Long-Term Monitoring Report

Year Three SLRIDT Project

Prepared for
XIK Corporation,
Minnesota Department of Natural Resources, and
Minnesota Pollution Control Agency

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Abbreviations and Acronyms

ACM	Activated Carbon Mat
BAZ	Bioactive Zone
CAD	Contained Aquatic Disposal
COC	Contaminants of Concern
COC, C	Coefficient of Conservatism
EPA	U.S. Environmental Protection Agency
FCV	Final Chronic Value
FQAI	Floristic Quality Assessment Index
FQA	Floristic Quality Assessment
FQI	Floristic Quality Index
GLNPO	Great Lakes National Program Office
ID	Inner Diameter
LTM&M	Long-Term Monitoring & Maintenance Plan
MDL/RL	Method Detection Limit/Reporting Limit
MNDNR	Minnesota Department of Natural Resources
MPCA	Minnesota Pollution Control Agency
NRRI	Natural Resources Research Institute
PAH	Polycyclic Aromatic Hydrocarbons
PRAO	Post-Remedial Action Objectives
QA/QC	Quality Assurance/Quality Control
RA	Response Action
RD/RAP	Remedial Design/Response Action Plan
ROD	Record of Decision
RPD	Relative Percent Difference
SAV	Submerged Aquatic Vegetation
SedOU	Sediment Operable Unit
SLRIDT	St. Louis River/Interlake/Duluth Tar Site
SOU	Soil Operable Unit
TICMP	Tallas Island Compensatory Mitigation Project
XIK	Responsible party

Units

mg/kg	milligram per kilogram
ppm	parts per million

Executive Summary

The St. Louis River/Interlake/Duluth Tar (SLRIDT) site caps are performing as designed to contain polynuclear aromatic hydrocarbon (PAH)-impacted sediment, in accordance with the Remedial Design/Response Action Plan (RD/RAP) and the Minnesota Pollution Control Agency (MPCA) Record of Decision (ROD), based on monitoring completed in accordance with the Long-Term Monitoring & Maintenance Plan (LTM&M).

This report presents the methods, procedures, and results from the third year of cap stability and pore water monitoring, and the fifth year of vegetation monitoring at SLRIDT in 2015. Pore water monitoring of the Contained Aquatic Disposal (CAD) facility cap was also conducted in 2011 and 2012 for the U.S. Environmental Protection Agency (EPA) Great Lakes National Program Office (GLNPO) project and a final report issued to EPA. The EPA-required monitoring, which is not included or discussed in detail in this report, indicated the CAD cap is performing as designed with respect to pore water migration.

LTM&M monitoring identified no major deficiencies and only three minor deficiencies despite a 500-year storm and flood in June 2012 that involved the entire St. Louis River estuary, including both the SLRIDT and Tallas Island sites. The minor deficiencies included pore water samples exceeding the Tier 1 monitoring criteria at one area in Stryker Bay, at one area in the wet meadow portion of Slip 7, and one sample location in Slip 6. Isolated areas of minor cap erosion have also been confirmed at the shoreline at the north end of Stryker Bay and at the north end of Slip 6 due to runoff from adjacent upland areas. These minor deficiencies will be further evaluated (pore water) and repaired (cap erosion) during scheduled Tier 1 and Tier II monitoring in 2016, in accordance with the LTM&M plan.

The fifth and final year of vegetation monitoring has been completed at SLRIDT and Tallas Island in accordance with Public Waters Restoration Permit 2005-2073 issued by the Minnesota Department of Natural Resources (MNDNR) for construction of the Sediment Operable Unit (SedOU) Response Actions (RAs), with the results presented in this report.

1.0 Introduction

The Minnesota Pollution Control Agency (MPCA)-approved Long-Term Monitoring & Maintenance Plan [LTM&M, Hard Hat Services, 2013] for the St. Louis River/Interlake/Duluth Tar (SLRIDT) site focuses on areas of the Sediment Operable Unit (SedOU) where Response Action (RA) caps were designed and installed to contain polynuclear aromatic hydrocarbon (PAH)-impacted sediments. The LTM&M inspections and samples were biased to the capped areas with PAH-impacted sediment remaining in place to provide the greatest probability of detecting PAHs migrating into the site caps. PAHs are the contaminants of concern (COC) with respect to the LTM&M of the SLRIDT caps. Aquatic and upland vegetation monitoring has been completed annually since 2011, but 2013 was the first year of pore water, bulk sediment and cap stability monitoring. Benthic assemblage monitoring began in 2014 and will be repeated in 2016. Benthic bioaccumulation monitoring is planned for 2017.

The monitoring and maintenance activities conducted in 2015 include:

- Pore water sampling,
- Visual inspections of above-water cap areas,
- Cap thickness measurements,
- Survey activities below water to confirm the continued presence of armor materials placed during RA construction,
- Monitoring vegetation recovery at the SLRIDT site and the Tallas Island Compensatory Mitigation Project (TICMP) site, and
- Recommendations for and documentation of maintenance repairs identified from sampling and inspection activities (if applicable).

Tier I sampling and analysis activities are focused at the base of the bioactive zone (BAZ) to serve as an early indicator of potential PAH migration into site caps prior to potential impacts to the benthic organisms. The Tier I sampling requirements will be followed until one of the following conditions occurs:

- A PAH exceedance is observed and confirmed, at which time Tier II sampling activities will be implemented.
- Modification is requested and approved by XIK (the responsible party) and the MPCA.
- An extenuating circumstance at the SLRIDT site requires an immediate elevation from Tier I to Tier III.

Cap maintenance activities will be categorized as Minor Deficiencies or Major Deficiencies and will be remedied in accordance with the following descriptions:

- **Minor Deficiencies** are classified as isolated areas of erosion, disruptive cap settlement, lack of vegetation, or animal burrows where cap or bank stability may become compromised. These areas must be repaired by adding materials that meet the specification as defined in the Remedial Design/Response Action Plan (RD/RAP) or the TICMP permit requirements. The MPCA must be

notified of these minor deficiencies when they are identified and shall be repaired as soon as practical.

- **Major Deficiencies** are classified as areas where the cap integrity may be compromised and/or contaminated sediments exposed. No repairs shall be made until a repair-specific remedial plan is approved by the MPCA. All areas where visual inspections and minor/major repair maintenance activities have taken place must be documented within the Annual LTM&M Report. The dates, activities, equipment, materials, and photos of the repairs shall be included within the Annual LTM&M Report.

1.1 Site Description

The SLRIDT site is located within the West Duluth neighborhood of the City of Duluth on the north bank of the St. Louis River, approximately four river miles upstream from Lake Superior (Figure 1).

The SLRIDT site includes approximately 255 acres of land and river embankments, wetlands, and shipping slips. The land portion of the SLRIDT site includes the 59th Avenue (Hallett) Peninsula and the 54th Avenue Peninsula, and is bounded on the north by the Burlington Northern railroad right-of-way and on the south by the St. Louis River.

