concentration of Contaminants (mg/kg) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Gas | Diesel | Oil | B | T | E | X |
| SB1 | SB1-5 | U | U | U | -- | -- | -- | -- |
| | SB1-10 | U | U | U | -- | -- | -- | -- |
| | SB1-15 | **560** | U | U | U | U | U | U |
| | SB1-17 | **2,200** | **95** | **56** | U | U | **5.0** | **6.8** |
| | SB1-20 | **1,200** | U | U | U | U | **2.9** | **3.4** |
| | SB1-25 | U | U | U | -- | -- | -- | -- |
| | SB1-30 | U | U | U | -- | -- | -- | -- |
| SB3 | SB3-5 | U | U | U | -- | -- | -- | -- |
| | SB3-10 | U | U | U | -- | -- | -- | -- |
| | SB3-15 | U | U | U | -- | -- | -- | -- |
| | SB3-20 | **510** | U | U | U | U | U | U |
| | SB3-21 | **3,500** | **110** | U | U | U | **9.9** | **7.0** |
| | SB3-25 | **490** | U | U | **0.51** | U | **3.3** | U |
| SB4 | SB4-5 | U | U | **70** | -- | -- | -- | -- |
| | SB4-10 | U | **64** | **140** | -- | -- | -- | -- |
| | SB4-15 | **570** | **13,000** | **13,000** | U | U | U | U |
| | SB4-20 | **6.4** | U | U | U | U | U | U |
| | SB4-25 | **49** | U | U | U | U | U | U |
| | SB4-29 | **780** | U | U | U | U | U | U |
| SB5 | SB5-10 | U | U | U | -- | -- | -- | -- |
| | SB5-15 | U | U | U | -- | -- | -- | -- |
| | SB5-20 | **730** | U | U | U | U | U | U |
| | SB5-25 | U | U | U | -- | -- | -- | -- |
| ***Method B & Site Specific Cleanup Levels (mg/kg)*** | | ***2,865*** | | | ***18*** | ***7*** | ***800*** | ***13*** |

U = sample analyzed, but not detected at laboratory provided reporting limits; shaded boxes indicate that sample exceeds cleanup standard; -- = analyte not tested


**Figure 4.** Map of soil sample results for contaminants of concern

## 6.5 Monitoring Well Installation

Monitoring wells were installed in borings SB1, SB3, and SB5 were completed as monitoring wells MW-1, MW-2, and MW-3, respectively. The screening depths for the wells were chosen to allow collection from the narrow water bearing zones within the subsurface. A sand pack was created around the screened section of the well casing and two feet above the screened depths. Hydrated bentonite chips filled the remaining annulus to within one foot of the casing. The wells were completed with steel flush mount monuments.

MW-1 was completed as a monitoring well on June 19, 2018. The well was developed using a hollow-stem auger, after the push probe sampling was completed, to allow installation of 2-inch, schedule 40 PVC pipe. The well was screened from 15 to 25 feet bgs to capture the most productive water-bearing zone between 17 and 19 feet bgs. Silica sand was placed around the well from approximately 29 to 13 feet bgs to create a sand filter pack around the well. Hydrated bentonite chips filled the borehole annulus to approximately 1-foot bgs and the well was capped with a cement surface seal. MW-1 was given the unique Department of Ecology well identification number of BKX665.

MW-2 was completed as a monitoring well on June 21, 2018. The auger was unable to drill below approximately 8 feet bgs, due to encountering a boulder or some other hard object. MW-2 was instead completed using 1-inch schedule 40 PVC placed into the push probe borehole. The well was screened from 18 to 28 feet bgs to capture a narrow water-bearing zone at 20 feet bgs and between 25 and 27 feet bgs. Silica sand was placed around the well from approximately 28 feet to 15.5 feet bgs to create a sand filter pack around the well. Hydrated bentonite chips filled the borehole annulus to approximately 2 feet bgs and the well was capped with a cement surface seal. MW-2 was given the unique Department of Ecology well identification number of BJR716.

MW-3 was completed as a monitoring well on June 20, 2018. The well was developed using a hollow-stem auger, after the push probe sampling was completed, to allow installation of 2-inch, schedule 40 PVC pipe. The well was screened from 12 to 22 feet bgs to capture two narrow minor water-bearing zones at 14 and 20 feet bgs. Silica sand was placed around the well from approximately 26 to 10 feet bgs to create a sand filter pack around the well. Hydrated bentonite chips filled the borehole annulus to approximately 1-foot bgs and the well was capped with a cement surface seal. MW-3 was given the unique Department of Ecology well identification number of BJR715.

A diagram of the well construction is provided in Appendix II.

### *6.5.1 Well Development*

Stratum Group returned to the site on July 13, 2018 to develop the three monitoring wells. Water was manually purged from the wells using a bailer. The bailer was rigorously raised and lowered within the water column to pull out fine sediment in the screened zone. Approximately 3.5 gallons of water was purged from MW-1 and approximately 2.25 gallons of water was purged from MW-3. Well development ceased when the wells were purged dry. The bailer was unable to be lowered into the 1” well casing of MW-2 and therefore no water was purged from MW-2.

## 6.6 Groundwater Samples

Stratum Group returned to the site on July 24, 2018 to collect groundwater samples from the monitoring wells.

### *6.6.1 Groundwater Sampling Methods*

Prior to sampling, depth-to-water measurements were recorded. Attempts were made to purge three well volumes of water from each of the wells using a low flow peristaltic pump.

Water was pulled at low flow rates from the well with a peristaltic pump for sampling. Water from each well was placed into labeled, laboratory-supplied containers. Two 40mL VOAs with hydrochloric acid preservative and one 500 mL amber glass bottle for each sample were filled with groundwater at the site.

### *6.6.2 Groundwater Sample Description*

Depth-to-water measurements were collected on July 12, 2018, prior to well development, and on July 24, 2018, prior to water sampling. These measurements are presented in Table 4, below. The depth to water was measured from the north side of the top of the well casing.

**Table 10.** Depth-to-Water

| **Monitoring Well** | Depth-to-Water (feet) | |
|---|---|---|
| | July 12, 2018 | July 24, 2018 |
| MW-1 | 19.99 | 19.68 |
| MW-2 | 24.76 | 24.43 |
| MW-3 | 18.98 | 19.30 |

Approximately 3 gallons of water was purged from MW-1 prior to sampling before the well went dry. Purge was water clean with no visible turbidity. The well was allowed to recharge and then sampled. The sample was placed into an ice-filled cooler.

Minimal amounts of water were purged from MW-2 and MW-3 before they went dry. The purge water was gray and turbid in both wells. Groundwater recharge rates for both wells was very slow and insufficient volumes of water returned to the wells after 30 minutes. Based upon the limited volume of water, the samples were unable to be collected from MW-2 and MW-3 on July 24, 2018.

An attempt was made to sample MW-2 and MW-3 the following day on July 25, 2018 but insufficient water had filled the well to allow for sampling to occur.

## 6.7 Groundwater Sample Results

The water sample from MW-1 was delivered to ALS Laboratory Group in Everett, Washington for analysis on the day after sample collection on July 25, 2018. A complete copy of the analytical laboratory report and chain-of-custody is provided in Appendix II.

One groundwater sample was analyzed by the laboratory. The sample was analyzed for halogenated VOCs, gasoline, diesel, oil-range petroleum and BTEX. A total of 44 chemicals were analyzed as part of the halogenated VOC analysis; however only five of the chemicals were detected.

A summary of the groundwater sample results is presented in Table 5 and a map with the groundwater sample results is provided in Figure 6. Table 5 includes only the chemicals that were detected the samples.

**Table 11.** Groundwater Sample Results

| Sample ID | Concentration of Contaminants (µg/L) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gas | Diesel | Oil | Benzene | Toluene | Ethyl-benzene | Xylenes | Vinyl Chloride | Trans 1,2-DCE | Cis 1,2-DCE | 1,2-DCP | 1,2-DCB |
| MW-1 | **2,100** | **2,400** | U | **6.3** | 1.3 | 6.1 | 8.9 | **460** | 14 | **160** | **17** | 3.5 |
| ***MTCA Method A (µg/kg)$_a$*** | ***1,000/800$_b$*** | ***500$_c$*** | | ***5*** | ***1,000*** | ***700*** | ***1,000*** | ***0.2*** | ***160*** | ***16*** | ***1.2*** | ***720*** |

a = screening levels match information provided in Table 1 and are MTCA Method A or Method B values, when available; b = The lower clean up value is used if benzene is present, otherwise, the higher clean up number is used; c = cleanup standard is based on a combination of concentrations of diesel and oil; U = sample analyzed, but not detected at laboratory provided reporting limits.

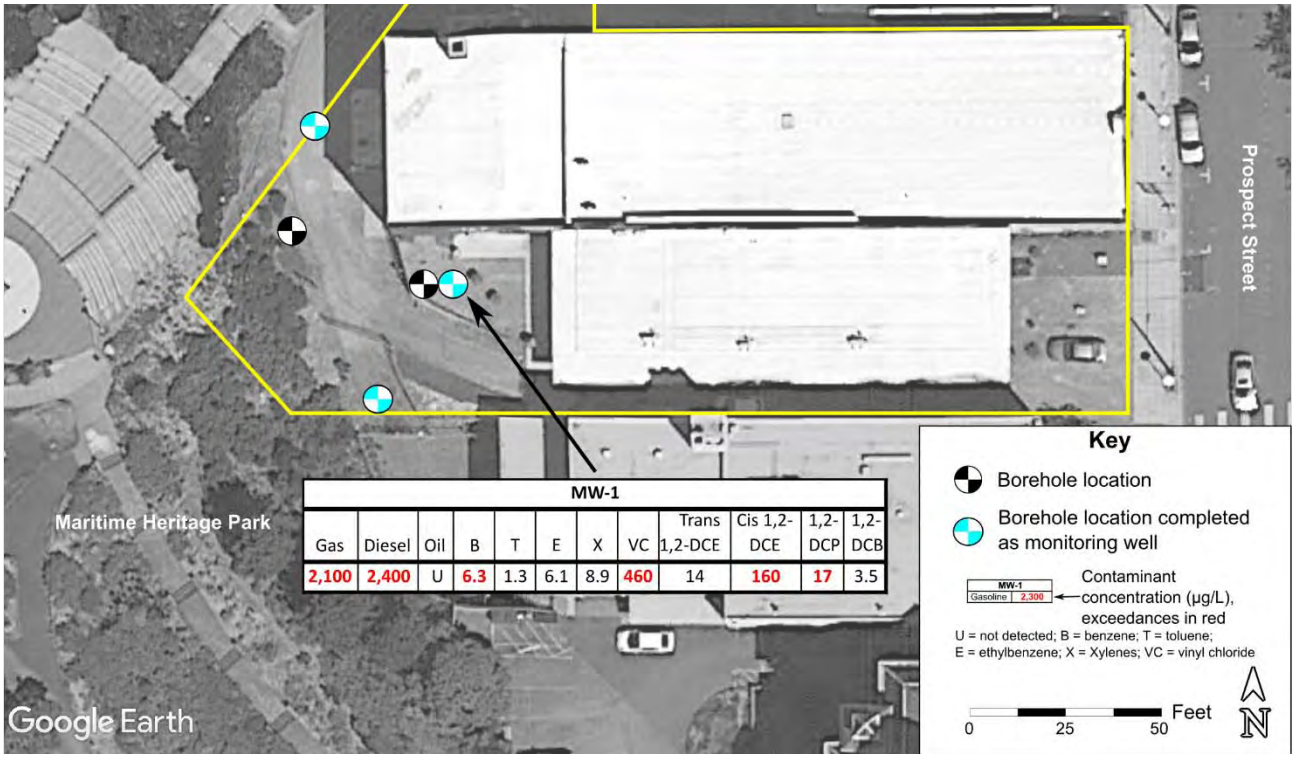



**Figure 5.** Map of groundwater sample results.

## 6.8 Laboratory Quality Assurance

ALS Laboratory of Everett, Washington was responsible for completion of the analytical assessment of the samples. The laboratory is accredited with the Department of Ecology (accreditation number C601). The laboratory reporting limits were below the cleanup standards for all non-detect analytes, which indicates that non-detect results for all analytes are below the cleanup screening standards.

The following quality assurance procedures were completed by the laboratory: surrogate recovery, method blank, and laboratory blank and blank spike duplicates. The surrogate recoveries were outside the control limit for numerous samples due to dilution of the samples or matrix interference. The low recoveries indicate that the concentrations reported may be biased low; however, the laboratory report continues to provide a sufficient documentation of the chemicals that are present and their approximate concentrations. It is our opinion that the laboratory quality control is sufficient to allow us to interpret the soil and groundwater sample results for this report.

## 6.9 Sample Results Discussion

The results of the sampling events are discussed below.

### *6.9.1 Soil Sample Results Discussion*

Tetrachloroethane (PCE) and its daughter products trichloroethene (TCE) and vinyl chloride, as well as gasoline-range Stoddard solvent were identified as the primary solvents detected in the site soils, along with additional breakdown products; however all the results were below the MTCA Method B cleanup standards for the site. PCE and TCE were detected within samples within the upper 15 feet of Borings SB1, SB3 and SB4. Vinyl chloride was detected in SB1, SB3 and SB4 to depths up to 21 foot. No PCE, TCE or vinyl chloride were detected in boring SB5. The concentrations of the breakdown products are one or more orders of magnitude less than the Method B standard and therefore do not pose a risk at the site.

Gasoline-range petroleum was detected in all four borings between 15 and 29 foot depths. Using the site-specific Method B cleanup standard (2,865 mg/kg), all the results were below the cleanup standard, except for one sample from SB3 at 21 foot depth, which had a detection of gasoline at 3,500 mg/kg. The lab reports state “chromatogram indicates that it is likely that sample contains mineral spirits” in all samples where gasoline-range petroleum was detected. This indicates that the gasoline-range petroleum product was likely Stoddard solvent, used in the dry cleaning operations.

Diesel and/or oil-range petroleum was detected in only five of the 23 samples. The concentrations were well below the site-specific Method B cleanup standard in all the samples, except in one sample from 15 foot depth in boring SB4. Sample SB4-15 had a detection of both diesel and oil at 13,000 mg/kg (total of 26,000 mg/kg), which exceeded the cleanup level of 2,865 mg/kg. The sample was collected just west of the building. A lid covers a suspected dry well just west of the southwest corner of the building. The use of the dry well has not been

confirmed, but may have been used to drain excess water from the boiler system, which is a potential source for the diesel and oil-range petroleum.

Benzene was detected in one sample, ethylbenzene was detected in four samples, and xylenes were detected in three samples from the site. None of the samples exceeded the MTCA Method B cleanup standards.

The sample results found only two samples that exceeded the cleanup standards: gasoline-range petroleum in sample SB3-21 and diesel and oil-range petroleum in sample SB4-15; however, samples collected from five feet above and five feet below each of these exceedences met the standards. These results indicate that the contamination is present in narrow bands, likely in lenses of coarser material, such as sand. The sample from SB3-21 was collected within a zone of wetter soil, where preferential pathway for water may be present.

None of the soil samples exceeded the Method B standard for VOCs (i.e. TCE, PCE and vinyl chloride) and therefore the concentrations are protective of direct contact for humans and wildlife. No evaluation was conducted regarding potential vapor intrusion from these contaminants during this study.

The vertical depth of soil contamination at the site was determined to be 21 feet during this investigation.

### 6.10 Groundwater Sample Results Discussion

One water sample was collected and analyzed for this report from MW1.

The water quality within MW1 exceeds the cleanup standards for protection of drinking water. Gasoline and diesel-range petroleum, benzene, vinyl chloride, cis1,2 DCE and 1,2DCP were detected above the Method A cleanup standards and therefore the water quality is not protective of drinking water standards.

Groundwater flow was not determined, based upon the varying depths of thin layers of producible water within each monitoring well location; however, flow is assumed to be west, toward the adjacent Holly Street landfill.

Three wells were installed onsite; however, the water recharge rate in MW2 and MW3 is so low, that water did not recharge enough within 24 hours after purging to generate water for sampling. This indicates a minimal volume of water has been impacted at the site.

Due to drilling refusal at bedrock within all the monitoring well locations, deeper non-perched groundwater was not encountered. Based upon the lack of productivity in the wells, the site's connection to public drinking water, lack of ability to install a drinking water well due to the property's location well within 1,000-feet of a landfill, and the landfill site being the down gradient property from the site, it is our opinion that the water should not be considered potable. Direct communications with Ecology and possibly additional sampling will be needed to have the groundwater at the site deemed non-potable.

# 7.0 POST SAMPLING WORK

A concrete patio was poured to the south of the west end of the building, around MW-1, shortly after the monitoring well was installed. The paved patio has capped the fill area to the south of the building, and is bound by a retaining wall to the west, the building to the north and east, and a retaining wall and paved access road to the south.

# 8.0 CONCLUSIONS

Five environmental borings were advanced on the west side of the property at 205 Prospect Street in Bellingham, Washington in June 2018. The investigation was completed to evaluate for soil and groundwater contamination associated with the site's historical use as a dry cleaning facility.

Twenty-three (23) soil samples were collected during the investigation, including soil samples from five foot depth increments within four soil borings. Borings were completed until bedrock was encountered to depths of 26 to 31 foot. Only two of the soil samples exceeded the MTCA Method B cleanup standards including one sample from boring SB3 that exceeded for gasoline-range petroleum and one soil sample from SB4 that exceeded for diesel and oil-range petroleum. The contamination was limited to narrow soil zones within each of these borings. Numerous VOCs including PCE, TCE and vinyl chloride were detected within the soil, but all the concentrations were below the MTCA Method B cleanup standards.

Three of the five borings were completed as monitoring wells (MW-1, MW-2 and MW-3). The water sample from MW-1 had exceedences of gasoline, diesel, benzene, and breakdown products of PCE including vinyl chloride, cis 1,2-DCE and 1,2-DCP. Groundwater was encountered only in perched, narrow lenses of sand within the subsurface and had low productivity. Water production in MW-2 and MW-3 was too low to collect a sample in July 2018. No deeper groundwater was encountered, as all borings hit refusal due to bedrock.

The subject property is already on the Department of Ecology's Confirmed and Suspected Contaminated Sites list (FS ID 21786898) and therefore no further reporting is required based upon this investigation.

