

Phase II Environmental Site Assessment
Botts Marsh Upland
Tax Lots 300, 400, 4600, 4700, 4800
Wheeler, Oregon

Prepared for
Tillamook County
EPA Brownfields Assessment Grant

February 2017

Prepared by
Parametrix

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Tillamook County

801 Ivy Avenue, Suite B
Tillamook, Oregon 97141

EPA Brownfields Assessment Grant

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Wheeler, Oregon.
Prepared by Parametrix, Portland, OR.
February 16, 2017.

CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.



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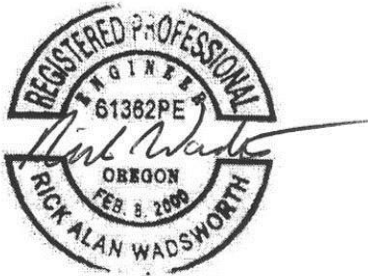


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EXECUTIVE SUMMARY

On behalf of Tillamook County, Parametrix conducted a Phase II Environmental Site Assessment (ESA) on the Botts Marsh Upland property located in Wheeler, Oregon (Figure 1) as part of the Salmonberry Trail Brownfields Assessment Program. Based on the findings of this investigation, Parametrix reached the following conclusions:

1. A Phase I ESA on the subject property was conducted in September 2016. The Phase I ESA identified former structures and features associated with the Wheeler Lumber Company which operated at the site from at least the 1920s through the 1950s or 1960s. Based on historical aerial photographs, the site has been vacant since at least 1970. Current use includes storage of miscellaneous equipment and vehicles on the southern portion of the property and temporary/periodic use of the central and northern portion of the property by the public for access to the adjacent Nehalem River. The Phase I ESA was conducted as part of Tillamook County's Salmonberry Trail Brownfields Assessment Grant. A Phase II ESA was recommended to determine if the past operations have impacted the subsurface the property and to establish baseline environmental conditions in support of potential redevelopment of the property.
2. Parametrix supervised the drilling of twenty exploratory borings (labelled BM-B-1 to BM-B-20) to a depth of 10 to 15 feet bgs on the subject property. A total of 31 soil samples were analyzed by the laboratory for one or more target compounds, including diesel-range petroleum hydrocarbons (TPH-Dx), PAHs, VOCs, RCRA 8 metals, and/or dioxins/furans. Six of the 20 borings included groundwater samples. The investigation focused on determining whether the past use of the property had impacted subsurface conditions. For the purposes of evaluation, the property was divided into three portions; the northern portion, the central portion, and the southern portion.
3. Six borings were completed in the northern portion of the site, which was the location of the former log deck and two former mill buildings. A very low concentration of diesel-range petroleum hydrocarbons was detected in one sample (lube oil in sample BM-B-1-5.0 at 73.8 mg/kg). No other significant concentrations of target compounds were detected in soil in the northern portion of the property. It does not appear that former operations or current use have impacted the soil subsurface in any significant manner.
4. Seven borings were completed in the central portion of the site, which was the location of a former machine shop and burn pit. Moderate concentrations of diesel-range petroleum hydrocarbons were detected in several of the borings, at a maximum concentration of 783 mg/kg (sample BM-B-11-1.0-D). In addition, near-surface soil samples (1 foot) from borings BM-B-11 and BM-B-12, near the former machine shop, had detections of several PAHs above the most stringent DEQ RBCs (residential). No other significant concentrations of target compounds were detected in soil in the central portion of the property. Based on the borings completed, there appears to be some soil contamination of petroleum hydrocarbons and associated compounds in the central portion of the site, primarily near the former machine shop. In general, the concentrations of COPCs detected are low and likely limited in extent. Widespread contamination was not observed through sampling or other field indications. However, it does appear that elevated concentrations of PAHs may be present within near-surface soils near boring BM-B-11, but it is not expected that PAH contamination is significant in extent laterally or vertically (based on other borings and field indications). In the event of future development, management of soils in the area near boring BM-B-11 may be necessary.

5. Seven borings were completed in the southern portion of the site, which is the location of a concrete slab and former mill buildings. In general, soil contamination appears to be limited in the southern section of the site. It does not appear that former operations or current use have impacted the soil subsurface in any significant manner.
6. Impacts to groundwater quality at the site appear to be limited to low levels of diesel-range petroleum hydrocarbons in the northern and central portions of the site, and detections of PAHs in one boring (BM-B-5) in the central portion of the property. Low levels of RCRA 8 metals were detected in all 6 borings, but none at significant concentrations. The source of groundwater impacts are not known, but may be related to former operations. In any event, residual groundwater contamination appears to be relatively low, considering the lack of shallow groundwater use as a drinking water source.
7. Current and former land use of the subject property has been industrial in nature. As development plans for the Botts Marsh Upland site are unknown at this time, all potential land use scenarios were evaluated including commercial (occupational) and residential. These were used in the development of a conceptual site model and exposure pathways as described in the risk evaluation.
8. Based on an evaluation of groundwater beneficial use, there is no current or potential beneficial use of shallow groundwater for drinking water at the site. For this reason, drinking water exposure was not evaluated as part of the risk assessment. However, a beneficial use of shallow groundwater is surface water recharge to the adjacent Nehalem River. Therefore, potential ecological impacts to the Nehalem River were evaluated as part of the risk assessment.
9. Based on the risk assessment, several PAHs [benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene] exceeded the DEQ RBC for residential exposure in one soil sample in the vicinity of the former machine shop (boring BM-B-11). Benzo(a)pyrene also slightly exceeded the DEQ RBC for occupational exposure to soil. It is not expected that PAH contamination in soil is significant in extent laterally or vertically (based on other borings and field indications). However, if residential or commercial development occurs in the future at the site in the vicinity of the former machine shop, these results should be considered for potential mitigation of near-surface soils to limit potential risk.
10. No COPCs exceeded the applicable DEQ RBCs for residential or occupational exposure to groundwater.
11. No COPCs exceeded the applicable DEQ RBCs for construction worker or excavation worker exposure to soil or groundwater.
12. No COPCs in soil samples exceeded the EPA ecological soil screening levels for invertebrates, birds, or mammals. No COPCs in groundwater exceeded the DEQ screening levels for birds and mammals associated with surface water or sediment exposure.
13. Five groundwater samples had concentrations of at least one RCRA 8 metal (barium, lead, and/or silver) above the DEQ screening level value for aquatic life. However, the concentrations of metals detected do not appear to be significantly elevated above expected naturally occurring conditions and a specific source of elevated metals was not observed in overlying soil. One groundwater sample (BM-B-5-W) also had concentrations of benz(a)anthracene and benzo(a)pyrene exceeding the screening level value for aquatic life. It appears that the extent of groundwater impacts on the subject property is limited, specifically for the metals and PAH compounds noted above. In addition,

it is not apparent that concentrations detected in a limited portion of the property is impacting the Nehalem River surface water at similar concentrations (i.e. dilution and attenuation is expected away from the subject property). In addition, the small contribution of source material should be considered when evaluating impacts associated with the very low screening value utilized to assess aquatic life in a large body of water. Based on these considerations, it is not expected that a significant ecological risk is present associated with groundwater emanating from the subject property to the adjacent Nehalem River.

Based on these conclusions, Parametrix offers the following recommendations:

1. Limited residual soil contamination was identified at the subject property, primary in the area near the former machine shop. In addition, impacts to groundwater were identified in the central and northern portions of the property. However, based on the data evaluation and risk assessment, the contamination appears to be very limited in extent and magnitude and it does not appear that there is a potential risk to current users of the property. No further environmental investigation is recommended for the Botts Marsh Upland site based on current use.
2. If the property is to be redeveloped, there is potential to encounter contamination in near-surface or subsurface soils. However, the impacts identified appear to be limited and it is not expected that significant mitigation is required. The presence of potentially contaminated material (particularly soil) should be considered during any future development work, including the potential for grading, foundation work, or excavation at the site. Therefore, it is recommended that a contaminated media management plan (CMMP) be prepared for the site during planning of any future development project. The CMMP should be implemented during construction and include procedures for management of known and potentially unknown contaminated media. The CMMP should be structured to outline procedures for management of excess soils at the site, including proper handling, testing, and disposal (if necessary).

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1. INTRODUCTION

On behalf of Tillamook County, Parametrix conducted a Phase II Environmental Site Assessment (ESA) on the Botts Marsh Upland property (Tax Lots 300, 400, 4600, 4700 and 4800; herein referred to as the *subject property*) located in Wheeler, Oregon (Figure 1). The subject property is approximately 8.6 acres in size and is currently vacant (Figure 2). The subject property was used for various lumber operations in the past, but appears to have been largely vacant for at least the last 40 years. Current use of the property includes limited automobile and equipment storage on the southern end and periodic access to the Nehalem River in the central and northern portion by the public.

The Phase II investigation and associated activities were conducted as part of an Environmental Protection Agency (EPA) Brownfields Assessment Grant (Cooperative Agreement BF-00J94201-0) for the Salmonberry Trail in Tillamook County. The Tillamook County Department of Health received the assessment grant in October 2014 and has initiated project activities, including compilation of a brownfields inventory, site ranking, and environmental site assessments. The subject property was identified as a candidate for assessment activities to support potential redevelopment of the property. A Phase I ESA was conducted in September 2016 (Parametrix 2016b) as part of the Brownfields project, and recommended further investigation in the form of a Phase II ESA.

It is our understanding that the property may be developed into residential or commercial use by the current owner; however, at this time plans are only preliminary and may be subject to significant change. In addition, it is our understanding that the City of Wheeler may be interested in acquiring a portion of the property (northern portion) for a park or natural open space area. Similarly, the City of Wheeler is in the initial stages of planning and any acquisition plans are preliminary in nature. In general, the current Phase II ESA was completed to provide support for future planning efforts.

The primary purpose of the Phase II ESA was to evaluate current environmental conditions at the subject property and determine if the past use of the property had impacted subsurface conditions. Specific tasks included the collection of soil samples from 20 investigative borings and collection of groundwater samples from 6 of those borings. Conclusions and recommendations within this report are based on observed evidence and data collected during the performance of this assessment, as well as information obtained through previous investigations or documentation, where available.

The Phase II ESA was conducted in accordance with the project-wide Quality Assurance Project Plan (Parametrix 2016a), dated September 9, 2016, and the site-specific Sampling and Analysis Plan (Parametrix 2017) dated January 11, 2017.

1.1 Site Location

The subject property is located on the north side of Wheeler, Oregon between U.S. Highway 101 and the Nehalem River (Figure 1). The property is owned by Botts Marsh LLC and consists of Tillamook County Tax Lots 2N1002BC0-4600, 2N1002BC-04700, 2N1002BC-04800, 2N1002BB-00400, and 2N1002BB-00300. According to City of Wheeler records, the subject property is zoned Water Related Industrial.

The site location is shown on Figure 1, the Site Vicinity Map. The boundaries of the subject property are shown on Figure 2.

1.2 Site and Vicinity Characteristics

The entire subject property includes approximately 8.6 acres. The property includes a mostly vacant dirt and gravel lot, with overgrown, un-landscaped areas. At the northern end, there is a partially paved/partially dirt and gravel road that surrounds the property that is mostly made up of blackberries and other vegetation. The southern end is also vacant and includes a concrete slab and/or other evidence of former building foundations, with an area used for storage of boats, cars and other equipment (see Figure 2).

The vicinity of the subject property is light industrial, maritime, commercial, residential, and forested land. Properties in the vicinity include marshlands to the north, a railroad and U.S. Highway 101 directly east, the Nehalem River to the west, commercial properties and boat piers to the south, forested land to the east-northeast, and residential properties to the southeast (Figure 2).

1.3 Site History

The property housed the Wheeler Lumber Company (or associated lumber operations) from at least the 1920s through the 1950s or 1960s; however, it is not known precisely when operations on the site ceased. The facility was primarily a sawmill/shingle mill and consisted of several structures, including a dry kiln, planer, machine shop, conveyor line, fire pit, and other associated operations. The use and storage of chemicals, oils, or other hazardous substances used at the facility is unknown, but are presumed to have occurred in some capacity similar to other known sawmill/shingle mill facilities, which primarily use petroleum-based products (lube or cutting oils, fuel, etc.). By 1970, most structures appear to have been demolished, and the majority of the property appears to have been graded at that time.

The property appears to have been primarily vacant for the last 40 years. However, it does appear that the southern portion of the property has been used to store miscellaneous equipment or vehicles. In addition, it appears that at least some limited use of the northern portion of the property by the public has occurred in recent years, primarily for temporary parking/access to the river or for access to the extensive blackberries on the property.

1.4 Physical Setting

The subject property is located within the North Coast Basin, which is generally composed of volcanic rocks, marine sedimentary rocks, alluvium, and a prominent dunal sand complex. The highlands on the basin's eastern border consist mainly of volcanic rocks, including basalt lava flows extruded on land and underwater. Folding and faulting uplifted submarine lavas and other volcanic rocks. These rocks are exposed in the Coast Range and in the prominent headlands along the basin's western coastline. From north to south these headlands include Tillamook Head, Cape Falcon, Cape Mears, Cape Lookout, and Cascade Head. Marine sedimentary rocks including mudstone, siltstone, sandstone, and conglomerate are major rock types present in the North Coast Basin.

Unconsolidated alluvial sediments are present as valley fill deposits and along streams in the basin. The Tillamook Valley lowlands contain terrace alluvium up to 120 feet thick. These deposits contain basalt pebbles and cobbles in a sand, silt, and clay matrix. Along the river flood plain, alluvium consisting of gravel layered with sand, silt, and clay is present in deposits up to 300 feet thick.

In the area of the subject property, subsurface soils generally consisted of sandy gravel (interpreted as fill material) to a depth of three to six feet below ground surface (bgs) during the Phase II investigation. Sand, silt, and mixtures thereof were generally encountered beneath the sandy gravel to a depth of 10 feet bgs (bottom of the borings).

Groundwater depth at the subject property, which lies directly adjacent to the Nehalem River, it is expected to be very shallow (less than 10 feet) during most of the year. Throughout the Phase II investigation, which occurred during an extended period of heavy rainfall during the wet season, groundwater was encountered as high as 5 or 6 feet bgs. Groundwater flow is expected to be towards the west to the Nehalem River. However, oceanic tidal action of the bay can significantly influence both groundwater gradient and flow direction.

2. PREVIOUS INVESTIGATIONS

The following sections summarize the previous environmental investigation on the subject property.

2.1 September 2016 Phase I ESA

In September 2016, Parametrix conducted a Phase I ESA (Parametrix 2016a) for Tillamook County on the subject property. The work was completed as part of the Tillamook County Brownfields project.

Conclusions of the Phase I ESA include:

- Based on information reviewed, the Wheeler Lumber Company or associated structures were present on the subject property from at least the 1920s through the 1950s or 1960s. However, it is not known when operations ceased. The facility was primarily a sawmill/shingle mill and consisted of several structures, including a dry kiln, planer, machine shop, conveyor line, fire pit, and other associated operations. It appears that facility operations may have extended towards and into the adjacent Nehalem River, based on the presence of remaining wood pilings in the river and former structure foundations along the river. The use and storage of chemicals, oils, or other hazardous substances used at the facility is unknown, but are presumed to have occurred in some capacity similar to other known sawmill/shingle mill facilities, which primarily use petroleum-based products (lube or cutting oils, fuel, etc.). Wood treatment operations were not identified during a review of historical information; however, the information was limited to Sanborn maps and aerial photographs and is not comprehensive. By 1970, most structures appear to have been demolished, and the majority of the property appears to have been graded at that time.
- The property appears to have been primarily vacant for the last 40 years. However, it does appear that the southern portion of the property has been used to store miscellaneous equipment or vehicles. In addition, it appears that at least some limited use of the northern portion of the property by the public has occurred in recent years, primarily for temporary parking/access to the river or for access to the extensive blackberries on the property.
- Several adjacent or nearby sites were identified in the regulatory record databases. However, based on the information reviewed, none of the sites identified represent a recognized environmental condition (REC) to the subject property. It should be noted that the railroad is located immediately adjacent to the subject property and past use of the railroad to support the former sawmill/shingle mill operations is likely. Although no specific RECs were identified with

the railroad, there is some potential that former railroad operations, including maintenance of the line or railcars, transport of oils or other substances, wood treated rail ties, or other typical operations has impacted environmental conditions near the railroad.

- No RECs were identified on the subject property during the site reconnaissance. No evidence of significant use or storage of hazardous substances and/or petroleum products, indications of spills, USTs, or distressed vegetation were observed.
- In the context of the Salmonberry Trail project, the subject property has the potential to provide an amenity to the trail or other infrastructure. Its location immediately adjacent to the Nehalem River and the proposed trail route provides an opportunity to utilize the subject property to enhance trail use or visibility.

The Phase I ESA recommended completion of a Phase II ESA based on the past use of the property as a lumber mill and significant redevelopment opportunities. The Phase II ESA was recommended to determine if these past operations have impacted the subsurface the property and to establish baseline environmental conditions.

3. PHASE II INVESTIGATION

On January 17 and 18, 2016, Parametrix supervised the drilling of 20 exploratory borings on the subject property. The locations of the borings are shown on Figure 2. The following sections describe the soil and groundwater sampling methods and analytical results.

3.1 Methods

The following sections describe the soil and groundwater sampling methods at the site. In general, the methods followed those outlined in the site-specific SAP (Parametrix 2017).

3.1.1 Soil Borings

Using a powered direct-push drill rig, Cascade Drilling, Inc. (Cascade Drilling) of Clackamas, Oregon, provided the drilling services and obtained all required permits from the Oregon Water Resources Department (OWRD). A total of twenty borings were completed on the subject property.

The direct-push probe consists of a section of hollow steel rod attached to a 5-foot long macro core sample barrel. After a section of the steel rod was advanced in each boring to specific sampling depths, the sampler, lined with a clear acetate liner, was attached to the rod and advanced 5 feet. The acetate liner containing the soil sample was then removed from the sample barrel, a clean liner inserted into the sample barrel, and the steel rod replaced into the boring. All borings were advanced to approximately 10 to 15 feet bgs. Boring logs are included in Appendix A.

The collection of soil samples from each boring was based on planned sampling intervals and field observations. In general, if there were no olfactory, PID, or visual indications of contamination, samples were collected from approximately 0 to 1 feet bgs, and deeper samples were collected near the soil/groundwater interface, generally from 5 to 10 feet bgs. Sample nomenclature includes the boring identification and the depth from which the sample was collected. For example, the sample collected from boring BM-B-1 at a depth of 9 feet bgs is labeled BM-B-1-9.0.

Soil samples were transferred from the clear PVC liners into appropriately labeled, laboratory-supplied 4- or 8-ounce glass jars with Teflon®-lined lids and placed into a cooler with ice. Samples collected for VOC analysis were placed in a cooler with dry ice to freeze samples until they could be transported to the lab for extraction. The samples were transported under chain-of-custody procedures to Specialty Analytical in Clackamas, Oregon. Forty-two soil samples were collected from the 20 borings and 31 were submitted for laboratory analysis. Laboratory analysis generally focused on diesel-range petroleum hydrocarbons using Northwest method NWTPH-Dx and RCRA 8 metals using EPA Methods 6020A/7471B. As specified in the SAP, the samples with the four highest diesel or lube oil concentrations (or Dx above 500 mg/kg) were analyzed for PAHs by EPA Method 8270D. In addition, based on past site activities and the historical location of site features (former mill buildings, location of log deck, location of burn pit, etc.) selected samples were analyzed for pentachlorophenol (PCP) and VOCs by EPA Methods 8270D and 8260B, respectively. Selected samples were also analyzed for dioxins/furans by EPA Method 1613B at Ceres Analytical Laboratory in El Dorado Hills, California.

3.1.2 Groundwater

Six groundwater samples were collected and submitted for laboratory analysis. The sample locations were chosen to provide spatial coverage of the site and to investigate groundwater quality in the vicinity of selected site features.

The groundwater samples were collected for laboratory analysis using the subsurface probe system's 5-foot-long by 0.75-inch-diameter sealed screen sampler. The groundwater sampling probe was advanced to the desired sampling depth and the screen was exposed by retracting the probe rods. Clean polyethylene tubing was then inserted through the steel rod to the bottom of the screen and attached at the surface to a pump. Prior to collecting groundwater samples, the borings were purged using a peristaltic pump until at least three bore volumes of groundwater were removed and/or the groundwater cleared. Groundwater parameters including pH, temperature, and dissolved oxygen were also recorded to ensure that groundwater conditions had stabilized and representative samples were collected.

After purging activities were complete, groundwater samples were collected through the peristaltic pump. The samples were transferred into appropriately labeled 40-milliliter glass vials with Teflon® septum lids preserved with hydrochloric acid. Additional samples were collected using the peristaltic pump and transferred into appropriately labeled 32-ounce glass amber bottles and 500-milliliter plastic bottles with Teflon®-lined lids.

Groundwater samples were collected from near the bottom of their respective borings with a screened interval of approximately five to 10 feet bgs. As shown on the boring logs in Appendix A, the typical groundwater level during sampling was approximately five to six feet bgs. Sample nomenclature includes the boring identification and a 'W' to indicate a water sample. For example, a groundwater sample collected from boring BM-B-1 is labeled BM-B-1-W.

The groundwater samples were placed into a cooler with ice and transported under chain-of-custody procedures to Specialty Analytical for analysis. The samples were analyzed for diesel-range petroleum hydrocarbons using the NWTPH-Dx method. In addition, selected groundwater samples were analyzed for VOCs, PAHs, and RCRA 8 metals using EPA Methods 8260B, 8270D-SIM, and 6020A/7470A, respectively. Groundwater samples analyzed for dissolved RCRA 8 metals were filtered in the field using a disposable 0.45µm filter.

3.2 Subsurface Soil Characteristics

Soil samples were inspected in the field and classified by soil type. In general, subsurface soils generally consisted of sandy gravel (interpreted as fill) to a depth of three to six feet bgs. Sand, silt, and mixtures thereof were generally encountered beneath the sandy gravel to a depth of 10 feet bgs (bottom of the borings).

Boring logs are included in Appendix A.

3.3 Analytical Results and Extent of Contamination

Soil analytical results for all samples are summarized in Table 1 (TPH and metals), Table 2 (PAHs and VOCs), and Table 3 (Dioxins/Furans). Groundwater analytical results for all samples are summarized in Table 4 (TPH and metals) and Table 5 (PAHs and VOCs). Copies of the laboratory reports, chain-of-custody documentation, and data validation are included in Appendix B. Selected analytical results for soil and groundwater are shown on Figures 3 and 4.

For context, analytical results for soil and groundwater samples were primarily compared to DEQ risk-based concentrations (RBCs) (DEQ 2015). In addition, groundwater concentrations were compared to DEQ Ecological Screening Levels (DEQ 2001). A streamlined risk screening was completed and is included in Section 6.

For the purpose of evaluating analytical results and the extent of contamination, the site has been partitioned into three sections, each comprising approximately one-third of the site: the northern section, the central section, and the southern section.

3.3.1 Northern Section

The northern third of the site was the site of the former log deck and two former mill buildings (Figure 2). Results of soil and groundwater sampling in the northern section is included in the following sections.

3.3.1.1 Soil

Six borings (BM-B-1 through BM-B-6) were completed on the northern section of the site to investigate former features and/or operations. In general, non-detect or very low concentrations of target compounds were encountered in soil in the northern section of the site. In addition, no field indications suggesting contaminants or other evidence of spills or impacts were observed.

A total of seven soil samples were collected and analyzed for diesel-range petroleum hydrocarbons. Only one sample, BM-B-1-5.0 (as shown on Figure 3), had a detection of petroleum hydrocarbons (lube oil at 73.8 milligrams per kilogram [mg/kg]). Two of those seven samples were also analyzed for RCRA 8 metals. As noted on Table 1, only arsenic exceeded residential RBCs for soil contact. However, the concentrations of arsenic are below the calculated background concentrations for Oregon and consistent with naturally occurring conditions.

A total of four samples were also analyzed for PAHs, PCP, and/or VOCs. There were no detections of any of these compounds (Tables 1 and 2). One sample, BM-B-5-1.0, was analyzed for dioxins/furans. Very low detections of OCDD, total PeCDD, and total TCDF were detected; however, all were below the residential RBC for dioxin/furans equivalents (Table 3).

In general, soil contamination appears to be limited in the northern section of the site. It does not appear that former operations or current use have impacted the soil subsurface in any significant manner.

3.3.1.2 Groundwater

Two groundwater samples were collected from BM-B-1 and BM-B-5 (Figure 4) with the intent of evaluating groundwater conditions in the vicinity of the former mill building and the former log deck. As shown on Figure 4, both groundwater samples collected had detectable concentrations of diesel-range petroleum hydrocarbons. Hydraulic oil was detected in BM-B-1-W at a concentration of 3,380 micrograms per liter ($\mu\text{g/L}$) and diesel and lube oil were detected in BM-B-5-W at 204 $\mu\text{g/L}$ and 1,070 $\mu\text{g/L}$, respectively. These concentrations were all below applicable RBCs (see Section 6 for risk evaluation).

Various metals were detected in the groundwater samples collected. However, none of the concentrations detected were significant and were below all applicable DEQ RBCs. Groundwater samples BM-B-1-W and BM-B-5-W had concentrations of barium and lead that exceeded DEQ Ecological Screening Level Values (SLVs) for aquatic life. These are further assessed in Section 6.

BM-B-1-W was non-detect for PAHs and VOCs. BM-B-5-W, located in the center of the former log deck, had detections of multiple PAH compounds. No PAHs detected exceeded the most stringent DEQ RBC. Two PAHs did exceed the DEQ SLVs for aquatic life (further assessed in Section 6). VOCs were not detected in sample BM-B-5-W.

Based on groundwater samples from these two borings, there are limited groundwater impacts in the northern portion of the site, primarily petroleum hydrocarbons. However, based on limited soil impacts in overlying soil, the source of the groundwater contamination is not apparent. In addition, based on the different ranges of hydrocarbons (hydraulic oil and diesel) in the two groundwater samples, it is not clear that the contaminants in the two locations represent a single, continuous impact in the northern section of the site.

3.3.2 Central Section

Historical features in the central portion of the site included a former machine shop and a burn pit (Figure 2). Results of soil and groundwater sampling in the central section is included in the following sections.

3.3.2.1 Soil

Two borings, BM-B-7 and BM-B-10, were located in the burn pit area; two borings, BM-B-11 and BM-B-12, were located in the vicinity of the former machine shop; and three additional borings, BM-B-8, BM-B-9, and BM-B-13, were located with intent of covering general use of the property, instead of focusing on a specific historical site feature.

Diesel range hydrocarbons in the vicinity of the former machine shop were detected primarily in near-surface soils (diesel at 21.1 mg/kg in BM-B-11 at 1.0 feet bgs and lube oil at 783 mg/kg and 501 mg/kg at 1.0 feet bgs in BM-B-11 and BM-B-12 respectively, Figure 3). Diesel was also detected in a deeper sample (23.5 mg/kg at 5.0 feet bgs) in BM-B-12. These concentrations are considered low or moderate and are significantly below applicable RBCs.

These samples were further analyzed for PAHs. As shown in Table 2, several PAHs were detected. Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene exceeded residential RBCs (the most stringent RBCs) in the sample collected from BM-B-11 from 1 foot bgs.

Metals were detected in several samples, but generally below the most stringent DEQ RBC (Table 1). Only arsenic exceeded residential RBCs for soil contact. However, the concentrations of arsenic are below the calculated background concentrations for Oregon and consistent with naturally occurring conditions.

Concentrations of diesel-range petroleum hydrocarbons were detected in the former burn pit area, but at generally very low concentrations (max of 267 mg/kg in BM-B-13). Detected concentrations in samples from near surface (1.0-2.0 feet bgs) and deeper samples (5.5-7.0 feet bgs) were all below applicable RBCs. Samples analyzed for VOCs in the vicinity of the former burn pit were non-detect. Samples from BM-B-7 and BM-B-13 analyzed for metals also had detections of arsenic above residential RBCs for soil contact, but below background conditions. One burn pit sample, BM-B-7-1.0, was analyzed for dioxins/furans. Very low detections of OCDD and total HpCDD were noted, and below the residential RBC for dioxin equivalents (Table 3).

Based on the borings completed in the central portion of the site, there appears to be some soil contamination associated with petroleum hydrocarbons, primarily near the former machine shop. In general, the concentrations detected are low and likely limited in extent. However, it does appear that elevated levels of PAHs are present within one near-surface sample, but it is not expected that PAH contamination is significant in extent (based on other borings and field indications). Based on the sampling completed, it does not appear that former operations or current use have impacted the subsurface in a significant manner. The potential risk associated with residual contamination is discussed in Section 6.

3.3.2.2 Groundwater

Two groundwater samples were collected from BM-B-7 and BM-B-12 (Figure 4) with the intent of evaluating groundwater conditions in the vicinity of the former burn pit and the former machine shop, respectively. The groundwater sample collected from the BM-B-7 (former burn pit) was non-detect for diesel range hydrocarbons, PAHs, and VOCs. The sample collected from BM-B-12 had detections of both diesel (139 µg/L) and lube oil (260 µg/L); however, these are both below applicable RBCs. This sample was non-detect for VOCs.

Various metals were detected in the groundwater samples collected. However, none of the concentrations detected were significant and were below all applicable DEQ RBCs.

Based on groundwater samples from these two borings, there are limited groundwater impacts in the central portion of the site, primarily in the vicinity of the former machine shop where petroleum hydrocarbons were detected and are likely associated with the petroleum hydrocarbons detected in soil in the same vicinity. Detections of metals in groundwater may be related to fill material across the site.

3.3.3 Southern Section

Historical features in the southern portion of the site included former mill buildings (Figure 2). Results of soil and groundwater sampling in the southern section is included in the following sections.

3.3.3.1 Soil

Seven borings were located in the southern portion of the site focusing on site features including a concrete slab and former mill buildings (Figure 2). BM-B-14 was drilled immediately north of the existing concrete slab. Samples collected from this location were non-detect for diesel-range petroleum hydrocarbons. BM-B-15, immediately to the east near the boundary of the site, was also non-detect for petroleum hydrocarbons.

The remaining five borings, BM-B-16 through BM-B-20, were located in the vicinity of former mill structures at the southern end of the site. All seven samples analyzed from these borings were non-detect for diesel-range petroleum hydrocarbons. Select samples analyzed for PCP and VOCs were also non-detect.

Two samples, BM-B-16-6.0 and BM-B-19-1.0, were analyzed for metals and had detections of arsenic which exceeded applicable RBCs for soil contact. However, as noted previously, the arsenic concentrations are below calculated background concentrations for Oregon and consistent with naturally occurring conditions.

One sample, BM-B-20-1.0, was analyzed for dioxins/furans and had a detection of OCDD which was below the residential RBC for dioxin equivalents (Table 3).

In general, soil contamination appears to be limited in the southern section of the site. It does not appear that former operations or current use have impacted the soil subsurface in any significant manner.

3.3.3.2 Groundwater

Two groundwater samples, BM-B-15-W and BM-B-20-W, were collected in the southern portion of the site. BM-B-15-W was located near the eastern boundary of the site to the east of the concrete slab, and BM-B-20-W was located in the center of the former mill structures to evaluate groundwater quality in the vicinity of that historical site feature. Both samples were non-detect for diesel-range petroleum hydrocarbons (Figure 4). BM-B-20-W was also non-detect for PAHs. With the exception of acetone (70.9 µg/L; there are no RBCs for acetone) VOCs were also non-detect in BM-B-20-W. RCRA 8 metals concentrations were not detected at concentration of any significance (Table 4).

Based on these analytical results, there is little impact to groundwater in the southern portion of the subject property.

4. LAND USE DETERMINATION

The land use of the subject property is typically used to define potential existing and future routes of exposure at the property. This land use determination was completed in order to evaluate these routes of exposure and aid in the risk evaluation. The land use determination was conducted in general accordance with the DEQ's Final Guidance, Consideration of Land Use in Environmental Remedial Actions (DEQ 1998).

4.1 Locality

DEQ guidance for a land use determination indicates that land use specifics must be determined for all properties within the locality of the facility. The locality is defined as a location where a human or ecological receptor may reasonably come into contact with hazardous substances or contaminants associated with the subject property.

As described above in Section 3.3, soil contamination associated with the subject property has not been documented beyond the boundaries of the property. Groundwater contamination has also not been documented beyond the property boundaries. The extent of soil and groundwater contamination associated with the site defines the locality as the area within the property boundary (Tax Lots 300, 400, 4600, 4700, and 4800).

4.2 Land Use in Locality

According to City of Wheeler records, the subject property is zoned Water Related Industrial. Since the initial development of the property as a lumber mill, land use has been industrial in nature; although it has been primarily vacant for the past 40 years. Adjacent properties to the north and south are zoned Estuarine Development. The adjacent property to the south and east is zoned Water Related Commercial.

Development plans for the Botts Marsh Upland site are unknown at this time. For this reason, all potential land use scenarios have been evaluated, including residential and commercial, though it is not apparent that current zoning allows for exclusively single-family residential development.

5. GROUNDWATER BENEFICIAL USE DETERMINATION

As part of the risk evaluation for the site (Section 6), current or reasonably likely future exposure pathways need to be established. Since contamination at the site includes impacted groundwater, an evaluation of the current and reasonably likely future beneficial uses of groundwater within the locality of the facility (LOF) was conducted. This was primarily completed to assess whether shallow groundwater has a beneficial use and to establish potential exposure pathways to support the risk evaluation. The beneficial use analysis is summarized below.

5.1 Water Rights

Information regarding groundwater points of diversion, groundwater registration points of diversion, and groundwater rights were obtained from the Oregon Water Resources Department (OWRD). According to the OWRD water rights map, there are no current water rights for groundwater use on the subject property or adjacent properties. In addition, it does not appear that there are significant groundwater rights located within 0.5 mile of the property (OWRD 2017).

5.2 Drinking Water Use

The OWRD database was utilized to obtain information regarding all wells within a one-mile radius of the site. There are no current drinking water wells within 0.5 mile of the property (OWRD 2017). In addition, it is not expected that shallow groundwater at the site would be utilized as drinking water. The

City of Wheeler has a well-established drinking water system which is supplied by a well or wells far from the subject property (east of the City approximately at least one mile). Shallow groundwater near the subject property is not of the quality or availability for drinking water; thus, drinking water is not a beneficial use of shallow groundwater at the site.

5.3 Irrigation

Shallow groundwater near the property is not used for irrigation purposes. The feasibility for utilizing shallow groundwater for irrigation near the subject property is low; thus, irrigation is not a beneficial use of shallow groundwater at the site.

5.4 Industrial and Engineering

There are no industrial or engineering uses of shallow groundwater near the site. As discussed above, the City of Wheeler has a well-established source of water. The feasibility for utilizing shallow groundwater for industrial or engineering purposes near the subject property is low; thus, industrial or engineering use is not a beneficial use of shallow groundwater at the site.

5.5 Surface Water Recharge

The Botts Marsh Upland site is located adjacent to the Nehalem River. Overall groundwater flow is presumed to be toward the river (though tidal conditions can influence groundwater direction), so it is likely that shallow groundwater has some interaction with or discharges to the river. As there is no recorded water right associated with the Nehalem River downstream of the site, there is no beneficial use of groundwater (as drinking water) at the site associated with a downstream beneficial use. However, surface water recharge is considered a beneficial use and included in the ecological risk evaluation.