The aquatic portion of the SLRIDT site includes Stryker Bay (approximately 41 acres and defining the western boundary of the SLRIDT site), Slip 6 (approximately 15 acres), and Keene Creek Bay/Slip 7 including the 48-inch outfall area and the Minnesota Channel (approximately 34 acres and defining the eastern boundary), and a portion of the St. Louis River south of the two peninsulas and the former shipping slips. A small portion of the SedOU (approximately 0.3 acres at the mouth of Slip 6 and 1.1 acres in the Minnesota Channel) is within the waters of the State of Wisconsin.

Residences are located west of the SLRIDT site on the 63rd Avenue Peninsula (on the west side of Stryker Bay), and to the north of the railroad tracks that form the northern boundary of the SLRIDT site. Approximately 800 people live within one mile of the SLRIDT site. The Tallas Island site is located approximately 1.5 miles upriver from the SLRIDT site. Figure 1 shows the Tallas Island site location. The Tallas Island site includes approximately 30 acres of land, river embankments and wetlands. The land portion of the Tallas Island site is bounded on the north by Bayhill Drive.

The SLRIDT and Tallas Island sites experienced a 500-year flood event that occurred throughout the area in June 2012. Using August water levels to compare the changes over time, water levels of 2014 and 2015 have not been seen since about 1996, and are approximately 16 inches higher than those measured in 2012. (NOAA, 2015)

1.2 Institutional Controls

Response actions for the SedOU portion of the SLRIDT site did not require establishment of institutional controls; the response actions for the Soil Operable Unit (SOU) included establishment of a groundwater use restriction that does not influence the LTM&M for the SedOU.

Current zoning for the land portion of the site is “Industrial-General”, and is intended for general to heavy impact industrial, processing, assembly, fabrication, and manufacturing uses. Office uses are allowed provided they are clearly incidental to and supportive of on-site industrial uses. The district is intended primarily for locations close to major transportation corridors and active commercial centers. This district should be located away from residential development, according to the City of Duluth Planning and Zoning Department’s Zone Districts document and maps.

The water covered portion of the site is unrestricted in its use, based on the response actions completed in the SedOU, but limited by water depth to primarily recreational activities. Slip 7 has sufficient water

depth to berth commercial vessels such as barges, but does not have sufficient water depth or dock wall integrity to berth ships or larger commercial vessels.

2.0 Annual Sampling and Monitoring

2.1 Pore Water

2.1.1 Introduction

Pore water samples were collected from the base of the BAZ and/or the top of mats using SedPoint samplers in accordance with the LTM&M Plan. SedPoint samplers consisting of a 6-inch-long, polypropylene screen attached in line to ¼-inch inner diameter (ID) polyethylene tubing were installed at the locations shown on Figure 2 on June 2, 3, and 12, 2015.

Pore water monitoring was conducted in 2011 and 2012 for the U.S. Environmental Protection Agency (EPA) Great Lakes National Program Office (GLNPO) project in the Contained Aquatic Disposal (CAD) and a final report was issued to EPA. A copy of the report will be provided upon request.

2.1.2 Methods

The SedPoints were installed from a boat using a stainless steel SedPoint Installation Tool in accordance with construction and installation methods provided by the SedPoint manufacturer, MHE Products presented in Exhibit A of the LTM&M Plan.

The SedPoint screen was pushed through the capping sand to the top of the activated carbon mat (ACM) in Stryker Bay, top of the root barrier in the land area near Slip 7, or the base of the BAZ, defined in the LTM&M Plan as a depth of 1 meter in areas with water depths less than 8 feet, and 0.5 meter in areas with water depths greater than 8 feet. A hand held concrete vibrator tool was used as an aid while hand pushing the installation tool through the capping material. The installation tool was then removed, leaving the SedPoint sampler tip typically within 3 inches of the driven depth, depending on the amount of friction encountered inside the installation tool. The SedPoint screen spanned the lower 6 inches of the BAZ if placement of the tip of the sampler was precisely at the target depth.

Pore water samples were collected June 3, 4, and 15, 2015, in accordance with the Low Flow Sampling Procedure presented in Exhibit C of the LTM&M Plan. Samples were collected using a peristaltic pump to draw pore water through the SedPoints at a flow rate of less than 500 milliliters per minute. At least 5 tubing volumes of water were purged from the sampling points prior to collecting analytical samples. Two 1-liter amber sample jars were filled at each sample location. Samples were submitted to Pace Analytical for laboratory analysis of PAHs using EPA method 8270C SIM.

Pore water PAH concentrations were compared to the PAH specific Final Chronic Values (FCVs) presented in the U.S. Environmental Protection Agency (EPA)'s Equilibrium Partitioning Sediment Benchmark for the Protection of Benthic Organisms document from November 2003, in accordance with Remedial Design/Response Action Plan (RD/RAP) Appendix B, Quality Assurance Project Plan and Monitoring Plan, Table B-7. The site-specific list of 17 PAHs comprising the total PAH concentration will be used during the LTM&M monitoring activities and the sum of the ratios will be used for the compliance standard.

2.1.3 Results

Pore water samples were collected at all planned locations as described in the 2014 annual monitoring report. Two additional Tier II samplings points were also installed based on field observations or laboratory results to further delineate the areas with concentrations of PAH greater than FCVs.

Target PAH compound concentrations were less than detection limits and/or FCVs in 23 of the 28 samples. Four sample locations contained naphthalene at concentrations exceeding FCVs: SB-PW-02 in Stryker Bay; S7-PW-06, S7-PW-08, and S7-PW-10 located in the filled portion of Slip 7 (Figure 2). These four samples represent the only locations where a compound-specific FCV (naphthalene) was exceeded. The sum of the PAH to FCV ratios exceeded 1 at these four location and at S6-PW-01. No individual PAH exceeded FCVs in the sample from S6-PW-01. Additionally, no other PAH compound concentrations exceeded FCVs in any sample. Analytical results of the pore water samples are summarized on Table 1; validation information is presented on Tables 2 and 3.

The actual sample depths were at the target depths, except at sample locations where less than 1 meter of cap materials were present (Table 4). The shallower samples within Stryker Bay were collected from immediately above the ACM or above a mat to control root depth in the filled portion of Slip 7.

Quality Assurance/Quality Control (QA/QC) criteria were met for the sample analyses. QA/QC data is presented in Appendix A.

2.1.4 Discussion

The Tier I criteria exceedances detected in pore water samples at locations SB-PW-02 and S7-PW-06 have been observed in samples collected in 2013, 2014, and 2015. The naphthalene concentration in the pore water sample collected at S7-PW-01 exceeded the Tier I FCV criteria in 2014, but, not in 2013, nor in 2015. The Tier I criteria was exceeded in the sample collected at S6-PW-01 in 2015, but, not in previous samples so this concentration has not been confirmed with a second sample. The sum of the PAH to FCV ratio was at 1.2 at S6-PW-01 and is only slightly over the criteria of 1.0.

