

# Memorandum

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B&L-O&M T. 1525 Project No:

**Ditch Bank Remedial Action** 

In this memorandum, the decision by the Washington State Department of Ecology (Ecology) concerning the remedial approach for two areas of impacted soil at the B&L Woodwaste Site (Site) is documented, based on an evaluation of remedial actions.

The investigation, evaluation, and implementation of this remedial action are ongoing elements of site cleanup by the B&L Woodwaste Custodial Trust (Trust) under Consent Decree No. 082106107. The major construction phases of the cleanup have been completed. These included excavation of contaminated ditch sediment and agricultural field soil in 2012. The two areas of soil contamination that remain in place along the ditch banks were identified during the 2012 excavation and confirmation sampling. Ditch bank characterization sampling was completed in May and June 2013 to establish the extent of elevated arsenic in these two areas. Geoprobe groundwater samples were also collected in the vicinity of the South Ditch hotspot to assess whether contaminated soil in this area may be a source of elevated arsenic in groundwater. The results of the investigation were submitted to Ecology in a June 27, 2013 memorandum entitled Ditch Bank Soil Investigation Results (Floyd|Snider/AMEC 2013). Additional results from archived samples collected as part of ditch bank characterization are presented in this memorandum.

The evaluation of the environmental protectiveness, estimated costs, and other factors concerning potential remedial options presented here was prepared by the Trust to support decision-making by Ecology. Ecology has indicated that excavation of contaminated soil (Option A) is the appropriate remedial action for both the South Ditch and West Ditch bank areas. Additional details on the remedial action are provided below.

### **ANALYSIS OF ADDITIONAL ARCHIVED SAMPLES**

To provide a clearer picture of the extent of soil contamination and aid in evaluating remedial approaches, archived samples collected during the investigation were submitted for analysis following submittal of the June 27, 2013 results memorandum. Twenty-three archived samples were submitted, including twenty from the South Ditch area (AV-4 7-8, AV-5 6-7, AV-5 7-8, AV-6 7-8, AV-7 6-7, AV-7 7-8, AV-10 7-8, AV-13 6-7, AV-13 7-8, AV-14 7-8, AV-15 6-7, AV-15 7-8,

AV-21 6-7, AV-23 6-7, AV-25 6-7, AV-26 6-7, AV-27 6-7, AV-27 7-8, AV-30 6-7, and AV-32 6-7) and three from the West Ditch area (WD-3 4-5, WD-7 4-5, and WD-14 4-5).

Results from these additional archived sample analyses are presented in Table 1 and shown on Figures 1 and 2. Laboratory analytical reports for all ditch bank investigation sampling are presented in Attachment 1.

#### **Data Validation**

A Compliance Screening, Tier I data quality review was performed on the arsenic data resulting from laboratory analysis. The analytical data for metals were validated in accordance with the U.S. Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (USEPA 1994 and 2004).

A total of 279 soil samples and 4 groundwater samples were submitted in three sample delivery groups (SDGs; 305440, 305469, and 306149) with 180 of the soil samples analyzed and the remainder temporarily archived. For all sample delivery groups, the analytical holding times were met, the method blanks had no detections, and the internal standard and laboratory control sample recoveries were within USEPA guidelines.

The matrix spike/matrix spike duplicate recoveries and relative percent difference (RPD) for Sample WD-9 2-3 from SDG 305469 were outside laboratory control limits. Therefore, the arsenic result for this sample has been qualified "J," indicating the value is an estimate. All other matrix spike/matrix spike duplicate recoveries and RPDs were within USEPA guidelines, providing adequate accuracy and precision for this analysis method by the laboratory.

Based on the data quality review, data are determined to be of acceptable quality for use as qualified.

### **SOUTH DITCH CONDITIONS**

As discussed in the *Ditch Bank Soil Investigation Results Memorandum*, the elevated soil arsenic in the South Ditch area was delineated to be at least 150 feet in length along the ditch bank, extending into the Autumn Village Apartments (Apartments) property approximately 15 feet. The maximum concentrations were encountered approximately 5 feet away from the ditch bank. This area consists of landscaping with a thick row of mature evergreen trees that abuts an asphalt parking lot. Vertically, arsenic contamination extends to at least 8 feet below ground surface (bgs) in some locations.

During Geoprobe exploration, a dark-brown soil horizon ranging in depth from approximately 3 to 8 feet bgs was observed in many locations and is correlated with the elevated total arsenic concentrations observed in samples submitted for laboratory analysis (refer to boring logs in Attachment 2). Arsenic concentrations in this apparent woodwaste-containing layer and in underlying native soil ranged from 24 to 612 milligrams per kilogram (mg/kg) in the samples collected 5 feet from the edge of the ditch bank (Figure 1). Though the vertical extent was not delineated in all locations below the maximum boring depth of 8 feet bgs, arsenic concentrations decreased with depth beneath the woodwaste layer, and with distance from the bank. Concentrations of arsenic that exceed the site cleanup level (CUL) of 20 mg/kg were not observed more than 15 feet from the bank.

The horizontal extent of arsenic exceedances of the soil CUL parallel to the ditch bank has not been determined. The maximum arsenic concentrations at the eastern and western extents of the investigation area were 51.2 mg/kg and 205 mg/kg, respectively. Additional sampling prior to implementation of a remedial action may be conducted if necessary to confirm the contamination extent prior to initiation of a remedial action.

To evaluate the leaching potential of soil encountered in the South Ditch, the sample with the highest arsenic concentration measured during the 2013 investigation was submitted for Toxicity Characteristics Leaching Procedure (TCLP) analysis. The total arsenic concentration of the sample analyzed (AV-8 6-7) was 612 mg/kg. The resulting TCLP analysis was non-detect (less than a reporting limit of 1 milligram per liter [mg/L]). Based on this result, it is assumed that impacted material throughout the South Ditch would not be regulated under state dangerous waste regulations and can be disposed of in a Subtitle D landfill.

Groundwater was sampled from shallow depths in the Upper Sand Aquifer (USAq) from four Geoprobe locations (refer to Figure 1) during the 2013 characterization sampling. Dissolved arsenic concentrations ranged from 31.5 to 80.6 micrograms per liter (µg/L) at locations south of the ditch bank on the Apartments property; however, discrete-depth Geoprobe groundwater samples are not necessarily representative of groundwater conditions throughout the aquifer as monitored for compliance (Floyd|Snider/AMEC 2013). The highest concentration was found at AV-31, located just north and downgradient of the impacted South Ditch area. In most boring locations, groundwater was encountered between 4 and 6 feet bgs. Based on these data, it appears that the contaminated soil in the ditch bank may act as a source of arsenic contamination to groundwater in this area.

Site conditions limit the potential for direct exposure to contaminated soil. The arsenic-impacted area is located beneath trees, landscaping, or pavement, and surface soils do not contain elevated arsenic concentrations. Human contact with contaminated soils would potentially occur if digging or regrading activities were conducted in the impacted area. Therefore, the potential for human contact with contaminated subsurface soil is limited to utility and other site workers that may penetrate into the subsurface.

Prior searches indicate that there are no drinking water supply wells on the Apartments property (Floyd|Snider 2007). State regulations (Washington Administrative Code Chapter 173-160) prohibit new water wells within 1,000 feet of existing solid waste landfills and new water wells must be located outside of known sources of contamination. The Apartments reportedly operate a pump station(s) used to manage high groundwater levels. The recovered water is apparently discharged to the adjacent ditch system west (downgradient) of the contaminated ditch bank soils in the South Ditch. Project water level data, including measurements from monitoring wells at the Apartments property, indicate that this system does not exert substantial influence on the overall northwesterly groundwater flow direction in the area. Based on available information, therefore, there is no reason to expect the Apartments pumping system to recover arsenic-contaminated water or present an exposure risk. Therefore, the potential for human contact with contaminated groundwater is limited to utility and other site workers that may penetrate into the subsurface.

Surface water in the adjacent ditch is a potential pathway for human exposure and eventual recontamination of ditch sediments. Given the groundwater elevation and northwesterly direction of groundwater flow, shallow groundwater may discharge to the drainage ditch system along the perimeter of the B&L Landfill (Landfill) property. Based on groundwater arsenic

concentrations in the vicinity of the ditch bank, this could contribute to potential exceedances of the site surface water CUL of  $5 \,\mu g/L$ . Contaminated groundwater discharging to the ditch system previously transferred arsenic contamination to ditch sediments adjacent to the Landfill. This raises the possibility of eventual recontamination of sediment in a section of the recently remediated ditches to concentrations greater than the site ditch sediment CUL of 20 mg/kg.

### POTENTIAL REMEDIAL STRATEGIES—SOUTH DITCH

This section includes a preliminary screening of remedial options and an evaluation of benefits, constraints, and costs of implementing two remedial options in the South Ditch: A) soil excavation, and B) filling of a section of the ditch combined with long-term monitoring.

### **Preliminary Screening of Remedial Options**

In addition to Options A and B, three approaches were considered as part of the initial screening: partial excavation, in-situ solidification/stabilization, and in-situ media-enhanced backfill treatment.

Evaluation of a partial or hotspot soil excavation alternative was considered but did not pass the screening stage because the cost savings associated with a limited excavation would not be substantial enough to justify the reduced environmental benefit of a partial removal action. This approach would result in disadvantages associated with full excavation without the full environmental benefit and would also result in disadvantages associated with leaving contamination in place. Partial excavation would cause substantial disruption to the Apartments property, including removal of mature trees, and would require a restrictive covenant and monitoring to address the source material left in place. The benefits and costs of full excavation and leaving contamination in place are described in more detail in the evaluations of Options A and B below.

In-situ solidification/stabilization (S/S) was also considered as a potential remedial strategy. This technology, which would leave contamination in place and treated to prevent leaching to groundwater, would require soil mixing or closely-spaced jet grouting. These activities would result in substantial disruption to the Apartments property similar to that caused by excavation, including removal of mature trees. Even if jet grouting could be implemented in between trees, the amended soil would no longer be suitable for trees. The S/S approach would produce displaced soil, which would require management and disposal. Similar to hotspot excavation, this alternative would be a disruptive, non-permanent solution, and would be expected to cost as much as excavation and disposal. The in-situ S/S approach was rejected based on this initial screening.

A third approach that was considered is the use of a treatment media such as zeolite as backfill in the ditch adjacent to the Apartments property. This approach, which shares characteristics with Option B, may enhance the capacity of the backfill material to slow the potential migration of arsenic away from the source material in very shallow groundwater. There is considerable uncertainty regarding the effectiveness of enhanced adsorption of arsenic at the shallow depths of the ditch backfill (above the current ground surface), relative to the depth of contaminated groundwater beneath the ditch (approximately 1 to 5 feet bgs) on protecting downgradient water quality. A similar benefit may be gained by retarding shallow water flow with soil. The approach may require a pilot treatability study to assess the effectiveness of the enhancement media. In

addition, the approach would involve disadvantages associated with leaving contamination in place, including the need for a restrictive covenant and monitoring. While natural zeolites are generally low-cost materials, the cost of iron-modified zeolite, the zeolite product that is used for arsenic remediation, is considerably greater and is estimated not to be commensurate with the potential benefits of this enhancement. Therefore, the media-enhanced backfill approach was rejected as a stand-alone option, based on the lack of additional environmental protectiveness relative to the anticipated costs and disadvantages.

The two remedial options to be considered are discussed below.

### **Option A: Excavation of Contaminated Soil**

This option includes the removal of arsenic-contaminated soil from the South Ditch and installation of one or two groundwater monitoring wells downgradient of the excavation area for compliance monitoring. Groundwater monitoring integrated into existing Landfill monitoring would confirm the source to groundwater has been successfully removed.

The estimated cost for implementation of Option A is \$340,000. This cost includes \$236,000 for soil excavation and disposal, site restoration, and monitoring well installation; \$43,000 for contingent excavation and restoration beyond the known volume; and \$61,000 for engineering design, oversight, and agency communications.

No cost is included for groundwater monitoring in conjunction with regular Landfill compliance monitoring. Semiannual monitoring and reporting for two additional wells is expected to add less than \$2,000 per year to site monitoring costs. This cost is assumed to occur for both Option A and Option B.

### **Key Assumptions**

Based on current data and cleanup objectives, the approximate extent of the excavation area would be approximately 4,550 square feet and is shown on Figure 1. The proposed excavation extent is not bounded vertically in all locations, or to the east or west, indicating the area of impact may be larger than the footprint shown in Figure 1. To the west, excavation is limited by an existing gate and buildings. While some excavation may be possible west of the gate, for purposes of this estimate it is assumed that these existing structures will not be removed to allow for soil excavation. To the east, excavation is assumed to extend approximately 8 feet east of the eastern-most boring location, AV-32, as shown on Figure 1. To the south, the assumed excavation extent has been set halfway between the southernmost contaminated boring location and the southernmost clean boring location from the 2013 characterization sampling.

Excavation would continue vertically until confirmation sampling results indicated that arsenic concentrations in the excavation base were less than the CUL. It is assumed that CULs would be achieved within 2 feet of the deepest sample location in borings where the vertical extent of contamination has not been confirmed, approximately 10 feet bgs. This assumes a total volume of 930 cubic yards (CY) of soil will be removed from the South Ditch bank, assuming the southern excavation sidewall is sloped for sidewall stability. As discussed above, the excavation extent includes a landscaped area with mature evergreen trees. It is estimated that 50 to 60 trees ranging from 4 inches to 12 inches in diameter would need to be removed prior to

excavation. The area would then be prepared for excavation by removing the surface layer of mulch in the landscaping area (for potential reuse), and removing the sidewalk located along the eastern excavation extent, parking areas, and potentially part of the Apartments driveway along the east of the excavation extent. Delineation results indicate that soil contamination is not present beneath the paved parking area; however, for excavation sidewall stability, sidewall cutbacks may extend into the paved parking area, requiring removal of asphalt and concrete curbing and pavement.

The excavation volume used in estimating remediation cost is limited to the known volume of contaminated soil. Given the unknowns regarding the volume of contaminated material, and the larger-than-expected volume of contaminated material encountered during ditch excavation in 2012, an additional contingent volume of 270 CY with associated site restoration has been added as a separate element in the cost estimate.

Before excavation, a survey would be conducted to document the ground surface elevation and identify the excavation extents. These survey data will be used as the baseline condition to verify depth and extent of excavation, and to calculate total volume of soil removed. The oversteepened ditch bank was stabilized with clean imported fill following ditch sediment removal activities in 2012, and a liner was placed separating the clean backfill from the impacted soils in the ditch bank. For this evaluation, it is assumed the imported material is removed and reconstructed following completion because it will not be stable enough to remain in place during excavation.

As described above, the groundwater depth in the vicinity of the excavation area is approximately 3 to 7 feet bgs. Because the depth of excavation will extend into groundwater, it is assumed that dewatering of the excavation area using sump pumps will be conducted, and excavated material may also require draining/dewatering prior to disposal. It is assumed that any water pumped from the excavation, or drained from excavated soil, would be transferred to the on-site groundwater treatment plant for processing.

Erosion controls in the South Ditch would be required during excavation to protect the ditch network from erosion and sediment transport during excavation. Temporary erosion and sediment controls would be implemented around the construction area to control run-on and run-off of stormwater into and from the construction area. Any stormwater collecting within the work area that does not infiltrate would be collected and managed as dewatering water or groundwater that has entered the ditches. The South Ditch will also be monitored for indications of turbidity, and sediment controls may be required if turbidity is observed in the ditch during construction.

Once the target excavation depth is achieved, confirmation soil samples would be collected from the excavation base and sidewalls at an approximate spacing of one sample every 25 feet. Alternatively, in locations where existing data have confirmed the extent of soil contamination, an elevation survey may be used to confirm the excavation depth has been achieved. Following confirmation that the excavation extent has been reached, the excavation area would be backfilled and compacted. Rock or quarry spall will be used to backfill the excavation below groundwater to allow for compaction and eliminate future settling. The ditch bank would require backfilling and stabilization with hydroseeding to prevent erosion of soil into the adjacent ditch. The remaining area would be re-landscaped, with transplant of semi-mature trees, and paved to restore any impacted parking spaces, curbs, and sidewalks returning the area to existing condition.

To confirm the source of arsenic to groundwater has been removed, one or two monitoring wells will be installed downgradient of the excavation extent on the landfill property in the vicinity of AV-31 (Figure 1) and potentially on the Apartments parcel. These wells will be integrated into the long-term groundwater monitoring program for the Landfill, sampled semiannually, and assessed for compliance as part of the cleanup.

### Advantages

- 1. Source removal is the most permanent solution for all environmental media and eliminates potential exposure pathways affecting human health and the environment. The primary advantage of excavation is removal of soil with arsenic concentrations greater than the CUL, which is an apparent source of groundwater contamination in the area. Remediation of arsenic in groundwater to 5 μg/L in this and other areas outside the Landfill perimeter, an element of the 2008 Cleanup Action Plan (CAP), may be impracticable without source removal. Removal of contaminated soil is anticipated to remove potential exposure pathways including contaminated soil, groundwater, ditch surface water, or ditch sediment in the area.
- 2. Achievement of CULs on adjacent property. This option would result in remediation of soil on the property adjacent to the Landfill. Arsenic concentrations in groundwater would be expected to attain the CUL over time, following source removal. Potential future impacts to ditch surface water and sediment from the source material would be prevented. No restrictive covenant or other deed restriction would be needed.

### Disadvantages

- 1. Cost would reduce funds available for implementation of the CAP remedy. The cost associated with excavation, off-site disposal, and site restoration is estimated to be \$340,000. Selection of excavation would reduce funds available for long-term implementation of the CAP remedy for the Site. The effects of reduced funding are particularly relevant for the Site because the remedy relies on long-term groundwater gradient control and associated continual groundwater recovery, treatment, and monitoring. Use of cleanup funds to address issues that pose relatively low risk to human health or the environment reduce the availability of funds to operate and maintain the Landfill containment remedy in the future, which could have a much greater impact on human health and the environment.
- 2. Disruption to owner and Apartments property residents. Excavation would require closure, and removal and restoration, of an area of the parking area adjacent to the ditch, and would likely restrict access to the Apartments property at the northernmost entrance during construction. Heavy construction noise, truck traffic, and machinery operation would also provide a disruption to Apartment residents.
- 3. Removal of trees. Excavation would require removal of approximately 50 to 60 existing mature evergreen trees. These trees provide a buffer to the Apartment residents from the Landfill. Although trees would be replanted as part of excavation restoration, replanted trees would likely be 4 to 6 feet in height, and it would be many years before the new vegetation would reach the maturity of the existing growth.

### Option B: Filling of South Ditch and Long-term Monitoring

This option assumes no further removal of contaminated soil and would address the area with the greatest potential for exposure to contaminated surface water through filling of the South Ditch in the vicinity of the Apartments complex, if necessary, and monitoring surface water and groundwater. One or two monitoring wells would be installed for long-term groundwater monitoring. Surface water in the portion of the ditch adjacent to the contaminated area would be monitored for arsenic concentration and elevation during the wet season prior to construction. If arsenic concentrations in surface water indicate a risk to human health and the environment, this area of the ditch would be filled with up to approximately 2 feet of clean fill (and potentially arsenic-adsorbent media) in order to prevent exposure to contaminated surface water. Filling would remove the surface water expression immediately adjacent to the contaminated groundwater plume beneath the Apartments. For shallow groundwater that discharges to the ditch, filling of the ditch would greatly slow the rate of transport and provide greater attenuation of arsenic concentrations in groundwater prior to discharge into the ditch network further downstream. This option would also include regular collection of a surface water sample from the ditch network downgradient of the South Ditch during long-term monitoring events.

A restrictive covenant would be prepared for the Apartments property where soil and groundwater concentrations exceed CULs to control contact with contaminated soil or groundwater. The restrictive covenant could be implemented so that source removal is required as part of future redevelopment or land use changes.

The estimated cost for implementation of Option B is \$72,000 to \$97,000. This cost includes \$12,000 for installation of two groundwater monitoring wells, \$15,000 to \$40,000 for filling of the ditch, \$12,000 for wetlands permitting, \$23,000 for data collection and engineering design, oversight, and agency involvement, and \$10,000 for revision of the existing draft restrictive covenant to address soil contamination.

No cost is included for groundwater and surface water monitoring in conjunction with regular Landfill compliance monitoring. Semiannual monitoring and reporting for two additional wells and one surface water sampling location is expected to add less than \$2,000 per year to site monitoring costs. This cost is assumed to occur for both Option A and Option B.

### **Key Assumptions**

Surface water conditions in this portion of the ditch have not been documented since excavation of contaminated sediment and backfilling in 2012. In order to provide data that would be used to calculate the volume of soil needed to cover exposed surface water, this alternative assumes water levels and arsenic concentrations would be monitored during wet season conditions. Additionally, a detailed elevation survey of the South Ditch would be conducted to document the existing conditions in the area considered for filling of the ditch. This survey will assist with evaluation and determination of the fill depth, extent, and surface grading that will eliminate surface water in the area while maintaining drainage and groundwater flow conditions. It is assumed that, because it will continue to be lower in elevation than the Apartments property, this ditch section can be filled without materially affecting surface drainage from the Apartments property.

The drainage ditch system and associated wetlands are subject to permitting requirements for filling under the Clean Water Act. As shown in Figure 1, a portion of the adjacent ditch is within (or in close proximity to) a previously delineated wetland. It is assumed that the ditch filling would be limited to 0.1 acre total and could be accomplished under a nationwide permit (#38). The 0.1-acre area is estimated to fill the approximate extent of the affected area shown on Figure 3; if necessary, the western extent of the filled area could be reduced so that the filled area fits within 0.1 acre. If impacts to jurisdictional ditches and wetlands exceed 0.1 acre, wetland mitigation would be needed and substantial cost would be added to Option B. It may be possible to conduct the work under the 2012 Nationwide Permit #38 by modifying the existing permit. Costs associated with attaining a new Nationwide Permit #38 are included in the cost estimate for Option B.

As described above, the survey data will be used to calculate the total volume of soil needed to cover any exposed surface water adjacent to the apartment complex. For this estimate, it is assumed that between 6 inches and 2 feet of soil will be placed to eliminate the surface water depression in the South Ditch (Figure 3). This is approximately 200 to 500 tons of imported clean backfill and topsoil. The section of filled ditch would be sloped consistent with the current westerly surface drainage direction. To prevent erosion, the surface would be hydroseeded with a specified wetland seed mix consisting of native emergent species suitable for wetland conditions.

No cost is included in this cost estimate for soil amendment with treatment media. Use of amendment may be evaluated during the design and planning phases to determine if use would be beneficial for attenuation of groundwater. If that evaluation determines that an adsorbent or other treatment media would further retard arsenic transport without interfering with groundwater flow and without significant additional cost, Ecology may direct that it be added to the backfill.

With this alternative, arsenic-contaminated soil beneath the Apartment's property will be left in place, and one or two monitoring wells will be installed to monitor groundwater plume stability over time as part of existing long-term semiannual groundwater monitoring. It is assumed that one new well would be installed downgradient of the soil contamination area, in the vicinity of AV-31 (Figure 1), and one new well may be installed within the center of the soil source area on the Apartments property. Existing Monitoring Well GW-1 (Figure 1) may also be used for monitoring. Long-term groundwater monitoring and reporting would document trends in groundwater conditions and assess compliance.

Because arsenic would be left in place at concentrations greater than the CUL, this option would include a restrictive covenant for the Apartments property. This restrictive covenant would control potential future exposures to contaminated soil and groundwater by restricting ground-disturbing activities and groundwater extraction in the vicinity of the CUL exceedances in soil and groundwater.

### Advantages

1. Limited disruption to owner and Apartments property residents. Leaving contamination in place would limit disruption to the owner and residents. There would be no construction conducted on the Apartments property aside from monitoring well installation. Sampling personnel may access the Site on a periodic basis to collect groundwater samples.

- 2. Addresses potential exposure pathways affecting human health and the environment. As described above, the current potential for human exposure to contaminated subsurface soil and/or groundwater is low because most of the area is covered by landscaping or paved with asphalt, and surface soil arsenic is less than CULs. Implementation of restrictive covenants would control potential future human contact with contaminated media. The potential for contact with contaminated surface water would be reduced through filling of the ditch, if necessary, in the area immediately adjacent to the Apartments where the greatest potential for contaminated surface water exists.
- 3. Monitoring approach is consistent with long-term monitoring to be conducted for the Landfill in perpetuity. As part of the implemented remedy for the Landfill, long-term groundwater monitoring will be conducted in perpetuity. This alternative includes the addition of approximately two monitoring wells to the groundwater monitoring plan and a surface water sample in the ditch network. The cost associated with the addition of these samples is relatively low because they will be part of an existing monitoring program.
- 4. Increases groundwater flow path distance, allowing for increased attenuation. Modifying the topography of the ditch network, and relocating the point where groundwater discharges to the ditches will slow the transport of arsenic and is expected to allow for more arsenic attenuation in groundwater. This may reduce arsenic concentrations in groundwater at the point of discharge to the ditch, reducing the degree of exposure risk associated with direct contact with contaminated surface water and slowing the rate of potential ditch recontamination.

### Disadvantages

- 1. Placement of restrictive covenant on adjacent property. The placement of a restrictive covenant on the Apartments property may reduce the potential options of the owner for future development and ground-disturbing activities on the property, and may affect the property value.
- 2. Potential over long-term for contaminated surface water to be a route of exposure for human and ecological receptors. Despite a blocked surface water exposure pathway adjacent to the soil contamination, and greater arsenic attenuation along longer groundwater flowpaths, groundwater would still discharge to surface water further downgradient in the ditch network. There would remain a potential for surface water in the ditches to present an exposure route to human and ecological receptors contacting surface water in the ditch network.
- 3. Potential long-term recontamination of ditch sediments. Because groundwater would discharge to the ditch system downgradient of the soil contamination area, the potential exists for contaminated groundwater to reach the ditch network. Over time this groundwater could contribute to recontamination of ditch sediments that were remediated in 2012 as part of Phase 2 Part 2 of the 2008 CAP implementation.

#### **WEST DITCH CONDITIONS**

As discussed in the *Ditch Bank Soil Investigation Results Memorandum*, the hotspot in the West Ditch was delineated to be at least 120 feet in length along the ditch bank, extending into the agricultural field approximately 10 feet, with the maximum concentrations observed in samples collected 5 feet from the ditch bank. Vertically, arsenic contamination extends to 4 feet bgs in some locations.

On the northern and southern extents of the West Ditch investigation, the contamination was not delineated to concentrations less than the CUL. The concentration pattern suggests decreasing arsenic concentrations in these areas, and it is assumed that arsenic contamination is not likely to extend more than 15 feet beyond the boring locations shown in Figure 2.

The depth to groundwater ranged from 3 to 4 feet bgs during Geoprobe advancement in this area (refer to boring logs in Attachment 2). Contaminated groundwater in the vicinity is associated with the Agricultural Field Plume that is being remediated under the 2008 CAP. The primary source of the contamination is the now-contained Landfill; therefore, groundwater was not sampled during investigation activities. The elevated soil arsenic concentrations may contribute to elevated groundwater and ditch surface water arsenic concentrations, and recontamination of the recently remediated ditch sediments.

The potential for human contact with shallow contaminated soil exists for agricultural and other workers. The area is not currently cultivated and is not part of the area leased by the property owner, the Washington State Department of Transportation (WSDOT), for farming. The future use of this area is expected to include site regrading and conversion to wetlands as part of the State Route-167 project.

### POTENTIAL REMEDIAL STRATEGIES—WEST DITCH

### **Option A: Excavation of Contaminated Soil**

This option includes the removal of approximately 450 tons of contaminated material from the West Ditch. The estimated cost for implementation of Option A is \$69,000. This cost includes \$55,000 for soil excavation and disposal and \$14,000 for engineering design, oversight, and agency involvement.

### **Key Assumptions**

Based on current data and cleanup objectives, the approximate extent of the excavation area would be approximately 2,975 square feet and is shown on Figure 2. The proposed excavation extent is not bounded to the north or south indicating the area of impact may be larger than the footprint shown in Figure 2. For the purposes of the cost assumption, excavation is assumed to extend approximately 15 feet past the northernmost and southernmost locations for a total of 150 feet along the ditch bank. The proposed extent will extend 8 feet past the transect located 10 feet west of the bank, for a total of 18 feet from the ditch bank. Vertically, the proposed excavation will extend to a minimum of 2 feet and a maximum of 4 feet, as shown in Figure 2.

Excavation would continue vertically until confirmation sampling indicated that arsenic concentrations in the excavation base were less than the CUL. This assumes a total soil volume of 320 CY, or 450 tons, of soil will be removed from the West Ditch bank.

Because the area is an agricultural field and no site structures exist, surface preparation activities would be minimal. Before excavation, a survey would be conducted to document the ground surface elevation and identify the excavation extents. These survey data will be used as the baseline condition to verify depth and extent of excavation, and to calculate total volume of soil removed.

As described above, the groundwater depth in the vicinity of the excavation area is approximately 3 to 4 feet bgs. Because the depth of excavation will extend into groundwater, dewatering of the excavation area using sump pumps is assumed, and excavated material may also require draining/dewatering prior to disposal. It is assumed that any water pumped from the excavation, or drained from excavated soil would be transferred to the on-site groundwater treatment plant for processing.

Excavation would extend from the current ditch bank into the agricultural field. Sedimentation controls in the ditch network would be required to ensure turbidity and sedimentation in the ditch do not exceed surface water quality standards. Temporary erosion and sediment controls will be implemented around the construction area to control run-on and run-off of stormwater into and from the construction area. Any stormwater collecting within the work area that does not infiltrate will be collected and managed as dewatering water or groundwater that has entered the ditches.

During Phase 2 Part 2 construction activities, logs and tree limbs were encountered during ditch bank sediment removal in the vicinity of the West Ditch hotspot area. The buried wood generally ranged in size from 1 to 4 feet in length and up to 8 inches in diameter. Excavated wood would be disposed of with the excavated soil.

Once the target excavation depth is achieved, confirmation soil samples will be collected from the excavation base and sidewalls at an approximate spacing of one sample every 25 feet. Alternatively, in locations where existing data have confirmed the extent of soil contamination, an elevation survey may be used to confirm the excavation depth has been achieved. Following confirmation that the excavation extent has been reached, the excavation area would be backfilled and compacted. Rock or quarry spall will be used to backfill the excavation below groundwater to allow for compaction, and eliminate future settling. The ditch bank would require backfilling and stabilization with hydroseeding to prevent erosion of soil into the adjacent ditch. A layer of topsoil would be placed on top to be consistent with the surrounding agricultural field ground surface.

### **Advantages**

1. Source removal. The primary advantage of excavation is removal of soil with arsenic concentrations greater than the CUL, which is likely a contributing source of groundwater contamination in the area. Removal of contaminated soil is anticipated to address potential exposure routes to contaminated soil, groundwater, or ditch surface water in the area.

2. Unencumbered future use of the Site. Because future use of this area is anticipated to include site regrading and construction of wetlands, attainment of CULs would allow for unrestricted future site redevelopment activities by the property owner.

### Disadvantages

1. Cost would reduce funds available for implementation of the CAP remedy. The cost associated with an excavation alternative, off-site disposal, and site restoration is estimated to be \$69,000. Selection of excavation reduces funds available for long-term implementation of the CAP remedy for the Site.

### **Option B: Restrictive Covenant for Soil Contamination**

This option assumes no removal of contaminated soil. The draft restrictive covenant for the agricultural field property under review by WSDOT would likely be modified to address soil exceedances of CULs to control contact with contaminated soil. This draft restrictive covenant already addresses contaminated groundwater and remediation equipment on the property.

The estimated cost for implementation of Option B is shown below, followed by discussion of the key assumptions and considerations used in evaluation of the no action option.

The estimated cost for Option B is \$20,000. This cost includes development of restrictive covenants and agency involvement.

### **Key Assumptions**

With this alternative, arsenic-contaminated soil is left in place with no further action on the property. Because arsenic would be left in place at concentrations greater than the CUL, this option would require long-term or permanent restrictive covenants to be placed on the property instead of the temporary restrictive covenant under review by WSDOT for groundwater remediation. This restrictive covenant would control potential future exposures to contaminated soil and groundwater by restricting ground-disturbing activities and groundwater extraction in the vicinity of the CUL exceedances in soil and groundwater. These covenants serve as a mechanism to protect human health from contact with contaminated soil and groundwater.

### Advantages

1. Short-term cost savings. The primary advantage of no action on the property would be cost savings relative to full excavation.

### Disadvantages

 Exceed CUL in area planned for redevelopment. Leaving contamination in place would not appear to be consistent with the property owner's future plans for the property. WSDOT, the current property owner, is planning to convert this land into a riparian wetland mitigation area. The no excavation option would leave in place

- contaminated soil and establish long-term restrictive covenant provisions that may impact WSDOT's ability to implement their planned future site use.
- 2. Potential source to groundwater and long-term recontamination of ditch surface water and sediments. Leaving contaminated soil in place, though of relatively low magnitude, risks continued leaching of arsenic to groundwater that may interfere with the 2008 CAP goal of remediating arsenic in groundwater to attain the CUL. As stated above, because the agricultural ditches likely receive groundwater from this area, the potential exists for contaminated groundwater to reach the ditch network. Over time this groundwater could contribute to recontamination of ditch sediments remediated in 2012.

### **NEXT STEPS**

Ecology's selection of Option A for both the South Ditch and West Ditch will allow the Trust to begin preparations for implementing the remedial action. Next steps will include coordination with the affected property owners, and preparation of plans and specifications.

#### REFERENCES

- Floyd|Snider/AMEC. 2013. Unpublished Memorandum from Brett Beaulieu and Erin Murray, Floyd|Snider to Dom Reale of the Washington State Department of Ecology Re: Ditch Bank Soil Investigation Results. 27 June.
- Floyd|Snider. 2007. B&L Landfill Groundwater Alternatives Evaluation, Ecology Preliminary Review Draft. Prepared for Murray Pacific Corporation. January.
- U.S. Environmental Protection Agency (USEPA). 1994. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* 9240.1-05-01, PB 94-963502, EPA 540/R-94/013. Office of Emergency and Remedial Response, Washington, D.C. February.
- ——. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. OSWER 9240.1-45, EPA 540-R-04-004. Office of Superfund Remediation and Technology Innovation (OSRTI), Washington, D.C. July.