5.6 Beneficial Use Determination Conclusions

There is no current or potential beneficial use of shallow groundwater as drinking water at the site. For this reason, drinking water RBCs are not evaluated as part of the risk assessment in Section 6.

6. RISK EVALUATION

Based on the results of the soil and groundwater sampling conducted on the Botts Marsh Upland site, a risk evaluation was completed to assess the potential risk of residual contaminants.

6.1 Exposure Path Summary

An exposure pathway is defined by four elements: 1) a source and mechanism of constituent release to the environment; 2) an environmental transport medium for the released constituent; 3) a point of potential contact with the impacted medium (the exposure point); and 4) an exposure route at the exposure point. Exposure can only occur when the potential exists for a receptor to directly contact released constituents at the point of release or when there is a transport mechanism for released constituents to a receptor at an exposure point. Without exposure, there is no risk. Therefore, the

exposure assessment is one of the key elements of any risk assessment and is summarized in the following sections.

6.1.1 Conceptual Site Model

A conceptual site model was developed for the site to determine potentially complete exposure pathways from site contaminants. As future development plans for the site are unknown, risk was evaluated for all reasonably likely potential receptors.

The conceptual site model is presented in Figure 5. The conceptual site model depicts potential releases and sources, environmental transport media, potential exposure pathways, potential exposure points, and potential human and ecological receptors. Each of these components of the exposure assessment is addressed in greater detail in the sections below.

6.1.2 Release/Source Analysis

The probable source of the constituents of potential concern (COPCs) detected in soils and groundwater at the site is historical use of the subject property as a mill and lumber processing facility. There are no ongoing primary sources of COPCs on the property.

6.1.3 Exposure Pathways, Exposure Points, and Receptors

Whether a constituent is actually of concern to human health depends on the likelihood of exposure (i.e., whether an exposure pathway exists). This section addresses the potential for exposure to COPCs detected in soil and groundwater under current or hypothetical future land use. The potential exposure scenarios to be assessed in the risk evaluation include a construction worker, an excavation worker (utility worker), an occupational worker, and a residential scenario (assessing future potential use). Based on the beneficial use analysis (Section 5), shallow groundwater at the site is not expected to be used as drinking water. Thus, exposure to COPCs via drinking water is not included in the risk evaluation.

As there is a connection between shallow groundwater in the area and the Nehalem River, impacts to ecological receptors including aquatic life, birds, and mammals were evaluated by comparing groundwater concentrations to DEQ Ecological Screening Levels.

6.1.3.1 Occupational Worker

There is no current exposure for occupational workers at the site. There is a potential for future development of the site to include commercial spaces which would allow for occupational exposure. Direct exposure to impacted soil would be unlikely, however, exposure via direct contact was evaluated using the occupational receptor exposures to provide a conservative analysis. In addition, potential exposure of groundwater via vapor intrusion into a future building was also assessed for occupational workers.

6.1.3.2 Residential User

The site does not currently have residential exposure. However, there is potential that the site could be redeveloped to mixed use in the future. Therefore, DEQ's residential scenario was assessed. While exposure via direct contact of subsurface soils is not likely, this pathway evaluates direct exposure as a

conservative measure. In addition, potential human exposure to groundwater contaminants via vapor intrusion into a future building was also assessed for residential users.

6.1.3.3 Excavation/Construction Worker

With expected site redevelopment in the future, a potential exists for exposure of construction workers to COPCs in soils via ingestion, dermal contact, and inhalation of volatile substances and airborne particulates. In addition, utility work at the site could expose excavation workers to site soils or groundwater within an excavation.

6.1.3.4 Ecological – Aquatic Life

As groundwater flow at the subject property is interpreted to flow west towards the Nehalem River, it is possible for dissolved COPCs to migrate from groundwater to surface water. Groundwater concentrations were compared to DEQ ecological screening levels for aquatic life to evaluate potential risk.

6.1.3.5 Ecological – Birds

As noted in Section 6.1.3.4, it is expected that groundwater flows toward and potentially interacts with surface water of the Nehalem River. As birds interact with the surface water and sediment, groundwater concentrations were compared to DEQ ecological screening levels for birds to evaluate potential risk.

6.1.3.6 Ecological – Mammals

As noted in Section 6.1.3.4, it is expected that groundwater flows to and potentially interacts with surface water of the Nehalem River. As mammals also interact with the surface water and sediment, groundwater concentrations were compared to DEQ ecological screening levels for mammals to evaluate potential risk.

6.2 Risk Characterization

Maximum detected concentrations of COPCs in soil and groundwater were compared to DEQ RBCs to provide an evaluation of the environmental risks associated with the site. RBCs protective of human health for exposure scenarios were selected from DEQ's guidance document Risk-Based Decision Making for the Remediation of Petroleum Contaminated Sites (DEQ 2003). It should be noted that DEQ updated the RBCs in November 2015 to reflect current toxicological and chemical characteristic information. The RBCs for each of the COPCs are shown on Tables 1 through 5.

6.2.1 Soil

The following evaluates the potential risk from soil for each of the established receptors. Soil sample results were compared to DEQ's most-recent RBCs for human exposure via soil ingestion, dermal contact, and inhalation (RBCs).

6.2.1.1 Residential Exposure

As shown in Tables 1 through 3, only arsenic and four PAHs (benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene) were detected in one or more samples at concentrations exceeding the DEQ RBCs for residential exposure.

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and/or indeno(1,2,3-cd)pyrene were detected in two samples (BM-B-11-1.0 and BM-B-12-1.0, each from 1.0 feet bgs, in the vicinity of the former machine shop) above the residential RBC for soil ingestion, dermal contact, and inhalation. Though there is no planned residential development for the site, if residential development does occur, these results should be considered.

Arsenic was detected at concentrations exceeding the residential DEQ RBC for soil ingestion, dermal contact, and inhalation in all eight samples analyzed for metals. However, all of the concentrations were below the calculated background concentration for arsenic in Oregon and consistent with naturally occurring conditions.

The area in the vicinity of the former machine shop may be considered an AOC (Area of Concern) for the residential use scenario. The residential exposure route was provided for a conservative analysis.

6.2.1.2 Occupational Exposure

As shown in Tables 1 through 3, only arsenic and benzo(a)pyrene were detected in one or more samples at concentrations exceeding the DEQ RBCs for occupational exposure.

Benzo(a)pyrene was detected in one sample (BM-B-11-1.0, from 1.0 feet bgs, in the vicinity of the former machine shop) slightly above the occupational RBC for soil ingestion, dermal contact, and inhalation. If commercial development does occur at the site, these results should be considered.

Arsenic was detected at concentrations exceeding the occupational DEQ RBC for soil ingestion, dermal contact, and inhalation in seven of the eight samples analyzed for metals. All detected concentrations of arsenic were below the calculated background concentrations for Oregon. Thus, arsenic is not considered a concern.

6.2.1.3 Excavation and Construction Worker Exposure

As shown in Tables 1 through 3, no analyzed constituents in soil exceeded the DEQ RBCs for excavation or construction worker exposure.

Based on these sample results, there is no potential risk to any receptors under the excavation and construction worker exposure scenarios.

6.2.2 Groundwater

The following evaluates the potential risk from groundwater for each of the established receptors. Note that drinking water use is not evaluated in this risk assessment. Excavation worker exposure to groundwater was assessed using DEQ's Groundwater in Excavation (RBCwe) RBCs. Residential and occupational exposure was assessed using DEQ's Volatilization to Outdoor Air (RBCwo) and Vapor Intrusion into Buildings (RBCwi) RBCs.

6.2.2.1 Residential Exposure

As shown in Tables 4 and 5, no analyzed constituents in groundwater exceeded the applicable DEQ RBCs for residential exposure.

Based on these sample results, there is no potential risk to receptors under the residential exposure scenario.

6.2.2.2 Occupational Exposure

As shown in Tables 4 and 5, no analyzed constituents in groundwater exceeded the DEQ RBCs for occupational exposure.

Based on these sample results, there is no potential risk to receptors under the occupational exposure scenario.

6.2.2.3 Excavation and Construction Worker Exposure

As shown in Tables 4 and 5, no analyzed constituents in groundwater exceeded the DEQ RBCs for excavation and construction worker exposure.

Based on these sample results, there is no potential risk to receptors under the excavation and construction worker exposure scenarios.

6.2.3 Ecological Risk

The following summarizes the potential ecological risk of site COPCs.

6.2.3.1 Ecological Soil Exposure – Invertebrates

As shown in Tables 1 and 2, no COPCs exceeded the EPA ecological soil screening levels for invertebrates, birds, or mammals.

6.2.3.2 Ecological Exposure – Aquatic Life

As shown in Tables 4 and 5, five groundwater samples had concentrations of at least one RCRA 8 metal (barium, lead, and/or silver) above the screening level value for aquatic life. One of these samples (BM-B-5-W) also had concentrations of benz(a)anthracene and benzo(a)pyrene exceeding the screening level value for aquatic life. It appears that the extent of groundwater impacts on the subject property is limited, specifically for the metals and PAH compounds noted above. In addition, it is not apparent that concentrations detected in a limited portion of the property is impacting the Nehalem River surface water at similar concentrations (i.e. dilution and attenuation is expected away from the subject property). In addition, the small contribution of source material should be considered when evaluating impacts associated with the very low screening value utilized to assess aquatic life in a large body of water. Based on these considerations, it is not expected that a significant ecological risk is present associated with groundwater emanating from the subject property to the adjacent Nehalem River.

6.2.3.3 Ecological Exposure – Birds

As shown in Tables 4 and 5, no analyzed constituents in groundwater exceeded the DEQ screening levels for exposure to birds from surface water and sediment. Based on these sample results, there is no potential risk to birds from COPCs in groundwater.

6.2.3.4 Ecological Exposure - Mammals

As shown in Tables 1 through 5, no analyzed constituents in groundwater exceeded the DEQ screening level for exposure to mammals from surface water and sediment. Based on these sample results, there is no potential risk to mammals from COPCs in groundwater.

7. CONCLUSIONS

Parametrix conducted a Phase II ESA on the Botts Marsh Upland site in Wheeler, Oregon. Based on the findings of this investigation, Parametrix reached the following conclusions:

1. A Phase I ESA on the subject property was conducted in September 2016. The Phase I ESA identified former structures and features associated with the Wheeler Lumber Company which operated at the site from at least the 1920s through the 1950s or 1960s. Based on historical aerial photographs, the site has been vacant since at least 1970. Current use includes storage of miscellaneous equipment and vehicles on the southern portion of the property and temporary/periodic use of the central and northern portion of the property by the public for access to the adjacent Nehalem River. The Phase I ESA was conducted as part of Tillamook County's Salmonberry Trail Brownfields Assessment Grant. A Phase II ESA was recommended to determine if the past operations have impacted the subsurface the property and to establish baseline environmental conditions in support of potential redevelopment of the property.
2. Parametrix supervised the drilling of twenty exploratory borings (labelled BM-B-1 to BM-B-20) to a depth of 10 to 15 feet bgs on the subject property. A total of 31 soil samples were analyzed by the laboratory for one or more target compounds, including diesel-range petroleum hydrocarbons (TPH-Dx), PAHs, VOCs, RCRA 8 metals, and/or dioxins/furans. Six of the 20 borings included groundwater samples. The investigation focused on determining whether the past use of the property had impacted subsurface conditions. For the purposes of evaluation, the property was divided into three portions; the northern portion, the central portion, and the southern portion.
3. Six borings were completed in the northern portion of the site, which was the location of the former log deck and two former mill buildings. A very low concentration of diesel-range petroleum hydrocarbons was detected in one sample (lube oil in sample BM-B-1-5.0 at 73.8 mg/kg). No other significant concentrations of target compounds were detected in soil in the northern portion of the property. It does not appear that former operations or current use have impacted the soil subsurface in any significant manner.
4. Seven borings were completed in the central portion of the site, which was the location of a former machine shop and burn pit. Moderate concentrations of diesel-range petroleum hydrocarbons were detected in several of the borings, at a maximum concentration of 783 mg/kg (sample BM-B-11-1.0-D). In addition, near-surface soil samples (1 foot) from borings BM-B-11 and BM-B-12, near the former machine shop, had detections of several PAHs above the most stringent DEQ RBCs (residential). No other significant concentrations of target compounds were detected in soil in the

central portion of the property. Based on the borings completed, there appears to be some soil contamination of petroleum hydrocarbons and associated compounds in the central portion of the site, primarily near the former machine shop. In general, the concentrations of COPCs detected are low and likely limited in extent. Widespread contamination was not observed through sampling or other field indications. However, it does appear that elevated concentrations of PAHs may be present within near-surface soils near boring BM-B-11, but it is not expected that PAH contamination is significant in extent laterally or vertically (based on other borings and field indications). In the event of future development, management of soils in the area near boring BM-B-11 may be necessary.

5. Seven borings were completed in the southern portion of the site, which is the location of a concrete slab and former mill buildings. In general, soil contamination appears to be limited in the southern section of the site. It does not appear that former operations or current use have impacted the soil subsurface in any significant manner.
6. Impacts to groundwater quality at the site appear to be limited to low levels of diesel-range petroleum hydrocarbons in the northern and central portions of the site, and detections of PAHs in one boring (BM-B-5) in the central portion of the property. Low levels of RCRA 8 metals were detected in all 6 borings, but none at significant concentrations. The source of groundwater impacts are not known, but may be related to former operations. In any event, residual groundwater contamination appears to be relatively low, considering the lack of shallow groundwater use as a drinking water source.
7. Current and former land use of the subject property has been industrial in nature. As development plans for the Botts Marsh Upland site are unknown at this time, all potential land use scenarios were evaluated including commercial (occupational) and residential. These were used in the development of a conceptual site model and exposure pathways as described in the risk evaluation.
8. Based on an evaluation of groundwater beneficial use, there is no current or potential beneficial use of shallow groundwater for drinking water at the site. For this reason, drinking water exposure was not evaluated as part of the risk assessment. However, a beneficial use of shallow groundwater is surface water recharge to the adjacent Nehalem River. Therefore, potential ecological impacts to the Nehalem River were evaluated as part of the risk assessment.
9. Based on the risk assessment, several PAHs [benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene] exceeded the DEQ RBC for residential exposure in one soil sample in the vicinity of the former machine shop (boring BM-B-11). Benzo(a)pyrene also slightly exceeded the DEQ RBC for occupational exposure to soil. It is not expected that PAH contamination in soil is significant in extent laterally or vertically (based on other borings and field indications). However, if residential or commercial development occurs in the future at the site in the vicinity of the former machine shop, these results should be considered for potential mitigation of near-surface soils to limit potential risk.
10. No COPCs exceeded the applicable DEQ RBCs for residential or occupational exposure to groundwater.
11. No COPCs exceeded the applicable DEQ RBCs for construction worker or excavation worker exposure to soil or groundwater.

12. No COPCs in soil samples exceeded the EPA ecological soil screening levels for invertebrates, birds, or mammals. No COPCs in groundwater exceeded the DEQ screening levels for birds and mammals associated with surface water or sediment exposure.
13. Five groundwater samples had concentrations of at least one RCRA 8 metal (barium, lead, and/or silver) above the DEQ screening level value for aquatic life. However, the concentrations of metals detected do not appear to be significantly elevated above expected naturally occurring conditions and a specific source of elevated metals was not observed in overlying soil. One groundwater sample (BM-B-5-W) also had concentrations of benz(a)anthracene and benzo(a)pyrene exceeding the screening level value for aquatic life. It appears that the extent of groundwater impacts on the subject property is limited, specifically for the metals and PAH compounds noted above. In addition, it is not apparent that concentrations detected in a limited portion of the property is impacting the Nehalem River surface water at similar concentrations (i.e. dilution and attenuation is expected away from the subject property). In addition, the small contribution of source material should be considered when evaluating impacts associated with the very low screening value utilized to assess aquatic life in a large body of water. Based on these considerations, it is not expected that a significant ecological risk is present associated with groundwater emanating from the subject property to the adjacent Nehalem River.

8. RECOMMENDATIONS

Based on the conclusions of the Phase II Environmental Site Assessment, the following are recommended:

1. Limited residual soil contamination was identified at the subject property, primary in the area near the former machine shop. In addition, impacts to groundwater were identified in the central and northern portions of the property. However, based on the data evaluation and risk assessment, the contamination appears to be very limited in extent and magnitude and it does not appear that there is a potential risk to current users of the property. No further environmental investigation is recommended for the Botts Marsh Upland site based on current use.
2. If the property is to be redeveloped, there is potential to encounter contamination in near-surface or subsurface soils. However, the impacts identified appear to be limited and it is not expected that significant mitigation is required. The presence of potentially contaminated material (particularly soil) should be considered during any future development work, including the potential for grading, foundation work, or excavation at the site. Therefore, it is recommended that a contaminated media management plan (CMMP) be prepared for the site during planning of any future development project. The CMMP should be implemented during construction and include procedures for management of known and potentially unknown contaminated media. The CMMP should be structured to outline procedures for management of excess soils at the site, including proper handling, testing, and disposal (if necessary).

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Tables



Table 1. Summary of Soil TPH and Metals Analytical Results

Sample ID	Sample Depth (feet)	Sample Date	Petroleum Hydrocarbons		RCRA Metals							
			Diesel (mg/kg)	Lube Oil (mg/kg)	Total Arsenic (mg/kg)	Total Barium (mg/kg)	Total Cadmium (mg/kg)	Total Chromium (mg/kg)	Total Lead (mg/kg)	Total Selenium (mg/kg)	Total Silver (mg/kg)	Total Mercury (mg/kg)
BM-B-1-1.0	1.0	01/18/17	ND (<22.3)	ND (<74.2)	7.34 J	65.7	0.122	23.5 J	28.8	ND (<1.04)	0.144	0.0506
BM-B-1-5.0	5.0	01/18/17	ND (<22.2) UJ	73.8	--	--	--	--	--	--	--	--
BM-B-2-1.0	1.0	01/18/17	ND (<20.6)	ND (<68.7)	--	--	--	--	--	--	--	--
BM-B-3-1.0	1.0	01/18/17	ND (<21.0)	ND (<70.0)	--	--	--	--	--	--	--	--
BM-B-4-1.0	1.0	01/18/17	ND (<20.9)	ND (<69.7)	--	--	--	--	--	--	--	--
BM-B-5-1.0	1.0	01/18/17	ND (<23.0)	ND (<76.6)	3.46 J	96.5	0.102	13.8 J	6.83	ND (<0.972)	0.101	0.0289
BM-B-6-1.0	1.0	01/18/17	ND (<17.9)	ND (<59.7)	--	--	--	--	--	--	--	--
BM-B-6-1.0-D	1.0	01/18/17	ND (<18.5)	ND (<61.8)	--	--	--	--	--	--	--	--
BM-B-7-1.0	1.0	01/18/17	ND (<19.2)	ND (<64.0)	--	--	--	--	--	--	--	--
BM-B-7-5.5	5.5	01/18/17	ND (<19.2) UJ	107	3.46	50.9	ND (<0.116)	23.0	7.4	ND (<0.116)	0.14	0.0226
BM-B-8-2.0	2.0	01/17/17	ND (<17.9)	ND (<59.8)	--	--	--	--	--	--	--	--
BM-B-9-0.5	0.5	01/17/17	ND (<18.7)	ND (<62.2)	--	--	--	--	--	--	--	--
BM-B-10-2.0	2.0	01/17/17	19.8	ND (<64.8)	3.37 J	174	ND (<0.0998)	11.1 J	6.95	ND (<0.998)	0.127	0.0204
BM-B-10-5.5	5.5	01/17/17	25.8	85.9	--	--	--	--	--	--	--	--
BM-B-11-1.0	1.0	01/17/17	21.1	138	1.13 J	55.1	0.0996	17.1 J	4.39	ND (<0.975)	0.192	ND (<0.0165)
BM-B-11-1.0-D	1.0	01/17/17	ND (<18.8)	783	3.28 J	57.5	ND (<0.101)	13.8 J	7.58	ND (<1.01)	ND (<0.101)	0.0184
BM-B-12-1.0	1.0	01/17/17	ND (<17.6)	501	--	--	--	--	--	--	--	--
BM-B-12-5.0	5.0	01/17/17	23.5	ND (<69.0)	4.57	90.3	ND (<0.141)	35.3	7.44	ND (<1.41)	ND (<0.141)	ND (<0.0226)
BM-B-13-1.0	1.0	01/17/17	ND (<17.8)	267	--	--	--	--	--	--	--	--
BM-B-13-7.0	7.0	01/17/17	54.4	240	--	--	--	--	--	--	--	--
BM-B-14-1.0	1.0	01/17/17	ND (<16.7)	ND (<55.7)	--	--	--	--	--	--	--	--
BM-B-14-5.5	5.5	01/17/17	ND (<20.4)	ND (<67.9)	--	--	--	--	--	--	--	--
BM-B-15-1.0	1.0	01/17/17	ND (<17.8)	ND (<59.5)	--	--	--	--	--	--	--	--
BM-B-16-1.0	1.0	01/17/17	ND (<20.0)	ND (<66.5)	--	--	--	--	--	--	--	--
BM-B-16-6.0	6.0	01/17/17	ND (<22.2)	ND (<73.9)	3.4	32.4	ND (<0.142)	24.7	4.23	ND (<1.42)	0.146	ND (<0.0247)
BM-B-17-1.0	1.0	01/17/17	ND (<18.4)	ND (<61.2)	--	--	--	--	--	--	--	--
BM-B-18-1.0	1.0	01/17/17	ND (<17.3)	ND (<57.3)	--	--	--	--	--	--	--	--
BM-B-19-1.0	1.0	01/17/17	ND (<19.7)	ND (<65.8)	2.81 J	88.4	0.123	28 J	2.82	ND (<1.08)	0.18	0.0258
BM-B-19-7.0	7.0	01/17/17	ND (<18.9)	ND (<63.0)	--	--	--	--	--	--	--	--
BM-B-20-1.0	1.0	01/17/17	ND (<19.1)	ND (<63.6)	--	--	--	--	--	--	--	--
BM-B-20-8.0	8.0	01/17/17	ND (<22.4)	ND (<74.6)	--	--	--	--	--	--	--	--
DEQ RBCs - Soil Ingestion, Dermal Contact, and Inhalation*												
Residential			1,100	2,800	0.43	15,000	78	NA	400	NA	390	23
Occupational			14,000	36,000	1.9	190,000	510	NA	800	NA	5,100	310
Construction Worker			4,600	11,000	15	60,000	150	NA	800	NA	1,500	93
Excavation Worker			>max	>max	420	>max	4,300	NA	800	NA	43,000	2,600
DEQ RBCs - Vapor Intrusion Into Buildings												
Residential			>max	>max	NA	NA	NA	NA	NA	NA	NA	NA
Occupational			>max	>max	NA	NA	NA	NA	NA	NA	NA	NA
EPA Ecological Soil Screening Levels												
Invertebrate			NA	NA	NA	330	140	NA	1,700	4.1	NA	NA
Bird			NA	NA	43	NA	0.77	NA	11	1.2	4.2	NA
Mammal			NA	NA	46	2,000	0.36	NA	56	0.63	14	NA

Notes:

mg/kg = milligrams per kilogram

ND = not detected (method reporting limit)

-- = Sample was not analyzed for this constituent.

NA = not applicable or no value available

>max = The constituent RBC for this pathway is greater than 100,000 mg/kg or 100,000 mg/L. The DEQ believes it is highly unlikely that such concentrations will ever be encountered.

Bold values = detected concentrations

Bold values = concentrations detected above Applicable DEQ RBCs

J = Estimated Value

Table 2. Summary of Soil PAH, PCP and VOC Analytical Results

Sample ID	Sample Depth (feet)	Sample Date	PAHs													Pentachlorophenol (mg/kg)	Volatile Organic Compounds	
			Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Fluoranthene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)			
BM-B-1-5.0	5.0	01/18/17	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	--	--
BM-B-3-1.0	1.0	01/18/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (<0.5)	--
BM-B-5-1.0	1.0	01/18/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
BM-B-7-1.0	1.0	01/18/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (<0.5)	ND
BM-B-11-1.0-D	1.0	01/17/17	ND (<0.167)	0.200	0.167	0.367	0.533	0.300	0.567	0.167	0.300	0.667	0.433	0.267	1.1	--	--	
BM-B-12-1.0	1.0	01/17/17	ND (<0.033)	ND (<0.033)	ND (<0.033)	0.033	0.040	ND (<0.033)	0.047	ND (<0.033)	0.033	0.047	0.033	0.033	0.080	--	--	
BM-B-12-5.0	5.0	01/17/17	ND (<0.003)	ND (<0.003)	ND (<0.003)	0.005	0.006	0.005	0.006	0.003	0.007	0.008	0.005	0.005	0.013	--	--	
BM-B-14-1.0	1.0	01/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (<0.5)	--	
BM-B-16-1.0	1.0	01/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	
BM-B-20-1.0	1.0	01/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (<0.5)	ND	
DEQ RBCs- Soil Ingestion, Dermal Contact, and Inhalation																		
Residential			4,700	NA	23,000	0.15	0.015	0.15	NA	2	15	2,400	0.15	NA	1,800	1.0	NA	
Occupational			70,000	NA	350,000	2.9	0.29	2.9	NA	29	290	30,000	2.9	NA	23,000	4.0	NA	
Construction Worker			21,000	NA	110,000	24	2.4	24	NA	240	2,400	10,000	24	NA	7,500	34	NA	
Excavation Worker			590,000	NA	>max	660	67	670	NA	6,700	67,000	280,000	670	NA	210,000	960	NA	
DEQ RBCs - Vapor Intrusion Into Buildings																		
Residential			>max	NA	>max	>Csat	NA	NA	NA	NA	NA	NA	>max	NA	>Csat	NA	NA	
Occupational			>max	NA	>max	>Csat	NA	NA	NA	NA	NA	NA	>max	NA	>Csat	NA	NA	
EPA Ecological Soil Screening Levels																		
Invertebrate			29	29	29	18	18	18	18	18	18	18	18	29	18	31	NA	
Bird			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1	NA	
Mammal			100	100	100	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	100	1.1	2.8	NA	

Notes:

PAHs = polynuclear aromatic hydrocarbons

mg/kg = milligrams per kilogram

ND = not detected (method reporting limit)

-- = Sample was not analyzed for this constituent.

NA = not applicable or not available

* = Reported result includes the combined area of the two isomers and should be considered the total of Benzo (b+k) Fluoranthenes.

Bold values = detected concentrations

Red values = concentrations detected above applicable DEQ RBCs

>max = The constituent RBC for this pathway is greater than 100,000 mg/kg or 100,000 mg/L. The DEQ believes it is highly unlikely that such concentrations will ever be encountered.

>Csat = This soil RBC exceeds the limit of three-phase equilibrium partitioning. Soil concentrations in excess of Csat indicate that free product might be present.

Table 3 - Summary of Soil Dioxins/Furans Analytical Results

Sample ID	TEF	BM-B-5-1.0		BM-B-7-1.0		BM-B-20-1.0		DEQ RBCs- Soil Ingestion, Dermal Contact, and Inhalation				DEQ RBCs - Vapor Intrusion into Buildings	
		Conc. (pg/g)	TEQ (pg/g)	Conc. (pg/g)	TEQ (pg/g)	Conc. (pg/g)	TEQ (pg/g)	Residential (pg/g)	Occupational (pg/g)	Construction Worker (pg/g)	Excavation Worker (pg/g)	Residential (pg/g)	Occupational (pg/g)
2,3,7,8-TCDD	1	ND (0.435)	0	ND (0.343)	0	ND (0.482)	0	4.7	16	170	4,800	10,000	130,000
1,2,3,7,8-PeCDD	1	ND (0.731)	0	ND (0.565)	0	ND (0.628)	0						
1,2,3,4,7,8-HxCDD	0.1	ND (1.25)	0	ND (0.898)	0	ND (0.793)	0						
1,2,3,6,7,8-HxCDD	0.1	ND (1.43)	0	ND (1.07)	0	ND (0.866)	0						
1,2,3,7,8,9-HxCDD	0.1	ND (1.28)	0	ND (0.946)	0	ND (0.797)	0						
1,2,3,4,6,7,8-HpCDD	0.01	ND (1.10)	0	3.39 EMPC	0.034	ND (0.525)	0						
OCDD	0.0003	8.47 J	0.003	38.0	0.011	5.72 J	0.002						
2,3,7,8-TCDF	0.1	ND (0.377)	0	ND (0.370)	0	ND (0.399)	0						
1,2,3,7,8-PeCDF	0.03	ND (0.438)	0	ND (0.586)	0	ND (0.538)	0						
2,3,4,7,8-PeCDF	0.3	ND (0.305)	0	ND (0.349)	0	ND (0.256)	0						
1,2,3,4,7,8-HxCDF	0.1	ND (0.698)	0	ND (0.698)	0	ND (0.576)	0						
1,2,3,6,7,8-HxCDF	0.1	ND (0.685)	0	ND (0.685)	0	ND (0.605)	0						
1,2,3,7,8,9-HxCDF	0.1	ND (0.769)	0	ND (0.769)	0	ND (0.658)	0						
2,3,4,6,7,8-HxCDF	0.1	ND (0.929)	0	ND (0.929)	0	ND (0.675)	0						
1,2,3,4,6,7,8-HpCDF	0.01	ND (0.506)	0	ND (0.506)	0	ND (0.295)	0						
1,2,3,4,7,8,9-HpCDF	0.01	ND (0.609)	0	ND (0.609)	0	ND (0.357)	0						
OCDF	0.0003	ND (1.97)	0	1.82 J	0.001	ND (1.18)	0						
Total TEQ			0.003		0.046		0.002						
Total TCDD		ND (0.435)		ND (0.343)		ND (0.482)							
Total PeCDD		1.46		ND (0.565)		ND (0.628)							
Total HxCDD		ND (1.43)		ND (1.07)		ND (0.866)							
Total HpCDD		ND (1.10)		4.50		ND (0.525)							
Total TCDF		1.56		ND (0.370)		ND (0.399)							
Total PeCDF		ND (0.438)		ND (0.586)		ND (0.538)							
Total HxCDF		ND (0.929)		ND (0.692)		ND (0.675)							
Total HpCDF		ND (0.609)		ND (0.690)		ND (0.357)							

Notes:

TEF Toxicity Equivalency Factor

TEQ Toxicity Equivalent (Concentration X Toxicity Equivalency Factor)

Source of avian TEFs : Van den Berg, et al., Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife, Environmental

J The amount detected is below the low calibration limit.

EMPC Estimated maximum potential concentration.

ND = not detected (sample specific reporting limit)

Table 4. Summary of Groundwater TPH and Metals Analytical Results

Sample ID	Sample Date	Petroleum Hydrocarbons			RCRA Metals															
		Diesel (µg/L)	Hydraulic Oil (µg/L)	Lube Oil (µg/L)	Total Arsenic (µg/L)	Dissolved Arsenic (µg/L)	Total Barium (µg/L)	Dissolved Barium (µg/L)	Total Cadmium (µg/L)	Dissolved Cadmium (µg/L)	Total Chromium (µg/L)	Dissolved Chromium (µg/L)	Total Lead (µg/L)	Dissolved Lead (µg/L)	Total Selenium (µg/L)	Dissolved Selenium (µg/L)	Total Silver (µg/L)	Dissolved Silver (µg/L)	Total Mercury (µg/L)	Dissolved Mercury (µg/L)
BM-B-1-W	01/18/17	ND (<75.5)	3,380	ND (<189)	12.6	--	194	--	ND (<0.100)	--	7.35	--	48.1	--	ND (<1.0)	--	ND (<0.100)	--	ND (<0.100)	--
BM-B-5-W	01/18/17	204	--	1,070	3.77	2.10	86.4	56.9	0.474	0.409	19.2	5.66	64.6	49.9	ND (<1.0)	ND (<1.0)	ND (<0.100)	ND (<0.100)	ND (<0.100)	ND (<1.0)
BM-B-7-W	01/18/17	ND (<75.6)	--	ND (<189)	8.96	--	199	--	0.502	--	5.01	--	55.8	--	1.24	--	0.133	--	ND (<0.100)	--
BM-B-12-W	01/17/17	139	--	260	25.4	16.1	127	83.2	0.143	ND (<0.100)	15.7	0.607	11.7	0.207	ND (<1.0)	ND (<1.0)	0.164	ND (<0.100)	ND (<0.100)	ND (<0.100)
BM-B-15-W	01/17/17	ND (<77.0)	--	ND (<192)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (<0.100)	--
BM-B-20-W	01/17/17	ND (<75.9)	--	ND (<190)	0.736	--	12	--	ND (<0.100)	--	2.66	--	2.26	--	ND (<1.0)	--	ND (<0.100)	--	ND (<0.100)	--
BM-B-20-W-D	01/17/17	ND (<76.5)	--	ND (<191)	0.619	--	9.65	--	ND (<0.100)	--	2.15	--	1.70	--	ND (<1.0)	--	ND (<0.100)	--	ND (<0.100)	--
DEQ RBCs- Groundwater Volatilization to Outdoor Air*																				
Residential		>S	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Occupational		>S	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DEQ RBCs- Groundwater Vapor Intrusion into Buildings*																				
Residential		>S	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Occupational		>S	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DEQ RBCs- Groundwater in Excavation*																				
Construction & Excavation Worker		>S	>S	>S	6,300	6,300	>S	>S	130,000	130,000	>S	>S	>S	>S	NA	NA	1,100,000	1,100,000	>S	>S
DEQ Aquatic Life Water Quality Criteria																				
Aquatic Life		NA	NA	NA	150	150	NA	NA	*	*	*	*	*	*	4.6	4.6	0.10	0.10	0.01	0.012
DEQ Ecological Screening Level Values - Surface Water/Fresh																				
Aquatic		NA	NA	NA	150	150	4	4	2.2	2.2	74	74	2.5	2.5	5	5	0.12	0.12	0.77	0.77
Birds		NA	NA	NA	18,000	18,000	150,000	150,000	10,000	10,000	7,200,000	7,200,000	28,000	28,000	3,600	3,600	NA	NA	3300	3,300
Mammals		NA	NA	NA	6,000	6,000	39,000	39,000	8,000	8,000	21,000,000	21,000,000	323,000	323,000	1,500	1,500	NA	NA	10,000	10,000

Notes:

TPH = total petroleum hydrocarbons

µg/L: micrograms per liter

ND = not detected (method reporting limit)

-- = Sample was not analyzed for this constituent.

NA = not applicable or no value available

Bold values = detected concentrations

Bold values = concentrations detected above applicable DEQ RBCs or Ecological SLVs/Water Quality Criteria

- = Sample not analyzed for this compound.

>S = This groundwater RBC exceeds the solubility limit. Groundwater concentrations in excess of S indicate that free product may be present.