Tier II sampling was conducted in 2015 in the vicinity of SB-PW-02 in Stryker Bay and S7-PW-06 in the filled portion of Slip 7 in accordance with the LTM&M plan.

2.1.4.1 Tier II Monitoring Results

Stryker Bay

Four additional locations were sampled in 2015 approximately 80 to 120 feet from SB-PW-02 as part of the Tier II monitoring program. These four locations were labeled SB-PW-07, SB-PW-08, SB-PW-09, and SB-PW-10. (Figures 2 and 2a). PAH concentrations in these four samples were less than the Tier I criteria. The extent of the area where Post-Remedial Action Objectives (PRAOs) are exceeded in the area surrounding SB-PW-02 appears to be delineated.

Slip 7

Four additional locations were sampled in 2015 approximately 100 to 130 feet from S7-PW-06 as part of the Tier II monitoring program. These four locations were labeled S7-PW-07, S7-PW-08, S7-PW-09, and S7-PW-10 (Figures 2 and 2a). PAH concentrations were less than PRAOs in samples S7-PW-07 and S7-PW-09 to the north and south of S7-PW-06. However, PAH concentrations were greater than Tier I criteria in samples S7-PW-08 and S7-PW-10 located to the east of S7-PW-06. It should be noted that all five of these sample locations are on the wet meadow area (formerly mudflats) adjacent to Slip 7. Pore water at these locations is shallow groundwater that exists at depths that match the defined depths for the BAZ.

Slip 7 is located east of location S7-PW-10, and the bottom of the slip is at an elevation lower that the elevation of sample S7-PW-10. A protective layer of armor stone is present at the shoreline and underwater slope of Slip 7 at this location. Pore water samples from S7-PW-03 located in the adjacent deep water portion of Slip 7 have always had PAH concentrations less than Tier I criteria.

Tier I sample location SW-PW-01 is approximately 240 feet west of S7-PW-06. PAH concentrations were less than Tier I criteria at that location.

Compliance with Tier II Requirements

The objective of Tier II monitoring is to delineate the extent of an area where PRAOs are exceeded, and to evaluate if Tier III actions need to be conducted. The lateral areas with pore water PRAO exceedances in Stryker Bay and adjacent to Slip 7 appear to be delineated.

Benthic macroinvertebrate bioaccumulation monitoring is required if PROAs are exceeded for two successive years. The method for analysis is to collect sediment samples and allow macro invertebrates to grow in the sample material in a laboratory. The bulk sediment samples from these areas have had low concentrations of PAHs that are well below the PRAOs (Section 2.2). A full round of benthic macroinvertebrate bioaccumulation sampling is scheduled to be conducted in 2017.

PAH compounds have been detected at concentrations greater than PRAOs at two other locations. The pore water sample collected from S7-PW-01 in 2014 had PAH concentrations above PRAOs, but, concentrations were less than PRAOs in 2013 and 2015. The pore water sample from S6-PW-01 in 2015 had PAH concentrations just above the PRAO, but, was less than PRAOs in previous years. Additionally, no individual PAH concentration was above the respective comparison value at S6-PW-01. Therefore Tier II monitoring is not required at this time at these two locations.

Expanded Tier II Monitoring Plan

Pore water samples from the locations described here were all targeted to be from the base of the BAZ at depths of 3 feet. All were from the target depths except SB-PW-02, where the depth to the ACM was approximately 2.2 feet and the sample was from that depth. As these locations are at the base of the BAZ or cap, it is recommended that additional samples be collected at shallower depths to determine concentrations within the BAZ as well as at the base. One additional sample will be collected in the next

sampling round from 1.5 feet below sediment surface (½ the BAZ depth) to evaluate the vertical extent of PAHs.

Pore water samples will also be collected from additional points surrounding S7-PW-10 to further delineate the area of PRAO exceedances. Samples will be collected to the north and south of the location, and one point will be sampled within the slip.

No benthic macroinvertebrate sampling is recommended during 2016 as additional pore water sampling will be conducted to determine vertical and lateral extents of the PRAO exceedances, and benthic macroinvertebrate sampling is scheduled for 2017.

2.2 Bulk Sediment

2.2.1 Introduction

Bulk sediment sampling activities were completed at the base of the BAZ, as described in Section 1.1, to detect PAH migration into the cap prior to impacting the benthic communities. Bulk sediment samples are collected every other year, beginning in 2013.

Bulk sediments are defined as the solid phase materials below the sediment surface and, as such, the bulk sediment samples consisted of sand cap materials. Bulk sediment samples were not collected from cap areas with cobble and gravel armoring.

Bulk sediment samples were collected from the following approximate depths, based on water depth and cap construction:

- 3 feet below the top of the cap in cores collected from the Contained Aquatic Disposal (CAD) facility (formerly Slip 6), Slip 7, and the North and South Wetlands with less than 8 feet of water;
- 1.5 feet below the top of the cap in cores collected from the CAD, Slip 7, and the North and South Wetlands with greater than 8 feet of water; and,
- Directly above the ACM in cores collected from Stryker Bay.

Table 4 presents the unique sample location identification number, cap depth determined in cores or probes, as well as the SedPoint installation depth, and description of sediments collected in the cores.

2.2.2 Methods

Bulk sediment sampling was completed in accordance with the Bulk Sediment Sampling Procedures in Exhibit D and Exhibit G of the LTM&M Plan at the locations shown on Figure 2. Bulk sediment cores were collected at a given location after pore water sampling was completed at locations where both sampling methods were conducted (Section 2.1 includes a discussion of the pore water sampling methods).

Bulk sediment core samples were collected between June 6 to 10, 2015, using either a hand-push core with a portable concrete vibrator, or a vibracore. The vibracore, manufactured by PVL Technologies, was

deployed using a pontoon boat equipped with an electric winch. The tubing was extracted using the winch, and the core sample was extruded onto a tray for examination and collection of laboratory analytical samples. The bulk sediment sampling locations on land and in the North and South Wetlands were collected by vibrating and pushing aluminum tubing into the sediments with a portable concrete vibrator. The tubing was extracted with a hand-operated jack and the sample extruded onto a tray for examination and collection of laboratory analytical samples.

The extruded sample recovery was measured, but the measurements should be considered estimates because changes in sample volume and length likely occurred during sample collection and extrusion. Sample cores were photographed, logged with the sediment type and depth, and laboratory analytical samples were collected, typically from a 3-inch zone at the target depth. Samples submitted for laboratory analysis were labelled, stored, and shipped in accordance with standard operating procedures. Samples were submitted to Pace Analytical for laboratory analysis of PAHs using EPA method 8270C SIM.