Encl.: Table 1—Arsenic Results in Soil and Groundwater Figure 1—Extent of South Ditch Excavation Option Figure 2—Extent of West Ditch Excavation Option Figure 3—Extent of South Ditch Fill Option Attachment 1—Analytical Laboratory Reports Attachment 2—Boring Logs

# Table



Table 1
Arsenic Results in Soil and Groundwater

Location	Sample ID	Sample Date	Top Depth (feet)	Bottom Depth (feet)	Arsenic Concentration (mg/kg)
Soil	•	•			` ` ` ` ` ` ` `
South Ditch	AV-1 2-3	5/22/2013	2	3	7.33
AV-1	AV-1 2-3 AV-1 5-6	5/22/2013	5	6	18.9
	AV-2 2-3	5/22/2013	2	3	5.95
AV-2	AV-2 5-6	5/22/2013	5	6	205
	AV-2 6-7	5/22/2013	6	7	71.7
Ī	AV-2 7-8	5/22/2013	7	8	8.82
	AV-3 2-3	5/22/2013	2	3	15.2
	AV-3 3-4	5/22/2013	3	4	69.5
4V-3	AV-3 5-6	5/22/2013	5	6	37.2
	AV-3 6-7	5/22/2013	6	7	11.2
	AV-3 7-8	5/22/2013	7	8	7.88
-	AV-4 2-3 AV-4 5-6	5/22/2013 5/22/2013	2 5	3 6	11.5 <b>159</b>
4V-4	AV-4 5-0 AV-4 6-7	5/22/2013	6	7	37.8
<u> </u>	AV-4 7-8	5/22/2013	7	8	8.41
	AV-5 2-3	5/22/2013	2	3	16.4
Ī	AV-5 3-4	5/22/2013	3	4	149
AV-5	AV-5 5-6	5/22/2013	5	6	103
[	AV-5 6-7	5/22/2013	6	7	109
	AV-5 7-8	5/22/2013	7	8	16.8
Ţ	AV-6 2-3	5/22/2013	2	3	7.15
4V-6	AV-6 5-6	5/22/2013	5	6	35.3
-	AV-6 6-7	5/22/2013	6	7	559
	AV-6 7-8 AV-7 2-3	5/22/2013 5/22/2013	7 2	8	<b>52.8</b> 13.5
}	AV-7 2-3 AV-7 3-4	5/22/2013	3	4	13.5
4V-7	AV-7 5-4 AV-7 5-6	5/22/2013	5 5	6	222
··· /	AV-7 5-0 AV-7 6-7	5/22/2013	6	7	278
•	AV-7 7-8	5/22/2013	7	8	36.3
	AV-8 2-3	5/22/2013	2	3	9.55
4V-8	AV-8 5-6	5/22/2013	5	6	204
10-0	AV-8 6-7	5/22/2013	6	7	612
	AV-8 7-8	5/22/2013	7	8	265
	AV-9 2-3	5/22/2013	2	3	3.18
4V-9	AV-9 2-3 DUP	5/22/2013	2	3	2.04
	AV-9 5-6 AV-10 2-3	5/22/2013 5/22/2013	5 2	6	1.37 13.8
	AV-10 2-3 AV-10 5-6	5/22/2013	5	6	25.6
4V-10	AV-10 5-6 DUP	5/22/2013	5	6	310
•	AV-10 6-7	5/22/2013	6	7	340
Ī	AV-10 7-8	5/22/2013	7	8	20.5
4V-11	AV-11 2-3	5/22/2013	2	3	17.8
-\V-11	AV-11 5-6	5/22/2013	5	6	5.09
	AV-12 2-3	5/22/2013	2	3	12.9
4V-12	AV-12 5-6 AV-12 6-7	5/22/2013	5 6	6 7	206
-	AV-12 0-7 AV-12 7-8	5/22/2013 5/22/2013	7	8	458 92.2
	AV-12 7-8 AV-13 2-3	5/22/2013	2	3	13.8
ŀ	AV-13 3-4	5/22/2013	3	4	68.2
4V-13	AV-13 5-6	5/22/2013	5	6	233
_	AV-13 6-7	5/22/2013	6	7	62.6
	AV-13 7-8	5/22/2013	7	8	18.8
	AV-14 2-3	5/22/2013	2	3	18.1
\V-14	AV-14 5-6	5/22/2013	5	6	29.8
	AV-14 6-7	5/22/2013	6	7	447
<u> </u>	AV-14 7-8	5/22/2013	7	8	99
<u> </u>	AV-15 2-3 AV-15 3-4	5/22/2013 5/22/2013	3	3 4	16.2 <b>20.9</b>
4V-15	AV-15 5-6	5/22/2013	5 5	6	59.5
··· · · · · ·	AV-15 6-7	5/22/2013	6	7	33.1
ļ	AV-15 7-8	5/22/2013	7	8	294
	AV-16 2-3	5/22/2013	2	3	16.9
4V-16	AV-16 5-6	5/22/2013	5	6	88.8
	AV-16 6-7	5/22/2013	6	7	340
	AV-16 7-8	5/22/2013	7	8	144
\V-17	AV-17 3-4	6/7/2013	3	4	1.46
	AV-17 5-6 AV-18 3-4	6/7/2013 6/7/2013	5 3	4	12 1.93
AV-18	AV-18 3-4 AV-18 5-6	6/7/2013	5	6	2.35
	AV-10 3-4	6/7/2013	3	4	1.88
AV-19	AV-19 5-6	6/7/2013	5	6	15.9
-	AV-19 5-6 DUP	6/7/2013	5	6	13.1
	AV-20 3-4	6/7/2013	3	4	1.53
4V-20	AV-20 3-4 DUP	6/7/2013	3	4	1.84
	AV-20 5-6	6/7/2013	5	6	15.3
	AV-21 3-4	6/7/2013	3	4	67.8
AV-21	AV-21 5-6	6/7/2013	5	6	107
	AV-21 6-7	6/7/2013	6	7	36
	AV-21 7-8	6/7/2013	7	8	6.75
4V-22	AV-22 3-4	6/7/2013 6/7/2013	5	6	1.91 2.63



Table 1
Arsenic Results in Soil and Groundwater

Location	Sample ID	Sample Date	Top Depth (feet)	Bottom Depth (feet)	Arsenic Concentration (mg/kg)
Soil (conti	,				
South Ditc	ch (continued) AV-23 3-4	6/7/2013	3	4	32
	AV-23 5-4 AV-23 5-6	6/7/2013	5	6	105
4V-23	AV-23 5-6 DUP	6/7/2013	5	6	110
AV-23	AV-23 6-7	6/7/2013	6	7	49.3
	AV-23 7-8	6/7/2013	7	8	5.61
N) / O /	AV-24 3-4	6/7/2013	3	4	1.84
AV-24	AV-24 5-6	6/7/2013	5	6	2.77
	AV-25 3-4	6/7/2013	3	4	17.7
	AV-25 3-4 DUP	6/7/2013	3	4	17.8
AV-25	AV-25 5-6	6/7/2013	5	6	426
	AV-25 6-7	6/7/2013	6	7	34.7
	AV-25 7-8	6/7/2013	7	8	7.09
	AV-26 3-4	6/7/2013	3	4	54.8
	AV-26 3-4 DUP	6/7/2013	3	4	51.2
4V-26	AV-26 5-6	6/7/2013	5	6	509
	AV-26 6-7	6/7/2013	6	7	303
	AV-26 7-8	6/7/2013	7	8	11.5
	AV-27 3-4	6/7/2013	3	4	11
AV-27	AV-27 5-6	6/7/2013	5	6	80.7
	AV-27 6-7	6/7/2013	6	7	34.7
	AV-27 7-8	6/7/2013	7	8	80.9
AV-28	AV-28 3-4	6/10/2013	3	4	1.46
	AV-28 5-6	6/10/2013	5 3	6	2.65
AV-29	AV-29 3-4	6/10/2013	3 5	4	1.7
	AV-29 5-6	6/10/2013	3	6	2.52
	AV-30 3-4 AV-30 5-6	6/10/2013 6/10/2013	5	6	23.1 50.2
4V-30	AV-30 5-6 AV-30 5-6 DUP	6/10/2013	5	6	50.2 57.7
₹V -OU	AV-30 5-6 DUP AV-30 6-7	6/10/2013	6	7	74
	AV-30 6-7 AV-30 7-8	6/10/2013	7	8	11.8
	AV-30 7-6 AV-32 3-4	6/10/2013	3	4	17.3
	AV-32 3-4 DUP	6/10/2013	3	4	23.5
AV-32	AV-32 5-6	6/10/2013	5	6	51.2
02	AV-32 6-7	6/10/2013	6	7	28.4
	AV-32 7-8	6/10/2013	7	8	14.1
Nest Ditch		0.10.2010	<u> </u>		
	WD-1 1-2	5/23/2013	1	2	23.8
	WD-1 2-3	5/23/2013	2	3	18.3
ND-1	WD-1 3-4	5/23/2013	3	4	3.73
	WD-1 3-4 DUP	5/23/2013	3	4	5.62
	WD-2 1-2	5/23/2013	1	2	29.5
ND 0	WD-2 2-3	5/23/2013	2	3	20
ND-2	WD-2 2-3 DUP	5/23/2013	2	3	42.1
	WD-2 3-4	5/23/2013	3	4	5.18
	WD-3 1-2	5/23/2013	1	2	28.1
ND-3	WD-3 2-3	5/23/2013	2	3	46.5
VD-0	WD-3 3-4	5/23/2013	3	4	45.1
	WD-3 4-5	5/23/2013	4	5	4.84
	WD-4 1-2	5/23/2013	1	2	26.4
ND-4	WD-4 2-3	5/23/2013	2	3	31.6
	WD-4 3-4	5/23/2013	3	4	6
	WD-5 1-2	5/23/2013	1	2	30.1
VD-5	WD-5 1-2 DUP	5/23/2013	1	2	47.8
-	WD-5 2-3	5/23/2013	2	3	103
	WD-5 3-4	5/23/2013	3	4	14.7
	WD-6 1-2	5/23/2013	1	2	27.4
VD-6	WD-6 2-3	5/23/2013	3	3 4	43
	WD-6 3-4 WD-6 3-4 DUP	5/23/2013 5/23/2013	3	4	9.58 12.4
	WD-6 3-4 DUP WD-7 1-2	5/23/2013	1	2	12.4 <b>45.4</b>
	WD-7 1-2 WD-7 2-3	5/23/2013	2	3	76.6
VD-7	WD-7 2-3 WD-7 3-4	5/23/2013	3	4	44.9
	WD-7 4-5	5/23/2013	4	5	<b>44.9</b> 5
	WD-8 1-2	5/23/2013	1	2	31.8
A/D C	WD-8 1-2 DUP	5/23/2013	1	2	23.9
ND-8	WD-8 2-3	5/23/2013	2	3	27.9
	WD-8 3-4	5/23/2013	3	4	12.3
WD-9	WD-9 1-2	5/23/2013	1	2	67.7
	WD-9 2-3	5/23/2013	2	3	<b>23.3</b> J
	WD-9 3-4	5/23/2013	3	4	8.47
	WD-10 1-2	5/23/2013	1	2	29.1
WD-10	WD-10 2-3	5/23/2013	2	3	10.3
	WD-10 3-4	5/23/2013	3	4	5.59
	WD-11 1-2	5/23/2013	1	2	30.8
WD-11	WD-11 2-3	5/23/2013	2	3	54
	WD-11 3-4	5/23/2013	3	4	8.21
	WD-12 1-2	5/23/2013	1	2	20.6
ND-12	WD-12 2-3	5/23/2013	2	3	24.1
	WD-12 3-4	5/23/2013	3	4	9.91
	WD-13 1-2	5/23/2013	1	2	41.1
WD-13	WD-13 2-3	5/23/2013	2	3	46
	WD-13 3-4	5/23/2013	3	4	13.7



# Table 1 Arsenic Results in Soil and Groundwater

			Тор	Bottom	Arsenic
			Depth	Depth	Concentration
Location	Sample ID	Sample Date	(feet)	(feet)	(mg/kg)
Soil					
West Ditch					
	WD-14 1-2	5/23/2013	1	2	26.6
WD-14	WD-14 2-3	5/23/2013	2	3	23.6
WD-14	WD-14 3-4	5/23/2013	3	4	21.7
	WD-14 4-5	5/23/2013	4	5	7.34
	WD-15 1-2	6/10/2013	1	2	30.2
WD-15	WD-15 2-3	6/10/2013	2	3	12.9
VVD-13	WD-15 2-3 DUP	6/10/2013	2	3	29.4
	WD-15 3-4	6/10/2013	3	4	5.42
	WD-16 1-2	6/10/2013	1	2	52.7
WD-16	WD-16 2-3	6/10/2013	2	3	7.61
	WD-16 3-4	6/10/2013	3	4	2.63
	WD-17 1-2	6/10/2013	1	2	56.1
WD-17	WD-17 2-3	6/10/2013	2	3	7.49
	WD-17 3-4	6/10/2013	3	4	4.81
	WD-18 1-2	6/10/2013	1	2	23
WD 40	WD-18 2-3	6/10/2013	2	3	5.6
WD-18	WD-18 3-4	6/10/2013	3	4	2.45
	WD-18 3-4 DUP	6/10/2013	3	4	2.45
Groundwat	er			-	
South Ditch	1				
AV-2	AV-2-GW (6-10)	6/7/2013	6	10	80.6
AV-13	AV-13-GW (7-11)	6/7/2013	7	11	31.5
AV-19	AV-19-GW (4-8)	6/7/2013	4	8	72.4
AV-31	AV-31-GW (1-5)	6/10/2013	1	5	141

### Note:

**Bold** Indicates concentration is greater than the cleanup level of 20 mg/kg for soil and 5  $\mu$ g/L for groundwater.

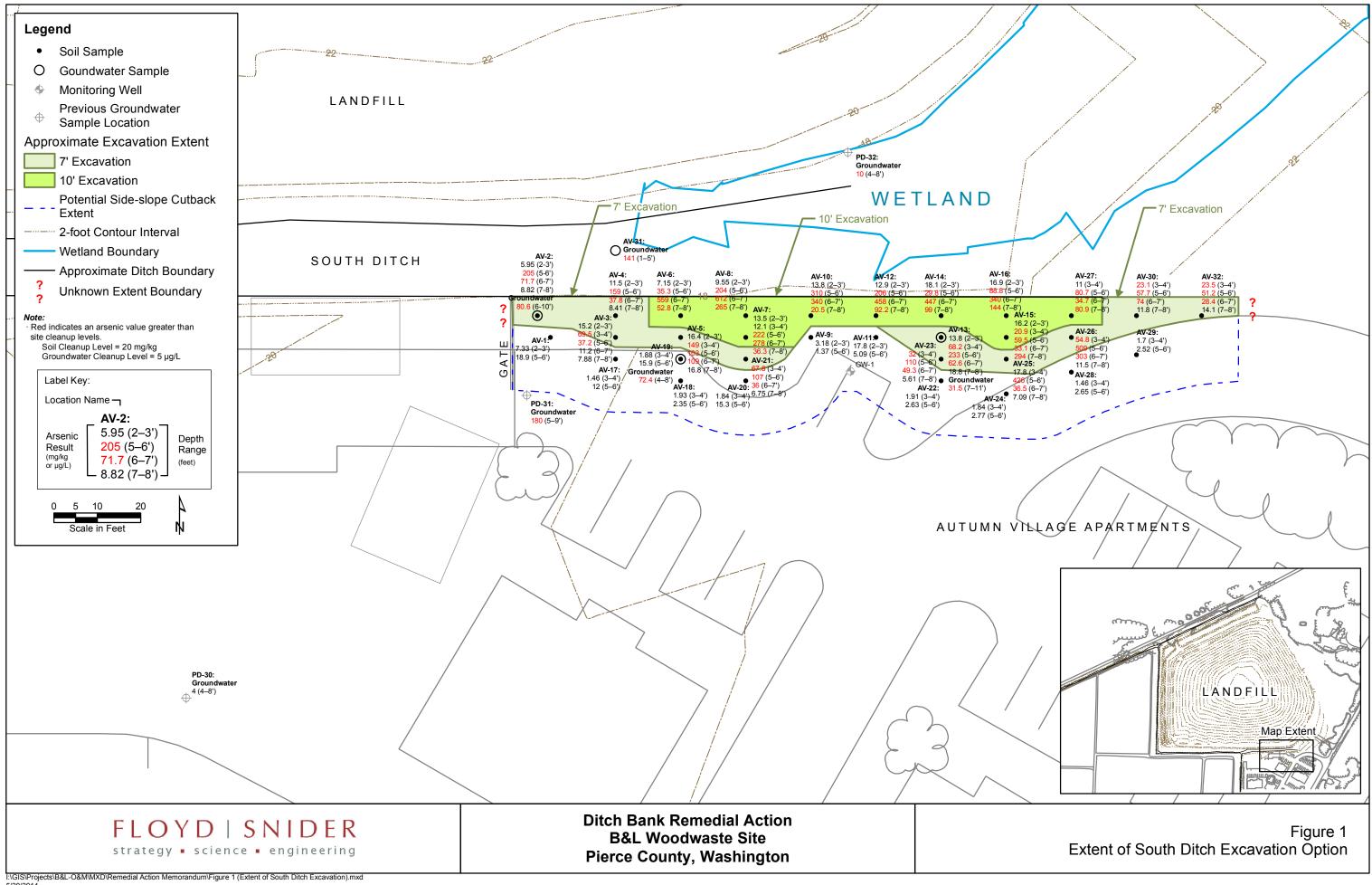
### Abbreviations:

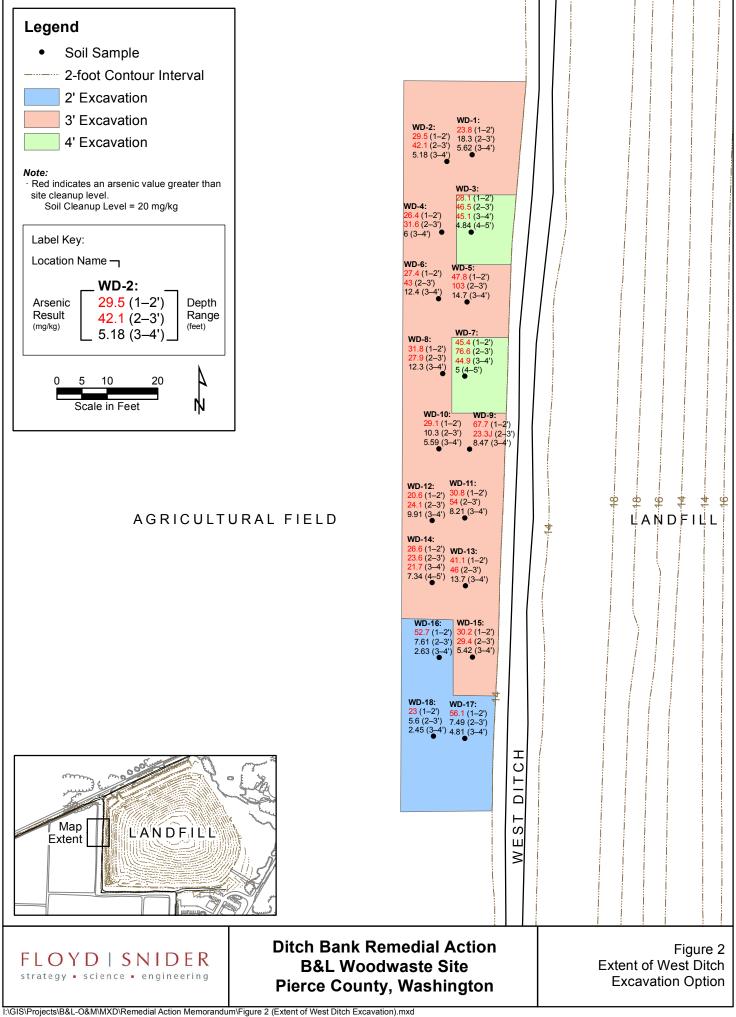
μg/L Micrograms per liter mg/kg Milligrams per kilogram

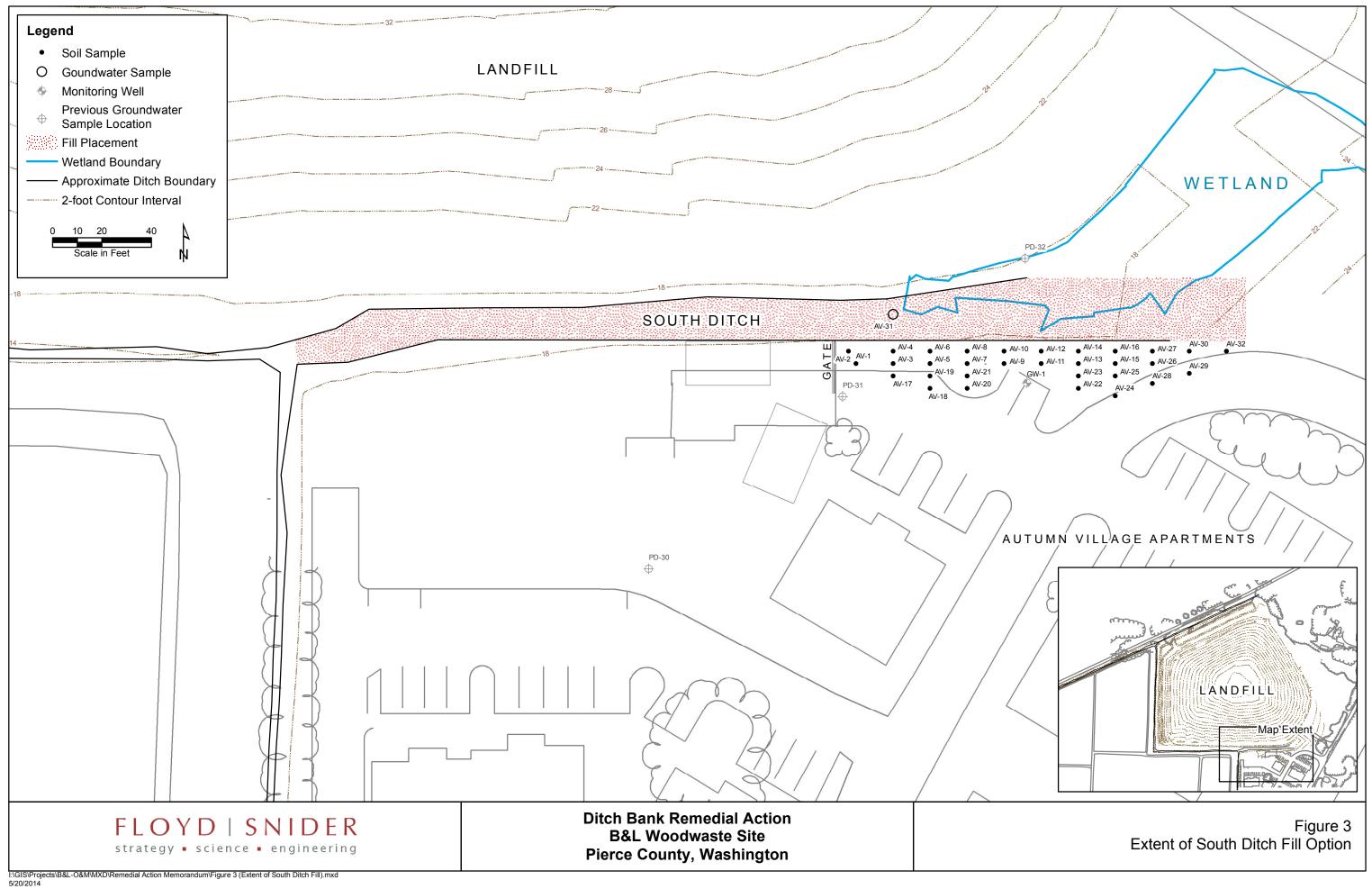
#### Qualifier:

J Analyte was detected; given concentration is considered an estimate.

# **Figures**







# Attachment 1 Analytical Laboratory Reports

### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 6, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square 601 Union St, Suite 600 Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the results from the testing of material submitted on May 22, 2013 from the B+L O+M 1525, F&BI 305440 project. There are 42 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures FDS0606R.DOC

### ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE

This case narrative encompasses samples received on May 22, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L O+M 1525, F&BI 305440 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Floyd/Snider
305440 -01	AV-1 1-2
305440 -02	AV-1 2-3
305440 -03	AV-1 3-4
305440 -04	AV-1 4-5
305440 -05	AV-1 5-6
305440 -06	AV-1 6-7
305440 -07	AV-1 7-8
305440 -08	AV-2 1-2
305440 -09	AV-2 2-3
305440 -10	AV-2 3-4
305440 -11	AV-2 4-5
305440 -12	AV-2 5-6
305440 -13	AV-2 6-7
305440 -14	AV-2 7-8
305440 -15	AV-3 1-2
305440 -16	AV-3 2-3
305440 -17	AV-3 3-4
305440 -18	AV-3 4-5
305440 -19	AV-3 5-6
305440 -20	AV-3 6-7
305440 -21	AV-3 7-8
305440 -22	AV-4 1-2
305440 -23	AV-4 2-3
305440 -24	AV-4 3-4
305440 -25	AV-4 4-5
305440 -26	AV-4 5-6
305440 -27	AV-4 6-7
305440 -28	AV-4 7-8
305440 -29	AV-5 1-2
305440 -30	AV-5 2-3
305440 -31	AV-5 3-4
305440 -32	AV-5 4-5
305440 -33	AV-5 5-6
305440 -34	AV-5 6-7
305440 -35	AV-5 7-8
305440 -36	AV-6 1-2
305440 -37	AV-6 2-3
305440 -38	AV-6 3-4

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

Laboratory ID	Floyd/Snider
305440 -39	AV-6 4-5
305440 -40	AV-6 5-6
305440 -41	AV-6 6-7
305440 -42	AV-6 7-8
305440 -43	AV-7 1-2
305440 -44	AV-7 2-3
305440 -45	AV-7 3-4
305440 -46	AV-7 4-5
305440 -47	AV-7 5-6
305440 -48	AV-7 6-7
305440 -49	AV-7 7-8
305440 -50	AV-8 1-2
305440 -51	AV-8 2-3
305440 -52	AV-8 3-4
305440 -53	AV-8 4-5
305440 -54	AV-8 5-6
305440 -55	AV-8 6-7
305440 -56	AV-8 7-8
305440 -57	AV-9 1-2
305440 -58	AV-9 2-3
305440 -59	AV-9 2-3 Duplicate
305440 -60	AV-9 3-4
305440 -61	AV-9 4-5
305440 -62	AV-9 5-6
305440 -63	AV-9 6-7
305440 -64	AV-9 7-8
305440 -65	AV-10 1-2
305440 -66	AV-10 2-3
305440 -67	AV-10 3-4
305440 -68	AV-10 4-5
305440 -69	AV-10 5-6
305440 -70	AV-10 5-6 Duplicate
305440 -71	AV-10 6-7
305440 -72	AV-10 7-8
305440 -73	AV-11 1-2
305440 -74	AV-11 2-3
305440 -75	AV-11 3-4
305440 -76	AV-11 5-6
305440 -77	AV-11 6-7

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

Elovid/Cnidon
<u>Floyd/Snider</u> AV-11 7-8
AV-11 7-8 AV-12 1-2
AV-12 1-2 AV-12 2-3
AV-12 2-3 AV-12 3-4
AV-12 3-4 AV-12 4-5
AV-12 4-3 AV-12 5-6
AV-12 5-0 AV-12 6-7
AV-12 0-7 AV-12 7-8
AV-12 7-8 AV-13 1-2
AV-13 1-2 AV-13 2-3
AV-13 2-3 AV-13 3-4
AV-13 3-4 AV-13 4-5
AV-13 4-3 AV-13 5-6
AV-13 6-7
AV-13 7-8
AV-14 1-2
AV-14 2-3
AV-14 3-4
AV-14 4-5
AV-14 5-6
AV-14 6-7
AV-14 7-8
AV-16 1-2
AV-16 2-3
AV-16 3-4
AV-16 4-5
AV-16 5-6
AV-16 6-7
AV-16 7-8
AV-15 1-2
AV-15 2-3
AV-15 3-4
AV-15 4-5
AV-15 5-6
AV-15 6-7
AV-15 7-8
AV-11-2-3 Duplicate

All quality control requirements were acceptable.

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-1 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-02

 Date Analyzed:
 05/28/13
 Data File:
 305440-02.034

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 7.33

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-1 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-05

 Date Analyzed:
 05/28/13
 Data File:
 305440-05.010

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 97 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 18.9

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-2 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-09

 Date Analyzed:
 05/28/13
 Data File:
 305440-09.035

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.95

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-2 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

Date Extracted:05/24/13Lab ID:305440-12Date Analyzed:05/28/13Data File:305440-12.037Matrix:SoilInstrument:ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 205

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-3 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-16

 Date Analyzed:
 05/28/13
 Data File:
 305440-16.038

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 15.2

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-3 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-19

 Date Analyzed:
 05/28/13
 Data File:
 305440-19.039

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 37.2

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-4 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-23

 Date Analyzed:
 05/28/13
 Data File:
 305440-23.040

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 91 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 11.5

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-4 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-26

 Date Analyzed:
 05/28/13
 Data File:
 305440-26.041

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Indium 90 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 159

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-5 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-30

 Date Analyzed:
 05/28/13
 Data File:
 305440-30.042

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 92 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 16.4

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-5 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-33

 Date Analyzed:
 05/28/13
 Data File:
 305440-33.043

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tadium: 125

Indium 89 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 103

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-6 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-37

 Date Analyzed:
 05/28/13
 Data File:
 305440-37.044

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

11druin 90 00

Analyte: Concentration mg/kg (ppm)

Arsenic 7.15

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-6 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-40

 Date Analyzed:
 05/28/13
 Data File:
 305440-40.045

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 35.3

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-7 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-44

 Date Analyzed:
 05/28/13
 Data File:
 305440-44.046

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 13.5

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-7 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-47

 Date Analyzed:
 05/28/13
 Data File:
 305440-47.048

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 91 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 222

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-8 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-51

 Date Analyzed:
 05/28/13
 Data File:
 305440-51.049

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 9.55

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-8 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-54

 Date Analyzed:
 05/28/13
 Data File:
 305440-54.050

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 204

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-9 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-58

 Date Analyzed:
 05/28/13
 Data File:
 305440-58.051

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tadium

Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.18

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-9 2-3 Duplicate Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/24/13
 Lab ID:
 305440-59

 Date Analyzed:
 05/28/13
 Data File:
 305440-59.052

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.04

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-9 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-62

 Date Analyzed:
 05/28/13
 Data File:
 305440-62.091

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 73 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.37

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-10 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-66

 Date Analyzed:
 05/28/13
 Data File:
 305440-66.092

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 13.8

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-10 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-69

 Date Analyzed:
 05/28/13
 Data File:
 305440-69.093

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 70 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 25.6

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-10 5-6 Duplicate Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-70

 Date Analyzed:
 05/28/13
 Data File:
 305440-70.094

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 70 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 310

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-11 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-74

 Date Analyzed:
 05/28/13
 Data File:
 305440-74.095

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 17.8

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-11 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-76

 Date Analyzed:
 05/28/13
 Data File:
 305440-76.096

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.09

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-12 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-80

 Date Analyzed:
 05/28/13
 Data File:
 305440-80.097

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 12.9

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-12 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-83

 Date Analyzed:
 05/28/13
 Data File:
 305440-83.098

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 206

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-13 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-87

 Date Analyzed:
 05/28/13
 Data File:
 305440-87.099

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 13.8

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-13 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-90

 Date Analyzed:
 05/28/13
 Data File:
 305440-90.100

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 233

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-14 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-94

 Date Analyzed:
 05/28/13
 Data File:
 305440-94.102

 Matrix:
 Soil
 Instrument:
 ICP MS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 18.1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-14 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-97

 Date Analyzed:
 05/28/13
 Data File:
 305440-97.103

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 29.8

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-16 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-101

 Date Analyzed:
 05/28/13
 Data File:
 305440-101.104

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 16.9

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-16 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-104

 Date Analyzed:
 05/28/13
 Data File:
 305440-104.105

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 62 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 88.8

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-15 2-3 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-108

 Date Analyzed:
 05/28/13
 Data File:
 305440-108.106

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 16.2

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-15 5-6 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 05/28/13
 Lab ID:
 305440-111

 Date Analyzed:
 05/28/13
 Data File:
 305440-111.087

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICPM Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 59.5

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M 1525, F&BI 305440

Date Extracted: 05/24/13 Lab ID: I3-280 mb
Date Analyzed: 05/28/13 Data File: I3-280 mb.008
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M 1525, F&BI 305440

Date Extracted: 05/28/13 Lab ID: I3-282 mb
Date Analyzed: 05/28/13 Data File: I3-282 mb.085
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/13 Date Received: 05/22/13

Project: B+L O+M 1525, F&BI 305440

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305440-05 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level		MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	18.9	84 b	69 b	70-118	20 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	92	83-113

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/13 Date Received: 05/22/13

Project: B+L O+M 1525, F&BI 305440

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305440-111 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level		MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	59.5	102 b	55 b	70-118	60 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	95	83-113

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

3	0	5	4	4	0
			_		

SAMPLE CHAIN OF CUSTODY

APLE CHAIN OF CUSTODY	ME 05/2	22/13
SAMPLERS (signature)	> ===	Page # of TURNAROUND TIME
PROJECT NAME/NO.  Por LOM 1525	PO#	Standard (2 Weeks) ☐ RUSH Rush charges authorized by
REMARKS PLEASE ARCHIVE SAMPLES SELECTED FOR ANALYSIS	5 NOT	SAMPLE DISPOSAL  ☐ Dispose after 30 days ☐ Return samples ☐ Will call with instructions

070

Send Report To BREIT GEAULEU
Company FLOMD SNIDER
Address 601 UNION STREET, SVITE 600
City, State, ZIP SEATTLE WA 9810I
Phone #(206) 242 - 2078 Fax #

										ANA	LYS	ES I	REQUES	TED		 I	-
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	Λ	TOTAL STATE	TOTAL AS				Notes
AV-1 1-2	01	5/22/m	8:30	SOIL	i							X					
AU-1 2-3	02	İ	£35	j	ì							A	X				
AV-1 3-4	03		8 40									X					
AU-1 4-5	04		8 45									N					
AU-1 5-6	05		8 50									<b>t</b> #	×				
AU-1 6-7	06		3 55							~		X					
AU-1 7-8	07		900									X			-		
AV-2 1-2	08		905			-						K					
AV-2 2-3	09		910				$\neg \dagger$					<del>. V - I</del>	X				
AV-2 3-4	10		915	1	<b>1</b>												