Table 5. Summary of Groundwater PAH and VOC Analytical Results

Sample ID	Sample Date	PAHs															VOCs	
		Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benz(a)anthracene (µg/L)	Benzo(a)pyrene (µg/L)	Benzo(b)fluoranthene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenz(a,h)anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)	Acetone (µg/L)	
BM-B-1-W	01/18/17	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<0.0474)	ND (<50.0)	
BM-B-5-W	01/18/17	0.0944	0.227	0.208	0.359	0.51	0.5	0.567	0.0661	0.406	0.151	0.878	0.236	0.368	0.434	1.48	ND (<50.0)	
BM-B-7-W	01/18/17	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<0.0472)	ND (<50.0)	
BM-B-12-W	01/17/17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (<50.0)	
BM-B-20-W	01/17/17	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<0.0468)	ND (<50.0)	
BM-B-20-W-D	01/17/17	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	ND (<0.0471)	70.9	
DEQ RBCs- Groundwater Volatilization to Outdoor Air*																		
Residential		>S	NA	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	>S	NA	NA	>S	NA
Occupational		>S	NA	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	>S	NA	NA	>S	NA
DEQ RBCs- Groundwater Vapor Intrusion into Buildings*																		
Residential		>S	NA	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	>S	NA	NA	>S	NA
Occupational		>S	NA	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	>S	NA	NA	>S	NA
DEQ RBCs- Groundwater in Excavation*																		
Construction and Excavation Workers		>S	NA	>S	>S	NA	NA	NA	NA	NA	NA	NA	NA	>S	NA	NA	>S	NA
DEQ Aquatic Life Water Quality Criteria																		
Aquatic Life		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DEQ Ecological Screening Level Values - Surface Water/Fresh																		
Aquatic		520	NA	13	0.027	0.014	NA	NA	NA	NA	NA	NA	6.16	3.9	NA	6.3	NA	1,500
Birds		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mammals		NA	NA	NA	NA	8,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76

Notes:

PAHs = polynuclear aromatic hydrocarbons

µg/L: micrograms per liter

ND = Not Detected

Bold values = detected concentrations

Bold values = concentrations detected above applicable DEQ RBCs or Ecological SLVs/Water Quality Criteria

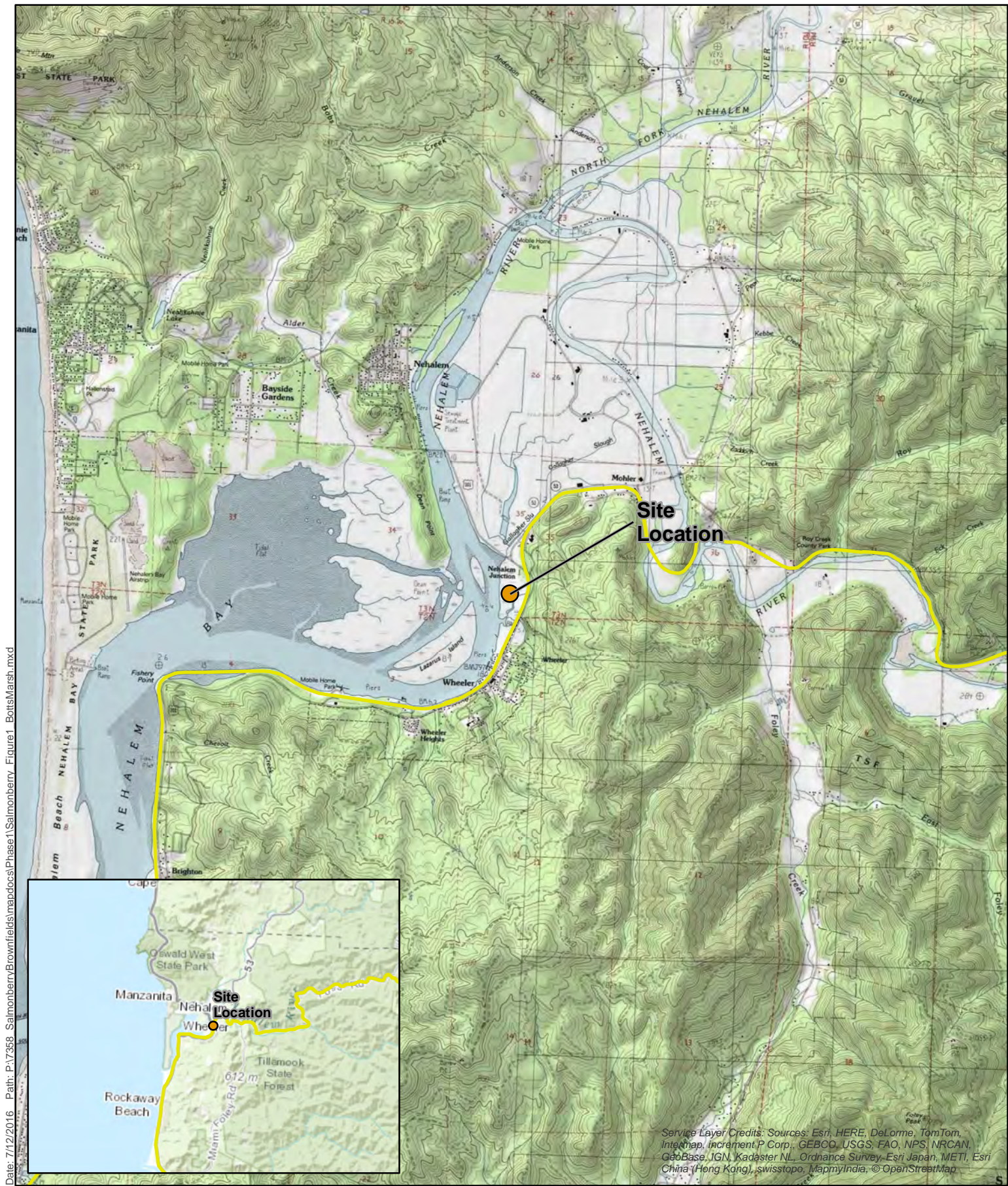
* = No Volatile Organic Compounds were detected in any groundwater samples

NA = Not Applicable or No Value Available

>S = This groundwater RBC exceeds the solubility limit. Groundwater concentrations in excess of S indicate that free product may be present.

Figures

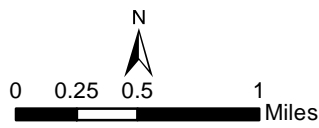




Date: 7/12/2016 Path: P:\7358_Salmonberry\Brownfields\mapdocs\Phase1\Salmonberry_Figure1_BottsMarsh.mxd

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap

Parametrix



- Site Location
- Trail Alignment

**Figure 1: Botts Marsh
Vicinity Map
Tillamook County, OR**

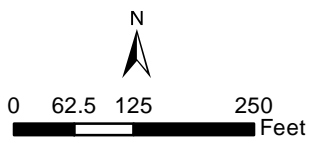
Salmonberry Trail

Date: 2/14/2017 Path: \\parametrix.com\omx\Port\Projects\Clients\Tillamook_Cnt\273-2925-007_Salmonberry_Corr\FEA\99\Sites\GIS\mapdocs\Phase2\Figure2_BottsMarshUpland.mxd



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

Parametrix



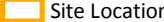




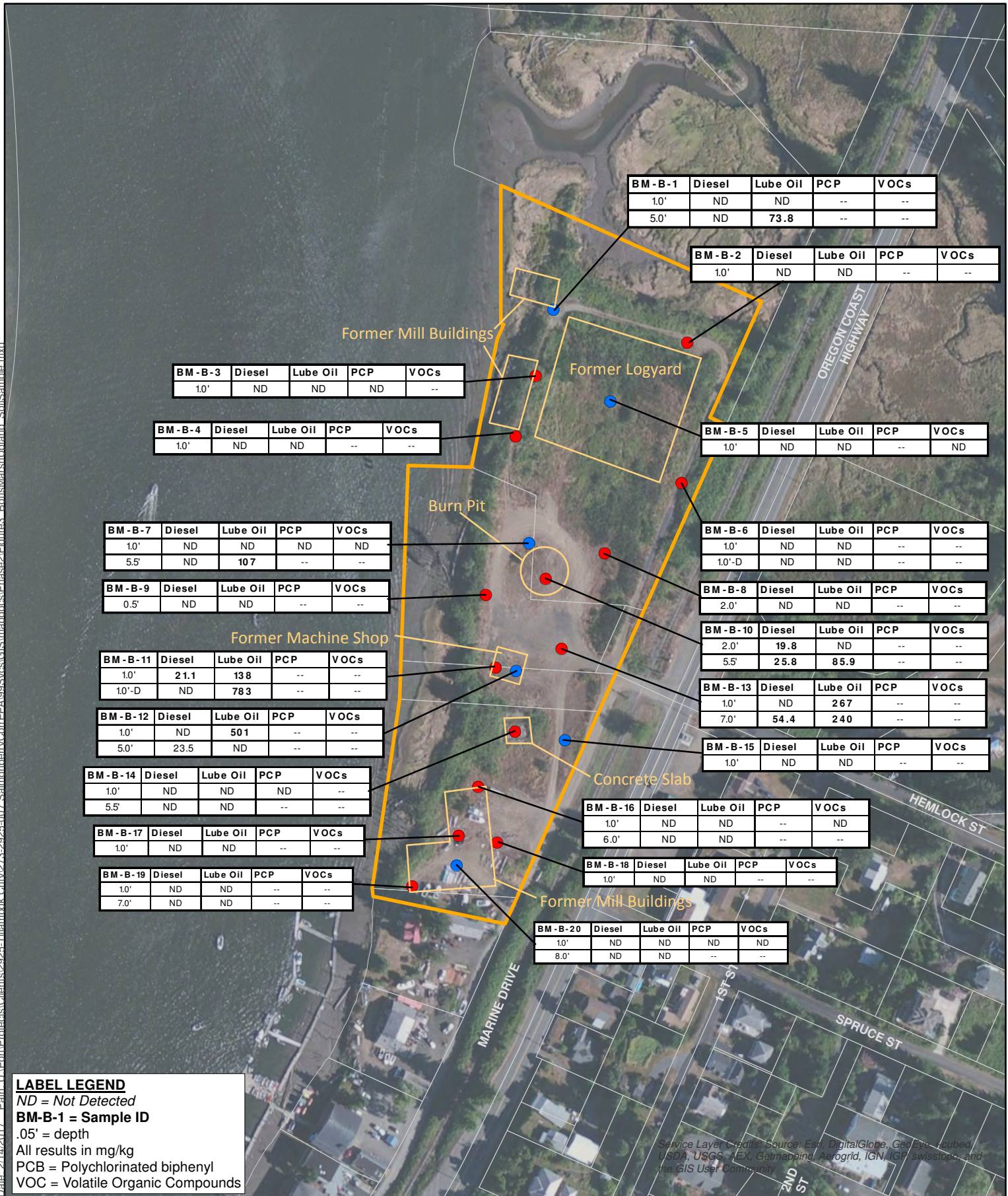
-  Site Location
-  Parcel
-  Groundwater and Soil Sampling Location
-  Soil Sampling Location
-  Former Site Features

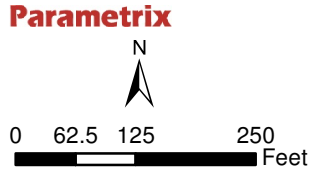
Figure 2: Botts Marsh Upland
Sample Locations
Tillamook County, OR

Salmonberry Trail

Date: 2/14/2017 Path: U:\PointProjects\Clients\2925-Tillamook Cont\273-2925-007 SalmonberryCont\EPA\99\Sves\GIS\mapdocs\Phase2\Figure3_BottsMarshUpland_SoilSamples.mxd



LABEL LEGEND
 ND = Not Detected
 BM-B-1 = Sample ID
 .05' = depth
 All results in mg/kg
 PCB = Polychlorinated biphenyl
 VOC = Volatile Organic Compounds

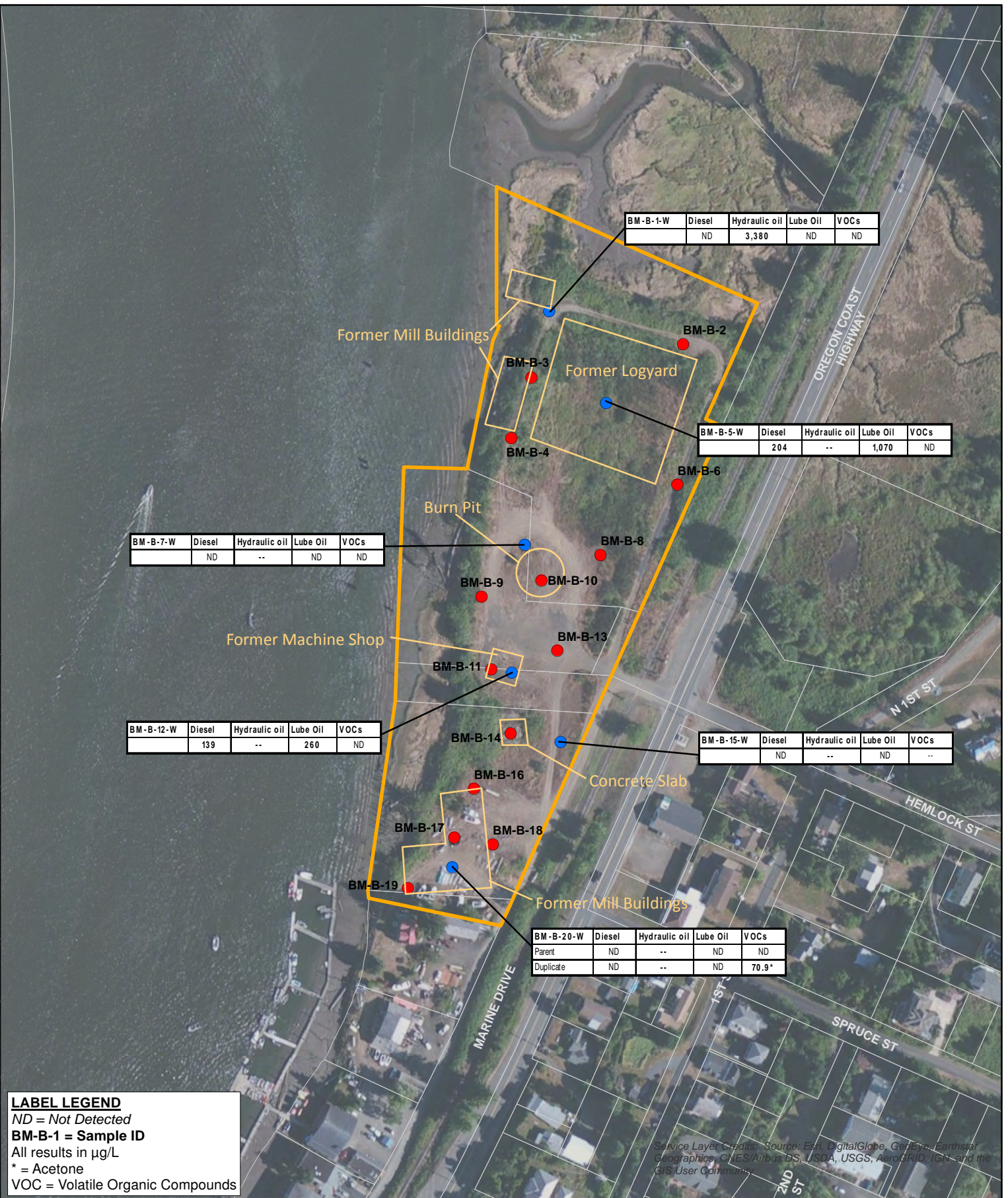


- Site Location
- Parcel
- Groundwater and Soil Sampling Location
- Soil Sampling Location
- Former Site Features

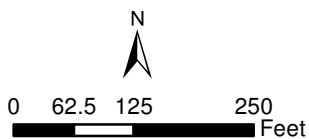
Figure 3: Botts Marsh Upland
 Soil Sample Locations and Results
 Tillamook County, OR

Salmonberry Trail

Date: 2/13/2017 Path: \\parametrix.com\omx\Portl\Projects\Clients\2925-Tillamook County\273-2925-007_Salmonberry\Conf\EPA\98\Sves\GIS\manados\Phase2\Figure4_BottsMarshUpland_GroundwaterSample.mxd



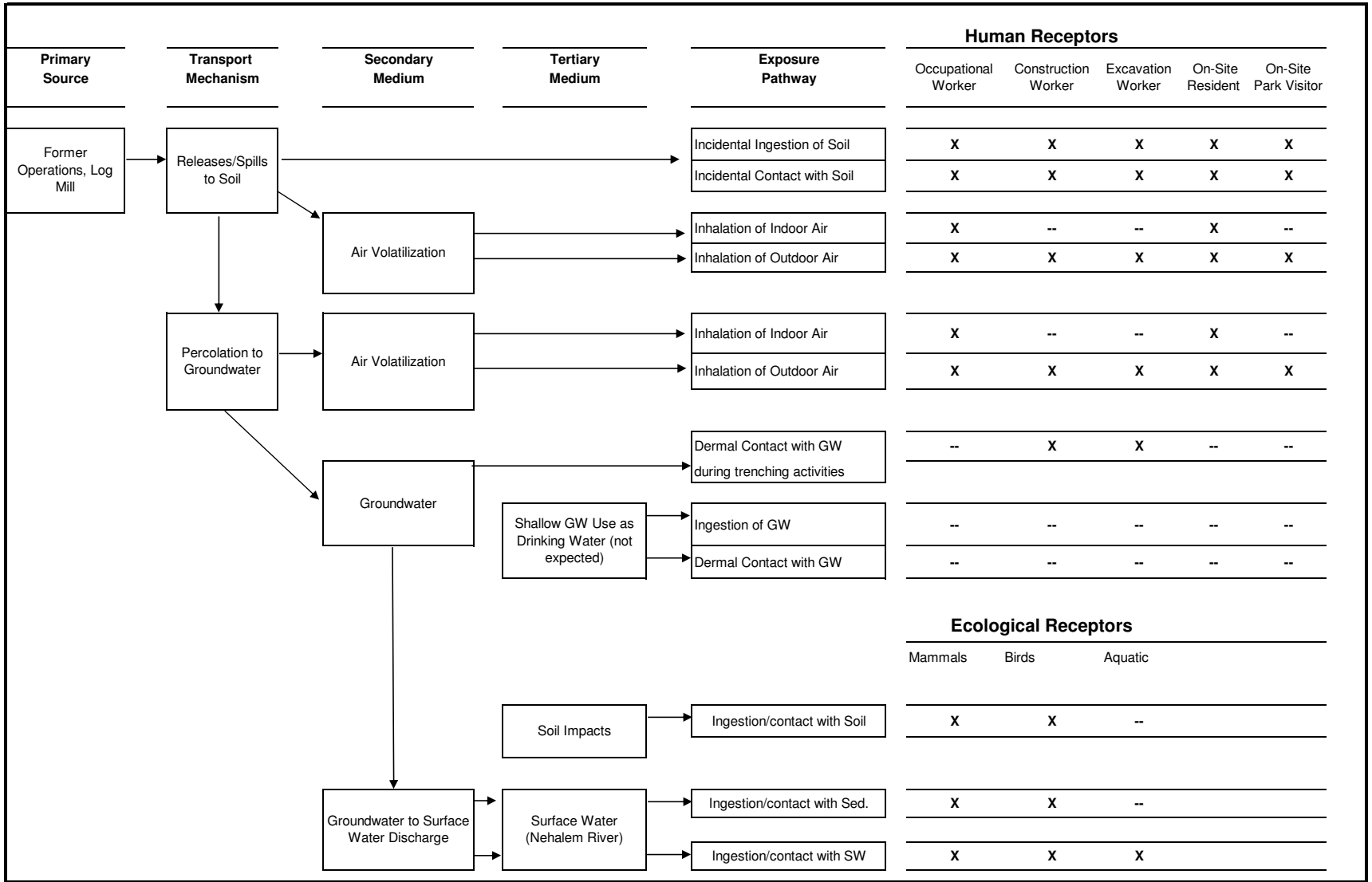
Parametrix



- Site Location
- Parcel
- Groundwater and Soil Sampling Location
- Soil Sampling Location
- Former Site Features

Figure 4: Botts Marsh Upland
 Groundwater Sample Locations and Results
 Tillamook County, OR

Salmonberry Trail



"X" Potentially complete pathway to be evaluated

"--" Incomplete pathway not evaluated

Figure 5
Conceptual Site Model

Botts Marsh Upland Site
Wheeler, Oregon

Appendix A

Boring Logs



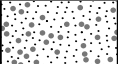
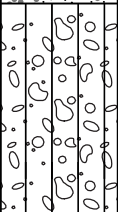


Boring Log BM-B-1

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/18/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-1-1.0 0955			Sandy Gravel - brown, fine to medium gravel, fine to coarse sand, trace fines, dry.	1
2			70%		Silty Gravel - brown to gray, fine to medium gravel, 30% fines, trace fine sand, dry.	2
3						3
4						4
5		BM-B-1-5.0 1000			Silt With Gravel - brown to gray, stiff, 20% fine gravel, moist.	5
6						6
7		BM-B-1-W 1330	70%		Silty Sand - gray, fine to medium sands, 20% fines, saturated.	7
8						8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

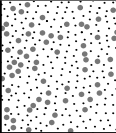
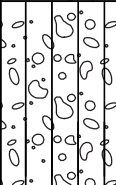

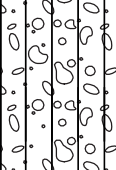
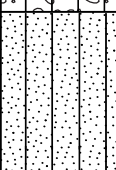
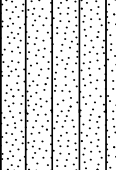


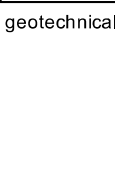

Boring Log BM-B-2

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/18/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 15 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-2-1.0 1020			Sandy Gravel - orange with brown mottling, fine to medium gravel, fine to coarse sand, trace fines, dry.	1
2			80%		Silty Gravel - brown, fine to medium gravel, 20% fines, dry.	2
3					- brown, fine to medium gravel, 25% fines, moist.	3
4						4
5						5
6						6
7		BM-B-2-7.5 1025	60%			7
8						8
9						9
10					Silty Sand - brown, medium to fine grained sand, 30% fines, saturated, organics at 12'.	10
11						11
12			100%			12
13					- gray, loose, increasing fines, saturated.	13
14						14
15					End of boring at: 10 feet	15
16						16
17						17
18						18
19						19

Boring Log BM-B-3

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/18/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-3-1.0 0945			Sandy Gravel - orange-brown to brown, fine to medium gravel, fine to coarse sand, trace fines, dry	1
2			70%			2
3						3
4						4
5		BM-B-3-5.5 0950				5
6				6	6	
7					Silt - dark brown, stiff, organics, moist.	7
8			50%			8
9						9
10						10
11						11
12					12	
13					13	
14					14	
15					15	
16					16	
17					17	
18					18	
19					19	
					End of boring at: 10 feet	

Boring Log BM-B-4

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/18/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-4-1.0 0930	30%		Sandy Gravel - brown, fine to coarse gravel, fine to coarse sand, trace fines, dry	1
2						2
3						3
4						4
5		BM-B-4-6.0 0940	50%		Sandy Silt with Gravel - brown to gray, stiff, fine to medium gravel, 15% fine sand, saturated.	5
6						6
7						7
8					Silty Gravel - dark gray, fine to medium gravel, 30% fines, saturated.	8
9			9			
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-5

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/18/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)	
1		BM-B-5-1.0 1115			Sandy Gravel - brown, fine to medium gravel, fine to coarse sand, trace fines, silt lenses, dry.	1	
2			80%				2
3							3
4		BM-B-5-4.0 1120			- saturated.	4	
5						5	
6					Sand with Gravel - gray, fine to medium sand, decreasing gravel with depth, saturated.	6	
7		BM-B-5-W 1150					7
8			50%				8
9							9
10					End of boring at: 10 feet	10	
11						11	
12						12	
13						13	
14						14	
15						15	
16						16	
17						17	
18						18	
19						19	

Boring Log BM-B-6

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/18/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-6-1.0 1100			Sandy Gravel - brown, fine to medium gravel, fine to coarse sand, trace fines, silt lenses, dry	1
2		BM-FD-011817-S2 0000	50%		2	
3					3	
4					4	
5					5	
6		BM-B-6.0 1100			6	
7			50%		Sandy Silt - gray, fine sand, stiff, moist.	7
8					8	
9					9	
10					10	
11					End of boring at: 10 feet	11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-7

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/18/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-7-1.0 0900	40%		Sandy Gravel - brown, fine to coarse gravel, fine to coarse sand, trace fines, dry.	1
2						2
3						3
4						4
5		BM-B-7-5.5 0910	30%		Silty Gravel - gray, fine to medium gravel, 30% fines, sand near 6.5', grades to silt near 10', saturated.	5
6						6
7		BM-B-7-W 1240				7
8						8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-8

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/17/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1						1
2		BM-B-8-2.0 1500	60%		Silty Sandy Gravel - brown to gray near 2.5', fine to medium gravel, fine to coarse sand, 20% fines, dry.	2
3					Silty Gravel - brown to gray, fine to medium gravel, 30% fines, only trace fine sands.	3
4						4
5		BM-B-8-5.5 1510	80%		- saturated.	5
6						6
7						7
8					Silt - gray, stiff, moist.	8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-9

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/17/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-9-0.5 1445	80%		Silt with Gravel - brown, darker with depth, stiff, 25% fines, fine to medium gravel, dry, moist near 5.0'.	1
2						2
3						3
4		BM-B-9-4.0 1450				4
5			50%		Silty Sand - gray, loose, fine sand, 30% fines, saturated.	5
6						6
7						7
8						8
9						9
10						10
11					End of boring at: 10 feet	11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19





Boring Log BM-B-10

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/17/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS Driller noted hard from 4'-6', no signs of concrete.

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1					Gravel / Cobbles	1
2		BM-B-10-2.0 1430	70%		Silty Gravel to Silt - brown, medium stiff, fine to medium gravel.	2
3						3
4						4
5		BM-B-10-5.5 1440			Silty Gravel - dark brown to gray, fine to coarse gravel, 30% fines,	5
6					Silt - dark gray, stiff, moist.	6
7			40%			7
8						8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/17/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS Driller noted hard from 4'-6', no signs of concrete.

LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-11-1.0 1340	70%		Sandy Silt / Debris - brown, fine to medium gravel, medium to coarse sand, trace fines, dry.	1
2		BM-FD-011717-S1 0000				2
3			90%		Silt with Woody Debris - brown to dark gray, medium stiff, trace fine sand, moist.	3
4						4
5						5
6		BM-B-11-6.5 1345	90%		Sand - dark gray, fine to medium sand, trace fines, moist.	6
7						7
8						8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-12

PROJECT NUMBER 273-2925-007/03/06
PROJECT NAME Salmonberry- Botts Marsh
CLIENT Tillamook County
LOCATION Wheeler, OR

DRILLING COMPANY Cascade Drilling
DRILLING DATE 1/17/2017
DRILLING METHOD Direct Push
TOTAL DEPTH 10 feet

COMMENTS Driller hit something hard at ~5.0'.


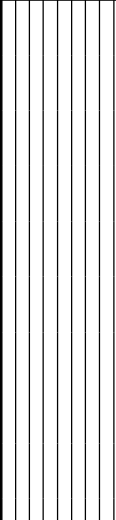
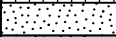
LOGGED BY Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-12-1.0 1210			Sandy Gravel / Debris - brown, fine to medium gravel, medium to coarse sand, trace fines, dry.	1
2			80%			2
3						3
4						4
5		BM-B-12-5.0 1215			Sandy Gravel - brown, fine to medium gravel, medium to coarse sand, trace fines, dry.	5
6						6
7						7
8		BM-B-12-W 1235		40%		8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-13

PROJECT NUMBER 273-2925-007/03/06 PROJECT NAME Salmonberry- Botts Marsh CLIENT Tillamook County LOCATION Wheeler, OR	DRILLING COMPANY Cascade Drilling DRILLING DATE 1/17/2017 DRILLING METHOD Direct Push TOTAL DEPTH 10 feet
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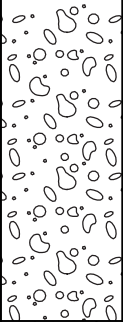
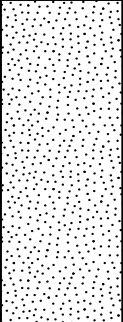
COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-13-1.0 1405			Sandy Gravel - brown, fine to medium gravel, medium to coarse sand, trace fines, dry.	1
2			80%		Silt - brown, stiff, moist.	2
3						3
4						4
5					- varying gravel and sand, medium stiff to 8.0'.	5
6						6
7		BM-B-13-7.0 1410				7
8			100%		- stiff from 8.0' to 9.5'.	8
9						9
10					Sand - gray, loose, fine grained, saturated.	10
11					End of boring at: 10 feet	11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-14

PROJECT NUMBER 273-2925-007/03/06	DRILLING COMPANY Cascade Drilling
PROJECT NAME Salmonberry- Botts Marsh	DRILLING DATE 1/17/2017
CLIENT Tillamook County	DRILLING METHOD Direct Push
LOCATION Wheeler, OR	TOTAL DEPTH 10 feet

COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-14-1.0 1315			Sandy Gravel / Debris - brown, fine to medium gravel, medium to coarse sand, trace fines, dry.	1
2			30%			2
3						3
4						4
5		BM-B-14-5.5 1320				5
6					Sand - gray, loose, fine grained, saturated, trace fines.	6
7			50%			7
8						8
9						9
10						10
11					End of boring at: 10 feet	11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-15

PROJECT NUMBER 273-2925-007/03/06	DRILLING COMPANY Cascade Drilling
PROJECT NAME Salmonberry- Botts Marsh	DRILLING DATE 1/17/2017
CLIENT Tillamook County	DRILLING METHOD Direct Push
LOCATION Wheeler, OR	TOTAL DEPTH 10 feet

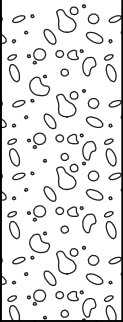
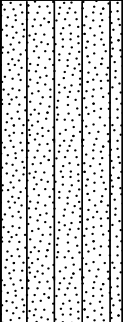
COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)	
1		BM-B-15-1.0 1110			Sandy Gravel - brown, fine to medium gravel, medium to coarse sand, trace fines, dry.	1	
2			60%				2
3							3
4							4
5		BM-B-15-5.5 1150					5
6							6
7		BM-B-15-W 1145	70%			Silty Sand - gray, fine grained, loose, 15% fines, saturated.	7
8						8	
9						9	
10					End of boring at: 10 feet	10	
11						11	
12						12	
13						13	
14						14	
15						15	
16						16	
17						17	
18						18	
19						19	

Boring Log BM-B-16

PROJECT NUMBER 273-2925-007/03/06 PROJECT NAME Salmonberry- Botts Marsh CLIENT Tillamook County LOCATION Wheeler, OR	DRILLING COMPANY Cascade Drilling DRILLING DATE 1/17/2017 DRILLING METHOD Direct Push TOTAL DEPTH 10 feet
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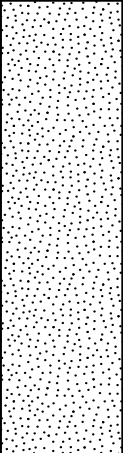
COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-16-1.0 1055			Sandy Gravel - brown, fine to medium gravel, medium to coarse grained sand, trace fines, dry.	1
2			50%			2
3						3
4						4
5						5
6		BM-B-16-6.0 1100			Sand - gray, fine grained, loose, saturated.	6
7			60%			7
8						8
9						9
10						10
11					End of boring at: 10 feet	11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-17

PROJECT NUMBER 273-2925-007/03/06	DRILLING COMPANY Cascade Drilling
PROJECT NAME Salmonberry- Botts Marsh	DRILLING DATE 1/17/2017
CLIENT Tillamook County	DRILLING METHOD Direct Push
LOCATION Wheeler, OR	TOTAL DEPTH 10 feet

COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-17-1.0 1015			Sandy Gravel - brown, medium to coarse sand, fine to medium gravel, trace fines, dry.	1
2			80%			2
3		BM-B-17-4.0 1020			Sand - gray, fine grained, moist. - saturated.	3
4						4
5						5
6						6
7						7
8			80%			8
9						9
10						10
11					End of boring at: 10 feet	11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-18

PROJECT NUMBER 273-2925-007/03/06	DRILLING COMPANY Cascade Drilling
PROJECT NAME Salmonberry- Botts Marsh	DRILLING DATE 1/17/2017
CLIENT Tillamook County	DRILLING METHOD Direct Push
LOCATION Wheeler, OR	TOTAL DEPTH 10 feet

COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-18-1.0 1030			Sandy Gravel - brown, medium to coarse sand, fine to medium gravel, trace fines, some silt, dry.	1
2			80%			2
3		BM-B-18-4.0 1040			Sand - gray, fine grained, moist. - saturated.	3
4						4
5						5
6						6
7					Silt - gray, stiff, saturated.	7
8			70%			8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-19

PROJECT NUMBER 273-2925-007/03/06	DRILLING COMPANY Cascade Drilling
PROJECT NAME Salmonberry- Botts Marsh	DRILLING DATE 1/17/2017
CLIENT Tillamook County	DRILLING METHOD Direct Push
LOCATION Wheeler, OR	TOTAL DEPTH 10 feet

COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-19-1.0 0955			Sandy Gravel - brown, medium to coarse sand, fine to medium gravel, trace fines, dry.	1
2			60%			2
3					Silt - gray, stiff, moist.	3
4						4
5						5
6						6
7		BM-B-19-7.0 1000	60%		Sand - gray, fine grained, loose, saturated.	7
8						8
9						9
10					End of boring at: 10 feet	10
11						11
12						12
13						13
14						14
15						15
16						16
17						17
18						18
19						19

Boring Log BM-B-20

PROJECT NUMBER 273-2925-007/03/06	DRILLING COMPANY Cascade Drilling
PROJECT NAME Salmonberry- Botts Marsh	DRILLING DATE 1/17/2017
CLIENT Tillamook County	DRILLING METHOD Direct Push
LOCATION Wheeler, OR	TOTAL DEPTH 15 feet

COMMENTS **LOGGED BY** Adam Romey

Depth (ft)	PID	Sample ID	% Recovery	Graphic Log	Material Description	Depth (ft)
1		BM-B-20-1.0 0845			Sandy Gravel - brown, dry, medium to large grained sand, fine to medium gravel, trace fines.	1
2			80%		Silt - gray, stiff, moist.	2
3						3
4						4
5					- gray to brown.	5
6						6
7						7
8		BM-B-20-8.0 0850	80%		Sand - gray, fine, loose, saturated.	8
9					- stiff.	9
10						10
11						11
12		BM-B-20-W 0915	100%			12
13		BM-FD-011717-W 0000				13
14					Silt - brown, stiff, moist.	14
15					End of boring at: 10 feet	15
16						16
17						17
18						18
19						19

Appendix B

Laboratory Analytical Reports and Data Validation





Specialty Analytical

11711 SE Capps Road, Ste B
Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

February 06, 2017

Richard Roche
Parametrix
700 NE Multnomah Blvd
Suite 1000
Portland, OR 97232

TEL: (503) 233-2400

FAX: (503) 233-4825

RE: Salmonberry -Botts Marsh / 2732925007

Dear Richard Roche:

Order No.: 1701106

Specialty Analytical received 50 sample(s) on 1/19/2017 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Marty French". The signature is cursive and somewhat stylized.