# APPENDIX I

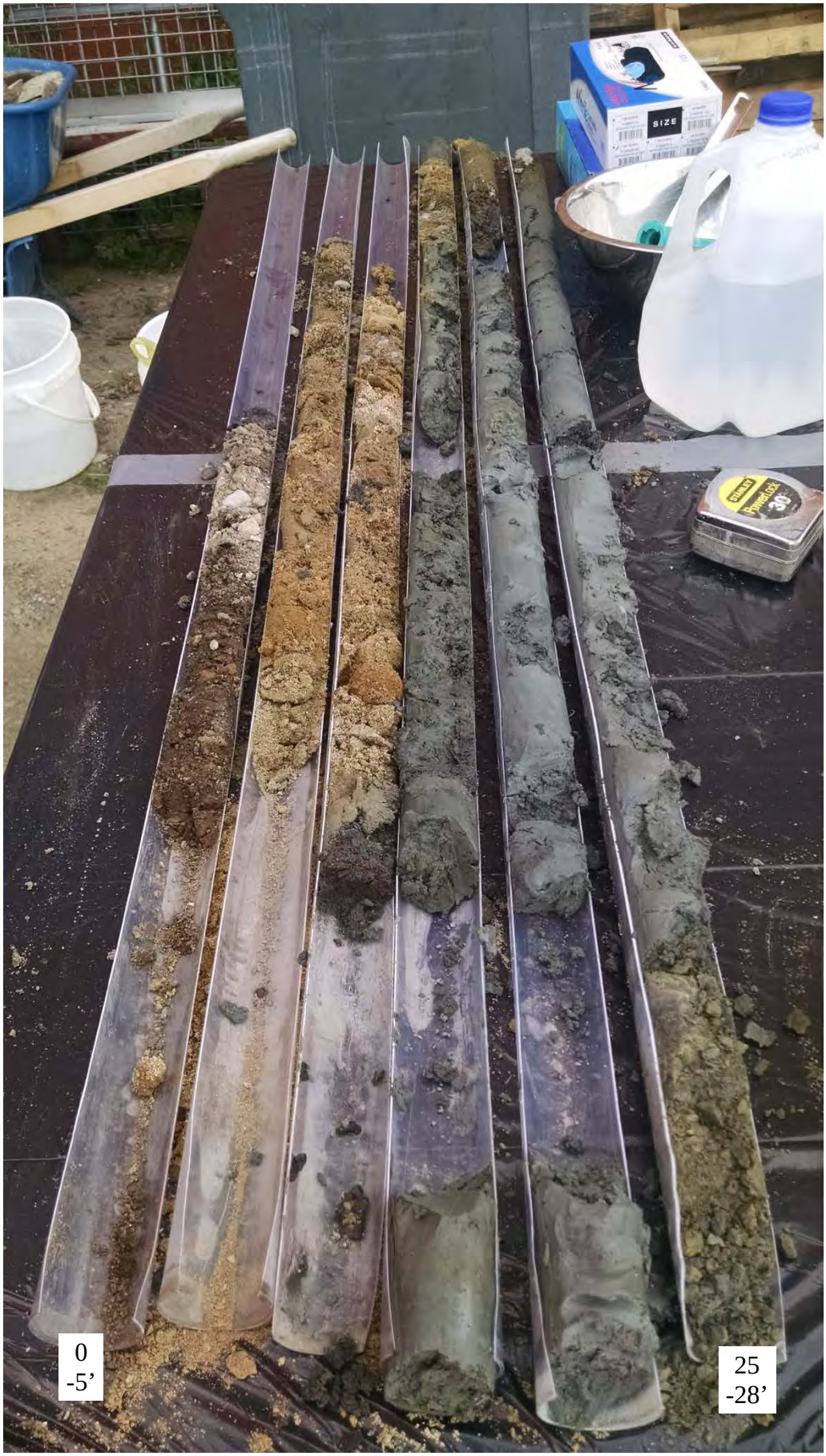
Site Photographs

View of boring location SB1 (MW-1), looking northwest.


View of soil core from boring SB1. Depth increases from background to foreground, left to right.

View of hollow-stem auger drilling in preparation of MW-1.


View of boring location SB3, looking west.



View of soil core from boring SB3. Depth increases from background to foreground, left to right.

View of boring location SB4, looking northwest.


View of soil core from boring SB4. Depth increases from background to foreground, left to right.

View of boring location SB5, looking south.

View of soil core from boring SB5. Depth increases from background to foreground, left to right.

Pressure-washing the auger bits between borings.

# APPENDIX II

Boring Logs

Diagram of Well Construction

Laboratory Results with Chain-of-Custody

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB1** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | 2" Bark chips |
| | | | | | | | ML | Dark brown to brown, SILT. Moist. Trace gravel. Trace orange mottling. |
| | | | | | | | SP | Brown, SAND. Moist. |
| SB1-5 | 5 | No | No | No | | 5-- | | |
| | | | | | | | ML | Dark brown, SILT with sand and debris (metal, glass, concrete). Moist. |
| SB1-10 | 10 | Yes | No | No | | 10-- | | --Debris disappears below approximately 11' bgs. |
| | | | | | | | ML | Gray, SILT. Thin lens of sand at approximately 12' bgs. Moist. Strong HC odor. |
| SB1-15 | 15 | Yes | Sl | Sl | | 15-- | | |
| SB1-17 | 17 | Yes | Sl | No | ▼ | | SP | Dark gray, fine to medium SAND. Wet |
| SB1-20 | 20 | Yes | No | No | | 20-- | | Dark gray, silty CLAY. Moist. |
| | | | | | | | CL | --Slightly gravelly from 21' to 22' bgs. |
| SB1-25 | 25 | Yes | No | Sl | | 25-- | | --Slight HC odor at 24' bgs. |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 19, 2018 |
| SURFACE ELEVATION | ~65 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB1** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | --Becomes very dense below 25' bgs. |
| **SB1-30** | 30 | No | No | No | | 30-- | | --Encountered sandstone bedrock at 31' bgs. |
| | | | | | | | | Boring terminated at 31' bgs |
| | | | | | | | | Groundwater encountered from 16' to 18' bgs |
| | | | | | | | | Boring completed as monitoring well MW-1 |
| | | | | | | 35-- | | See well construction log for well details |
| | | | | | | 40-- | | |
| | | | | | | 45-- | | |
| | | | | | | 50-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 19, 2018 |
| SURFACE ELEVATION | ~65 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB2** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | Drilled without sampling to 30' bgs. |
| | | | | | | 5-- | | |
| | | | | | | 10-- | | |
| | | | | | | 15-- | | |
| | | | | | | 20-- | | |
| | | | | | | 25-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 19, 2018 |
| SURFACE ELEVATION | ~65 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB2** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | 30-- | | --Encountered sandstone bedrock at 32' bgs. |
| | | | | | | | | Boring terminated at 31' bgs |
| | | | | | | 35-- | | |
| | | | | | | 40-- | | |
| | | | | | | 45-- | | |
| | | | | | | 50-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 19, 2018 |
| SURFACE ELEVATION | ~65 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB3** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | | | | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | Groundwater depth (ft) | Depth (ft) | STRATA | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | 9" asphalt |
| | | | | | | | GM | Sandy gravel. |
| | | | | | | | | Brown to dark brown, gravelly SILT. Moist. |
| | | | | | | | ML | |
| SB3-5 | 5 | No | No | No | | 5-- | | --Becomes reddish brown with trace gravel below 5' bgs |
| SB3-10 | 10 | No | No | No | | 10-- | | |
| | | | | | | | SP | |
| SB3-15 | 15 | Yes | No | No | | 15-- | | Brown to reddish brown, SAND. Moist. |
| | | | | | | | | Dark gray to black, silty CLAY to CLAY. Moist. Relatively dense. Trace organics. Few lenses of sand. |
| SB3-20 | 20 | No | No | No | | 20-- | CL | |
| SB3-21 | 21 | Yes | Yes | Yes | ▼ | | | --~7" thick lens of dark gray SAND. Wet. Strong HC odor. |
| SB3-25 | 25 | Yes | Sl | Sl | ▼ | 25-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 20, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB3** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | |
| | | | | | | | | Dark gray, sandy CLAY. Wet. Relatively soft. |
| | | | | | | | CL | |
| | | | | | | | | |
| | | | | | | | | Boring terminated at 28' bgs |
| | | | | | | 30-- | | Groundwater encountered at 21' and from 26' to 28' bgs |
| | | | | | | | | Boring completed as monitoring well MW-2 |
| | | | | | | | | See well construction log for well details |
| | | | | | | | | |
| | | | | | | 35-- | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | 40-- | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | 45-- | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | 50-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 20, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB4** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | 3" Bark chips underlain by 4" brown-gray SILT. |
| | | | | | | | GM | Brown, silty GRAVEL. Moist. |
| | | | | | | | | Brown to gray, SILT. Moist. Few gravel, trace sand and organics. |
| | | | | | | | ML | |
| **SB4-5** | 5 | No | No | No | | 5-- | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **SB4-10** | 10 | No | No | No | | 10-- | | --2" lens of gray SILT with abundant wood at 9' bgs |
| | | | | | | | | --5" lens of yellow-brown sand at 9.5' bgs (SB4-10) |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **SB4-15** | 15 | Yes | No | Yes | | 15-- | ML | Black to gray, SILT. Moist. Glass, ceramic, fiber debris. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | Greenish-gray, silty CLAY to CLAY. Moist. Trace gravel and organics. |
| **SB4-20** | 20 | Yes | No | No | | 20-- | | |
| | | | | | | | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **SB4-25** | 25 | Yes | No | No | | 25-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 20, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB4** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | Dark greenish gray, SILT. Moist. Relatively dense. |
| | | | | | | | ML | --Few gravel encountered below 26' bgs |
| **SB4-29** | 29 | No | No | No | | | | --Encountered sandstone bedrock at 29' bgs. Wet in bottom 3" of boring. |
| | | | | | | 30-- | | Boring terminated at 29' bgs |
| | | | | | | | | No significant groundwater encountered during drilling |
| | | | | | | 35-- | | |
| | | | | | | 40-- | | |
| | | | | | | 45-- | | |
| | | | | | | 50-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 20, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB5** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | | 3" asphalt underlain by 4" brown sandy GRAVEL. |
| | | | | | | | | Dark brown, SILT with gravel. |
| | | | | | | | ML | |
| | | | | | | 5-- | | |
| | | | | | | | | Brown to reddish brown, SILT. Moist. |
| | | | | | | | ML | |
| SB5-10 | 10 | No | No | No | | 10-- | | Dark gray, silty CLAY to CLAY. Moist to wet. Trace gravel. Relatively soft. |
| | | | | | ▼ | | | |
| SB5-15 | 15 | No | No | No | | 15-- | | |
| | | | | | | | | --Becomes more dense and less moist below 17' bgs |
| | | | | | | | CL | |
| SB5-20 | 20 | Yes | No | No | | 20-- | | |
| SB5-25 | 25 | No | No | No | | 25-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 20, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **SB5** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



| SAMPLE INFORMATION | | | | | Groundwater depth (ft) | Depth (ft) | STRATA | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| Sample ID | Sample Depth (ft) | Discolor-ation | Sheen | Odor | | | | USCS group name, color, grain size range, minor constituents, plasticity, odor, sheen, moisture content, texture, weathering, cementation, geologic interpretation, etc. |
| | | | | | | | CL | --Encountered sandstone bedrock at 26' bgs. |
| | | | | | | | | Boring terminated at 31' bgs |
| | | | | | | | | Groundwater encountered from 16' to 18' bgs |
| | | | | | | | | Boring completed as monitoring well MW-3 |
| **SB1-30** | 30 | No | No | No | | 30-- | | See well construction log for well details |
| | | | | | | 35-- | | |
| | | | | | | 40-- | | |
| | | | | | | 45-- | | |
| | | | | | | 50-- | | |

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| SAMPLING EQUIPMENT | Stainless steel spoon & bowl |
| DRILLING DATE | June 20, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

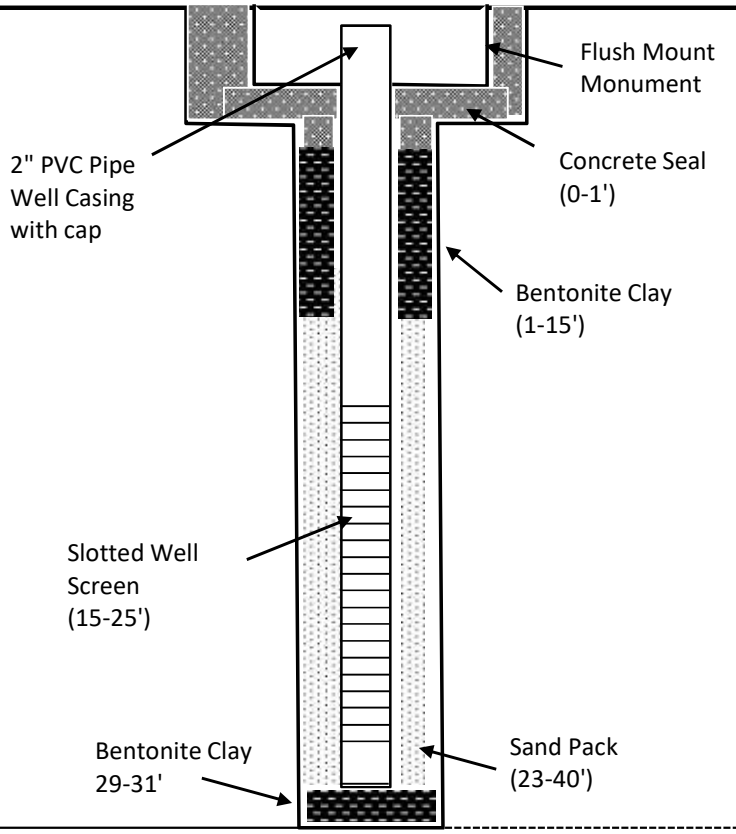
Boring Location

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **MW-1** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



## Monitoring Well Construction Design




Monitoring well completed to depth of 31'

Well ID: BKX665

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| DRILLING DATE | June 19, 2018 |
| SURFACE ELEVATION | ~65 feet |
| DATUMS | |

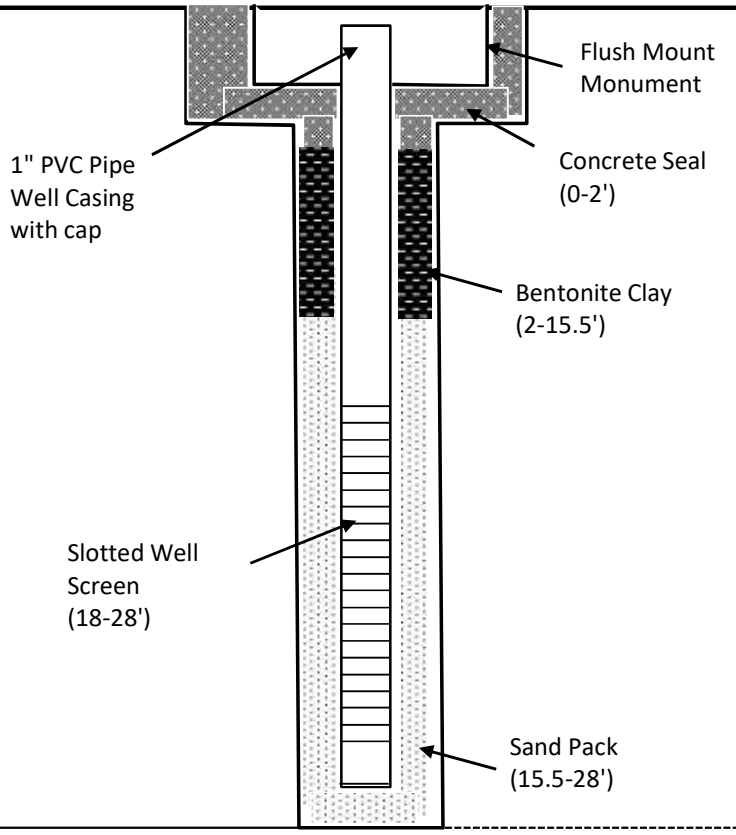
Location Sketch

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **MW-2** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



## Monitoring Well Construction Design




Monitoring well completed to depth of 28'

Well ID: BJR716

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe |
| DRILLING DATE | June 21, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

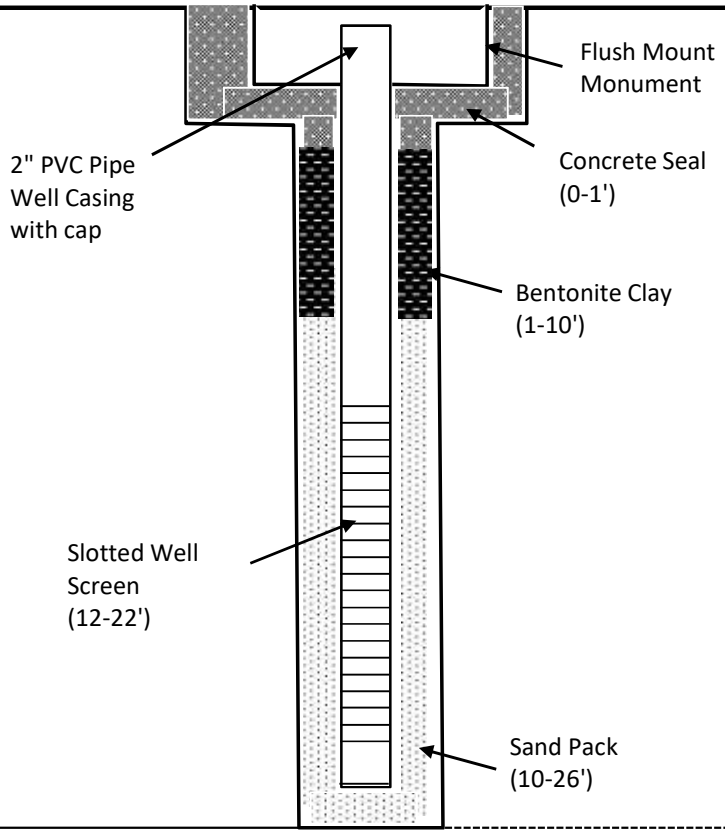
Location Sketch

STRATUM GROUP

| | |
|---|---|
| BOREHOLE NUMBER | **MW-3** |
| PROJECT | Cascade Laundry |
| LOCATION | 205 Prospect Street |
| PROJECT NUMBER | |
| LOGGED BY | Kim Ninnemann |