Bulk sediment Total PAH concentrations were compared to 13.7 milligrams per kilogram (mg/kg) or parts per million (ppm), in accordance with RD/RAP Appendix B, Quality Assurance Project Plan and Monitoring Plan, Table B-7. The site-specific list of 17 PAHs comprising the Total PAH concentration will be used during the LTM&M monitoring activities and the sum of the ratios will be used for the compliance standard.

2.2.3 Results

No sample concentrations exceeded the site-specific criteria of 13.7 mg/kg Total PAHs (the sum of the site-specific list of 17 PAH compounds). The maximum concentration of Total PAHs was 1.81 ppm, and only one sample had a total PAH concentration greater than 1 ppm. Analytical results of the bulk sediment samples are summarized on Table 5; laboratory QA/QC information is presented on Tables 6 and 7 and discussed in Appendix A.

2.2.4 Discussion

The field duplicate (S7-BS-06 3.3 FT) relative percent difference (RPD) for several PAH compounds exceeded the acceptance limits (40%) (Table 7). Sample concentrations near the practical quantitation limit can exaggerate the deviation of the RPD. Since most of the PAH sample concentrations were within five times the method detection limit/reporting limit (MDL/RL), no results were "*" qualified (estimated) based upon the field duplicate RPD calculation.

Overall, the laboratory data were considered useable with qualification assigned during the data evaluation process.

Two sets of laboratory data from 2015 are included for four sediment samples on Table 5. These samples include S7-BS-01, S7-BS-04, S7-BS-05, and S7-BS-06 (and the field duplicated for S7-BS-06). The laboratory report from Pace indicated that the first set of data for each of the samples had a low surrogate recovery. The lab reran the samples (designated with an RE on Table 5) and the surrogate recovery was normal although concentrations of PAHs were also higher. The second sample run was

conducted two days later than the first run but was out of hold time. All PAH concentrations from both sample runs are well below the FCV criteria.

Tier I bulk sediment monitoring will be conducted in 2017, in accordance with the LTM&M Plan because no bulk sediment samples exceeded the Total PAH criteria of 13.7 mg/kg.

2.3 Cap Stability

2.3.1 Introduction

Cap stability monitoring is intended to identify cap areas that have been compromised and no longer meet the requirements of the MPCA Record of Decision (ROD), in accordance with the LTM&M Plan.

2.3.2 Methods

Cap stability monitoring consists of a combination of the following components:

- Cap thickness measurements for the subaqueous areas with sand caps;
    - Sand caps underlain with geosynthetics were probed to confirm the cap thickness,
    - Sand caps without geosynthetics were cored and measured to confirm thickness
- Probing to determine the presence or absence of armor material and identify the elevation of caps containing gravel and cobble materials;
- Visual observations and cap thickness surveys where erosion observed for areas above, and leading into, the water; and,
- Visual inspection of dock walls above the water level in the CAD and Slip 7 from shore and/or water for deterioration that may have the potential to negatively impact the cap stability.

Cap thickness measurements were conducted by probing to the depth of the geosynthetic, or by collecting sediment core samples and measuring the thickness of cap materials in the sample core in capped areas where no geosynthetic was installed. The cap thickness measurements were completed in accordance with the LTM&M Plan at the locations shown on Figure 2 in June 2015. Measurements are presented on Table 4.

The presence of gravel or cobble below the current water elevation was probed with a rod to determine the presence or absence of the armor materials at the locations shown on Figure 2.

Photo documentation of the above-water caps was collected at the locations and directions presented on Figure 3 on October 5,2015, with photographs taken in the directions listed by degrees in Table 8 and Appendix B. The photos are intended to serve as a year-by-year comparison to review visual changes over longer periods of time. Additional cap stability monitoring information is included in subsequent sections.

Visual inspection of the shoreline at the TICMP site has been completed during vegetation monitoring since 2014. The banks of the TICMP site have been inspected for erosion, sparsely vegetated areas,

slumping of bank materials, and any other unusual condition. The inspections have taken place via boat and photo documentation has been collected of all suspect or deficient areas.

Dock wall inspections and riparian buffer zone transects above water inspections (Figure 4) were also conducted at this time. Results were recorded on the inspection report form provided in the LTM&M Plan during the inspection (Appendix C), and additional site photos are included in Appendix D.

2.3.3 Results

Cap thickness measurements to determine the presence of gravel and cobbles in aquatic areas were conducted in June at the time pore water sample SedPoints were installed. Measurement data are summarized in Table 4. Measurements could not be made to the design depth at two locations within Slip 7 (S7-CT-02 and S7-CT-03). Refusal was met when pushing cores at these locations. Refusal was on coarse material placed at that location. No thinning of the cap material was observed. The thickness measurements were consistent with past measurements at these locations. Sediment cores were collected at S7-CT-02 and S7-CT-03 to observe the soil profile (Table 4). Fine grained environmental media was present at a thickness of 0.5 to 0.8 feet over cap sand, indicating that erosion is not occurring in Slip 7.

Lake Superior and St. Louis River water levels in 2014 were near the long-term average elevation, which is 6 to 18 inches above the level of the last several years. Water levels in 2015 were compared, and found to be similar to those of 2014.

The heads of Stryker Bay and the CAD have areas of erosion where overland runoff has formed channels in the cap material. These areas were surveyed in 2015 to confirm that the cap in these areas is thinner than designed, and repairs are planned for the spring of 2016.

The inspection transect at the south end of the 59th Avenue West Peninsula crosses an upland area which is well-vegetated and no erosional areas were observed.

The dock wall along the western edge of Slip 6 (CAD) appears to be intact, and has no visible deficiencies. The only remnants of the previously installed silt fences along the eastern shore of Slip 6 (CAD) are a few wooden stakes.

The 54th Avenue West Peninsula had increased vehicle activity in 2013 and 2014, with a well-worn road crossing the culvert at the north end of Slip 7 to gain access to the peninsula. This roadway is still evident, although it appears that there has been no more traffic accessing the site from that location. Boulders were placed across this entry point in late fall of 2014 to block vehicular access and repairs were made to the most eroded areas near the southwestern shoreline. Ruts remain, and are inundated, due to higher water levels. The cobble armor along the southern end of this peninsula appears to be intact, with much of the cobble still underwater.

Conditions along the Slip 7 dock wall appear to be similar to the 2013 and 2014 inspections, with several areas where the soil behind the dock wall has washed out.

Tallas Island shoreline inspections completed during the vegetation survey in August 2015 observed similar conditions to 2014, including the area of deposition at the mouth of Knowlton Creek.

2.3.4 Discussion

The erosional areas along the shorelines of Stryker Bay and Slip 6 have been surveyed, and corrective action will be conducted in accordance with the LTM&M Plan in 2016.