Marty French
Lab Director

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-001
Client Sample ID: BM-B-20-1.0

Collection Date: 1/17/2017 8:45:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	19.1		mg/Kg-dry	1	1/27/2017 12:07:00 AM
Lube Oil	ND	63.6		mg/Kg-dry	1	1/27/2017 12:07:00 AM
Surr: o-Terphenyl	78.3	50-150		%REC	1	1/27/2017 12:07:00 AM
SEMI-VOLATILE COMPOUNDS - ACID FRACTION SW8270D						Analyst: CK
Pentachlorophenol	ND	500		µg/Kg	1	1/30/2017 4:28:00 PM
Surr: 2,4,6-Tribromophenol	47.8	39.1-119		%REC	1	1/30/2017 4:28:00 PM
Surr: 2-Fluorophenol	45.9	40.7-111		%REC	1	1/30/2017 4:28:00 PM
Surr: Phenol-d6	57.2	37.5-117		%REC	1	1/30/2017 4:28:00 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,1,1-Trichloroethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,1,2,2-Tetrachloroethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,1,2-Trichloroethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,1-Dichloroethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,1-Dichloroethene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,1-Dichloropropene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2,3-Trichlorobenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2,3-Trichloropropane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2,4-Trichlorobenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2,4-Trimethylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2-Dibromo-3-chloropropane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2-Dibromoethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2-Dichlorobenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2-Dichloroethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,2-Dichloropropane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,3,5-Trimethylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,3-Dichlorobenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,3-Dichloropropane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
1,4-Dichlorobenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
2,2-Dichloropropane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
2-Butanone	ND	61.7		µg/Kg-dry	1	1/30/2017 7:21:00 PM
2-Chlorotoluene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
2-Hexanone	ND	30.9		µg/Kg-dry	1	1/30/2017 7:21:00 PM
4-Chlorotoluene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
4-Isopropyltoluene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
4-Methyl-2-pentanone	ND	61.7		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Acetone	ND	154		µg/Kg-dry	1	1/30/2017 7:21:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-001
Client Sample ID: BM-B-20-1.0

Collection Date: 1/17/2017 8:45:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
Benzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Bromobenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Bromochloromethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Bromodichloromethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Bromoform	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Bromomethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Carbon Disulfide	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Carbon tetrachloride	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Chlorobenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Chloroethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Chloroform	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Chloromethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
cis-1,2-Dichloroethene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
cis-1,3-Dichloropropene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Dibromochloromethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Dibromomethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Dichlorodifluoromethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Ethylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Hexachlorobutadiene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Isopropylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
m,p-Xylene	ND	30.9		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Methyl tert-butyl ether	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Methylene Chloride	ND	77.2		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Naphthalene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
n-Butylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
n-Propylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
o-Xylene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
sec-Butylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Styrene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
tert-Butylbenzene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Tetrachloroethene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Toluene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
trans-1,2-Dichloroethene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
trans-1,3-Dichloropropene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Trichloroethene	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Trichlorofluoromethane	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Vinyl Chloride	ND	15.4		µg/Kg-dry	1	1/30/2017 7:21:00 PM
Surr: 1,2-Dichloroethane-d4	85.9	71.5-124		%REC	1	1/30/2017 7:21:00 PM
Surr: 4-Bromofluorobenzene	94.3	75.7-122		%REC	1	1/30/2017 7:21:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-001
Client Sample ID: BM-B-20-1.0

Collection Date: 1/17/2017 8:45:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
Surr: Dibromofluoromethane	101	64.3-124		%REC	1	1/30/2017 7:21:00 PM
Surr: Toluene-d8	89.2	74.9-120		%REC	1	1/30/2017 7:21:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-002
Client Sample ID: BM-B-20-8.0

Collection Date: 1/17/2017 8:50:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	22.4		mg/Kg-dry	1	2/1/2017 1:27:00 PM
Lube Oil	ND	74.6		mg/Kg-dry	1	2/1/2017 1:27:00 PM
Surr: o-Terphenyl	74.9	50-150		%REC	1	2/1/2017 1:27:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-003
Client Sample ID: BM-B-19-1.0

Collection Date: 1/17/2017 9:55:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	19.7		mg/Kg-dry	1	1/25/2017 10:44:00 PM
Lube Oil	ND	65.8		mg/Kg-dry	1	1/25/2017 10:44:00 PM
Surr: o-Terphenyl	76.9	50-150		%REC	1	1/25/2017 10:44:00 PM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	2810	1080		µg/Kg	10	1/25/2017 12:48:56 PM
Barium	88400	541		µg/Kg	10	1/25/2017 12:48:56 PM
Cadmium	123	108		µg/Kg	10	1/25/2017 12:48:56 PM
Chromium	28000	1080		µg/Kg	10	1/25/2017 12:48:56 PM
Lead	2820	271		µg/Kg	10	1/25/2017 12:48:56 PM
Selenium	ND	1080		µg/Kg	10	1/25/2017 12:48:56 PM
Silver	180	108		µg/Kg	10	1/25/2017 12:48:56 PM
TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	0.0258	0.0166		mg/Kg	1	1/27/2017 8:34:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-004
Client Sample ID: BM-B-19-7.0

Collection Date: 1/17/2017 10:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	18.9		mg/Kg-dry	1	2/1/2017 1:49:00 PM
Lube Oil	ND	63.0		mg/Kg-dry	1	2/1/2017 1:49:00 PM
Surr: o-Terphenyl	75.3	50-150		%REC	1	2/1/2017 1:49:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-005
Client Sample ID: BM-B-17-1.0

Collection Date: 1/17/2017 10:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	18.4		mg/Kg-dry	1	1/25/2017 11:05:00 PM
Lube Oil	ND	61.2		mg/Kg-dry	1	1/25/2017 11:05:00 PM
Surr: o-Terphenyl	79.0	50-150		%REC	1	1/25/2017 11:05:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/17/2017 10:20:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-006
Client Sample ID: BM-B-17-4.0 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-007
Client Sample ID: BM-B-18-1.0

Collection Date: 1/17/2017 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	17.3		mg/Kg-dry	1	1/27/2017 12:29:00 AM
Lube Oil	ND	57.6		mg/Kg-dry	1	1/27/2017 12:29:00 AM
Surr: o-Terphenyl	78.7	50-150		%REC	1	1/27/2017 12:29:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/17/2017 10:40:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-008
Client Sample ID: BM-B-18-4.0 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-009
Client Sample ID: BM-B-16-1.0

Collection Date: 1/17/2017 10:55:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	20.0		mg/Kg-dry	1	1/25/2017 11:27:00 PM
Lube Oil	ND	66.5		mg/Kg-dry	1	1/25/2017 11:27:00 PM
Surr: o-Terphenyl	78.8	50-150		%REC	1	1/25/2017 11:27:00 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,1,1-Trichloroethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,1,2,2-Tetrachloroethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,1,2-Trichloroethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,1-Dichloroethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,1-Dichloroethene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,1-Dichloropropene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2,3-Trichlorobenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2,3-Trichloropropane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2,4-Trichlorobenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2,4-Trimethylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2-Dibromo-3-chloropropane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2-Dibromoethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2-Dichlorobenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2-Dichloroethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,2-Dichloropropane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,3,5-Trimethylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,3-Dichlorobenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,3-Dichloropropane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
1,4-Dichlorobenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
2,2-Dichloropropane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
2-Butanone	ND	66.4		µg/Kg-dry	1	1/30/2017 7:54:00 PM
2-Chlorotoluene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
2-Hexanone	ND	33.2		µg/Kg-dry	1	1/30/2017 7:54:00 PM
4-Chlorotoluene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
4-Isopropyltoluene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
4-Methyl-2-pentanone	ND	66.4		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Acetone	ND	166		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Benzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Bromobenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Bromochloromethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Bromodichloromethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Bromoform	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Bromomethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-009
Client Sample ID: BM-B-16-1.0

Collection Date: 1/17/2017 10:55:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
Carbon Disulfide	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Carbon tetrachloride	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Chlorobenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Chloroethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Chloroform	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Chloromethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
cis-1,2-Dichloroethene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
cis-1,3-Dichloropropene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Dibromochloromethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Dibromomethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Dichlorodifluoromethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Ethylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Hexachlorobutadiene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Isopropylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
m,p-Xylene	ND	33.2		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Methyl tert-butyl ether	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Methylene Chloride	ND	83.1		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Naphthalene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
n-Butylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
n-Propylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
o-Xylene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
sec-Butylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Styrene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
tert-Butylbenzene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Tetrachloroethene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Toluene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
trans-1,2-Dichloroethene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
trans-1,3-Dichloropropene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Trichloroethene	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Trichlorofluoromethane	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Vinyl Chloride	ND	16.6		µg/Kg-dry	1	1/30/2017 7:54:00 PM
Surr: 1,2-Dichloroethane-d4	86.7	71.5-124		%REC	1	1/30/2017 7:54:00 PM
Surr: 4-Bromofluorobenzene	106	75.7-122		%REC	1	1/30/2017 7:54:00 PM
Surr: Dibromofluoromethane	100	64.3-124		%REC	1	1/30/2017 7:54:00 PM
Surr: Toluene-d8	90.0	74.9-120		%REC	1	1/30/2017 7:54:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-010
Client Sample ID: BM-B-16-6.0

Collection Date: 1/17/2017 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	22.2		mg/Kg-dry	1	2/1/2017 2:11:00 PM
Lube Oil	ND	73.9		mg/Kg-dry	1	2/1/2017 2:11:00 PM
Surr: o-Terphenyl	78.0	50-150		%REC	1	2/1/2017 2:11:00 PM
RCRA_8 ICP/MS METALS-TOTAL RECOVERABLE SW6020A						Analyst: EFH
Arsenic	3400	1420		µg/Kg-dry	10	1/30/2017 2:19:53 PM
Barium	32400	710		µg/Kg-dry	10	1/30/2017 2:19:53 PM
Cadmium	ND	142		µg/Kg-dry	10	1/30/2017 2:19:53 PM
Chromium	24700	1420		µg/Kg-dry	10	1/30/2017 2:19:53 PM
Lead	4230	355		µg/Kg-dry	10	1/30/2017 2:19:53 PM
Selenium	ND	1420		µg/Kg-dry	10	1/30/2017 2:19:53 PM
Silver	146	142		µg/Kg-dry	10	1/30/2017 2:19:53 PM
RCRA_8 TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	ND	0.0247		mg/Kg-dry	1	1/31/2017 9:13:27 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-011
Client Sample ID: BM-B-15-1.0

Collection Date: 1/17/2017 11:10:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	17.8		mg/Kg-dry	1	1/25/2017 11:49:00 PM
Lube Oil	ND	59.5		mg/Kg-dry	1	1/25/2017 11:49:00 PM
Surr: o-Terphenyl	76.7	50-150		%REC	1	1/25/2017 11:49:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/17/2017 11:15:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-012
Client Sample ID: BM-B-15-5.5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-013
Client Sample ID: BM-B-12-1.0

Collection Date: 1/17/2017 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	17.6	A3	mg/Kg-dry	1	1/26/2017 10:40:00 AM
Lube Oil	501	58.7		mg/Kg-dry	1	1/26/2017 10:40:00 AM
Surr: o-Terphenyl	87.2	50-150		%REC	1	1/26/2017 10:40:00 AM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
2-Methylnaphthalene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Acenaphthene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Acenaphthylene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Anthracene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Benz(a)anthracene	33.3	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Benzo(a)pyrene	40.0	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Benzo(b)fluoranthene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Benzo(g,h,i)perylene	46.7	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Benzo(k)fluoranthene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Chrysene	33.3	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Dibenz(a,h)anthracene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Fluoranthene	46.7	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Fluorene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Indeno(1,2,3-cd)pyrene	33.3	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Naphthalene	ND	33.3	Q	µg/Kg	10	2/1/2017 3:21:00 PM
Phenanthrene	33.3	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Pyrene	80.0	33.3		µg/Kg	10	2/1/2017 3:21:00 PM
Surr: 2-Fluorobiphenyl	82.7	42.6-128		%REC	10	2/1/2017 3:21:00 PM
Surr: Nitrobenzene-d5	50.5	21.7-155		%REC	10	2/1/2017 3:21:00 PM
Surr: p-Terphenyl-d14	90.4	44.9-155		%REC	10	2/1/2017 3:21:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-014
Client Sample ID: BM-B-12-5.0

Collection Date: 1/17/2017 12:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	23.5	20.7		mg/Kg-dry	1	2/1/2017 2:54:00 PM
Lube Oil	ND	69.0		mg/Kg-dry	1	2/1/2017 2:54:00 PM
Surr: o-Terphenyl	75.4	50-150		%REC	1	2/1/2017 2:54:00 PM
RCRA_8 ICP/MS METALS-TOTAL RECOVERABLE SW6020A						Analyst: EFH
Arsenic	4570	1410		µg/Kg-dry	10	1/30/2017 2:36:45 PM
Barium	90300	703		µg/Kg-dry	10	1/30/2017 2:36:45 PM
Cadmium	ND	141		µg/Kg-dry	10	1/30/2017 2:36:45 PM
Chromium	35300	1410		µg/Kg-dry	10	1/30/2017 2:36:45 PM
Lead	7440	351		µg/Kg-dry	10	1/30/2017 2:36:45 PM
Selenium	ND	1410		µg/Kg-dry	10	1/30/2017 2:36:45 PM
Silver	ND	141		µg/Kg-dry	10	1/30/2017 2:36:45 PM
RCRA_8 TOTAL MERCURY						Analyst: MIS
Mercury	ND	0.0226		mg/Kg-dry	1	1/31/2017 9:21:27 AM
PAH'S BY GC/MS - LOW LEVEL						Analyst: CK
1-Methylnaphthalene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
2-Methylnaphthalene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Acenaphthene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Acenaphthylene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Anthracene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Benz(a)anthracene	5.33	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Benzo(a)pyrene	6.00	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Benzo(b)fluoranthene	4.67	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Benzo(g,h,i)perylene	6.00	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Benzo(k)fluoranthene	3.33	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Chrysene	7.33	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Dibenz(a,h)anthracene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Fluoranthene	8.00	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Fluorene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Indeno(1,2,3-cd)pyrene	4.67	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Naphthalene	ND	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Phenanthrene	5.33	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Pyrene	13.3	3.33		µg/Kg	1	2/1/2017 12:25:00 PM
Surr: 2-Fluorobiphenyl	94.1	42.6-128		%REC	1	2/1/2017 12:25:00 PM
Surr: Nitrobenzene-d5	72.8	21.7-155		%REC	1	2/1/2017 12:25:00 PM
Surr: p-Terphenyl-d14	89.8	44.9-155		%REC	1	2/1/2017 12:25:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-015
Client Sample ID: BM-B-14-1.0

Collection Date: 1/17/2017 1:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	16.7		mg/Kg-dry	1	1/26/2017 12:10:00 AM
Lube Oil	ND	55.7		mg/Kg-dry	1	1/26/2017 12:10:00 AM
Surr: o-Terphenyl	79.0	50-150		%REC	1	1/26/2017 12:10:00 AM
SEMI-VOLATILE COMPOUNDS - ACID FRACTION SW8270D						Analyst: CK
Pentachlorophenol	ND	500		µg/Kg	1	1/30/2017 6:03:00 PM
Surr: 2,4,6-Tribromophenol	52.2	39.1-119		%REC	1	1/30/2017 6:03:00 PM
Surr: 2-Fluorophenol	47.9	40.7-111		%REC	1	1/30/2017 6:03:00 PM
Surr: Phenol-d6	41.7	37.5-117		%REC	1	1/30/2017 6:03:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-016
Client Sample ID: BM-B-14-5.5

Collection Date: 1/17/2017 1:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	20.4		mg/Kg-dry	1	2/1/2017 3:16:00 PM
Lube Oil	ND	67.9		mg/Kg-dry	1	2/1/2017 3:16:00 PM
Surr: o-Terphenyl	77.4	50-150		%REC	1	2/1/2017 3:16:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-017
Client Sample ID: BM-B-11-1.0

Collection Date: 1/17/2017 1:40:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	21.1	18.5		mg/Kg-dry	1	1/26/2017 10:20:00 AM
Lube Oil	138	61.7		mg/Kg-dry	1	1/26/2017 10:20:00 AM
Surr: o-Terphenyl	77.9	50-150		%REC	1	1/26/2017 10:20:00 AM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	1130	975		µg/Kg	10	1/25/2017 1:05:47 PM
Barium	55100	487		µg/Kg	10	1/25/2017 1:05:47 PM
Cadmium	99.6	97.5		µg/Kg	10	1/25/2017 1:05:47 PM
Chromium	17100	975		µg/Kg	10	1/25/2017 1:05:47 PM
Lead	4390	244		µg/Kg	10	1/25/2017 1:05:47 PM
Selenium	ND	975		µg/Kg	10	1/25/2017 1:05:47 PM
Silver	192	97.5		µg/Kg	10	1/25/2017 1:05:47 PM
TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	ND	0.0165		mg/Kg	1	1/27/2017 8:42:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/17/2017 1:45:00 PM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-018
Client Sample ID: BM-B-11-6.5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-019
Client Sample ID: BM-B-13-1.0

Collection Date: 1/17/2017 2:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	17.8	A3	mg/Kg-dry	1	1/27/2017 3:43:00 AM
Lube Oil	267	59.2		mg/Kg-dry	1	1/27/2017 3:43:00 AM
Surr: o-Terphenyl	80.4	50-150		%REC	1	1/27/2017 3:43:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-020
Client Sample ID: BM-B-13-7.0

Collection Date: 1/17/2017 2:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	54.4	38.9	A1	mg/Kg-dry	1	2/1/2017 3:38:00 PM
Lube Oil	240	130	A2	mg/Kg-dry	1	2/1/2017 3:38:00 PM
Surr: o-Terphenyl	79.1	50-150		%REC	1	2/1/2017 3:38:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-021
Client Sample ID: BM-B-10-2.0

Collection Date: 1/17/2017 2:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	19.8	19.4		mg/Kg-dry	1	1/26/2017 10:00:00 AM
Lube Oil	ND	64.8		mg/Kg-dry	1	1/26/2017 10:00:00 AM
Surr: o-Terphenyl	78.4	50-150		%REC	1	1/26/2017 10:00:00 AM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	3370	998		µg/Kg	10	1/25/2017 1:19:51 PM
Barium	174000	4990		µg/Kg	100	1/25/2017 2:11:00 PM
Cadmium	ND	99.8		µg/Kg	10	1/25/2017 1:19:51 PM
Chromium	11100	998		µg/Kg	10	1/25/2017 1:19:51 PM
Lead	6950	249		µg/Kg	10	1/25/2017 1:19:51 PM
Selenium	ND	998		µg/Kg	10	1/25/2017 1:19:51 PM
Silver	127	99.8		µg/Kg	10	1/25/2017 1:19:51 PM
TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	0.0204	0.0162		mg/Kg	1	1/27/2017 8:44:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-022
Client Sample ID: BM-B-10-5.5

Collection Date: 1/17/2017 2:40:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	25.8		mg/Kg-dry	1	2/1/2017 3:59:00 PM
Lube Oil	ND	85.9		mg/Kg-dry	1	2/1/2017 3:59:00 PM
Surr: o-Terphenyl	79.5	50-150		%REC	1	2/1/2017 3:59:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-023
Client Sample ID: BM-B-9-0.5

Collection Date: 1/17/2017 2:45:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	18.7		mg/Kg-dry	1	1/25/2017 10:22:00 PM
Lube Oil	ND	62.2		mg/Kg-dry	1	1/25/2017 10:22:00 PM
Surr: o-Terphenyl	77.9	50-150		%REC	1	1/25/2017 10:22:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/17/2017 2:50:00 PM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-024
Client Sample ID: BM-B-9-4.0 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-025
Client Sample ID: BM-B-8-2.0

Collection Date: 1/17/2017 3:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	17.9		mg/Kg-dry	1	1/27/2017 12:50:00 AM
Lube Oil	ND	59.8		mg/Kg-dry	1	1/27/2017 12:50:00 AM
Surr: o-Terphenyl	67.9	50-150		%REC	1	1/27/2017 12:50:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/17/2017 3:10:00 PM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-026
Client Sample ID: BM-B-8-5.5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-027
Client Sample ID: BM-FD-011717-S1

Collection Date: 1/17/2017

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	18.8	A3	mg/Kg-dry	1	1/26/2017 11:00:00 AM
Lube Oil	783	62.8		mg/Kg-dry	1	1/26/2017 11:00:00 AM
Surr: o-Terphenyl	86.5	50-150		%REC	1	1/26/2017 11:00:00 AM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	3280	1010		µg/Kg	10	1/25/2017 1:23:13 PM
Barium	57500	506		µg/Kg	10	1/25/2017 1:23:13 PM
Cadmium	ND	101		µg/Kg	10	1/25/2017 1:23:13 PM
Chromium	13800	1010		µg/Kg	10	1/25/2017 1:23:13 PM
Lead	7580	253		µg/Kg	10	1/25/2017 1:23:13 PM
Selenium	ND	1010		µg/Kg	10	1/25/2017 1:23:13 PM
Silver	ND	101		µg/Kg	10	1/25/2017 1:23:13 PM
TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	0.0184	0.0164		mg/Kg	1	1/27/2017 8:46:16 AM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	167		µg/Kg	10	1/30/2017 9:02:00 PM
2-Methylnaphthalene	ND	167		µg/Kg	10	1/30/2017 9:02:00 PM
Acenaphthene	ND	167		µg/Kg	10	1/30/2017 9:02:00 PM
Acenaphthylene	200	167		µg/Kg	10	1/30/2017 9:02:00 PM
Anthracene	167	167		µg/Kg	10	1/30/2017 9:02:00 PM
Benz(a)anthracene	367	167		µg/Kg	10	1/30/2017 9:02:00 PM
Benzo(a)pyrene	533	167		µg/Kg	10	1/30/2017 9:02:00 PM
Benzo(b)fluoranthene	300	167		µg/Kg	10	1/30/2017 9:02:00 PM
Benzo(g,h,i)perylene	567	167		µg/Kg	10	1/30/2017 9:02:00 PM
Benzo(k)fluoranthene	167	167		µg/Kg	10	1/30/2017 9:02:00 PM
Chrysene	300	167		µg/Kg	10	1/30/2017 9:02:00 PM
Dibenz(a,h)anthracene	ND	167		µg/Kg	10	1/30/2017 9:02:00 PM
Fluoranthene	667	167		µg/Kg	10	1/30/2017 9:02:00 PM
Fluorene	ND	167		µg/Kg	10	1/30/2017 9:02:00 PM
Indeno(1,2,3-cd)pyrene	433	167		µg/Kg	10	1/30/2017 9:02:00 PM
Naphthalene	ND	167		µg/Kg	10	1/30/2017 9:02:00 PM
Phenanthrene	267	167		µg/Kg	10	1/30/2017 9:02:00 PM
Pyrene	1100	167		µg/Kg	10	1/30/2017 9:02:00 PM
Surr: 2-Fluorobiphenyl	50.5	42.6-128		%REC	10	1/30/2017 9:02:00 PM
Surr: Nitrobenzene-d5	80.0	21.7-155		%REC	10	1/30/2017 9:02:00 PM
Surr: p-Terphenyl-d14	84.0	44.9-155		%REC	10	1/30/2017 9:02:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
 Project: Salmonberry -Botts Marsh / 2732925007
 Lab ID: 1701106-027
 Client Sample ID: BM-FD-011717-S1

Collection Date: 1/17/2017
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,1,1-Trichloroethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,1,2,2-Tetrachloroethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,1,2-Trichloroethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,1-Dichloroethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,1-Dichloroethene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,1-Dichloropropene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2,3-Trichlorobenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2,3-Trichloropropane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2,4-Trichlorobenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2,4-Trimethylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2-Dibromo-3-chloropropane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2-Dibromoethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2-Dichlorobenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2-Dichloroethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,2-Dichloropropane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,3,5-Trimethylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,3-Dichlorobenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,3-Dichloropropane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
1,4-Dichlorobenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
2,2-Dichloropropane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
2-Butanone	ND	60.4		µg/Kg-dry	1	1/30/2017 8:27:00 PM
2-Chlorotoluene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
2-Hexanone	ND	30.2		µg/Kg-dry	1	1/30/2017 8:27:00 PM
4-Chlorotoluene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
4-Isopropyltoluene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
4-Methyl-2-pentanone	ND	60.4		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Acetone	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Benzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Bromobenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Bromochloromethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Bromodichloromethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Bromoform	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Bromomethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Carbon Disulfide	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Carbon tetrachloride	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Chlorobenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Chloroethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Chloroform	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-027
Client Sample ID: BM-FD-011717-S1

Collection Date: 1/17/2017

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
Chloromethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
cis-1,2-Dichloroethene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
cis-1,3-Dichloropropene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Dibromochloromethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Dibromomethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Dichlorodifluoromethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Ethylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Hexachlorobutadiene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Isopropylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
m,p-Xylene	ND	30.2		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Methyl tert-butyl ether	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Methylene Chloride	ND	75.6		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Naphthalene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
n-Butylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
n-Propylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
o-Xylene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
sec-Butylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Styrene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
tert-Butylbenzene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Tetrachloroethene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Toluene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
trans-1,2-Dichloroethene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
trans-1,3-Dichloropropene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Trichloroethene	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Trichlorofluoromethane	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Vinyl Chloride	ND	15.1		µg/Kg-dry	1	1/30/2017 8:27:00 PM
Surr: 1,2-Dichloroethane-d4	90.7	71.5-124		%REC	1	1/30/2017 8:27:00 PM
Surr: 4-Bromofluorobenzene	96.8	75.7-122		%REC	1	1/30/2017 8:27:00 PM
Surr: Dibromofluoromethane	103	64.3-124		%REC	1	1/30/2017 8:27:00 PM
Surr: Toluene-d8	91.1	74.9-120		%REC	1	1/30/2017 8:27:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-028
Client Sample ID: BM-B-7-1.0

Collection Date: 1/18/2017 9:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	19.2		mg/Kg-dry	1	1/26/2017 11:03:00 PM
Lube Oil	ND	64.0		mg/Kg-dry	1	1/26/2017 11:03:00 PM
Surr: o-Terphenyl	80.9	50-150		%REC	1	1/26/2017 11:03:00 PM
SEMI-VOLATILE COMPOUNDS - ACID FRACTION SW8270D						Analyst: CK
Pentachlorophenol	ND	500		µg/Kg	1	1/30/2017 4:51:00 PM
Surr: 2,4,6-Tribromophenol	49.2	39.1-119		%REC	1	1/30/2017 4:51:00 PM
Surr: 2-Fluorophenol	45.8	40.7-111		%REC	1	1/30/2017 4:51:00 PM
Surr: Phenol-d6	59.5	37.5-117		%REC	1	1/30/2017 4:51:00 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,1,1-Trichloroethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,1,2,2-Tetrachloroethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,1,2-Trichloroethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,1-Dichloroethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,1-Dichloroethene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,1-Dichloropropene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2,3-Trichlorobenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2,3-Trichloropropane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2,4-Trichlorobenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2,4-Trimethylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2-Dibromo-3-chloropropane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2-Dibromoethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2-Dichlorobenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2-Dichloroethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,2-Dichloropropane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,3,5-Trimethylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,3-Dichlorobenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,3-Dichloropropane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
1,4-Dichlorobenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
2,2-Dichloropropane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
2-Butanone	ND	62.3		µg/Kg-dry	1	1/30/2017 8:59:00 PM
2-Chlorotoluene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
2-Hexanone	ND	31.2		µg/Kg-dry	1	1/30/2017 8:59:00 PM
4-Chlorotoluene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
4-Isopropyltoluene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
4-Methyl-2-pentanone	ND	62.3		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Acetone	ND	156		µg/Kg-dry	1	1/30/2017 8:59:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-028
Client Sample ID: BM-B-7-1.0

Collection Date: 1/18/2017 9:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
Benzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Bromobenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Bromochloromethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Bromodichloromethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Bromoform	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Bromomethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Carbon Disulfide	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Carbon tetrachloride	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Chlorobenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Chloroethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Chloroform	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Chloromethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
cis-1,2-Dichloroethene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
cis-1,3-Dichloropropene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Dibromochloromethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Dibromomethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Dichlorodifluoromethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Ethylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Hexachlorobutadiene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Isopropylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
m,p-Xylene	ND	31.2		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Methyl tert-butyl ether	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Methylene Chloride	ND	77.9		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Naphthalene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
n-Butylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
n-Propylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
o-Xylene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
sec-Butylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Styrene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
tert-Butylbenzene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Tetrachloroethene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Toluene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
trans-1,2-Dichloroethene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
trans-1,3-Dichloropropene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Trichloroethene	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Trichlorofluoromethane	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Vinyl Chloride	ND	15.6		µg/Kg-dry	1	1/30/2017 8:59:00 PM
Surr: 1,2-Dichloroethane-d4	91.0	71.5-124		%REC	1	1/30/2017 8:59:00 PM
Surr: 4-Bromofluorobenzene	97.0	75.7-122		%REC	1	1/30/2017 8:59:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-028
Client Sample ID: BM-B-7-1.0

Collection Date: 1/18/2017 9:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
Surr: Dibromofluoromethane	105	64.3-124		%REC	1	1/30/2017 8:59:00 PM
Surr: Toluene-d8	91.6	74.9-120		%REC	1	1/30/2017 8:59:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-029
Client Sample ID: BM-B-7-5.5

Collection Date: 1/18/2017 9:10:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	19.2		mg/Kg-dry	1	2/2/2017 12:52:00 PM
Lube Oil	107	64.0		mg/Kg-dry	1	2/2/2017 12:52:00 PM
Surr: o-Terphenyl	78.3	50-150		%REC	1	2/2/2017 12:52:00 PM
RCRA_8 ICP/MS METALS-TOTAL RECOVERABLE SW6020A						Analyst: EFH
Arsenic	3460	1160		µg/Kg-dry	10	1/30/2017 4:01:35 PM
Barium	50900	578		µg/Kg-dry	10	1/30/2017 4:01:35 PM
Cadmium	ND	116		µg/Kg-dry	10	1/30/2017 4:01:35 PM
Chromium	23000	1160		µg/Kg-dry	10	1/30/2017 4:01:35 PM
Lead	7400	289		µg/Kg-dry	10	1/30/2017 4:01:35 PM
Selenium	ND	1160		µg/Kg-dry	10	1/30/2017 4:01:35 PM
Silver	140	116		µg/Kg-dry	10	1/30/2017 4:01:35 PM
RCRA_8 TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	0.0226	0.0213		mg/Kg-dry	1	1/31/2017 9:23:27 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-030
Client Sample ID: BM-B-4-1.0

Collection Date: 1/18/2017 9:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	20.9		mg/Kg-dry	1	1/27/2017 1:33:00 AM
Lube Oil	ND	69.7		mg/Kg-dry	1	1/27/2017 1:33:00 AM
Surr: o-Terphenyl	77.4	50-150		%REC	1	1/27/2017 1:33:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/18/2017 9:40:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-031
Client Sample ID: BM-B-4-6.0 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-032
Client Sample ID: BM-B-3-1.0

Collection Date: 1/18/2017 9:45:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	21.0		mg/Kg-dry	1	1/27/2017 1:55:00 AM
Lube Oil	ND	70.0		mg/Kg-dry	1	1/27/2017 1:55:00 AM
Surr: o-Terphenyl	77.4	50-150		%REC	1	1/27/2017 1:55:00 AM
SEMI-VOLATILE COMPOUNDS - ACID FRACTION SW8270D						Analyst: CK
Pentachlorophenol	ND	500		µg/Kg	1	1/30/2017 5:39:00 PM
Surr: 2,4,6-Tribromophenol	70.7	39.1-119		%REC	1	1/30/2017 5:39:00 PM
Surr: 2-Fluorophenol	56.5	40.7-111		%REC	1	1/30/2017 5:39:00 PM
Surr: Phenol-d6	71.7	37.5-117		%REC	1	1/30/2017 5:39:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/18/2017 9:50:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-033
Client Sample ID: BM-B-3-5.5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-034
Client Sample ID: BM-B-1-1.0

Collection Date: 1/18/2017 9:55:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	22.3		mg/Kg-dry	1	1/27/2017 2:16:00 AM
Lube Oil	ND	74.2		mg/Kg-dry	1	1/27/2017 2:16:00 AM
Surr: o-Terphenyl	78.0	50-150		%REC	1	1/27/2017 2:16:00 AM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	7340	1040		µg/Kg	10	1/25/2017 1:26:36 PM
Barium	65700	519		µg/Kg	10	1/25/2017 1:26:36 PM
Cadmium	122	104		µg/Kg	10	1/25/2017 1:26:36 PM
Chromium	23500	1040		µg/Kg	10	1/25/2017 1:26:36 PM
Lead	28800	260		µg/Kg	10	1/25/2017 1:26:36 PM
Selenium	ND	1040		µg/Kg	10	1/25/2017 1:26:36 PM
Silver	144	104		µg/Kg	10	1/25/2017 1:26:36 PM
TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	0.0506	0.0166		mg/Kg	1	1/27/2017 8:48:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-035
Client Sample ID: BM-B-1-5.0

Collection Date: 1/18/2017 10:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	22.2		mg/Kg-dry	1	2/2/2017 1:13:00 PM
Lube Oil	75.9	73.8	A2	mg/Kg-dry	1	2/2/2017 1:13:00 PM
Surr: o-Terphenyl	78.9	50-150		%REC	1	2/2/2017 1:13:00 PM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
2-Methylnaphthalene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Acenaphthene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Acenaphthylene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Anthracene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Benz(a)anthracene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Benzo(a)pyrene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Benzo(b)fluoranthene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Benzo(g,h,i)perylene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Benzo(k)fluoranthene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Chrysene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Dibenz(a,h)anthracene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Fluoranthene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Fluorene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Indeno(1,2,3-cd)pyrene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Naphthalene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Phenanthrene	ND	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Pyrene	3.33	3.33		µg/Kg	1	2/1/2017 2:56:00 PM
Surr: 2-Fluorobiphenyl	88.9	42.6-128		%REC	1	2/1/2017 2:56:00 PM
Surr: Nitrobenzene-d5	76.7	21.7-155		%REC	1	2/1/2017 2:56:00 PM
Surr: p-Terphenyl-d14	92.5	44.9-155		%REC	1	2/1/2017 2:56:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-036
Client Sample ID: BM-B-2-1.0

Collection Date: 1/18/2017 10:20:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	20.6		mg/Kg-dry	1	1/26/2017 11:24:00 PM
Lube Oil	ND	68.7		mg/Kg-dry	1	1/26/2017 11:24:00 PM
Surr: o-Terphenyl	76.1	50-150		%REC	1	1/26/2017 11:24:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/18/2017 10:25:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-037
Client Sample ID: BM-B-2-7.5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-038
Client Sample ID: BM-B-6-1.0

Collection Date: 1/18/2017 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	17.9		mg/Kg-dry	1	1/27/2017 2:59:00 AM
Lube Oil	ND	59.7		mg/Kg-dry	1	1/27/2017 2:59:00 AM
Surr: o-Terphenyl	78.9	50-150		%REC	1	1/27/2017 2:59:00 AM
RCRA_8 ICP/MS METALS-TOTAL RECOVERABLE SW6020A						Analyst: EFH
Arsenic	1550	1020		µg/Kg	10	1/30/2017 4:04:57 PM
Barium	165000	5080		µg/Kg	100	1/31/2017 11:43:00 AM
Cadmium	138	102		µg/Kg	10	1/30/2017 4:04:57 PM
Chromium	31400	1020		µg/Kg	10	1/30/2017 4:04:57 PM
Lead	12100	254		µg/Kg	10	1/30/2017 4:04:57 PM
Selenium	ND	1020		µg/Kg	10	1/30/2017 4:04:57 PM
Silver	181	102		µg/Kg	10	1/30/2017 4:04:57 PM
RCRA_8 TOTAL MERCURY		SW 7471B				Analyst: MIS
Mercury	0.0258	0.0164		mg/Kg	1	1/31/2017 9:25:27 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/18/2017 11:10:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-039
Client Sample ID: BM-B-6-6.0 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-040
Client Sample ID: BM-B-5-1.0