## Monitoring Well Construction Design




Monitoring well completed to depth of 26'

Well ID: BJR715

| | |
|---|---|
| DRILLING CONTRACTOR | ESN Northwest |
| DRILLING METHOD | Geoprobe/HSA |
| DRILLING DATE | June 20, 2018 |
| SURFACE ELEVATION | ~55 feet |
| DATUMS | |

Location Sketch

July 10, 2018

Ms. Kim Ninnemann
Stratum Group
P.O. Box 2546
Bellingham, WA 98227

Dear Ms. Ninnemann,

On June 22nd, 23 samples were received by our laboratory and assigned our laboratory project number EV18060136. The project was identified as your Cascade Laundry. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-01 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 11:45:00 AM |
| CLIENT SAMPLE ID | SB1-5 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | **13** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-01 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 11:45:00 AM |
| CLIENT SAMPLE ID | SB1-5 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **68.6** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **72.8** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **98.7** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **87.1** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-02 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:00:00 PM |
| CLIENT SAMPLE ID | SB1-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | **18** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | **12000** | 120 | 10 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-02 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:00:00 PM |
| CLIENT SAMPLE ID | SB1-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **61.8** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **66.4** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **100** | 06/24/2018 | DLC |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **97.8** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **109** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene 10X Dilution | EPA-8260 | **87.7** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-03 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:10:00 PM |
| CLIENT SAMPLE ID | SB1-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **560** | 30 | 10 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/25/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/25/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | 0.60 | 10 | MG/KG | 06/25/2018 | JMK |
| Xylenes | EPA-8021 | U | 2.0 | 10 | MG/KG | 06/25/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 120 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 71 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **110** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | **180** | 59 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 71 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 75 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 63 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 71 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 72 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 77 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 73 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 130 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 73 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 66 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 66 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 66 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 84 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 74 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 79 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 76 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 79 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 77 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 110 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 79 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 61 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 85 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-03 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:10:00 PM |
| CLIENT SAMPLE ID | SB1-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 82 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 86 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 82 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 82 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 120 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | **96** | 83 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | **200** | 77 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **710** | 83 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 98 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 72 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 86 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 77 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 10X Dilution | NWTPH-GX | **78.2** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **89.4** | 06/25/2018 | JMK |
| C25 | NWTPH-DX | **98.8** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **98.5** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **56.0 GS1** | 06/24/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-04 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:40:00 PM |
| CLIENT SAMPLE ID | SB1-17 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **2200** | 240 | 80 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/23/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Ethylbenzene | EPA-8021 | **5.0** | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Xylenes | EPA-8021 | **6.8** | 2.0 | 10 | MG/KG | 06/23/2018 | JMK |
| C5-C6 Aliphatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C6-C8 Aliphatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aliphatics | NWVPH | **1200** | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C10-C12 Aliphatics | NWVPH | **1300** | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aromatics | NWVPH | **1300** | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C10-C12 Aromatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C12-C13 Aromatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| Hexane | NWVPH | U | 20 | 100 | MG/KG | 07/05/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | **95** | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | **56** | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 100 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 61 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **280** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 51 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 61 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 64 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 54 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 130 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | **75** | 61 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 61 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 66 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 63 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 110 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 63 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 56 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 56 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 57 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 72 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 64 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 67 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 65 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-04 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:40:00 PM |
| CLIENT SAMPLE ID | SB1-17 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | EPA-8260 | U | 68 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 66 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 97 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 68 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 53 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 73 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 70 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 74 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 70 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 70 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 100 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | **670** | 71 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | **1500** | 66 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **6000** | 710 | 10 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 84 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | **190** | 62 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 73 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | **77** | 66 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 80X Dilution | NWTPH-GX | **0 SUR07** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **82.3** | 06/23/2018 | JMK |
| TFT - Aliphatic 100X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Aromatic 100X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Hexane 100X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| C25 | NWTPH-DX | **101** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **92.6** | 06/24/2018 | DLC |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **99.3** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **35.4 GS1** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene 10X Dilution | EPA-8260 | **54.8 GS1** | 06/24/2018 | DLC |

DS2 - Due to high dilution factor surrogate results should be considered uncontrolled.
GS1 - Surrogate outside of control limits due to matrix effect.
SUR07 -The surrogate recoveries could not be determined due to dilution below the calibration range.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits and an unidentified diesel range product.
Diesel range product results biased high due to oil range product overlap.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-05 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:30:00 PM |
| CLIENT SAMPLE ID | SB1-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **1200** | 120 | 40 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/23/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Ethylbenzene | EPA-8021 | **2.9** | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Xylenes | EPA-8021 | **3.4** | 2.0 | 10 | MG/KG | 06/23/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 140 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 85 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **320** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 71 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 85 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 89 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 75 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 180 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 84 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 86 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 92 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 87 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 88 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 79 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 79 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 79 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 100 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 89 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 94 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 91 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 94 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 92 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 140 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 94 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 73 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 100 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-05 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 12:30:00 PM |
| CLIENT SAMPLE ID | SB1-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 98 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 100 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 98 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 98 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 140 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 99 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | **200** | 92 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **710** | 99 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 120 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 86 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 100 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 92 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 40X Dilution | NWTPH-GX | **0 SUR07** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **110** | 06/23/2018 | JMK |
| C25 | NWTPH-DX | **94.1** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **97.9** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **41.0 GS1** | 06/24/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
SUR07 -The surrogate recoveries could not be determined due to dilution below the calibration range.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-06 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 1:10:00 PM |
| CLIENT SAMPLE ID | SB1-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **16** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **550** | 84 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-06 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 1:10:00 PM |
| CLIENT SAMPLE ID | SB1-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **78.6** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **82.2** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **93.7** | 06/24/2018 | DLC |
| 1,2-Dichloroethane-d4 | EPA-8260 | **103** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **68.4 GS1** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **76.7** | 06/24/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-07 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 1:25:00 PM |
| CLIENT SAMPLE ID | SB1-30 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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ALS Group USA, Corp dba ALS Environmental

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-07 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/19/2018 1:25:00 PM |
| CLIENT SAMPLE ID | SB1-30 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **80.8** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **85.0** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **95.2** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **116** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-08 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:00:00 AM |
| CLIENT SAMPLE ID | SB3-5 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | **26** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-08 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:00:00 AM |
| CLIENT SAMPLE ID | SB3-5 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **93.4** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **98.2** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **101** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **92.1** | 06/24/2018 | DLC |

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-09 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:10:00 AM |
| CLIENT SAMPLE ID | SB3-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/23/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/23/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/23/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-09 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:10:00 AM |
| CLIENT SAMPLE ID | SB3-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **108** | 06/23/2018 | GAP |
| C25 | NWTPH-HCID | **113** | 06/23/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **97.2** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **92.4** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-10 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:20:00 AM |
| CLIENT SAMPLE ID | SB3-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **11** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-10 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:20:00 AM |
| CLIENT SAMPLE ID | SB3-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **83.4** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **86.5** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **98.1** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **102** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-11 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:30:00 AM |
| CLIENT SAMPLE ID | SB3-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **510** | 30 | 10 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/25/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/25/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/25/2018 | JMK |
| Xylenes | EPA-8021 | U | 2.0 | 10 | MG/KG | 06/25/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/25/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-11 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:30:00 AM |
| CLIENT SAMPLE ID | SB3-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 10X Dilution | NWTPH-GX | **116** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **113** | 06/25/2018 | JMK |
| C25 | NWTPH-DX | **96.7** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **92.7** | 06/25/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **50.1 GS1** | 06/25/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-12 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:55:00 AM |
| CLIENT SAMPLE ID | SB3-21 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **3500** | 240 | 80 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/23/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Ethylbenzene | EPA-8021 | **9.9** | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Xylenes | EPA-8021 | **7.0** | 2.0 | 10 | MG/KG | 06/23/2018 | JMK |
| C5-C6 Aliphatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C6-C8 Aliphatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aliphatics | NWVPH | **1200** | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C10-C12 Aliphatics | NWVPH | **960** | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aromatics | NWVPH | **1200** | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C10-C12 Aromatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| >C12-C13 Aromatics | NWVPH | U | 500 | 100 | MG/KG | 07/05/2018 | JMK |
| Hexane | NWVPH | U | 20 | 100 | MG/KG | 07/05/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | **110** | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 110 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloromethane | EPA-8260 | U | 65 | 1 | UG/KG | 06/25/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **52** | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromomethane | EPA-8260 | U | 54 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroethane | EPA-8260 | U | 65 | 1 | UG/KG | 06/25/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 68 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 57 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 130 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 64 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 65 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 70 | 1 | UG/KG | 06/25/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 66 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 120 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroform | EPA-8260 | U | 66 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 60 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 60 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 60 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 76 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 67 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 71 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 69 | 1 | UG/KG | 06/25/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-12 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:55:00 AM |
| CLIENT SAMPLE ID | SB3-21 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | EPA-8260 | U | 72 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 70 | 1 | UG/KG | 06/25/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 100 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/25/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 72 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 56 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromoform | EPA-8260 | U | 77 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 74 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 78 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 74 | 1 | UG/KG | 06/25/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 74 | 1 | UG/KG | 06/25/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 110 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 75 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 70 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **440** | 75 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 88 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 66 | 1 | UG/KG | 06/25/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 78 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 70 | 1 | UG/KG | 06/25/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 80X Dilution | NWTPH-GX | **0 SUR07** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **172 SUR12** | 06/23/2018 | JMK |
| TFT - Aliphatic 100X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Aromatic 100X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Hexane 100X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| C25 | NWTPH-DX | **85.7** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **101** | 06/25/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **28.9 GS1** | 06/25/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.
DS2 - Due to high dilution factor surrogate results should be considered uncontrolled.
GS1 - Surrogate outside of control limits due to matrix effect.
SUR07 -The surrogate recoveries could not be determined due to dilution below the calibration range.
SUR12 -Surrogate recoveries were outside of the control limits due to matrix interference.
Chromatogram indicates that it is likely that sample contains mineral spirits and an unidentified diesel range product.
Diesel range product results biased high due to oil range product overlap.



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-13 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:45:00 AM |
| CLIENT SAMPLE ID | SB3-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **490** | 60 | 20 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | **0.51** | 0.30 | 10 | MG/KG | 06/23/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Ethylbenzene | EPA-8021 | **3.3** | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Xylenes | EPA-8021 | U | 2.0 | 10 | MG/KG | 06/23/2018 | JMK |
| C5-C6 Aliphatics | NWVPH | U | 100 | 20 | MG/KG | 07/05/2018 | JMK |
| >C6-C8 Aliphatics | NWVPH | U | 100 | 20 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aliphatics | NWVPH | **140** | 100 | 20 | MG/KG | 07/05/2018 | JMK |
| >C10-C12 Aliphatics | NWVPH | **150** | 100 | 20 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aromatics | NWVPH | **170** | 100 | 20 | MG/KG | 07/05/2018 | JMK |
| >C10-C12 Aromatics | NWVPH | U | 100 | 20 | MG/KG | 07/05/2018 | JMK |
| >C12-C13 Aromatics | NWVPH | U | 100 | 20 | MG/KG | 07/05/2018 | JMK |
| Hexane | NWVPH | U | 4.0 | 20 | MG/KG | 07/05/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 94 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloromethane | EPA-8260 | U | 57 | 1 | UG/KG | 06/25/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromomethane | EPA-8260 | U | 47 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroethane | EPA-8260 | U | 57 | 1 | UG/KG | 06/25/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 60 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 50 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 120 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 56 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 57 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 62 | 1 | UG/KG | 06/25/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 58 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 100 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroform | EPA-8260 | U | 58 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 53 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 53 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 53 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 67 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 59 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 63 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 61 | 1 | UG/KG | 06/25/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-13 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 8:45:00 AM |
| CLIENT SAMPLE ID | SB3-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | EPA-8260 | U | 63 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 61 | 1 | UG/KG | 06/25/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 91 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/25/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 63 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 49 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromoform | EPA-8260 | U | 68 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 65 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 69 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 65 | 1 | UG/KG | 06/25/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 65 | 1 | UG/KG | 06/25/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 94 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 66 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 62 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **150** | 66 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 78 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 58 | 1 | UG/KG | 06/25/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 68 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 62 | 1 | UG/KG | 06/25/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 20X Dilution | NWTPH-GX | **128** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **135** | 06/23/2018 | JMK |
| TFT - Aliphatic 20X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Aromatic 20X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Hexane 20X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| C25 | NWTPH-DX | **83.5** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **92.2** | 06/25/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **51.9 GS1** | 06/25/2018 | DLC |

DS2 - Due to high dilution factor surrogate results should be considered uncontrolled.
GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-14 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:30:00 AM |
| CLIENT SAMPLE ID | SB4-5 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | **>100** | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/27/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | **70** | 50 | 1 | MG/KG | 06/27/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | **46** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-14 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:30:00 AM |
| CLIENT SAMPLE ID | SB4-5 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **80.5** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **83.5** | 06/22/2018 | GAP |
| C25 | NWTPH-DX | **94.6** | 06/27/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **106** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **88.9** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-15 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:35:00 AM |
| CLIENT SAMPLE ID | SB4-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | **>50** | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | **>100** | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Diesel Range | NWTPH-DX | **64** | 25 | 1 | MG/KG | 06/27/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | **140** | 50 | 1 | MG/KG | 06/27/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | **31** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-15 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:35:00 AM |
| CLIENT SAMPLE ID | SB4-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **56.2** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **68.7** | 06/22/2018 | GAP |
| C25 | NWTPH-DX | **85.8** | 06/27/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **99.7** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **92.5** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains extremely weathered diesel and lube oil.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-16 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:45:00 AM |
| CLIENT SAMPLE ID | SB4-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **570** | 30 | 10 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/25/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/25/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/25/2018 | JMK |
| Xylenes | EPA-8021 | U | 2.0 | 10 | MG/KG | 06/25/2018 | JMK |
| C5-C6 Aliphatics | NWVPH | U | 40 | 8 | MG/KG | 07/05/2018 | JMK |
| >C6-C8 Aliphatics | NWVPH | U | 40 | 8 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aliphatics | NWVPH | **310** | 40 | 8 | MG/KG | 07/05/2018 | JMK |
| >C8-C10 Aromatics | NWVPH | **81** | 40 | 8 | MG/KG | 07/05/2018 | JMK |
| Hexane | NWVPH | U | 1.6 | 8 | MG/KG | 07/05/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | **13000** | 430 | 10 | MG/KG | 06/23/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | **13000** | 840 | 10 | MG/KG | 06/23/2018 | GAP |
| >C8-C10 Aliphatics | NWEPH | **11000** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C10-C12 Aliphatics | NWEPH | **6900** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C12-C16 Aliphatics | NWEPH | **310** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C16-C21 Aliphatics | NWEPH | **3200** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C21-C34 Aliphatics | NWEPH | **17000** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C8-C10 Aromatics | NWEPH | **5500** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C10-C12 Aromatics | NWEPH | **1300** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C12-C16 Aromatics | NWEPH | **120** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C16-C21 Aromatics | NWEPH | **2400** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| >C21-C34 Aromatics | NWEPH | **10000** | 5.0 | 1 | MG/KG | 06/29/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 250 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **49** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 120 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 160 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 130 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 310 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **650** | 160 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 270 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 140 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 140 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-16 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:45:00 AM |
| CLIENT SAMPLE ID | SB4-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | **26** | 11 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 140 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 180 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 160 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 170 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 160 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 170 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 160 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | **85** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 240 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.2 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 170 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 130 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 180 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 170 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 180 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 170 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 170 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 250 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 180 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 160 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **1400** | 170 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 210 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | **160** | 150 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 180 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | **220** | 160 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 10X Dilution | NWTPH-GX | **34.8 SUR11** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **54.5 SUR11** | 06/25/2018 | JMK |
| TFT - Aliphatic 8X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Aromatic 8X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| TFT - Hexane 8X Dilution | NWVPH | **0 DS2** | 07/05/2018 | JMK |
| C25 10X Dilution | NWTPH-DX | **76.4** | 06/23/2018 | GAP |
| C25 | NWEPH | **110** | 06/29/2018 | GAP |
| p-Terphenyl | NWEPH | **75.2** | 06/29/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **101** | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-16 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:45:00 AM |
| CLIENT SAMPLE ID | SB4-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 4-Bromofluorobenzene | EPA-8260 | **54.4 GS1** | 06/24/2018 | DLC |

DS2 - Due to high dilution factor surrogate results should be considered uncontrolled.
GS1 - Surrogate outside of control limits due to matrix effect.
SUR11 -Surrogate recovery was below acceptance limits. Re-extraction and/or reanalysis confirm low recovery caused by matrix interferences.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits and light oil.