The culvert area at the north end of Slip 7 had large boulders installed November 2014 to prevent erosion caused by vehicle access at the 54th Avenue West Peninsula. This area was monitored in 2015, and appears to be limiting vehicle access at this location.

2.4 Benthic Assemblage and Abundance

Benthic macroinvertebrate assemblage (community composition) and abundance will be monitored at the SLRIDT site in order to track the reestablishment of the biotic community after completion of the response actions. This testing includes determination of species abundance and diversity in benthic macroinvertebrate assemblages. The benthic macroinvertebrate assemblage and abundance sampling at the SLRIDT site will be compared to the North Bay reference site. Specifically, Stryker Bay, Slip 7 and the CAD will be monitored for the reestablishment of the benthic macroinvertebrate communities and compared to the North Bay reference site every two years starting in 2014. The next benthic sampling event will be in 2016.

2.5 Aquatic and Upland Vegetation Sampling

2.5.1 Introduction

A Public Waters Restoration Permit issued by the Minnesota Department of Natural Resources (MNDNR) for construction of the RAs includes requirements for vegetation monitoring at the SLRIDT site and at the TICMP site.

Sampling methods, locations and frequencies for vegetation monitoring at SLRIDT, TICMP, and a reference site (Kingsbury Bay) are described in the draft LTM&M Plan. Sample locations are shown on Figure 5 and Figure 6. Sample locations and sampling methods will remain constant during the five years of annual monitoring to allow for documentation of vegetation changes over time across all of the sites.

Vegetation monitoring began in 2011 in accordance with the draft LTM&M Plan, pending approval of the final LTM&M Plan. Field work for the fifth and final annual survey was completed in August of 2015.

2.5.2 Vegetation Sampling

2.5.2.1 Submerged Aquatic Vegetation

Submerged aquatic vegetation (SAV) sample locations were determined in 2011 by placing evenly spaced transects within each water body within the SLRIDT and TICMP project areas (Figures 5 and 6), and those locations were sampled again in 2012, 2013, 2014, and 2015. Sample plots were placed at regular intervals along each transect, depending on the transect length.

SAV sampling was completed in accordance with standard methodologies: lake rake sampling for SAV (Owens, et al, 2010; Kenow, et al, 2007; and Rodusky, et al, 2005), and in accordance with the SAV sampling procedure (Yin, Winkelman and Langrehr, 2000), as described in the draft LTMMP. Field scientists used a boat to access pre-determined points at the SLRIDT site. Water depth was determined at each sample location with a rod graduated to the nearest 0.05 meters. Samples were collected at locations where water depth was 8 feet deep and less.

A rake was used to retrieve plants from a one square meter sampling area off the side of the boat. Most plants were identified in the field. Those not identified in the field were assessed in an off-site laboratory shortly after collection. Individual species and different life forms of aquatic vegetation (e.g., submersed and rooted floating–leaf) were recorded as either present or absent at each subsampling area based on visual examination and a rake sample. When present, submersed species were given a density rating (Table 9) based on their thickness on the rake teeth. When present, rooted floating–leaf and emergent species were given a percent cover rating based on visual examination.

Table 9 Rake Method Density Ratings

Percent of rake teeth filled	Density rating
76-100	4
51-75	3
26-50	2
1-25	1
no plants retrieved	0

Species that had not been recorded in the six subsampling areas but were observed at the site were recorded and marked as "additional" species. If any sediment adhered to the rake, it was also assessed and noted at that time. Plant species were determined using field guides and plant keys in the field, and percentages of those plants collected in each rake sample were estimated.

2.5.2.2 Upland Vegetation

Emergent and upland vegetation monitoring was performed at six pre-determined locations at the SLRIDT site in 2011, 2012, 2013, 2014, and 2015 (Figure 5). Each assessment location consisted of a 15 square meter area. The vegetation was identified in the field, and the plant density was measured using cover classes (Daubenmire, 1959). The vegetation cover classes are included in the survey results for the upland vegetation in Appendix E. Plant species were determined using field guides and plant keys in the field by a botanist/plant taxonomist and a technician, under the guidance and supervision of a senior botanist/plant taxonomist.

2.5.2.3 Invasive and Non-Native Species Assessment

Invasive and non-native plant species were observed during the upland vegetation plot assessments and during the invasive species control site visits (Figure 7). All locations had non-native invasive plant species, and included one or more of the following:

- Canada thistle *(Cirsium arvensis)*
- Bird's foot trefoil *(Lotus corniculatus)*
- Purple loosestrife *(Lythrum salicaria)*
- Sweet clover *(Melilotus officinalis)*
- Common tansy *(Tanacetum vulgare)*
- Reed canary grass *(Phalaris arundinacea)*
- Spotted knapweed *(Centaurea maculosa)*

Non-native species or exotic plant species which are often invasive are those that have been introduced by human action, and often disrupt natural/native plant communities or ecosystems. Seed sources on adjacent lands and within the St. Louis River estuary will likely be on-going contributors of invasive plant species in the SedOU work areas.

Invasive and non-native plant species assessments were completed in May and October of 2015.

2.5.3 Data Analysis Methods

2.5.3.1 Species Present and Species Richness

The total number of species present, or the number of species occurring in a plot or study area is termed species richness and is a measure of species diversity. Species richness is sensitive to sample unit area and the skill of the observer.

Species richness can be expressed as the average number of species per sampling unit:

$$\bar{y} = \frac{\sum_{i=1}^{n} y_i}{n}$$

Where: y_i = the number of species in sampling unit i
n = the number of sampling units.

2.5.3.2 Species Diversity

Species diversity for plant sampling will be measured using the H' – the Shannon Diversity Index (Macgurran, 1988).

$$H' = -\sum_{i=1}^{S} p_i \ln p_i$$

Where: S = The number of species (also called species richness)

p_i = The relative abundance of each species, calculated as the proportion of the total sample belonging to the *i*th species: $\frac{n_i}{N}$

2.5.3.3 Coefficients of Conservatism

The concept of individual species conservatism to natural habitats and communities is a fundamental principle in the Floristic Quality Assessment Index (FQAI). The Coefficient of Conservatism (*C*) value is simply a numerical rating of an individual species' conservatism and habitat fidelity in relation to disturbance. *C*-values range from 0 to 10 and are assigned to each native species in a flora based upon the best professional judgment of an expert review panel within the region for which the values are applicable. Non-native species are not assigned *C*-values, as they were not present during the evolution of native species and local plant communities. They may, however, be included in index calculations with a value of 0. Species that are least conservative, or show the least fidelity to specific natural habitats, are assigned a value of 0, while 10 is reserved for those species that are most conservative (Milburn, et al., 2007). *C*-values from Milburn, et al. (2007) are used and the mean values for all species in a plot were calculated.