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Lisa Meohi	F(5	5/22/13	1.4
Received by:  Relinquished by:	DS VO	F&BI	11	//
Received by:				

FORMS\COC\COC.DOC

3	05	4	4	0
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# SAMPLE CHAIN OF CUSTODY ME 05/22/13

BI	5
----	---

30397°		70 - 70- 1	1/
Send Report To BUETT BEAULIEU  Company FLOYD SNIDER  Address	PROJECT NAME/NO.  BHL O+M 1525	PO#	Page # Z of
City, State, ZIP Fax #	REMARKS PLEASE ARCHIVE SAMPLY SELECTED	ES NUT	SAMPLE DISPOSAL  ☐ Dispose after 30 days ☐ Return samples ☐ Will call with instructions

		<del></del>	т				***							ANA	LYS	ES R	EQUI	ESTI	ED	 		
Sam	nple ID	Lab ID		ate ipled	Time Sampled	Samp	ole Type	# conta	of iners	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	TOTAL AS						Notes
AV-2	4-5	11	51:	22/13	9:20	So	)/L		i													
AV-2	5-6	12		<u> </u>	925											X						
AU-2	6-7	13		/	930																	
AU-2	7-8	14			9 35																	
AU-3	1-2	15			940																	
AV-3	2-3	16			9 45											X						
Au-3	3-4	17			950																	
AU-3	4-5	18			9509																	
AU-3	5-6	19			1000	-								7		X						
AU-3	6-7	20	1		loug	4		a							1						_	

Friedman & Bruya, Inc. 3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

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Received by:				

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SAMPLE CHAIN OF CUSTODY ME 05/22//3

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Send Report To BOSENT BENEVIEW	SAMPLERS (signature)		Page # 3 of TURNAROUND TIME
Company FLON DISNIDER	PROJECT NAME/NO.	PO#	☐ Standard (2 Weeks) ☐ RUSH
Address			Rush charges authorized by
City, State, ZIP	REMARKS PLEASE ALCHIVE SAMOUSS	NOT	SAMPLE DISPOSAL  ☐ Dispose after 30 days
Phone # Fax #	SELECTED		☐ Return samples ☐ Will call with instructions

			······································	· · · · · · · · · · · · · · · · · · ·						ANA	LYS	SES F	EQU	EST	ED	 	
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	1074C AS					Notes
AU3 7-8	21	5/22/13	1010	SOIL	1												
Av-4 1-2	22	Ì	1015	1	İ												
AV-4 2-3	23		1020									X	_				
AV-4 3-4	24		1025														
AU-4 4-5	25		1030														
Au-4 5-6	26		1035				_					X					
AV-4 6-7	27		1040									-					
AV-4 7-8	28		1045														
AV-5 1-2	29		1050							1	1			7			
Av-5 2-3	30	4	1055	4	1							X				 	

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Fax (206) 283-5044

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Received by:				

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SAMPLE CHAIN OF CUSTODY

ME	05/22	/13
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JUJ 770	STATE CANALITY OF COSTORY	MC 03	
Send Report To BREIT BEAULIEU	SAMPLERS (signature)		TURNAROUND TIME
Company FLOY1) Shiper	PROJECT NAME/NO.	PO#	☐ Standard (2 Weeks) ☐ RUSH
Address	Btl 0+M 1525		Rush charges authorized by
City, State, ZIP	REMARKS		SAMPLE DISPOSAL  ☐ Dispose after 30 days
Phone # Fax #			☐ Return samples ☐ Will call with instructions

		ANALYSES REQUESTED																
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	8260		HFS	POTAL AS						Notes
AU-G 3-4	31	5/22/13	1(00	SOIL	l										-			
AU 5 4-5	32	i	1105	1														
AU 5 5-6	33		1110									X						
AU 5 6-7	34		1115													1		**
AV 5 7-8	35		1/20															7
AV 6 1-2	36		1125															
AU 6 2-3	37		1130									X						
AU G 3-4	38		1135													1		
AU 6 4-5	39		1140									_				1		
AU 6 5-6	40	7	1145	4								X						

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Seattle, WA 98119-2029

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Fax (206) 283-5044

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SAMPLE CHAIN OF CUSTODY

ME 05/22/13
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سستع	,	12

Send Report To BREST BEAULIEU  Company FLOUR SNIPER  Address	PROJECT NAME/NO.  BHL OHM 1525	PO#	Page #of
City, State, ZIP Fax #	REMARKS RETER ARCHUZ SAMACE SECULITED	TS NOT	SAMPLE DISPOSAL  ☐ Dispose after 30 days  ☐ Return samples  ☐ Will call with instructions

	ANALYSES REQUESTED																	
Sample ID La		Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	10741 AS						Notes
AV-6 6-7	41	5/22/13	1150	SOIL	ĺ													,
AU-6 7-8	42		1155	1														
AU-7 1-2	43		1200													-		
44-7 2-3	44		1205									X						
AU-7 3-4	45		1210															
AU-7 4-5	46		1215															
AU-7 5-6	47		1220									X						
AU-7 6-7	48		1225															
40-7 7-8	49		1230															
AU-B 1-2	50	0	1235	•	J													

Friedman & Bruya, Inc. 3012 16th Avenue West

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Fax (206) 283-5044

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Received by:

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Send Report To	BUSIT	BEAULIEN

City, State, ZIP

Phone #\_\_\_\_\_ Fax #\_\_\_\_

SA]	MPLE CHAIN OF CUSTODY	ME	05/0	22/1	3	BIY	,
	SAMPLERS (signature)				Page #_	6	_of <u>\</u>
					TURNA	ROUN	TIME
	PROJECT NAME/NO.	P	PO#	□s	tandard (	2 Weeks	.)

Company FLOMD (SN:030	PROJECT NAME	J/NO.
Company	BHLOWN	
Address	1 VIC O AN	15 25

□ RUSH\_\_\_` Rush charges authorized by

REMARKS

PLEASE ARCHIVE

SAMPLE DISPOSAL ☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

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l										ANALYSES REQUESTED												1	
		Sample ID				Time Sampled	Sample	е Туре	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	144 45						Notes	
	AU-8 AU-8	2-3	51	5/22	2/13	1240	Sol	<u> </u>	(							X							
	AU-0	3-4	52			1245			ì														
	AU-8	4-5	53			1250																	
	Av-8	5-6	54			1255										X							
	40-8	6-7	55			1300																	
	40-8	7-8	5%			1305																	
	10-9	1-2	57			1200																	
	AV- 9	2-3	58	£ 50	7	120										X						AU-9 2-3 Duf	
	AV- 9	•	5/16	20		1200									Ī	X						2-3 000	1 (
	AV-9	4-5	61			1200	٧	-	J														

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Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

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SAMPLE CHAIN OF CUSTODY	ME	05/22	113
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Send Report To BASIT STAVILLE	SAMPLERS (signature)		Page # of B
Company FLAND SHIDER Address	PROJECT NAME/NO. SHL OXM 1525	PO#	Standard (2 Weeks)  RUSH  Rush charges authorized by
City, State, ZIP Fax #	REMARKS PLEAST ARCHUZ		SAMPLE DISPOSAL  ☐ Dispose after 30 days  ☐ Return samples  ☐ Will call with instructions

Sample ID  Lab   Date   Time   Sampled   Sample Type   # of containers   Hall   Discolution   Date   Sampled   Sample Type   Sampled   S																
Sample ID		B.	•	Sample Type		TPH-Diesel	TPH-Gasoline	BTEX by 8021B		8270		AS				Notes
AV-9 5-6	62	5/27/1	1700	SOIL	1							人				
#AV-9 6-7	63		1200	Ì	i											
AV-9 7-8	64		1 200													
AV-10 1-2	65		12 20													
AU ~10 2-3	66		1220									X				
AV-10 3-4	67		1220													
AV-10 4-5	68		1220													
AV-10 5-60	69	4. 30	1220									X				
AV-10 5-60 AV-10 6-7	7/		(220									<u> </u>				
AV-10 7-8	72	J	1220		7											

Friedman & Bruya, Inc. 3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

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Received by:	D0 00	FYBI	///	12
Relinquished by:				
Received by:				

305440	SAMPLE CHAIN OF CUSTODY M	E 05/22	113 0
Send Report To Brett Beautien	SAMPLERS (signature)		Page # of & Of B
Company Floyd / Swider	PROJECT NAME/NO.	PO#	☐ Standard (2 Weeks)☐ RUSH
Address	B+L 0+m 1525		Rush charges authorized by
City, State, ZIP	REMARKS		SAMPLE DISPOSAL
Phone # Fax #	AREMUE per PJ.1		☐ Dispose after 30 days ☐ Return samples ☐ Will call with instructions

												ANALYSES REQUESTED									
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B		SVOCs by 8270	HFS	tor As					Notes				
AV-11 1-2	73	5/22/13	1335	801L	1												,				
AV-11 2-3	74				1							X									
RV-11 3-4	75				1																
AV-11 4.5	200	race ve q	2		1																
AV-11 5-6	76				1							X									
AV-11 6-7	77 AB				1																
AV-11 7-8	78		V		ı			Ì													
AV-12 1-2	79		12:40		1									1							
AV-12 1-2 AV-12 2-3 AV-12 3-4	80				1							X									
AV-12 3-4	81	V	~	<b>V</b>	1																

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Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Reinglished by:	Liga Mesti	F15	5/22/13	1600
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Relinquished by:		,		
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305440	SAMPLE CHAIN OF CUSTODY M	E 05/22	/13
Send Report To Brett Beau Lieur  Company F S  Address	PROJECT NAME/NO.  By L O+ M 1515	PO#	Page # of of
City, State, ZIP Fax #	REMARKS Archive per pg.1		SAMPLE DISPOSAL  ☐ Dispose after 30 days  ☐ Return samples  ☐ Will call with instructions

									 ANA	LYS	ES R	EQUE	STE	∃D		
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	SVOCs by 8270	HFS	tor As					Notes
AV-12 4-9	82	5/22/13	12:40	SOIL	1											
AV-12 4-5 AV-12 5-6 AV-12 6-7 AV-12 7-8	83				- 1						X					
AV-12 6-7	84				1											
AV-12 7-8	85		L		1					1			$\top$			
AV-13 1-2	86		13:10		1											
AV-13 2-3	87		1		1				T		×					
AV-13 3-4	88				1										-	
QV-13 4-5	89				1											
AV-13 5-6	90				1						x					
AV-13 1-2 AV-13 2-3 AV-13 3-4 AV-13 4-5 AV-13 5-6 AV-13 6-1	91	V	V	L	1											

Friedman & Bruya, Inc. 3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

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305440	SAMPLE CHAIN OF CUSTODY	ME 05/0	32/13 10 BT
Send Report To Brett Beau Liev Company +15 Address	PROJECT NAME/NO.  841 0+111 1G15	PO#	Page # of  TURNAROUND TIME  Standard (2 Weeks)  RUSH  Rush charges authorized by
City, State, ZIP Fax #	REMARKS  Archive per par		SAMPLE DISPOSAL  ☐ Dispose after 30 days  ☐ Return samples  ☐ Will call with instructions

												ANA	LYS	ES R	EQUI	ESTE	.D		ſ	
Sample ID	Lab ID	Dat Samp	led	Time Sampled		e Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	1	197 AS						Notes
AV-13 7-8	92	5/22	13	13:10	50	1L	1													
AV-1412	93		'	13:30		1	1													
AV-142-3	94						(							×						
AV-14 3-4	95						1													
AV-14 4-5	96						1												,	
AV91545-6	97						1							×					-	· · · · · · · · · · · · · · · · · · ·
AV-13 7-8 AV-141-2 AV-142-3 AV-143-4 AV-14 4-5 AV-144-5 AV-144-5 AV-144-7 AV-147-8	98						1													
AV-14 7-8	99			*			1													
AV-16 1-2 AV-16 2-3	100			1400			1											 		
AV-16 2-3	101				V	,	1							X						

Friedman & Bruya, Inc. 3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinco shed by:	Limeoli	P/S	722/3	1600
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305440	
Send Report To Brett	Beautien

SAMPLE CHAIN OF CUSTODY MF 05/22/13

		M 12
Send Report To Brett Beautien	SAMPLERS (signature)	TURNAROUND TIME
Company \frac{+(5}{}	PROJECT NAME/NO. PO#	☐ Standard (2 Weeks) ☐ RUSH
Address	0 tm 1525	Rush charges authorized by
City, State, ZIP	REMARKS	SAMPLE DISPOSAL  ☐ Dispose after 30 days
Phone # Fax #	Archine per pg. 1	☐ Return samples ☐ Will call with instructions

	7	1		-						ANA	LYS	ES F	EQUES	STED			
Sample ID	Lab ID	Date Sample		Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	tor As					Notes
AV-16 3-4	102	5/22/1	3 1400	SOIL	1												
AV-16 3-4 AV-16 4-5 AV-16 5-6 AV-16 6-7	103				1												
AV-16 5-6	104				(							X					
AV-16 6-7	105				1										1	<u>†                                      </u>	
AV-16 7-8	106				1												
AV-15 1-2	107		1350		1											<u> </u>	
AV-1523	108		1									×					
AV-15 1-2 AV-15 23 AV-15 3-4	109				1					1							
AV-15 4-5 AV-15 5-6	110				!												
AV-15 5-le	111	V	Y	V	1							X		1			

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Ph. (206) 285-8282

Fax (206) 283-5044

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Refugalshed by:	L. Meoli	75	5/22/13	1600
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Relinquished by:		,		
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30544U	SAMPLE CHAIN OF CUSTODY	ME OS/2=	$^{2}/^{3}$ $^{2}$
Send Report To Brett Beautien	SAMPLERS (signature)		Page #of
Company 1/5	PROJECT NAME/NO.	PO#	TURNAROUND TIME  ☐ Standard (2 Weeks) ☐ RUSH
Address	PAL OHM 1525		Rush charges authorized by
City, State, ZIP	REMARKS		SAMPLE DISPOSAL ☐ Dispose after 30 days
Phone # Fax #	Archive per	rpa.l	☐ Return samples ☐ Will call with instructions

											, 0					
			T							ANA	ALYS	ES R	EQUES	TED	 	
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	tot As				Notes
AV-15 6-7	112	5/22/13	1390	SOIL	# 1											
AV-16 7-8	113	1	1	L	1											
AV-11-2-3 Duplicate	114	5/22	1335	SOIL	1										*	ND) 5/22/13 Addod at 19
	-	<u>-</u>														

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE TIME
Religuished by: Mean	Lisa Mesa	P15	5/22/13 1600
Received by:	20 00	F + BI	11 11
Relinquished by:		/	
Received by:			

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 6, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the results from the testing of material submitted on May 23, 2013 from the B+L Rim O+M 1525, F&BI 305469 project. There are 57 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures FDS0606R.DOC

### ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L Rim O+M 1525, F&BI 305469 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Floyd/Snider
305469-01	WD-1 1-2
305469-02	WD-1 2-3
305469-03	WD-1 3-4
305469-04	WD-1 4-5
305469-05	WD-2 1-2
305469-06	WD-2 2-3
305469-07	WD-2 3-4
305469-08	WD-2 4-5
305469-09	WD-3 1-2
305469-10	WD-3 2-3
305469-11	WD-3 3-4
305469-12	WD-3 4-5
305469-13	WD-4 1-2
305469-14	WD-4 2-3
305469-15	WD-4 3-4
305469-16	WD-4 4-5
305469-17	WD-5 1-2
305469-18	WD-5 2-3
305469-19	WD-5 3-4
305469-20	WD-5 4-5
305469-21	WD-6 1-2
305469-22	WD-6 2-3
305469-23	WD-6 3-4
305469-24	WD-6 4-5
305469-25	WD-7 1-2
305469-26	WD-7 2-3
305469-27	WD-7 3-4
305469-28	WD-7 4-5
305469-29	WD-8 1-2
305469-30	WD-8 2-3
305469-31	WD-8 3-4
305469-32	WD-8 4-5
305469-33	WD-9 1-2
305469-34	WD-9 2-3
305469-35	WD-9 3-4
305469-36	WD-9 4-5

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

<u>Floyd/Snider</u>
WD-10 1-2
WD-10 2-3
WD-10 3-4
WD-10 4-5
WD-11 1-2
WD-11 2-3
WD-11 3-4
WD-11 4-5
WD-12 1-2
WD-12 2-3
WD-12 3-4
WD-12 4-5
WD-13 1-2
WD-13 2-3
WD-13 3-4
WD-13 4-5
WD-14 1-2
WD-14 2-3
WD-14 3-4
WD-14 4-5
WD-1 3-4 Duplicate
WD-2 2-3 Duplicate
WD-5 1-2 Duplicate
WD-6 3-4 Duplicate
WD-8 1-2 Duplicate

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-1 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-01

 Date Analyzed:
 05/29/13
 Data File:
 305469-01.046

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 23.8

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-1 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-02

 Date Analyzed:
 05/29/13
 Data File:
 305469-02.047

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 18.3

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-1 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-03

 Date Analyzed:
 05/29/13
 Data File:
 305469-03.043

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.73

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-2 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-05

 Date Analyzed:
 05/29/13
 Data File:
 305469-05.049

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 29.5

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-2 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-06

 Date Analyzed:
 05/29/13
 Data File:
 305469-06.050

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 20.0

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-2 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-07

 Date Analyzed:
 05/29/13
 Data File:
 305469-07.051

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.18

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-3 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-09

 Date Analyzed:
 05/29/13
 Data File:
 305469-09.052

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 28.1

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-3 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-10

 Date Analyzed:
 05/29/13
 Data File:
 305469-10.053

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 46.5

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-3 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-11

 Date Analyzed:
 05/29/13
 Data File:
 305469-11.054

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 45.1

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-4 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-13

 Date Analyzed:
 05/29/13
 Data File:
 305469-13.055

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 26.4

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-4 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-14

 Date Analyzed:
 05/29/13
 Data File:
 305469-14.056

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 31.6

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-4 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-15

 Date Analyzed:
 05/29/13
 Data File:
 305469-15.057

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 6.00

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-5 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-17

 Date Analyzed:
 05/29/13
 Data File:
 305469-17.058

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 30.1

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-5 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-18

 Date Analyzed:
 05/29/13
 Data File:
 305469-18.060

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 103

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-5 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-19

 Date Analyzed:
 05/29/13
 Data File:
 305469-19.061

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 14.7

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-6 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-21

 Date Analyzed:
 05/29/13
 Data File:
 305469-21.062

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 27.4

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-6 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-22

 Date Analyzed:
 05/29/13
 Data File:
 305469-22.063

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 43.0

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-6 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-23

 Date Analyzed:
 05/29/13
 Data File:
 305469-23.064

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 9.58

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-7 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-25

 Date Analyzed:
 05/29/13
 Data File:
 305469-25.065

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 45.4

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-7 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-26

 Date Analyzed:
 05/29/13
 Data File:
 305469-26.066

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 76.6

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-7 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-27

 Date Analyzed:
 05/29/13
 Data File:
 305469-27.074

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 44.9

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-8 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-29

 Date Analyzed:
 05/29/13
 Data File:
 305469-29.075

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 31.8

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-8 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-30

 Date Analyzed:
 05/29/13
 Data File:
 305469-30.076

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 27.9

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-8 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-31

 Date Analyzed:
 05/29/13
 Data File:
 305469-31.077

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 12.3

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-9 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-33

 Date Analyzed:
 05/29/13
 Data File:
 305469-33.078

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit:

Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 67.7

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-9 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-34

 Date Analyzed:
 05/29/13
 Data File:
 305469-34.071

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 23.3

#### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: WD-9 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-35

 Date Analyzed:
 05/29/13
 Data File:
 305469-35.080

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 8.47

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-10 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-37

 Date Analyzed:
 05/29/13
 Data File:
 305469-37.081

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 29.1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-10 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-38

 Date Analyzed:
 05/29/13
 Data File:
 305469-38.082

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 10.3

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-10 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-39

 Date Analyzed:
 05/29/13
 Data File:
 305469-39.083

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.59

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-11 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-41

 Date Analyzed:
 05/29/13
 Data File:
 305469-41.084

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 30.8

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-11 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-42

 Date Analyzed:
 05/29/13
 Data File:
 305469-42.085

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 54.0

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-11 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-43

 Date Analyzed:
 05/29/13
 Data File:
 305469-43.086

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tadium: 125

Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 8.21

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-12 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-45

 Date Analyzed:
 05/29/13
 Data File:
 305469-45.087

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 20.6

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-12 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-46

 Date Analyzed:
 05/29/13
 Data File:
 305469-46.088

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 24.1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-12 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-47

 Date Analyzed:
 05/29/13
 Data File:
 305469-47.089

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 9.91

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-13 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-49

 Date Analyzed:
 05/29/13
 Data File:
 305469-49.091

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 89 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 41.1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-13 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-50

 Date Analyzed:
 05/29/13
 Data File:
 305469-50.092

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 46.0

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-13 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-51

 Date Analyzed:
 05/29/13
 Data File:
 305469-51.093

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 13.7

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-14 1-2 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-53

 Date Analyzed:
 05/30/13
 Data File:
 305469-53.021

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 86 60 125

Concentration

Analyte: ug/g (ppm)

Arsenic 26.6

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-14 2-3 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-54

 Date Analyzed:
 05/30/13
 Data File:
 305469-54.022

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 23.6

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-14 3-4 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-55

 Date Analyzed:
 05/30/13
 Data File:
 305469-55.023

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 21.7

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-1 3-4 Duplicate Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-57

 Date Analyzed:
 05/30/13
 Data File:
 305469-57.015

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 5.62

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-2 2-3 Duplicate Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-58

 Date Analyzed:
 05/30/13
 Data File:
 305469-58.024

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 42.1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-5 1-2 Duplicate Client: Floyd/Snider

Date Received: Project: B+L Rim O+M 1525, F&BI 305469 05/23/13

05/29/13 Lab ID: 305469-59 Date Extracted: Date Analyzed: 05/30/13 Data File: 305469-59.025 Matrix: Soil Instrument: ICPMS1

Units: ug/g (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 87 60 125

Concentration

Analyte: ug/g (ppm)

Arsenic 47.8

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-6 3-4 Duplicate Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-60

 Date Analyzed:
 05/30/13
 Data File:
 305469-60.026

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 12.4

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-8 1-2 Duplicate Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L Rim O+M 1525, F&BI 305469

 Date Extracted:
 05/29/13
 Lab ID:
 305469-61

 Date Analyzed:
 05/30/13
 Data File:
 305469-61.027

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 23.9

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L Rim O+M 1525, F&BI 305469

Date Extracted: 05/29/13 Lab ID: I3-286 mb
Date Analyzed: 05/29/13 Data File: I3-286 mb.041
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 93 60 125

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L Rim O+M 1525, F&BI 305469

Date Extracted: 05/29/13 Lab ID: I3-287 mb
Date Analyzed: 05/29/13 Data File: I3-287 mb.069
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L Rim O+M 1525, F&BI 305469

Date Extracted: 05/29/13 Lab ID: I3-287 mb
Date Analyzed: 05/30/13 Data File: I3-287 mb.029
Matrix: Soil Instrument: ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L Rim O+M 1525, F&BI 305469

Date Extracted: 05/29/13 Lab ID: I3-289 mb
Date Analyzed: 05/30/13 Data File: I3-289 mb.013
Matrix: Soil Instrument: ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 85 60 125

Concentration

Analyte: ug/g (ppm)

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/13 Date Received: 05/23/13

Project: B+L Rim O+M 1525, F&BI 305469

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305469-03 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level		MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	3.73	90 b	88 b	70-118	2 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	91	83-113

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/13 Date Received: 05/23/13

Project: B+L Rim O+M 1525, F&BI 305469

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305469-34 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level		MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	23.3	132 b	64 b	70-118	69 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	95	83-113

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/06/13 Date Received: 05/23/13

Project: B+L Rim O+M 1525, F&BI 305469

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305469-57 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	4.05	96 b	97 b	70-118	1 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	101	83-113

#### **ENVIRONMENTAL CHEMISTS**

## **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- $\operatorname{pr}$  The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

395469 SA	MPLE CHAIN OF CUSTODY	ME 05/23/1	BIY
Send Report To Brett Beaulier	SAMP ARS (signature)		Page # of  TURNAROUND TIME
Company Mond Snider	PROJECT NAME/NO.	PO#	☐ Standard (2 Weeks) ☐ RUSH
Address 600 Union Ste 601	BURLIN 1525		Rush charges authorized by
City, State, ZIP <u>Seattle</u> , WA 951901	REMARKS	. 0	SAMPLE DISPOSAL  ☐ Dispose after 30 days
Phone # 106 1911018 ax #	tective 4-51 inter	only	☐ Return samples ☐ Will call with instructions

								ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	POT AS							Notes
WD-1 1-2	01	5/20/3	1030	501	1							×							
WD-1 2-3	02	1	1030									×							
WD-1 3-4	03		1030									X							
WD-1 4-5	09		1030	Y															
WD-2 1-2	05		1035									X							
WD-2 2-3	06		1035									X						-	
WD-2 3-4	67		1035									$\times$							
WD-2 3-4 WD-2 4-5 WD-3 41-2	88		(035				á												
WD-3- #1-2	og		1040				•				1		1					-	
W0-3 2-3	10	1	1040	V	4							X			$\mathbf{S}$	:D <sup>1</sup> /-	S 1974	wiyod	at 15 %

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinguished by:	Lisa Neoli	AS	703 13	1405
Received by:	James BIOY	FEB	5/22/2	1405
Delinguished by:				
Received by:				

305469	SAMPLE CHAIN OF CUSTODY	ME oslash	BLY Page # 2 of
Send Report To Brett Beautien Company Floyd Smider	PROJECT NAME/NO.	PO#	Page # of of TURNAROUND TIME    Standard (2 Weeks)   RUSH
Address	BAL OHM 1525	•	Rush charges authorized by
City, State, ZIP	REMARKS		SAMPLE DISPOSAL  ☐ Dispose after 30 days
Phone # Fax #	Archive 4-5 Frem	elony	☐ Return samples ☐ Will call with instructions
	ANA	LYSES REQUEST	ED
	sel line 021B 260	N	

						ANALYSES REQUESTED												
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	bt As						Notes
WD-3 3-4	11	5/23/13	1040	Soil	(							×						
WD-3 4-5	12		1		\													
WD-41-2	13		1045									×						
WD-4 2-3	14		\									×						
WD-4 3-4	15											×						
WD-4 4-5	16		1															
WD-6 1-2	17		loso									×						-
WD-52-3	18											×						
WO-5 3-4	19										-	×						, . · · · · · · · · · · · · · · · · · ·
WD-5 4-5	20	1	7	4	1								Sa	mpl	es ro	ceiv	ed at_	15°C

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE TIME
Relinguished by:	Liza Medu	FIS	62331405
Received by:	Janes Brown	FFR	5/22/2 1405
Relinquished by:			1745
Received by:			

305469	SAMPLE CHAIN OF CUSTODY	ME OSTA	3/13
Send Report To bold Beautier  Company Hoyd Snider	SAMPLERS (signature) ' PROJECT NAME/NO.	PO#	Page # of B B TURNAROUND TIME ☐ Standard (2 Weeks)
Address	B+C B+M 1925		Rush charges authorized by
City, State, ZIP Fax #	REMARKS Archive 4-5 Interval	thy	SAMPLE DISPOSAL  ☐ Dispose after 30 days  ☐ Return samples  ☐ Will call with instructions
<u></u>	I AN/	A VOES DECLIES	

											ANA	LYS	ES R	EQUE	ESTEL	)				
San	nple ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	TOT AS						Notes	-
WD-6	1-2	21	92313	<b>1055</b>	SOIL	ĺ							X							
WD-10	2-3	27	1		j	,							×							
Work	') (	23											X							
WD-10	106	24		V																
WD-7		25		1100									X						- v	
WD-7	0.0	24		1					Ì			,	X						***************************************	~-
WD-7	3-4	27											X							
WD-1	16-6	28								$\neg$										
WD-8	1-2	29		1105									$\times$						·	
WD-8	00	30	V	V	1	V							X		\$a.	mole	sre	ceived	lat_15	°C

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinguished by:	Yisa Meoh	P(5	5/23/13	1405
Received by:	Janes Bruxa	FAB	5/23/8	1485
Reliacurished by:		,		
Received by:				

305969	SAMPLE CHAIN OF CUSTODY	ME 05/23/13	a - 11
Send Report To Breth Bearlin  Company Floyd Smder  Address	PROJECT NAME/NO.  Btc Otm (525	PO#	Page #of
City, State, ZIP	REMARKS	i	SAMPLE DISPOSAL  ☐ Dispose after 30 days
Phone # Fax #	Archive 4-6' inter	val only	☐ Return samples ☐ Will call with instructions
	ANA	LYSES REQUESTE	D

	· · · · · ·	······································			-					ANA	LYS	ES R	EQUE	STED					
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	id As						Notes	
WD-8 3-4	3(	5/23/13	11.05	501L	ţ							X						•	
WD-8 4-5	32		1		١														
WD-9 1-2	33		1200									×							
WD-9 2-3	34											X							
WD-9 3-4	35											×							
ud9 4-5	34		1																
1. 5. 10	<b>3</b> 7		1205								,	X							
(10 12 2 2	35										1	X							
12 10 2 10	39										-	X			<del>                                     </del>			<del></del>	
(1AD 10 116	40	V	1	V	V			1			1			Sam	ples	rece	ived ε	it_ 15	_°C

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinguished by:	Lisa Meoli	F13	5/23/13	1405
Received by:	James Brug	F3B	5/22/13	1405
Reliaquished by:			743	<del></del>
Received by:				

305469	SAMPLE CHAIN OF CUSTODY M	E 05/23/13	
Send Report To Brett Beaul	SAMPLERS (signature)		Page # O of 1 TURNAROUND TIME
Send Report To Brett Bearle Company Mond Soud	PROJECT NAME/NO.  B+L O+m 1525	PO#	☐ Standard (2 Weeks) ☐ RUSH Rush charges authorized by
City, State, ZIP	REMARKS		SAMPLE DISPOSAL  ☐ Dispose after 30 days
Phone # Fax #	Archive 4-5 luter	valouly	☐ Return samples ☐ Will call with instructions
	ANA	LYSES REQUEST	ED
	el el 21B 260 270		

			<del></del>			L				ANA	LYS	SES F	(EQU	ESTI	ED			
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	lot AS						Notes
WD-11 1-2	4/ 4	5/23/13	1210	Seel	١							X						
WD-11 2-3	47				i							X						
WD-11 3-4	43											X						
WD-11 4-5	44		V															
WD-121-2	45		1200									X						
WD-12 2-3	96											X						
WD-12 2-3 WD-12 3-4	47										Ì	$\checkmark$						
UD12 4-6	48		1															
WD-13 1-2	47		1225									X		Î				
WD-13 1-2 WD-13 4-3	50	V	1,	7	4							X			San	ple	rec	eived at 15 °C

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relingarshed by:	lisa Mesh	P(5	5/23/13	405
Received by:	James Blugg	F\$R	5/23/B	1405
Relinquished by:			7.70	<del> </del>
Received by:				

Send Report To Breet Beaulin	SAMPLERS (signature)		Page # 6 of 7
Company Royd Smider  Address	PROJECT NAME/NO.  By 02m (525)	PO#	☐ Standard (2 Weeks) ☐ RUSH Rush charges authorized by
City, State, ZIP Fax #	REMARKS Avelure 4-5' lut.	enrels only	SAMPLE DISPOSAL  Dispose after 30 days Return samples Will call with instructions

	,									ANA	LYS	ES R	EQU	ESTE	ED				
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	70T AS							Notes
WD-13 3-4	57	52313	1295	8016								×							
WD-13 4-5	52		1																
WD-14 1-2	53		1230									X							
WD-14 2-3	54											X							
W0-14 3-4	65											X							
WD-14 4-5	56																		
WD-13-4 Duphical	257		1030									X							
WD-2 2-3 Duplic	58		1035									X							
WD-5 1-2 Duplice	FE <sup>7</sup>		1050									X							
WD-6 3-4 Duple		1	1065	4								X		S	San	ples	rec	eived:	at_15_°C

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquiched by:	lisa Meoli	P15	52313	1405
Received by:	James Bruss	FZB	422/3	1405
Relinquished by:			7.70	
Received by:				

Send Report To Brett Bearlie	SAMPLE CHAIN OF CUSTODY  SAMPLERS (signature)	1E 05/22/13	Page # Of TURNAROUND TIME
Company Moya   Smider Address	PROJECT NAME/NO.  BAL DAM (525)	PO#	☐ Standard (2 Weeks) ☐ RUSH Rush charges authorized by
City, State, ZIP Fax #	REMARKS		SAMPLE DISPOSAL  ☐ Dispose after 30 days ☐ Return samples ☐ Will call with instructions
	ANA	LYSES REQUESTE	D

						ANALYSES REQUESTED														
Sample ID	Lab ID	Date Sampled	_	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	of As							Notes	
WD-8 1-2 Dupli	cate	5/23/13	1105	501L								X								
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														Sa	mpl	es ro	ceiv	ed at	15 %	
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Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinguished by:	Lisa Meoli	F(5	5/23/1	B KCO
Received by:	James Brys	F\$B	5/23/13	1405
Relin dished by:			7 27.5	
Received by:				

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 14, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the additional results from the testing of material submitted on May 22, 2013 from the B+L O+M 1525, F&BI 305440 project. There are 19 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Erin Murray FDS0614R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 22, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L O+M 1525, F&BI 305440 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Floyd/Snider
305440 -01	AV-1 1-2
305440 -02	AV-1 2-3
305440 -03	AV-1 3-4
305440 -04	AV-1 4-5
305440 -05	AV-1 5-6
305440 -06	AV-1 6-7
305440 -07	AV-1 7-8
305440 -08	AV-2 1-2
305440 -09	AV-2 2-3
305440 -10	AV-2 3-4
305440 -11	AV-2 4-5
305440 -12	AV-2 5-6
305440 -13	AV-2 6-7
305440 -14	AV-2 7-8
305440 -15	AV-3 1-2
305440 -16	AV-3 2-3
305440 -17	AV-3 3-4
305440 -18	AV-3 4-5
305440 -19	AV-3 5-6
305440 -20	AV-3 6-7
305440 -21	AV-3 7-8
305440 -22	AV-4 1-2
305440 -23	AV-4 2-3
305440 -24	AV-4 3-4
305440 -25	AV-4 4-5
305440 -26	AV-4 5-6
305440 -27	AV-4 6-7
305440 -28	AV-4 7-8
305440 -29	AV-5 1-2
305440 -30	AV-5 2-3
305440 -31	AV-5 3-4
305440 -32	AV-5 4-5
305440 -33	AV-5 5-6
305440 -34	AV-5 6-7
305440 -35	AV-5 7-8

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE (continued)

I I , ID	Fl 1/C : 1
<u>Laboratory ID</u>	Floyd/Snider
305440 -36	AV-6 1-2
305440 -37	AV-6 2-3
305440 -38	AV-6 3-4
305440 -39	AV-6 4-5
305440 -40	AV-6 5-6 AV-6 6-7
305440 -41 305440 -42	AV-6 7-8
305440 -42	AV-0 7-8 AV-7 1-2
305440 -44	AV-7 1-2 AV-7 2-3
305440 -45	AV-7 2-3 AV-7 3-4
305440 -46	AV-7 3-4 AV-7 4-5
305440 -47	AV-7 5-6
305440 -48	AV-7 6-7
305440 -49	AV-7 7-8
305440 -50	AV-8 1-2
305440 -51	AV-8 2-3
305440 -52	AV-8 3-4
305440 -53	AV-8 4-5
305440 -54	AV-8 5-6
305440 -55	AV-8 6-7
305440 -56	AV-8 7-8
305440 -57	AV-9 1-2
305440 -58	AV-9 2-3
305440 -59	AV-9 2-3 Duplicate
305440 -60	AV-9 3-4
305440 -61	AV-9 4-5
305440 -62	AV-9 5-6
305440 -63	AV-9 6-7
305440 -64	AV-9 7-8
305440 -65	AV-10 1-2
305440 -66	AV-10 2-3
305440 -67	AV-10 3-4
305440 -68	AV-10 4-5
305440 -69	AV-10 5-6
305440 -70	AV-10 5-6 Duplicate
305440 -71	AV-10 6-7
305440 -72	AV-10 7-8
305440 -73	AV-11 1-2
305440 -74	AV-11 2-3
305440 -75	AV-11 3-4

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE (continued)

T 1 . TD	TI 1/G . 1
<u>Laboratory ID</u>	Floyd/Snider
305440 -76	AV-11 5-6
305440 -77	AV-11 6-7
305440 -78	AV-11 7-8
305440 -79	AV-12 1-2
305440 -80	AV-12 2-3
305440 -81	AV-12 3-4
305440 -82	AV-12 4-5
305440 -83	AV-12 5-6
305440 -84	AV-12 6-7
305440 -85	AV-12 7-8
305440 -86	AV-13 1-2
305440 -87	AV-13 2-3
305440 -88	AV-13 3-4
305440 -89	AV-13 4-5
305440 -90	AV-13 5-6
305440 -91	AV-13 6-7
305440 -92	AV-13 7-8
305440 -93	AV-14 1-2
305440 -94	AV-14 2-3
305440 -95	AV-14 3-4
305440 -96	AV-14 4-5
305440 -97	AV-14 5-6
305440 -98	AV-14 6-7
305440 -99	AV-14 7-8
305440 -100	AV-16 1-2
305440 -101	AV-16 2-3
305440 -102	AV-16 3-4
305440 -103	AV-16 4-5
305440 -104	AV-16 5-6
305440 -105	AV-16 6-7
305440 -106	AV-16 7-8
305440 -107	AV-15 1-2
305440 -108	AV-15 2-3
305440 -109	AV-15 3-4
305440 -110	AV-15 4-5
305440 -111	AV-15 5-6
305440 -112	AV-15 6-7
305440 -113	AV-15 7-8
305440 -114	AV-11-2-3 Duplicate
	1

All quality control requirements were acceptable.