Collection Date: 1/18/2017 11:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX		Analyst: JRC		
Diesel	ND	23.0		mg/Kg-dry	1	1/26/2017 11:46:00 PM
Lube Oil	ND	76.6		mg/Kg-dry	1	1/26/2017 11:46:00 PM
Surr: o-Terphenyl	74.3	50-150		%REC	1	1/26/2017 11:46:00 PM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A		Analyst: EFH		
Arsenic	3460	972		µg/Kg	10	1/25/2017 1:29:58 PM
Barium	96500	486		µg/Kg	10	1/25/2017 1:29:58 PM
Cadmium	102	97.2		µg/Kg	10	1/25/2017 1:29:58 PM
Chromium	13800	972		µg/Kg	10	1/25/2017 1:29:58 PM
Lead	6830	243		µg/Kg	10	1/25/2017 1:29:58 PM
Selenium	ND	972		µg/Kg	10	1/25/2017 1:29:58 PM
Silver	101	97.2		µg/Kg	10	1/25/2017 1:29:58 PM
TOTAL MERCURY		SW 7471B		Analyst: MIS		
Mercury	0.0289	0.0166		mg/Kg	1	1/27/2017 8:50:16 AM
SEMI-VOLATILE COMPOUNDS - ACID FRACTION		SW8270D		Analyst: CK		
Pentachlorophenol	ND	500		µg/Kg	1	1/30/2017 5:15:00 PM
Surr: 2,4,6-Tribromophenol	73.3	39.1-119		%REC	1	1/30/2017 5:15:00 PM
Surr: 2-Fluorophenol	64.9	40.7-111		%REC	1	1/30/2017 5:15:00 PM
Surr: Phenol-d6	72.7	37.5-117		%REC	1	1/30/2017 5:15:00 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B		Analyst: CK		
1,1,1,2-Tetrachloroethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,1,1-Trichloroethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,1,2,2-Tetrachloroethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,1,2-Trichloroethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,1-Dichloroethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,1-Dichloroethene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,1-Dichloropropene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2,3-Trichlorobenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2,3-Trichloropropane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2,4-Trichlorobenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2,4-Trimethylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2-Dibromo-3-chloropropane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2-Dibromoethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2-Dichlorobenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2-Dichloroethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,2-Dichloropropane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-040
Client Sample ID: BM-B-5-1.0

Collection Date: 1/18/2017 11:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
1,3,5-Trimethylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,3-Dichlorobenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,3-Dichloropropane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
1,4-Dichlorobenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
2,2-Dichloropropane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
2-Butanone	ND	82.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
2-Chlorotoluene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
2-Hexanone	ND	41.3		µg/Kg-dry	1	1/30/2017 9:33:00 PM
4-Chlorotoluene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
4-Isopropyltoluene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
4-Methyl-2-pentanone	ND	82.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Acetone	ND	206		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Benzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Bromobenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Bromochloromethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Bromodichloromethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Bromoform	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Bromomethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Carbon Disulfide	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Carbon tetrachloride	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Chlorobenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Chloroethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Chloroform	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Chloromethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
cis-1,2-Dichloroethene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
cis-1,3-Dichloropropene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Dibromochloromethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Dibromomethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Dichlorodifluoromethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Ethylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Hexachlorobutadiene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Isopropylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
m,p-Xylene	ND	41.3		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Methyl tert-butyl ether	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Methylene Chloride	ND	103		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Naphthalene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
n-Butylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
n-Propylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
o-Xylene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-040
Client Sample ID: BM-B-5-1.0

Collection Date: 1/18/2017 11:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS		SW8260B				Analyst: CK
sec-Butylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Styrene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
tert-Butylbenzene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Tetrachloroethene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Toluene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
trans-1,2-Dichloroethene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
trans-1,3-Dichloropropene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Trichloroethene	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Trichlorofluoromethane	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Vinyl Chloride	ND	20.6		µg/Kg-dry	1	1/30/2017 9:33:00 PM
Surr: 1,2-Dichloroethane-d4	92.5	71.5-124		%REC	1	1/30/2017 9:33:00 PM
Surr: 4-Bromofluorobenzene	98.3	75.7-122		%REC	1	1/30/2017 9:33:00 PM
Surr: Dibromofluoromethane	104	64.3-124		%REC	1	1/30/2017 9:33:00 PM
Surr: Toluene-d8	91.4	74.9-120		%REC	1	1/30/2017 9:33:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix **Collection Date:** 1/18/2017 11:20:00 AM
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-041
Client Sample ID: BM-B-5-4.0 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: knb
Hold	Hold	0			1	2/6/2017 11:22:16 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-042
Client Sample ID: BM-FD-011817-S2

Collection Date: 1/18/2017

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: JRC
Diesel	ND	18.5		mg/Kg-dry	1	1/27/2017 2:38:00 AM
Lube Oil	ND	61.8		mg/Kg-dry	1	1/27/2017 2:38:00 AM
Surr: o-Terphenyl	80.9	50-150		%REC	1	1/27/2017 2:38:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-043
Client Sample ID: BM-FD-011717-W

Collection Date: 1/17/2017

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX - RBC		NWTPH-DX				Analyst: JRC
Diesel	ND	0.0765		mg/L	1	1/25/2017 2:11:00 PM
Lube Oil	ND	0.191		mg/L	1	1/25/2017 2:11:00 PM
Surr: o-Terphenyl	76.9	50-150		%REC	1	1/25/2017 2:11:00 PM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	0.619	0.100		µg/L	1	1/20/2017 4:31:28 PM
Barium	9.65	1.00		µg/L	1	1/20/2017 4:31:28 PM
Cadmium	ND	0.100		µg/L	1	1/20/2017 4:31:28 PM
Chromium	2.15	0.100		µg/L	1	1/20/2017 4:31:28 PM
Lead	1.70	0.100		µg/L	1	1/20/2017 4:31:28 PM
Selenium	ND	1.00		µg/L	1	1/20/2017 4:31:28 PM
Silver	ND	0.100		µg/L	1	1/20/2017 4:31:28 PM
TOTAL MERCURY		E7470A				Analyst: MIS
Mercury	ND	0.000100		mg/L	1	1/20/2017 10:14:25 AM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
2-Methylnaphthalene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Acenaphthene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Acenaphthylene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Anthracene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Benz(a)anthracene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Benzo(a)pyrene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Benzo(b)fluoranthene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Benzo(g,h,i)perylene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Benzo(k)fluoranthene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Chrysene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Dibenz(a,h)anthracene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Fluoranthene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Fluorene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Naphthalene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Phenanthrene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Pyrene	ND	0.0471		µg/L	1	1/24/2017 6:22:00 PM
Surr: 2-Fluorobiphenyl	63.5	18.6-106		%REC	1	1/24/2017 6:22:00 PM
Surr: Nitrobenzene-d5	46.2	17-130		%REC	1	1/24/2017 6:22:00 PM
Surr: Terphenyl-d14	87.7	39.6-131		%REC	1	1/24/2017 6:22:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix

Collection Date: 1/17/2017

Project: Salmonberry -Botts Marsh / 2732925007

Lab ID: 1701106-043

Client Sample ID: BM-FD-011717-W

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,1,1-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2,3-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
2,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
2-Butanone	ND	10.0		µg/L	1	1/27/2017 3:55:00 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
2-Hexanone	ND	10.0		µg/L	1	1/27/2017 3:55:00 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
4-Methyl-2-pentanone	ND	20.0		µg/L	1	1/27/2017 3:55:00 PM
Acetone	70.9	50.0		µg/L	1	1/27/2017 3:55:00 PM
Acrylonitrile	ND	5.00		µg/L	1	1/27/2017 3:55:00 PM
Benzene	ND	0.300		µg/L	1	1/27/2017 3:55:00 PM
Bromobenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Bromochloromethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Bromoform	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Bromomethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Carbon disulfide	ND	2.00		µg/L	1	1/27/2017 3:55:00 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Chlorobenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-043
Client Sample ID: BM-FD-011717-W

Collection Date: 1/17/2017

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
Chloroethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Chloroform	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Chloromethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Dibromomethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Dichlorodifluoromethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Ethylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
m,p-Xylene	ND	2.00		µg/L	1	1/27/2017 3:55:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Methylene chloride	ND	20.0		µg/L	1	1/27/2017 3:55:00 PM
Naphthalene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
o-Xylene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Styrene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Tetrachloroethene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Toluene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Trichloroethene	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Trichlorofluoromethane	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Vinyl chloride	ND	1.00		µg/L	1	1/27/2017 3:55:00 PM
Surr: 1,2-Dichloroethane-d4	94.5	75.3-126		%REC	1	1/27/2017 3:55:00 PM
Surr: 4-Bromofluorobenzene	101	78.1-120		%REC	1	1/27/2017 3:55:00 PM
Surr: Dibromofluoromethane	99.3	74.2-122		%REC	1	1/27/2017 3:55:00 PM
Surr: Toluene-d8	94.6	76.2-135		%REC	1	1/27/2017 3:55:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-044
Client Sample ID: BM-B-15-W

Collection Date: 1/17/2017 11:45:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX - RBC		NWTPH-DX				Analyst: JRC
Diesel	ND	0.0770		mg/L	1	1/25/2017 2:33:00 PM
Lube Oil	ND	0.192		mg/L	1	1/25/2017 2:33:00 PM
Surr: o-Terphenyl	72.6	50-150		%REC	1	1/25/2017 2:33:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-045
Client Sample ID: BM-B-20-W

Collection Date: 1/17/2017 9:15:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX - RBC		NWTPH-DX				Analyst: JRC
Diesel	ND	0.0759		mg/L	1	1/25/2017 2:55:00 PM
Lube Oil	ND	0.190		mg/L	1	1/25/2017 2:55:00 PM
Surr: o-Terphenyl	74.0	50-150		%REC	1	1/25/2017 2:55:00 PM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	0.736	0.100		µg/L	1	1/20/2017 4:34:50 PM
Barium	11.5	1.00		µg/L	1	1/20/2017 4:34:50 PM
Cadmium	ND	0.100		µg/L	1	1/20/2017 4:34:50 PM
Chromium	2.66	0.100		µg/L	1	1/20/2017 4:34:50 PM
Lead	2.26	0.100		µg/L	1	1/20/2017 4:34:50 PM
Selenium	ND	1.00		µg/L	1	1/20/2017 4:34:50 PM
Silver	ND	0.100		µg/L	1	1/20/2017 4:34:50 PM
TOTAL MERCURY		E7470A				Analyst: MIS
Mercury	ND	0.000100		mg/L	1	1/20/2017 10:22:25 AM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
2-Methylnaphthalene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Acenaphthene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Acenaphthylene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Anthracene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Benz(a)anthracene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Benzo(a)pyrene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Benzo(b)fluoranthene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Benzo(g,h,i)perylene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Benzo(k)fluoranthene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Chrysene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Dibenz(a,h)anthracene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Fluoranthene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Fluorene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Naphthalene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Phenanthrene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Pyrene	ND	0.0468		µg/L	1	1/24/2017 6:47:00 PM
Surr: 2-Fluorobiphenyl	61.0	18.6-106		%REC	1	1/24/2017 6:47:00 PM
Surr: Nitrobenzene-d5	49.8	17-130		%REC	1	1/24/2017 6:47:00 PM
Surr: Terphenyl-d14	105	39.6-131		%REC	1	1/24/2017 6:47:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-045
Client Sample ID: BM-B-20-W

Collection Date: 1/17/2017 9:15:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,1,1-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2,3-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
2,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
2-Butanone	ND	10.0		µg/L	1	1/27/2017 4:27:00 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
2-Hexanone	ND	10.0		µg/L	1	1/27/2017 4:27:00 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
4-Methyl-2-pentanone	ND	20.0		µg/L	1	1/27/2017 4:27:00 PM
Acetone	ND	50.0		µg/L	1	1/27/2017 4:27:00 PM
Acrylonitrile	ND	5.00		µg/L	1	1/27/2017 4:27:00 PM
Benzene	ND	0.300		µg/L	1	1/27/2017 4:27:00 PM
Bromobenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Bromochloromethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Bromoform	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Bromomethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Carbon disulfide	ND	2.00		µg/L	1	1/27/2017 4:27:00 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Chlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-045
Client Sample ID: BM-B-20-W

Collection Date: 1/17/2017 9:15:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
Chloroethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Chloroform	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Chloromethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Dibromomethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Dichlorodifluoromethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Ethylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
m,p-Xylene	ND	2.00		µg/L	1	1/27/2017 4:27:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Methylene chloride	ND	20.0		µg/L	1	1/27/2017 4:27:00 PM
Naphthalene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
o-Xylene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Styrene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Tetrachloroethene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Toluene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Trichloroethene	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Trichlorofluoromethane	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Vinyl chloride	ND	1.00		µg/L	1	1/27/2017 4:27:00 PM
Surr: 1,2-Dichloroethane-d4	95.3	75.3-126		%REC	1	1/27/2017 4:27:00 PM
Surr: 4-Bromofluorobenzene	101	78.1-120		%REC	1	1/27/2017 4:27:00 PM
Surr: Dibromofluoromethane	101	74.2-122		%REC	1	1/27/2017 4:27:00 PM
Surr: Toluene-d8	87.2	76.2-135		%REC	1	1/27/2017 4:27:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-046
Client Sample ID: BM-B-12-W

Collection Date: 1/17/2017 12:35:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX - RBC		NWTPH-DX				Analyst: JRC
Diesel	0.139	0.0761		mg/L	1	1/25/2017 3:38:00 PM
Lube Oil	0.260	0.190		mg/L	1	1/25/2017 3:38:00 PM
Surr: o-Terphenyl	74.7	50-150		%REC	1	1/25/2017 3:38:00 PM
RCRA 8 AQUEOUS ICP/MS METALS-TOTAL		SW6020A				Analyst: EFH
Arsenic	25.4	0.100		µg/L	1	1/31/2017 4:56:48 PM
Barium	127	10.0		µg/L	10	2/1/2017 12:09:00 PM
Cadmium	0.143	0.100		µg/L	1	1/31/2017 4:56:48 PM
Chromium	15.7	0.100		µg/L	1	1/31/2017 4:56:48 PM
Lead	11.7	0.100		µg/L	1	1/31/2017 4:56:48 PM
Selenium	ND	1.00		µg/L	1	1/31/2017 4:56:48 PM
Silver	0.164	0.100		µg/L	1	1/31/2017 4:56:48 PM
ICP/MS METALS-DISSOLVED RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	16.1	0.100		µg/L	1	1/31/2017 12:34:04 PM
Barium	83.2	1.00		µg/L	1	1/31/2017 12:34:04 PM
Cadmium	ND	0.100		µg/L	1	1/31/2017 12:34:04 PM
Chromium	0.607	0.100		µg/L	1	1/31/2017 12:34:04 PM
Lead	0.207	0.100		µg/L	1	1/31/2017 12:34:04 PM
Selenium	ND	1.00		µg/L	1	1/31/2017 12:34:04 PM
Silver	ND	0.100		µg/L	1	1/31/2017 12:34:04 PM
RCRA 8 AQUEOUS TOTAL MERCURY		E7470A				Analyst: MIS
Mercury	ND	0.000100		mg/L	1	2/1/2017 9:25:29 AM
MERCURY, DISSOLVED		SW7470A				Analyst: MIS
Mercury	ND	0.000100		mg/L	1	2/1/2017 9:39:29 AM
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,1,1-Trichloroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2,3-Trichlorobenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-046
Client Sample ID: BM-B-12-W

Collection Date: 1/17/2017 12:35:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2-Dibromoethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2-Dichloroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
2,2-Dichloropropane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
2-Butanone	ND	10.0		µg/L	1	1/30/2017 9:01:00 AM
2-Chlorotoluene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
2-Hexanone	ND	10.0		µg/L	1	1/30/2017 9:01:00 AM
4-Chlorotoluene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
4-Methyl-2-pentanone	ND	20.0		µg/L	1	1/30/2017 9:01:00 AM
Acetone	ND	50.0		µg/L	1	1/30/2017 9:01:00 AM
Acrylonitrile	ND	5.00		µg/L	1	1/30/2017 9:01:00 AM
Benzene	ND	0.300		µg/L	1	1/30/2017 9:01:00 AM
Bromobenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Bromochloromethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Bromodichloromethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Bromoform	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Bromomethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Carbon disulfide	ND	2.00		µg/L	1	1/30/2017 9:01:00 AM
Carbon tetrachloride	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Chlorobenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Chloroethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Chloroform	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Chloromethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Dibromochloromethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Dibromomethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Dichlorodifluoromethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Ethylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Isopropylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-046
Client Sample ID: BM-B-12-W

Collection Date: 1/17/2017 12:35:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
m,p-Xylene	ND	2.00		µg/L	1	1/30/2017 9:01:00 AM
Methyl tert-butyl ether	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Methylene chloride	ND	20.0		µg/L	1	1/30/2017 9:01:00 AM
Naphthalene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
n-Butylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
n-Propylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
o-Xylene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
sec-Butylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Styrene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
tert-Butylbenzene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Tetrachloroethene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Toluene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Trichloroethene	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Trichlorofluoromethane	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Vinyl chloride	ND	1.00		µg/L	1	1/30/2017 9:01:00 AM
Surr: 1,2-Dichloroethane-d4	90.4	75.3-126		%REC	1	1/30/2017 9:01:00 AM
Surr: 4-Bromofluorobenzene	103	78.1-120		%REC	1	1/30/2017 9:01:00 AM
Surr: Dibromofluoromethane	86.7	74.2-122		%REC	1	1/30/2017 9:01:00 AM
Surr: Toluene-d8	91.3	76.2-135		%REC	1	1/30/2017 9:01:00 AM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-047
Client Sample ID: BM-B-5-W

Collection Date: 1/18/2017 11:50:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX - RBC		NWTPH-DX				Analyst: JRC
Diesel	0.204	0.0782		mg/L	1	1/25/2017 4:22:00 PM
Lube Oil	1.07	0.196		mg/L	1	1/25/2017 4:22:00 PM
Surr: o-Terphenyl	81.6	50-150		%REC	1	1/25/2017 4:22:00 PM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	3.77	0.100		µg/L	1	1/20/2017 4:38:12 PM
Barium	86.4	1.00		µg/L	1	1/20/2017 4:38:12 PM
Cadmium	0.474	0.100		µg/L	1	1/20/2017 4:38:12 PM
Chromium	19.2	0.100		µg/L	1	1/20/2017 4:38:12 PM
Lead	64.6	0.100		µg/L	1	1/20/2017 4:38:12 PM
Selenium	ND	1.00		µg/L	1	1/20/2017 4:38:12 PM
Silver	ND	0.100		µg/L	1	1/20/2017 4:38:12 PM
ICP/MS METALS-DISSOLVED RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	2.10	0.100		µg/L	1	1/31/2017 5:00:10 PM
Barium	56.9	1.00		µg/L	1	1/31/2017 5:00:10 PM
Cadmium	0.409	0.100		µg/L	1	1/31/2017 5:00:10 PM
Chromium	5.66	0.100		µg/L	1	1/31/2017 5:00:10 PM
Lead	49.9	0.100		µg/L	1	1/31/2017 5:00:10 PM
Selenium	ND	1.00		µg/L	1	1/31/2017 5:00:10 PM
Silver	ND	0.100		µg/L	1	1/31/2017 5:00:10 PM
TOTAL MERCURY		E7470A				Analyst: MIS
Mercury	ND	0.000100		mg/L	1	1/20/2017 10:24:25 AM
MERCURY, DISSOLVED		SW7470A				Analyst: MIS
Mercury	ND	0.00100		mg/L	1	2/1/2017 9:45:29 AM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	0.0472		µg/L	1	1/24/2017 7:12:00 PM
2-Methylnaphthalene	ND	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Acenaphthene	0.0944	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Acenaphthylene	0.227	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Anthracene	0.208	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Benz(a)anthracene	0.359	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Benzo(a)pyrene	0.510	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Benzo(b)fluoranthene	0.500	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Benzo(g,h,i)perylene	0.567	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Benzo(k)fluoranthene	0.0661	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Chrysene	0.406	0.0472		µg/L	1	1/24/2017 7:12:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-047
Client Sample ID: BM-B-5-W

Collection Date: 1/18/2017 11:50:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAH'S BY GC/MS - LOW LEVEL		SW8270D		Analyst: CK		
Dibenz(a,h)anthracene	0.151	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Fluoranthene	0.878	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Fluorene	0.236	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Indeno(1,2,3-cd)pyrene	0.368	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Naphthalene	ND	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Phenanthrene	0.434	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Pyrene	1.48	0.0472		µg/L	1	1/24/2017 7:12:00 PM
Surr: 2-Fluorobiphenyl	39.2	18.6-106		%REC	1	1/24/2017 7:12:00 PM
Surr: Nitrobenzene-d5	39.3	17-130		%REC	1	1/24/2017 7:12:00 PM
Surr: Terphenyl-d14	96.5	39.6-131		%REC	1	1/24/2017 7:12:00 PM
VOLATILE ORGANICS BY GC/MS		SW8260B		Analyst: CK		
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,1,1-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2,3-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
2,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
2-Butanone	ND	10.0		µg/L	1	1/27/2017 4:59:00 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
2-Hexanone	ND	10.0		µg/L	1	1/27/2017 4:59:00 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-047
Client Sample ID: BM-B-5-W

Collection Date: 1/18/2017 11:50:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B		Analyst: CK		
4-Methyl-2-pentanone	ND	20.0		µg/L	1	1/27/2017 4:59:00 PM
Acetone	ND	50.0		µg/L	1	1/27/2017 4:59:00 PM
Acrylonitrile	ND	5.00		µg/L	1	1/27/2017 4:59:00 PM
Benzene	ND	0.300		µg/L	1	1/27/2017 4:59:00 PM
Bromobenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Bromochloromethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Bromoform	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Bromomethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Carbon disulfide	ND	2.00		µg/L	1	1/27/2017 4:59:00 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Chlorobenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Chloroethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Chloroform	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Chloromethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Dibromomethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Dichlorodifluoromethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Ethylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
m,p-Xylene	ND	2.00		µg/L	1	1/27/2017 4:59:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Methylene chloride	ND	20.0		µg/L	1	1/27/2017 4:59:00 PM
Naphthalene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
o-Xylene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Styrene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Tetrachloroethene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Toluene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Trichloroethene	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Trichlorofluoromethane	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-047
Client Sample ID: BM-B-5-W

Collection Date: 1/18/2017 11:50:00 AM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
Vinyl chloride	ND	1.00		µg/L	1	1/27/2017 4:59:00 PM
Surr: 1,2-Dichloroethane-d4	98.4	75.3-126		%REC	1	1/27/2017 4:59:00 PM
Surr: 4-Bromofluorobenzene	102	78.1-120		%REC	1	1/27/2017 4:59:00 PM
Surr: Dibromofluoromethane	102	74.2-122		%REC	1	1/27/2017 4:59:00 PM
Surr: Toluene-d8	84.8	76.2-135		%REC	1	1/27/2017 4:59:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-048
Client Sample ID: BM-B-7-W

Collection Date: 1/18/2017 12:40:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX - RBC		NWTPH-DX				Analyst: JRC
Diesel	ND	0.0756		mg/L	1	1/25/2017 3:17:00 PM
Lube Oil	ND	0.189		mg/L	1	1/25/2017 3:17:00 PM
Surr: o-Terphenyl	31.4	50-150	SMI	%REC	1	1/25/2017 3:17:00 PM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	8.96	0.100		µg/L	1	1/20/2017 4:41:35 PM
Barium	199	10.0		µg/L	10	1/23/2017 12:32:10 PM
Cadmium	0.502	0.100		µg/L	1	1/20/2017 4:41:35 PM
Chromium	5.01	0.100		µg/L	1	1/20/2017 4:41:35 PM
Lead	55.8	0.100		µg/L	1	1/20/2017 4:41:35 PM
Selenium	1.24	1.00		µg/L	1	1/20/2017 4:41:35 PM
Silver	0.133	0.100		µg/L	1	1/20/2017 4:41:35 PM
TOTAL MERCURY		E7470A				Analyst: MIS
Mercury	ND	0.000100		mg/L	1	1/20/2017 10:26:25 AM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
2-Methylnaphthalene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Acenaphthene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Acenaphthylene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Anthracene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Benz(a)anthracene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Benzo(a)pyrene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Benzo(b)fluoranthene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Benzo(g,h,i)perylene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Benzo(k)fluoranthene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Chrysene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Dibenz(a,h)anthracene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Fluoranthene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Fluorene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Naphthalene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Phenanthrene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Pyrene	ND	0.0472		µg/L	1	1/24/2017 7:37:00 PM
Surr: 2-Fluorobiphenyl	49.1	18.6-106		%REC	1	1/24/2017 7:37:00 PM
Surr: Nitrobenzene-d5	37.2	17-130		%REC	1	1/24/2017 7:37:00 PM
Surr: Terphenyl-d14	92.6	39.6-131		%REC	1	1/24/2017 7:37:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-048
Client Sample ID: BM-B-7-W

Collection Date: 1/18/2017 12:40:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,1,1-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2,3-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
2,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
2-Butanone	ND	10.0		µg/L	1	1/27/2017 5:32:00 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
2-Hexanone	ND	10.0		µg/L	1	1/27/2017 5:32:00 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
4-Methyl-2-pentanone	ND	20.0		µg/L	1	1/27/2017 5:32:00 PM
Acetone	ND	50.0		µg/L	1	1/27/2017 5:32:00 PM
Acrylonitrile	ND	5.00		µg/L	1	1/27/2017 5:32:00 PM
Benzene	ND	0.300		µg/L	1	1/27/2017 5:32:00 PM
Bromobenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Bromochloromethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Bromoform	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Bromomethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Carbon disulfide	ND	2.00		µg/L	1	1/27/2017 5:32:00 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Chlorobenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-048
Client Sample ID: BM-B-7-W

Collection Date: 1/18/2017 12:40:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
Chloroethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Chloroform	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Chloromethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Dibromomethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Dichlorodifluoromethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Ethylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
m,p-Xylene	ND	2.00		µg/L	1	1/27/2017 5:32:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Methylene chloride	ND	20.0		µg/L	1	1/27/2017 5:32:00 PM
Naphthalene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
o-Xylene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Styrene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Tetrachloroethene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Toluene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Trichloroethene	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Trichlorofluoromethane	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Vinyl chloride	ND	1.00		µg/L	1	1/27/2017 5:32:00 PM
Surr: 1,2-Dichloroethane-d4	98.2	75.3-126		%REC	1	1/27/2017 5:32:00 PM
Surr: 4-Bromofluorobenzene	102	78.1-120		%REC	1	1/27/2017 5:32:00 PM
Surr: Dibromofluoromethane	103	74.2-122		%REC	1	1/27/2017 5:32:00 PM
Surr: Toluene-d8	81.0	76.2-135		%REC	1	1/27/2017 5:32:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-049
Client Sample ID: BM-B-1-W

Collection Date: 1/18/2017 1:30:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
NWTPH-DX - RBC		NWTPH-DX				Analyst: JRC
Diesel	ND	0.0755	A3	mg/L	1	1/25/2017 4:00:00 PM
Hydraulic Oil	3.38	0.189		mg/L	1	1/25/2017 4:00:00 PM
Lube Oil	ND	0.189	A3	mg/L	1	1/25/2017 4:00:00 PM
Surr: o-Terphenyl	98.4	50-150		%REC	1	1/25/2017 4:00:00 PM
ICP/MS METALS-TOTAL RECOVERABLE		SW6020A				Analyst: EFH
Arsenic	12.6	0.100		µg/L	1	1/20/2017 4:44:58 PM
Barium	194	10.0		µg/L	10	1/23/2017 12:35:33 PM
Cadmium	ND	0.100		µg/L	1	1/20/2017 4:44:58 PM
Chromium	7.35	0.100		µg/L	1	1/20/2017 4:44:58 PM
Lead	48.1	0.100		µg/L	1	1/20/2017 4:44:58 PM
Selenium	ND	1.00		µg/L	1	1/20/2017 4:44:58 PM
Silver	ND	0.100		µg/L	1	1/20/2017 4:44:58 PM
TOTAL MERCURY		E7470A				Analyst: MIS
Mercury	ND	0.000100		mg/L	1	1/20/2017 10:28:25 AM
PAH'S BY GC/MS - LOW LEVEL		SW8270D				Analyst: CK
1-Methylnaphthalene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
2-Methylnaphthalene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Acenaphthene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Acenaphthylene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Anthracene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Benz(a)anthracene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Benzo(a)pyrene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Benzo(b)fluoranthene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Benzo(g,h,i)perylene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Benzo(k)fluoranthene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Chrysene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Dibenz(a,h)anthracene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Fluoranthene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Fluorene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Naphthalene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Phenanthrene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Pyrene	ND	0.0474		µg/L	1	1/24/2017 8:02:00 PM
Surr: 2-Fluorobiphenyl	43.6	18.6-106		%REC	1	1/24/2017 8:02:00 PM
Surr: Nitrobenzene-d5	40.8	17-130		%REC	1	1/24/2017 8:02:00 PM
Surr: Terphenyl-d14	63.5	39.6-131		%REC	1	1/24/2017 8:02:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
 Project: Salmonberry -Botts Marsh / 2732925007
 Lab ID: 1701106-049
 Client Sample ID: BM-B-1-W

Collection Date: 1/18/2017 1:30:00 PM
 Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,1,1-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2,3-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
2,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
2-Butanone	ND	10.0		µg/L	1	1/27/2017 6:05:00 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
2-Hexanone	ND	10.0		µg/L	1	1/27/2017 6:05:00 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
4-Methyl-2-pentanone	ND	20.0		µg/L	1	1/27/2017 6:05:00 PM
Acetone	ND	50.0		µg/L	1	1/27/2017 6:05:00 PM
Acrylonitrile	ND	5.00		µg/L	1	1/27/2017 6:05:00 PM
Benzene	ND	0.300		µg/L	1	1/27/2017 6:05:00 PM
Bromobenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Bromochloromethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Bromoform	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Bromomethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Carbon disulfide	ND	2.00		µg/L	1	1/27/2017 6:05:00 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Chlorobenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-049
Client Sample ID: BM-B-1-W

Collection Date: 1/18/2017 1:30:00 PM

Matrix: WATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
Chloroethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Chloroform	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Chloromethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Dibromomethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Dichlorodifluoromethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Ethylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
m,p-Xylene	ND	2.00		µg/L	1	1/27/2017 6:05:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Methylene chloride	ND	20.0		µg/L	1	1/27/2017 6:05:00 PM
Naphthalene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
o-Xylene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Styrene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Tetrachloroethene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Toluene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Trichloroethene	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Trichlorofluoromethane	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Vinyl chloride	ND	1.00		µg/L	1	1/27/2017 6:05:00 PM
Surr: 1,2-Dichloroethane-d4	98.0	75.3-126		%REC	1	1/27/2017 6:05:00 PM
Surr: 4-Bromofluorobenzene	101	78.1-120		%REC	1	1/27/2017 6:05:00 PM
Surr: Dibromofluoromethane	101	74.2-122		%REC	1	1/27/2017 6:05:00 PM
Surr: Toluene-d8	90.7	76.2-135		%REC	1	1/27/2017 6:05:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-050
Client Sample ID: Trip Blank

Collection Date:

Matrix:

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,1,1-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2,3-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2,4-Trichlorobenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
2,2-Dichloropropane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
2-Butanone	ND	10.0		µg/L	1	1/27/2017 2:19:00 PM
2-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
2-Hexanone	ND	10.0		µg/L	1	1/27/2017 2:19:00 PM
4-Chlorotoluene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
4-Methyl-2-pentanone	ND	20.0		µg/L	1	1/27/2017 2:19:00 PM
Acetone	ND	50.0		µg/L	1	1/27/2017 2:19:00 PM
Acrylonitrile	ND	5.00		µg/L	1	1/27/2017 2:19:00 PM
Benzene	ND	0.300		µg/L	1	1/27/2017 2:19:00 PM
Bromobenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Bromochloromethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Bromodichloromethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Bromoform	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Bromomethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Carbon disulfide	ND	2.00		µg/L	1	1/27/2017 2:19:00 PM
Carbon tetrachloride	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Chlorobenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM

Specialty Analytical

Date Reported: 06-Feb-17

CLIENT: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007
Lab ID: 1701106-050
Client Sample ID: Trip Blank

Collection Date:

Matrix:

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		SW8260B				Analyst: CK
Chloroethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Chloroform	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Chloromethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Dibromochloromethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Dibromomethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Dichlorodifluoromethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Ethylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Hexachlorobutadiene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
m,p-Xylene	ND	2.00		µg/L	1	1/27/2017 2:19:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Methylene chloride	ND	20.0		µg/L	1	1/27/2017 2:19:00 PM
Naphthalene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
n-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
o-Xylene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
sec-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Styrene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
tert-Butylbenzene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Tetrachloroethene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Toluene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Trichloroethene	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Trichlorofluoromethane	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Vinyl chloride	ND	1.00		µg/L	1	1/27/2017 2:19:00 PM
Surr: 1,2-Dichloroethane-d4	89.3	75.3-126		%REC	1	1/27/2017 2:19:00 PM
Surr: 4-Bromofluorobenzene	103	78.1-120		%REC	1	1/27/2017 2:19:00 PM
Surr: Dibromofluoromethane	98.2	74.2-122		%REC	1	1/27/2017 2:19:00 PM
Surr: Toluene-d8	93.2	76.2-135		%REC	1	1/27/2017 2:19:00 PM

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: ICV	SampType: ICV	TestCode: 6020_S	Units: µg/Kg	Prep Date:	RunNo: 19836						
Client ID: ICV	Batch ID: 9311	TestNo: SW6020A	SW3050B	Analysis Date: 1/25/2017	SeqNo: 265550						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4600	100	5000	0	92.1	90	110				
Barium	4690	50.0	5000	0	93.8	90	110				
Cadmium	4690	10.0	5000	0	93.8	90	110				
Chromium	4600	100	5000	0	92.1	90	110				
Lead	4510	25.0	5000	0	90.2	90	110				
Selenium	4710	100	5000	0	94.3	90	110				
Silver	4670	10.0	5000	0	93.3	90	110				