2.5.3.4 Plant Community Quality, or Floristic Quality Assessment Index

The FQAI is a tool used to objectively quantify the natural quality of a given habitat. Used over time, performing a Floristic Quality Assessment (FQA) assists in demonstrating whether mitigation performance standards are being met.

FQA is performed by calculating a Mean Coefficient of Conservatism (*mean C*) and a Floristic Quality Index (*FQI*). *Mean C* is calculated by summing the Coefficient of Conservatism (*C*) for each taxa at a site and dividing by the total number of taxa (*n*) to obtain a mean:

$$(\overline{C} = \sum C/n)$$

As with *C*, *mean C* scores range from 0-10. The closer to "10" a site ranks, the greater the biodiversity, richness, and level of habitat fidelity.

FQI is a weighted index of species richness and allows for comparisons between dissimilar sites. To obtain the *FQI*, the *mean C* is multiplied by the square root of *n*:

$$(FQI = \overline{C}\sqrt{n})$$

It is interpreted that the higher the *FQI* value, the more similar the site is to the pre-European settlement condition.

2.5.3.5 Percent Cover (rooted floating-leaf and emergent life form)

Cover is commonly measured as "total cover", which is the percentage of all vegetation covering the ground surface inside the plot, or as "species cover", which is the percentage of the target species covering the ground surface inside the plot.

The percent cover of rooted floating–leaf and emergent life forms in a stratum was computed using the following formula:

$$C = \frac{\sum_{j=1}^{m} L_j \cdot A}{M}$$

Where: Lj is the cover rating at individual sites, and
A is the midpoint of the corresponding percent cover, and
M is the total number of sites in the stratum.

Percent cover in a pool was computed as the average of all shallow water strata, weighted by acreage:

$$C = \frac{\sum_{j=1}^{m} C_j \cdot S_j}{\sum_{j=1}^{m} S_j}$$

Where: Cj is percent cover in stratum j and Sj is the acreage of stratum j.

2.5.3.6 Relative Cover

Relative cover for plants represents the proportion of the whole sample represented by each species. The sum of all species relative cover within a plot will equal 100 percent. Relative cover is calculated using the cover class midpoint value for each species.

$$p_i = x_i / N$$

Where: $N = \sum x_i$

Where: p_i = the relative cover of plant species *i*

x_i = the cover class midpoint value for species *i*

N = the sum of all species cover classes Plant Community Similarity – Jaccard's Index

Similarity was measured using the Jaccard coefficient, which describes the degree of similarity between two communities in terms of shared species. The Jaccard coefficient takes two sample sets and divides the intersection of elements in the two sets by the union of elements within the two sets.

Jaccard coefficient = $J(A,B) = |A \cap B| / |A \cup B|$

A coefficient of 1.0 demonstrates 100% similarity between two communities; the closer the coefficient approaches 0.0, the more dissimilar. Each SAV community was compared to the Kingsbury Bay reference site for degree of species similarity.

2.6 Vegetation Monitoring Results - 2015

2.6.1 General Plot Descriptions

2.6.1.1 Slip 7

Sample plots in Slip 7 were set up at regularly spaced intervals on evenly spaced horizontal transects (Figure 5). The locations were analyzed with the most recent bathymetry to determine depth restrictions for the best vegetation sampling (Appendix F). Due to the historic boat slip configuration, only a very narrow zone close to the western shore would have submerged aquatic plants given that the depth of water within the majority of the slip is greater than 8 feet and the near shore area is extremely shallow. Water depths are greater than 8 feet along the dock wall that defines the eastern boundary of the slip. Therefore, only those four plots along the western shoreline are included in the results.

2.6.1.2 Slip 6

In Slip 6, the sampling transects were evenly spaced north to south with sampling plots along each transect (Figure 5). The depth of Slip 6 was mostly less than 8 feet, which allowed for some variability in the plot locations.

2.6.1.3 Stryker Bay

Stryker Bay plots were also located along horizontal transects (Figure 5). The irregular configuration of both east and west shorelines made the plots evenly spaced along each transect, but did not line up north and south.

2.6.1.4 Tallas Island

Tallas Island transects were oriented perpendicular to each shoreline, and were evenly spaced from one end of the bay behind the island to the other end, (Figure 6). Since each transect was a different length, the number of plots were determined by those lengths, ranging from 1-3 plots per transect.

2.6.1.5 Kingsbury Bay

Kingsbury Bay is the reference site for comparison of SAV recovery in the work areas; plots were also located along horizontal transects.

2.6.1.6 Upland Sites

The upland sites included in this survey were located along the shoreline at two places on Stryker Bay, one at the riverward end of the 59th Avenue Peninsula, and three more on the 54th Avenue Peninsula (Figure 6). These results are tabulated separately from the aquatic sites. (Appendix E).

2.6.1.7 Reference Sites

Two additional reference sites were added in 2015, as required by the MN DNR in the Supplemental Permit Information. These were located in a shoreline wetland (Ref 1) and an upland (Ref 2) to compare with vegetation found at the wetland buffer and upland site locations. (Figure 5)

2.6.1.8 Transect Inspection Assessment Sites

Inspection transects, as shown on Figure 4, are located along the northeast shoreline of Stryker Bay, the southern shore of the 59th Avenue West Peninsula, the eastern shore of the CAD, and four are along the western shoreline of Slip 7; at the north and south ends, with two centrally located. These assessment sites provide data on the distribution, composition, density, and recovery of the upland vegetation.

2.6.1.9 Invasive/Non-native Plant Surveys

Across the site, nine plots were established to assess invasive and non-native plants (Figure 7). These were placed in the Stryker Bay riparian area, the 54th Avenue West Peninsula upland area, the Slip 6 riparian buffer area, the Slip 7 riparian buffer area, and the 59th Avenue West riparian buffer areas in both Minnesota and Wisconsin.

2.6.2 Submerged Aquatic Vegetation Data Analysis

2.6.2.1 SAV Species Presence and Species Richness

Plants were identified from all aquatic sites. SAV species distribution across sites is shown in Figure 8, and species richness is summarized in Table 10. More plant species were observed at most sites than were collected with the rake (see Appendix G for complete SAV species list).