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-2 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-13

 Date Analyzed:
 06/11/13
 Data File:
 305440-13.022

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 71.7

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-3 3-4 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-17

 Date Analyzed:
 06/11/13
 Data File:
 305440-17.032

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 93 60 125

Concentration

Analyte: ug/g (ppm)

Arsenic 69.5

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-4 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-27

 Date Analyzed:
 06/11/13
 Data File:
 305440-27.069

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 83 60 125

Concentration

Analyte: ug/g (ppm)

Arsenic 37.8

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-5 3-4 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-31

 Date Analyzed:
 06/11/13
 Data File:
 305440-31.070

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tadium:

Indium 84 60 125

Concentration

Analyte: ug/g (ppm)

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-6 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-41

 Date Analyzed:
 06/11/13
 Data File:
 305440-41.071

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-7 3-4 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-45

 Date Analyzed:
 06/11/13
 Data File:
 305440-45.072

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 12.1

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-8 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-55

 Date Analyzed:
 06/11/13
 Data File:
 305440-55.073

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 89 60 125

Concentration

Analyte: ug/g (ppm)

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-10 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-71

 Date Analyzed:
 06/11/13
 Data File:
 305440-71.074

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 79 60 125

Concentration

Analyte: ug/g (ppm)

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-12 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-84

 Date Analyzed:
 06/11/13
 Data File:
 305440-84.079

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 79 60 125

Concentration

Analyte: ug/g (ppm)

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-13 3-4 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-88

 Date Analyzed:
 06/11/13
 Data File:
 305440-88.080

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 68.2

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-14 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-98

 Date Analyzed:
 06/11/13
 Data File:
 305440-98.081

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-16 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-105

 Date Analyzed:
 06/11/13
 Data File:
 305440-105.082

Matrix: Soil Instrument: ICPMS1 Units: ug/g (ppm) Operator: AP

Concentration

Analyte: ug/g (ppm)

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-15 3-4 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/10/13
 Lab ID:
 305440-109

 Date Analyzed:
 06/11/13
 Data File:
 305440-109.083

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: ug/g (ppm) Instrument: ICPM
Operator: AP

Concentration

Analyte: ug/g (ppm)

Arsenic 20.9

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M 1525, F&BI 305440

06/10/13 Lab ID: I3-322 mb Date Extracted: Date Analyzed: 06/11/13 Data File: I3-322 mb.020 Matrix: Soil Instrument: ICPMS1

Units: ug/g (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 87 60 125

Concentration

Analyte: ug/g (ppm)

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/14/13 Date Received: 05/22/13

Project: B+L O+M 1525, F&BI 305440

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305440-13 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	55.9	0 b	0 b	70-118	0 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	98	83-113

### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- $\operatorname{pr}$  The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

305440 Send Report To BOSIT (SAMIFU) Company FLOUD SNIDSR

City, State, ZIP SEATTLE WA 9 810 I Address 601 UNION STREET, SUITE 600

Phone # (206) 242-2078 Fax #

SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature) PROJECT NAME/NO. B+1 GM 1525

REMARKS PLEASE SELECTED FOR ANALYSIS ARCHIVE SAMBLES NOT

PO# 12 13 Page # Rush charges authorized by TURNAROUND TIME

Design (2 Weeks)

RUSH

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☐ Return samples ☐ Dispose after 30 days SAMPLE DISPOSAL

Will call with instructions

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Cample II	Lab	Date	Time	3	# of					ر م	AC	<u>As</u>	<del></del>				
Sample ID	Ð	Sampled	Sampled	Sample Type	containers	TPH-D	BTEX by	VOCs by	SVOCs by	HFS	Ton	TOTAL	<del></del>	······		z	Notes
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Friedman & Bruya, Inc.	Palin	SIGN	SIGNATURE		PR	PRINT NAME	AME				C	COMPANY	X N			DATE	TIME
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Ph. (206) 285-8282	Relinquished by:	ned by:	28		Do vo	9					Fa	F&BI	1		+-	//	//
Fax (206) 283-5044	Received by:	by:								1					+		
TO COCCOCION ACC									l						-		

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305440

# SAMPLE CHAIN OF CUSTODY

NE 05/22/13

Company FLOYD Send Report To BOSIT BEAULIEU City, State, ZIP Address\_ 25012

Phone #

Fax #

SAMPLERS (signature)		4
PROJECT NAME/NO.		PO#
BH OFM 1525		
REMARKS		
OUTASE AZUME	SANDIS	San

☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

TURNAROUND TIME

Standard (2 Weeks)

RUSH

Page # 2 of

Rush charges authorized by

SAMPLE DISPOSAL

Fax (206) 283-5044	Ph. (206) 285-8282	Seattle WA 98119_2020	Friedman & Bruya, Inc.	AU-3 6-7	9-5 E-NY	8-12 A-18	Au-3 3.4	Av-3 2-3	AU-3 1-2	AU-2 7-8	AU-2 6-7	AV-2 5-6	AV-2 4-5	Sample ID	
Received by:	Relinquished by:	Breeze And No.		20	12	/8	<del>[</del> ]	16	15	14	13	12	=	Lab ID	
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		•												VOCs by8260	
														SVOCs by 8270	ANA
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	/ 1/	5/22/13	DATE												
	11	1000	TIME											Notes	

FORMS\COC\COC.DOC Fax (206) 283-3044

305440

### SAMPLE CHAIN OF CUSTODY

ME 05/22/13

Address	Company Flon 115k, 0.22	Send Report To BUEN SEAULIES
1	7	S

Phone #

Fax #

City, State, ZIP

ROJECT NAME/NO.	SAMPLERS (signature)
P0#	Ĭ
	PROJECT NAME/NO. PO#

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

SAMPLE DISPOSAL

Rush charges authorized by

TURNAROUND TIME

C) Standard (2 Weeks)

C) RUSH

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	ALYSES REQUESTED	S REQU	LYSE	ANA											
Notes	ESTED	REQU	HFS LYSES	OCs by 8270		<del></del>			# of	Sample Type		Date Sampled	Lab ID	₽	Sample

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044 FORMSICOCICOC.DOC

uya, Inc.	P. D. SIGNALOKE	PRINT NAME	COMPANY	DATE	TIME
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### SAMPLE CHAIN OF CUSTODY

City, State, ZIP	Address	Company FLOTO SKIPER	305440 Send Report To BRET SEAULISU	
			SA	

Phone #

Fax #\_

	SAMPLERS (signature)	
1	PROJECT NAME/NO.	PO#
1	BTL OM 1525	
•	REMARKS	
i		

			P0#			ME OS/da
☐ Return samples ☐ Will call with instructions	SAMPLE DISPOSAL  ☐ Dispose after 30 days	Rush charges authorized by	☐ Standard (2 Weeks) ☐ RUSH	TURNAROUND TIME	Page # 9 of	Ja // 3

Sample ID    Lab   Date   Time   Sampled   Sample Type   Color	DO 10 F+ BI	i meon	O W	0 10	0	10/2		700	by: <hr/> hed by:	Received by: Relinquished by: Received by:	Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044
Lab Date Time ID Sampled Sample Type  31 5/22/13 1(00 5000  32 1105  34 1115  35 1125  36 1135  37 1146  40 1145		PRINT NAME	PRINT NAMI	PRINT	` _			ATURE	SIGN bed by:	RS CO	112 16th Avenue West
Sample ID  Lab Date Time Sampled Sampled Sample Type  3 - 4 31 5   72   13 11 00 500  4-5 32 11 105  5-6 33 11 105  1-2 34 11 126  2-3 37 11 136  3-4 38 1135  4-5 34 1146  5-6 40 40 1145		-									
Sample ID       Lab ID       Date Sampled Sampled Sample Type         3-4       31       5/27/13       1/00       50/L         4-5       32       1/10       50/L         5-6       33       1/10       1/15         7-8       35       1/125       1/120         1-2       36       1/150       1/150         3-4       38       1/16       1/10         4-5       34       1/10       1/10	×						A	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	V	yΟ	
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305440

Phone #

City, State, ZIP

Address\_

Company \_\_

# SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature) PROJECT NAME/NO. Bt oth 1525 PO#

Send Report To BREIT SEAULIEU SKIDER Fax # REMARKS のなる CALOPORK ARCITURE Lan symmes ANALYSES REQUESTED Po#

| Page # 5 of | V | Po#

| Po# | Standard (2 Weeks) | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | Po# | P ☐ Dispose after 30 days☐ Return samples☐ Will call with instructions Rush charges authorized by SAMPLE DISPOSAL

FORMSICOCICOCIDOC	Fax (206) 283-5044	Ph. (206) 285-8282	Seante, WA 98119-2029	S - 21 VIII Avenue West	Friedman & Bruya, Inc.	AU-8 1-2	9-7 7-W	AU-7 6-7	Av-7 5-6	AV-7 4-5	AU-7 3-4	40-7 2-3	AU-7 1-2	Av-6 7-8	AU-6 6-7	Sample ID	
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	by:	hed by:	Ny.	The by:	SIGN	a									8/27/13	Date Sampled	
		(			SIGNATURE	1235	1230	1225	1270	1215	1210	1205	1200	1155	0511	Time Sampled	
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			ή 7	lt Ga Meoli	PR	۷									i	# of containers	
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L												-				SVOCs by 8270 HFS	YALY
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305440 Send Report To BASAT BANGA

### SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature) PROJECT NAME/NO.

1251 MO 148

REMARKS BUZASE ARCHIVE

Phone #

Fax #

Address\_

Company \_

FLOND / SNIDER

City, State, ZIP

05/221

Page #\_

□ Standard (2 Weeks) TURNAROUND TIME

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Rush charges authorized by SAMPLE DISPOSAL

☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

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FORMS\COC\CQC.DOC Fax (206) 283-5044 Ph. (206) 285-8282 Seattle, WA 98119-2029 3012 16th Avenue West

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City, State, ZIPFax #	Company チレめい Sレックラス Address	305440 Send Report To BIGHT GERVILLE
REMARKS PLATS ARCHUZ	PROJECT NAME/NO.	SAMPLE CHAIN OF CUSTODY  SAMPLERS (signature)
	PO#	DY ME 05/22/13
SAMPLE DISPOSAL  Dispose after 30 days  Return samples  Will call with instructions	☐ RUSH Rush charges authorized by	Page # 7 of 17

Seattle, WA 98119-2029	_	· 	AU-10 7-8	AV-W 6-7	3.6	AV-10 6-1	5-h. 01-A	AV-10 3-4	AV -16 2-3	AV-10 1-2	av-9 7-8	7-9 P-VA.	AV-9 5-6	Sample ID	
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# SAMPLE CHAIN OF CUSTODY $\,\,$ $\,\,$ $\,\,$

Send Report To Brett Bear Lein Company F/5 City, State, ZIP Address\_ REMARKS

Phone #

Fax #

Archive per pg.1

PROJECT NAME/NO.	SAMPLERS (signatura)	
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8+1 0+11 1625 PO#

	13
TURNAROUND TIME	Page # 9 of

☐ Standard (2 Weeks)
☐ RUSH Rush charges authorized by

SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

Fax (206) 283-5044	Ph. (206) 285-8282	_	Friedman & Bruya, Inc.	AV-13 6-1	W-13 6-6	81-13 4-6	Mrs 61-M	AV-13 2-3	N-13 1-4	8-1- TIM	AN-12 6-7	4-5 to -NA	AV-12 4-9	Sample ID	
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# SAMPLE CHAIN OF CUSTODY $ME \frac{05}{32}/3$

Send Report To Brett Beau luic PH
Company 15
Address RIP

Phone #

Fax #

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			PO#		
☐ Return samples ☐ Will call with instructions	SAMPLE DISPOSAL	Rush charges authorized by	☐ Standard (2 Weeks)☐ RUSH	TURNAROUND TIME	Page # of

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Fax (206) 283-5044	Ph. (206) 285-8282	Seattle, WA 98119-2029	3012 10th Avenue West	Friedman & Bruya, Inc.	AV-16 2-3	AV-16 1-7	8-1-8-1-8	1-9+95 NO	ANS1545-1	AV-14 4-6	AN-14 3-4	AV-142-3	AN-14F2	AV-13 7-8	Sample ID	
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Fax (206) 283-5044 Ph. (206) 285-8282

Relinquished by:

Received by:

### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 17, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the results from the testing of material submitted on June 10, 2013 from the B+L O+M t-1525, F&BI 306149 project. There are 67 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Erin Murray FDS0617R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on June 10, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L O+M t-1525, F&BI 306149 project. Samples were logged in under the laboratory ID's listed below.

T 1 . TD	FI 1/G 11
<u>Laboratory ID</u>	Floyd/Snider
306149-01	AV-17 (3-4)
306149-02	AV-17 (4-5)
306149-03	AV-17 (5-6)
306149-04	AV-17 (6-7)
306149-05	AV-17 (7-8)
306149-06	AV-18 (3-4)
306149-07	AV-18 (4-5)
306149-08	AV-18 (5-6)
306149-09	AV-18 (6-7)
306149-10	AV-18 (7-8)
306149-11	AV-2-GW (6-10)
306149-12	AV-19 (3-4)
306149-13	AV-19 (4-5)
306149-14	AV-19 (5-6)
306149-15	AV-19 (5-6) Dup
306149-16	AV-19 (6-7)
306149-17	AV-19 (7-8)
306149-18	AV-19-GW (4-8)
306149-19	AV-20 (3-4)
306149-20	AV-20 (3-4) Dup
306149-21	AV-20 (4-5)
306149-22	AV-20 (5-6)
306149-23	AV-20 (6-7)
306149-24	AV-20 (7-8)
306149-25	AV-21 (3-4)
306149-26	AV-21 (4-5)
306149-27	AV-21 (5-6)
306149-28	AV-21 (6-7)
306149-29	AV-21 (7-8)
306149-30	AV-22 (3-4)
306149-31	AV-22 (4-5)
306149-32	AV-22 (5-6)
306149-33	AV-13-GW (7-11)
306149-34	AV-22 (6-7)
306149-35	AV-22 (7-8)
306149-36	AV-23 (3-4)
306149-37	AV-23 (4-5)

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE (continued)

Laboratory ID	Floyd/Snider
306149-38	AV-23 (5-6)
306149-39	AV-23 (5-6) DUP
306149-40	AV-23 (6-7)
306149-41	AV-23 (7-8)
306149-42	AV-24 (3-4)
306149-43	AV-24 (4-5)
306149-44	AV-24 (5-6)
306149-45	AV-24 (6-7)
306149-46	AV-24 (7-8)
306149-47	AV-25 (3-4)
306149-48	AV-25 (3-4) DUP
306149-49	AV-25 (4-5)
306149-50	AV-25 (5-6)
306149-51	AV-25 (6-7)
306149-52	AV-25 (7-8)
306149-53	AV-26 (3-4)
306149-54	AV-26 (3-4) DUP
306149-55	AV-26 (4-5)
306149-56	AV-26 (5-6)
306149-57	AV-26 (6-7)
306149-58	AV-26 (7-8)
306149-59	AV-27 (3-4)
306149-60	AV-27 (4-5)
306149-61	AV-27 (5-6)
306149-62	AV-27 (6-7)
306149-63	AV-27 (7-8)
306149-64	AV-28 (3-4)
306149-65	AV-28 (4-5)
306149-66	AV-28 (5-6)
306149-67	AV-28 (6-7)
306149-68	AV-28 (7-8)
306149-69	AV-29 (3-4)
306149-70	AV-29 (4-5)
306149-71	AV-29 (5-6)
306149-72	AV-29 (6-7)
306149-73	AV-29 (7-8)
306149-74	AV-30 (3-4)
306149-75	AV-30 (4-5)
306149-76	AV-30 (5-6)
	• •

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd/Snider
306149-77	AV-30 (5-6) DUP
306149-78	AV-30 (6-7)
306149-79	AV-30 (7-8)
306149-80	AV-31-GW (1-5)
306149-81	AV-32 (3-4)
306149-82	AV-32 (3-4) DUP
306149-83	AV-32 (4-5)
306149-84	AV-32 (5-6)
306149-85	AV-32 (6-7)
306149-86	AV-32 (7-8)
306149-87	WD-15 (0-1)
306149-88	WD-15 (1-2)
306149-89	WD-15 (2-3)
306149-90	WD-15 (2-3) DUP
306149-91	WD-15 (3-4)
306149-92	WD-15 (4-5)
306149-93	WD-16 (0-1)
306149-94	WD-16 (1-2)
306149-95	WD-16 (2-3)
306149-96	WD-16 (3-4)
306149-97	WD-16 (4-5)
306149-98	WD-17 (0-1)
306149-99	WD-17 (1-2)
306149-100	WD-17 (2-3)
306149-101	WD-17 (3-4)
306149-102	WD-17 (4-5)
306149-103	WD-18 (0-1)
306149-104	WD-18 (1-2)
306149-105	WD-18 (2-3)
306149-106	WD-18 (3-4)
306149-107	WD-18 (3-4) DUP
306149-108	WD-18 (4-5)

All quality control requirements were acceptable.

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-17 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-01

 Date Analyzed:
 06/12/13
 Data File:
 306149-01.020

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 92 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.46

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-17 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-03

 Date Analyzed:
 06/12/13
 Data File:
 306149-03.050

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 82 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 12.0

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-18 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-06

 Date Analyzed:
 06/12/13
 Data File:
 306149-06.051

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.93

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-18 (5-6) Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-08 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-08.052 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower Internal Standard: Limit: % Recovery: Limit:

Indium 84 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.35

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-19 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-12

 Date Analyzed:
 06/12/13
 Data File:
 306149-12.053

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.88

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-19 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-14

 Date Analyzed:
 06/12/13
 Data File:
 306149-14.054

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 15.9

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-19 (5-6) Dup Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-15 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-15.055 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit: 125

Indium 87 60

Concentration

Analyte: mg/kg (ppm)

Arsenic 13.1

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-20 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-19

 Date Analyzed:
 06/12/13
 Data File:
 306149-19.056

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.53

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-20 (3-4) Dup Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-20 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-20.057 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.84

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-20 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-22

 Date Analyzed:
 06/12/13
 Data File:
 306149-22.058

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 15.3

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-21 (3-4) Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-25 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-25.059 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 67.8

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-21 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-27

 Date Analyzed:
 06/12/13
 Data File:
 306149-27.061

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tadium: 125

Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 107

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-22 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-30

 Date Analyzed:
 06/12/13
 Data File:
 306149-30.062

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 82 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.91

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-22 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-32

 Date Analyzed:
 06/12/13
 Data File:
 306149-32.063

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 82 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.63

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-23 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-36

 Date Analyzed:
 06/12/13
 Data File:
 306149-36.064

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 32.0

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-23 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-38

 Date Analyzed:
 06/12/13
 Data File:
 306149-38.065

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 105

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-23 (5-6) DUP Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-39 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-39.066 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 86 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 110

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-24 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-42

 Date Analyzed:
 06/12/13
 Data File:
 306149-42.067

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.84

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-24 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-44

 Date Analyzed:
 06/12/13
 Data File:
 306149-44.068

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.77

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-25 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-47

 Date Analyzed:
 06/12/13
 Data File:
 306149-47.069

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 17.7

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-25 (3-4) DUP Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-48

 Date Analyzed:
 06/12/13
 Data File:
 306149-48.029

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 17.8

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-25 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-50

 Date Analyzed:
 06/12/13
 Data File:
 306149-50.030

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 426

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-26 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-53

 Date Analyzed:
 06/12/13
 Data File:
 306149-53.031

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Indium 92 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 54.8

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-26 (3-4) DUP Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-54

 Date Analyzed:
 06/12/13
 Data File:
 306149-54.032

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 90 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 51.2

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-26 (5-6) Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-56 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-56.033 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 92 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 509

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-27 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-59

 Date Analyzed:
 06/12/13
 Data File:
 306149-59.025

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 11.0

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-27 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-61

 Date Analyzed:
 06/12/13
 Data File:
 306149-61.034

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 80.7

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-28 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-64

 Date Analyzed:
 06/12/13
 Data File:
 306149-64.035

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.46

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-28 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-66

 Date Analyzed:
 06/12/13
 Data File:
 306149-66.036

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 89 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.65

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-29 (3-4) Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-69 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-69.037 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 88 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 1.70

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-29 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-71

 Date Analyzed:
 06/12/13
 Data File:
 306149-71.038

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.52

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-30 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-74

 Date Analyzed:
 06/12/13
 Data File:
 306149-74.040

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 23.1

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-30 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-76

 Date Analyzed:
 06/12/13
 Data File:
 306149-76.041

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 50.2

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-30 (5-6) DUP Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-77

 Date Analyzed:
 06/12/13
 Data File:
 306149-77.042

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 57.7

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-32 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-81

 Date Analyzed:
 06/12/13
 Data File:
 306149-81.043

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 17.3

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-32 (3-4) DUP Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-82

 Date Analyzed:
 06/12/13
 Data File:
 306149-82.044

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 23.5

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: AV-32 (5-6) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-84

 Date Analyzed:
 06/12/13
 Data File:
 306149-84.045

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 51.2

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-15 (1-2) Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-88 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-88.046 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 30.2

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-15 (2-3) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-89

 Date Analyzed:
 06/12/13
 Data File:
 306149-89.047

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 12.9

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-15 (2-3) DUP Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-90

 Date Analyzed:
 06/12/13
 Data File:
 306149-90.048

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 29.4

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-15 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-91 Date Extracted: Date Analyzed: 06/12/13 Data File: 306149-91.076 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 82 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.42

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-16 (1-2) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-94

 Date Analyzed:
 06/12/13
 Data File:
 306149-94.077

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 52.7

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-16 (2-3) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-95

 Date Analyzed:
 06/12/13
 Data File:
 306149-95.078

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 7.61

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-16 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-96

 Date Analyzed:
 06/12/13
 Data File:
 306149-96.079

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.63

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-17 (1-2) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-99

 Date Analyzed:
 06/12/13
 Data File:
 306149-99.080

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 56.1

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-17 (2-3) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-100

 Date Analyzed:
 06/12/13
 Data File:
 306149-100.082

 Date Analyzed:
 06/12/13
 Data File:
 1600/161

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 7.49

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-17 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-101

 Date Analyzed:
 06/12/13
 Data File:
 306149-101.083

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.81

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-18 (1-2) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-104

 Date Analyzed:
 06/12/13
 Data File:
 306149-104.084

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 23.0

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-18 (2-3) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-105

 Date Analyzed:
 06/12/13
 Data File:
 306149-105.085

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.60

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-18 (3-4) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-106

 Date Analyzed:
 06/12/13
 Data File:
 306149-106.073

 Matrice
 Sell
 Lab ID:
 306149-106.073

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.45

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: WD-18 (3-4) DUP Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-107

 Date Analyzed:
 06/12/13
 Data File:
 306149-107.086

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.45

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M t-1525, F&BI 306149

Date Extracted: 06/12/13 Lab ID: I3-334 mb
Date Analyzed: 06/12/13 Data File: I3-334 mb.018
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Indium 92 60 125

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M t-1525, F&BI 306149

Date Extracted: 06/12/13 Lab ID: I3-335 mb
Date Analyzed: 06/12/13 Data File: I3-335 mb.023
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M t-1525, F&BI 306149

Date Extracted: 06/12/13 Lab ID: I3-338 mb
Date Analyzed: 06/12/13 Data File: I3-338 mb.071
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Dissolved Metals By EPA Method 200.8

Client ID: AV-2-GW (6-10) Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-11 Date Extracted: Date Analyzed: 06/13/13 Data File: 306149-11.010 Matrix: Instrument: Water ICPMS1 Units: ug/L (ppb) Operator: AP

Lower

Upper **Internal Standard:** Limit: % Recovery: Limit: Indium 106 60 125

Concentration

Analyte: ug/L (ppb)

Arsenic 80.6

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Dissolved Metals By EPA Method 200.8

Client ID: AV-19-GW (4-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-18

 Date Analyzed:
 06/13/13
 Data File:
 306149-18.019

 Matrix:
 Water
 Instrument:
 ICPMS1

Units: ug/L (ppb) Operator: AP

Concentration

Analyte: ug/L (ppb)

Arsenic 72.4

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Dissolved Metals By EPA Method 200.8

Client ID: AV-13-GW (7-11) Client: Floyd/Snider

Date Received: Project: 06/10/13 B+L O+M t-1525, F&BI 306149

Lab ID: 06/12/13 306149-33 Date Extracted: Date Analyzed: 06/13/13 Data File: 306149-33.020 Matrix: Instrument: Water ICPMS1 ug/L (ppb) Units: Operator: AP

Lower

Upper Limit: **Internal Standard:** % Recovery: Limit: Indium 104 60 125

Concentration

Analyte: ug/L (ppb)

Arsenic 31.5

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Dissolved Metals By EPA Method 200.8

Client ID: AV-31-GW (1-5) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/12/13
 Lab ID:
 306149-80

 Date Analyzed:
 06/13/13
 Data File:
 306149-80.021

 Matrix:
 Water
 Instrument:
 ICPMS1

Units: ug/L (ppb) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 105 60 125

Concentration

Analyte: ug/L (ppb)

Arsenic 141

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Dissolved Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M t-1525, F&BI 306149

Date Extracted:06/12/13Lab ID:I3-339 mbDate Analyzed:06/13/13Data File:I3-339 mb.008Matrix:WaterInstrument:ICPMS1

Units: ug/L (ppb) Operator: AP

Concentration

Analyte: ug/L (ppb)

## ENVIRONMENTAL CHEMISTS

Date of Report: 06/17/13 Date Received: 06/10/13

Project: B+L O+M t-1525, F&BI 306149

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306149-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	1.33	85	87	70-118	2

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	91	83-113

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/17/13 Date Received: 06/10/13

Project: B+L O+M t-1525, F&BI 306149

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306149-59 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	9.54	87 b	85 b	70-118	2 b

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	91	83-113

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 06/17/13 Date Received: 06/10/13

Project: B+L O+M t-1525, F&BI 306149

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306149-106 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	2.06	83 b	86 b	70-118	4 b

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	85	83-113

## ENVIRONMENTAL CHEMISTS

Date of Report: 06/17/13 Date Received: 06/10/13

Project: B+L O+M t-1525, F&BI 306149

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 306149-11 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	80.6	57 b	71 b	60-150	22 b

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	89	80-111

#### **ENVIRONMENTAL CHEMISTS**

## **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

# SAMPLE CHAIN OF CUSTODY

ME 06-10-13

E Fax # 700	00 10186 00	Phone # 206-292-7078 Fax # 706-687-7867	City, State, ZIP Seathe, WA 98101	Address 601 Union St, Ste 600	Company Fluyd Snider	Send Report To Bell Beaulton
To Sell Land	Onion St, Ste 6  Onion St, Ste 6  Onion St, Ste 6  Onion St, Ste 6	Phone # 206	City, State, Z	Address 60	Company H	Send Report
	E Fax # 700	1-292-20F	TIP Seate	Union St	luyd Smiz	To Siell B

SAMPLERS (signature)

PROJECT NAME/NO.

\$ \( \text{P} \) \( \text{P} \) PO#

\$ \( \text{C} \) \( \text{P} \) \( \text{C} \) PO#

REMARKS

TURNAROUND TIME

TURNAROUND TIME

Standard (2 Weeks)

KRUSH 3- 464

Rush charges authorized by

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

XWill call with instructions

Fax (206) 283-5044	Ph. (206) 285-8282	Deutie, WA 70119-2029	M annave mor z roc	Friedman & Bruya, Inc.	N-8 (7-8)		AV-18 (5	AV -18 (4-5)	AV-18 (3-4)		M-17 (6-7)	AV-17 (5-6	AV-17 (4-6)	AV-17 (3-4)	Sample ID	
Received by:	Relinqui	_			8) 10	(6-7) oq	5-6) 08	5) 07	4) 06	(7-8) 05	4) 04	6) 03	02	01	Lab ID	
d by:	ished by:	MIM		SIGN.	2									6/7/13	Date Sampled	
		and	M	SIGNATURE	1028	1026	1024	Íbzz	1020	0958	0956	0954	0454	0950	Time Sampled	
		\ 			4									Soil	Sample Type	
		Nhan	Krishm	PR	4	مو	H	11	11	۲	μ	H	₽	4	# of containers	
				PRINT NAME											TPH-Diesel	
		phan	1	MAN											TPH-Gasoline	
Ì		ž	resulter	Œ											BTEX by 8021B	
					<del> </del>										VOCs by8260	Ą
															SVOCs by 8270	A
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188			Srider	ANJ			-									HEI
Samples received at			7													
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	,	6/10/13	15 No/12	DATE												
S.		_	1632	TIME											Notes	

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ME 06-10-13

of

SAMPLERS (signature)	
PROJECT NAME/NO.	P
B+1 0+1 + 1525	
REMARKS	

8 Page # 2

☐ Dispose after 30 days Rush charges authorized by ☐ Standard (2 Weeks)

☐ Standard (2 Weeks) TURNAROUND TIME SAMPLE DISPOSAL

Will call with instructions ☐ Return samples

Phone # 206-277-2078 Fax # 766-682-7867

Seath, WA 9810)

Union St.