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-17 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:55:00 AM |
| CLIENT SAMPLE ID | SB4-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **6.4** | 3.0 | 1 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.030 | 1 | MG/KG | 06/25/2018 | JMK |
| Toluene | EPA-8021 | U | 0.050 | 1 | MG/KG | 06/25/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | 0.050 | 1 | MG/KG | 06/25/2018 | JMK |
| Xylenes | EPA-8021 | U | 0.20 | 1 | MG/KG | 06/25/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-17 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 11:55:00 AM |
| CLIENT SAMPLE ID | SB4-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT | NWTPH-GX | **67.6** | 06/25/2018 | JMK |
| TFT | EPA-8021 | **51.2 SUR11** | 06/25/2018 | JMK |
| C25 | NWTPH-DX | **71.2** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **93.2** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **69.2 GS1** | 06/24/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
SUR11 -Surrogate recovery was below acceptance limits. Re-extraction and/or reanalysis confirm low recovery caused by matrix interferences.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-18 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 12:00:00 PM |
| CLIENT SAMPLE ID | SB4-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **49** | 3.0 | 1 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.030 | 1 | MG/KG | 06/25/2018 | JMK |
| Toluene | EPA-8021 | U | 0.050 | 1 | MG/KG | 06/25/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | 0.050 | 1 | MG/KG | 06/25/2018 | JMK |
| Xylenes | EPA-8021 | U | 0.20 | 1 | MG/KG | 06/25/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/25/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-18 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 12:00:00 PM |
| CLIENT SAMPLE ID | SB4-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **32** | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT | NWTPH-GX | **87.3** | 06/25/2018 | JMK |
| TFT | EPA-8021 | **69.0** | 06/25/2018 | JMK |
| C25 | NWTPH-DX | **87.3** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **85.1** | 06/25/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **23.1 GS1** | 06/25/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-19 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 12:15:00 PM |
| CLIENT SAMPLE ID | SB4-29 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **780** | 120 | 40 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/23/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Xylenes | EPA-8021 | U | 2.0 | 10 | MG/KG | 06/23/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/25/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-19 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 12:15:00 PM |
| CLIENT SAMPLE ID | SB4-29 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **29** | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 40X Dilution | NWTPH-GX | **131** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **108** | 06/23/2018 | JMK |
| C25 | NWTPH-DX | **78.5** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **84.9** | 06/25/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **65.0 GS1** | 06/25/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-20 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:25:00 PM |
| CLIENT SAMPLE ID | SB5-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-20 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:25:00 PM |
| CLIENT SAMPLE ID | SB5-10 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **80.7** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **82.6** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **101** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **87.2** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-21 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:30:00 PM |
| CLIENT SAMPLE ID | SB5-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-21 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:30:00 PM |
| CLIENT SAMPLE ID | SB5-15 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **81.8** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **84.2** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **99.2** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **89.1** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-22 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:45:00 PM |
| CLIENT SAMPLE ID | SB5-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **730** | 60 | 20 | MG/KG | 06/25/2018 | JMK |
| Benzene | EPA-8021 | U | 0.30 | 10 | MG/KG | 06/23/2018 | JMK |
| Toluene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | 0.50 | 10 | MG/KG | 06/23/2018 | JMK |
| Xylenes | EPA-8021 | U | 2.0 | 10 | MG/KG | 06/23/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | U | 25 | 1 | MG/KG | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/25/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-22 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:45:00 PM |
| CLIENT SAMPLE ID | SB5-20 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/25/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 20X Dilution | NWTPH-GX | **93.6** | 06/25/2018 | JMK |
| TFT 10X Dilution | EPA-8021 | **106** | 06/23/2018 | JMK |
| C25 | NWTPH-DX | **80.4** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **86.3** | 06/25/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **46.1 GS1** | 06/25/2018 | DLC |

GS1 - Surrogate outside of control limits due to matrix effect.
U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains mineral spirits.



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-23 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:55:00 PM |
| CLIENT SAMPLE ID | SB5-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | 20 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | 50 | 1 | MG/KG | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | 100 | 1 | MG/KG | 06/22/2018 | GAP |
| Dichlorodifluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 20 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **23** | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 5.0 | 1 | UG/KG | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/10/2018<br>EV18060136<br>EV18060136-23 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 06/22/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 6/20/2018 1:55:00 PM |
| CLIENT SAMPLE ID | SB5-25 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 4-Chlorotoluene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 50 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 10 | 1 | UG/KG | 06/24/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| BCB | NWTPH-HCID | **81.6** | 06/22/2018 | GAP |
| C25 | NWTPH-HCID | **83.0** | 06/22/2018 | GAP |
| 1,2-Dichloroethane-d4 | EPA-8260 | **97.3** | 06/24/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **84.3** | 06/24/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MB-062218S - Batch 129747 - Soil by NWTPH-HCID

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| HCID-Gas Range | NWTPH-HCID | U | MG/KG | 20 | 06/22/2018 | GAP |
| HCID-Diesel Range | NWTPH-HCID | U | MG/KG | 50 | 06/22/2018 | GAP |
| HCID-Oil Range | NWTPH-HCID | U | MG/KG | 100 | 06/22/2018 | GAP |

U - Analyte analyzed for but not detected at level above reporting limit.

### MBG-062318S - Batch 129826 - Soil by NWTPH-GX

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | U | MG/KG | 3.0 | 06/23/2018 | JMK |

U - Analyte analyzed for but not detected at level above reporting limit.

### MB-062318S - Batch 129826 - Soil by EPA-8021

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Benzene | EPA-8021 | U | MG/KG | 0.030 | 06/23/2018 | JMK |
| Toluene | EPA-8021 | U | MG/KG | 0.050 | 06/23/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | MG/KG | 0.050 | 06/23/2018 | JMK |
| Xylenes | EPA-8021 | U | MG/KG | 0.20 | 06/23/2018 | JMK |

U - Analyte analyzed for but not detected at level above reporting limit.

### MBLK-319388 - Batch R319388 - Soil by NWVPH

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| C5-C6 Aliphatics | NWVPH | U | MG/KG | 5.0 | 07/05/2018 | JMK |
| >C6-C8 Aliphatics | NWVPH | U | MG/KG | 5.0 | 07/05/2018 | JMK |
| >C8-C10 Aliphatics | NWVPH | U | MG/KG | 5.0 | 07/05/2018 | JMK |
| >C10-C12 Aliphatics | NWVPH | U | MG/KG | 5.0 | 07/05/2018 | JMK |
| >C8-C10 Aromatics | NWVPH | U | MG/KG | 5.0 | 07/05/2018 | JMK |
| >C10-C12 Aromatics | NWVPH | U | MG/KG | 5.0 | 07/05/2018 | JMK |
| >C12-C13 Aromatics | NWVPH | U | MG/KG | 5.0 | 07/05/2018 | JMK |
| Hexane | NWVPH | U | MG/KG | 0.20 | 07/05/2018 | JMK |

U - Analyte analyzed for but not detected at level above reporting limit.

### MB-062218S - Batch 129772 - Soil by NWTPH-DX

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| TPH-Diesel Range | NWTPH-DX | U | MG/KG | 25 | 06/22/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | MG/KG | 50 | 06/22/2018 | GAP |



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CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

## MB-062218S - Batch 129772 - Soil by NWTPH-DX

U - Analyte analyzed for but not detected at level above reporting limit.

## MB-062718S - Batch 129913 - Soil by NWTPH-DX

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| TPH-Diesel Range | NWTPH-DX | U | MG/KG | 25 | 06/27/2018 | GAP |
| TPH-Oil Range | NWTPH-DX | U | MG/KG | 50 | 06/27/2018 | GAP |

U - Analyte analyzed for but not detected at level above reporting limit.

## MBLK-R319335 - Batch R319335 - Soil by NWEPH

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| >C8-C10 Aliphatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C10-C12 Aliphatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C12-C16 Aliphatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C16-C21 Aliphatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C21-C34 Aliphatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C8-C10 Aromatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C10-C12 Aromatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C12-C16 Aromatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C16-C21 Aromatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |
| >C21-C34 Aromatics | NWEPH | U | MG/KG | 5.0 | 06/29/2018 | GAP |

U - Analyte analyzed for but not detected at level above reporting limit.

## MB-062318S - Batch 129766 - Soil by EPA-8260

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Chloromethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Bromomethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Chloroethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | UG/KG | 20 | 06/23/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |



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CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

**MB-062318S - Batch 129766 - Soil by EPA-8260**

| | | | | | | |
|---|---|---|---|---|---|---|
| Chloroform | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Trichloroethene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Dibromomethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Toluene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | UG/KG | 5.0 | 06/23/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Bromoform | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Bromobenzene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | UG/KG | 50 | 06/23/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/23/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.

**MB-062418S - Batch 129780 - Soil by EPA-8260**

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Chloromethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Bromomethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Chloroethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MB-062418S - Batch 129780 - Soil by EPA-8260

| | | | | | | |
|---|---|---|---|---|---|---|
| Carbon Tetrachloride | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | UG/KG | 20 | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Chloroform | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Trichloroethene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Dibromomethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Toluene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | UG/KG | 5.0 | 06/24/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Bromoform | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Bromobenzene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | UG/KG | 50 | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | UG/KG | 10 | 06/24/2018 | DLC |



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CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE: | 7/10/2018 |
| | | ALS SDG#: | EV18060136 |
| | | WDOE ACCREDITATION: | C601 |
| CLIENT CONTACT: | Kim Ninnemann | | |
| CLIENT PROJECT: | Cascade Laundry | | |

LABORATORY BLANK RESULTS

**MB-062418S - Batch 129780 - Soil by EPA-8260**

U - Analyte analyzed for but not detected at level above reporting limit.



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CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: 129826 - Soil by NWTPH-GX

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| TPH-Volatile Range - BS | NWTPH-GX | **84.8** | | | 66.5 | 122.7 | 06/23/2018 | JMK |
| TPH-Volatile Range - BSD | NWTPH-GX | **82.1** | **3** | | 66.5 | 122.7 | 06/23/2018 | JMK |

### ALS Test Batch ID: 129826 - Soil by EPA-8021

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Benzene - BS | EPA-8021 | **98.2** | | | 67.7 | 124 | 06/23/2018 | JMK |
| Benzene - BSD | EPA-8021 | **101** | **3** | | 67.7 | 124 | 06/23/2018 | JMK |
| Toluene - BS | EPA-8021 | **102** | | | 71 | 123 | 06/23/2018 | JMK |
| Toluene - BSD | EPA-8021 | **105** | **3** | | 71 | 123 | 06/23/2018 | JMK |
| Ethylbenzene - BS | EPA-8021 | **103** | | | 69.8 | 117 | 06/23/2018 | JMK |
| Ethylbenzene - BSD | EPA-8021 | **104** | **1** | | 69.8 | 117 | 06/23/2018 | JMK |
| Xylenes - BS | EPA-8021 | **105** | | | 70 | 119 | 06/23/2018 | JMK |
| Xylenes - BSD | EPA-8021 | **107** | **2** | | 70 | 119 | 06/23/2018 | JMK |

### ALS Test Batch ID: R319388 - Soil by NWVPH

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| C5-C6 Aliphatics - BS | NWVPH | **112** | | | 70 | 130 | 07/05/2018 | JMK |
| C5-C6 Aliphatics - BSD | NWVPH | **117** | **4** | | 70 | 130 | 07/05/2018 | JMK |
| >C6-C8 Aliphatics - BS | NWVPH | **108** | | | 70 | 130 | 07/05/2018 | JMK |
| >C6-C8 Aliphatics - BSD | NWVPH | **111** | **3** | | 70 | 130 | 07/05/2018 | JMK |
| >C8-C10 Aliphatics - BS | NWVPH | **98.0** | | | 70 | 130 | 07/05/2018 | JMK |
| >C8-C10 Aliphatics - BSD | NWVPH | **100** | **2** | | 70 | 130 | 07/05/2018 | JMK |
| >C10-C12 Aliphatics - BS | NWVPH | **112** | | | 70 | 130 | 07/05/2018 | JMK |
| >C10-C12 Aliphatics - BSD | NWVPH | **116** | **4** | | 70 | 130 | 07/05/2018 | JMK |
| >C8-C10 Aromatics - BS | NWVPH | **94.8** | | | 70 | 130 | 07/05/2018 | JMK |
| >C8-C10 Aromatics - BSD | NWVPH | **97.4** | **3** | | 70 | 130 | 07/05/2018 | JMK |
| >C10-C12 Aromatics - BS | NWVPH | **96.7** | | | 70 | 130 | 07/05/2018 | JMK |
| >C10-C12 Aromatics - BSD | NWVPH | **96.9** | **0** | | 70 | 130 | 07/05/2018 | JMK |
| >C12-C13 Aromatics - BS | NWVPH | **98.0** | | | 70 | 130 | 07/05/2018 | JMK |
| >C12-C13 Aromatics - BSD | NWVPH | **102** | **4** | | 70 | 130 | 07/05/2018 | JMK |
| Hexane - BS | NWVPH | **105** | | | 70 | 130 | 07/05/2018 | JMK |
| Hexane - BSD | NWVPH | **105** | **0** | | 70 | 130 | 07/05/2018 | JMK |

### ALS Test Batch ID: 129772 - Soil by NWTPH-DX

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| TPH-Diesel Range - BS | NWTPH-DX | **90.9** | | | 75.5 | 122.1 | 06/22/2018 | GAP |



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Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| TPH-Diesel Range - BSD | NWTPH-DX | **97.5** | **7** | | 75.5 | 122.1 | 06/22/2018 | GAP |

### ALS Test Batch ID: 129913 - Soil by NWTPH-DX

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| TPH-Diesel Range - BS | NWTPH-DX | **90.6** | | | 75.5 | 122.1 | 06/27/2018 | GAP |
| TPH-Diesel Range - BSD | NWTPH-DX | **103** | **13** | | 75.5 | 122.1 | 06/27/2018 | GAP |

### ALS Test Batch ID: R319335 - Soil by NWEPH

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| >C8-C10 Aliphatics - BS | NWEPH | **83.1** | | | 70 | 130 | 06/29/2018 | GAP |
| >C8-C10 Aliphatics - BSD | NWEPH | **93.5** | **12** | | 70 | 130 | 06/29/2018 | GAP |
| >C10-C12 Aliphatics - BS | NWEPH | **88.3** | | | 70 | 130 | 06/29/2018 | GAP |
| >C10-C12 Aliphatics - BSD | NWEPH | **96.8** | **9** | | 70 | 130 | 06/29/2018 | GAP |
| >C12-C16 Aliphatics - BS | NWEPH | **93.8** | | | 70 | 130 | 06/29/2018 | GAP |
| >C12-C16 Aliphatics - BSD | NWEPH | **101** | **8** | | 70 | 130 | 06/29/2018 | GAP |
| >C16-C21 Aliphatics - BS | NWEPH | **92.6** | | | 70 | 130 | 06/29/2018 | GAP |
| >C16-C21 Aliphatics - BSD | NWEPH | **99.9** | **8** | | 70 | 130 | 06/29/2018 | GAP |
| >C21-C34 Aliphatics - BS | NWEPH | **80.6** | | | 70 | 130 | 06/29/2018 | GAP |
| >C21-C34 Aliphatics - BSD | NWEPH | **88.0** | **9** | | 70 | 130 | 06/29/2018 | GAP |
| >C8-C10 Aromatics - BS | NWEPH | **116** | | | 70 | 130 | 06/29/2018 | GAP |
| >C8-C10 Aromatics - BSD | NWEPH | **114** | **2** | | 70 | 130 | 06/29/2018 | GAP |
| >C10-C12 Aromatics - BS | NWEPH | **113** | | | 70 | 130 | 06/29/2018 | GAP |
| >C10-C12 Aromatics - BSD | NWEPH | **114** | **1** | | 70 | 130 | 06/29/2018 | GAP |
| >C12-C16 Aromatics - BS | NWEPH | **117** | | | 70 | 130 | 06/29/2018 | GAP |
| >C12-C16 Aromatics - BSD | NWEPH | **115** | **1** | | 70 | 130 | 06/29/2018 | GAP |
| >C16-C21 Aromatics - BS | NWEPH | **115** | | | 70 | 130 | 06/29/2018 | GAP |
| >C16-C21 Aromatics - BSD | NWEPH | **113** | **2** | | 70 | 130 | 06/29/2018 | GAP |
| >C21-C34 Aromatics - BS | NWEPH | **114** | | | 70 | 130 | 06/29/2018 | GAP |
| >C21-C34 Aromatics - BSD | NWEPH | **126** | **10** | | 70 | 130 | 06/29/2018 | GAP |

### ALS Test Batch ID: 129766 - Soil by EPA-8260

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane - BS | EPA-8260 | **93.6** | | | 50 | 150 | 06/23/2018 | DLC |
| Dichlorodifluoromethane - BSD | EPA-8260 | **104** | **11** | | 50 | 150 | 06/24/2018 | DLC |
| Chloromethane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/23/2018 | DLC |
| Chloromethane - BSD | EPA-8260 | **113** | **10** | | 50 | 150 | 06/24/2018 | DLC |
| Vinyl Chloride - BS | EPA-8260 | **96.7** | | | 50 | 150 | 06/23/2018 | DLC |



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CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride - BSD | EPA-8260 | **105** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| Bromomethane - BS | EPA-8260 | **107** | | | 50 | 150 | 06/23/2018 | DLC |
| Bromomethane - BSD | EPA-8260 | **114** | **7** | | 50 | 150 | 06/24/2018 | DLC |
| Chloroethane - BS | EPA-8260 | **89.6** | | | 50 | 150 | 06/23/2018 | DLC |
| Chloroethane - BSD | EPA-8260 | **98.4** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| Carbon Tetrachloride - BS | EPA-8260 | **93.5** | | | 50 | 150 | 06/23/2018 | DLC |
| Carbon Tetrachloride - BSD | EPA-8260 | **104** | **10** | | 50 | 150 | 06/24/2018 | DLC |
| Trichlorofluoromethane - BS | EPA-8260 | **94.0** | | | 50 | 150 | 06/23/2018 | DLC |
| Trichlorofluoromethane - BSD | EPA-8260 | **103** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloroethene - BS | EPA-8260 | **91.2** | | | 73 | 138 | 06/23/2018 | DLC |
| 1,1-Dichloroethene - BSD | EPA-8260 | **101** | **10** | | 73 | 138 | 06/24/2018 | DLC |
| Methylene Chloride - BS | EPA-8260 | **98.0** | | | 50 | 150 | 06/23/2018 | DLC |
| Methylene Chloride - BSD | EPA-8260 | **109** | **11** | | 50 | 150 | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene - BS | EPA-8260 | **96.8** | | | 50 | 150 | 06/23/2018 | DLC |
| Trans-1,2-Dichloroethene - BSD | EPA-8260 | **106** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloroethane - BS | EPA-8260 | **89.3** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,1-Dichloroethane - BSD | EPA-8260 | **101** | **13** | | 50 | 150 | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene - BS | EPA-8260 | **95.9** | | | 50 | 150 | 06/23/2018 | DLC |
| Cis-1,2-Dichloroethene - BSD | EPA-8260 | **105** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| 2,2-Dichloropropane - BS | EPA-8260 | **92.2** | | | 50 | 150 | 06/23/2018 | DLC |
| 2,2-Dichloropropane - BSD | EPA-8260 | **102** | **10** | | 50 | 150 | 06/24/2018 | DLC |
| Bromochloromethane - BS | EPA-8260 | **99.8** | | | 50 | 150 | 06/23/2018 | DLC |
| Bromochloromethane - BSD | EPA-8260 | **105** | **5** | | 50 | 150 | 06/24/2018 | DLC |
| Chloroform - BS | EPA-8260 | **104** | | | 50 | 150 | 06/23/2018 | DLC |
| Chloroform - BSD | EPA-8260 | **114** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane - BS | EPA-8260 | **101** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,1,1-Trichloroethane - BSD | EPA-8260 | **111** | **10** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloropropene - BS | EPA-8260 | **93.7** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,1-Dichloropropene - BSD | EPA-8260 | **105** | **11** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dichloroethane - BS | EPA-8260 | **114** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,2-Dichloroethane - BSD | EPA-8260 | **122** | **7** | | 50 | 150 | 06/24/2018 | DLC |
| Trichloroethene - BS | EPA-8260 | **113** | | | 75 | 136 | 06/23/2018 | DLC |
| Trichloroethene - BSD | EPA-8260 | **124** | **9** | | 75 | 136 | 06/24/2018 | DLC |
| 1,2-Dichloropropane - BS | EPA-8260 | **92.8** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,2-Dichloropropane - BSD | EPA-8260 | **100** | **8** | | 50 | 150 | 06/24/2018 | DLC |
| Dibromomethane - BS | EPA-8260 | **93.7** | | | 50 | 150 | 06/23/2018 | DLC |
| Dibromomethane - BSD | EPA-8260 | **103** | **10** | | 50 | 150 | 06/24/2018 | DLC |
| Bromodichloromethane - BS | EPA-8260 | **93.4** | | | 50 | 150 | 06/23/2018 | DLC |
| Bromodichloromethane - BSD | EPA-8260 | **100** | **7** | | 50 | 150 | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene - BS | EPA-8260 | **103** | | | 50 | 150 | 06/23/2018 | DLC |