Sample ID: MB-9311	SampType: MBLK	TestCode: 6020_S	Units: µg/Kg	Prep Date: 1/24/2017	RunNo: 19836						
Client ID: PBS	Batch ID: 9311	TestNo: SW6020A	SW3050B	Analysis Date: 1/25/2017	SeqNo: 265553						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	100									
Barium	ND	50.0									
Cadmium	ND	10.0									
Chromium	ND	100									
Lead	ND	25.0									
Selenium	ND	100									
Silver	ND	10.0									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 1 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: LCS-9311	SampType: LCS	TestCode: 6020_S	Units: µg/Kg	Prep Date: 1/24/2017	RunNo: 19836						
Client ID: LCSS	Batch ID: 9311	TestNo: SW6020A	SW3050B	Analysis Date: 1/25/2017	SeqNo: 265555						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4540	100	5000	0	90.9	73.4	120				
Barium	5190	50.0	5000	0	104	80	120				
Cadmium	4450	10.0	5000	0	89.0	80	120				
Chromium	5630	100	5000	0	113	80	120				
Lead	5150	25.0	5000	0	103	80	120				
Selenium	4540	100	5000	0	90.9	79.5	119				
Silver	4680	10.0	5000	0	93.7	12.3	165				

Sample ID: 1701106-003BDUP	SampType: DUP	TestCode: 6020_S	Units: µg/Kg	Prep Date: 1/24/2017	RunNo: 19836						
Client ID: BM-B-19-1.0	Batch ID: 9311	TestNo: SW6020A	SW3050B	Analysis Date: 1/25/2017	SeqNo: 265561						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1880	1010						2807	39.7	20	R
Barium	72700	505						88410	19.5	20	
Cadmium	118	101						123.5	4.32	20	
Chromium	29100	1010						28000	3.74	20	
Lead	1950	253						2817	36.2	20	R
Selenium	ND	1010						0	0	20	
Silver	183	101						180.3	1.32	20	

Qualifiers:	B Analyte detected in the associated Method Blank O RSD is greater than RSDlimit	H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits	ND Not Detected at the Reporting Limit S Spike Recovery outside accepted reco	Page 2 of 69
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QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: 1701106-003BMS		SampType: MS		TestCode: 6020_S		Units: µg/Kg		Prep Date: 1/24/2017		RunNo: 19836	
Client ID: BM-B-19-1.0		Batch ID: 9311		TestNo: SW6020A		SW3050B		Analysis Date: 1/25/2017		SeqNo: 265563	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5880	992	4960	2807	62.0	70	130				SRP
Barium	84700	496	4960	88410	-75.1	70	130				SRP
Cadmium	4980	99.2	4960	123.5	97.8	70	130				
Chromium	35700	992	4960	28000	155	70	130				SRP
Lead	6440	248	4960	2817	72.9	70	130				
Selenium	4400	992	4960	586.8	76.8	70	130				
Silver	4810	99.2	4960	180.3	93.4	70	130				

Sample ID: 1701106-003BMSD		SampType: MSD		TestCode: 6020_S		Units: µg/Kg		Prep Date: 1/24/2017		RunNo: 19836	
Client ID: BM-B-19-1.0		Batch ID: 9311		TestNo: SW6020A		SW3050B		Analysis Date: 1/25/2017		SeqNo: 265565	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5280	965	4823	2807	51.3	70	130	5881	10.7	20	SRP
Barium	48600	482	4823	88410	-825	70	130	84680	54.1	20	SRP
Cadmium	5060	96.5	4823	123.5	102	70	130	4975	1.70	20	
Chromium	26800	965	4823	28000	-24.9	70	130	35700	28.5	20	SRP
Lead	5720	241	4823	2817	60.2	70	130	6435	11.8	20	SRP
Selenium	4780	965	4823	586.8	87.0	70	130	4397	8.39	20	
Silver	4920	96.5	4823	180.3	98.3	70	130	4811	2.20	20	

Qualifiers:	B Analyte detected in the associated Method Blank O RSD is greater than RSDlimit	H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits	ND Not Detected at the Reporting Limit S Spike Recovery outside accepted reco	Page 3 of 69
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QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: CCV	SampType: CCV	TestCode: 6020_S	Units: µg/Kg		Prep Date:	RunNo: 19836					
Client ID: CCV	Batch ID: 9311	TestNo: SW6020A	SW3050B		Analysis Date: 1/25/2017	SeqNo: 265569					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4700	100	5000	0	94.0	90	110				
Barium	4770	50.0	5000	0	95.4	90	110				
Cadmium	4820	10.0	5000	0	96.5	90	110				
Chromium	4920	100	5000	0	98.5	90	110				
Lead	4580	25.0	5000	0	91.5	90	110				
Selenium	4770	100	5000	0	95.3	90	110				
Silver	5180	10.0	5000	0	104	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_S	Units: µg/Kg		Prep Date:	RunNo: 19836					
Client ID: CCV	Batch ID: 9311	TestNo: SW6020A	SW3050B		Analysis Date: 1/25/2017	SeqNo: 265576					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4750	100	5000	0	94.9	90	110				
Barium	4920	50.0	5000	0	98.3	90	110				
Cadmium	4850	10.0	5000	0	97.0	90	110				
Chromium	5000	100	5000	0	100	90	110				
Lead	4690	25.0	5000	0	93.7	90	110				
Selenium	4740	100	5000	0	94.8	90	110				
Silver	4890	10.0	5000	0	97.9	90	110				

Qualifiers:	B Analyte detected in the associated Method Blank O RSD is greater than RSDlimit	H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits	ND Not Detected at the Reporting Limit S Spike Recovery outside accepted reco	Page 4 of 69
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QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: CCV	SampType: CCV	TestCode: 6020_S	Units: µg/Kg	Prep Date:	RunNo: 19836						
Client ID: CCV	Batch ID: 9311	TestNo: SW6020A	SW3050B	Analysis Date: 1/25/2017	SeqNo: 265581						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	4930	50.0	5000	0	98.5	90	110				
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Sample ID: ICV	SampType: ICV	TestCode: 6020_S	Units: µg/Kg	Prep Date:	RunNo: 19899						
Client ID: ICV	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/30/2017	SeqNo: 266544						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	4750	100	5000	0	95.1	90	110				
Barium	4960	50.0	5000	0	99.1	90	110				
Cadmium	4730	10.0	5000	0	94.6	90	110				
Chromium	5030	100	5000	0	101	90	110				
Lead	4870	25.0	5000	0	97.4	90	110				
Selenium	4790	100	5000	0	95.7	90	110				
Silver	4950	10.0	5000	0	99.1	90	110				

Sample ID: MB-9339	SampType: MBLK	TestCode: 6020_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19899						
Client ID: PBS	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/30/2017	SeqNo: 266545						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	100									
Barium	ND	50.0									
Cadmium	ND	10.0									
Chromium	ND	100									
Lead	ND	25.0									

Qualifiers:	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit	Page 5 of 69
	O RSD is greater than RSDlimit	R RPD outside accepted recovery limits	S Spike Recovery outside accepted reco	

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: MB-9339	SampType: MBLK	TestCode: 6020_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19899						
Client ID: PBS	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/30/2017	SeqNo: 266545						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	100									
Silver	ND	10.0									

Sample ID: LCS-9339	SampType: LCS	TestCode: 6020_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19899						
Client ID: LCSS	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/30/2017	SeqNo: 266546						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4430	100	5000	0	88.7	73.4	120				
Barium	4920	50.0	5000	0	98.5	80	120				
Cadmium	4420	10.0	5000	0	88.5	80	120				
Chromium	5290	100	5000	0	106	80	120				
Lead	5220	25.0	5000	0	104	80	120				
Selenium	4440	100	5000	0	88.7	79.5	119				
Silver	5160	10.0	5000	0	103	12.3	165				

Sample ID: 1701106-010BDUP	SampType: DUP	TestCode: 6020_S	Units: µg/Kg-dry	Prep Date: 1/30/2017	RunNo: 19899						
Client ID: BM-B-16-6.0	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/30/2017	SeqNo: 266549						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	3670	1450						3398	7.80	20	
Barium	28900	726						32410	11.4	20	
Cadmium	ND	145						0	0	20	RF
Chromium	24600	1450						24700	0.458	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 6 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: 1701106-010BDUP		SampType: DUP		TestCode: 6020_S		Units: µg/Kg-dry		Prep Date: 1/30/2017		RunNo: 19899	
Client ID: BM-B-16-6.0		Batch ID: 9339		TestNo: SW6020A		SW3050B		Analysis Date: 1/30/2017		SeqNo: 266549	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	3830	363						4227	9.85	20	
Selenium	ND	1450						0	0	20	
Silver	145	145						146.2	0.573	20	

Sample ID: 1701106-010BMS		SampType: MS		TestCode: 6020_S		Units: µg/Kg-dry		Prep Date: 1/30/2017		RunNo: 19899	
Client ID: BM-B-16-6.0		Batch ID: 9339		TestNo: SW6020A		SW3050B		Analysis Date: 1/30/2017		SeqNo: 266550	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9520	1420	7123	3398	85.9	70	130				
Barium	37800	712	7123	32410	75.6	70	130				
Cadmium	7450	142	7123	67.14	104	70	130				
Chromium	45200	1420	7123	24700	288	70	130				SMC
Lead	11800	356	7123	4227	107	70	130				
Selenium	6450	1420	7123	650.5	81.5	70	130				
Silver	7580	142	7123	146.2	104	70	130				

Sample ID: 1701106-010BMSD		SampType: MSD		TestCode: 6020_S		Units: µg/Kg-dry		Prep Date: 1/30/2017		RunNo: 19899	
Client ID: BM-B-16-6.0		Batch ID: 9339		TestNo: SW6020A		SW3050B		Analysis Date: 1/30/2017		SeqNo: 266551	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9270	1480	7377	3398	79.6	70	130	9519	2.61	20	
Barium	37700	738	7377	32410	72.3	70	130	37800	0.138	20	
Cadmium	7140	148	7377	67.14	95.9	70	130	7454	4.28	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 7 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: 1701106-010BMSD	SampType: MSD	TestCode: 6020_S	Units: µg/Kg-dry	Prep Date: 1/30/2017	RunNo: 19899						
Client ID: BM-B-16-6.0	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/30/2017	SeqNo: 266551						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	31500	1480	7377	24700	92.9	70	130	45190	35.6	20	R
Lead	10800	369	7377	4227	88.8	70	130	11840	9.37	20	
Selenium	6460	1480	7377	650.5	78.7	70	130	6455	0.0440	20	
Silver	7260	148	7377	146.2	96.4	70	130	7578	4.30	20	

Sample ID: ICV	SampType: ICV	TestCode: 6020_S	Units: µg/Kg	Prep Date:	RunNo: 19899						
Client ID: ICV	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/31/2017	SeqNo: 266674						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	4920	50.0	5000	0	98.5	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_S	Units: µg/Kg	Prep Date:	RunNo: 19899						
Client ID: CCV	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/31/2017	SeqNo: 266675						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	4980	50.0	5000	0	99.5	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_S	Units: µg/Kg	Prep Date:	RunNo: 19899						
Client ID: CCV	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/31/2017	SeqNo: 266677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	5280	50.0	5000	0	106	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 8 of 69
 O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_S

Sample ID: CCV	SampType: CCV	TestCode: 6020_S	Units: µg/Kg	Prep Date:	RunNo: 19899						
Client ID: CCV	Batch ID: 9339	TestNo: SW6020A	SW3050B	Analysis Date: 1/31/2017	SeqNo: 266677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 9 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19781						
Client ID: ICV	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/20/2017	SeqNo: 264717						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.1	0.100	50.00	0	94.1	90	110				
Barium	48.6	1.00	50.00	0	97.3	90	110				
Cadmium	45.8	0.100	50.00	0	91.7	90	110				
Chromium	50.7	0.100	50.00	0	101	90	110				
Lead	47.5	0.100	50.00	0	95.0	90	110				
Selenium	47.6	1.00	50.00	0	95.2	90	110				
Silver	48.6	0.100	50.00	0	97.2	90	110				

Sample ID: MB-9289	SampType: MBLK	TestCode: 6020_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19781						
Client ID: PBW	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/20/2017	SeqNo: 264720						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.100									
Barium	ND	1.00									
Cadmium	ND	0.100									
Chromium	ND	0.100									
Lead	ND	0.100									
Selenium	ND	1.00									
Silver	ND	0.100									

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: LCS-9289	SampType: LCS	TestCode: 6020_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19781						
Client ID: LCSW	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/20/2017	SeqNo: 264721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.2	0.100	50.00	0	100	80	120				
Barium	50.4	1.00	50.00	0	101	80	120				
Cadmium	50.0	0.100	50.00	0	99.9	80	120				
Chromium	47.1	0.100	50.00	0	94.2	80	120				
Lead	50.1	0.100	50.00	0	100	80	120				
Selenium	49.5	1.00	50.00	0	99.0	80	120				
Silver	50.1	0.100	50.00	0	100	80	120				

Sample ID: A1701119-001BDUP	SampType: DUP	TestCode: 6020_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19781						
Client ID: ZZZZZ	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/20/2017	SeqNo: 264729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.174	0.100						0.2007	14.0	20	
Barium	40.4	1.00						41.83	3.57	20	
Cadmium	0.925	0.100						1.001	7.95	20	
Chromium	0.963	0.100						1.001	3.88	20	
Lead	6.75	0.100						7.049	4.39	20	
Selenium	ND	1.00						0	0	20	
Silver	ND	0.100						0	0	20	RF

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 11 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: A1701119-001BMS	SampType: MS	TestCode: 6020_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19781						
Client ID: ZZZZZZ	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/20/2017	SeqNo: 264730						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.8	0.100	50.00	0.2007	103	70	130				
Barium	93.5	1.00	50.00	41.83	103	70	130				
Cadmium	51.4	0.100	50.00	1.001	101	70	130				
Chromium	53.2	0.100	50.00	1.001	104	70	130				
Lead	58.3	0.100	50.00	7.049	102	70	130				
Selenium	51.0	1.00	50.00	0	102	70	130				
Silver	48.8	0.100	50.00	0.009144	97.6	70	130				

Sample ID: A1701119-001BMSD	SampType: MSD	TestCode: 6020_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19781						
Client ID: ZZZZZZ	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/20/2017	SeqNo: 264731						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.2	0.100	50.00	0.2007	104	70	130	51.83	0.783	20	
Barium	93.2	1.00	50.00	41.83	103	70	130	93.54	0.406	20	
Cadmium	51.3	0.100	50.00	1.001	101	70	130	51.44	0.219	20	
Chromium	51.0	0.100	50.00	1.001	99.9	70	130	53.21	4.33	20	
Lead	58.4	0.100	50.00	7.049	103	70	130	58.25	0.210	20	
Selenium	51.8	1.00	50.00	0	104	70	130	51.01	1.45	20	
Silver	47.8	0.100	50.00	0.009144	95.5	70	130	48.80	2.14	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 12 of 69
 O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19781						
Client ID: CCV	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/20/2017	SeqNo: 264963						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.1	0.100	50.00	0	96.3	90	110				
Barium	48.4	1.00	50.00	0	96.7	90	110				
Cadmium	48.4	0.100	50.00	0	96.8	90	110				
Chromium	49.3	0.100	50.00	0	98.6	90	110				
Lead	47.3	0.100	50.00	0	94.6	90	110				
Selenium	47.6	1.00	50.00	0	95.2	90	110				
Silver	47.0	0.100	50.00	0	94.1	90	110				

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19781						
Client ID: ICV	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/23/2017	SeqNo: 265097						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	48.6	1.00	50.00	0	97.2	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19781						
Client ID: CCV	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/23/2017	SeqNo: 265098						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	52.2	1.00	50.00	0	104	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 13 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19781						
Client ID: CCV	Batch ID: 9289	TestNo: SW6020A	SW3010A	Analysis Date: 1/23/2017	SeqNo: 265103						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	50.8	1.00	50.00	0	102	90	110				

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: ICV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266801						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.2	0.100	50.00	0	96.4	90	110				
Barium	49.2	1.00	50.00	0	98.5	90	110				
Cadmium	48.2	0.100	50.00	0	96.3	90	110				
Chromium	50.6	0.100	50.00	0	101	90	110				
Lead	49.1	0.100	50.00	0	98.2	90	110				
Selenium	49.0	1.00	50.00	0	98.0	90	110				
Silver	49.6	0.100	50.00	0	99.3	90	110				

Sample ID: MB-9347	SampType: MBLK	TestCode: 6020_W	Units: µg/L	Prep Date: 1/30/2017	RunNo: 19918						
Client ID: PBW	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266802						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.100									
Barium	ND	1.00									
Cadmium	ND	0.100									
Chromium	ND	0.100									
Lead	ND	0.100									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 14 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: MB-9347	SampType: MBLK	TestCode: 6020_W	Units: µg/L	Prep Date: 1/30/2017	RunNo: 19918						
Client ID: PBW	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266802						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	1.00									
Silver	ND	0.100									

Sample ID: LCS-9347	SampType: LCS	TestCode: 6020_W	Units: µg/L	Prep Date: 1/30/2017	RunNo: 19918						
Client ID: LCSW	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266803						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.0	0.100	50.00	0	100	80	120				
Barium	51.3	1.00	50.00	0	103	80	120				
Cadmium	51.5	0.100	50.00	0	103	80	120				
Chromium	50.1	0.100	50.00	0	100	80	120				
Lead	53.7	0.100	50.00	0	107	80	120				
Selenium	50.3	1.00	50.00	0	101	80	120				
Silver	58.7	0.100	50.00	0	117	80	120				

Sample ID: A1701178-004CDUP	SampType: DUP	TestCode: 6020_W	Units: µg/L	Prep Date: 1/30/2017	RunNo: 19918						
Client ID: ZZZZZ	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266809						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	3.66	0.100						3.502	4.50	20	
Barium	1.89	1.00						1.864	1.63	20	
Cadmium	ND	0.100						0	0	20	RF
Chromium	0.178	0.100						0.1736	2.45	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 15 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: A1701178-004CDUP	SampType: DUP	TestCode: 6020_W	Units: µg/L	Prep Date: 1/30/2017	RunNo: 19918						
Client ID: ZZZZZZ	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266809						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.100						1.136	200	20	RF
Selenium	ND	1.00						0	200	20	RF
Silver	ND	0.100						0	0	20	

Sample ID: A1701178-004CMS	SampType: MS	TestCode: 6020_W	Units: µg/L	Prep Date: 1/30/2017	RunNo: 19918						
Client ID: ZZZZZZ	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266810						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	58.6	0.100	50.00	3.502	110	70	130				
Barium	57.0	1.00	50.00	1.864	110	70	130				
Cadmium	49.8	0.100	50.00	0.01378	99.6	70	130				
Chromium	49.6	0.100	50.00	0.1736	98.9	70	130				
Lead	55.7	0.100	50.00	1.136	109	70	130				
Selenium	54.1	1.00	50.00	0.05456	108	70	130				
Silver	51.1	0.100	50.00	0	102	70	130				

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: CCV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266811						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.4	0.100	50.00	0	96.8	90	110				
Barium	50.3	1.00	50.00	0	101	90	110				
Cadmium	48.4	0.100	50.00	0	96.8	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 16 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: CCV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266811						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	50.5	0.100	50.00	0	101	90	110				
Lead	50.2	0.100	50.00	0	100	90	110				
Selenium	48.2	1.00	50.00	0	96.5	90	110				
Silver	49.9	0.100	50.00	0	99.8	90	110				

Sample ID: A1701178-004CMSD	SampType: MSD	TestCode: 6020_W	Units: µg/L	Prep Date: 1/30/2017	RunNo: 19918						
Client ID: ZZZZZZ	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266812						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	57.3	0.100	50.00	3.502	108	70	130	58.59	2.29	20	
Barium	54.0	1.00	50.00	1.864	104	70	130	56.99	5.31	20	
Cadmium	49.6	0.100	50.00	0.01378	99.1	70	130	49.84	0.573	20	
Chromium	50.3	0.100	50.00	0.1736	100	70	130	49.60	1.41	20	
Lead	53.9	0.100	50.00	1.136	106	70	130	55.71	3.31	20	
Selenium	53.1	1.00	50.00	0.05456	106	70	130	54.12	1.85	20	
Silver	51.6	0.100	50.00	0	103	70	130	51.11	0.996	20	

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: ICV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.7	0.100	50.00	0	95.5	90	110				
Barium	47.5	1.00	50.00	0	95.0	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 17 of 69
 O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: ICV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	48.1	0.100	50.00	0	96.1	90	110				
Chromium	49.2	0.100	50.00	0	98.3	90	110				
Lead	47.5	0.100	50.00	0	95.0	90	110				
Selenium	48.3	1.00	50.00	0	96.6	90	110				
Silver	52.8	0.100	50.00	0	106	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: CCV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 266945						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.5	0.100	50.00	0	95.1	90	110				
Barium	49.6	1.00	50.00	0	99.2	90	110				
Cadmium	47.1	0.100	50.00	0	94.2	90	110				
Chromium	49.3	0.100	50.00	0	98.7	90	110				
Lead	49.6	0.100	50.00	0	99.2	90	110				
Selenium	47.0	1.00	50.00	0	93.9	90	110				
Silver	54.6	0.100	50.00	0	109	90	110				

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: ICV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 2/1/2017	SeqNo: 267128						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	47.6	1.00	50.00	0	95.1	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 18 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_W

Sample ID: ICV	SampType: ICV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: ICV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 2/1/2017	SeqNo: 267128						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: CCV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 2/1/2017	SeqNo: 267128						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	46.9	1.00	50.00	0	93.9	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_W	Units: µg/L	Prep Date:	RunNo: 19918						
Client ID: CCV	Batch ID: 9347	TestNo: SW6020A	SW3010A	Analysis Date: 1/31/2017	SeqNo: 267149						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.2	0.100	50.00	0	96.4	90	110				
Barium	49.1	1.00	50.00	0	98.1	90	110				
Cadmium	48.9	0.100	50.00	0	97.7	90	110				
Chromium	51.4	0.100	50.00	0	103	90	110				
Lead	49.7	0.100	50.00	0	99.3	90	110				
Selenium	48.3	1.00	50.00	0	96.6	90	110				
Silver	49.6	0.100	50.00	0	99.1	90	110				

Qualifiers:	B Analyte detected in the associated Method Blank O RSD is greater than RSDlimit	H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits	ND Not Detected at the Reporting Limit S Spike Recovery outside accepted reco	Page 19 of 69
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QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_WDISS

Sample ID: ICV		SampType: ICV		TestCode: 6020_WDISS		Units: µg/L		Prep Date:		RunNo: 19913		
Client ID: ICV		Batch ID: 9351		TestNo: SW6020A				Analysis Date: 1/31/2017		SeqNo: 266701		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	48.2	0.100	50.00	0	96.4	90	110					
Barium	49.2	1.00	50.00	0	98.5	90	110					
Cadmium	48.2	0.100	50.00	0	96.3	90	110					
Chromium	50.6	0.100	50.00	0	101	90	110					
Lead	49.1	0.100	50.00	0	98.2	90	110					
Selenium	49.0	1.00	50.00	0	98.0	90	110					
Silver	49.6	0.100	50.00	0	99.3	90	110					

Sample ID: 1701106-046EMS		SampType: MS		TestCode: 6020_WDISS		Units: µg/L		Prep Date: 1/31/2017		RunNo: 19913		
Client ID: BM-B-12-W		Batch ID: 9351		TestNo: SW6020A				Analysis Date: 1/31/2017		SeqNo: 266707		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Barium	582	10.0	500.0	81.23	100	70	130					

Sample ID: 1701106-046EMSD		SampType: MSD		TestCode: 6020_WDISS		Units: µg/L		Prep Date: 1/31/2017		RunNo: 19913		
Client ID: BM-B-12-W		Batch ID: 9351		TestNo: SW6020A				Analysis Date: 1/31/2017		SeqNo: 266708		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Barium	582	10.0	500.0	81.23	100	70	130	582.1	0.00192	20		

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 20 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_WDISS

Sample ID: 1701106-046EDUP		SampType: DUP		TestCode: 6020_WDISS		Units: µg/L		Prep Date: 1/31/2017		RunNo: 19913	
Client ID: BM-B-12-W		Batch ID: 9351		TestNo: SW6020A		Analysis Date: 1/31/2017		SeqNo: 266712			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	16.4	0.100						16.06	1.95	20	
Barium	81.0	1.00						83.18	2.60	20	
Cadmium	ND	0.100						0	0	20	
Chromium	0.613	0.100						0.6072	0.916	20	
Lead	0.199	0.100						0.2069	3.82	20	
Selenium	ND	1.00						0	0	20	RF
Silver	ND	0.100						0	0	20	

Sample ID: 1701106-046EMS		SampType: MS		TestCode: 6020_WDISS		Units: µg/L		Prep Date: 1/31/2017		RunNo: 19913	
Client ID: BM-B-12-W		Batch ID: 9351		TestNo: SW6020A		Analysis Date: 1/31/2017		SeqNo: 266712			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	63.0	0.100	50.00	16.06	93.8	70	130				
Cadmium	46.9	0.100	50.00	0.01542	93.9	70	130				
Chromium	51.1	0.100	50.00	0.6072	101	70	130				
Lead	50.2	0.100	50.00	0.2069	100	70	130				
Selenium	45.9	1.00	50.00	0.08106	91.7	70	130				
Silver	49.4	0.100	50.00	0.007652	98.9	70	130				

Sample ID: 1701106-046EMSD		SampType: MSD		TestCode: 6020_WDISS		Units: µg/L		Prep Date: 1/31/2017		RunNo: 19913	
Client ID: BM-B-12-W		Batch ID: 9351		TestNo: SW6020A		Analysis Date: 1/31/2017		SeqNo: 266712			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 21 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_WDISS

Sample ID: 1701106-046EMSD	SampType: MSD	TestCode: 6020_WDISS	Units: µg/L	Prep Date: 1/31/2017	RunNo: 19913						
Client ID: BM-B-12-W	Batch ID: 9351	TestNo: SW6020A	Analysis Date: 1/31/2017	SeqNo: 266713							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	62.4	0.100	50.00	16.06	92.7	70	130	62.96	0.915	20	
Cadmium	46.4	0.100	50.00	0.01542	92.8	70	130	46.94	1.07	20	
Chromium	49.5	0.100	50.00	0.6072	97.9	70	130	51.12	3.15	20	
Lead	48.0	0.100	50.00	0.2069	95.6	70	130	50.24	4.49	20	
Selenium	45.9	1.00	50.00	0.08106	91.6	70	130	45.94	0.172	20	
Silver	47.6	0.100	50.00	0.007652	95.1	70	130	49.43	3.85	20	

Sample ID: ICV	SampType: ICV	TestCode: 6020_WDISS	Units: µg/L	Prep Date:	RunNo: 19913						
Client ID: ICV	Batch ID: 9351	TestNo: SW6020A	Analysis Date: 1/31/2017	SeqNo: 266958							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.7	0.100	50.00	0	95.5	90	110				
Barium	47.5	1.00	50.00	0	95.0	90	110				
Cadmium	48.1	0.100	50.00	0	96.1	90	110				
Chromium	49.2	0.100	50.00	0	98.3	90	110				
Lead	47.5	0.100	50.00	0	95.0	90	110				
Selenium	48.3	1.00	50.00	0	96.6	90	110				
Silver	52.8	0.100	50.00	0	106	90	110				

Sample ID: CCV	SampType: CCV	TestCode: 6020_WDISS	Units: µg/L	Prep Date:	RunNo: 19913						
Client ID: CCV	Batch ID: 9351	TestNo: SW6020A	Analysis Date: 1/31/2017	SeqNo: 266960							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 22 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 6020_WDISS

Sample ID: CCV	SampType: CCV	TestCode: 6020_WDISS	Units: µg/L	Prep Date:	RunNo: 19913						
Client ID: CCV	Batch ID: 9351	TestNo: SW6020A		Analysis Date: 1/31/2017	SeqNo: 266960						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.5	0.100	50.00	0	95.1	90	110				
Barium	49.6	1.00	50.00	0	99.2	90	110				
Cadmium	47.1	0.100	50.00	0	94.2	90	110				
Chromium	49.3	0.100	50.00	0	98.7	90	110				
Lead	49.6	0.100	50.00	0	99.2	90	110				
Selenium	47.0	1.00	50.00	0	93.9	90	110				
Silver	54.6	0.100	50.00	0	109	90	110				

Sample ID: MB-9351	SampType: MBLK	TestCode: 6020_WDISS	Units: µg/L	Prep Date: 1/31/2017	RunNo: 19913						
Client ID: PBW	Batch ID: 9351	TestNo: SW6020A		Analysis Date: 1/31/2017	SeqNo: 266962						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.100									
Barium	ND	1.00									
Cadmium	ND	0.100									
Chromium	ND	0.100									
Lead	ND	0.100									
Selenium	ND	1.00									
Silver	ND	0.100									

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_5035

Sample ID: CCV MSVWS-2061		SampType: CCV		TestCode: 8260_5035		Units: µg/Kg		Prep Date:		RunNo: 19914	
Client ID: CCV		Batch ID: 9355		TestNo: SW8260B SW5035A		Analysis Date: 1/30/2017		SeqNo: 266721			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	79.6	10.0	80.00	0	99.5	80	120				
1,2-Dichloropropane	88.1	10.0	80.00	0	110	80	120				
Chloroform	79.3	10.0	80.00	0	99.2	80	120				
Ethylbenzene	78.5	10.0	80.00	0	98.1	80	120				
Toluene	77.8	10.0	80.00	0	97.2	80	120				
Vinyl Chloride	67.7	10.0	80.00	0	84.6	80	120				

Sample ID: LCS MSVWS-2062		SampType: LCS		TestCode: 8260_5035		Units: µg/Kg		Prep Date:		RunNo: 19914	
Client ID: LCSS		Batch ID: 9355		TestNo: SW8260B SW5035A		Analysis Date: 1/30/2017		SeqNo: 266722			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	45.5	10.0	40.00	0	114	72.4	131				
Benzene	50.7	10.0	40.00	0	127	74.3	136				
Chlorobenzene	39.8	10.0	40.00	0	99.4	75.9	121				
Toluene	40.3	10.0	40.00	0	101	75.1	123				
Trichloroethene	48.4	10.0	40.00	0	121	77.8	129				

Sample ID: MB		SampType: MBLK		TestCode: 8260_5035		Units: µg/Kg		Prep Date:		RunNo: 19914	
Client ID: PBS		Batch ID: 9355		TestNo: SW8260B SW5035A		Analysis Date: 1/30/2017		SeqNo: 266723			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10.0									
1,1,1-Trichloroethane	ND	10.0									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 24 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_5035

Sample ID: MB	SampType: MBLK	TestCode: 8260_5035	Units: µg/Kg	Prep Date:	RunNo: 19914						
Client ID: PBS	Batch ID: 9355	TestNo: SW8260B SW5035A	Analysis Date: 1/30/2017	SeqNo: 266723							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	10.0									
1,1,2-Trichloroethane	ND	10.0									
1,1-Dichloroethane	ND	10.0									
1,1-Dichloroethene	ND	10.0									
1,1-Dichloropropene	ND	10.0									
1,2,3-Trichlorobenzene	ND	10.0									
1,2,3-Trichloropropane	ND	10.0									
1,2,4-Trichlorobenzene	ND	10.0									
1,2,4-Trimethylbenzene	ND	10.0									
1,2-Dibromo-3-chloropropane	ND	10.0									
1,2-Dibromoethane	ND	10.0									
1,2-Dichlorobenzene	ND	10.0									
1,2-Dichloroethane	ND	10.0									
1,2-Dichloropropane	ND	10.0									
1,3,5-Trimethylbenzene	ND	10.0									
1,3-Dichlorobenzene	ND	10.0									
1,3-Dichloropropane	ND	10.0									
1,4-Dichlorobenzene	ND	10.0									
2,2-Dichloropropane	ND	10.0									
2-Butanone	ND	40.0									
2-Chlorotoluene	ND	10.0									
2-Hexanone	ND	20.0									
4-Chlorotoluene	ND	10.0									
4-Isopropyltoluene	ND	10.0									
4-Methyl-2-pentanone	ND	40.0									
Acetone	ND	100									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 25 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_5035

Sample ID: MB	SampType: MBLK	TestCode: 8260_5035	Units: µg/Kg	Prep Date:	RunNo: 19914						
Client ID: PBS	Batch ID: 9355	TestNo: SW8260B	SW5035A	Analysis Date: 1/30/2017	SeqNo: 266723						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10.0									
Bromobenzene	ND	10.0									
Bromochloromethane	ND	10.0									
Bromodichloromethane	ND	10.0									
Bromoform	ND	10.0									
Bromomethane	ND	10.0									
Carbon Disulfide	ND	10.0									
Carbon tetrachloride	ND	10.0									
Chlorobenzene	ND	10.0									
Chloroethane	ND	10.0									
Chloroform	ND	10.0									
Chloromethane	ND	10.0									
cis-1,2-Dichloroethene	ND	10.0									
cis-1,3-Dichloropropene	ND	10.0									
Dibromochloromethane	ND	10.0									
Dibromomethane	ND	10.0									
Dichlorodifluoromethane	ND	10.0									
Ethylbenzene	ND	10.0									
Hexachlorobutadiene	ND	10.0									
Isopropylbenzene	ND	10.0									
m,p-Xylene	ND	20.0									
Methyl tert-butyl ether	ND	10.0									
Methylene Chloride	ND	50.0									
Naphthalene	ND	10.0									
n-Butylbenzene	ND	10.0									
n-Propylbenzene	ND	10.0									

Qualifiers:	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	R RPD outside accepted recovery limits	S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_5035

Sample ID: MB	SampType: MBLK	TestCode: 8260_5035	Units: µg/Kg	Prep Date:	RunNo: 19914						
Client ID: PBS	Batch ID: 9355	TestNo: SW8260B	SW5035A	Analysis Date: 1/30/2017	SeqNo: 266723						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	10.0									
sec-Butylbenzene	ND	10.0									
Styrene	ND	10.0									
tert-Butylbenzene	ND	10.0									
Tetrachloroethene	ND	10.0									
Toluene	ND	10.0									
trans-1,2-Dichloroethene	ND	10.0									
trans-1,3-Dichloropropene	ND	10.0									
Trichloroethene	ND	10.0									
Trichlorofluoromethane	ND	10.0									
Vinyl Chloride	ND	10.0									
Surr: 1,2-Dichloroethane-d4	103		100.0		103	71.5	124				
Surr: 4-Bromofluorobenzene	102		100.0		102	75.7	122				
Surr: Dibromofluoromethane	110		100.0		110	64.3	124				
Surr: Toluene-d8	95.5		100.0		95.5	74.9	120				

Sample ID: 1701106-001CMS	SampType: MS	TestCode: 8260_5035	Units: µg/Kg-dry	Prep Date:	RunNo: 19914						
Client ID: BM-B-20-1.0	Batch ID: 9355	TestNo: SW8260B	SW5035A	Analysis Date: 1/30/2017	SeqNo: 266729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	59.4	15.4	61.75	0	96.2	69.2	158				
Benzene	63.8	15.4	61.75	0	103	71.7	147				
Chlorobenzene	51.6	15.4	61.75	0	83.6	75	148				
Toluene	54.3	15.4	61.75	0	87.9	75.8	153				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 27 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_5035

Sample ID: 1701106-001CMS	SampType: MS	TestCode: 8260_5035	Units: µg/Kg-dry	Prep Date:	RunNo: 19914						
Client ID: BM-B-20-1.0	Batch ID: 9355	TestNo: SW8260B	SW5035A	Analysis Date: 1/30/2017	SeqNo: 266729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene	58.9	15.4	61.75	0	95.4	77.1	138				