K

800

Snibler

City, State, ZIP

Address\_

Company \_

	•	(12   and (4-5) 02 - NY	AV-20 (3-4)	AV-19- GW (4-8)	W-19(1-8)	AN-19 (6-7)	N-19 (5-6) DUP 15	M-19 (2-6)	M-19 (4-5)	AV-19 (3-4)	AN-2-GW (6-10)	Sample ID	
elinguisi		8	ھ	20	7	16	a,	41	13	12	1	Lab ID	
ned by:	SIGNATURE	4								6 HiB	0425	Date Sampled	
1	ATURE	1132	130	1115	1110	108	1106	HOH	1102	1100	7, 0	Time Sampled	
		4	50 2	GW	<					50-	GW	Sample Type	
-	PR	1	4	4	1	4	۲	<i> </i>	۲	۲	۲	# of containers	
1	PRINT NAME				ļ			_	,			TPH-Diesel	
•	VAM							_		-		TPH-Gasoline	
	Œ											BTEX by 8021B	
		-										VOCs by8260	≥
												SVOCs by 8270 HFS	AA
		X	X				X	×		X		Total As Disk. 45 HOLD	ANALYSES REQUESTED
				×							X	Disk to	REQ
<b>[</b> .	ME				X	×			X			HOLD	UES.
•	COMPANY					•							TED
	DATE				-								
	TIME											Notes	
-													

FORMS\COC\COC.DOC Fax (206) 283-5044 Ph. (206) 285-8282 Seattle, WA 98119-2029

Received by:

3012 16th Avenue West

Received by:

Relinquished by:

Relinquished by

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18/3V

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Samples received at 2

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FORMS\COC\COC.DOC Friedman & Bruya, Inc. 3012 16th Avenue West Fax (206) 283-5044 Ph. (206) 285-8282 Seattle, WA 98119-2029 Send Report To Broth Beauhou City, State, ZIP Phone # 266-212-7078 Fax # 206-682-7867 Address 601 Unian St Company Floyd Sider 306149 AV - 20 と -4V - ZZ AV-20 (6-7) 12 - NA 41-21 AN-20 (5-6 と、こ N2-17 Sample ID 8-4)02 G-HJ (3-4)(6-7) | 28 7-4 (8-4 4-51 (5/2) Sea Hie Relinquish Received by: Refinquished by 130 25, 22 6 Lab ID 6/7/13 \$ Sampled Date SIGNATURE Sampled 1350 1216 1210 140 248 1138 1131 Time 98101 4121 1212 8 11.36 SAMPLE CHAIN OF CUSTODY Sample Type 8 SAMPLERS (signature) PROJECT NAME/NO. REMARKS 2.58 containers 240 4 # of H 1 4 1 1 1 4 1 PRINT NAME TPH-Diesel 7.1525 TPH-Gasoline BTEX by 8021B VOCs by8260 ANALYSES REQUESTED SVOCs by 8270 **HFS** X X X Tota l X Mardl Snixler PO# 06-10-13 X HOLL X X X COMPANY Samples received at Standard (2 Weeks)
STRUSH
3-667 ☐ Return samples ☐ Dispose after 30 days Will call with instructions Rush charges authorized by Page # 3 TURNAROUND TIME SAMPLE DISPOSAL 4/101/3 DATE Notes S 1632 TIME 620 S.

BZY

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Fax (206) 283-5044 Seattle, WA 98119-2029 3012 16th Avenue West Ph. (206) 285-8282 Friedman & Bruya, Inc. City, State, ZIP Seath, wt 98101 Phone # 206-292-2018 Fax # 706-682-7867 Address 601 Union St, 64 Company Floyd Sondle Send Report To Bril Bewie AN-241 AU-25 M- 24 AV- 25 (3-4) DXP 48 8-4) 52-NV M-24 (4-5 AU-25(4-5) AU-25 H2-M AV-24 (5-6 Sample ID (3-4 (4-3)(5-6) 7-4 (7-8 Relinquished by Relinquished by: Received by: Received by: as ナト 47 42 2 4 44 Lab ID 0821 811413 Sampled Date SIGNATURE 8 Sampled 5 92H エグジ H24 1422 1449 447 45 142K Sample Type SAMPLERS (signature) # REMARKS PROJECT NAME/NO. BHL OM 4. 1525 containers PRINT NAME TPH-Diesel malusar TPH-Gasoline BTEX by 8021B VOCs by8260 ANALYSES REQUESTED SVOCs by 8270 HFS X Total X X Mayd I Smide PO# X HOLD COMPANY Will call with instructions SRUSH 3-day ☐ Return samples ☐ Dispose after 30 days Rush charges authorized by Page #\_ TURNAROUND TIME SAMPLE DISPOSAL 6/10/13 पटत आ *11011 d* DATE

**Notes** 

306149

SAMPLE CHAIN OF CUSTODY ME 06-10-13

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1632 TIME FORMS\COC\COC.DOC Seattle, WA 98119-2029 3012 16th Avenue West Fax (206) 283-5044 Ph. (206) 285-8282 Friedman & Bruya, Inc. City, State, ZIP Send Report To Address Company M-26 (4-5) N-28(3-4) Phone # 206 - 292-2018 Fax # 206-682-7867 306149 \*N-25( AN -26 (3-4) DUP SH M-25 AU-27 AU -26 AN-26 (6-7 AV-26 (5-6 Sample ID 84) 16-4 9-4 60/ (7-8 2,2 Floyd \ Snider Breft Beaution ts rain Received by: Kelinquished/by Relinquished by: Same, 57 B 5 53  $\overset{\sim}{\sim}$ 52 53 Lab ED Sampled | Sampled Date SIGNATURE 900 As WA 98101 1352 544 1540 15 32 1538 1350 1534 1547 14Z Time 1430 SAMPLE CHAIN OF CUSTODY Sample Type Soi SAMPLERS (signature) REMARKS PROJECT NAME/NO. のたのま containers ۲ 4 1 1 4 4 4 PRINT NAME TPH-Diesel TPH-Gasoline +. 1525 BTEX by 8021B となる ANALYSES REQUESTED SVOCs by 8270 HFS ME 06-10-13 X X X Total PO# HO4 COMPANY \_ambles received at \_\_ Srida Will call with instructions ☐ Return samples ☐ Dispose after 30 days Rush charges authorized by NRUSH\_ □ Standard (2 Weeks)
□ RUSH TURNAROUND TIME ruge # SAMPLE DISPOSAL DATE 0 Notes 앜 1632 1632 TIME

306149

SAMPLE CHAIN OF CUSTODY

ME 06-10-13

41 ef\_

Phone # 206-292-2048 Fax # 206-687-7867	City, State, ZIP Scalle, WA 98101	Company Floyal Smiller	Send Report To Brok Beaulico
	R	 PI	V.

SAMPLERS (signature) **EMARKS** ROJECT NAME/NO. BHL OHM + 1525 PO#

TURNAROUND TIME rage #

Standard (2 Weeks)

RUSH 3-day Rush charges authorized by SAMPLE DISPOSAL

SkWill call with instructions ☐ Return samples ☐ Dispose after 30 days

					<del>, ,</del>		<del>,</del>	,		_				
3012 16th Avenue West	Friedman & Bruya, Inc.		W-29(4-5)	AN-29 (3-4)	(8-4)82-M	AN-28 (6-7)	AV-28 (5-6)	AV-28 C4-5)	AV-28 (3-4)	W+27 (7-8)	M-27 (6-7)	M-27 (5-6)	Sample ID	
Kennquis	-		な	69	89	49	99	29	64	63	62	6	Lab ID	
Kelinquished by	SIG		4						6/10/12	4		6/7/13	Date Sampled	
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)			В	<u> </u>							_	Sói l	Sample Type	
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	PRINT NAME						-						TPH-Diesel	
marken	NA												TPH-Gasoline	
3	ME												BTEX by 8021B	
>			-										VOCs by8260	
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306149

Send Report To Breff Beatieu

Company \_ Floyal Snider

City, State, ZIP seatte, Union St. WA 9810) Sta 600

REMARKS

Address\_

Phone # 206-291-2078 Fax # 706-687-7867

SAMPLE CHAIN OF CUSTODY SAMPLERS (signature) PROJECT NAME/NO. 557 ME 06-10-13 PO#

Rush charges authorized by □ Standard (2 Weeks)
□ Standard (2 Weeks) Will call with instructions ☐ Dispose after 30 days ☐ Return samples TURNAROUND TIME SAMPLE DISPOSAL

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FORMS\COC\COC.DOC Fax (206) 283-5044 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc. Ph. (206) 285-8282

Relinquished by; Received by: SIGNATURE PRINT NAME nous nan COMPANY sumples receive Snix 6/19/13 6/10/13 DATE TIME 1632 1632

Send Report To Broth Beaulico Company \_ Phone # 286-291-7078 Fax # 706-682-4867 City, State, ZIP Address\_ 306149 601 Union St Floyd Snider Seather, WA 4 98161 8

SAMPLE CHAIN OF CUSTODY SAMPLERS (signature) PROJECT NAME/NO. REMARKS BY OTA t-1525 MC 06-10-13 PQ# Standard (2 Weeks) Return samples

Kwill call with instructions Rush charges authorized by ☐ Dispose after 30 days

TURNAROUND TIME

SAMPLE DISPOSAL

Page #

of I

**B**五4

Friedman & Bruy AU . 32 MD-15 (2-3) DUP 90 AU- 32 (3-4) DUP 82 WD-15 (0-1 WD-15(2-3) MU-15 (1-2) M-32 (6-7 M-32 AV -32 M-32 (5-6 Sample ID (2-4) (4-5) 8 4)  $\mathcal{Z}$ 2 Lab ID 88  $\frac{8}{6}$  $\infty$ 6/10/13 Sampled Date Sampled 1132 1140 1252 136 1250 138 1136 1134 1256 Time 1254 Sample Type | containers Ř # of TPH-Diesel TPH-Gasoline VOCs by8260 ANALYSES REQUESTED SVOCs by 8270 **HFS** X X total HOLD X **Notes** 

Fax (206) 283-504 Ph. (206) 285-828 Seattle, WA 98119. 3012 16th Avenue

FORMS\COC\COC.DOC

ya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DAIL	IME
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<b>A</b>	Received by:		Samples received at _	ng at	
2					

Send Report To Broth Beaulieu したののの

Company \_ Floyd 1 Smoler

City, State, ZIP Address\_\_\_ 601 Union St, 3c 600 Seather WA 98/01

Phone # 206-297-2078 Fax # 706-681- 7867

SAI	SAMPLE CHAIN OF CUSTODY HE 06-10-13	ME 06-10-13
	SAMPLERS (signature)	\
1	PROJECT NAME/NO.	PO#
	BTL OH +. 1525	
	REMARKS	

□ Standard (2 Weeks)

■ RUSH 3-day Rush charges authorize ☐ Return samples ☐ Dispose after 30 days TURNAROUND TIME Page # 0 SAMPLE DISPOSAL

| | of |

Bzy

Will call with instructions

Friedman & Bruya, I 41-GW 1-0) FI-GM 1-0191-0M WD-15 (4-5 WD - 15 12-12 (1-2) WW- 16 (4-5) WD-17 (2-3 WD-16 (3-4) WD-16 (2-3 Sample ID 17-5) (1-2) 92 26 2 Lab ID 8 6/10/13 Sampled Date Sampled SK SK 1322 1258 1300 Time 138 1308 13/4 150 312 Sample Type 18/ containers # of TPH-Diesel TPH-Gasoline BTEX by 8021B VOCs by8260 ANALYSES REQUESTED SVOCs by 8270 HFS X X Total As X HOLD X Notes

FORMS\COC\COC.DOC Ph. (206) 285-8282 Seattle, WA 98119-20 3012 16th Avenue We Fax (206) 283-5044

		•		Received by:
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1632	6/10/13	Floyd SiMA	Known Indusor	Relinquished By MM
TIME	DATE	COMPANY	PRINT NAME	SIGNATURE

FORMS\COC\CO@.DOC Seattle, WA 98119-2029 Fax (206) 283-5044 Ph. (206) 285-8282 3012 16th Avenue West Friedman & Bruya, Inc. Company Floyd Snider MD-18 (1-2) Phone # 206-292-278 Fax # 206-692-7864 City, State, ZIP Scattle, WA 98101 Address 601 Union \$1 WB-18 (3-4) DUP [6-2) 81-9M MD-18 Send Report To Back Beaulicu (2-4) 81-an 41-9M WD-1763-4 WD-18 **bh1908** Sample ID ームーな 1-9 5-17 Received by Received by: Relinquished by Relinquished by 02 <del>2</del> Lab 0 9 Ø 2 9 8/10/13 Str 6000 Sampled Date SIGNATURE Time Sampled 1346 1348 1344 1342 1328 1326 1352 1350 SAMPLE CHAIN OF CUSTODY Sample Type | containers 8 SAMPLERS (signature) PROJECT NAME/NO REMARKS BH O+n + 1525 # of PRINT NAME TPH-Diesel TPH-Gasoline VOCs by8260 ANALYSES REQUESTED SVOCs by 8270 HFS HoydlSnider X X X X Total -PBI HOLD X COMPANY paktabar cardinor 06-10-13 Will call with instructions □ Return samples Rush charges authorized by Standard (2 Weeks) ☐ Dispose after 30 days TURNAROUND TIME Page # SAMPLE DISPOSAL 6/10/13 6/10/13 DATE Notes 1632 TIME [632

### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 26, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the additional results from the testing of material submitted on June 10, 2013 from the B+L O+M t-1525, F&BI 306149, F&BI 306149 project. There are 12 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Erin Murray FDS0626R.DOC

### ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE

This case narrative encompasses samples received on June 10, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L O+M t-1525, F&BI 306149 project. Samples were logged in under the laboratory ID's listed below.

T 1 . TD	Tl 1/G . 1
<u>Laboratory ID</u>	Floyd/Snider
306149-01	AV-17 (3-4)
306149-02	AV-17 (4-5)
306149-03	AV-17 (5-6)
306149-04	AV-17 (6-7)
306149-05	AV-17 (7-8)
306149-06	AV-18 (3-4)
306149-07	AV-18 (4-5)
306149-08	AV-18 (5-6)
306149-09	AV-18 (6-7)
306149-10	AV-18 (7-8)
306149-11	AV-2-GW (6-10)
306149-12	AV-19 (3-4)
306149-13	AV-19 (4-5)
306149-14	AV-19 (5-6)
306149-15	AV-19 (5-6) Dup
306149-16	AV-19 (6-7)
306149-17	AV-19 (7-8)
306149-18	AV-19-GW (4-8)
306149-19	AV-20 (3-4)
306149-20	AV-20 (3-4) Dup
306149-21	AV-20 (4-5)
306149-22	AV-20 (5-6)
306149-23	AV-20 (6-7)
306149-24	AV-20 (7-8)
306149-25	AV-21 (3-4)
306149-26	AV-21 (4-5)
306149-27	AV-21 (5-6)
306149-28	AV-21 (6-7)
306149-29	AV-21 (7-8)
306149-30	AV-22 (3-4)
306149-31	AV-22 (4-5)
306149-32	AV-22 (5-6)
306149-33	AV-13-GW (7-11)
306149-34	AV-22 (6-7)
306149-35	AV-22 (7-8)
306149-36	AV-23 (3-4)

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd/Snider
306149-37	AV-23 (4-5)
306149-38	AV-23 (5-6)
306149-39	AV-23 (5-6) DUP
306149-40	AV-23 (6-7)
306149-41	AV-23 (7-8)
306149-42	AV-24 (3-4)
306149-43	AV-24 (4-5)
306149-44	AV-24 (5-6)
306149-45	AV-24 (6-7)
306149-46	AV-24 (7-8)
306149-47	AV-25 (3-4)
306149-48	AV-25 (3-4) DUP
306149-49	AV-25 (4-5)
306149-50	AV-25 (5-6)
306149-51	AV-25 (6-7)
306149-52	AV-25 (7-8)
306149-53	AV-26 (3-4)
306149-54	AV-26 (3-4) DUP
306149-55	AV-26 (4-5)
306149-56	AV-26 (5-6)
306149-57	AV-26 (6-7)
306149-58	AV-26 (7-8)
306149-59	AV-27 (3-4)
306149-60	AV-27 (4-5)
306149-61	AV-27 (5-6)
306149-62	AV-27 (6-7)
306149-63	AV-27 (7-8)
306149-64	AV-28 (3-4)
306149-65	AV-28 (4-5)
306149-66	AV-28 (5-6)
306149-67	AV-28 (6-7)
306149-68	AV-28 (7-8)
306149-69	AV-29 (3-4)
306149-70	AV-29 (4-5)
306149-71	AV-29 (5-6)
306149-72	AV-29 (6-7)
306149-73	AV-29 (7-8)

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd/Snider
306149-74	AV-30 (3-4)
306149-75	AV-30 (4-5)
306149-76	AV-30 (5-6)
306149-77	AV-30 (5-6) DUP
306149-78	AV-30 (6-7)
306149-79	AV-30 (7-8)
306149-80	AV-31-GW (1-5)
306149-81	AV-32 (3-4)
306149-82	AV-32 (3-4) DUP
306149-83	AV-32 (4-5)
306149-84	AV-32 (5-6)
306149-85	AV-32 (6-7)
306149-86	AV-32 (7-8)
306149-87	WD-15 (0-1)
306149-88	WD-15 (1-2)
306149-89	WD-15 (2-3)
306149-90	WD-15 (2-3) DUP
306149-91	WD-15 (3-4)
306149-92	WD-15 (4-5)
306149-93	WD-16 (0-1)
306149-94	WD-16 (1-2)
306149-95	WD-16 (2-3)
306149-96	WD-16 (3-4)
306149-97	WD-16 (4-5)
306149-98	WD-17 (0-1)
306149-99	WD-17 (1-2)
306149-100	WD-17 (2-3)
306149-101	WD-17 (3-4)
306149-102	WD-17 (4-5)
306149-103	WD-18 (0-1)
306149-104	WD-18 (1-2)
306149-105	WD-18 (2-3)
306149-106	WD-18 (3-4)
306149-107	WD-18 (3-4) DUP
306149-108	WD-18 (4-5)

All quality control requirements were acceptable.

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-21 (7-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149, F&BI 306149

 Date Extracted:
 06/19/13
 Lab ID:
 306149-29

 Date Analyzed:
 06/19/13
 Data File:
 306149-29.052

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 6.75

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-23 (7-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149, F&BI 306149

 Date Extracted:
 06/19/13
 Lab ID:
 306149-41

 Date Analyzed:
 06/19/13
 Data File:
 306149-41.055

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.61

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-25 (7-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149, F&BI 306149

 Date Extracted:
 06/19/13
 Lab ID:
 306149-52

 Date Analyzed:
 06/19/13
 Data File:
 306149-52.057

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 86 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 7.09

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-26 (7-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149, F&BI 306149

 Date Extracted:
 06/19/13
 Lab ID:
 306149-58

 Date Analyzed:
 06/19/13
 Data File:
 306149-58.058

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 11.5

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-30 (7-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149, F&BI 306149

 Date Extracted:
 06/19/13
 Lab ID:
 306149-79

 Date Analyzed:
 06/19/13
 Data File:
 306149-79 rr.074

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 11.8

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-32 (7-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149, F&BI 306149

 Date Extracted:
 06/19/13
 Lab ID:
 306149-86

 Date Analyzed:
 06/19/13
 Data File:
 306149-86 rr.075

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 14.1

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M t-1525, F&BI 306149, F&BI 306149

Date Extracted:06/19/13Lab ID:I3-356 mbDate Analyzed:06/19/13Data File:I3-356 mb.050Matrix:SoilInstrument:ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/26/13 Date Received: 06/10/13

Project: B+L O+M t-1525, F&BI 306149

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306149-29 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	5.13	93 b	96 b	70-118	3 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	93	83-113

### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

# SAMPLE CHAIN OF CUSTODY

ス (で) 06-10-13

Company Fluyd Sonider Send Report To Sell Beauly Phone # 206-292-2078 Fax # 706-682-7867 City, State, ZIP Seathe, Address 601 Union St, SE WA 98161 8

REMARKS

PROJECT NAME/NO. SAMPLERS (signature) t.1625 PQ#

Page #\_

BIY

TURNAROUND TIME

U Standard (2 Weeks)

KRUSH 3- 444

Rush charges authofized by ☐ Dispose after 30 days SAMPLE DISPOSAL

☐ Return samples

XWill call with instructions

FORMSCOCCCCCCDCC	Fax (206) 283-5044		_	Seattle WA 98119-2020	3012 I6th Avenue West		M-8 (7-8)	4-9) 81-NY	AV-18 (5-6)	AU -18 (4-5)	1	AU-17 (7-8)	M-17 (6-7)	AV-17 (5-6)	AN-17 (4-B)	AV-17 (3-4)	Sample ID	
	Received by:	ernhmas	AM.	Received by:	Relinquished by		10	3	80	40	8	05	40	03	02	0	Lab ID	-
	by:	iicu oy.		)///A	SIGN,		~									6/7/13	Date Sampled	
			m am		SIGNATURE		1028	9201	1024	İbzz	1620	0958	0956	0954	2530	0950	Time Sampled	
				\			4									Soil	Sample Type	
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					PRINT NAME	-											TPH-Diesel	4
	ļ		phan	John Say	AM	}											TPH-Gasoline	
			ξ	542		I	7										BTEX by 8021B	$\  \cdot \ $
						r											VOCs by 8260 SVOCs by 8270	2
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			ヹ	艺					X		X			X		X	Total A	SES
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-	2	$\dashv$	6	A.I	H													
	5		6/10/13	EN/M/B	DATE													
	य		_	1632	TIME												Notes	

# SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature) HG. 06-10-13

Phone # 206-277-2078 Fax # 766-682-7867 Send Report To Frest Beauty Seath, WA 1819 Unan St, (Snixter Stc 600 REMARKS PROJECT NAME/NO.

City, State, ZIP

Address\_ Company \_

BH OH + 1525

☐ Return samples ☐ Dispose after 30 days Standard (2 Weeks)

Skrush 3-00-4 Will call with instructions Rush charges authorized by Page # Z TURNAROUND TIME SAMPLE DISPOSAL

		JUJ - 2013-4) DUR	AN-20 (3-4)	AV-19-GW (4-8)	W-19(7-8)	AN-19 (6-7)	M-19 (5-6) M	M-19 (2-6)	W-19 (45)	AV-19 (3-4)	AN-2-GW (6-10)	Sample ID	
		22)	19	180	41	16	2	14	73	12	E	Lab ID	
SIGN		4								6 A/13	0425-	Date Sampled	
ATURE		1/32	1130	115	1110	108	1106	1104	1102	1100	1	Time Sampled	
		4	Sold	G (b)	<					Sol	გდ	Sample Type	
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FORMSYCOCYCOCLDOC Ph (206) 285-8282 Fax (206) 283-5044 Seattle, WA 98119-2029

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Phone # 266-212-7078 Fax # 206-662-7867 City, State, ZIP Company Floyd Sider Address 601 Union St, Salle 3 4 98101 8

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ME 06-10-13 Page # 3

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SAMPLE CHAIN OF CUSTODY

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Standard (2 Weeks) Rush charges authorized by Page # TURNAROUND TIME SAMPLE DISPOSAL

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Ph (206) 285-8282

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Company \_ Phone # 206-292-2018 Fax # 706-682-7867 City, State, ZIP Address 601 Union St, Ste Send Report To Breth Beaulieu 306149 Floyd Isnider Mas. Mt 98101 8 SAMPLE CHAIN OF CUSTODY ME 06-10-13 PROJECT NAME/NO. SAMPLERS (signature) REMARKS BTL OTH 4.1525 PQ# ☐ Return samples SRUSH 3-004 ☐ Dispose after 30 days Rush charges authorized by Page #\_ TURNAROUND TIME SAMPLE DISPOSAL

Fax (206) 283-5044	1 1200/ 200-0202			3012 16th Avenue West		Au-25 (5-6)	AV-25(4-5)		AV-25 (3-4)	M-24 (7-8)	(t-9) hz-N	AV-24 (5-6)	M-24 (4-5)	AV-24 (3-4)	(8-6) 52-NV	Sample ID		r none # 620 210
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City, State, ZIP Phone # 206 - 292-2078 Fax # 706-682-7867 Send Report To \_ 306149 Company 601 Union St Floyd \Snider Breft Beautieu Salta, WA 98101 600 SAMPLE CHAIN OF CUSTODY PROJECT NAME/NO. SAMPLERS (signature) REMARKS BY OF 4. 1525 ME 06-10-13 **PQ** Standard (2 Weeks)

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Rush charges authorized by Return samples ☐ Dispose after 30 days Togo # TURNAROUND TIME SAMPLE DISPOSAL BIY

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□ Standard (2 Weeks)

□ RUSH 3-day

Rush charges authorized by ☐ Dispose after 30 days SAMPLE DISPOSAL

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Phone # 206-292-2678 Fax # 206-687-7867

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FORMS/COC/COC/DOC Fax (206) 283-5044 Friedman & Briya, Inc. 3012 16th Avenue West Ph. (206) 285-8282 Seattle, WA 98119-2029

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Send Report To Bref Bealicu Phone # 206-297-2078 Fax # 706-687- 7867 City, State, ZIP Company \_ Address\_ 306149 Floyd Snider Scattle, wt 98101 Sta 608 SAMPLE CHAIN OF CUSTODY SAMPLERS (signature) PROJECT NAME/NO. REMARKS 2 973 06-10-13 PO# Return samples

[Will call with instructions □ Dispose after 30 days Ostandard (2 Weeks) Rush charges authori TURNAROUND TIME Page #\_ SAMPLE DISPOSAL

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Send Report To Brett Beaulico Company \_ City, State, ZIP Address\_ 306149 601 Floyd Snider Unian St Salta, WA 98101 X 80 SAMPLE CHAIN OF CUSTODY SAMPLERS (signature) PROJECT NAME/NO. REMARKS BH O+M +- 1525

Phone # 286-291-7078 Fax # 706-182-7867 Return samples

(Will call with instructions □ Dispose after 30 days

MC 06-10-13 Rush charges authorized by Standard (2 Weeks)
SERUSH 3-864 Page #\_ TURNAROUND TIME SAMPLE DISPOSAL のよう

Fax (206) 283-5044		929		Friedman & Bruya, Inc.	MD-15 (2-3) DUP 90	WD-15(2-3)	MD-15 (1-2)	WD-15 (0-1)	M-32 (7-8)	M-52 (6-7)	N-32 (5-6)	MV-32 (4-5)	Au- 32 (3-4) DUP	AU-32 (3-4)	Sample ID	
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Address 691 Union St., 3c 600

City, State, ZIP Son He, WA 98101

Phone # 206-297-2078 Fax # 706-682-7867

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REMARKS

Page # 10 of 1

Page # 10 of 1

TURNAROUND TIME

Standard (2 Weeks)

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Rush charges authorized by

SAMPLE DISPOSAL

Return samples
Will call with instructions

Ph. (206) 285-8282	2029		Friedman & Brıya, İnc.	WD-17 (2-3)	WD-17 (1-2)	(1-0) FI-DW	WD-16 (4-5)	WD-16 (3-4)	MD-16 (2-3)	mD-16 (1-2)	MD-16 (0-1)	WD-15 (4-5)	MD-15 (3-4)	Sample ID	
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Phone # 206-292-2018 Fax # 106-692-7864 City, State, ZIP Scally, WA 9101 601 Unan \$4, A A 800

SAMPLE CHAIN OF CUSTODY

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06-10-13

Standard (2 Weeks)

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Rush charges authorized by Will call with instructions ☐ Dispose after 30 days ☐ Return samples TURNAROUND TIME SAMPLE DISPOSAL

3012 16th Avenue West	Friedman & Bruya, Inc.			MD-18 (4-8)	MD-18 (3-4) DUP	MD-8(24)	(5-2) 81-AM	(2-1) 81-AM	WD-18 (6-1)	MD-17 (4-5)	WD-17(3-4)	Sample ID	
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FORMS/COC/COE/DOC Fax (206) 283-5044 Ph. (206) 285-8282 Seattle, WA 98119-2029

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### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

June 27, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St. Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the additional results from the testing of material submitted on May 22, 2013 from the B+L O+M 1525, F&BI 305440 project. There are 15 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Erin Murray FDS0627R.DOC

### ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE

This case narrative encompasses samples received on May 22, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L O+M 1525, F&BI 305440 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd/Snider
305440 -01	AV-1 1-2
305440 -02	AV-1 2-3
305440 -03	AV-1 3-4
305440 -04	AV-1 4-5
305440 -05	AV-1 5-6
305440 -06	AV-1 6-7
305440 -07	AV-1 7-8
305440 -08	AV-2 1-2
305440 -09	AV-2 2-3
305440 -10	AV-2 3-4
305440 -11	AV-2 4-5
305440 -12	AV-2 5-6
305440 -13	AV-2 6-7
305440 -14	AV-2 7-8
305440 -15	AV-3 1-2
305440 -16	AV-3 2-3
305440 -17	AV-3 3-4
305440 -18	AV-3 4-5
305440 -19	AV-3 5-6
305440 -20	AV-3 6-7
305440 -21	AV-3 7-8
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305440 -29	AV-5 1-2
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305440 -31	AV-5 3-4
305440 -32	AV-5 4-5
305440 -33	AV-5 5-6
305440 -34	AV-5 6-7
305440 -35	AV-5 7-8
305440 -36	AV-6 1-2

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

Laboratory ID	Floyd/Spidor
305440 -37	<u>Floyd/Snider</u> AV-6 2-3
305440 -38	AV-6 2-3 AV-6 3-4
305440 -39	AV-6 4-5
305440 -40	AV-6 5-6
305440 -41	AV-6 6-7
305440 -42	AV-6 7-8
305440 -42	AV-7 1-2
305440 -44	AV-7 2-3
305440 -45	AV 7 2 3 AV-7 3-4
305440 -46	AV-7 4-5
305440 -47	AV-7 5-6
305440 -48	AV-7 6-7
305440 -49	AV-7 7-8
305440 -50	AV-8 1-2
305440 -51	AV-8 2-3
305440 -52	AV-8 3-4
305440 -53	AV-8 4-5
305440 -54	AV-8 5-6
305440 -55	AV-8 6-7
305440 -56	AV-8 7-8
305440 -57	AV-9 1-2
305440 -58	AV-9 2-3
305440 -59	AV-9 2-3 Duplicate
305440 -60	AV-9 3-4
305440 -61	AV-9 4-5
305440 -62	AV-9 5-6
305440 -63	AV-9 6-7
305440 -64	AV-9 7-8
305440 -65	AV-10 1-2
305440 -66	AV-10 2-3
305440 -67	AV-10 3-4
305440 -68	AV-10 4-5
305440 -69	AV-10 5-6
305440 -70	AV-10 5-6 Duplicate
305440 -71	AV-10 6-7
305440 -72	AV-10 7-8
305440 -73	AV-11 1-2
305440 -74	AV-11 2-3
305440 -75	AV-11 3-4

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

I -ht ID	El1/C:1
<u>Laboratory ID</u>	Floyd/Snider
305440 -76	AV-11 5-6
305440 -77	AV-11 6-7
305440 -78	AV-11 7-8
305440 -79	AV-12 1-2
305440 -80	AV-12 2-3
305440 -81	AV-12 3-4
305440 -82	AV-12 4-5
305440 -83	AV-12 5-6
305440 -84	AV-12 6-7
305440 -85	AV-12 7-8
305440 -86	AV-13 1-2
305440 -87	AV-13 2-3
305440 -88	AV-13 3-4
305440 -89	AV-13 4-5
305440 -90	AV-13 5-6
305440 -91	AV-13 6-7
305440 -92	AV-13 7-8
305440 -93	AV-14 1-2
305440 -94	AV-14 2-3
305440 -95	AV-14 3-4
305440 -96	AV-14 4-5
305440 -97	AV-14 5-6
305440 -98	AV-14 6-7
305440 -99	AV-14 7-8
305440 -100	AV-16 1-2
305440 -101	AV-16 2-3
305440 -102	AV-16 3-4
305440 -103	AV-16 4-5
305440 -104	AV-16 5-6
305440 -105	AV-16 6-7
305440 -106	AV-16 7-8
305440 -107	AV-15 1-2
305440 -108	AV-15 2-3
305440 -109	AV-15 3-4
305440 -110	AV-15 4-5
305440 -111	AV-15 5-6
305440 -112	AV-15 6-7
305440 -113	AV-15 7-8
305440 -114	AV-11-2-3 Duplicate
000110 111	11 v 11 % o Duplicate

All quality control requirements were acceptable.

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-2 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/19/13
 Lab ID:
 305440-14

 Date Analyzed:
 06/19/13
 Data File:
 305440-14.061

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 8.82

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-3 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/19/13
 Lab ID:
 305440-20

 Date Analyzed:
 06/19/13
 Data File:
 305440-20.062

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 11.2

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-3 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/19/13
 Lab ID:
 305440-21

 Date Analyzed:
 06/19/13
 Data File:
 305440-21.063

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 7.88

### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-8 7-8 Client: Floyd/Snider

Date Received: Project: B+L O+M 1525, F&BI 305440 05/22/13

Lab ID: 06/19/13 305440-56 Date Extracted: Date Analyzed: 06/19/13 Data File: 305440-56.064 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 89 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 265

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-12 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/19/13
 Lab ID:
 305440-85

 Date Analyzed:
 06/19/13
 Data File:
 305440-85.065

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 92.2

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-16 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/19/13
 Lab ID:
 305440-106

 Date Analyzed:
 06/19/13
 Data File:
 305440-106.066

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICPM Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 144

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M 1525, F&BI 305440

Date Extracted: 06/19/13 Lab ID: I3-356 mb
Date Analyzed: 06/19/13 Data File: I3-356 mb.050
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

## **ENVIRONMENTAL CHEMISTS**

# Analysis for TCLP Metals By EPA Method 200.8 and 40 CFR PART 261

Client ID: AV-8 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 06/25/13
 Lab ID:
 305440-55

 Date Analyzed:
 06/25/13
 Data File:
 305440-55.029

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/L (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 84 60 125

Concentration

Analyte: mg/L (ppm) TCLP Limit

Arsenic <1 5.0

## **ENVIRONMENTAL CHEMISTS**

# Analysis for TCLP Metals By EPA Method 200.8 and 40 CFR PART 261

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M 1525, F&BI 305440

Date Extracted: 06/25/13 Lab ID: I3-372 mb
Date Analyzed: 06/25/13 Data File: I3-372 mb.026
Matrix: Soil Instrument: ICPMS1

Units: mg/L (ppm) Operator: AP

Concentration

Analyte: mg/L (ppm) TCLP Limit

Arsenic <1 5.0

## ENVIRONMENTAL CHEMISTS

Date of Report: 06/27/13 Date Received: 05/22/13

Project: B+L O+M 1525, F&BI 305440

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306149-29 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	5.13	93 b	96 b	70-118	3 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	93	83-113

## ENVIRONMENTAL CHEMISTS

Date of Report: 06/27/13 Date Received: 05/22/13

Project: B+L O+M 1525, F&BI 305440

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TCLP METALS USING EPA METHOD 200.8 AND 40 CFR PART 261

Laboratory Code: 305440-55 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/L (ppm)	1.0	<1	94	93	50-150	1

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/L (ppm)	1.0	96	70-130

#### **ENVIRONMENTAL CHEMISTS**

# **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

305440 Send Report To

SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature) PROJECT NAME/NO.