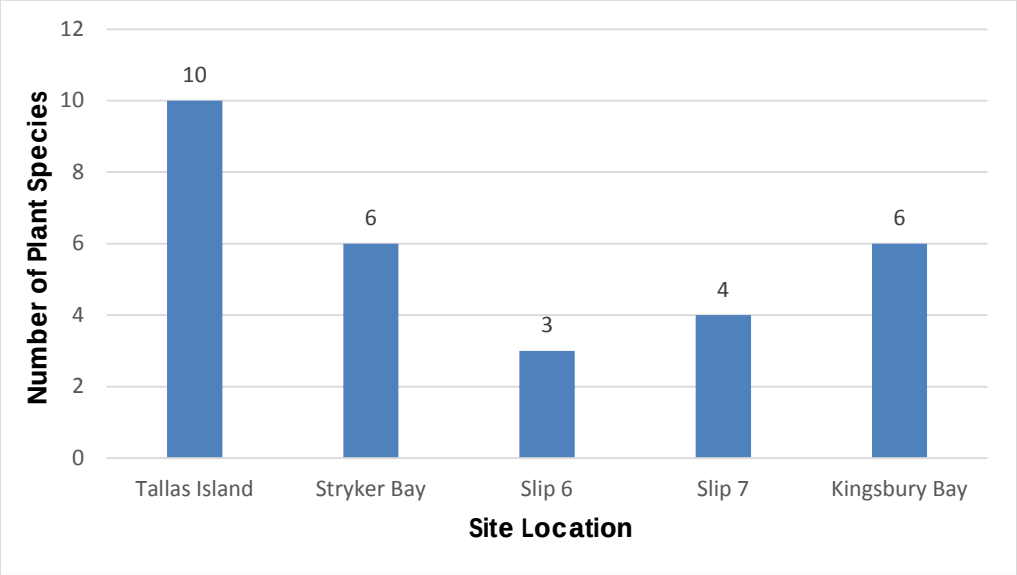


Figure 8 Number of Plant Species per Site, 2015

Table 10 Species Richness for SAV Sites 2015

	Tallas Island	Stryker Bay	Slip 6	Slip 7*	Kingsbury Bay	TOTALS
# of Sampling Plots	18	18	21	4	12	73
Sample Plots with Vegetation	17	8	7	4	8	44
Number of Plant Species per Site	10	6	3	4	6	29
% of Sample Plots with vegetation	94.4%	44.4%	33.3%	100.0%	66.7%	NA

*Only 4 of 12 plots were within the correct depth range

2014	Tallas Island	Stryker Bay	Slip 6	Slip 7	Kingsbury Bay*	Totals
# of Sampling Points	21	18	21	12		72
Sample Points with Vegetation	20	7	4	3		34
Number of Plant Species per Site	17	6	8	4		35
% of Sample Points with Vegetation	95.2%	38.9%	19.0%	25.0%		NA

2.6.2.2 SAV Non-native Species

Non-native plant species were not observed in any of the SAV sampling plots. Purple loosestrife was observed along the shoreline at Tallas Island.

2.6.2.3 SAV Species Diversity

The Shannon-Weiner Diversity Index was not calculated for the 2015 survey.

2.6.2.4 SAV Coefficients of Conservatism

The results of the 2015 mean coefficient of conservatism values by site are presented in Figure 9. The mean *C*-values ranged from a low of 4.8 at Kingsbury Bay and Stryker Bay, to a high of 5.5 and 5.4 at Slip 7 and Tallas Island respectively.

As with *C*, *mean C* scores range from 0-10. The closer to "10" a site ranks, the greater the biodiversity, richness, and level of habitat fidelity, as defined in Table 11.

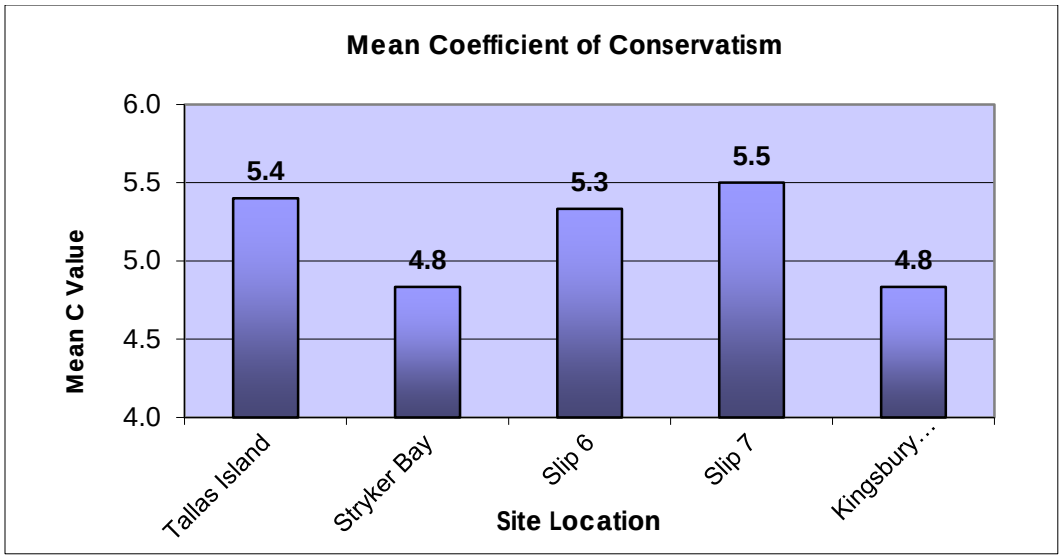


Figure 9 **2015 Mean Coefficient of Conservatism by Site**

Table 11 **Coefficient of Conservatism Scale Descriptions**

C-value	Description
0	Plants with a wide range of ecological tolerances. Often these plants are opportunistic invaders of natural communities (e.g. *Phalaris arundinacea)* or native species typical of disturbed or ruderal communities (e.g., *Ambrosia artemisiifolia* or *Hordeum jubatum* ssp. *jubatum*)
1-2	Widespread taxa that are not typical of a particular community (e.g., *Impatiens capensis* or *Acer negundo*)
3-5	Plants with an intermediate range of ecological tolerances that typify a stable phase of some native communities, but persist under some disturbance (e.g., *Carex comosa* or *Potamogeton richardsonii*)
6-8	Plants with a moderately narrow range of ecological tolerances that typify stable or late successional native plant communities (e.g., *Epilobium leptophyllum* or *Vallisneria americana*)
9-10	Plants with a narrow range of ecological tolerances that exhibit very high fidelity to a narrow range of stable habitat requirements (e.g., *Arethusa bulbosa* or *Salix candida*)

2.6.2.5 SAV Plant Community Quality – Floristic Quality Assessment Index

The results of the *FQA* are presented below in Figure 10. Tallas Island scored highest in *FQI*. Based on the results, Tallas Island represents moderately valuable natural habitat. Kingsbury Bay, Stryker Bay, and Slip 7 scored nearly identically in FQI. Slip 6 scored lowest of all sites in *FQI*. More natural sites will have higher FQI values.