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DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Trans-1,3-Dichloropropene - BSD | EPA-8260 | **111** | **8** | | 50 | 150 | 06/24/2018 | DLC |
| Toluene - BS | EPA-8260 | **91.6** | | | 71.6 | 122.1 | 06/23/2018 | DLC |
| Toluene - BSD | EPA-8260 | **100** | **9** | | 71.6 | 122.1 | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene - BS | EPA-8260 | **94.6** | | | 50 | 150 | 06/23/2018 | DLC |
| Cis-1,3-Dichloropropene - BSD | EPA-8260 | **102** | **8** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane - BS | EPA-8260 | **99.3** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,1,2-Trichloroethane - BSD | EPA-8260 | **105** | **6** | | 50 | 150 | 06/24/2018 | DLC |
| 1,3-Dichloropropane - BS | EPA-8260 | **92.7** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,3-Dichloropropane - BSD | EPA-8260 | **97.4** | **5** | | 50 | 150 | 06/24/2018 | DLC |
| Tetrachloroethylene - BS | EPA-8260 | **111** | | | 50 | 150 | 06/23/2018 | DLC |
| Tetrachloroethylene - BSD | EPA-8260 | **122** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| Dibromochloromethane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/23/2018 | DLC |
| Dibromochloromethane - BSD | EPA-8260 | **109** | **7** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dibromoethane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,2-Dibromoethane - BSD | EPA-8260 | **108** | **6** | | 50 | 150 | 06/24/2018 | DLC |
| Chlorobenzene - BS | EPA-8260 | **97.0** | | | 79 | 128 | 06/23/2018 | DLC |
| Chlorobenzene - BSD | EPA-8260 | **107** | **9** | | 79 | 128 | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BS | EPA-8260 | **94.8** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BSD | EPA-8260 | **102** | **7** | | 50 | 150 | 06/24/2018 | DLC |
| Bromoform - BS | EPA-8260 | **106** | | | 50 | 150 | 06/23/2018 | DLC |
| Bromoform - BSD | EPA-8260 | **113** | **7** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BS | EPA-8260 | **97.6** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BSD | EPA-8260 | **105** | **7** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,2,3-Trichloropropane - BSD | EPA-8260 | **109** | **6** | | 50 | 150 | 06/24/2018 | DLC |
| Bromobenzene - BS | EPA-8260 | **91.2** | | | 50 | 150 | 06/23/2018 | DLC |
| Bromobenzene - BSD | EPA-8260 | **98.5** | **8** | | 50 | 150 | 06/24/2018 | DLC |
| 2-Chlorotoluene - BS | EPA-8260 | **96.2** | | | 50 | 150 | 06/23/2018 | DLC |
| 2-Chlorotoluene - BSD | EPA-8260 | **105** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| 4-Chlorotoluene - BS | EPA-8260 | **95.7** | | | 50 | 150 | 06/23/2018 | DLC |
| 4-Chlorotoluene - BSD | EPA-8260 | **104** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene - BS | EPA-8260 | **96.5** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,3-Dichlorobenzene - BSD | EPA-8260 | **104** | **8** | | 50 | 150 | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene - BS | EPA-8260 | **91.8** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,4-Dichlorobenzene - BSD | EPA-8260 | **99.5** | **8** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene - BS | EPA-8260 | **99.3** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,2-Dichlorobenzene - BSD | EPA-8260 | **105** | **6** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BS | EPA-8260 | **107** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BSD | EPA-8260 | **113** | **6** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene - BS | EPA-8260 | **98.1** | | | 50 | 150 | 06/23/2018 | DLC |



ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene - BSD | EPA-8260 | **107** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| Hexachlorobutadiene - BS | EPA-8260 | **91.3** | | | 50 | 150 | 06/23/2018 | DLC |
| Hexachlorobutadiene - BSD | EPA-8260 | **99.7** | **9** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene - BS | EPA-8260 | **100** | | | 50 | 150 | 06/23/2018 | DLC |
| 1,2,3-Trichlorobenzene - BSD | EPA-8260 | **109** | **8** | | 50 | 150 | 06/24/2018 | DLC |

### ALS Test Batch ID: 129780 - Soil by EPA-8260

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/24/2018 | DLC |
| Dichlorodifluoromethane - BSD | EPA-8260 | **99.3** | **3** | | 50 | 150 | 06/24/2018 | DLC |
| Chloromethane - BS | EPA-8260 | **112** | | | 50 | 150 | 06/24/2018 | DLC |
| Chloromethane - BSD | EPA-8260 | **110** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Vinyl Chloride - BS | EPA-8260 | **104** | | | 50 | 150 | 06/24/2018 | DLC |
| Vinyl Chloride - BSD | EPA-8260 | **105** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| Bromomethane - BS | EPA-8260 | **101** | | | 50 | 150 | 06/24/2018 | DLC |
| Bromomethane - BSD | EPA-8260 | **103** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Chloroethane - BS | EPA-8260 | **96.8** | | | 50 | 150 | 06/24/2018 | DLC |
| Chloroethane - BSD | EPA-8260 | **93.4** | **4** | | 50 | 150 | 06/24/2018 | DLC |
| Carbon Tetrachloride - BS | EPA-8260 | **104** | | | 50 | 150 | 06/24/2018 | DLC |
| Carbon Tetrachloride - BSD | EPA-8260 | **103** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| Trichlorofluoromethane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/24/2018 | DLC |
| Trichlorofluoromethane - BSD | EPA-8260 | **100** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloroethene - BS | EPA-8260 | **96.0** | | | 73 | 138 | 06/24/2018 | DLC |
| 1,1-Dichloroethene - BSD | EPA-8260 | **95.4** | **1** | | 73 | 138 | 06/24/2018 | DLC |
| Methylene Chloride - BS | EPA-8260 | **118** | | | 50 | 150 | 06/24/2018 | DLC |
| Methylene Chloride - BSD | EPA-8260 | **116** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene - BS | EPA-8260 | **104** | | | 50 | 150 | 06/24/2018 | DLC |
| Trans-1,2-Dichloroethene - BSD | EPA-8260 | **103** | **0** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloroethane - BS | EPA-8260 | **98.6** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloroethane - BSD | EPA-8260 | **97.1** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene - BS | EPA-8260 | **99.8** | | | 50 | 150 | 06/24/2018 | DLC |
| Cis-1,2-Dichloroethene - BSD | EPA-8260 | **101** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 2,2-Dichloropropane - BS | EPA-8260 | **109** | | | 50 | 150 | 06/24/2018 | DLC |
| 2,2-Dichloropropane - BSD | EPA-8260 | **108** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| Bromochloromethane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/24/2018 | DLC |
| Bromochloromethane - BSD | EPA-8260 | **101** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| Chloroform - BS | EPA-8260 | **111** | | | 50 | 150 | 06/24/2018 | DLC |
| Chloroform - BSD | EPA-8260 | **108** | **3** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,1-Trichloroethane - BS | EPA-8260 | **108** | | | 50 | 150 | 06/24/2018 | DLC |



ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227

CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane - BSD | EPA-8260 | **106** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloropropene - BS | EPA-8260 | **103** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,1-Dichloropropene - BSD | EPA-8260 | **103** | **0** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dichloroethane - BS | EPA-8260 | **114** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dichloroethane - BSD | EPA-8260 | **112** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Trichloroethene - BS | EPA-8260 | **116** | | | 75 | 136 | 06/24/2018 | DLC |
| Trichloroethene - BSD | EPA-8260 | **114** | **2** | | 75 | 136 | 06/24/2018 | DLC |
| 1,2-Dichloropropane - BS | EPA-8260 | **93.7** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dichloropropane - BSD | EPA-8260 | **92.0** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Dibromomethane - BS | EPA-8260 | **94.1** | | | 50 | 150 | 06/24/2018 | DLC |
| Dibromomethane - BSD | EPA-8260 | **94.5** | **0** | | 50 | 150 | 06/24/2018 | DLC |
| Bromodichloromethane - BS | EPA-8260 | **94.3** | | | 50 | 150 | 06/24/2018 | DLC |
| Bromodichloromethane - BSD | EPA-8260 | **93.0** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene - BS | EPA-8260 | **109** | | | 50 | 150 | 06/24/2018 | DLC |
| Trans-1,3-Dichloropropene - BSD | EPA-8260 | **106** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Toluene - BS | EPA-8260 | **95.2** | | | 71.6 | 122.1 | 06/24/2018 | DLC |
| Toluene - BSD | EPA-8260 | **93.9** | **1** | | 71.6 | 122.1 | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene - BS | EPA-8260 | **101** | | | 50 | 150 | 06/24/2018 | DLC |
| Cis-1,3-Dichloropropene - BSD | EPA-8260 | **99.0** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane - BS | EPA-8260 | **97.6** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,2-Trichloroethane - BSD | EPA-8260 | **95.3** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| 1,3-Dichloropropane - BS | EPA-8260 | **92.7** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,3-Dichloropropane - BSD | EPA-8260 | **89.0** | **4** | | 50 | 150 | 06/24/2018 | DLC |
| Tetrachloroethylene - BS | EPA-8260 | **114** | | | 50 | 150 | 06/24/2018 | DLC |
| Tetrachloroethylene - BSD | EPA-8260 | **114** | **0** | | 50 | 150 | 06/24/2018 | DLC |
| Dibromochloromethane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/24/2018 | DLC |
| Dibromochloromethane - BSD | EPA-8260 | **101** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dibromoethane - BS | EPA-8260 | **100** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dibromoethane - BSD | EPA-8260 | **98.1** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Chlorobenzene - BS | EPA-8260 | **102** | | | 79 | 128 | 06/24/2018 | DLC |
| Chlorobenzene - BSD | EPA-8260 | **100** | **2** | | 79 | 128 | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BS | EPA-8260 | **96.4** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BSD | EPA-8260 | **95.8** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| Bromoform - BS | EPA-8260 | **105** | | | 50 | 150 | 06/24/2018 | DLC |
| Bromoform - BSD | EPA-8260 | **105** | **0** | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BS | EPA-8260 | **98.1** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BSD | EPA-8260 | **97.0** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane - BS | EPA-8260 | **102** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,3-Trichloropropane - BSD | EPA-8260 | **100** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Bromobenzene - BS | EPA-8260 | **95.0** | | | 50 | 150 | 06/24/2018 | DLC |



ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/10/2018
ALS SDG#: EV18060136
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Bromobenzene - BSD | EPA-8260 | **94.3** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 2-Chlorotoluene - BS | EPA-8260 | **102** | | | 50 | 150 | 06/24/2018 | DLC |
| 2-Chlorotoluene - BSD | EPA-8260 | **101** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 4-Chlorotoluene - BS | EPA-8260 | **103** | | | 50 | 150 | 06/24/2018 | DLC |
| 4-Chlorotoluene - BSD | EPA-8260 | **102** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene - BS | EPA-8260 | **103** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,3-Dichlorobenzene - BSD | EPA-8260 | **102** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene - BS | EPA-8260 | **103** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,4-Dichlorobenzene - BSD | EPA-8260 | **102** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene - BS | EPA-8260 | **102** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dichlorobenzene - BSD | EPA-8260 | **101** | **1** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BS | EPA-8260 | **103** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BSD | EPA-8260 | **100** | **3** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene - BS | EPA-8260 | **110** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,4-Trichlorobenzene - BSD | EPA-8260 | **109** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| Hexachlorobutadiene - BS | EPA-8260 | **95.8** | | | 50 | 150 | 06/24/2018 | DLC |
| Hexachlorobutadiene - BSD | EPA-8260 | **94.1** | **2** | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene - BS | EPA-8260 | **108** | | | 50 | 150 | 06/24/2018 | DLC |
| 1,2,3-Trichlorobenzene - BSD | EPA-8260 | **106** | **2** | | 50 | 150 | 06/24/2018 | DLC |

APPROVED BY

Laboratory Director



ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
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# Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1806013G

Date 6/21/18 Page 1 Of 3

PROJECT ID: Cascade Laundry
REPORT TO COMPANY: Stratum Group
PROJECT MANAGER: Kim Nimmermann
ADDRESS: Po Box 2546
Bellingham WA 98227
PHONE: 360 714 9409 P.O. #: Cascade Laundry
E-MAIL: Kime stratumgroup.net
INVOICE TO COMPANY:
ATTENTION: Same as above
ADDRESS:

| SAMPLE I.D. | DATE | TIME | TYPE | LAB# | NWTPH-HCID | NWTPH-Dx | NWTPH-Gx | BTEX by EPA 8021 ☒ | BTEX by EPA 8260 ☐ | MTBE by EPA 8021 ☐ | MTBE by EPA 8260 ☐ | Halogenated Volatiles by EPA 8260 | Volatile Organic Compounds by EPA 8260 | EDB / EDC by EPA 8260 SIM (water) | EDB / EDC by EPA 8260 (soil) | Semivolatile Organic Compounds by EPA 8270 | Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM | PCB by EPA 8082 ☐ | Pesticides by EPA 8081 ☐ | Metals-MTCA-5 ☐ | RCRA-8 ☐ | Pri Pol ☐ | TAL ☐ | Metals Other (Specify) | TCLP-Metals ☐ | VOA ☐ | Semi-Vol ☐ | Pest ☐ | Herbs ☐ | VPH | NUMBER OF CONTAINERS | RECEIVED IN GOOD CONDITION? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SB1-5 | 6/19/18 | 11:45 | Soil | 1 | X | | | | | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 2. SB1-10 | | 12:00 | | 2 | X | | | | | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 3. SB1-15 | | 12:10 | | 3 | | X | X | | X | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 4. SB1-17 | | 12:40 | | 4 | | X | X | | X | | | X | | | | | | | | | | | | | | | | | | X | 4 | |
| 5. SB1-20 | | 12:30 | | 5 | | X | X | | X | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 6. SB1-25 | | 13:10 | | 6 | X | | | | | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 7. SB1-30 | ↓ | 13:25 | | 7 | X | | | | | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 8. SB3-5 | 6/20/18 | 8:00 | | 8 | X | | | | | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 9. SB3-10 | ↓ | 8:10 | | 9 | X | | | | | | | X | | | | | | | | | | | | | | | | | | | 4 | |
| 10. SB3-15 | ↓ | 8:20 | ↓ | 10 | X | | | | | | | X | | | | | | | | | | | | | | | | | | | 4 | |

SPECIAL INSTRUCTIONS: ⊗ 6/26/18 - Kim added Dx to SB4-5, SB4-10, VPH to SB1-17, SB3-21, SB3-25, EPH + VPH to SB4-15 all on std TAT.