Sample ID: 1701106-001CMSD	SampType: MSD	TestCode: 8260_5035	Units: µg/Kg-dry	Prep Date:	RunNo: 19914						
Client ID: BM-B-20-1.0	Batch ID: 9355	TestNo: SW8260B	SW5035A	Analysis Date: 1/30/2017	SeqNo: 266730						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	61.4	15.4	61.75	0	99.4	69.2	158	59.41	3.25	20	
Benzene	63.4	15.4	61.75	0	103	71.7	147	63.75	0.607	20	
Chlorobenzene	56.0	15.4	61.75	0	90.6	75	148	51.63	8.03	20	
Toluene	59.7	15.4	61.75	0	96.7	75.8	153	54.26	9.59	20	
Trichloroethene	58.9	15.4	61.75	0	95.3	77.1	138	58.89	0.0524	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 28 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_W

Sample ID: CCV MSVWS-2061		SampType: CCV		TestCode: 8260_W		Units: µg/L		Prep Date:		RunNo: 19903	
Client ID: CCV		Batch ID: R19903		TestNo: SW8260B		Analysis Date: 1/27/2017				SeqNo: 266678	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	37.3	1.00	40.00	0	93.4	80	120				
1,2-Dichloropropane	44.1	1.00	40.00	0	110	80	120				
Chloroform	39.7	1.00	40.00	0	99.2	80	120				
Ethylbenzene	34.5	1.00	40.00	0	86.4	80	120				
Toluene	36.9	1.00	40.00	0	92.4	80	120				
Vinyl chloride	42.7	1.00	40.00	0	107	80	120				

Sample ID: LCS MSVWS-2062		SampType: LCS		TestCode: 8260_W		Units: µg/L		Prep Date:		RunNo: 19903	
Client ID: LCSW		Batch ID: R19903		TestNo: SW8260B		Analysis Date: 1/27/2017				SeqNo: 266679	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	33.0	1.00	40.00	0	82.5	61.2	135				
Benzene	41.5	0.300	40.00	0	104	76.8	125				
Chlorobenzene	36.6	1.00	40.00	0	91.6	84.1	116				
Toluene	35.2	1.00	40.00	0	88.1	82	122				
Trichloroethene	37.4	1.00	40.00	0	93.5	68.5	124				

Sample ID: LCSD MSVWS-2062		SampType: LCSD		TestCode: 8260_W		Units: µg/L		Prep Date:		RunNo: 19903	
Client ID: LCSS02		Batch ID: R19903		TestNo: SW8260B		Analysis Date: 1/27/2017				SeqNo: 266680	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	37.7	1.00	40.00	0	94.3	61.2	135	33.00	13.3	20	
Benzene	43.7	0.300	40.00	0	109	76.8	125	41.54	5.14	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 29 of 69
 O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_W

Sample ID: LCSD MSVWS-2062		SampType: LCSD		TestCode: 8260_W		Units: µg/L		Prep Date:		RunNo: 19903	
Client ID: LCSS02		Batch ID: R19903		TestNo: SW8260B		Analysis Date: 1/27/2017				SeqNo: 266680	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	37.9	1.00	40.00	0	94.8	84.1	116	36.65	3.35	20	
Toluene	36.9	1.00	40.00	0	92.2	82	122	35.25	4.52	20	
Trichloroethene	39.3	1.00	40.00	0	98.2	68.5	124	37.40	4.93	20	

Sample ID: A1701162-001AMS		SampType: MS		TestCode: 8260_W		Units: µg/L		Prep Date:		RunNo: 19903	
Client ID: ZZZZZ		Batch ID: R19903		TestNo: SW8260B		Analysis Date: 1/27/2017				SeqNo: 266681	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	43.7	1.00	40.00	0	109	47.8	165				
Benzene	45.8	0.300	40.00	0	114	74.1	136				
Chlorobenzene	40.4	1.00	40.00	0	101	70.7	133				
Toluene	39.6	1.00	40.00	0	99.0	68.4	135				
Trichloroethene	41.5	1.00	40.00	0	104	50.8	164				

Sample ID: A1701162-001AMSD		SampType: MSD		TestCode: 8260_W		Units: µg/L		Prep Date:		RunNo: 19903	
Client ID: ZZZZZ		Batch ID: R19903		TestNo: SW8260B		Analysis Date: 1/27/2017				SeqNo: 266682	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	45.1	1.00	40.00	0	113	47.8	165	43.72	3.04	20	
Benzene	44.4	0.300	40.00	0	111	74.1	136	45.77	3.15	20	
Chlorobenzene	38.6	1.00	40.00	0	96.5	70.7	133	40.35	4.41	20	
Toluene	37.6	1.00	40.00	0	94.0	68.4	135	39.62	5.23	20	
Trichloroethene	39.1	1.00	40.00	0	97.9	50.8	164	41.54	5.95	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 30 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_W

Sample ID: A1701162-001AMSD	SampType: MSD	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 19903						
Client ID: ZZZZZZ	Batch ID: R19903	TestNo: SW8260B		Analysis Date: 1/27/2017	SeqNo: 266682						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: MB	SampType: MBLK	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 19903						
Client ID: PBW	Batch ID: R19903	TestNo: SW8260B		Analysis Date: 1/27/2017	SeqNo: 266683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1,1,2-Tetrachloroethane	ND	1.00
1,1,1-Trichloroethane	ND	1.00
1,1,2,2-Tetrachloroethane	ND	1.00
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	1.00
1,1,2-Trichloroethane	ND	1.00
1,1-Dichloroethane	ND	1.00
1,1-Dichloroethene	ND	1.00
1,1-Dichloropropene	ND	1.00
1,2,3-Trichlorobenzene	ND	1.00
1,2,3-Trichloropropane	ND	1.00
1,2,4-Trichlorobenzene	ND	1.00
1,2,4-Trimethylbenzene	ND	1.00
1,2-Dibromo-3-chloropropane	ND	1.00
1,2-Dibromoethane	ND	1.00
1,2-Dichlorobenzene	ND	1.00
1,2-Dichloroethane	ND	1.00
1,2-Dichloropropane	ND	1.00
1,3,5-Trimethylbenzene	ND	1.00
1,3-Dichlorobenzene	ND	1.00

Qualifiers:	B Analyte detected in the associated Method Blank O RSD is greater than RSDlimit	H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits	ND Not Detected at the Reporting Limit S Spike Recovery outside accepted reco	Page 31 of 69
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QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_W

Sample ID: MB	SampType: MBLK	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 19903						
Client ID: PBW	Batch ID: R19903	TestNo: SW8260B		Analysis Date: 1/27/2017	SeqNo: 266683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichloropropane	ND	1.00									
1,4-Dichlorobenzene	ND	1.00									
2,2-Dichloropropane	ND	1.00									
2-Butanone	ND	10.0									
2-Chlorotoluene	ND	1.00									
2-Hexanone	ND	10.0									
4-Chlorotoluene	ND	1.00									
4-Isopropyltoluene	ND	1.00									
4-Methyl-2-pentanone	ND	20.0									
Acetone	ND	50.0									
Acrylonitrile	ND	5.00									
Benzene	ND	0.300									
Bromobenzene	ND	1.00									
Bromochloromethane	ND	1.00									
Bromodichloromethane	ND	1.00									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									
Carbon disulfide	ND	2.00									
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	1.00									
Chloroethane	ND	1.00									
Chloroform	ND	1.00									
Chloromethane	ND	1.00									
cis-1,2-Dichloroethene	ND	1.00									
cis-1,3-Dichloropropene	ND	1.00									
Dibromochloromethane	ND	1.00									

Qualifiers:	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	R RPD outside accepted recovery limits	S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_W

Sample ID: MB	SampType: MBLK	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 19903						
Client ID: PBW	Batch ID: R19903	TestNo: SW8260B		Analysis Date: 1/27/2017	SeqNo: 266683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromomethane	ND	1.00									
Dichlorodifluoromethane	ND	1.00									
Ethylbenzene	ND	1.00									
Hexachlorobutadiene	ND	1.00									
Isopropylbenzene	ND	1.00									
m,p-Xylene	ND	2.00									
Methyl tert-butyl ether	ND	1.00									
Methylene chloride	ND	20.0									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	1.00									
n-Propylbenzene	ND	1.00									
o-Xylene	ND	1.00									
sec-Butylbenzene	ND	1.00									
Styrene	ND	1.00									
tert-Butylbenzene	ND	1.00									
Tetrachloroethene	ND	1.00									
Toluene	ND	1.00									
trans-1,2-Dichloroethene	ND	1.00									
trans-1,3-Dichloropropene	ND	1.00									
Trichloroethene	ND	1.00									
Trichlorofluoromethane	ND	1.00									
Vinyl chloride	ND	1.00									
Surr: 1,2-Dichloroethane-d4	85.4		100.0		85.4	75.3	126				
Surr: 4-Bromofluorobenzene	102		100.0		102	78.1	120				
Surr: Dibromofluoromethane	96.6		100.0		96.6	74.2	122				
Surr: Toluene-d8	92.5		100.0		92.5	76.2	135				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 33 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8260_W

Sample ID: MB	SampType: MBLK	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 19903						
Client ID: PBW	Batch ID: R19903	TestNo: SW8260B		Analysis Date: 1/27/2017	SeqNo: 266683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 34 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8270AFLL_S

Sample ID: CCV MSSWS-1410	SampType: CCV	TestCode: 8270AFLL_S	Units: µg/Kg	Prep Date:	RunNo: 19938						
Client ID: CCV	Batch ID: 9334	TestNo: SW8270D	SW 3545A	Analysis Date: 1/30/2017	SeqNo: 267154						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	536	500	666.6	0	80.4	80	120				

Sample ID: MB-9334	SampType: MBLK	TestCode: 8270AFLL_S	Units: µg/Kg	Prep Date: 1/27/2017	RunNo: 19938						
Client ID: PBS	Batch ID: 9334	TestNo: SW8270D	SW 3545A	Analysis Date: 1/30/2017	SeqNo: 267155						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	ND	500									
Surr: 2,4,6-Tribromophenol	2330		3333		69.9	39.1	119				
Surr: 2-Fluorophenol	2170		3333		65.2	40.7	111				
Surr: Phenol-d6	2420		3333		72.7	37.5	117				

Sample ID: 1701106-032BMS	SampType: MS	TestCode: 8270AFLL_S	Units: µg/Kg	Prep Date: 1/27/2017	RunNo: 19938						
Client ID: BM-B-3-1.0	Batch ID: 9334	TestNo: SW8270D	SW 3545A	Analysis Date: 1/30/2017	SeqNo: 267161						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	761	500	1666	0	45.7	30	130				

Sample ID: 1701106-032BMSD	SampType: MSD	TestCode: 8270AFLL_S	Units: µg/Kg	Prep Date: 1/27/2017	RunNo: 19938						
Client ID: BM-B-3-1.0	Batch ID: 9334	TestNo: SW8270D	SW 3545A	Analysis Date: 1/30/2017	SeqNo: 267162						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	849	500	1666	0	50.9	30	130	761.0	10.9	30	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 35 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: 8270AFLL_S

Sample ID: 1701106-032BMSD	SampType: MSD	TestCode: 8270AFLL_S	Units: µg/Kg	Prep Date: 1/27/2017	RunNo: 19938						
Client ID: BM-B-3-1.0	Batch ID: 9334	TestNo: SW8270D	SW 3545A	Analysis Date: 1/30/2017	SeqNo: 267162						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LCS-9334	SampType: LCS	TestCode: 8270AFLL_S	Units: µg/Kg	Prep Date: 1/27/2017	RunNo: 19938						
Client ID: LCSS	Batch ID: 9334	TestNo: SW8270D	SW 3545A	Analysis Date: 1/30/2017	SeqNo: 267163						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol	983	500	1666	0	59.0	30	130				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 36 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CT

Sample ID: MB-9292	SampType: MBLK	TestCode: HG_CT	Units: mg/L	Prep Date: 1/20/2017	RunNo: 19779
Client ID: PBW	Batch ID: 9292	TestNo: E7470A	E245.1	Analysis Date: 1/20/2017	SeqNo: 264678
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury ND 0.000100

Sample ID: LCS-9292	SampType: LCS	TestCode: HG_CT	Units: mg/L	Prep Date: 1/20/2017	RunNo: 19779
Client ID: LCSW	Batch ID: 9292	TestNo: E7470A	E245.1	Analysis Date: 1/20/2017	SeqNo: 264678
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00387 0.000100 0.004000 0 96.8 85.4 116

Sample ID: 1701106-043DDUP	SampType: DUP	TestCode: HG_CT	Units: mg/L	Prep Date: 1/20/2017	RunNo: 19779
Client ID: BM-FD-011717-W	Batch ID: 9292	TestNo: E7470A	E245.1	Analysis Date: 1/20/2017	SeqNo: 264681
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury ND 0.000100 0 0 20

Sample ID: 1701106-043DMS	SampType: MS	TestCode: HG_CT	Units: mg/L	Prep Date: 1/20/2017	RunNo: 19779
Client ID: BM-FD-011717-W	Batch ID: 9292	TestNo: E7470A	E245.1	Analysis Date: 1/20/2017	SeqNo: 264682
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00387 0.000100 0.004000 0 96.8 69.5 125

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 37 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CT

Sample ID: 1701106-043DMSD	SampType: MSD	TestCode: HG_CT	Units: mg/L	Prep Date: 1/20/2017	RunNo: 19779						
Client ID: BM-FD-011717-W	Batch ID: 9292	TestNo: E7470A	E245.1	Analysis Date: 1/20/2017	SeqNo: 264683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00407	0.000100	0.004000	0	102	69.5	125	0.003874	4.86	20	

Sample ID: 9292-CCV	SampType: CCV	TestCode: HG_CT	Units: mg/L	Prep Date:	RunNo: 19779						
Client ID: CCV	Batch ID: 9292	TestNo: E7470A	E245.1	Analysis Date: 1/20/2017	SeqNo: 264690						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00428	0.000100	0.004000	0	107	90	110				

Sample ID: 9292-CCV	SampType: CCV	TestCode: HG_CT	Units: mg/L	Prep Date:	RunNo: 19779						
Client ID: CCV	Batch ID: 9292	TestNo: E7470A	E245.1	Analysis Date: 1/20/2017	SeqNo: 264692						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00420	0.000100	0.004000	0	105	90	110				

Sample ID: MB-9362	SampType: MBLK	TestCode: HG_CT	Units: mg/L	Prep Date: 2/1/2017	RunNo: 19930						
Client ID: PBW	Batch ID: 9362	TestNo: E7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267036						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.000100									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 38 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CT

Sample ID: LCS-9362	SampType: LCS	TestCode: HG_CT	Units: mg/L	Prep Date: 2/1/2017	RunNo: 19930						
Client ID: LCSW	Batch ID: 9362	TestNo: E7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267037						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.00386 0.000100 0.004000 0 96.5 85.4 116

Sample ID: 1701106-046DDUP	SampType: DUP	TestCode: HG_CT	Units: mg/L	Prep Date: 2/1/2017	RunNo: 19930						
Client ID: BM-B-12-W	Batch ID: 9362	TestNo: E7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267039						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.000100 0 0 20

Sample ID: 1701106-046DMS	SampType: MS	TestCode: HG_CT	Units: mg/L	Prep Date: 2/1/2017	RunNo: 19930						
Client ID: BM-B-12-W	Batch ID: 9362	TestNo: E7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267040						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.000994 0.000100 0.004000 0 24.8 69.5 125 SMI

Sample ID: 1701106-046DMSD	SampType: MSD	TestCode: HG_CT	Units: mg/L	Prep Date: 2/1/2017	RunNo: 19930						
Client ID: BM-B-12-W	Batch ID: 9362	TestNo: E7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267041						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.00114 0.000100 0.004000 0 28.5 69.5 125 0.0009940 13.8 20 SMI

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 39 of 69
 O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CT

Sample ID: 9362CCV	SampType: CCV	TestCode: HG_CT	Units: mg/L	Prep Date:	RunNo: 19930						
Client ID: CCV	Batch ID: 9362	TestNo: E7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267046						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00402	0.000100	0.004000	0	100	90	110				

Sample ID: 9362CCV	SampType: CCV	TestCode: HG_CT	Units: mg/L	Prep Date:	RunNo: 19930						
Client ID: CCV	Batch ID: 9362	TestNo: E7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267051						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00365	0.000100	0.004000	0	91.2	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 40 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CTS

Sample ID: MB-9331	SampType: MBLK	TestCode: HG_CTS	Units: mg/Kg	Prep Date: 1/26/2017	RunNo: 19869
Client ID: PBS	Batch ID: 9331	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/27/2017	SeqNo: 266147
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	ND	0.0167			

Sample ID: LCS-9331	SampType: LCS	TestCode: HG_CTS	Units: mg/Kg	Prep Date: 1/26/2017	RunNo: 19869
Client ID: LCSS	Batch ID: 9331	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/27/2017	SeqNo: 266148
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.376	0.0167	0.4000	0	94.1 80 120

Sample ID: 1701106-003BDUP	SampType: DUP	TestCode: HG_CTS	Units: mg/Kg	Prep Date: 1/26/2017	RunNo: 19869
Client ID: BM-B-19-1.0	Batch ID: 9331	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/27/2017	SeqNo: 266150
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.0216	0.0162			0.02583 18.0 20

Sample ID: 1701106-003BMS	SampType: MS	TestCode: HG_CTS	Units: mg/Kg	Prep Date: 1/26/2017	RunNo: 19869
Client ID: BM-B-19-1.0	Batch ID: 9331	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/27/2017	SeqNo: 266151
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.319	0.0166	0.3971	0.02583	73.9 75 125 S

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 41 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CTS

Sample ID: 1701106-003BMSD	SampType: MSD	TestCode: HG_CTS	Units: mg/Kg	Prep Date: 1/26/2017	RunNo: 19869						
Client ID: BM-B-19-1.0	Batch ID: 9331	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/27/2017	SeqNo: 266152						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.334	0.0166	0.3982	0.02583	77.5	75	125	0.3194	4.55	20	

Sample ID: 9331CCV	SampType: CCV	TestCode: HG_CTS	Units: mg/Kg	Prep Date:	RunNo: 19869						
Client ID: CCV	Batch ID: 9331	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/27/2017	SeqNo: 266159						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.410	0.0167	0.4000	0	103	90	110				

Sample ID: 9331CCV	SampType: CCV	TestCode: HG_CTS	Units: mg/Kg	Prep Date:	RunNo: 19869						
Client ID: CCV	Batch ID: 9331	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/27/2017	SeqNo: 266164						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.422	0.0167	0.4000	0	106	90	110				

Sample ID: MB-9352	SampType: MBLK	TestCode: HG_CTS	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19905						
Client ID: PBS	Batch ID: 9352	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/31/2017	SeqNo: 266601						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0167									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 42 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CTS

Sample ID: LCS-9352	SampType: LCS	TestCode: HG_CTS	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19905						
Client ID: LCSS	Batch ID: 9352	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/31/2017	SeqNo: 266602						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.421 0.0167 0.4000 0 105 80 120

Sample ID: 1701106-010BDUP	SampType: DUP	TestCode: HG_CTS	Units: mg/Kg-dry	Prep Date: 1/30/2017	RunNo: 19905						
Client ID: BM-B-16-6.0	Batch ID: 9352	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/31/2017	SeqNo: 266604						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.0235 0 0 20

Sample ID: 1701106-010BMS	SampType: MS	TestCode: HG_CTS	Units: mg/Kg-dry	Prep Date: 1/30/2017	RunNo: 19905						
Client ID: BM-B-16-6.0	Batch ID: 9352	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/31/2017	SeqNo: 266605						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.486 0.0237 0.5668 0.02197 81.8 75 125

Sample ID: 1701106-010BMSD	SampType: MSD	TestCode: HG_CTS	Units: mg/Kg-dry	Prep Date: 1/30/2017	RunNo: 19905						
Client ID: BM-B-16-6.0	Batch ID: 9352	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/31/2017	SeqNo: 266606						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.517 0.0246 0.5902 0.02197 83.9 75 125 0.4856 6.33 20

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 43 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HG_CTS

Sample ID: 9352CCV	SampType: CCV	TestCode: HG_CTS	Units: mg/Kg	Prep Date:	RunNo: 19905						
Client ID: CCV	Batch ID: 9352	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/31/2017	SeqNo: 266610						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.420	0.0167	0.4000	0	105	90	110				

Sample ID: 9352CCV	SampType: CCV	TestCode: HG_CTS	Units: mg/Kg	Prep Date:	RunNo: 19905						
Client ID: CCV	Batch ID: 9352	TestNo: SW 7471B	SW 7471B	Analysis Date: 1/31/2017	SeqNo: 266615						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.383	0.0167	0.4000	0	95.8	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 44 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HGDIS_GW

Sample ID: MB-9362	SampType: MBLK	TestCode: HGDIS_GW	Units: mg/L	Prep Date: 2/1/2017	RunNo: 19932
Client ID: PBW	Batch ID: 9362	TestNo: SW7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267062
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury ND 0.000100

Sample ID: LCS-9362	SampType: LCS	TestCode: HGDIS_GW	Units: mg/L	Prep Date: 2/1/2017	RunNo: 19932
Client ID: LCSW	Batch ID: 9362	TestNo: SW7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267063
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00386 0.000100 0.004000 0 96.5 85.4 116

Sample ID: A1701106-046DDUP	SampType: DUP	TestCode: HGDIS_GW	Units: mg/L	Prep Date:	RunNo: 19932
Client ID: ZZZZZZ	Batch ID: 9362	TestNo: SW7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267068
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury ND 0.000100 0 0 20

Sample ID: A1701106-046DMS	SampType: MS	TestCode: HGDIS_GW	Units: mg/L	Prep Date:	RunNo: 19932
Client ID: ZZZZZZ	Batch ID: 9362	TestNo: SW7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267069
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.000994 0.000100 0.004000 0 24.8 69.5 125 SMI

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 45 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: HGDIS_GW

Sample ID: A1701106-046DMSD	SampType: MSD	TestCode: HGDIS_GW	Units: mg/L	Prep Date:	RunNo: 19932						
Client ID: ZZZZZZ	Batch ID: 9362	TestNo: SW7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267070						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00114	0.000100	0.004000	0	28.5	69.5	125	0.0009940	13.8	20	SMI

Sample ID: 9362CCV	SampType: CCV	TestCode: HGDIS_GW	Units: mg/L	Prep Date:	RunNo: 19932						
Client ID: CCV	Batch ID: 9362	TestNo: SW7470A	E245.1	Analysis Date: 2/1/2017	SeqNo: 267071						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00402	0.000100	0.004000	0	100	90	110				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 46 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCV	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 265680						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	936	15.0	999.0	0	93.6	85	115
Lube Oil	513	50.0	499.5	0	103	85	115

Sample ID: MB-9314	SampType: MBLK	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/25/2017	RunNo: 19844						
Client ID: PBS	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/25/2017	SeqNo: 265681						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0					
Lube Oil	ND	50.0					
Surr: o-Terphenyl	26.3		33.30		79.0	50	150

Sample ID: LCS-9314	SampType: LCS	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/25/2017	RunNo: 19844						
Client ID: LCSS	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/25/2017	SeqNo: 265682						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	164	15.0	166.5	0	98.3	76.3	125
Lube Oil	162	50.0	166.5	0	97.5	69.9	127

Sample ID: 1701105-001ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/25/2017	RunNo: 19844						
Client ID: ZZZZZ	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/25/2017	SeqNo: 265685						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 47 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: 1701105-001ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/25/2017	RunNo: 19844						
Client ID: ZZZZZZ	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/25/2017	SeqNo: 265685						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	21.8						0	0	20	RF
Lube Oil	ND	72.6						0	0	20	RF

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCV	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 265696						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	923	15.0	999.0	0	92.4	85	115				
Lube Oil	486	50.0	499.5	0	97.3	85	115				

Sample ID: CCB	SampType: CCB	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCB	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 265697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									
Surr: o-Terphenyl	26.0		33.30		78.2	50	150				

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCV	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/25/2017	SeqNo: 265703						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 48 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCV	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/25/2017	SeqNo: 265703						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	1190	15.0	1332	0	89.3	85	115
Lube Oil	664	50.0	666.0	0	99.6	85	115

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCV	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 266103						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	944	15.0	999.0	0	94.5	85	115
Lube Oil	452	50.0	499.5	0	90.4	85	115

Sample ID: CCB-9314	SampType: CCB	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCB	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 266104						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0					
Lube Oil	ND	50.0					
Surr: o-Terphenyl	26.4		33.30		79.2	50	150

Sample ID: 1701106-015ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/25/2017	RunNo: 19844						
Client ID: BM-B-14-1.0	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266108						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 49 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: 1701106-015ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/25/2017	RunNo: 19844						
Client ID: BM-B-14-1.0	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266108						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	16.7						0	0	20	RF
Lube Oil	ND	55.7						0	0	20	RF

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19844						
Client ID: CCV	Batch ID: 9314	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266110						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1240	15.0	1332	0	92.7	85	115				
Lube Oil	585	50.0	666.0	0	87.8	85	115				

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19867						
Client ID: CCV	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 266111						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	944	15.0	999.0	0	94.5	85	115				
Lube Oil	452	50.0	499.5	0	90.4	85	115				

Sample ID: MB-9325	SampType: MBLK	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/25/2017	RunNo: 19867						
Client ID: PBS	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 266112						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 50 of 69
 O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: MB-9325	SampType: MBLK	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/25/2017	RunNo: 19867						
Client ID: PBS	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 266112						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lube Oil	ND	50.0									
Surr: o-Terphenyl	26.4		33.30		79.2	50	150				

Sample ID: LCS-9325	SampType: LCS	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/25/2017	RunNo: 19867						
Client ID: LCSS	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/26/2017	SeqNo: 266113						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	166	15.0	166.5	0	99.6	76.3	125				
Lube Oil	150	50.0	166.5	0	90.1	69.9	127				

Sample ID: 1701106-038ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/25/2017	RunNo: 19867						
Client ID: BM-B-6-1.0	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266122						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	17.9						0	0	20	RF
Lube Oil	78.7	59.7						44.26	56.0	20	RF

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19867						
Client ID: CCV	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266123						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	1240	15.0	1332	0	92.7	85	115				
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Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 51 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19867						
Client ID: CCV	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266123						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	585	50.0	666.0	0	87.8	85	115				

Sample ID: 1701149-004ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/26/2017	RunNo: 19867						
Client ID: ZZZZZZ	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266355						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	16.7						0	200	20	RF
Lube Oil	ND	55.6						0	0	20	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19867						
Client ID: CCV	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266364						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	963	15.0	999.0	0	96.4	85	115				
Lube Oil	451	50.0	499.5	0	90.2	85	115				

Sample ID: CCB-9325	SampType: CCB	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19867						
Client ID: CCB	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266365						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 52 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: CCB-9325	SampType: CCB	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19867						
Client ID: CCB	Batch ID: 9325	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/27/2017	SeqNo: 266365						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: o-Terphenyl	26.6	33.30	79.8	50	150
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Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19949						
Client ID: CCV	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/30/2017	SeqNo: 267271						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	1010	15.0	999.0	0	101	85	115
Lube Oil	474	50.0	499.5	0	94.9	85	115

Sample ID: MB-9344	SampType: MBLK	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19949						
Client ID: PBS	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/30/2017	SeqNo: 267272						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0					
Lube Oil	ND	50.0					
Surr: o-Terphenyl	25.4		33.30		76.4	50	150

Sample ID: LCS-9344	SampType: LCS	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19949						
Client ID: LCSS	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/30/2017	SeqNo: 267273						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	168	15.0	166.5	0	101	76.3	125
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Qualifiers:	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	R RPD outside accepted recovery limits	S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: LCS-9344	SampType: LCS	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19949						
Client ID: LCSS	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/30/2017	SeqNo: 267273						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	155	50.0	166.5	0	92.8	69.9	127				

Sample ID: 1701091-015ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/30/2017	RunNo: 19949						
Client ID: ZZZZZZ	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 1/30/2017	SeqNo: 267278						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	22.7						0	0	20	
Lube Oil	ND	75.6						0	0	20	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19949						
Client ID: CCV	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/1/2017	SeqNo: 267280						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	905	15.0	999.0	0	90.6	85	115				
Lube Oil	460	50.0	499.5	0	92.1	85	115				

Sample ID: CCB-9344	SampType: CCB	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19949						
Client ID: CCB	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/1/2017	SeqNo: 267281						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 54 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: CCB-9344	SampType: CCB	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 1/30/2017	RunNo: 19949						
Client ID: CCB	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/1/2017	SeqNo: 267281						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: o-Terphenyl	25.5		33.30		76.5	50	150				

Sample ID: 1701106-010ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 1/31/2017	RunNo: 19949						
Client ID: BM-B-16-6.0	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/1/2017	SeqNo: 267285						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	22.2						0	0	20	
Lube Oil	ND	73.9						0	0	20	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19949						
Client ID: CCV	Batch ID: 9344	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/1/2017	SeqNo: 267290						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1300	15.0	1332	0	97.2	85	115				
Lube Oil	595	50.0	666.0	0	89.4	85	115				

Sample ID: MB-9365	SampType: MBLK	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 2/1/2017	RunNo: 19956						
Client ID: PBS	Batch ID: 9365	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/2/2017	SeqNo: 267349						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 55 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDX_S

Sample ID: 1701173-002ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 2/1/2017	RunNo: 19956						
Client ID: ZZZZZZ	Batch ID: 9365	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/2/2017	SeqNo: 267431						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	RunNo: 19956						
Client ID: CCV	Batch ID: 9365	TestNo: NWTPH-Dx	SW3550C	Analysis Date: 2/2/2017	SeqNo: 267433						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	944	15.0	999.0	0	94.5	85	115				
Lube Oil	460	50.0	499.5	0	92.1	85	115				

Qualifiers:	B Analyte detected in the associated Method Blank O RSD is greater than RSDlimit	H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits	ND Not Detected at the Reporting Limit S Spike Recovery outside accepted reco	Page 57 of 69
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QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDXLL_W

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	RunNo: 19843						
Client ID: CCV	Batch ID: 9298	TestNo: NWTPH-Dx	SW3510B	Analysis Date: 1/25/2017	SeqNo: 265637						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	5.45	0.0800	6.000	0	90.9	85	115				
Hydraulic Oil	3.97	0.200	4.000	0	99.2	85	115				
Lube Oil	3.00	0.200	3.000	0	100	85	115				

Sample ID: MB-9298	SampType: MBLK	TestCode: NWTPHDXLL	Units: mg/L	Prep Date: 1/23/2017	RunNo: 19843						
Client ID: PBW	Batch ID: 9298	TestNo: NWTPH-Dx	SW3510B	Analysis Date: 1/25/2017	SeqNo: 265637						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	0.0800									
Hydraulic Oil	ND	0.200									
Lube Oil	ND	0.200									
Surr: o-Terphenyl	0.151		0.2000		75.6	50	150				

Sample ID: LCS-9298	SampType: LCS	TestCode: NWTPHDXLL	Units: mg/L	Prep Date: 1/23/2017	RunNo: 19843						
Client ID: LCSW	Batch ID: 9298	TestNo: NWTPH-Dx	SW3510B	Analysis Date: 1/25/2017	SeqNo: 265639						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	0.912	0.0800	1.000	0	91.2	60.7	121				
Lube Oil	0.908	0.200	1.000	0	90.8	64	126				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 58 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: NWTPHDXLL_W

Sample ID: LCSD-9298	SampType: LCSD	TestCode: NWTPHDXLL	Units: mg/L	Prep Date: 1/23/2017	RunNo: 19843						
Client ID: LCSS02	Batch ID: 9298	TestNo: NWTPH-Dx	SW3510B	Analysis Date: 1/25/2017	SeqNo: 265640						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	0.931	0.0800	1.000	0	93.1	60.7	121	0.9122	2.05	20	
Lube Oil	1.00	0.200	1.000	0	100	64	126	0.9082	10.1	20	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	RunNo: 19843						
Client ID: CCV	Batch ID: 9298	TestNo: NWTPH-Dx	SW3510B	Analysis Date: 1/25/2017	SeqNo: 265648						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	7.15	0.0800	8.000	0	89.3	85	115				
Hydraulic Oil	4.27	0.200	4.000	0	107	85	115				
Lube Oil	3.94	0.200	4.000	0	98.6	85	115				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_S

Sample ID: CCV MSSWS-1410	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	RunNo: 19925						
Client ID: CCV	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267025						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	137	3.33	133.3	0	103	80	120				
2-Methylnaphthalene	108	3.33	133.3	0	81.0	80	120				
Acenaphthene	129	3.33	133.3	0	96.5	80	120				
Acenaphthylene	123	3.33	133.3	0	92.5	80	120				
Anthracene	115	3.33	133.3	0	86.0	80	120				
Benz(a)anthracene	117	3.33	133.3	0	87.5	80	120				
Benzo(a)pyrene	116	3.33	133.3	0	87.0	80	120				
Benzo(b)fluoranthene	133	3.33	133.3	0	100	80	120				
Benzo(g,h,i)perylene	114	3.33	133.3	0	85.5	80	120				
Benzo(k)fluoranthene	131	3.33	133.3	0	98.5	80	120				
Chrysene	107	3.33	133.3	0	80.5	80	120				
Dibenz(a,h)anthracene	130	3.33	133.3	0	97.5	80	120				
Fluoranthene	107	3.33	133.3	0	80.5	80	120				
Fluorene	125	3.33	133.3	0	93.5	80	120				
Indeno(1,2,3-cd)pyrene	113	3.33	133.3	0	84.5	80	120				
Naphthalene	111	3.33	133.3	0	83.5	80	120				
Phenanthrene	112	3.33	133.3	0	84.0	80	120				
Pyrene	112	3.33	133.3	0	84.0	80	120				

Sample ID: MB-9346	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19925						
Client ID: PBS	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267026						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	3.33									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 60 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_S

Sample ID: MB-9346	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19925						
Client ID: PBS	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267026						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	3.33									
Acenaphthene	ND	3.33									
Acenaphthylene	ND	3.33									
Anthracene	ND	3.33									
Benzo(a)anthracene	ND	3.33									
Benzo(a)pyrene	ND	3.33									
Benzo(b)fluoranthene	ND	3.33									
Benzo(g,h,i)perylene	ND	3.33									
Benzo(k)fluoranthene	ND	3.33									
Chrysene	ND	3.33									
Dibenz(a,h)anthracene	ND	3.33									
Fluoranthene	ND	3.33									
Fluorene	ND	3.33									
Indeno(1,2,3-cd)pyrene	ND	3.33									
Naphthalene	ND	3.33									
Phenanthrene	ND	3.33									
Pyrene	ND	3.33									
Surr: 2-Fluorobiphenyl	4420		6667		66.2	42.6	128				
Surr: Nitrobenzene-d5	3650		6667		54.7	21.7	155				
Surr: p-Terphenyl-d14	5710		6667		85.6	44.9	155				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 61 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_S