なしなべ 1525

REMARKS PLEASE ARCHIVE SELECTED FOR ANALYSIS SAMBLES NOT

Phone #(706) 242-2078 Fax #

City, State, ZIP SEATTLE WA 9 810 I

Address bol UNION STREET, SUITE LOO

Company FLOUD SN, 05/2

BOST SAMIFU

**PQ** Rush charges authorized by TURNAROUND TIME
D'Standard (2 Weeks)
D RUSH Page #

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☐ Dispose after 30 days

SAMPLE DISPOSAL

Return samples

Will call with instructions

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ANALYSES REQUESTED

FORMS/COC/COC.DOC Ph. (206) 285-8282 Seattle, WA 98119-2029 Fax (206) 283-5044 3012 16th

Received by: Relinquished by: δ

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Send Report To BREAT BEAUCIEU

Company FLOYDISNIDER

# SAMPLE CHAIN OF CUSTODY

HE 05/22/13

Page # 2 of

REMARKS	PROJECT NAME/NO.	SAMPLERS (signature)
SAMOLES NUT	PO#	3

TURNAROUND TIME

Standard (2 Weeks)

RUSH

Rush charges authorized by SAMPLE DISPOSAL

Dispose after 30 days

Fax # らをしているり ANALYSES REQUESTED ☐ Return samples
☐ Will call with instructions

Phone #

City, State, ZIP

Address\_

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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS TUTAL 15	13/16 1/3						Notes
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305440

Send Report To Bakel Beken 160 Phone # City, State, ZIP Address\_ Company \_\_\_ Fron 115×10:20 Fax # SAMPLE CHAIN OF CUSTODY REMARKS PURISE SAMPLERS (signature) PROJECT NAME/NO. (34.29.35) ARCHIVE SAMOUSS NOT ME 05/22/13 PO# TURNAROUND TIME

Standard (2 Weeks)

RUSH

Rush charges authorized by ☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions Page # 3 of SAMPLE DISPOSAL

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Sample ID	Lab	Date Sampled	Time Sampled	Sample Type	# of	-Diesel Gasoline	by 80211	by8260	s by 8270	IFS	AS						Notes .
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City, State, ZIP				REMARKS	ARKS		ŀ				Ī				<u> </u>		S S	SAMPLE DISPOSAL  Dispose after 30 days	S SSI	OSAL
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305440

# SAMPLE CHAIN OF CUSTODY

Send Report To BASK SS. AULIEU Address\_\_\_\_\_City, State, ZIP\_ Phone #\_ Company FROHD SKIDER SECRECTE!

\_ Fax #

0 0	7	EMARKS  PETUS CAMBIES ABT	REMARKS PE WE
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		SAMPLERS (signature)	SAMPLE

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Tau	PO#		ME 05/22/13
SAMPLE DISPOSAL  Dispose after 30 days Return samples Will call with instructions	☐ Standard (2 Weeks) ☐ RUSH Rush charges authorized by	TURNAROUND TIME	2/13 BIY

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rax (200) 283-5044	7- (200) 203-5212	Ph (20K) 285, 8282	Seattle WA 08110 2020	Friedman & Bruya, Inc.	AU-8 1-2	A1-7 7-6	AU-7 6-7	Av-7 5-6	AV-7 4-5	AU-7 3-4	AU-7 2-3	AV-7 1-2	AV-6 7-8	AU-6 6-7	Sample ID	
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SAMPLE CHAIN OF CUSTODY

REMARKS PUZASE SAMPLERS (signature) PROJECT NAME/NO. のおのま 15251 NO. PQ#

カア 05/22/13

TURNAROUND TIME
D-Standard (2 Weeks)

SAMPLE DISPOSAL

☐ Will call with instructions

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Ph. (206) 285-8282 Friedman & Bruya, Inc. 3012 16th Avenue West 305440 Fax (206) 283-5044 Seattle, WA 98119-2029 Phone # City, State, ZIP Address\_ Company F5 Send Report To Prest Bear lein Elina AV-13 **8**-10 27-12 6-1 4-5 41-12 81-13 46 AV-12 4-5 8-1-1-8 W-13 67 W-13 5% Sample ID 3-4 6,4 4 Received by: Relinquished by: 3  $\mathcal{Z}$ 82 430 R کن ان 3 82 E La Fax # Sted by: Sampled 6 Shills Date SIGNATURE Sampled 01:61 0h; E/ 4 Time 4 SAMPLE CHAIN OF CUSTODY Sample Type | containers 2011 SAMPLERS (signatura) PROJECT NAME/NO REMARKS Archive per pg.1 B+L 0+M 1625 Meoli # of PRINT NAME TPH-Diesel TPH-Gasoline BTEX by 8021B ANALYSES REQUESTED SVOCs by 8270 HFS COMPANY × TOT AS O × X FX BI 05/22 **PQ4** ☐ Return samples
☐ Will call with instructions ☐ Dispose after 30 days TURNAROUND TIME

| Standard (2 Weeks)
| RUSH | Rush charges authorized by Page # SAMPLE DISPOSAL S/22/13 1600 DATE 2

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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

July 3, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the additional results from the testing of material submitted on May 22, 2013 from the B+L O+M 1525, F&BI 305440 project. There are 18 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Erin Murray FDS0703R.DOC

## ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE

This case narrative encompasses samples received on May 22, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L O+M 1525, F&BI 305440 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd/Snider
305440 -01	AV-1 1-2
305440 -02	AV-1 2-3
305440 -03	AV-1 3-4
305440 -04	AV-1 4-5
305440 -05	AV-1 5-6
305440 -06	AV-1 6-7
305440 -07	AV-1 7-8
305440 -08	AV-2 1-2
305440 -09	AV-2 2-3
305440 -10	AV-2 3-4
305440 -11	AV-2 4-5
305440 -12	AV-2 5-6
305440 -13	AV-2 6-7
305440 -14	AV-2 7-8
305440 -15	AV-3 1-2
305440 -16	AV-3 2-3
305440 -17	AV-3 3-4
305440 -18	AV-3 4-5
305440 -19	AV-3 5-6
305440 -20	AV-3 6-7
305440 -21	AV-3 7-8
305440 -22	AV-4 1-2
305440 -23	AV-4 2-3
305440 -24	AV-4 3-4
305440 -25	AV-4 4-5
305440 -26	AV-4 5-6
305440 -27	AV-4 6-7
305440 -28	AV-4 7-8
305440 -29	AV-5 1-2
305440 -30	AV-5 2-3
305440 -31	AV-5 3-4
305440 -32	AV-5 4-5
305440 -33	AV-5 5-6
305440 -34	AV-5 6-7
305440 -35	AV-5 7-8
305440 -36	AV-6 1-2

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

Laboratory ID	Floyd/Spidor
305440 -37	<u>Floyd/Snider</u> AV-6 2-3
305440 -38	AV-6 2-3 AV-6 3-4
305440 -39	AV-6 4-5
305440 -40	AV-6 5-6
305440 -41	AV-6 6-7
305440 -42	AV-6 7-8
305440 -42	AV-7 1-2
305440 -44	AV-7 2-3
305440 -45	AV 7 2 3 AV-7 3-4
305440 -46	AV-7 4-5
305440 -47	AV-7 5-6
305440 -48	AV-7 6-7
305440 -49	AV-7 7-8
305440 -50	AV-8 1-2
305440 -51	AV-8 2-3
305440 -52	AV-8 3-4
305440 -53	AV-8 4-5
305440 -54	AV-8 5-6
305440 -55	AV-8 6-7
305440 -56	AV-8 7-8
305440 -57	AV-9 1-2
305440 -58	AV-9 2-3
305440 -59	AV-9 2-3 Duplicate
305440 -60	AV-9 3-4
305440 -61	AV-9 4-5
305440 -62	AV-9 5-6
305440 -63	AV-9 6-7
305440 -64	AV-9 7-8
305440 -65	AV-10 1-2
305440 -66	AV-10 2-3
305440 -67	AV-10 3-4
305440 -68	AV-10 4-5
305440 -69	AV-10 5-6
305440 -70	AV-10 5-6 Duplicate
305440 -71	AV-10 6-7
305440 -72	AV-10 7-8
305440 -73	AV-11 1-2
305440 -74	AV-11 2-3
305440 -75	AV-11 3-4

# ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd/Snider
305440 -76	AV-11 5-6
305440 -77	AV-11 6-7
305440 -78	AV-11 7-8
305440 -79	AV-12 1-2
305440 -80	AV-12 2-3
305440 -81	AV-12 3-4
305440 -82	AV-12 4-5
305440 -83	AV-12 5-6
305440 -84	AV-12 6-7
305440 -85	AV-12 7-8
305440 -86	AV-13 1-2
305440 -87	AV-13 2-3
305440 -88	AV-13 3-4
305440 -89	AV-13 4-5
305440 -90	AV-13 5-6
305440 -91	AV-13 6-7
305440 -92	AV-13 7-8
305440 -93	AV-14 1-2
305440 -94	AV-14 2-3
305440 -95	AV-14 3-4
305440 -96	AV-14 4-5
305440 -97	AV-14 5-6
305440 -98	AV-14 6-7
305440 -99	AV-14 7-8
305440 -100	AV-16 1-2
305440 -101	AV-16 2-3
305440 -102	AV-16 3-4
305440 -103	AV-16 4-5
305440 -104	AV-16 5-6
305440 -105	AV-16 6-7
305440 -106	AV-16 7-8
305440 -107	AV-15 1-2
305440 -108	AV-15 2-3
305440 -109	AV-15 3-4
305440 -110	AV-15 4-5
305440 -111	AV-15 5-6
305440 -112	AV-15 6-7
305440 -113	AV-15 7-8
305440 -114	AV-11-2-3 Duplicate
TII UFFUU	11 v 11 & o Duplicate

All quality control requirements were acceptable.

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-4 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-28

 Date Analyzed:
 07/02/13
 Data File:
 305440-28.056

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 8.41

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-5 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-34

 Date Analyzed:
 07/02/13
 Data File:
 305440-34.057

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 109

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-5 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-35

 Date Analyzed:
 07/02/13
 Data File:
 305440-35.058

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 16.8

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-6 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-42

 Date Analyzed:
 07/02/13
 Data File:
 305440-42.059

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 52.8

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-7 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-48

 Date Analyzed:
 07/02/13
 Data File:
 305440-48.060

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 278

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-7 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-49

 Date Analyzed:
 07/02/13
 Data File:
 305440-49.061

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 36.3

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-10 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-72

 Date Analyzed:
 07/02/13
 Data File:
 305440-72.063

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 20.5

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-13 6-7 Client: Floyd/Snider

Date Received: Project: 05/22/13 B+L O+M 1525, F&BI 305440

Lab ID: 07/02/13 305440-91 Date Extracted: Date Analyzed: 07/02/13 Data File: 305440-91.064 Matrix: Instrument: Soil ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 91 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 62.6

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-13 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-92

 Date Analyzed:
 07/02/13
 Data File:
 305440-92.065

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 18.8

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-14 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-99

 Date Analyzed:
 07/02/13
 Data File:
 305440-99.066

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 99.0

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-15 6-7 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-112

 Date Analyzed:
 07/02/13
 Data File:
 305440-112.067

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICPN Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 33.1

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: AV-15 7-8 Client: Floyd/Snider

Date Received: 05/22/13 Project: B+L O+M 1525, F&BI 305440

 Date Extracted:
 07/02/13
 Lab ID:
 305440-113

 Date Analyzed:
 07/02/13
 Data File:
 305440-113.068

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICP: Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 294

## **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M 1525, F&BI 305440

Date Extracted: 07/02/13 Lab ID: I3-398 mb
Date Analyzed: 07/02/13 Data File: I3-398 mb.043
Matrix: Soil Instrument: ICPMS1

Matrix: Soil Instrument: ICPMS
Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

## ENVIRONMENTAL CHEMISTS

Date of Report: 07/03/13 Date Received: 05/22/13

Project: B+L O+M 1525, F&BI 305440

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306511-05 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	<1	104	99	70-118	5

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	99	83-113

### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- $\operatorname{pr}$  The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

305440

Send Report To Company FLOHO SNIDSR BOST GAMIFU

Phone #(206) 242-2078 Fax #. City. State, ZIP SEATTLE WA 9 810 I Address bol UNION STREET, SUITE LOO

REMARKS

PLEASE ARCHIVE

SAMOLES NOT

SELECTED FOR SMALLYSIS

SAMPLE CHAIN OF CUSTODY

PROJECT NAME/NO. SAMPLERS (signature) B+1 CM 1525 ğ

MET OS

Page \* of TURNAROUND TIME

TURNAROUND TIME

D Standard (2 Weeks)

D RUSH

Rush charges authorized by

SAMPLE DISPOSAL

☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

ANALYSES REQUESTED

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Sample ID

Sampled Date .

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Sample Type

containers

TPH-Diesel **TPH-Gasoline** 

BTEX by 8021B VOCs by8260

of of

Time

AU-1

40

PORMSICOCICOCLOC Fax (206) 283-5044 Ph (206) 285-8282 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc.

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PRINT NAME

COMPANY

°h (206) 285-8282	Seattle, WA 98119-2029	012 16th Avenue West	Friedman & Rruwa Inc	AU-3	80-3		Au - 3	AV - 3	2-3	1	1	1		Sample ID		City, State, ZIP Phone #	Company 1/2 Address	Send Report to ROET
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FORMSCOCCCCCLOC Fax (206) 283-5044

Received by:

Fax (206) 283-5044 Ph (206) 285-8282 Friedman & Bruya, Inc. 3012 16th Avenue West Searrle, WA 98119-2029 305440 Send Report To BOGHT (SEAN): 160 Phone # Avy A43 City, State, ZIP Company Flor 1150,027 Address\_ 47-4 Av - 4 キャーユ A v - 5 イン・ム Av - 5 トノーム タッコ Sample ID 7-8 2 - 3 1-2 いよ 5.6 6-7 7-7 7-8 1-2 2-3 Received by: Relinquished by: Ú 25 3 24 4 <u>ي</u> 2 23 2 ン 55 Fax # Sampled 0101 12/22/5 SIGNATURE Sampled 1025 SHOI 5101 1055 56.03 1050 040 1030 1020 Time SAMPLE CHAIN OF CUSTODY Sample Type 21.05 REMARKS PURISE PROJECT NAME/NO. SAMPLERS (signamor) (30.137.25) containers Da 727 **\*** 오 ARCHIVE PRINTNAME TPH-Diesel Keok TPH-Gasoline samples not ANALYSES REQUESTED SVOCs by 8270 HFS HE 今天 O IVIAL × AS FY 82 \$ COMPANY 05/22/13 TURNAROUND TIME

Standard (2 Weeks)

RUSH Return samples
 Will call with instructions SAMPLE DISPOSAL

Dispose after 30 days Rush charges authorized by hala DATE hra Notes 1600 HE

**FORMS/COCKOCDOC** 

	Send Report To BREIT BEAULISU  Company [-1041] Shiper  Address  City, State, ZIP	85AV	1 2 1 5 V		SAMPLE CHAIN OF CUSTODY  SAMPLERS (signange)  PROJECT NAME/NO.  677 0+4 1525  REMARKS	APLE CHAIN OF CUST  SAMPLERS (signature)  PROJECT NAME/NO.  PATL O+* 1525  REMARKS	NO PE	CUS NO.		I MI	I N'I		A NOW	8	, <b>y</b> i <b></b>	*		250	250	D Start	D Start	TURNAROUND  TURNAROUND  Standard (2 Weeks)  Rush charges authori  SAMPLE DISP				
$\Box$		- - - - -					П		]   [			/NV	VATVAV	ANALYSES	ANALYSES REC	ANALYSES REQUE	ANALYSES REQUESTS	LYSES REQUESTED	LYSES REQUESTED	LYSES REQUESTED						
T	Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	* of containers	TPH-Diesel		TPH-Gasoline	TPH-Gasoline BTEX by 8021B		BTEX by 8021B VOCs by8260	BTEX by 8021B	BTEX by 8021B VOCs by8260 SVOCs by 8270	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS	BTEX by 8021B  VOCs by8260  SVOCs by 8270  HFS  TOIAL AS	BTEX by 8021B  VOCs by8260  SVOCs by 8270  HFS  TOIAL AS	VOCs by 8021B VOCs by 8260 SVOCs by 8270 HFS
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	AU 5 6-7	34		713							-			*	*	*	*	**	*	*	**	*	*	*	**	***
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	AV 6 1-2	36	_	1125																						
	AV 6 2-3	37		1150										×	×	×	×	*	×	×	×	×	×	×	×	×
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	Fax (206) 283-5044	Received by:	ši		_			1																		

FORMSCOCGOCGOC

305440

Send Report To BART & AULIEU SAMPLE CHAIN OF CUSTODY

SAMPLERS (signature) PROJECT NAME/NO.

BH OM 1525

OK WE CELIPARE ARCITURE somes not

ANALYSES REQUESTED

REMARKS

Phone #

Fax #

Sample ID

**5** €

Sampled Date

Sampled

Sample Type

containers \* ©

TPH-Diesel TPH-Gasoline

Time

City, State, ZIP

Company \_\_

FROHD SNIDER

Address

I I \$ 05/22/13

TURNAROUND TIME

F Standard (2 Weeks)

D RUSH ☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions Rush charges authorized by SAMPLE DISPOSAL 2

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PORMS/COCCOCLDOC Fax (206) 283-5044 Ph. (206) 285-8282 Seattle, WA 98119-2029 Friedman & Bruya, Inc. 3012 16th Avenue West

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# SAMPLE CHAIN OF CUSTODY

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FORMS/COCKOC.DOC Fax (206) 283-5044 Ph (206) 285-8282 Seattle, WA 98119-2029 Friedman & Bruya, Inc. 3012 16th Avenue West Phone # Company 75 City, State, ZIP Address\_ Send Report To Bull 305440 ターのよる タンスペン m-16 2-4 ターカーア AV-16 7-8 av-16 4-5 AV-16 8V -15 4-5 AV-16 6-7 DN-110 6-10 Sample ID 34 Received by: Relinquished by: 10% 50 401 104 110 8 103 8 9 **£** 102 5/20/20/20 Fax # Sampled Date SIGNATURE Sampled 1360 Time SAMPLE CHAIN OF CUSTODY HESample Type PROJECT NAMEDIO. 1108 REMARKS Archive per pop containers **\*** 인 Riesli PRINT NAME TPH-Diesel ANALYSES REQUESTED HFS X COMPANY X TOT AS G X 三8 大五 \$ 05/22/13 ☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions Rush charges authorized by TURNAROUND TIME

U Standard (2 Weeks)

U RUSH - - - N SAMPLE DISPOSAL DATE Notes

**FORMSICOCCOCLOC** Fax (206) 283-5044 Ph (206) 285-8282 Seattle, WA 98119-2029 Friedman & Bruya, Inc. 3012 16th Avenue West 305440 AV-11-2-3 Duplicat 114 Phone # Send Report To Prest Beenles City, State, ZIP Address\_ Company 7/5 8/15 e-1 8-1 51-NA Sample ID Received by: Relinquished by 113 1/2 **₽** May 5 ğ Sampled Date SIGNATURE 1350 Sampled 1335 Time 6 SAMPLE CHAIN OF CUSTODY Sample Type 5012 7005 PROJECT NAME/NO. SAMPLERS (signature) REMARKS BAL OFM 1625 containers **\*** PRINT NAME Mesa Archive per ps. TPH-Diesel VOCs by8260 ANALYSES REQUESTED SVOCs by 8270 HE 057 221 HFS B 13 107 E+ 82 PIS ₫ COMPANY TURNAROUND TIME

| Standard (2 Weeks)
| Rush charges authorized by Dispose after 30 days
Return samples □ Will call with instructions SAMPLE DISPOSAL \* Stralia roo DATE A SOS Zogg

### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

July 3, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the additional results from the testing of material submitted on June 10, 2013 from the B+L O+M t-1525, F&BI 306149 project. There are 14 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Erin Murray FDS0703R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on June 10, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L O+M t-1525, F&BI 306149 project. Samples were logged in under the laboratory ID's listed below.

	71 1/6 . 1
<u>Laboratory ID</u>	Floyd/Snider
306149-01	AV-17 (3-4)
306149-02	AV-17 (4-5)
306149-03	AV-17 (5-6)
306149-04	AV-17 (6-7)
306149-05	AV-17 (7-8)
306149-06	AV-18 (3-4)
306149-07	AV-18 (4-5)
306149-08	AV-18 (5-6)
306149-09	AV-18 (6-7)
306149-10	AV-18 (7-8)
306149-11	AV-2-GW (6-10)
306149-12	AV-19 (3-4)
306149-13	AV-19 (4-5)
306149-14	AV-19 (5-6)
306149-15	AV-19 (5-6) Dup
306149-16	AV-19 (6-7)
306149-17	AV-19 (7-8)
306149-18	AV-19-GW (4-8)
306149-19	AV-20 (3-4)
306149-20	AV-20 (3-4) Dup
306149-21	AV-20 (4-5)
306149-22	AV-20 (5-6)
306149-23	AV-20 (6-7)
306149-24	AV-20 (7-8)
306149-25	AV-21 (3-4)
306149-26	AV-21 (4-5)
306149-27	AV-21 (5-6)
306149-28	AV-21 (6-7)
306149-29	AV-21 (7-8)
306149-30	AV-22 (3-4)
306149-31	AV-22 (4-5)
306149-32	AV-22 (5-6)
306149-33	AV-13-GW (7-11)
306149-34	AV-22 (6-7)
306149-35	AV-22 (7-8)
306149-36	AV-23 (3-4)

### ENVIRONMENTAL CHEMISTS

## CASE NARRATIVE (continued)

I abanatany ID	Elovid/Craidan
Laboratory ID	Floyd/Snider
306149-37	AV-23 (4-5)
306149-38	AV-23 (5-6)
306149-39	AV-23 (5-6) DUP
306149-40	AV-23 (6-7)
306149-41	AV-23 (7-8)
306149-42	AV-24 (3-4)
306149-43	AV-24 (4-5)
306149-44	AV-24 (5-6)
306149-45	AV-24 (6-7)
306149-46	AV-24 (7-8)
306149-47	AV-25 (3-4)
306149-48	AV-25 (3-4) DUP
306149-49	AV-25 (4-5)
306149-50	AV-25 (5-6)
306149-51	AV-25 (6-7)
306149-52	AV-25 (7-8)
306149-53	AV-26 (3-4)
306149-54	AV-26 (3-4) DUP
306149-55	AV-26 (4-5)
306149-56	AV-26 (5-6)
306149-57	AV-26 (6-7)
306149-58	AV-26 (7-8)
306149-59	AV-27 (3-4)
306149-60	AV-27 (4-5)
306149-61	AV-27 (5-6)
306149-62	AV-27 (6-7)
306149-63	AV-27 (7-8)
306149-64	AV-28 (3-4)
306149-65	AV-28 (4-5)
306149-66	AV-28 (5-6)
306149-67	AV-28 (6-7)
306149-68	AV-28 (7-8)
306149-69	AV-29 (3-4)
306149-70	AV-29 (4-5)
306149-71	AV-29 (5-6)
306149-72	AV-29 (6-7)
306149-73	AV-29 (7-8)
306149-74	AV-30 (3-4)
306149-75	AV-30 (4-5)
	( - 0 )

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd/Snider
306149-76	AV-30 (5-6)
306149-77	AV-30 (5-6) DUP
306149-78	AV-30 (6-7)
306149-79	AV-30 (7-8)
306149-80	AV-31-GW (1-5)
306149-81	AV-32 (3-4)
306149-82	AV-32 (3-4) DUP
306149-83	AV-32 (4-5)
306149-84	AV-32 (5-6)
306149-85	AV-32 (6-7)
306149-86	AV-32 (7-8)
306149-87	WD-15 (0-1)
306149-88	WD-15 (1-2)
306149-89	WD-15 (2-3)
306149-90	WD-15 (2-3) DUP
306149-91	WD-15 (3-4)
306149-92	WD-15 (4-5)
306149-93	WD-16 (0-1)
306149-94	WD-16 (1-2)
306149-95	WD-16 (2-3)
306149-96	WD-16 (3-4)
306149-97	WD-16 (4-5)
306149-98	WD-17 (0-1)
306149-99	WD-17 (1-2)
306149-100	WD-17 (2-3)
306149-101	WD-17 (3-4)
306149-102	WD-17 (4-5)
306149-103	WD-18 (0-1)
306149-104	WD-18 (1-2)
306149-105	WD-18 (2-3)
306149-106	WD-18 (3-4)
306149-107	WD-18 (3-4) DUP
306149-108	WD-18 (4-5)

All quality control requirements were acceptable.

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-21 (6-7) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-28

 Date Analyzed:
 07/01/13
 Data File:
 306149-28.022

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tradium

Indium 95 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 36.0

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-23 (6-7) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-40

 Date Analyzed:
 07/01/13
 Data File:
 306149-40.023

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 49.3

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-25 (6-7) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-51

 Date Analyzed:
 07/01/13
 Data File:
 306149-51.024

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 97 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 36.5

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-26 (6-7) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-57

 Date Analyzed:
 07/01/13
 Data File:
 306149-57.025

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 97 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 303

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-27 (6-7) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-62

 Date Analyzed:
 07/01/13
 Data File:
 306149-62.026

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 97 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 34.7

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-27 (7-8) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-63

 Date Analyzed:
 07/01/13
 Data File:
 306149-63.027

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 80.9

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-30 (6-7) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-78

 Date Analyzed:
 07/01/13
 Data File:
 306149-78.028

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 97 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 74.0

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: AV-32 (6-7) Client: Floyd/Snider

Date Received: 06/10/13 Project: B+L O+M t-1525, F&BI 306149

 Date Extracted:
 06/28/13
 Lab ID:
 306149-85

 Date Analyzed:
 07/01/13
 Data File:
 306149-85.029

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 97 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 28.4

### **ENVIRONMENTAL CHEMISTS**

### Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L O+M t-1525, F&BI 306149

Date Extracted: 06/28/13 Lab ID: I3-386 mb
Date Analyzed: 07/01/13 Data File: I3-386 mb.014
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

### ENVIRONMENTAL CHEMISTS

Date of Report: 07/03/13 Date Received: 06/10/13

Project: B+L O+M t-1525, F&BI 306149

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305469-56 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	6.09	104 b	108 b	70-118	4 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	98	83-113

### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Send Report To Sel Beauly

## SAMPLE CHAIN OF CUSTODY

PROJECT NAME/NO. SAMPLERS (signature) コの

06-10-13

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Standard (2 Weeks) Rush charges authoriz TURNAROUND TIME Zed by

PQ#

☐ Dispose after 30 days SAMPLE DISPOSAL

Phone # 206-292-7078 Fax # 706-687-7867

City, State, ZIP Seally,

MA 98101

REMARKS

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Address 601 Union St, Se

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ANALYSES REQUESTED 000

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PORMSOND FOR	Fax (206) 283-5044	Ph (206) 285-8282	Seattle, WA 98119-2029	Friedman & Bruya, Inc. 3012 16th Avenue West
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Phone #206-277-2078 Fax # 766-682-7867

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Company Floyd | Sider

SAMPLE CHAIN OF CUSTODY

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**FORMS/COCCOCLDOC** 

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SAMPLE CHAIN OF CUSTODY

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FORMSYCOCCOCLDOC	Fax (206) 283-5044		_	_	3012 16th Avenue West		ーチーだらん	AV-25(4-5)	M(B-6) 52-NY	AV- 25 (3-4)	M-24 (7-8)	(t-9) 42-N	W-24 (5-6)	M. 24 (4-5)	AV-24 (3-4)	AN-23 (7-8)	Sample ID	
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Ph (206) 285-8282 Friedman & Bruya, Inc. 3012 16th Avenue West Fax (206) 283-5044 Seanle, WA 98119-2029 (G-F) 92-N W-26 City, State, ZIP Phone # 206 - 292-2016 Fax # 126-682-7867 Send Report To 306149 Company N-Address\_ AN - 25 ( AN -26 (3-4) DUP SY 42-64 AU -26 4V-27 AV-26 (5-6) AN - 23 **75** Sample ID (3-4) 84) 16-7 (4-5 (6-7)60/ 22 Floyd 1 Snizer Broff Beaution ts 22.40 Relinquished by: Roccived by: る場合 53 45 8 2 क्ष 25 53 52 1 8 6/7/13 Sampled Date SIGNATURE X WA SUR Sampled 544 352 1540 15 38 1350 1542 15 36 1534 1428 1428 Time 430 600 SAMPLE CHAIN OF CUSTODY Sample Type SO REMARKS SAMPLERS (signature) PROJECT NAME/NO. t BL OF container 4 4 \* or 1 4 4 PRINT NAME TPH-Diesel 4. 1525 gan NALYSES REQUESTED HFS G × ME 06-10-13 X Total PlandIsnida 灭 火 **PQ** H04) COMPANY Alabar separite TURNAROUND TIME

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SAMPLE CHAIN OF CUSTODY

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SAMPLERS (signature)

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Ph (206) 285-8282 Fax (206) 283-5044 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc. AN-31-GW (1-5) Company \_ Send Report To Brett Berlicu Phone # 206-297-2078 Fax # 706-62- 7867 City, State, ZIP Address\_ N-38 M-30 (5-6) DUP (77 AN-30 M-30 (6-7) 306149 AN-30 (5-6) t-9) 12-17 AN-29 (5-6) 8-+1 bz-N M-30 (4-5) Sample ID 7-8 (3-E) Floyd Snider Sate, Union St. Received by: 34 B ¥ 72 <u>+</u> **5** 8/00/13 W+ 9810) Sampled Date Sta 600 Time Sampled 0935 22.52 0456 252 800 0354 0931 28.50 1260 SAMPLE CHAIN OF CUSTODY Sample Type 30, Z SAMPLERS (signature) PROJECT NAME/NO. REMARKS かん containers **\*** 이 2002 2002 4 4 242 PRINT NAMB 93 TPH-Diesel moun Phan NALYSES REQUESTED SVOCs by 8270 HFS Total As Mad! Snike 这 O X 6-10-13 4 \$ HOLD X X COMPANY <del>demplos rocci</del>n X X 28 A C Standard (2 Weeks)
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| Will call with instructions □ Dispose after 30 days TURNAROUND TIME SAMPLE DISPOSAL 6/19/3 6/10/13 DATE Notes 1632 1632 HME BIY

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Send Report To But Beaulico City, State, ZIP Company \_ Address\_ 601 Union St Floyd Snider 一里 **X** St

Phone # 28 6-291-2078 Fax # 206-82-7867 10186

8 REMARKS PROJECT NAME/NO. SAMPLERS (signature) BH OTH +- 1525

SAMPLE CHAIN OF CUSTODY

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FORMSICOCICOCIDOC	Fax (206) 283-5044		229		•		WD-15(2-3)	MD-15 (1-2)	WD-15 (0-1)	M/32 (7-8)	M-52 (6-7)	AV-32 (5-6)	AV-32 (4-5)	A4- 32 (3-4) NUP 82	M-32 (3-4)	Sample ID	
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Fax (206) 283-5044 Ph. (206) 285-8282 Seanle, WA 98119-2029 Friedman & Brsya, Inc. 3012 16th Avenue West Send Report To Broth Brauleu Company \_ Phone # 206-277-2078 Fax # 706-682- 7867 Address City, State, ZIP 20-300 H9 TI-CM 41-0M 200 1-01 91-DM WD-17 (2-3 WW- 16 14-5 WD-K (3-4) MD-15 (4-5 MY - KM 5 Sample ID 601 Union St, 30 600 (7-3) 7-7 h-27 1-0 11-2 Floyd I Shizer THES Received by: 92 2 25 か 93 8 ₽₽ 410/13 Sampled Date 3 Time Sampled 1324 1320 1372 13k1 1300 1758 <u>%10</u> 1300 1510 1308 1312 SAMPLE CHAIN OF CUSTODY HE 06-10-1) Sample Type 13 SAMPLERS (signature) REMARKS PROJECT NAME/NO. BH OH + 1525 containers \* of TOUS ! PRINT NAME **TPH-Diesel** reser ANALYSES REQUESTED SVOCs by 8270 HFS Total As X Frid I S. X FLA \$ COMPANY HOLD mades recen O Return samples
Will call with instructions ☐ Dispose after 30 days Standard (2 Weeks)

RRUSH 5-dow Rush charges authorize TURNAROUND TIME Page + 10 SAMPLE DISPOSAL 6/10/13 E/10/19 BING Notes 2£11 | 유 Bzy 1632

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City, State, ZIP Scally, WA 98101 Phone # 206-212-278 Fax # 106-692-7864 Send Report To Back Beaulieu Company Flood Snider **bh1908** 601 Unan \$4, Ste 600 SAMPLE CHAIN OF CUSTODY SAMPLERS (signature) 好く ひれ ナ・ PROJECT NAME/NO. REMARKS 1525 ME Ş 06-10-13 TURNAROUND TIME

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SVOCs by 8270 HFS	VOCa by8260	TPH-Diesel TPH-Gasoline	# of containers	Sample Type	Time Sampled	Date Sampled	ID bb	Sample ID
ANALYSES REQUESTED								

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Kurt Johnson, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

July 3, 2013

Brett Beaulieu, Project Manager Floyd/Snider Two Union Square, Suite 600 601 Union St Seattle, WA 98101

Dear Mr. Beaulieu:

Included are the additional results from the testing of material submitted on May 23, 2013 from the B+L RIM O+M 1525, F&BI 305469 project. There are 8 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures c: Erin Murray FDS0703R.DOC

## ENVIRONMENTAL CHEMISTS

## CASE NARRATIVE

This case narrative encompasses samples received on May 23, 2013 by Friedman & Bruya, Inc. from the Floyd/Snider B+L Rim O+M 1525, F&BI 305469 project. Samples were logged in under the laboratory ID's listed below.

Floyd/Snider
WD-1 1-2
WD-1 2-3
WD-1 3-4
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## ENVIRONMENTAL CHEMISTS

# CASE NARRATIVE (continued)

<u>Laboratory ID</u>	Floyd/Snider
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305469-38	WD-10 2-3
305469-39	WD-10 3-4
305469-40	WD-10 4-5
305469-41	WD-11 1-2
305469-42	WD-11 2-3
305469-43	WD-11 3-4
305469-44	WD-11 4-5
305469-45	WD-12 1-2
305469-46	WD-12 2-3
305469-47	WD-12 3-4
305469-48	WD-12 4-5
305469-49	WD-13 1-2
305469-50	WD-13 2-3
305469-51	WD-13 3-4
305469-52	WD-13 4-5
305469-53	WD-14 1-2
305469-54	WD-14 2-3
305469-55	WD-14 3-4
305469-56	WD-14 4-5
305469-57	WD-1 3-4 Duplicate
305469-58	WD-2 2-3 Duplicate
305469-59	WD-5 1-2 Duplicate
305469-60	WD-6 3-4 Duplicate
305469-61	WD-8 1-2 Duplicate

All quality control requirements were acceptable.