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Kim Stratum Grp 6/22/18 6:30
Received By: 6/22/18 6:30
2. Relinquished By: 6/22/18 8:15
Received By: ALS 6/22/18 8:15

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard ☒ | 5 ☐ | 3 ☐ | 2 ☐ | 1 ☐ | SAME DAY ☐

Fuels & Hydrocarbon Analysis: 5 Standard ☒ | 3 ☐ | 1 ☐ | SAME DAY ☐

OTHER: Specify:

*Turnaround request less than standard may incur Rush Charges

**ALS Environmental**
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Everett, WA 98208
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http://www.alsglobal.com

# Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1806136

Date 6/21/18 Page 2 of 3

| | |
|---|---|
| PROJECT ID: | Cascade Laundry |
| REPORT TO COMPANY: | Stratum Group |
| PROJECT MANAGER: | Kim Nienaber |
| ADDRESS: | PO Box 2546 |
| | Bellingham, WA 98227 |
| PHONE: | 360 714 9402 P.O. #: Cascade Laundry |
| E-MAIL: | kim@stratumgroup.net |
| INVOICE TO COMPANY: | |
| ATTENTION: | Same as above |
| ADDRESS: | |

ANALYSIS REQUESTED

| SAMPLE I.D. | DATE | TIME | TYPE | LAB# | NWTPH-HCID | NWTPH-DX | NWTPH-GX | BTEX by EPA 8021 (BTEX by EPA 8260 ☐) | MTBE by EPA 8021 (MTBE by EPA 8260 ☐) | Halogenated Volatiles by EPA 8260 | Volatile Organic Compounds by EPA 8260 (HVOC) | EDB / EDC by EPA 8260 SIM (water) | EDB / EDC by EPA 8260 (soil) | Semivolatile Organic Compounds by EPA 8270 | Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM | PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐ | Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐ | Metals Other (Specify) | TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐ | OTHER (Specify) | NUMBER OF CONTAINERS | RECEIVED IN GOOD CONDITION? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | VPH | EPH | |
| 1. SB3-20 | 6/20/18 | 8:30 | Soil | 11 | | X | X | X | | | X | | | | | | | | | | | 4 | |
| 2. SB3-21 | | 8:55 | | 12 | | X | X | X | | | X | | | | | | | | | X | | 4 | |
| 3. SB3-25 | | 8:45 | | 13 | | X | X | X | | | X | | | | | | | | | X | | 4 | |
| 4. SB4-5 | | 11:30 | | 14 | X | X | | | | | X | | | | | | | | | | | 4 | |
| 5. SB4-10 | | 11:35 | | 15 | X | X | | | | | X | | | | | | | | | | | 4 | |
| 6. SB4-15 | | 11:45 | | 16 | | X | X | X | | | X | | | | | | | | | X | X | 4 | |
| 7. SB4-20 | | 11:55 | | 17 | | X | X | X | | | X | | | | | | | | | | | 4 | |
| 8. SB4-25 | | 12:00 | | 18 | | X | X | X | | | X | | | | | | | | | | | 4 | |
| 9. SB4-29 | | 12:15 | | 19 | | X | X | X | | | X | | | | | | | | | | | 4 | |
| 10. SB5-10 | ↓ | 13:25 | ↓ | 20 | X | | | | | | X | | | | | | | | | | | 4 | |

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Kim N Stratum Group 6/22/18 6:30
   Received By: [signature] 6/22/18 6:30
2. Relinquished By: [signature] 6/22/18 8:15
   Received By: [signature] ALS 6/22/18 8:15

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 (Standard) | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 (Standard) | 3 | 1 | SAME DAY

OTHER: Specify:

*Turnaround requests less than standard may incur Rush Charges

**ALS Environmental**
8620 Holly Drive, Suite 100
Everett, WA 98208
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http://www.alsglobal.com

# Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1806013 6

Date 6/22/18 Page 3 Of 3

| | |
|---|---|
| PROJECT ID: | Cascade Laundry |
| REPORT TO COMPANY: | Shannon Group |
| PROJECT MANAGER: | Kim Nineham |
| ADDRESS: | P. Box 2516 |
| | Bellingham, WA 98227 |
| PHONE: | 360 714 9404 P.O. #: Cascade Laundry |
| E-MAIL: | kime shannongroup.net |
| INVOICE TO COMPANY: | |
| ATTENTION: | Same as above |
| ADDRESS: | |

ANALYSIS REQUESTED

| SAMPLE I.D. | DATE | TIME | TYPE | LAB# | NWTPH-HCID | NWTPH-DX | NWTPH-GX | BTEX by EPA 8021 ☒ BTEX by EPA 8260 ☐ | MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐ | Halogenated Volatiles by EPA 8260 | Volatile Organic Compounds by EPA 8260 | EDB / EDC by EPA 8260 SIM (water) | EDB / EDC by EPA 8260 (soil) | Semivolatile Organic Compounds by EPA 8270 | Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM | PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐ | Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐ | Metals Other (Specify) | TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐ | NUMBER OF CONTAINERS | RECEIVED IN GOOD CONDITION? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SB5-15 | 6/22/18 | 13:30 | Soil | 21 | X | | | | | X | | | | | | | | | | 4 | |
| 2. SB5-20 | ↓ | 13:45 | ↓ | 22 | | X | X | X | | X | | | | | | | | | | 4 | |
| 3. SB5-25 | ↓ | 13:55 | ↓ | 23 | X | | | | | X | | | | | | | | | | 4 | |
| 4. | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | | | | | | | | |

OTHER (Specify)

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Kim Nineham Shannon Group 6/22/18 6:30
   Received By: [signature] 6/22/18 6:30
2. Relinquished By: [signature] 6/22 8:15
   Received By: [signature] ALS 6/22/18 8:15

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard ☒ | 5 ☐ | 3 ☐ | 2 ☐ | 1 ☐ | SAME DAY ☐

Fuels & Hydrocarbon Analysis: Standard ☒ | 3 ☐ | 1 ☐ | SAME DAY ☐

OTHER:

Specify: _____

July 27, 2018

Ms. Kim Ninnemann
Stratum Group
P.O. Box 2546
Bellingham, WA 98227

Dear Ms. Ninnemann,

On July 25th, 1 sample was received by our laboratory and assigned our laboratory project number EV18070154. The project was identified as your Cascade Laundry. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/27/2018<br>EV18070154<br>EV18070154-01 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 07/25/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 7/24/2018 10:20:00 AM |
| CLIENT SAMPLE ID | MW 1 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | **2100** | 200 | 4 | UG/L | 07/26/2018 | JMK |
| Benzene | EPA-8021 | **6.3** | 1.0 | 1 | UG/L | 07/26/2018 | JMK |
| Toluene | EPA-8021 | **1.3** | 1.0 | 1 | UG/L | 07/26/2018 | JMK |
| Ethylbenzene | EPA-8021 | **6.1** | 1.0 | 1 | UG/L | 07/26/2018 | JMK |
| Xylenes | EPA-8021 | **8.9** | 3.0 | 1 | UG/L | 07/26/2018 | JMK |
| TPH-Diesel Range | NWTPH-DX | **2400** | 130 | 1 | UG/L | 07/26/2018 | EBS |
| TPH-Oil Range | NWTPH-DX | U | 250 | 1 | UG/L | 07/26/2018 | EBS |
| Dichlorodifluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **460** | 20 | 100 | UG/L | 07/26/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/26/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | **14** | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **160** | 20 | 10 | UG/L | 07/26/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | **17** | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/26/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |



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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Stratum Group<br>P.O. Box 2546<br>Bellingham, WA 98227 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/27/2018<br>EV18070154<br>EV18070154-01 |
| CLIENT CONTACT: | Kim Ninnemann | DATE RECEIVED: | 07/25/2018 |
| CLIENT PROJECT: | Cascade Laundry | COLLECTION DATE: | 7/24/2018 10:20:00 AM |
| CLIENT SAMPLE ID | MW 1 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | **3.5** | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/26/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| TFT 4X Dilution | NWTPH-GX | **106** | 07/26/2018 | JMK |
| TFT | EPA-8021 | **95.9** | 07/26/2018 | JMK |
| C25 | NWTPH-DX | **92.2** | 07/26/2018 | EBS |
| 1,2-Dichloroethane-d4 | EPA-8260 | **96.1** | 07/26/2018 | DLC |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **101** | 07/26/2018 | DLC |
| 1,2-Dichloroethane-d4 100X Dilution | EPA-8260 | **102** | 07/26/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **72.9 SUR12** | 07/26/2018 | DLC |
| 4-Bromofluorobenzene 10X Dilution | EPA-8260 | **84.2** | 07/26/2018 | DLC |
| 4-Bromofluorobenzene 100X Dilution | EPA-8260 | **92.0** | 07/26/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.
SUR12 -Surrogate recoveries were outside of the control limits due to matrix interference.
Chromatogram indicates that it is likely that sample contains gasoline and weathered diesel 1.
Gasoline range product results biased high due to semivolatile range product overlap.



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## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/27/2018
ALS SDG#: EV18070154
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MBG-072518W - Batch 130813 - Water by NWTPH-GX

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| TPH-Volatile Range | NWTPH-GX | U | UG/L | 50 | 07/25/2018 | JMK |

U - Analyte analyzed for but not detected at level above reporting limit.

### MB-072518W - Batch 130813 - Water by EPA-8021

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Benzene | EPA-8021 | U | UG/L | 1.0 | 07/25/2018 | JMK |
| Toluene | EPA-8021 | U | UG/L | 1.0 | 07/25/2018 | JMK |
| Ethylbenzene | EPA-8021 | U | UG/L | 1.0 | 07/25/2018 | JMK |
| Xylenes | EPA-8021 | U | UG/L | 3.0 | 07/25/2018 | JMK |

U - Analyte analyzed for but not detected at level above reporting limit.

### MB-072618W - Batch 130883 - Water by NWTPH-DX

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| TPH-Diesel Range | NWTPH-DX | U | UG/L | 130 | 07/26/2018 | EBS |
| TPH-Oil Range | NWTPH-DX | U | UG/L | 250 | 07/26/2018 | EBS |

U - Analyte analyzed for but not detected at level above reporting limit.

### MB-072618W - Batch 130915 - Water by EPA-8260

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Chloromethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | UG/L | 0.20 | 07/26/2018 | DLC |
| Bromomethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Chloroethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | UG/L | 5.0 | 07/26/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Chloroform | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227

CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/27/2018
ALS SDG#: EV18070154
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MB-072618W - Batch 130915 - Water by EPA-8260

| | | | | | | |
|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Trichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Dibromomethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Toluene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | UG/L | 0.010 | 07/26/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Bromoform | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Bromobenzene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | UG/L | 10 | 07/26/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/26/2018 | DLC |

U - Analyte analyzed for but not detected at level above reporting limit.



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## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227
CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/27/2018
ALS SDG#: EV18070154
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: 130813 - Water by NWTPH-GX

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| TPH-Volatile Range - BS | NWTPH-GX | **97.7** | | | 66.5 | 122.7 | 07/25/2018 | JMK |
| TPH-Volatile Range - BSD | NWTPH-GX | **102** | **5** | | 66.5 | 122.7 | 07/25/2018 | JMK |

### ALS Test Batch ID: 130813 - Water by EPA-8021

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Benzene - BS | EPA-8021 | **95.9** | | | 83 | 120 | 07/25/2018 | JMK |
| Benzene - BSD | EPA-8021 | **98.5** | **3** | | 83 | 120 | 07/25/2018 | JMK |
| Toluene - BS | EPA-8021 | **95.1** | | | 85 | 115 | 07/25/2018 | JMK |
| Toluene - BSD | EPA-8021 | **97.5** | **3** | | 85 | 115 | 07/25/2018 | JMK |
| Ethylbenzene - BS | EPA-8021 | **96.2** | | | 85 | 113 | 07/25/2018 | JMK |
| Ethylbenzene - BSD | EPA-8021 | **98.6** | **2** | | 85 | 113 | 07/25/2018 | JMK |
| Xylenes - BS | EPA-8021 | **97.4** | | | 85 | 116 | 07/25/2018 | JMK |
| Xylenes - BSD | EPA-8021 | **100** | **3** | | 85 | 116 | 07/25/2018 | JMK |

### ALS Test Batch ID: 130883 - Water by NWTPH-DX

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| TPH-Diesel Range - BS | NWTPH-DX | **97.8** | | | 67 | 125.2 | 07/26/2018 | EBS |
| TPH-Diesel Range - BSD | NWTPH-DX | **101** | **3** | | 67 | 125.2 | 07/26/2018 | EBS |

### ALS Test Batch ID: 130915 - Water by EPA-8260

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane - BS | EPA-8260 | **78.7** | | | 50 | 150 | 07/26/2018 | DLC |
| Dichlorodifluoromethane - BSD | EPA-8260 | **77.6** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Chloromethane - BS | EPA-8260 | **108** | | | 50 | 150 | 07/26/2018 | DLC |
| Chloromethane - BSD | EPA-8260 | **107** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Vinyl Chloride - BS | EPA-8260 | **116** | | | 50 | 150 | 07/26/2018 | DLC |
| Vinyl Chloride - BSD | EPA-8260 | **116** | **0** | | 50 | 150 | 07/26/2018 | DLC |
| Bromomethane - BS | EPA-8260 | **101** | | | 50 | 150 | 07/26/2018 | DLC |
| Bromomethane - BSD | EPA-8260 | **103** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Chloroethane - BS | EPA-8260 | **105** | | | 50 | 150 | 07/26/2018 | DLC |
| Chloroethane - BSD | EPA-8260 | **104** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Carbon Tetrachloride - BS | EPA-8260 | **114** | | | 50 | 150 | 07/26/2018 | DLC |
| Carbon Tetrachloride - BSD | EPA-8260 | **113** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Trichlorofluoromethane - BS | EPA-8260 | **95.5** | | | 50 | 150 | 07/26/2018 | DLC |
| Trichlorofluoromethane - BSD | EPA-8260 | **93.3** | **2** | | 50 | 150 | 07/26/2018 | DLC |
| 1,1-Dichloroethene - BS | EPA-8260 | **126** | | | 72.5 | 136 | 07/26/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227

CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

DATE: 7/27/2018
ALS SDG#: EV18070154
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene - BSD | EPA-8260 | **125** | **1** | | 72.5 | 136 | 07/26/2018 | DLC |
| Methylene Chloride - BS | EPA-8260 | **88.2** | | | 50 | 150 | 07/26/2018 | DLC |
| Methylene Chloride - BSD | EPA-8260 | **86.6** | **2** | | 50 | 150 | 07/26/2018 | DLC |
| Trans-1,2-Dichloroethene - BS | EPA-8260 | **104** | | | 50 | 150 | 07/26/2018 | DLC |
| Trans-1,2-Dichloroethene - BSD | EPA-8260 | **103** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 1,1-Dichloroethane - BS | EPA-8260 | **103** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,1-Dichloroethane - BSD | EPA-8260 | **108** | **5** | | 50 | 150 | 07/26/2018 | DLC |
| Cis-1,2-Dichloroethene - BS | EPA-8260 | **113** | | | 50 | 150 | 07/26/2018 | DLC |
| Cis-1,2-Dichloroethene - BSD | EPA-8260 | **115** | **2** | | 50 | 150 | 07/26/2018 | DLC |
| 2,2-Dichloropropane - BS | EPA-8260 | **88.0** | | | 50 | 150 | 07/26/2018 | DLC |
| 2,2-Dichloropropane - BSD | EPA-8260 | **88.3** | **0** | | 50 | 150 | 07/26/2018 | DLC |
| Bromochloromethane - BS | EPA-8260 | **114** | | | 50 | 150 | 07/26/2018 | DLC |
| Bromochloromethane - BSD | EPA-8260 | **113** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Chloroform - BS | EPA-8260 | **113** | | | 50 | 150 | 07/26/2018 | DLC |
| Chloroform - BSD | EPA-8260 | **113** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 1,1,1-Trichloroethane - BS | EPA-8260 | **108** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,1,1-Trichloroethane - BSD | EPA-8260 | **108** | **0** | | 50 | 150 | 07/26/2018 | DLC |
| 1,1-Dichloropropene - BS | EPA-8260 | **108** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,1-Dichloropropene - BSD | EPA-8260 | **107** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dichloroethane - BS | EPA-8260 | **110** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dichloroethane - BSD | EPA-8260 | **109** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Trichloroethene - BS | EPA-8260 | **110** | | | 74.4 | 141 | 07/26/2018 | DLC |
| Trichloroethene - BSD | EPA-8260 | **108** | **2** | | 74.4 | 141 | 07/26/2018 | DLC |
| 1,2-Dichloropropane - BS | EPA-8260 | **98.5** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dichloropropane - BSD | EPA-8260 | **98.3** | **0** | | 50 | 150 | 07/26/2018 | DLC |
| Dibromomethane - BS | EPA-8260 | **107** | | | 50 | 150 | 07/26/2018 | DLC |
| Dibromomethane - BSD | EPA-8260 | **103** | **3** | | 50 | 150 | 07/26/2018 | DLC |
| Bromodichloromethane - BS | EPA-8260 | **112** | | | 50 | 150 | 07/26/2018 | DLC |
| Bromodichloromethane - BSD | EPA-8260 | **112** | **0** | | 50 | 150 | 07/26/2018 | DLC |
| Trans-1,3-Dichloropropene - BS | EPA-8260 | **115** | | | 50 | 150 | 07/26/2018 | DLC |
| Trans-1,3-Dichloropropene - BSD | EPA-8260 | **114** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Toluene - BS | EPA-8260 | **105** | | | 71.7 | 139 | 07/26/2018 | DLC |
| Toluene - BSD | EPA-8260 | **103** | **2** | | 71.7 | 139 | 07/26/2018 | DLC |
| Cis-1,3-Dichloropropene - BS | EPA-8260 | **109** | | | 50 | 150 | 07/26/2018 | DLC |
| Cis-1,3-Dichloropropene - BSD | EPA-8260 | **109** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 1,1,2-Trichloroethane - BS | EPA-8260 | **104** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,1,2-Trichloroethane - BSD | EPA-8260 | **102** | **2** | | 50 | 150 | 07/26/2018 | DLC |
| 1,3-Dichloropropane - BS | EPA-8260 | **102** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,3-Dichloropropane - BSD | EPA-8260 | **101** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Tetrachloroethylene - BS | EPA-8260 | **123** | | | 50 | 150 | 07/26/2018 | DLC |



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ALS Group USA, Corp dba ALS Environmental