Sample ID: LCS-9346	SampType: LCS	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19925						
Client ID: LCSS	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267027						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	286	3.33	333.4	0	85.8	29.1	109				
2-Methylnaphthalene	209	3.33	333.4	0	62.6	29.1	109				
Acenaphthene	273	3.33	333.4	0	81.8	39.6	107				
Acenaphthylene	259	3.33	333.4	0	77.6	38.9	102				
Anthracene	267	3.33	333.4	0	80.0	43.4	119				
Benz(a)anthracene	255	3.33	333.4	0	76.6	48.4	121				
Benzo(a)pyrene	261	3.33	333.4	0	78.2	37.7	137				
Benzo(b)fluoranthene	212	3.33	333.4	0	63.6	58.6	117				
Benzo(g,h,i)perylene	271	3.33	333.4	0	81.4	49.7	135				
Benzo(k)fluoranthene	217	3.33	333.4	0	65.2	46.1	124				
Chrysene	237	3.33	333.4	0	71.0	57.1	130				
Dibenz(a,h)anthracene	304	3.33	333.4	0	91.2	44.2	124				
Fluoranthene	246	3.33	333.4	0	73.8	53.4	113				
Fluorene	279	3.33	333.4	0	83.6	37.1	114				
Indeno(1,2,3-cd)pyrene	265	3.33	333.4	0	79.4	47.9	121				
Naphthalene	227	3.33	333.4	0	68.2	29.1	109				
Phenanthrene	247	3.33	333.4	0	74.2	48.4	115				
Pyrene	249	3.33	333.4	0	74.6	47.2	134				

Sample ID: 1701106-027BMS	SampType: MS	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19925						
Client ID: BM-FD-011717-S1	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267029						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	333	167	333.3	0	100	27.7	108				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 62 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_S

Sample ID: 1701106-027BMS	SampType: MS	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19925						
Client ID: BM-FD-011717-S1	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267029						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	233	167	333.3	0	70.0	27.7	108				
Acenaphthene	367	167	333.3	0	110	33.7	111				
Acenaphthylene	400	167	333.3	200.0	60.0	32.3	125				
Anthracene	367	167	333.3	166.7	60.0	42.7	121				
Benz(a)anthracene	500	167	333.3	366.7	40.0	13.4	121				
Benzo(a)pyrene	600	167	333.3	533.3	20.0	14.6	110				
Benzo(b)fluoranthene	533	167	333.3	300.0	70.0	41.6	172				
Benzo(g,h,i)perylene	733	167	333.3	566.7	50.0	15	128				
Benzo(k)fluoranthene	433	167	333.3	166.7	80.0	47.9	140				
Chrysene	467	167	333.3	300.0	50.0	37.5	125				
Dibenz(a,h)anthracene	267	167	333.3	0	80.0	23.6	125				
Fluoranthene	900	167	333.3	666.7	70.0	56.8	141				
Fluorene	367	167	333.3	0	110	48.6	117				
Indeno(1,2,3-cd)pyrene	567	167	333.3	433.3	40.0	26.8	133				
Naphthalene	267	167	333.3	0	80.0	27.7	108				
Phenanthrene	400	167	333.3	266.7	40.0	20.2	139				
Pyrene	1530	167	333.3	1100	130	26.8	142				

Sample ID: 1701106-027BMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19925						
Client ID: BM-FD-011717-S1	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267030						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	333	167	333.3	0	100	27.7	108	333.3	0	20	
2-Methylnaphthalene	233	167	333.3	0	70.0	27.7	108	233.3	0	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 63 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_S

Sample ID: 1701106-027BMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 1/30/2017	RunNo: 19925						
Client ID: BM-FD-011717-S1	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 1/30/2017	SeqNo: 267030						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	333	167	333.3	0	100	33.7	111	366.7	9.52	20	
Acenaphthylene	433	167	333.3	200.0	70.0	32.3	125	400.0	8.00	20	
Anthracene	367	167	333.3	166.7	60.0	42.7	121	366.7	0	20	
Benz(a)anthracene	533	167	333.3	366.7	50.0	13.4	121	500.0	6.45	20	
Benzo(a)pyrene	667	167	333.3	533.3	40.0	14.6	110	600.0	10.5	20	
Benzo(b)fluoranthene	500	167	333.3	300.0	60.0	41.6	172	533.3	6.45	20	
Benzo(g,h,i)perylene	800	167	333.3	566.7	70.0	15	128	733.3	8.70	20	
Benzo(k)fluoranthene	500	167	333.3	166.7	100	47.9	140	433.3	14.3	20	
Chrysene	567	167	333.3	300.0	80.0	37.5	125	466.7	19.4	20	
Dibenz(a,h)anthracene	300	167	333.3	0	90.0	23.6	125	266.7	11.8	20	
Fluoranthene	1070	167	333.3	666.7	120	56.8	141	900.0	16.9	20	
Fluorene	300	167	333.3	0	90.0	48.6	117	366.7	20.0	20	R
Indeno(1,2,3-cd)pyrene	533	167	333.3	433.3	30.0	26.8	133	566.7	6.06	20	
Naphthalene	300	167	333.3	0	90.0	27.7	108	266.7	11.8	20	
Phenanthrene	500	167	333.3	266.7	70.0	20.2	139	400.0	22.2	20	R
Pyrene	1370	167	333.3	1100	80.0	26.8	142	1533	11.5	20	

Sample ID: CCV MSSWS-1410	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	RunNo: 19925						
Client ID: CCV	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 2/1/2017	SeqNo: 267136						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	133	3.33	133.3	0	99.5	80	120				
2-Methylnaphthalene	110	3.33	133.3	0	82.5	80	120				
Acenaphthene	129	3.33	133.3	0	97.0	80	120				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 64 of 69
 O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_S

Sample ID: CCV MSSWS-1410	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	RunNo: 19925						
Client ID: CCV	Batch ID: 9346	TestNo: SW8270D	SW 3550C	Analysis Date: 2/1/2017	SeqNo: 267136						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthylene	126	3.33	133.3	0	94.5	80	120				
Anthracene	116	3.33	133.3	0	87.0	80	120				
Benz(a)anthracene	115	3.33	133.3	0	86.5	80	120				
Benzo(a)pyrene	113	3.33	133.3	0	85.0	80	120				
Benzo(b)fluoranthene	135	3.33	133.3	0	102	80	120				
Benzo(g,h,i)perylene	108	3.33	133.3	0	81.0	80	120				
Benzo(k)fluoranthene	134	3.33	133.3	0	101	80	120				
Chrysene	109	3.33	133.3	0	82.0	80	120				
Dibenz(a,h)anthracene	127	3.33	133.3	0	95.5	80	120				
Fluoranthene	110	3.33	133.3	0	82.5	80	120				
Fluorene	125	3.33	133.3	0	94.0	80	120				
Indeno(1,2,3-cd)pyrene	109	3.33	133.3	0	81.5	80	120				
Naphthalene	113	3.33	133.3	0	85.0	80	120				
Phenanthrene	112	3.33	133.3	0	84.0	80	120				
Pyrene	119	3.33	133.3	0	89.0	80	120				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 65 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_W

Sample ID: CCV MSSWS-1410	SampType: CCV	TestCode: PAHLL_W	Units: µg/L	Prep Date:	RunNo: 19862						
Client ID: CCV	Batch ID: 9285	TestNo: SW8270D	SW 3510C	Analysis Date: 1/24/2017	SeqNo: 265999						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.08	0.0500	2.000	0	104	80	120				
2-Methylnaphthalene	1.75	0.0500	2.000	0	87.5	80	120				
Acenaphthene	1.92	0.0500	2.000	0	96.0	80	120				
Acenaphthylene	1.91	0.0500	2.000	0	95.5	80	120				
Anthracene	1.76	0.0500	2.000	0	88.0	80	120				
Benz(a)anthracene	1.71	0.0500	2.000	0	85.5	80	120				
Benzo(a)pyrene	1.63	0.0500	2.000	0	81.5	80	120				
Benzo(b)fluoranthene	1.76	0.0500	2.000	0	88.0	80	120				
Benzo(g,h,i)perylene	1.67	0.0500	2.000	0	83.5	80	120				
Benzo(k)fluoranthene	1.72	0.0500	2.000	0	86.0	80	120				
Chrysene	1.69	0.0500	2.000	0	84.5	80	120				
Dibenz(a,h)anthracene	1.90	0.0500	2.000	0	95.0	80	120				
Fluoranthene	1.65	0.0500	2.000	0	82.5	80	120				
Fluorene	1.93	0.0500	2.000	0	96.5	80	120				
Indeno(1,2,3-cd)pyrene	1.65	0.0500	2.000	0	82.5	80	120				
Naphthalene	1.71	0.0500	2.000	0	85.5	80	120				
Phenanthrene	1.69	0.0500	2.000	0	84.5	80	120				
Pyrene	2.22	0.0500	2.000	0	111	80	120				

Sample ID: MB-9285	SampType: MBLK	TestCode: PAHLL_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19862						
Client ID: PBW	Batch ID: 9285	TestNo: SW8270D	SW 3510C	Analysis Date: 1/24/2017	SeqNo: 266000						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.0500									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 66 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_W

Sample ID: MB-9285	SampType: MBLK	TestCode: PAHLL_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19862						
Client ID: PBW	Batch ID: 9285	TestNo: SW8270D	SW 3510C	Analysis Date: 1/24/2017	SeqNo: 266000						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	0.0500									
Acenaphthene	ND	0.0500									
Acenaphthylene	ND	0.0500									
Anthracene	ND	0.0500									
Benzo(a)anthracene	ND	0.0500									
Benzo(a)pyrene	ND	0.0500									
Benzo(b)fluoranthene	ND	0.0500									
Benzo(g,h,i)perylene	ND	0.0500									
Benzo(k)fluoranthene	ND	0.0500									
Chrysene	ND	0.0500									
Dibenz(a,h)anthracene	ND	0.0500									
Fluoranthene	ND	0.0500									
Fluorene	ND	0.0500									
Indeno(1,2,3-cd)pyrene	ND	0.0500									
Naphthalene	ND	0.0500									
Phenanthrene	ND	0.0500									
Pyrene	ND	0.0500									
Surr: 2-Fluorobiphenyl	68.9		100.0		68.9	18.6	106				
Surr: Nitrobenzene-d5	55.3		100.0		55.3	17	130				
Surr: Terphenyl-d14	89.7		100.0		89.7	39.6	131				

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 67 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106
06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_W

Sample ID: LCS-9285	SampType: LCS	TestCode: PAHLL_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19862						
Client ID: LCSW	Batch ID: 9285	TestNo: SW8270D	SW 3510C	Analysis Date: 1/24/2017	SeqNo: 266001						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	4.40	0.0500	5.000	0	88.0	39.6	131				
2-Methylnaphthalene	3.44	0.0500	5.000	0	68.8	25.6	106				
Acenaphthene	4.37	0.0500	5.000	0	87.4	35.1	131				
Acenaphthylene	4.16	0.0500	5.000	0	83.2	29	126				
Anthracene	3.96	0.0500	5.000	0	79.2	42	130				
Benz(a)anthracene	3.97	0.0500	5.000	0	79.4	34.2	129.1				
Benzo(a)pyrene	4.18	0.0500	5.000	0	83.6	23.4	127.4				
Benzo(b)fluoranthene	4.01	0.0500	5.000	0	80.2	36.6	125.8				
Benzo(g,h,i)perylene	3.63	0.0500	5.000	0	72.6	20.8	123				
Benzo(k)fluoranthene	4.40	0.0500	5.000	0	88.0	39.7	129.5				
Chrysene	3.55	0.0500	5.000	0	71.0	39.1	120				
Dibenz(a,h)anthracene	4.52	0.0500	5.000	0	90.4	5.05	123.4				
Fluoranthene	3.69	0.0500	5.000	0	73.8	42.4	119				
Fluorene	4.31	0.0500	5.000	0	86.2	37.4	129				
Indeno(1,2,3-cd)pyrene	3.99	0.0500	5.000	0	79.8	10.5	125.9				
Naphthalene	3.39	0.0500	5.000	0	67.8	25.6	128.4				
Phenanthrene	3.79	0.0500	5.000	0	75.8	38.1	128.4				
Pyrene	4.05	0.0500	5.000	0	81.0	41.3	126				

Sample ID: LCSD-9285	SampType: LCSD	TestCode: PAHLL_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19862						
Client ID: LCSS02	Batch ID: 9285	TestNo: SW8270D	SW 3510C	Analysis Date: 1/24/2017	SeqNo: 266002						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	4.23	0.0500	5.000	0	84.6	39.6	131	4.400	3.94	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 68 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: 1701106

06-Feb-17

Specialty Analytical

Client: Parametrix
Project: Salmonberry -Botts Marsh / 2732925007

TestCode: PAHLL_W

Sample ID: LCSD-9285	SampType: LCSD	TestCode: PAHLL_W	Units: µg/L	Prep Date: 1/19/2017	RunNo: 19862						
Client ID: LCSS02	Batch ID: 9285	TestNo: SW8270D	SW 3510C	Analysis Date: 1/24/2017	SeqNo: 266002						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylnaphthalene	3.31	0.0500	5.000	0	66.2	25.6	106	3.440	3.85	20	
Acenaphthene	4.19	0.0500	5.000	0	83.8	35.1	131	4.370	4.21	20	
Acenaphthylene	4.07	0.0500	5.000	0	81.4	29	126	4.160	2.19	20	
Anthracene	4.00	0.0500	5.000	0	80.0	42	130	3.960	1.01	20	
Benzo(a)anthracene	4.04	0.0500	5.000	0	80.8	34.2	129.1	3.970	1.75	20	
Benzo(a)pyrene	4.23	0.0500	5.000	0	84.6	23.4	127.4	4.180	1.19	20	
Benzo(b)fluoranthene	4.41	0.0500	5.000	0	88.2	36.6	125.8	4.010	9.50	20	
Benzo(g,h,i)perylene	3.90	0.0500	5.000	0	78.0	20.8	123	3.630	7.17	20	
Benzo(k)fluoranthene	3.95	0.0500	5.000	0	79.0	39.7	129.5	4.400	10.8	20	
Chrysene	3.55	0.0500	5.000	0	71.0	39.1	120	3.550	0	20	
Dibenz(a,h)anthracene	4.83	0.0500	5.000	0	96.6	5.05	123.4	4.520	6.63	20	
Fluoranthene	3.74	0.0500	5.000	0	74.8	42.4	119	3.690	1.35	20	
Fluorene	4.26	0.0500	5.000	0	85.2	37.4	129	4.310	1.17	20	
Indeno(1,2,3-cd)pyrene	4.20	0.0500	5.000	0	84.0	10.5	125.9	3.990	5.13	20	
Naphthalene	3.39	0.0500	5.000	0	67.8	25.6	128.4	3.390	0	20	
Phenanthrene	3.89	0.0500	5.000	0	77.8	38.1	128.4	3.790	2.60	20	
Pyrene	4.16	0.0500	5.000	0	83.2	41.3	126	4.050	2.68	20	

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 69 of 69
O RSD is greater than RSDlimit R RPD outside accepted recovery limits S Spike Recovery outside accepted reco

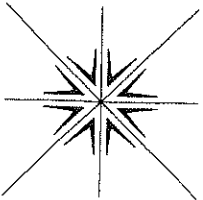
KEY TO FLAGS

Rev. May 12, 2010

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- A4 The product appears to be aged or degraded diesel.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended holding time.
- HT At clients request, samples was analyzed outside of recommended holding time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits; post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Specialty Analytical
 11711 SE Capps Road
 Clackamas, OR 97015
 Phone: 503-607-1331
 Fax: 503-607-1336



Contact Person/Project Manager: RICK WADSWORTH
 Company: PARAMETRIX
 Address: 700 NE MULTNOMAH, SUITE 1000
PORTLAND OR 97214
 Phone: 503-238-2400 Fax: _____
 Project No. 2432925007 Project Name Salmon Berry - Rotts Marsh
 Project Site Location OR X WA _____ Other _____
 Invoice To: Parametrix P.O. No. _____

Collected By: [Signature]
 Signature: [Signature]
 Printed: Adam Ramey

Signature: _____
 Printed: _____

Turn Around Time
 Normal 5-7 Business Days
 Rush _____
 Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

No. of Containers	Analyses			For Laboratory Use		
	SVOCs (Benz only)	Dioxins (CERCLIS)	VOCs	Lab Job No.	Shipped Via	Air Bill No.
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1701106	Client	
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

Temperature On Receipt 4 °C
 Specialty Analytical Containers? Y/N
 Specialty Analytical Trip Blanks? Y/N

Date	Time	Sample I.D.	Matrix	Received By:	Time
1/17/17	0845	BM-B-20-1.0	SOIL	[Signature]	1045
	0850	BM-B-20-8.0			
	0955	BM-B-19-1.0			
	1000	BM-B-19-7.0			
	1015	BM-B-17-1.0			
	1020	BM-B-17-4.0			
	1030	BM-B-18-1.0			
	1040	BM-B-18-4.0			
	1055	BM-B-16-1.0			
	1100	BM-B-16-6.0			
	1110	BM-B-15-1.0			
	1115	BM-B-15-5.5			

Relinquished By: [Signature]
 Company: Parametrix
 Date: 1/17/17
 Time: 1045

Relinquished By: _____
 Company: _____
 Date: _____
 Time: _____

Received For Lab By: [Signature]
 Date: 1-16-17
 Time: 10:95

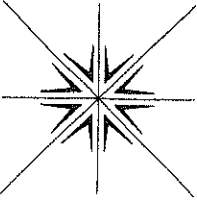
Received For Lab By: _____
 Date: _____
 Time: _____

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
 Samples held beyond 60 days subject to storage fee(s)

CHAIN OF CUSTODY RECORD

Specialty Analytical

11711 SE Capps Road
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336



Contact Person/Project Manager: RICK WADSWORTH
Company: PARAMETRIX
Address: 700 NE WASHINGTON, SUITE 1000
PORTLAND, OR 97214
Phone: 503-233-2400 Fax: _____
Project No: 2B2925007 Project Name: Salmonberry - Belts Marsh
Project Site Location: OR WA Other: _____
Invoice To: Parametrix P.O. No.: _____

Collected By: AR
Signature: Adam Ramsey
Printed: Adam Ramsey

Signature: _____
Printed: _____

Turn Around Time _____

Normal 5-7 Business Days
 Rush _____ Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses						For Laboratory Use						
					SVCS (Perk only)	Dioxins (Perk)	VOCs	RCRA 8 Metals	PAHs	NITRATE Dx	Lab Job No.	Shipped Via	Air Bill No.	Temperature On Receipt	Specialty Analytical Containers?	Specialty Analytical Trip Blanks?	Lab I.D.
1/17/17	1210	BM-B-12-1.0	SOIL	3	X	X	X	X	X	X	701106	clean		L	Y		
	1215	BM-B-12-5.0		3	X	X	X	X	X	X							
	1315	BM-B-14-1.0		3	X	X	X	X	X	X							
	1320	BM-B-14-5.5		3	X	X	X	X	X	X							
	1340	BM-B-11-1.0		3	X	X	X	X	X	X							
	1345	BM-B-11-6.5		3	X	X	X	X	X	X							
	1405	BM-B-13-1.0		3	X	X	X	X	X	X							
	1410	BM-B-13-7.0		3	X	X	X	X	X	X							
	1430	BM-B-10-2.0		3	X	X	X	X	X	X							
	1440	BM-B-10-5.5		3	X	X	X	X	X	X							
	1445	BM-B-9-0.5		3	X	X	X	X	X	X							
	1450	BM-B-9-4.0		3	X	X	X	X	X	X							
Relinquished By: <u>AR</u>				Received By: _____				Date: <u>1/19/17</u>				Time: <u>1045</u>					
Company: <u>Parametrix</u>				Company: _____				Received For Lab By: _____				Date: <u>1/19/17</u>					
												Time: <u>1045</u>					

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
Samples held beyond 60 days subject to storage fee(s)

CHAIN OF CUSTODY RECORD

Specialty Analytical
 11711 SE Capps Road
 Clackamas, OR 97015
 Phone: 503-607-1331
 Fax: 503-607-1336

Contact Person/Project Manager RIX U4050000TH
 Company PARAMETRIX
 Address 1700 NE MULTNOMAH, SUITE 1000
PORTLAND, OR 97214
 Phone 503-233-2400 Fax _____
 Project No. 2732925007 Project Name Saltmberg - Bobb Marsh
 Project Site Location OR K WA Other
 Invoice To PMX P.O. No. _____

Collected By: [Signature]
 Signature Adam Ramey
 Printed Adam Ramey

Signature _____
 Printed _____

Turn Around Time _____
 Normal 5-7 Business Days
 Rush _____ Specify _____

Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix
1/17/17	1500	BM-B-8-2.0	Soil
	1510	BM-B-8-5.5	
	0000	BM-FD-011717-S1	
1/18/17	0900	BM-B-7-1.0	
	0910	BM-B-7-5.5	
	0930	BM-B-4-1.0	
	0940	BM-B-4-6.0	
	0945	BM-B-3-1.0	
	0950	BM-B-3-5.5	
	0955	BM-B-1-1.0	
	1000	BM-B-1-5.0	
	1020	BM-B-2-1.0	

Relinquished By: [Signature] Date 1/19/17 Time 1045
 Company: Parametrix

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
 Samples held beyond 60 days subject to storage fee(s)

No. of Containers	Analyses					For Laboratory Use Lab Job No. <u>1701106</u> Shipped Via <u>Client</u> Air Bill No. _____ Temperature On Receipt <u>4</u> °C Specialty Analytical Containers? <u>Y/N</u> Specialty Analytical Trip Blanks? <u>Y/N</u>	Comments	Lab I.D.
	SWTP4 Dx	PATH	SVCS (Rents only)	Dioxins (CERCLIS)	VOCs			
3	X						<u>Added 1/17/17</u>	
3	X	X		X			<u>HOLD</u>	
3	X	X		X			<u>HOLD</u>	
3	X	X		X			<u>HOLD</u>	
3	X	X		X			<u>HOLD</u>	
3	X	X		X			<u>HOLD</u>	
3	X	X		X			<u>HOLD</u>	
3	X	X		X			<u>HOLD</u>	
3	X	X		X			<u>HOLD</u>	

Relinquished By: _____ Date _____ Time _____
 Company: _____
 Received For Lab By: _____ Date 1-19-17 Time 10:45

DATA VALIDATION REPORT

DATE: February 17, 2017

PROJECT NAME: Botts Marsh Upland – Wheeler, OR

PROJECT NUMBER: 273-2925-017

LAB NAME: Specialty Analytical

LAB SAMPLE GROUP: 1701106

TOTAL FIELD SAMPLES: 7 (and 1 trip blank)

MATRIX: Groundwater

AUTHOR/REVIEWER: Adam Romey

SUMMARY

This report is a review of the analytical results for samples collected by Parametrix, Inc. for Botts Marsh Upland site in Wheeler, Oregon. These samples were collected as part of the Phase II Environmental Site Assessment (ESA) in January 2017. The samples, analyses performed, and analytical methods are identified in the attached lab report.

Final laboratory data were delivered to Parametrix via a Tier II data report following a technical review by Specialty Analytical’s project chemist. The chemist reviewed the data and analytical quality control elements against project, laboratory, and method quality control criteria, and applied laboratory qualifiers where judged appropriate.

The Parametrix data quality review was conducted in accordance with the project Quality Assurance Plan (Parametrix, 2016) using the USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (USEPA 2009) for guidance. This data review was conducted on summary results only (i.e., did not include recalculation of results from raw data) and includes evaluation of the laboratory information for completeness, precision, and accuracy.

The data are considered acceptable for their intended use with appropriate qualifiers assigned, if applicable. The potential usability issues and overall evaluation of the data are described in the Data Review section below.

Matrix Spike/Matrix Spike Duplicate

Mercury; matrix spike for batch 9362: recovery was outside of control limits due to matrix interference. As this analyte was not detected, no data were qualified.

Surrogate Recoveries

Sample BM-B-7-W; surrogate o-terphenyl: Surrogate recovery is outside of established control limits. However, results were not qualified based solely on the out of control surrogate recovery.

Field Duplicate

Total barium, chromium and lead; field duplicate: the RPD for these analytes was outside the required precision of 20%. No data have been qualified on the basis on RPD exceedances alone.

DATA REVIEW

Date sampled	01/17/17-01/18/17
Date analyzed (extracted/prepared)	01/20/17-02/01/17
Final lab report date	02/06/17

Holding Times – Groundwater

Parameter	Method	Holding Time Allowed (Days)	Holding Time Exceedance Date	Holding Conditions Acceptable?	Basis for Actual Holding Time ¹
Diesel / Heavy Oil	NWTPH-Dx	14	01/30/17-02/01/17	Yes	Analyzed
RCRA8 Metals	EPA 6020A/7470A	6 months	07/16/17-07/17/17	Yes	Analyzed
Polycyclic Aromatic Hydrocarbons	EPA 8270-sim	14	01/30/17-02/01/17	Yes	Analyzed
Volatile Organic Compounds	EPA 8260B	14	01/30/17-02/01/17	Yes	Extracted

¹ When extraction methods were used for analysis, actual holding time equals the number of days from date sampled to date prepared, otherwise, actual holding time equals the number of days from date sampled to date analyzed.

Quality Control Samples

Field Blanks

	Rinsate (Equipment) Blank	Transfer Blank	Transport (Trip) Blank
Total Number	0	0	1
Frequency	N/A	N/A	1/6
Detections	N/A	N/A	ND

Frequency – Number of blanks per method/number of samples per method

N/A – Not applicable

ND – Not detected

If there are detections, state details:

Method Blanks

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	1	1/7	Y
RCRA8 Metals	EPA 6020A	3	3/6	Y
Polycyclic Aromatic Hydrocarbons	EPA 8270-sim	1	1/5	Y
Volatile Organic Compounds	EPA 8260B	1	1/6	Y

Frequency – Number of blanks per method/number of samples per method

-- Not evaluated

If not within limits, state details:

Laboratory Control Spikes

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	1	1/7	Y
RCRA8 Metals	EPA 6020A	2	2/6	Y
Polycyclic Aromatic Hydrocarbons	EPA 8270-sim	1	1/5	Y
Volatile Organic Compounds	EPA 8260B	1	1/6	Y

Frequency – Number of laboratory control samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

Laboratory Control Spike Duplicates

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	1	1/7	Y
RCRA8 Metals	EPA 6020A	0	0/6	--
Polycyclic Aromatic Hydrocarbons	EPA 8270-sim	1	1/5	Y
Volatile Organic Compounds	EPA 8260B	1	1/6	Y

Frequency – Number of LCS duplicate samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

Laboratory Duplicate Samples

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	0	0/7	--
RCRA8 Metals	EPA 6020A	3	3/6	Y
Polycyclic Aromatic Hydrocarbons	EPA 8270-sim	0	0/5	--
Volatile Organic Compounds	EPA 8260B	0	0/6	--

Frequency – Number of laboratory duplicate samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

Matrix Spikes

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	0	0/7	--
RCRA8 Metals	EPA 6020A	3	3/6	N
Polycyclic Aromatic Hydrocarbons	EPA 8270-sim	0	0/5	--
Volatile Organic Compounds	EPA 8260B	1	1/6	Y

Frequency – Number of matrix spike samples per method/number of samples per method
 -- Not evaluated

If not within limits, state details:

See Summary above.

Matrix Spike Duplicates

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	0	0/7	--
RCRA8 Metals	EPA 6020A	3	3/6	Y
Polycyclic Aromatic Hydrocarbons	EPA 8270-sim	0	0/5	--
Volatile Organic Compounds	EPA 8260B	1	1/6	Y

Frequency – Number of matrix spike duplicate samples per method/number of samples per method
 -- Not evaluated

If not within limits, state details:

Surrogate Recoveries

	Field Sample	Method Blank	Laboratory Control Sample	Laboratory Control Sample Duplicate	Laboratory Duplicate Sample	Matrix Spike	Matrix Spike Duplicate
Within Limit? (Y/N)	N	Y	--	--	--	--	--

-- Not evaluated

If not within limits, state details:

See Summary section above.

Field Duplicates

One field duplicate was collected with this sample delivery group. The field (groundwater) sample CM-FD-011717-W is a duplicate of sample BM-B-20-W.

Analyte	Parent Sample Result	Duplicate Sample Result	Relative Percent Difference (%)	Field Duplicate Precision less than 20%? (Y/N)
Arsenic	0.736	0.619	17.3	Y
Barium	12	9.65	21.7	N
Chromium	2.66	2.15	21.2	N
Lead	2.26	1.70	28.3	N
Acetone	ND	70.9	NA	--

DATA VALIDATION REPORT

DATE: February 16, 2017

PROJECT NAME: Botts Marsh Upland Site – Wheeler, OR

PROJECT NUMBER: 273-2925-017

LAB NAME: Specialty Analytical

LAB SAMPLE GROUP: 1701091

TOTAL FIELD SAMPLES: 31

MATRIX: Soil

AUTHOR/REVIEWER: Adam Romey

SUMMARY

This report is a review of the analytical results for samples collected by Parametrix, Inc. for the Botts Marsh Upland Site in Wheeler, Oregon. These samples were collected as part of the Phase II Environmental Site Assessment (ESA) in January 2017. The samples, analyses performed, and analytical methods are identified in the attached lab report.

Final laboratory data were delivered to Parametrix via a Tier II data report following a technical review by Specialty Analytical's project chemist. The chemist reviewed the data and analytical quality control elements against project, laboratory, and method quality control criteria, and applied laboratory qualifiers where judged appropriate.

The Parametrix data quality review was conducted in accordance with the project Quality Assurance Plan (Parametrix, 2016) using the USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (USEPA 2009) for guidance. This data review was conducted on summary results only (i.e., did not include recalculation of results from raw data) and includes evaluation of the laboratory information for completeness, precision, and accuracy.

The data are considered acceptable for their intended use with appropriate qualifiers assigned, if applicable. The potential usability issues and overall evaluation of the data are described in the Data Review section below.

Laboratory Duplicate Samples

Arsenic and lead; laboratory duplicate samples for batch 9311: these duplicates failed due to the result being over the RPD limit. Based on these RPD exceedances and the field duplicate exceedances for these constituents in the same batch, all arsenic and lead concentrations will be qualified as estimates (J and UJ).

Matrix Spikes

Mercury; laboratory duplicate samples for batch 9331: this spike failed due to the result being outside of the applicable limit. No data were qualified based on this spike failure alone.

Matrix Spike Duplicates

Chromium; laboratory duplicate samples for batch 9339: fluorene and phenanthrene; laboratory duplicate samples for batch 9346; these duplicates failed due to the result being below above the RPD limit. No data were qualified based on these spike failures alone.

Field Duplicates

Field duplicate precision for target analytes was screened against an RPD of 35%. Three field duplicate RPDs were above this value: lube oil, arsenic, and lead. See note on qualifications due to lab duplicate exceedances for arsenic and lead in the same batch above.

DATA REVIEW

Date sampled	01/17/17 – 01/18/17
Date analyzed (extracted/prepared)	01/19/17 – 02/01/17
Final lab report date	02/06/17

Holding Times – Soil

Parameter	Method	Holding Time Allowed (Days)	Holding Time Exceedance Date	Holding Conditions Acceptable?	Basis for Actual Holding Time ¹
Diesel / Heavy Oil	NWTPH-Dx	14	01/31/17-02/01/17	Yes	Analyzed
RCRA 8 Metals	6020A/7471B	180	07/17/17-07/18/17	Yes	Analyzed
PAHs	8270D-SIM	14	01/31/17-02/01/17	Yes	Analyzed
VOCs	8260B	14 (if frozen)	01/31/17-02/01/17	Yes	Analyzed
PCP (SVOCs)	8270C	14	01/31/17-02/01/17	Yes	Analyzed
Dioxins	1613B	180	07/17/17-07/18/17	Yes	Analyzed

¹ When extraction methods were used for analysis, actual holding time equals the number of days from date sampled to date prepared, otherwise, actual holding time equals the number of days from date sampled to date analyzed.

Quality Control Samples

Field Blanks

	Rinsate (Equipment) Blank	Transfer Blank	Transport (Trip) Blank
Total Number	0	0	0
Frequency	N/A	N/A	N/A
Detections	N/A	N/A	ND

Frequency – Number of blanks per method/number of samples per method
 N/A – Not applicable

ND – Not detected

If there are detections, state details:

Method Blanks

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	4	4/31	Y
RCRA 8 Metals	6020A/7471B	2	2/9	Y
PAHs	8270D-SIM	1	1/4	Y
VOCs	8260B	1	1/4	Y
PCP (SVOCs)	8270C	1	1/4	Y
Dioxins	1613B	1	1/3	Y

Frequency – Number of blanks per method/number of samples per method

-- Not evaluated

If not within limits, state details:

Laboratory Control Spikes

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	4	4/31	Y
RCRA 8 Metals	6020A/7471B	2	2/9	Y
PAHs	8270D-SIM	1	1/4	Y
VOCs	8260B	1	1/4	Y
PCP (SVOCs)	8270C	1	1/4	Y
Dioxins	1613B	1	1/3	Y

Frequency – Number of laboratory control samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

Laboratory Control Spike Duplicates

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	0	0/31	--
RCRA 8 Metals	6020A/7471B	0	0/9	--
PAHs	8270D-SIM	0	0/4	--
VOCs	8260B	0	0/4	--
PCP (SVOCs)	8270C	0	0/4	--
Dioxins	1613B	0	0/3	--

Frequency – Number of LCS duplicate samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

Laboratory Duplicate Samples

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	7	7/31	Y
RCRA 8 Metals	6020A/7471B	2	2/9	N
PAHs	8270D-SIM	0	0/4	--
VOCs	8260B	0	0/4	--
PCP (SVOCs)	8270C	0	0/4	--
Dioxins	1613B	0	0/3	--

Frequency – Number of laboratory duplicate samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

See Summary section above.

Matrix Spikes

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	0	0/31	--
RCRA 8 Metals	6020A/7471B	2	2/9	N
PAHs	8270D-SIM	1	1/4	Y
VOCs	8260B	1	1/4	Y
PCP (SVOCs)	8270C	1	1/4	Y
Dioxins	1613B	0	0/3	--

Frequency – Number of matrix spike samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

See Summary section above.

Matrix Spike Duplicates

Analysis	Method	Total Number	Frequency	Within Limit? (Y/N)
Diesel / Heavy Oil	NWTPH-Dx	0	0/31	--
RCRA 8 Metals	6020A/7471B	2	2/9	N
PAHs	8270D-SIM	1	1/4	N
VOCs	8260B	1	1/4	Y
PCP (SVOCs)	8270C	1	1/4	Y
Dioxins	1613B	0	0/3	--

Frequency – Number of matrix spike duplicate samples per method/number of samples per method

-- Not evaluated

If not within limits, state details:

See Summary section above.

Surrogate Recoveries

	Field Sample	Method Blank	Laboratory Control Sample	Laboratory Control Sample Duplicate	Laboratory Duplicate Sample	Matrix Spike	Matrix Spike Duplicate
Within Limit? (Y/N)	Y	Y	--	--	--	--	--

-- Not evaluated

If not within limits, state details:

Field Duplicates

Two field duplicates were collected with this sample delivery group. One parent sample and duplicate were non-detect and no evaluation was necessary. The field sample BM-FD-011717-S1 is a duplicate of sample BM-B-11-1.0.

Analyte	Parent Sample Result	Duplicate Sample Result	Relative Percent Difference (%)	Field Duplicate Precision less than 35%? (Y/N)
Diesel	21.1	ND	N/A	--
Lube Oil	138	783	140.1	N
Arsenic	1.13	3.28	97.5	N
Barium	55.1	57.5	4.26	Y
Cadmium	0.0996	ND	N/A	--
Chromium	17.1	13.8	21.4	Y
Lead	4.39	7.58	53.3	N
Silver	0.192	ND	N/A	--
Mercury	ND	0.0184	N/A	--