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-3 4-5 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L RIM O+M 1525, F&BI 305469

 Date Extracted:
 06/28/13
 Lab ID:
 305469-12

 Date Analyzed:
 07/01/13
 Data File:
 305469-12.020

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 93 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.84

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-7 4-5 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L RIM O+M 1525, F&BI 305469

 Date Extracted:
 06/28/13
 Lab ID:
 305469-28

 Date Analyzed:
 07/01/13
 Data File:
 305469-28.021

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.00

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: WD-14 4-5 Client: Floyd/Snider

Date Received: 05/23/13 Project: B+L RIM O+M 1525, F&BI 305469

 Date Extracted:
 06/28/13
 Lab ID:
 305469-56

 Date Analyzed:
 07/01/13
 Data File:
 305469-56.016

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: AP

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 95 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 7.34

### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Floyd/Snider

Date Received: Not Applicable Project: B+L RIM O+M 1525, F&BI 305469

06/28/13 Lab ID: Date Extracted: I3-386 mb Date Analyzed: 07/01/13 Data File: I3-386 mb.014 Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: AP

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 95 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

## ENVIRONMENTAL CHEMISTS

Date of Report: 07/03/13 Date Received: 05/23/13

Project: B+L RIM O+M 1525, F&BI 305469

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 305469-56 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	6.09	104 b	108 b	70-118	4 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	98	83-113

#### **ENVIRONMENTAL CHEMISTS**

## **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Phone # log - 1811 Pax # City, State, ZIP Seattle, WA GOO Company Hond Snider Send Report To \_ Address 600 Union ste 60 38469 breet beautien SAMPLE CHAIN OF CUSTODY REMARKS PAR 1828 SAMPLERS (signifure)
PROJECT NAME/NO. recenve 4-61 interval PO# TURNAROUND TIME

☐ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by ☐ Return samples
☐ Will call with instructions ☐ Dispose after 30 days Page # SAMPLE DISPOSAL

						أ				Z	SKI	ANALYSES REQUESTED		EST	띰		4		
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	TOT AS						N	Notes
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Fax (206) 283-5044	Received by:	by:									-								
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FORMS/COC/COC/DOC

308-469

City, State, ZIP Send Report To but Company Kena Address\_ Smider SAMPLE CHAIN OF CUSTODY REMARKS PROJECT NAME/NO. SANGLERS (signature) Archive 4-5 Therval only BH OM 1525 Page # 2 of 7
TURNAROUND TIME

| Standard (2 Weeks)
| RUSH | ☐ Return samples
☐ Will call with instructions □ Dispose after 30 days Rush charges authorized by SAMPLE DISPOSAL

Phone #

Fax #

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Send Report To Brett Beaulus

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Phone #

Fax #

City, State, ZIP

SAMPLE CHAIN OF CUSTODY

Floyd Snider PROJECT NAME/NO. SAMPLEAS (signature) Bur our 1525

**REMARKS** frehwe 45' when the PQ#

ME 05/23/13 SAMPLE DISPOSAL

Dispose after 30 days
Return samples
Will call with instructions Rush charges authorized by TURNAROUND TIME

| Standard (2 Weeks)
| RUSH | Page #

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# SAMPLE CHAIN OF CUSTODY ME 05/23/13

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Page # 5 of 7
TURNAROUND TIME

| Standard (2 Weeks)
| RUSH | Rush |

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SAMPLE DISPOSAL

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Notes

☐ Return samples
☐ Will call with instructions ☐ Dispose after 30 days

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Send Report To 3 305469

SAMPLE CHAIN OF CUSTODY ME 05/22

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Phone #

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SAMPLE DISPOSAL

Dispose after 30 days
Return samples
Will call with instructions Rush charges authorized by ☐ Standard (2 Weeks)
☐ RUSH TURNAROUND TIME Page #

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	Received by:	Relinguished by:
		The Sun

# Attachment 2 Boring Logs

Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 5

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186405.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L-O&M

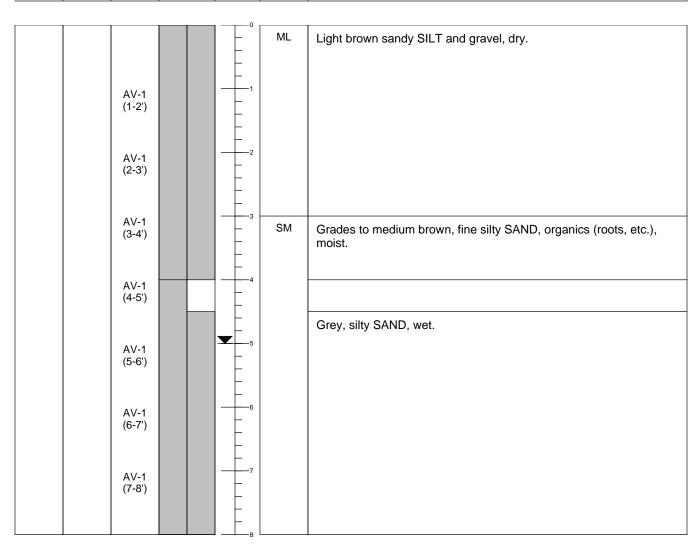
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

**Boring ID: AV-1** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186402.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L-O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 8

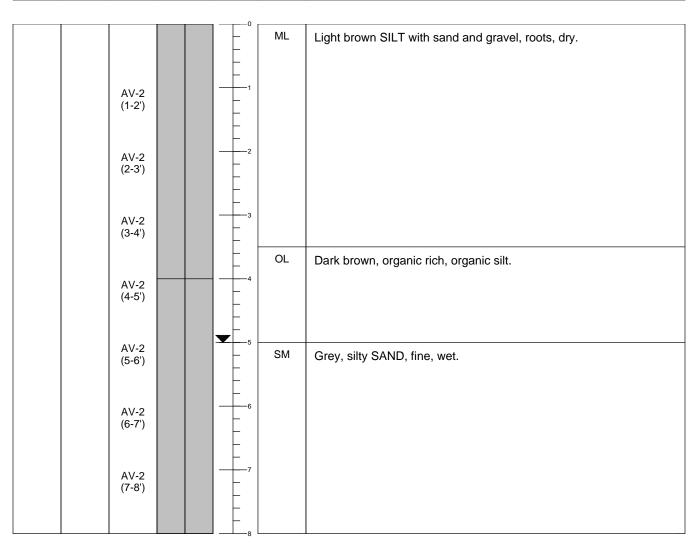
**Boring ID: AV-2** 

Client: B&L Trust

Task: 1525 Address: 2211 6th Ave

Milton, WA 98354 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 5

ı							
	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 4.5

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186420.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

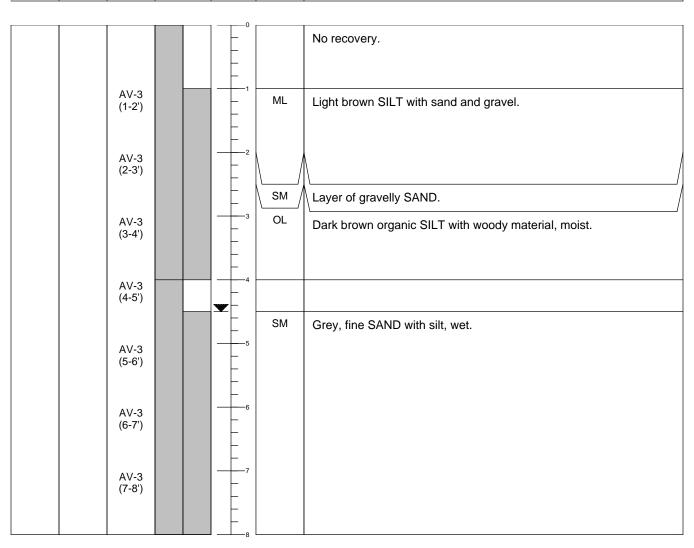
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

**Boring ID: AV-3** 

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 6

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186420.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

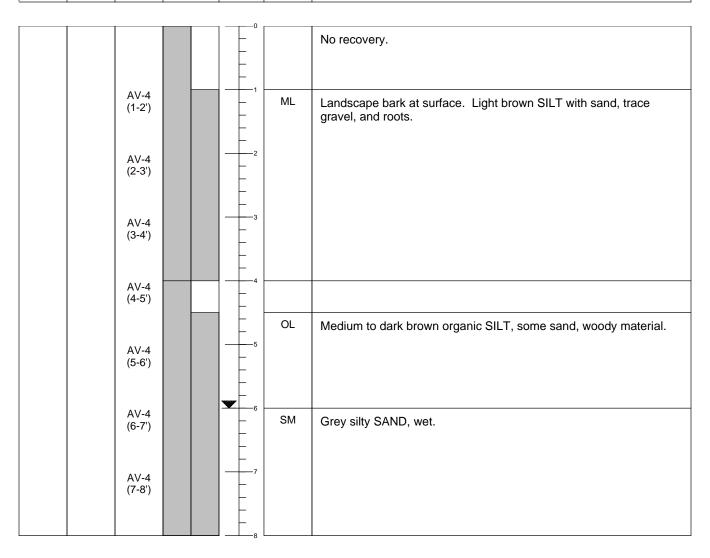
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

**Boring ID: AV-4** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186435.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu

Drilled By: Cascade / Kasey Goble Drill Type: 54 LT Limited Access GP

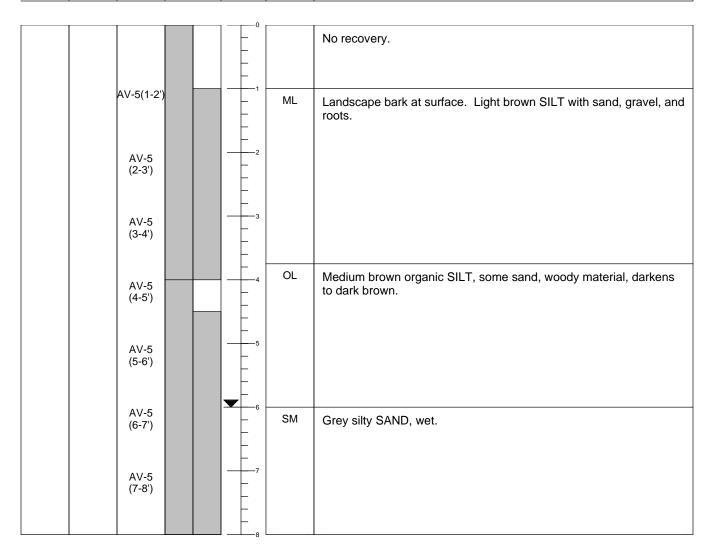
Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 6 **Boring ID: AV-5** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 7

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186435.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

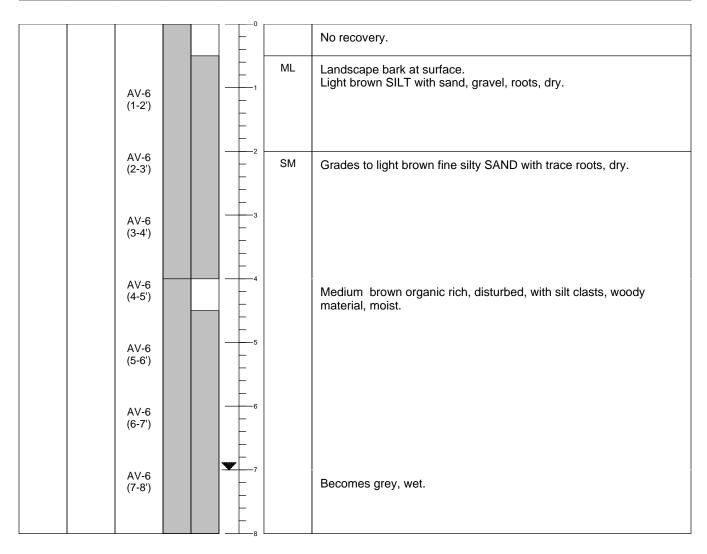
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

Client: B&L Trust Task: 1525

**Boring ID: AV-6** 

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 6

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186450.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

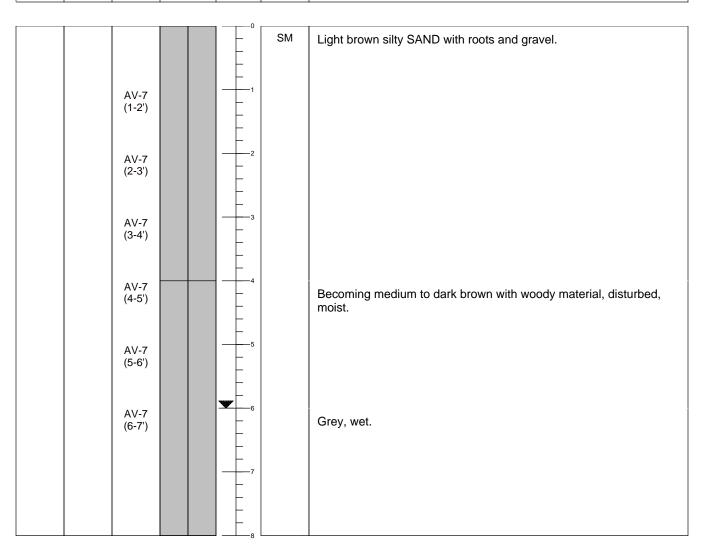
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

**Boring ID: AV-7** 

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 7

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186450.89

**Drill Date:** May 22, 2013 Logged By: Brett Beaulieu

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

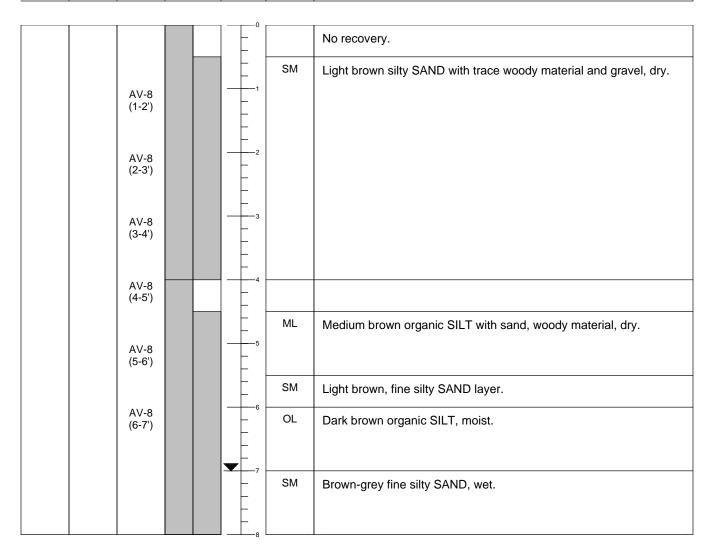
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

Client: B&L Trust Task: 1525

**Boring ID: AV-8** 

Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 5

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186465.89

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble Drill Type: 54 LT Limited Access GP

Sample Method: Direct Push 2"x4' Core Project: B&L O&M

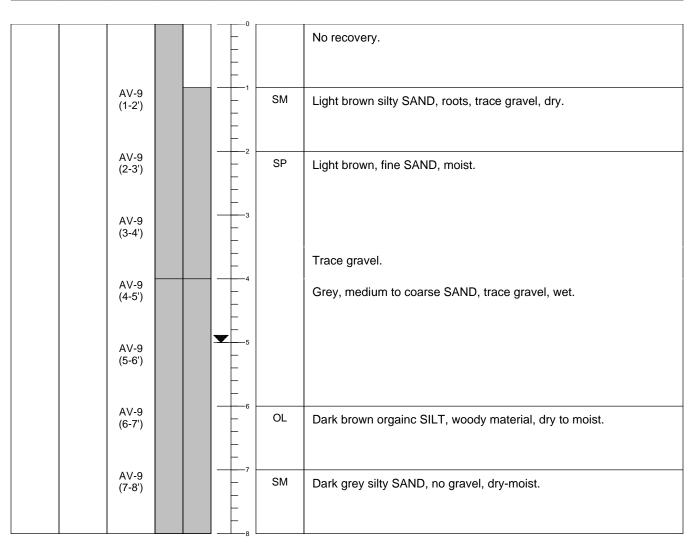
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

**Boring ID: AV-9** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186465.89

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

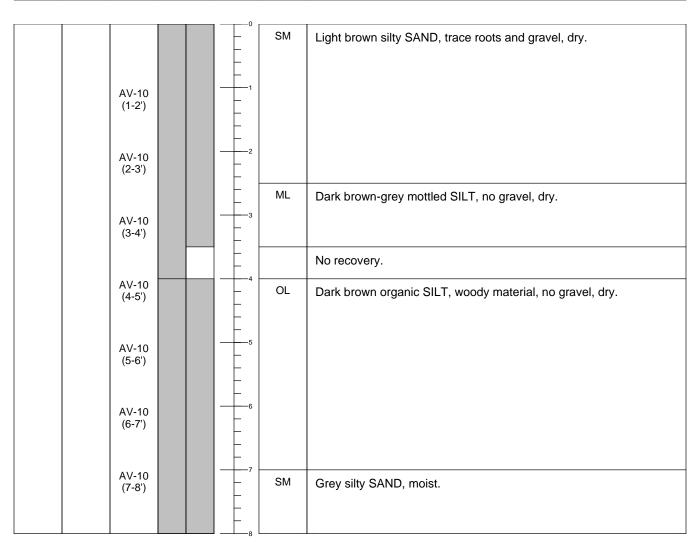
Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): N/A **Boring ID: AV-10** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186480.89

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble Drill Type: 54 LT Limited Access GP

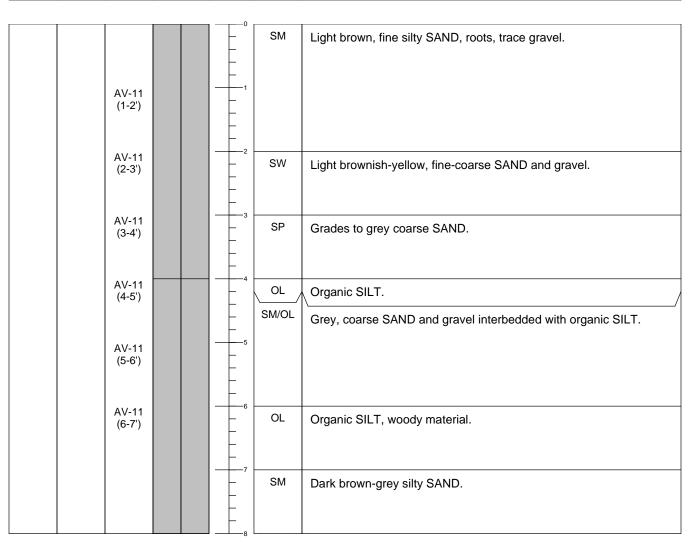
Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches

Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA **Boring ID: AV-11** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186480.89

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

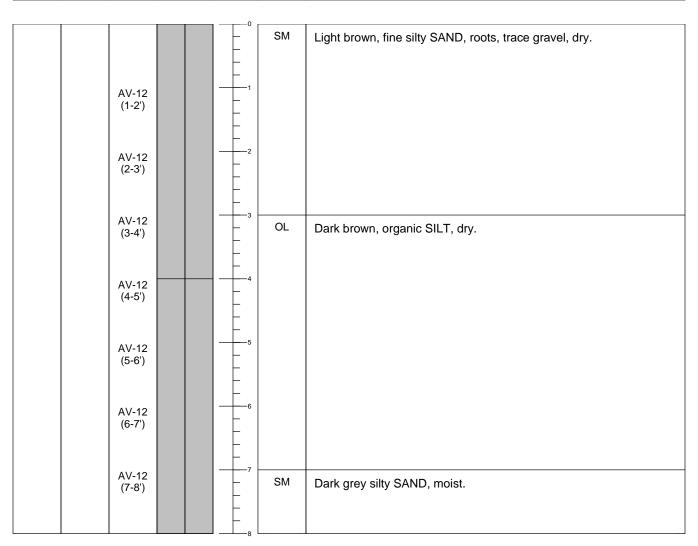
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

Client: B&L Trust Task: 1525

**Boring ID: AV-12** 

Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186495.89

Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Casey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

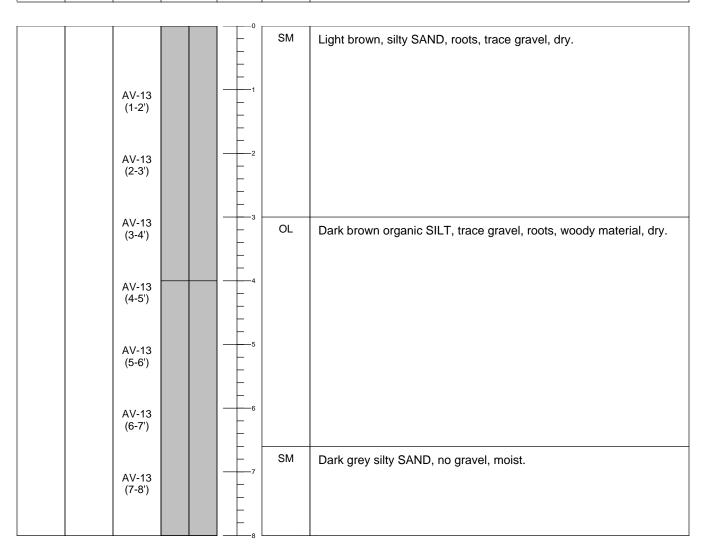
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

**Boring ID: AV-13** 

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186495.89

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

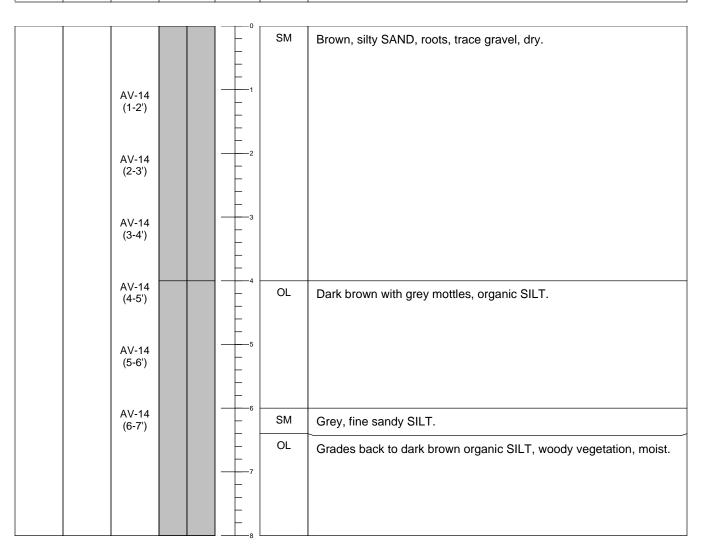
Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches

Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA **Boring ID: AV-14** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186510.89

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Client: B&L Trust Sample Method: Direct Push 2"x4' Core Project: B&L O&M

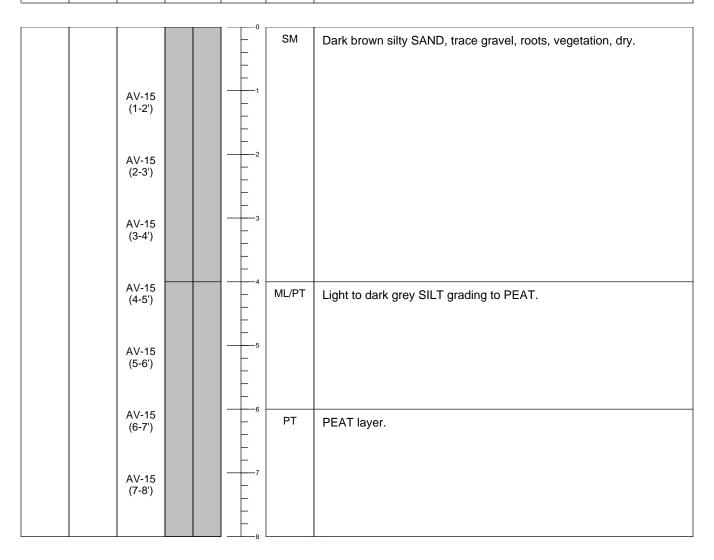
**Boring ID: AV-15** 

Boring Diameter: 2 inches Task: 1525

Boring Depth (ft bgs): 8 Address: 2211 6th Ave Milton, WA 98354 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA

Remarks: Advanced adjacent probe location due to compressed recovery in initial boring due to the presence of peat.

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186510.89

**Drill Date:** May 22, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

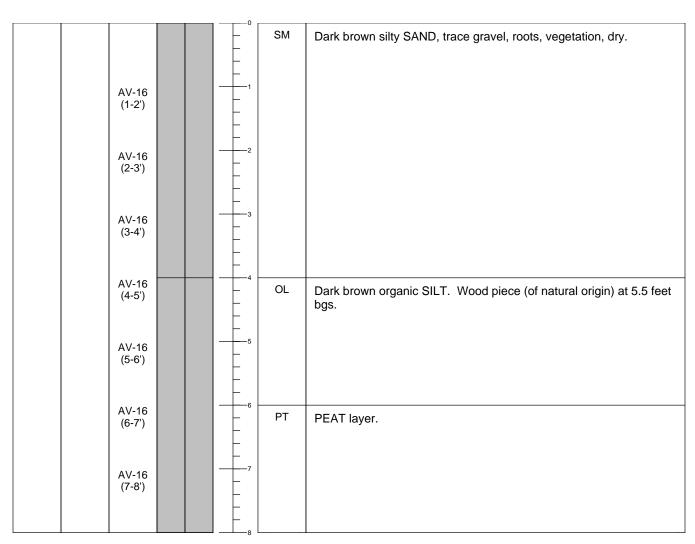
Boring Diameter: 2 inches Boring Depth (ft bgs): 8

Client: B&L Trust Task: 1525

**Boring ID: AV-16** 

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701565.59 Longitude/Easting: 1186420.89

Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

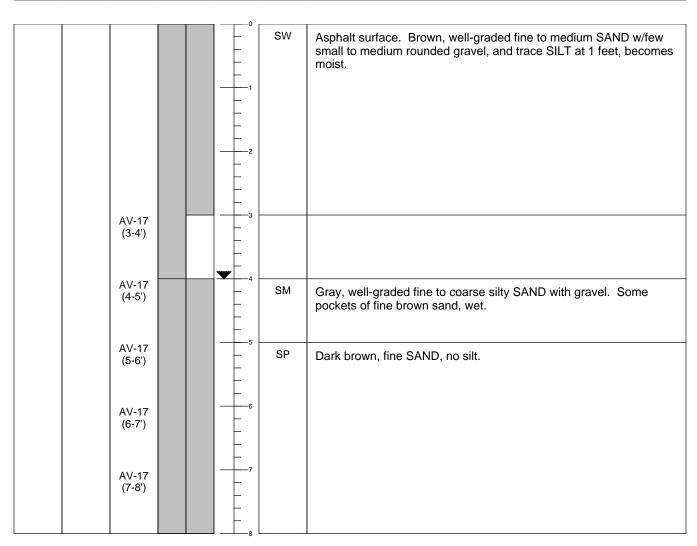
Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 4 **Boring ID: AV-17** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701560.59 Longitude/Easting: 1186435.89

Boring Diameter: 2 inches

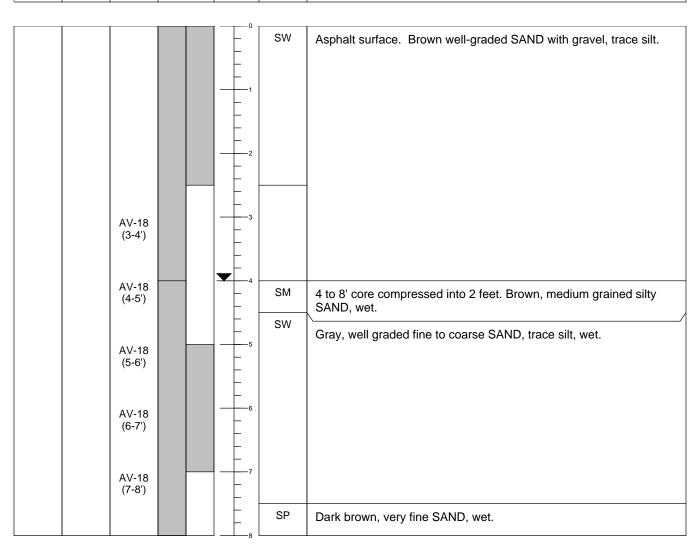
Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Client: B&L Trust Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Task: 1525 Address: 2211 6th Ave Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 4 Milton, WA 98354

**Boring ID: AV-18** 

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701565.59 Longitude/Easting: 1186435.89

Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

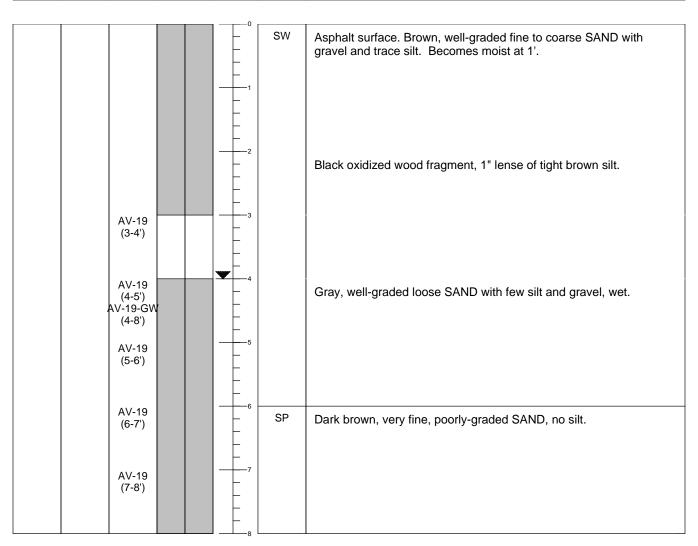
Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 4 **Boring ID: AV-19** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701560.59 Longitude/Easting: 1186450.89

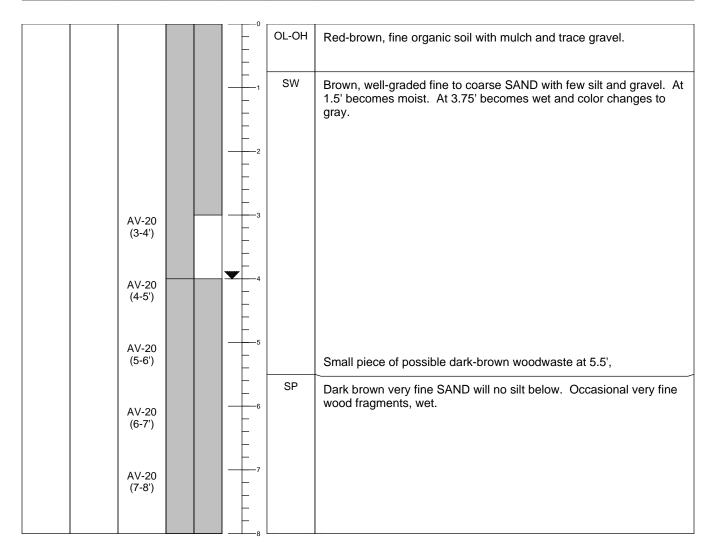
Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Client: B&L Trust Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches Task: 1525

**Boring ID: AV-20** 

Address: 2211 6th Ave Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 4 Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701565.59

Longitude/Easting: 1186450.89 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 6

Drill Date: June 7, 2013 Logged By: Kristin Andersen

Drilled By: Cascade / Kasey Goble Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Boring Diameter: 2 inches

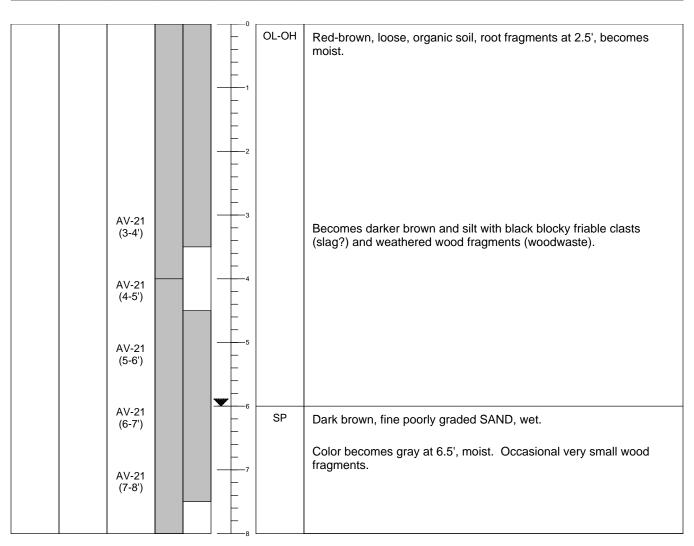
Boring Depth (ft bgs): 8

**Boring ID: AV-21** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701560.59 Longitude/Easting: 1186495.89

Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 3

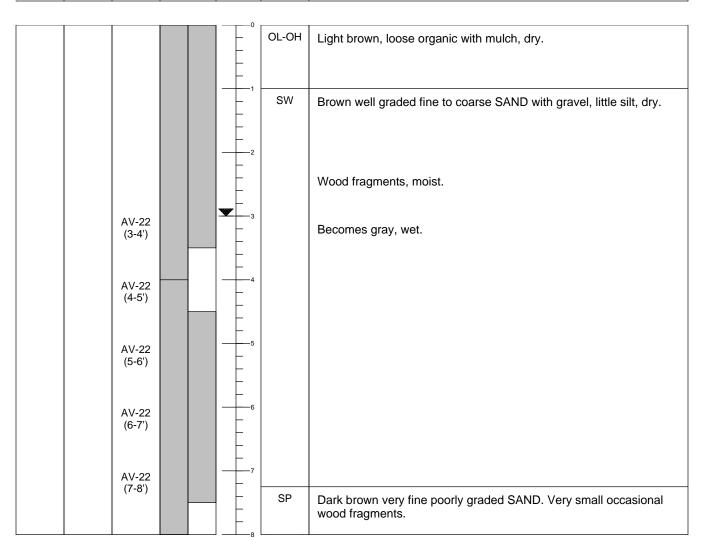
**Boring ID: AV-22** Drill Date: June 7, 2013

Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Client: B&L Trust Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches Task: 1525