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## CERTIFICATE OF ANALYSIS

CLIENT: Stratum Group
P.O. Box 2546
Bellingham, WA 98227

DATE: 7/27/2018
ALS SDG#: EV18070154
WDOE ACCREDITATION: C601

CLIENT CONTACT: Kim Ninnemann
CLIENT PROJECT: Cascade Laundry

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Tetrachloroethylene - BSD | EPA-8260 | **120** | **3** | | 50 | 150 | 07/26/2018 | DLC |
| Dibromochloromethane - BS | EPA-8260 | **111** | | | 50 | 150 | 07/26/2018 | DLC |
| Dibromochloromethane - BSD | EPA-8260 | **110** | **2** | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dibromoethane - BS | EPA-8260 | **107** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dibromoethane - BSD | EPA-8260 | **106** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Chlorobenzene - BS | EPA-8260 | **108** | | | 73 | 131 | 07/26/2018 | DLC |
| Chlorobenzene - BSD | EPA-8260 | **105** | **3** | | 73 | 131 | 07/26/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BS | EPA-8260 | **109** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BSD | EPA-8260 | **104** | **4** | | 50 | 150 | 07/26/2018 | DLC |
| Bromoform - BS | EPA-8260 | **117** | | | 50 | 150 | 07/26/2018 | DLC |
| Bromoform - BSD | EPA-8260 | **112** | **5** | | 50 | 150 | 07/26/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BS | EPA-8260 | **105** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BSD | EPA-8260 | **102** | **3** | | 50 | 150 | 07/26/2018 | DLC |
| 1,2,3-Trichloropropane - BS | EPA-8260 | **104** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2,3-Trichloropropane - BSD | EPA-8260 | **101** | **3** | | 50 | 150 | 07/26/2018 | DLC |
| Bromobenzene - BS | EPA-8260 | **95.3** | | | 50 | 150 | 07/26/2018 | DLC |
| Bromobenzene - BSD | EPA-8260 | **94.6** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 2-Chlorotoluene - BS | EPA-8260 | **103** | | | 50 | 150 | 07/26/2018 | DLC |
| 2-Chlorotoluene - BSD | EPA-8260 | **101** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 4-Chlorotoluene - BS | EPA-8260 | **99.9** | | | 50 | 150 | 07/26/2018 | DLC |
| 4-Chlorotoluene - BSD | EPA-8260 | **98.0** | **2** | | 50 | 150 | 07/26/2018 | DLC |
| 1,3-Dichlorobenzene - BS | EPA-8260 | **98.2** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,3-Dichlorobenzene - BSD | EPA-8260 | **97.0** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 1,4-Dichlorobenzene - BS | EPA-8260 | **99.4** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,4-Dichlorobenzene - BSD | EPA-8260 | **96.4** | **3** | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dichlorobenzene - BS | EPA-8260 | **102** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dichlorobenzene - BSD | EPA-8260 | **101** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BS | EPA-8260 | **112** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BSD | EPA-8260 | **110** | **2** | | 50 | 150 | 07/26/2018 | DLC |
| 1,2,4-Trichlorobenzene - BS | EPA-8260 | **105** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2,4-Trichlorobenzene - BSD | EPA-8260 | **104** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| Hexachlorobutadiene - BS | EPA-8260 | **81.4** | | | 50 | 150 | 07/26/2018 | DLC |
| Hexachlorobutadiene - BSD | EPA-8260 | **80.8** | **1** | | 50 | 150 | 07/26/2018 | DLC |
| 1,2,3-Trichlorobenzene - BS | EPA-8260 | **109** | | | 50 | 150 | 07/26/2018 | DLC |
| 1,2,3-Trichlorobenzene - BSD | EPA-8260 | **108** | **1** | | 50 | 150 | 07/26/2018 | DLC |



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CERTIFICATE OF ANALYSIS

APPROVED BY

Laboratory Director



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**ALS Environmental**
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Everett, WA 98208
Phone (425) 356-2600
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http://www.alsglobal.com

# Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1807015 4

Date 7/24/18 Page 1 Of 1

| | |
|---|---|
| PROJECT ID: | Cascade Laundry |
| REPORT TO COMPANY: | Stratum Group |
| PROJECT MANAGER: | Kim Nienemann |
| ADDRESS: | Po Box 2546 |
| | Bellingham, WA 98227 |
| PHONE: | 360 714-9469 P.O. #: Cascade Laundry |
| E-MAIL: | kim@stratumgroup.net |
| INVOICE TO COMPANY: | |
| ATTENTION: | Same as above |
| ADDRESS: | |

| SAMPLE I.D. | DATE | TIME | TYPE | LAB# | NWTPH-HCID | NWTPH-DX | NWTPH-GX | BTEX by EPA 8021 ☒ BTEX by EPA 8260 ☐ | MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐ | Halogenated Volatiles by EPA 8260 | Volatile Organic Compounds by EPA 8260 | EDB / EDC by EPA 8260 SIM (water) | EDB / EDC by EPA 8260 (soil) | Semivolatile Organic Compounds by EPA 8270 | Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM | PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐ | Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐ | Metals Other (Specify) | TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐ | OTHER (Specify) | NUMBER OF CONTAINERS | RECEIVED IN GOOD CONDITION? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW1 | 7/24/18 | 10:20 | H2O | 1 | | X | X | X | | X | | | | | | | | | | | 3 | |
| 2. | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | | | | | | | | | |

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: [signature] Stratum Group 7/25/18 1:35
   Received By: [signature] ALS 7/25/18 1:35
2. Relinquished By: _____
   Received By: _____

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ☒ 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: ☒ 5 Standard | 3 | 1 | SAME DAY

OTHER: Specify: _____

*Turnaround request less than standard may incur Rush Charges

# APPENDIX III

MTCA Method B – Petroleum Worksheets

TEE Evaluation Form

US Fish and Wildlife Resource List

WA Fish and Wildlife Priority Habitats and Species Report

# A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

## *1. Enter Site Information*

Date: 06/20/18
Site Name: Cascade Laundry
Sample Name: SB1-17

## *2. Enter Soil Concentration Measured*

| Chemical of Concern or Equivalent Carbon Group | Measured Soil Conc dry basis mg/kg | Composition Ratio % |
|---|---|---|
| ***Petroleum EC Fraction*** | | |
| AL_EC >5-6 | | 0.00% |
| AL_EC >6-8 | | 0.00% |
| AL_EC >8-10 | 1200 | 31.48% |
| AL_EC >10-12 | 1300 | 34.10% |
| AL_EC >12-16 | | 0.00% |
| AL_EC >16-21 | | 0.00% |
| AL_EC >21-34 | | 0.00% |
| AR_EC >8-10 | 1300 | 34.10% |
| AR_EC >10-12 | | 0.00% |
| AR_EC >12-16 | | 0.00% |
| AR_EC >16-21 | | 0.00% |
| AR_EC >21-34 | | 0.00% |
| Benzene | | 0.00% |
| Toluene | | 0.00% |
| Ethylbenzene | 5 | 0.13% |
| Total Xylenes | 6.8 | 0.18% |
| Naphthalene | | 0.00% |
| 1-Methyl Naphthalene | | 0.00% |
| 2-Methyl Naphthalene | | 0.00% |
| n-Hexane | | 0.00% |
| MTBE | | 0.00% |
| Ethylene Dibromide (EDB) | | 0.00% |
| 1,2 Dichloroethane (EDC) | | 0.00% |
| Benzo(a)anthracene | | 0.00% |
| Benzo(b)fluoranthene | | 0.00% |
| Benzo(k)fluoranthene | | 0.00% |
| Benzo(a)pyrene | | 0.00% |
| Chrysene | | 0.00% |
| Dibenz(a,h)anthracene | | 0.00% |
| Indeno(1,2,3-cd)pyrene | | 0.00% |
| **Sum** | 3811.8 | 100.00% |

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

## *3. Enter Site-Specific Hydrogeological Data*

| | | |
|---|---|---|
| Total soil porosity: | 0.43 | Unitless |
| Volumetric water content: | 0.3 | Unitless |
| Volumetric air content: | 0.13 | Unitless |
| Soil bulk density measured: | 1.5 | kg/L |
| Fraction Organic Carbon: | 0.001 | Unitless |
| Dilution Factor: | 20 | Unitless |

## *4. Target TPH Ground Water Concentation (if adjusted)*

If you adjusted the target TPH ground water concentration, enter adjusted value here: ug/L

# A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 6/20/2018
Site Name: Cascade Laundry
Sample Name: SB1-17
Measured Soil TPH Concentration, mg/kg: **3,811.800**

**1. Summary of Calculation Results**

| Exposure Pathway | Method/Goal | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc | | Does Measured Soil Conc Pass or Fail? |
|---|---|---|---|---|---|
| | | | RISK @ | HI @ | |
| Protection of Soil Direct Contact: Human Health | Method B | 2,922 | 0.00E+00 | 1.30E+00 | Fail |
| | Method C | 57,506 | 0.00E+00 | 6.63E-02 | Pass |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 142 | 0.00E+00 | 1.59E+00 | Fail |
| | NA | NA | NA | NA | NA |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

| | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|---|---|---|
| Protective Soil Concentration, TPH mg/kg | **2,921.73** | **57,506.24** |
| Most Stringent Criterion | **HI =1** | **HI =1** |

| Soil Criteria | Protective Soil Concentration @Method B | | | | Protective Soil Concentration @Method C | | | |
|---|---|---|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ |
| HI =1 | YES | 2.92E+03 | 0.00E+00 | 1.00E+00 | YES | 5.75E+04 | 0.00E+00 | 1.00E+00 |
| Total Risk=1E-5 | NA | NA | NA | NA | NA | NA | NA | NA |
| Risk of Benzene= 1E-6 | NA | NA | NA | NA | NA | | | |
| Risk of cPAHs mixture= 1E-6 | NA | NA | NA | NA | | | | |
| EDB | NA | NA | NA | NA | | NA | | |
| EDC | NA | NA | NA | NA | | | | |

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

| | |
|---|---|
| Most Stringent Criterion | **HI=1** |
| Protective Ground Water Concentration, ug/L | **785.75** |
| Protective Soil Concentration, mg/kg | **142.10** |

| Ground Water Criteria | Protective Potable Ground Water Concentration @Method B | | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, ug/L | RISK @ | HI @ | |
| HI=1 | YES | 7.86E+02 | 0.00E+00 | 1.00E+00 | 1.42E+02 |
| Total Risk = 1E-5 | NA | NA | NA | NA | NA |
| Total Risk = 1E-6 | NA | NA | NA | NA | NA |
| Risk of cPAHs mixture= 1E-5 | NA | NA | NA | NA | NA |
| Benzene MCL = 5 ug/L | NA | NA | NA | NA | NA |
| MTBE = 20 ug/L | NA | NA | NA | NA | NA |

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria | Protective Ground Water Concentration | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|
| | TPH Conc, ug/L | Risk @ | HI @ | |
| NA | NA | NA | NA | **NA** |

# A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

## *1. Enter Site Information*

Date: 06/20/18
Site Name: Cascade Laundry
Sample Name: SB3-21

## *2. Enter Soil Concentration Measured*

| Chemical of Concern or Equivalent Carbon Group | Measured Soil Conc dry basis mg/kg | Composition Ratio % |
|---|---|---|
| ***Petroleum EC Fraction*** | | |
| AL_EC >5-6 | | 0.00% |
| AL_EC >6-8 | | 0.00% |
| AL_EC >8-10 | 1200 | 35.54% |
| AL_EC >10-12 | 960 | 28.43% |
| AL_EC >12-16 | | 0.00% |
| AL_EC >16-21 | | 0.00% |
| AL_EC >21-34 | | 0.00% |
| AR_EC >8-10 | 1200 | 35.54% |
| AR_EC >10-12 | | 0.00% |
| AR_EC >12-16 | | 0.00% |
| AR_EC >16-21 | | 0.00% |
| AR_EC >21-34 | | 0.00% |
| Benzene | | 0.00% |
| Toluene | | 0.00% |
| Ethylbenzene | 9.9 | 0.29% |
| Total Xylenes | 7 | 0.21% |
| Naphthalene | | 0.00% |
| 1-Methyl Naphthalene | | 0.00% |
| 2-Methyl Naphthalene | | 0.00% |
| n-Hexane | | 0.00% |
| MTBE | | 0.00% |
| Ethylene Dibromide (EDB) | | 0.00% |
| 1,2 Dichloroethane (EDC) | | 0.00% |
| Benzo(a)anthracene | | 0.00% |
| Benzo(b)fluoranthene | | 0.00% |
| Benzo(k)fluoranthene | | 0.00% |
| Benzo(a)pyrene | | 0.00% |
| Chrysene | | 0.00% |
| Dibenz(a,h)anthracene | | 0.00% |
| Indeno(1,2,3-cd)pyrene | | 0.00% |
| **Sum** | 3376.9 | 100.00% |

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

## *3. Enter Site-Specific Hydrogeological Data*

| | | |
|---|---|---|
| Total soil porosity: | 0.43 | Unitless |
| Volumetric water content: | 0.3 | Unitless |
| Volumetric air content: | 0.13 | Unitless |
| Soil bulk density measured: | 1.5 | kg/L |
| Fraction Organic Carbon: | 0.001 | Unitless |
| Dilution Factor: | 20 | Unitless |

## *4. Target TPH Ground Water Concentation (if adjusted)*

| | | |
|---|---|---|
| If you adjusted the target TPH ground water concentration, enter adjusted value here: | 500 | ug/L |

# A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 6/20/2018
Site Name: Cascade Laundry
Sample Name: SB3-21
Measured Soil TPH Concentration, mg/kg: **3,376.900**

**1. Summary of Calculation Results**

| Exposure Pathway | Method/Goal | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc | | Does Measured Soil Conc Pass or Fail? |
|---|---|---|---|---|---|
| | | | RISK @ | HI @ | |
| Protection of Soil Direct Contact: Human Health | Method B | 2,966 | 0.00E+00 | 1.14E+00 | Fail |
| | Method C | 58,385 | 0.00E+00 | 5.78E-02 | Pass |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 124 | 0.00E+00 | 1.65E+00 | Fail |
| | Target TPH GW Conc. @ 500 ug/L | 58 | NA | NA | Fail |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

| | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|---|---|---|
| Protective Soil Concentration, TPH mg/kg | **2,966.30** | **58,384.51** |
| Most Stringent Criterion | **HI =1** | **HI =1** |

| Soil Criteria | Protective Soil Concentration @Method B | | | | Protective Soil Concentration @Method C | | | |
|---|---|---|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ |
| HI =1 | YES | 2.97E+03 | 0.00E+00 | 1.00E+00 | YES | 5.84E+04 | 0.00E+00 | 1.00E+00 |
| Total Risk=1E-5 | NA | NA | NA | NA | NA | NA | NA | NA |
| Risk of Benzene= 1E-6 | NA | NA | NA | NA | NA | | | |
| Risk of cPAHs mixture= 1E-6 | NA | NA | NA | NA | | | | |
| EDB | NA | NA | NA | NA | | NA | | |
| EDC | NA | NA | NA | NA | | | | |

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

| | |
|---|---|
| Most Stringent Criterion | **HI=1** |
| Protective Ground Water Concentration, ug/L | **783.83** |
| Protective Soil Concentration, mg/kg | **124.05** |

| Ground Water Criteria | Protective Potable Ground Water Concentration @Method B | | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, ug/L | RISK @ | HI @ | |
| HI=1 | YES | 7.84E+02 | 0.00E+00 | 1.00E+00 | 1.24E+02 |
| Total Risk = 1E-5 | NA | NA | NA | NA | NA |
| Total Risk = 1E-6 | NA | NA | NA | NA | NA |
| Risk of cPAHs mixture= 1E-5 | NA | NA | NA | NA | NA |
| Benzene MCL = 5 ug/L | NA | NA | NA | NA | NA |
| MTBE = 20 ug/L | NA | NA | NA | NA | NA |

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria | Protective Ground Water Concentration | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|
| | TPH Conc, ug/L | Risk @ | HI @ | |
| Target TPH GW Conc = 500 ug/L | 5.00E+02 | 0.00E+00 | 6.50E-01 | **5.79E+01** |

# A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

## 1. Enter Site Information

Date: 06/20/18
Site Name: Cascade Laundry
Sample Name: SB3-25

## 2. Enter Soil Concentration Measured

| Chemical of Concern or Equivalent Carbon Group | Measured Soil Conc dry basis mg/kg | Composition Ratio % |
|---|---|---|
| ***Petroleum EC Fraction*** | | |
| AL_EC >5-6 | | 0.00% |
| AL_EC >6-8 | | 0.00% |
| AL_EC >8-10 | 140 | 30.18% |
| AL_EC >10-12 | 150 | 32.34% |
| AL_EC >12-16 | 170 | 36.65% |
| AL_EC >16-21 | | 0.00% |
| AL_EC >21-34 | | 0.00% |
| AR_EC >8-10 | | 0.00% |
| AR_EC >10-12 | | 0.00% |
| AR_EC >12-16 | | 0.00% |
| AR_EC >16-21 | | 0.00% |
| AR_EC >21-34 | | 0.00% |
| Benzene | 0.51 | 0.11% |
| Toluene | | 0.00% |
| Ethylbenzene | 3.3 | 0.71% |
| Total Xylenes | | 0.00% |
| Naphthalene | | 0.00% |
| 1-Methyl Naphthalene | | 0.00% |
| 2-Methyl Naphthalene | | 0.00% |
| n-Hexane | | 0.00% |
| MTBE | | 0.00% |
| Ethylene Dibromide (EDB) | | 0.00% |
| 1,2 Dichloroethane (EDC) | | 0.00% |
| Benzo(a)anthracene | | 0.00% |
| Benzo(b)fluoranthene | | 0.00% |
| Benzo(k)fluoranthene | | 0.00% |
| Benzo(a)pyrene | | 0.00% |
| Chrysene | | 0.00% |
| Dibenz(a,h)anthracene | | 0.00% |
| Indeno(1,2,3-cd)pyrene | | 0.00% |
| **Sum** | 463.81 | 100.00% |

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

## 3. Enter Site-Specific Hydrogeological Data

| | | |
|---|---|---|
| Total soil porosity: | 0.43 | Unitless |
| Volumetric water content: | 0.3 | Unitless |
| Volumetric air content: | 0.13 | Unitless |
| Soil bulk density measured: | 1.5 | kg/L |
| Fraction Organic Carbon: | 0.001 | Unitless |
| Dilution Factor: | 20 | Unitless |

## 4. Target TPH Ground Water Concentation (if adjusted)

| | | |
|---|---|---|
| If you adjusted the target TPH ground water concentration, enter adjusted value here: | 500 | ug/L |

# A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 6/20/2018
Site Name: Cascade Laundry
Sample Name: SB3-25
Measured Soil TPH Concentration, mg/kg: **463.810**

**1. Summary of Calculation Results**

| Exposure Pathway | Method/Goal | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc | | Does Measured Soil Conc Pass or Fail? |
|---|---|---|---|---|---|
| | | | RISK @ | HI @ | |
| Protection of Soil Direct Contact: Human Health | Method B | 1,975 | 2.81E-08 | 2.35E-01 | Pass |
| | Method C | 30,450 | 3.76E-09 | 1.52E-02 | Pass |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 26 | 7.87E-05 | 2.08E+00 | Fail |
| | Target TPH GW Conc. @ 500 ug/L | 100% NAPL | NA | NA | Pass |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

| | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|---|---|---|
| Protective Soil Concentration, TPH mg/kg | **1,975.01** | **30,450.11** |
| Most Stringent Criterion | **HI =1** | **HI =1** |

| Soil Criteria | Protective Soil Concentration @Method B | | | | Protective Soil Concentration @Method C | | | |
|---|---|---|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ |
| HI =1 | YES | 1.98E+03 | 1.20E-07 | 1.00E+00 | YES | 3.05E+04 | 2.47E-07 | 1.00E+00 |
| Total Risk=1E-5 | *NO* | 1.65E+05 | 1.00E-05 | 8.36E+01 | *NO* | 1.23E+06 | 1.00E-05 | 4.05E+01 |
| Risk of Benzene= 1E-6 | *NO* | 1.65E+04 | 1.00E-06 | 8.36E+00 | NA | | | |
| Risk of cPAHs mixture= 1E-6 | NA | NA | NA | NA | | | | |
| EDB | NA | NA | NA | NA | | | | |
| EDC | NA | NA | NA | NA | | | | |