Boring Depth (ft bgs): 8 Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701565.59 Longitude/Easting: 1186495.89

Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

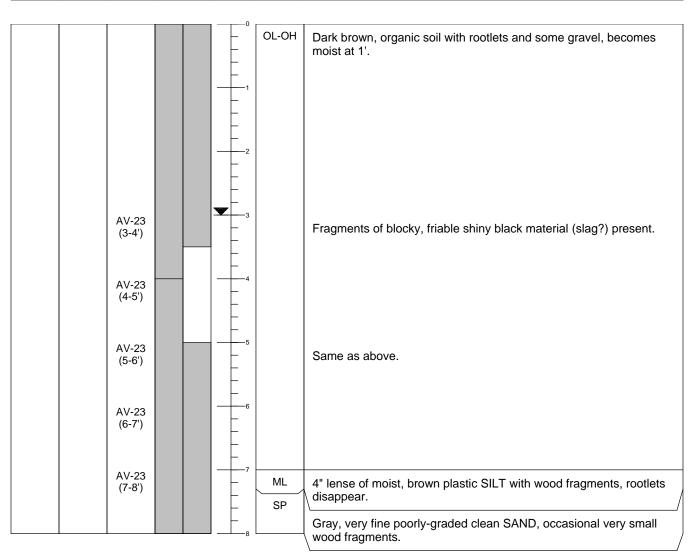
Boring Diameter: 2 inches Task: 1525 Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 3

Boring ID: AV-23

Client: B&L Trust

Address: 2211 6th Ave Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701557.59 Longitude/Easting: 1186510.89

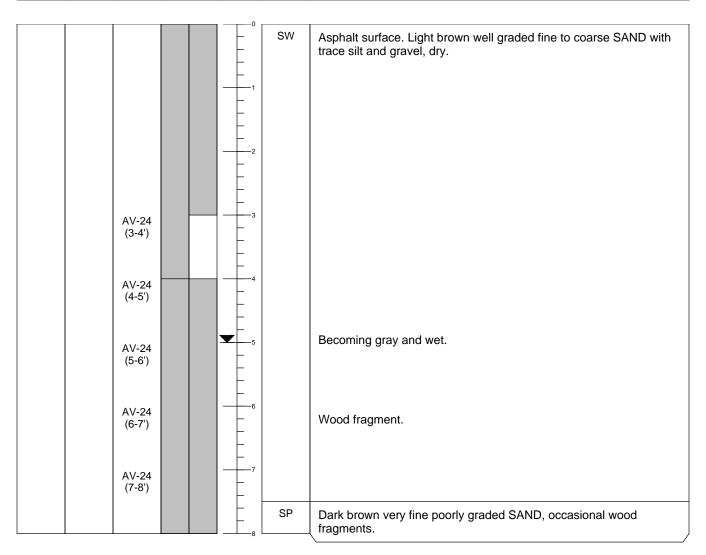
Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Client: B&L Trust Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches Task: 1525

**Boring ID: AV-24** 

Boring Depth (ft bgs): 8 Address: 2211 6th Ave Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 5 Milton, WA 98354

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701565.59 Longitude/Easting: 1186510.89

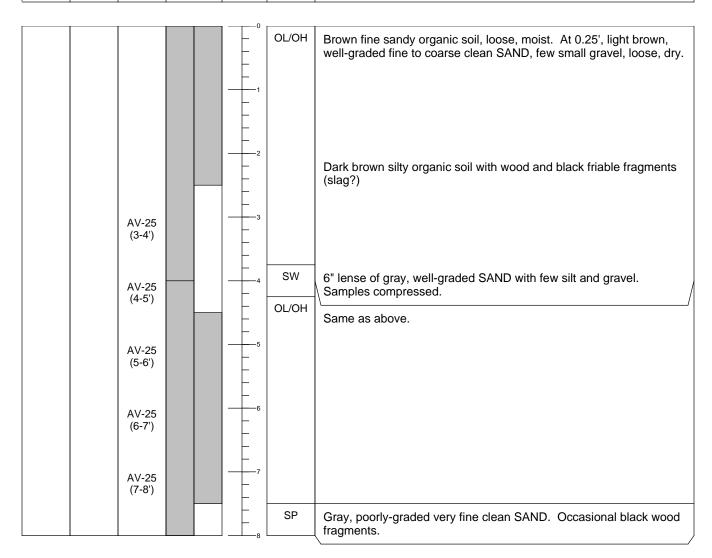
Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Client: B&L Trust Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches Task: 1525

Address: 2211 6th Ave Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA Milton, WA 98354

**Boring ID: AV-25** 

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701570.59 Longitude/Easting: 1186525.89

Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches

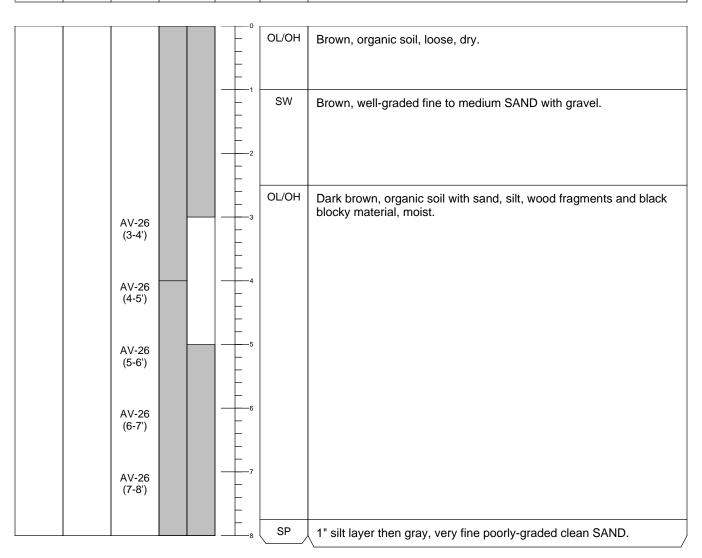
Boring Depth (ft bgs): 8 Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA **Boring ID: AV-26** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

#### Remarks:

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701575.59 Longitude/Easting: 1186525.89

**Boring Location:** Autumn Village Apartments

Drill Date: June 7, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Casey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M Boring Diameter: 2 inches

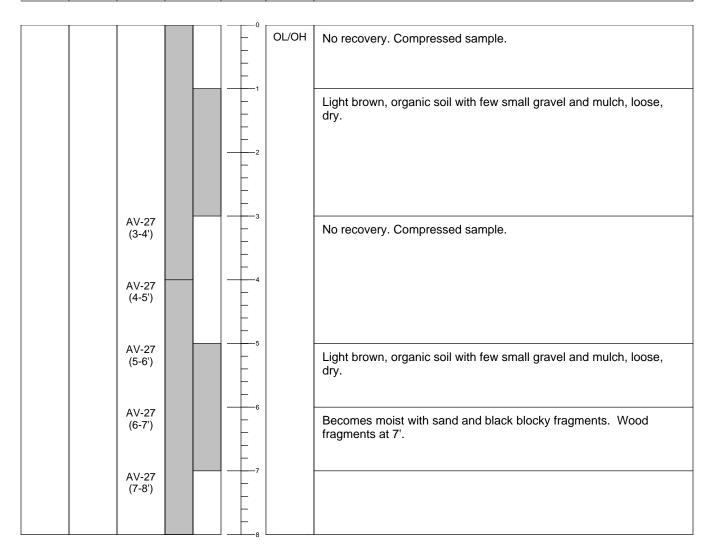
Boring Depth (ft bgs): 8 Groundwater ATD (ft bgs): NA Boring ID: AV-27

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

Remarks: Both samples very compressed.

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701562.59 Longitude/Easting: 1186525.89

Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 4

Drill Date: June 7, 2013 Logged By: Kristin Andersen

Drilled By: Cascade / Kasey Goble Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Boring Diameter: 2 inches

Boring Depth (ft bgs): 8

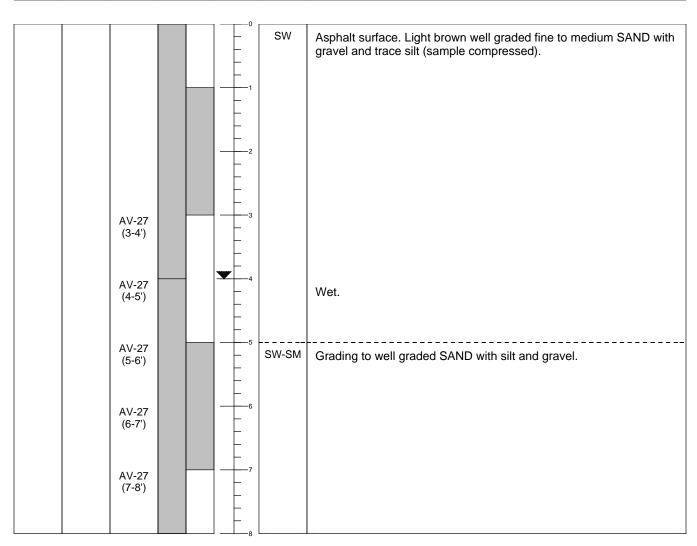
**Boring ID: AV-28** 

Client: B&L Trust

Task: 1525 Address: 2211 6th Ave

Milton, WA 98354

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701566.59 Longitude/Easting: 1186540.89

Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): 4

Drill Date: June 10, 2013 Logged By: Kristin Andersen Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x4' Core Project: B&L O&M

Boring Diameter: 2 inches

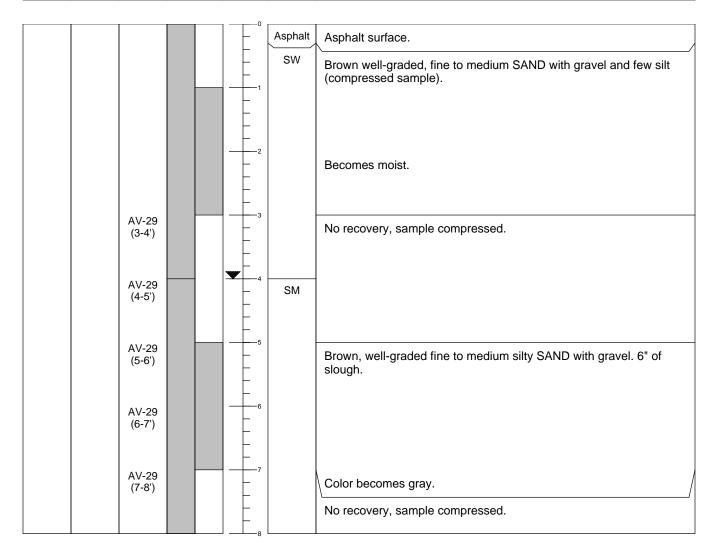
Boring Depth (ft bgs): 8

**Boring ID: AV-29** 

Client: B&L Trust Task: 1525

Address: 2211 6th Ave Milton, WA 98354

- 1							
	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



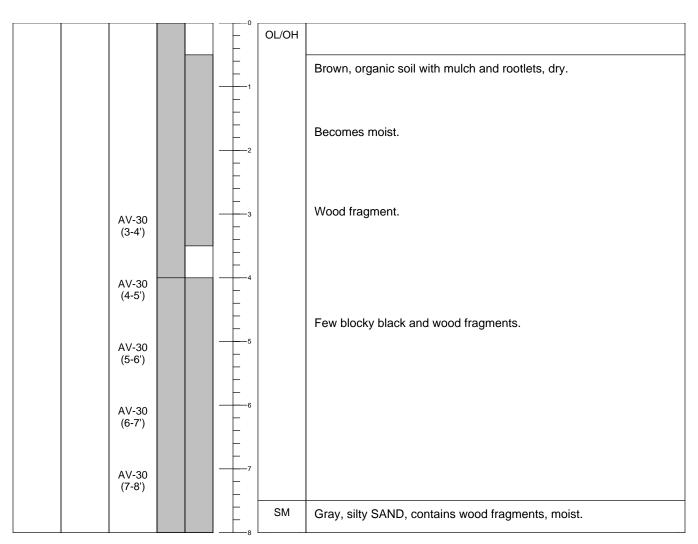
Coordinate System: NAV83 Ground Surface Elevation: NA Latitude/Northing: 701575.59 Longitude/Easting: 1186540.89 Drill Date: June 10, 2013
Logged By: Kristin Andersen
Drilled By: Cascade / Kasey Goble
Drill Type: 54 LT Limited Access GE

Drill Type: 54 LT Limited Access GP Client: B&L Trust
Sample Method: Direct Push 2"x4' Core Project: B&L O&M
Boring Diameter: 2 inches Task: 1525

Longitude/Easting: 1186540.89 Boring Depth (ft bgs): 8 Address: 2211 6th Ave Boring Location: Autumn Village Apartments Groundwater ATD (ft bgs): NA Milton, WA 98354

**Boring ID: AV-30** 

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 Ground Surface Elevation: NA Latitude/Northing: 701575.59 Longitude/Easting: 1186555.89 Drill Date: June 10, 2013
Logged By: Kristin Andersen
Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP
Sample Method: Direct Push 2"x4' Core
Boring Diameter: 2 inches

Client: B&L Trust
Project: B&L O&M
Task: 1525

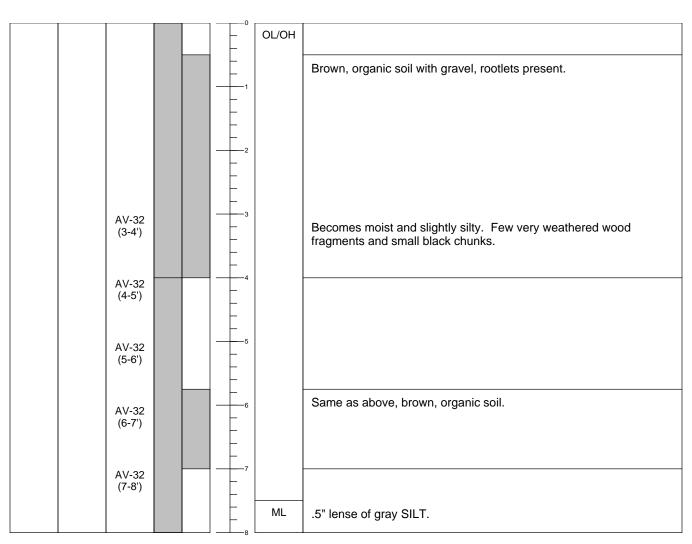
Boring Depth (ft bgs): 8 Address: 2211 6th Ave Groundwater ATD (ft bgs): NA Milton, WA 98354

**Boring ID: AV-32** 

Remarks: Samples very compressed.

**Boring Location:** Autumn Village Apartments

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 702027.34 Longitude/Easting: 1185675.88 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Address: B&L Landfill

Boring ID: WD-1

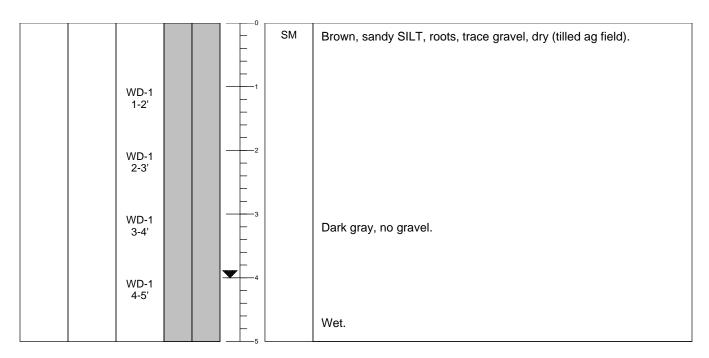
Client: B&L Trust

Task: 1525

Milton, WA Groundwater ATD (ft bgs): 4

#### Remarks:

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 702026.02 Longitude/Easting: 1185670.82 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches

Boring Depth (ft bgs): 5

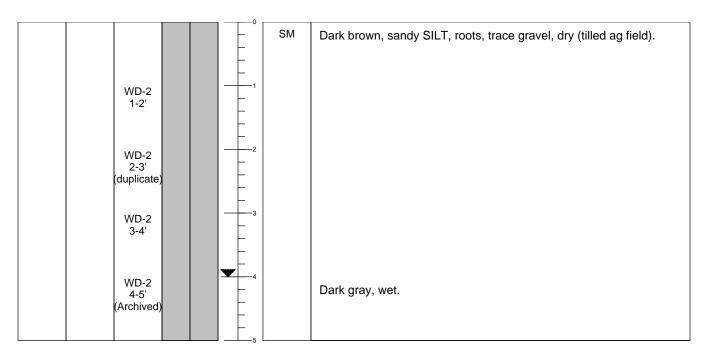
Address: B&L Landfill Milton, WA Groundwater ATD (ft bgs): 4

**Boring ID: WD-2** 

Client: B&L Trust

Task: 1525

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	PID	SHEEN	SAMPLE	DRIVEN/	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 702012.01 Longitude/Easting: 1185675.67 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

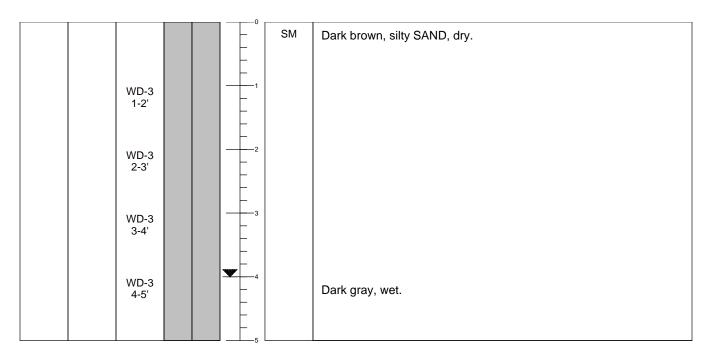
Address: B&L Landfill Milton, WA Groundwater ATD (ft bgs): 4

Boring ID: WD-3

Client: B&L Trust

Task: 1525

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 702011.99 Longitude/Easting: 1185669.84 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Groundwater ATD (ft bgs): 4

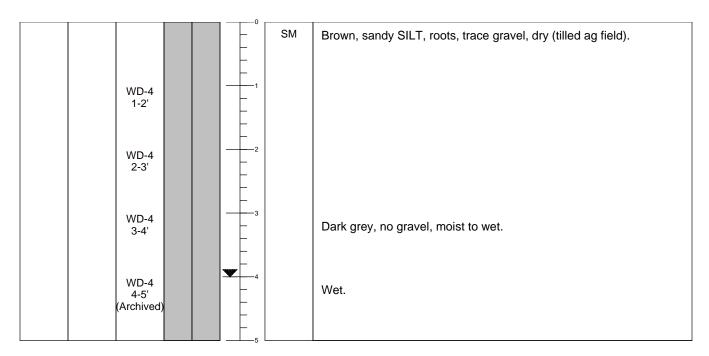
Client: B&L Trust Task: 1525

Address: B&L Landfill

**Boring ID: WD-4** 

Milton, WA

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701998.15 Longitude/Easting: 1185674.85 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Groundwater ATD (ft bgs): 4 feet bgs

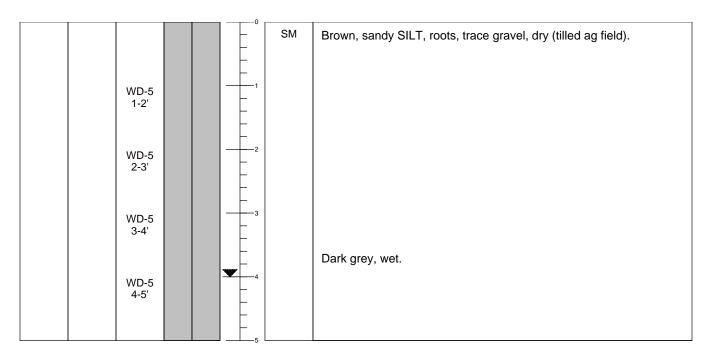
Boring Diameter: 2 inches Boring Depth (ft bgs): 5 feet Client: B&L Trust Task: 1525

Address: B&L Landfill

**Boring ID: WD-5** 

Milton, WA

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701998.81 Longitude/Easting: 1185669.18 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Groundwater ATD (ft bgs): 4

**Boring ID: WD-6** 

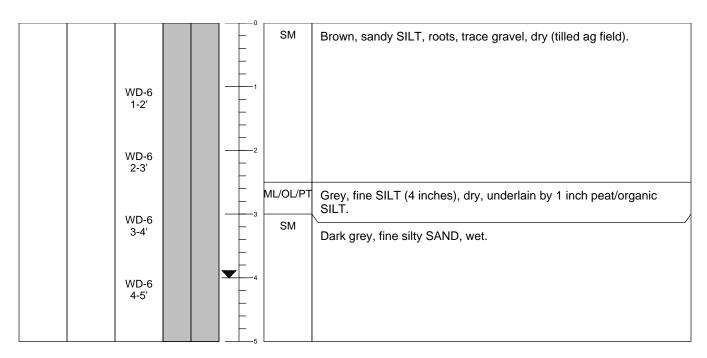
Client: B&L Trust Task: 1525

Address: B&L Landfill

Milton, WA

#### Remarks:

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701983.40 Longitude/Easting: 1185674.42 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Groundwater ATD (ft bgs): 4

Task: 1525 Address: B&L Landfill

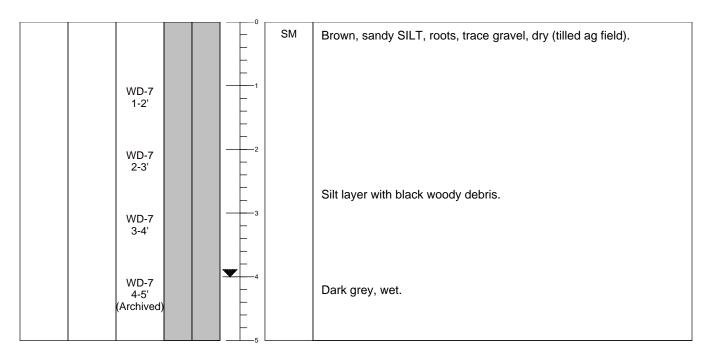
Client: B&L Trust

Boring ID: WD-7

Milton, WA

#### Remarks:

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



ppm = parts per million

Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701983.92 Longitude/Easting: 1185669.99 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Casey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5 feet

Groundwater ATD (ft bgs): 5

Task: 1525 Address: B&L Landfill

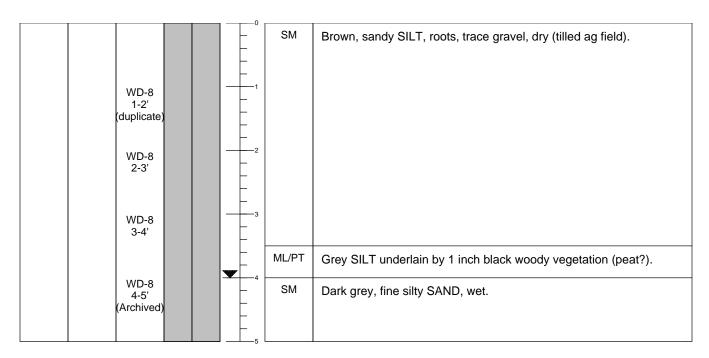
Client: B&L Trust

**Boring ID: WD-8** 

Milton, WA

Remarks:

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701968.93 Longitude/Easting: 1185675.32 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Groundwater ATD (ft bgs): 5

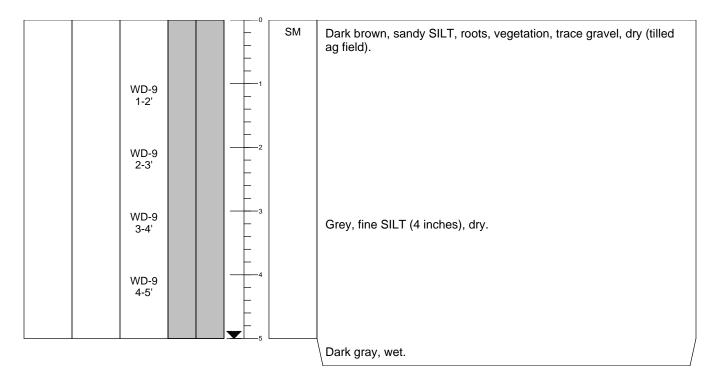
Client: B&L Trust Task: 1525

Address: B&L Landfill

**Boring ID: WD-9** 

Milton, WA

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701969.03 Longitude/Easting: 1185669.26 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches

Boring Depth (ft bgs): 5 Address: B&L Landfill

**Boring ID: WD-10** 

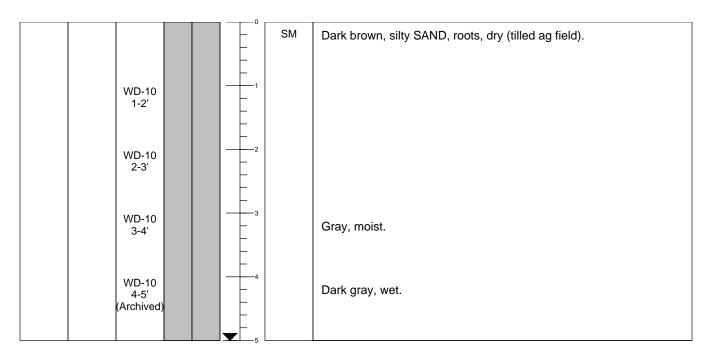
Client: B&L Trust

Task: 1525

Milton, WA Groundwater ATD (ft bgs): 5

#### Remarks:

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701955.33 Longitude/Easting: 1185674.42 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Groundwater ATD (ft bgs): 5

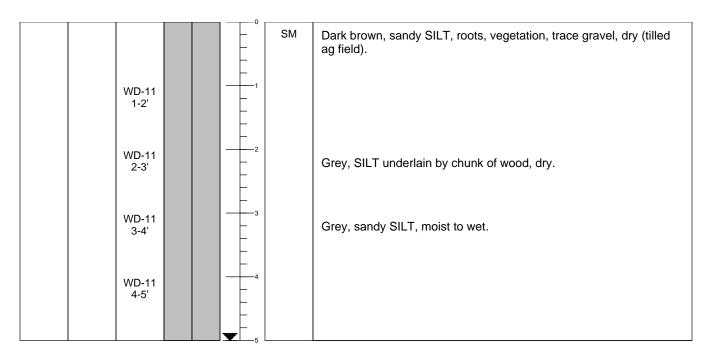
Client: B&L Trust Task: 1525

Address: B&L Landfill

**Boring ID: WD-11** 

Milton, WA

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701954.83 Longitude/Easting: 1185667.94 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Groundwater ATD (ft bgs): 4

Task: 1525

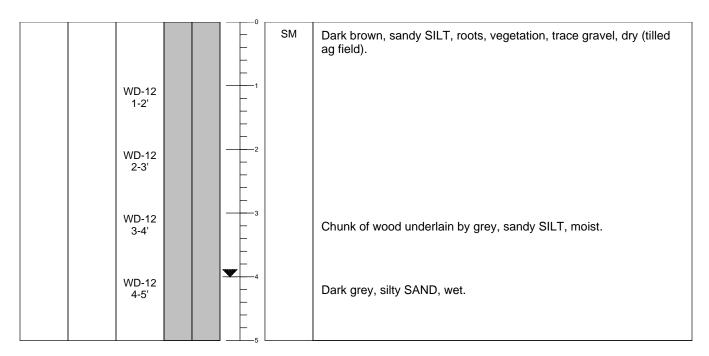
Client: B&L Trust

**Boring ID: WD-12** 

Address: B&L Landfill

Milton, WA

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701941.87 Longitude/Easting: 1185674.51 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

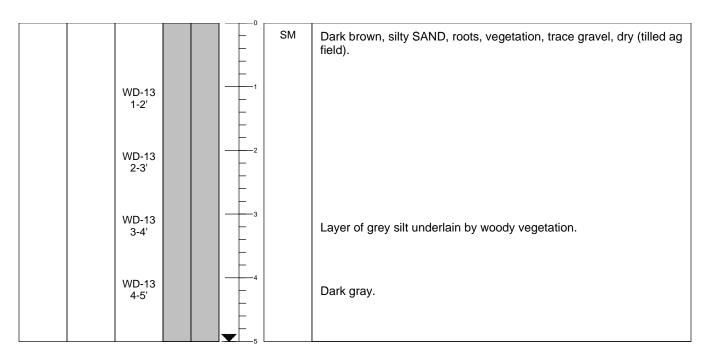
Boring Diameter: 2 inches Boring Depth (ft bgs): 5 Groundwater ATD (ft bgs): 5 Client: B&L Trust

**Boring ID: WD-13** 

Task: 1525 Address: B&L Landfill

Milton, WA

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701942.47 Longitude/Easting: 1185667.89 Boring Location: Agricultural Field

Drill Date: May 23, 2013 Logged By: Lisa Meoli

Drilled By: Cascade / Kasey Goble

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Client: B&L Trust Task: 1525

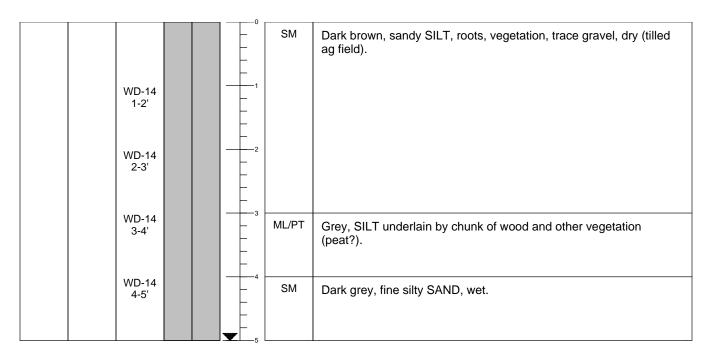
Boring ID: WD-14

Address: B&L Landfill

Milton, WA Groundwater ATD (ft bgs): 5

#### Remarks:

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701927.71 Longitude/Easting: 1185675.90 Boring Location: Agricultural Field

**Boring ID: WD-15** Drill Date: June 10, 2013 Logged By: Kristin Andersen

**Drilled By:** Cascade / Don Harnden

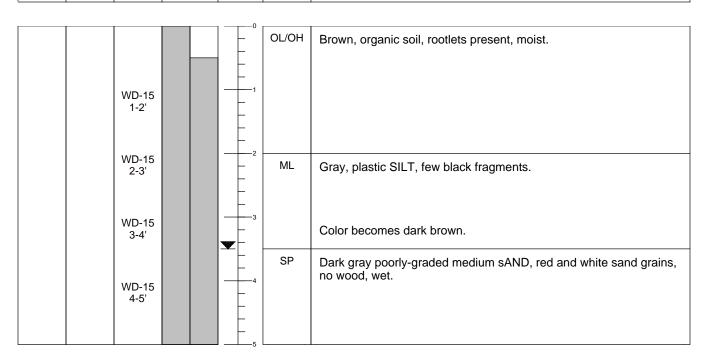
Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5 Groundwater ATD (ft bgs): 3.5 Client: B&L Trust Task: 1525

Address: B&L Landfill

Milton, WA

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701927.66 Longitude/Easting: 1185669.34 Boring Location: Agricultural Field

Drill Date: June 10, 2013 Logged By: Kristin Andersen **Drilled By:** Cascade / Don Harnden

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5

Groundwater ATD (ft bgs): 2.5

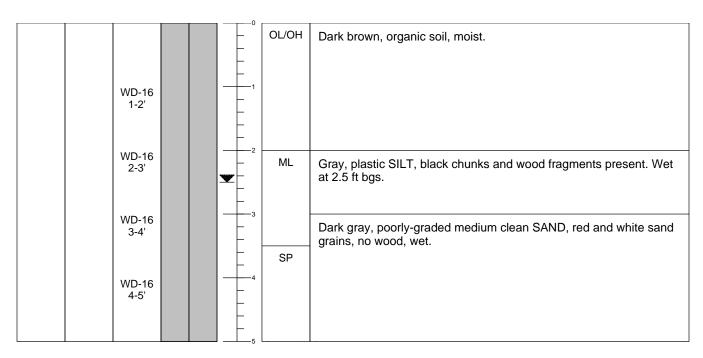
**Boring ID: WD-16** 

Client: B&L Trust Task: 1525

Address: B&L Landfill

Milton, WA

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701911.57 Longitude/Easting: 1185674.42 Boring Location: Agricultural Field **Boring ID: WD-17** 

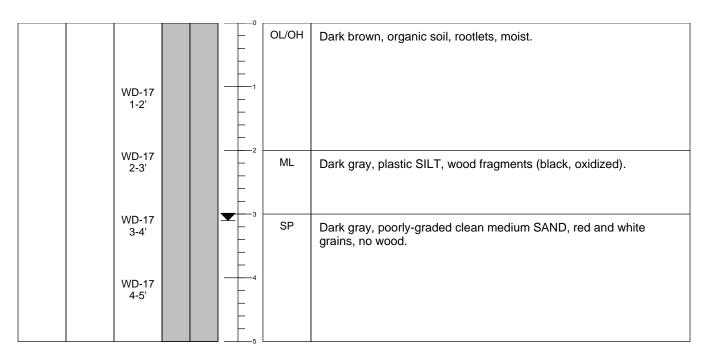
Drill Date: June 10, 2013 Logged By: Kristin Andersen **Drilled By:** Cascade / Don Harnden

Drill Type: 54 LT Limited Access GP Client: B&L Trust Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Task: 1525 Boring Depth (ft bgs): 5 feet Address: B&L Landfill

Groundwater ATD (ft bgs): 3.1 feet Milton, WA

PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)



Coordinate System: NAV83 **Ground Surface Elevation: NA** Latitude/Northing: 701912.00 Longitude/Easting: 1185668.18 Boring Location: Agricultural Field

Drill Date: June 10, 2013 Logged By: Kristin Andersen **Drilled By:** Cascade / Don Harnden

Drill Type: 54 LT Limited Access GP Sample Method: Direct Push 2"x5' Core Project: B&L O&M

Boring Diameter: 2 inches Boring Depth (ft bgs): 5 Groundwater ATD (ft bgs): 5 Client: B&L Trust Task: 1525

**Boring ID: WD-18** 

Address: B&L Landfill Milton, WA

#### Remarks:

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	PID	SHEEN	SAMPLE	DRIVEN /	DEPTH	USCS	SOIL DESCRIPTION AND OBSERVATIONS
	(ppm)		ID	RECOVERED	FT BGS	SYMBOL	(color, texture, moisture, MAJOR CONSITIUENT, odor, staining, sheen, debris, etc.)