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

| | |
|---|---|
| Most Stringent Criterion | **Benzene MCL = 5 ug/L** |
| Protective Ground Water Concentration, ug/L | **30.03** |
| Protective Soil Concentration, mg/kg | **26.04** |

| Ground Water Criteria | Protective Potable Ground Water Concentration @Method B | | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, ug/L | RISK @ | HI @ | |
| HI=1 | *NO* | 9.42E+01 | 3.60E-05 | 1.00E+00 | 1.70E+02 |
| Total Risk = 1E-5 | *NO* | 4.20E+01 | 1.00E-05 | 3.12E-01 | 4.20E+01 |
| Total Risk = 1E-6 | YES | 6.08E+00 | 1.00E-06 | 3.71E-02 | 4.08E+00 |
| Risk of cPAHs mixture= 1E-5 | NA | NA | NA | NA | NA |
| Benzene MCL = 5 ug/L | YES | 3.00E+01 | 6.29E-06 | 2.06E-01 | 2.60E+01 |
| MTBE = 20 ug/L | NA | NA | NA | NA | NA |

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria | Protective Ground Water Concentration | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|
| | TPH Conc, ug/L | Risk @ | HI @ | |
| Target TPH GW Conc = 500 ug/L | 2.93E+02 | 2.44E-04 | 6.22E+00 | **100% NAPL** |

# A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

## 1. Enter Site Information

Date: 06/20/18
Site Name: Cascade Laundry
Sample Name: SB4-15

## 2. Enter Soil Concentration Measured

| Chemical of Concern or Equivalent Carbon Group | Measured Soil Conc dry basis mg/kg | Composition Ratio % |
|---|---|---|
| ***Petroleum EC Fraction*** | | |
| AL_EC >5-6 | | 0.00% |
| AL_EC >6-8 | | 0.00% |
| AL_EC >8-10 | 11,000 | 19.05% |
| AL_EC >10-12 | 6900 | 11.95% |
| AL_EC >12-16 | 310 | 0.54% |
| AL_EC >16-21 | 3200 | 5.54% |
| AL_EC >21-34 | 17000 | 29.45% |
| AR_EC >8-10 | 5500 | 9.53% |
| AR_EC >10-12 | 1300 | 2.25% |
| AR_EC >12-16 | 120 | 0.21% |
| AR_EC >16-21 | 2400 | 4.16% |
| AR_EC >21-34 | 10000 | 17.32% |
| Benzene | | 0.00% |
| Toluene | | 0.00% |
| Ethylbenzene | | 0.00% |
| Total Xylenes | | 0.00% |
| Naphthalene | | 0.00% |
| 1-Methyl Naphthalene | | 0.00% |
| 2-Methyl Naphthalene | | 0.00% |
| n-Hexane | | 0.00% |
| MTBE | | 0.00% |
| Ethylene Dibromide (EDB) | | 0.00% |
| 1,2 Dichloroethane (EDC) | | 0.00% |
| Benzo(a)anthracene | | 0.00% |
| Benzo(b)fluoranthene | | 0.00% |
| Benzo(k)fluoranthene | | 0.00% |
| Benzo(a)pyrene | | 0.00% |
| Chrysene | | 0.00% |
| Dibenz(a,h)anthracene | | 0.00% |
| Indeno(1,2,3-cd)pyrene | | 0.00% |
| **Sum** | 57730 | 100.00% |

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Enter site-specific information here……..

## 3. Enter Site-Specific Hydrogeological Data

| | | |
|---|---|---|
| Total soil porosity: | 0.43 | Unitless |
| Volumetric water content: | 0.3 | Unitless |
| Volumetric air content: | 0.13 | Unitless |
| Soil bulk density measured: | 1.5 | kg/L |
| Fraction Organic Carbon: | 0.001 | Unitless |
| Dilution Factor: | 20 | Unitless |

## 4. Target TPH Ground Water Concentation (if adjusted)

| | | |
|---|---|---|
| If you adjusted the target TPH ground water concentration, enter adjusted value here: | 500 | ug/L |

# A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 6/20/2018
Site Name: Cascade Laundry
Sample Name: SB4-15
Measured Soil TPH Concentration, mg/kg: **57,730.000**

**1. Summary of Calculation Results**

| Exposure Pathway | Method/Goal | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc | | Does Measured Soil Conc Pass or Fail? |
|---|---|---|---|---|---|
| | | | RISK @ | HI @ | |
| Protection of Soil Direct Contact: Human Health | Method B | 3,597 | 0.00E+00 | 1.60E+01 | Fail |
| | Method C | 56,490 | 0.00E+00 | 1.02E+00 | Fail |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 100% NAPL | 0.00E+00 | 9.26E-01 | Pass |
| | Target TPH GW Conc. @ 500 ug/L | 1,271 | NA | NA | Fail |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

| | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|---|---|---|
| Protective Soil Concentration, TPH mg/kg | **3,597.24** | **56,489.58** |
| Most Stringent Criterion | **HI =1** | **HI =1** |

| Soil Criteria | Protective Soil Concentration @Method B | | | | Protective Soil Concentration @Method C | | | |
|---|---|---|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ | Most Stringent? | TPH Conc, mg/kg | RISK @ | HI @ |
| HI =1 | YES | 3.60E+03 | 0.00E+00 | 1.00E+00 | YES | 5.65E+04 | 0.00E+00 | 1.00E+00 |
| Total Risk=1E-5 | NA | NA | NA | NA | NA | NA | NA | NA |
| Risk of Benzene= 1E-6 | NA | NA | NA | NA | NA | | | |
| Risk of cPAHs mixture= 1E-6 | NA | NA | NA | NA | | | | |
| EDB | NA | NA | NA | NA | | NA | | |
| EDC | NA | NA | NA | NA | | | | |

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

| | |
|---|---|
| Most Stringent Criterion | **NA** |
| Protective Ground Water Concentration, ug/L | **NA** |
| Protective Soil Concentration, mg/kg | **Soil-to-Ground Water is not a critical pathway!** |

| Ground Water Criteria | Protective Potable Ground Water Concentration @Method B | | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|---|
| | Most Stringent? | TPH Conc, ug/L | RISK @ | HI @ | |
| HI=1 | YES | 5.55E+02 | 0.00E+00 | 9.26E-01 | 100% NAPL |
| Total Risk = 1E-5 | NA | NA | NA | NA | NA |
| Total Risk = 1E-6 | NA | NA | NA | NA | NA |
| Risk of cPAHs mixture= 1E-5 | NA | NA | NA | NA | NA |
| Benzene MCL = 5 ug/L | NA | NA | NA | NA | NA |
| MTBE = 20 ug/L | NA | NA | NA | NA | NA |

Note: 100% NAPL is 73000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria | Protective Ground Water Concentration | | | Protective Soil Conc, mg/kg |
|---|---|---|---|---|
| | TPH Conc, ug/L | Risk @ | HI @ | |
| Target TPH GW Conc = 500 ug/L | 5.00E+02 | 0.00E+00 | 8.47E-01 | **1.27E+03** |

# Voluntary Cleanup Program

**Washington State Department of Ecology**
**Toxics Cleanup Program**

# TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation. You still need to submit your evaluation as part of your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm.

| **Step 1: IDENTIFY HAZARDOUS WASTE SITE** | |
|---|---|
| Please identify below the hazardous waste site for which you are documenting an evaluation. | |
| Facility/Site Name: Cascade Laundry | |
| Facility/Site Address: 205 Prospect Street, Bellingham, WA 98225 | |
| Facility/Site No: 21786898 | VCP Project No.: |

| **Step 2: IDENTIFY EVALUATOR** | | | |
|---|---|---|---|
| Please identify below the person who conducted the evaluation and their contact information. | | | |
| Name: Kim Ninnemann | | | Title: geologist |
| Organization: Stratum Group | | | |
| Mailing address: PO Box 2546 | | | |
| City: Bellingham | | State: WA | Zip code: 98227 |
| Phone: 360-714-9409 | Fax: | E-mail: kim@stratumgroup.net | |

## Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

### A. Exclusion from further evaluation.

**1. Does the Site qualify for an exclusion from further evaluation?**

☐ Yes *If you answered **"YES,"** then answer **Question 2**.*

☒ No or Unknown *If you answered **"NO" or "UKNOWN,"** then skip to **Step 3B** of this form.*

**2. What is the basis for the exclusion?** *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☐ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☐ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☐ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

## B. Simplified evaluation.

**1. Does the Site qualify for a simplified evaluation?**

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☒ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

**2. Did you conduct a simplified evaluation?**

☐ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

**3. Was further evaluation necessary?**

☐ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☐ No *If you answered **"NO,"** then answer **Question 5** below.*

**4. If further evaluation was necessary, what did you do?**

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

**5. If no further evaluation was necessary, what was the reason?** *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

☐ Area of soil contamination at the Site is not more than 350 square feet.

☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

☐ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

**C. Site-specific evaluation.** A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

**1. Was there a problem?** *See* WAC 173-340-7493(2).

☒ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

**2. What did you do to resolve the problem?** *See* WAC 173-340-7493(3).

☒ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*

☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

**3. If you conducted further site-specific evaluations, what methods did you use?**
*Check all that apply. See* WAC 173-340-7493(3).

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

**4. What was the result of those evaluations?**

- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

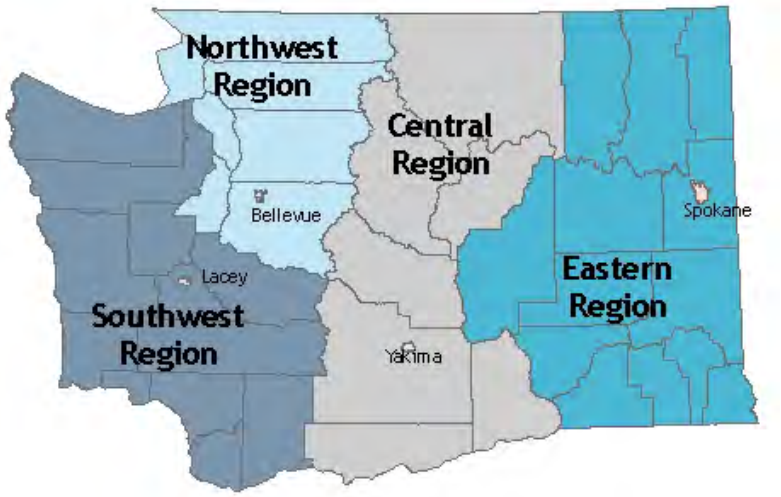
**5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?**

☐ Yes If so, please identify the Ecology staff who approved those steps:

☒ No

## Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.




| | |
|---|---|
| **Northwest Region:**<br>Attn: Sara Nied<br>3190 160th Ave. SE<br>Bellevue, WA 98008-5452 | **Central Region:**<br>Attn: Mark Dunbar<br>15 W. Yakima Ave., Suite 200<br>Yakima, WA 98902 |
| **Southwest Region:**<br>Attn: Scott Rose<br>P.O. Box 47775<br>Olympia, WA 98504-7775 | **Eastern Region:**<br>Attn: Patti Carter<br>N. 4601 Monroe<br>Spokane WA 99205-1295 |

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Whatcom County, Washington


## Local office

Washington Fish And Wildlife Office

(360) 753-9440
(360) 753-9405

510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263

http://www.fws.gov/wafwo/

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

| NAME | STATUS |
|---|---|
| Gray Wolf Canis lupus<br>No critical habitat has been designated for this species. | Proposed Endangered |
| North American Wolverine Gulo gulo luscus<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/5123 | Proposed Threatened |

## Birds

| NAME | STATUS |
|---|---|
| Marbled Murrelet Brachyramphus marmoratus<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>https://ecos.fws.gov/ecp/species/4467 | Threatened |
| Streaked Horned Lark Eremophila alpestris strigata<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>https://ecos.fws.gov/ecp/species/7268 | Threatened |

Yellow-billed Cuckoo Coccyzus americanus — Threatened
There is **proposed** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/3911

## Fishes

| NAME | STATUS |
|---|---|
| Bull Trout Salvelinus confluentus<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>https://ecos.fws.gov/ecp/species/8212 | Threatened |
| Dolly Varden Salvelinus malma<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/1008 | PSAT |

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE |
|---|---|

| | RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.) |
|---|---|
| Bald Eagle Haliaeetus leucocephalus<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1626 | Breeds Jan 1 to Sep 30 |
| Black Turnstone Arenaria melanocephala<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| Great Blue Heron Ardea herodias fannini<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds Mar 15 to Aug 15 |
| Olive-sided Flycatcher Contopus cooperi<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/3914 | Breeds May 20 to Aug 31 |
| Red-throated Loon Gavia stellata<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| Rufous Hummingbird selasphorus rufus<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8002 | Breeds Apr 15 to Jul 15 |



# Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

**Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

**Breeding Season (■)**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data (–)**
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.




**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

**Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

**What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

# Facilities

## National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

# Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

**Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Data precautions**

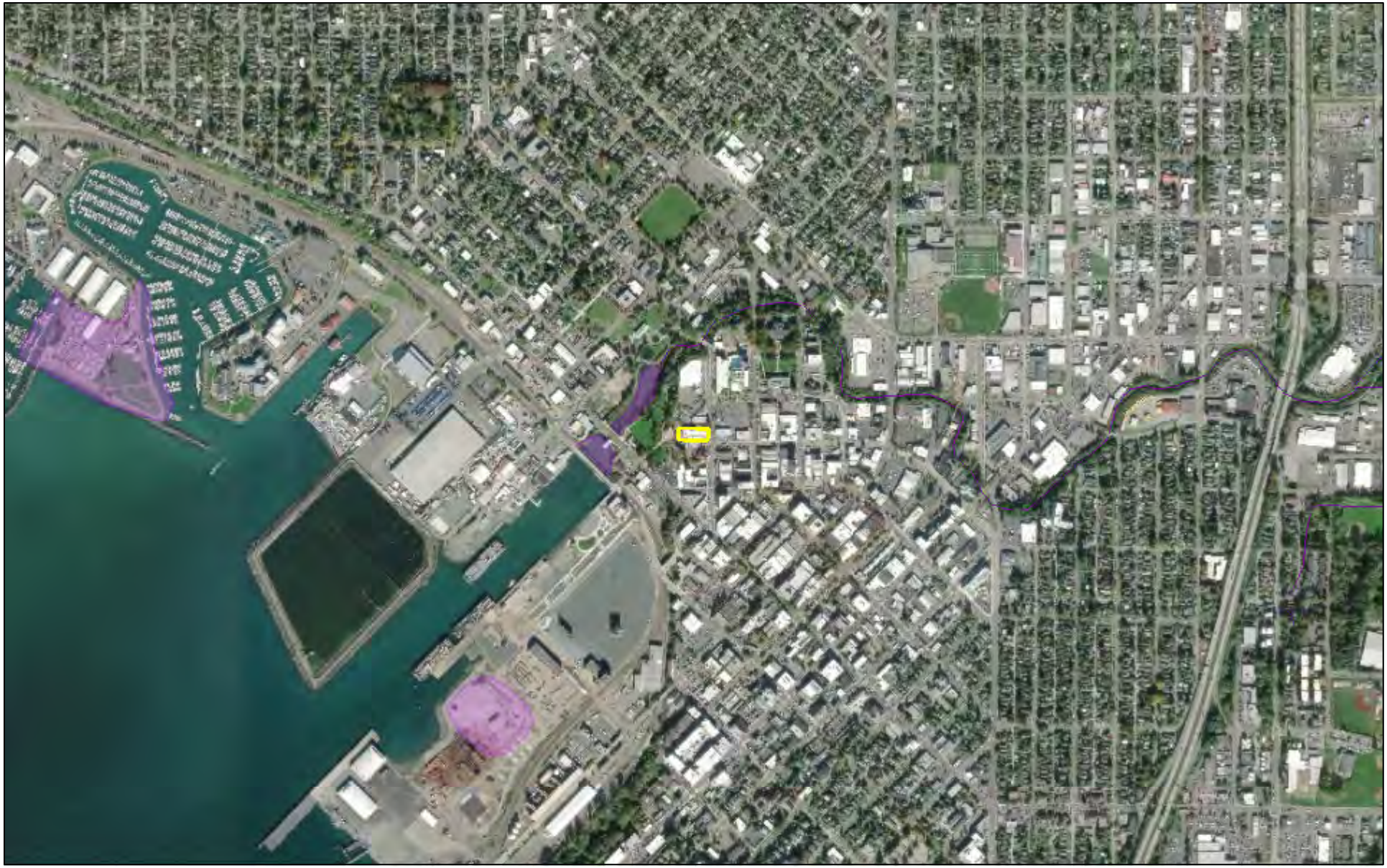
Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
# PRIORITY HABITATS AND SPECIES REPORT

SOURCE DATASET: PHSPlusPublic Query ID: P191210131115
REPORT DATE: 12/10/2019 1.11

| Common Name / Scientific Name / Notes | Site Name / Source Dataset / Source Record / Source Date | Priority Area / Occurrence Type / More Information (URL) / Mgmt Recommendations | Accuracy | Federal Status / State Status / PHS Listing Status | Sensitive Data / Resolution | Source Entity / Geometry Type |
|---|---|---|---|---|---|---|
| Big brown bat<br>Eptesicus fuscus | <br>WS_OccurPoint<br>144055<br>August 28, 2017 | Breeding Area<br>Biotic detection<br>http://wdfw.wa.gov/publications/pub.php? | GPS | N/A<br>N/A<br>PHS LISTED | Y<br>TOWNSHIP | WA Dept. of Fish and Wildlife<br>Points |

# WDFW Test Map



December 10, 2019

PHS Report Clip Area

PT

LN

**POLY**

AS MAPPED

SECTION

QTR-TWP

TOWNSHIP

1:19,842

0 0.15 0.3 0.6 mi

0 0.275 0.55 1.1 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community