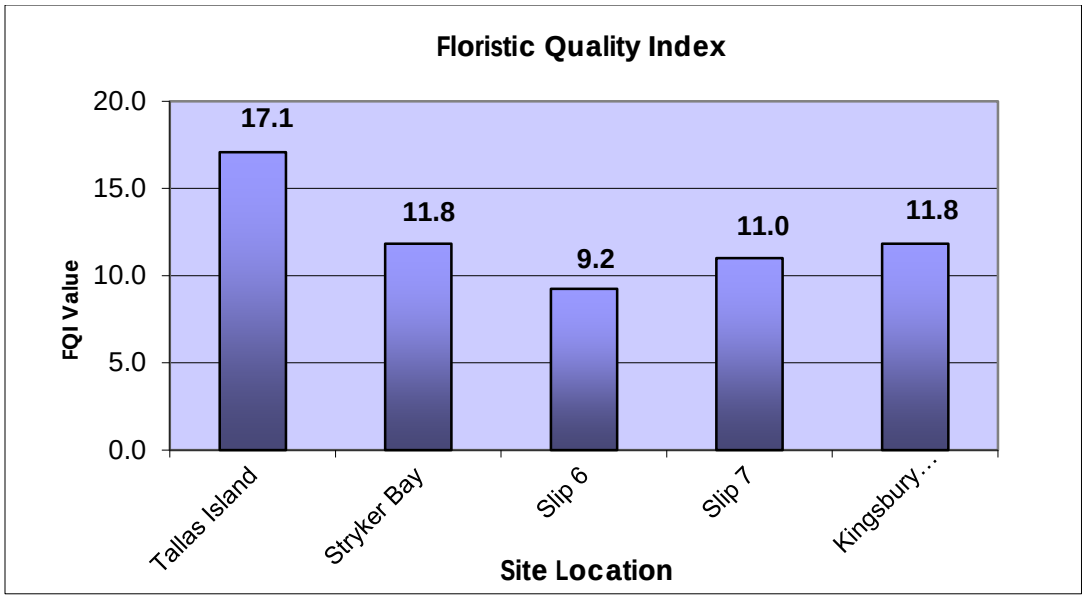


Figure 10 2015 Floristic Quality Index Values by Site

2.6.2.6 Cover – Absolute and Relative Cover

Percent cover for SAV was not calculated for 2015 due to the low plant density at the sites. Percent of sample plots with vegetation was used as a surrogate for cover – Tallas Island (94.4%), Slip 7 (100%), and Kingsbury Bay (66.7%) had the highest percentages, while Stryker Bay (44.4%), and Slip 6 (33.3%), as listed in Table 10, had lower percentages of plots with vegetation. Cover measures were not calculated using the information collected for 2011, 2012, 2013, 2014, or 2015 as vegetative cover was sparse, and density was consistently too low to allow for meaningful cover numbers to be developed. Plants not collected by the rake were recorded in the field notes and are included in the vegetation assessment but as such do not have cover values. Table 12 provides the sampling results that provide an overview of surrogates of plant cover; in particular the percentage of sample plots with vegetation provides an indirect measure of plant cover.

2.6.2.7 Plant Community Similarity

Plant community species similarity was calculated using Jaccard's coefficient. A Jaccard's coefficient of 1.0 demonstrates 100% similarity between two communities; the closer the coefficient approaches 0.0, the more dissimilar the communities. Each SAV community was compared to the Kingsbury Bay reference site for degree of species similarity. The number of plant species identified in 2015 was lower than in previous surveys. Tallas Island and Stryker Bay were most similar to Kingsbury, at 0.71 and 0.67 respectively, and Slip 6 and Slip 7 were about 60% similar to Kingsbury Bay, at 0.58 and 0.57.

Table 12 Jaccard's Coefficient

Location	Jaccard's Coefficient
Tallas Island	0.71
Stryker Bay	0.67
Slip 6	0.58
Slip 7	0.57

2.6.3 Upland Monitoring

The 2015 monitoring results from the upland areas indicate variable coverage – ranging from 87% coverage to 181% across the sites (Table 13). See Appendix E for the complete plant species lists and cover classes for the upland monitoring sites from 2011 to 2015.

Table 13 Upland Monitoring Location Summary, 2015

Site	Number of Species	Absolute Cover (%)	Non-native species
Site: 59-UV-01	29	87/181*	Yes
Site: 59-UV-02	18	167	Yes
Site: 54-UV-01	26	154	Yes
Site: 54-UV-02	11	123	Yes
Site: 54-UV-03	26	105	Yes
Site: 54-UV-04	30	114	Yes

*This plot has two communities

2.6.4 Invasive and Non-native Plant Assessment

Spring and fall site visits were conducted to review the seeding, vegetation plantings, and invasive species control progress. Several invasives were present in varying abundance, including Tansy *(Tanacetum vulgare)*, Sweet clover *(Melilotus alba)*, Birdsfoot trefoil *(Lotus corniculatus)*, Spotted knapweed *(Centaurea maculosa),* Reed canary grass *(Phalaris arundinacea),* and Canadian thistle *(Cirsium arvense)*. Summer herbicide treatments have significantly reduced populations of purple loosestrife *(Lythrum salicaria)* and spotted knapweed. Prairie grass planted areas have continued to improve, especially in the sedge meadow areas. Overall, the seeded areas have shown improved coverage except for sandy and gravelly areas where plants are stunted and sparse. Generally, the density and diversity of the prairie and wildflower plant species is increasing, especially in the sedge meadow area. Tree and shrub species such as alders and willows are spreading across the site. Areas that have little to no topsoil are not re-vegetating well, and are often dominated by aggressive invasive plant species. These areas include the eastern shore of Stryker Bay, parts of the eastern shore of Slip 6, and along existing railroad tracks.

2.6.5 Monitoring Summary - 2015

The 2015 vegetation survey assessed the re-vegetation progress of post-Response Action construction at the SLRIDT and Tallas Island sites. Vegetation monitoring has been conducted annually for a period of five years; this fifth and final round (August 2015) of monitoring showed that:

- Species composition for SAV was greatest in Tallas Island (10 species). Stryker Bay (6 species), and Kingsbury Bay (6 species) have slightly lower species richness, and Slip 7 (4 species) and Slip 6 (3 species) had the lowest species richness (Table 14, Figure 11).
- Percent cover for SAV was not calculated for 2015 due to the low plant density. Percent of sample plots with vegetation was used as a surrogate for cover – Slip 7 (100%), Tallas Island (94.4%) and Kingsbury Bay (66.7%) had the highest percentages of plots with vegetation. Stryker Bay had 44.4% of plots with vegetation, and Slip 6 had the lowest percentages of plots with vegetation at 33.3% (Table 14, Appendix H).
- All of the upland plots had exotic/invasive species present
- Upland plot vegetation was compared to two reference sites (Appendix I). Inundated plots were compared to Ref 1 (wetland), and generally had 4 to 5 species in common with the 8 species at the reference location. Upland plots with no inundation had less similarity to Ref 2 (more upland plant species), having only 1 to 3 species in common out of 12 plant species. This lack of similarity may be attributed to the difference in plant communities. All of the monitored vegetation plots have had good diversity, all with different plant species compositions. Each of the wetland buffer plots are different from each other, so finding a reference wetland to compare to all of them would likely be difficult. The same holds true for the upland plots.

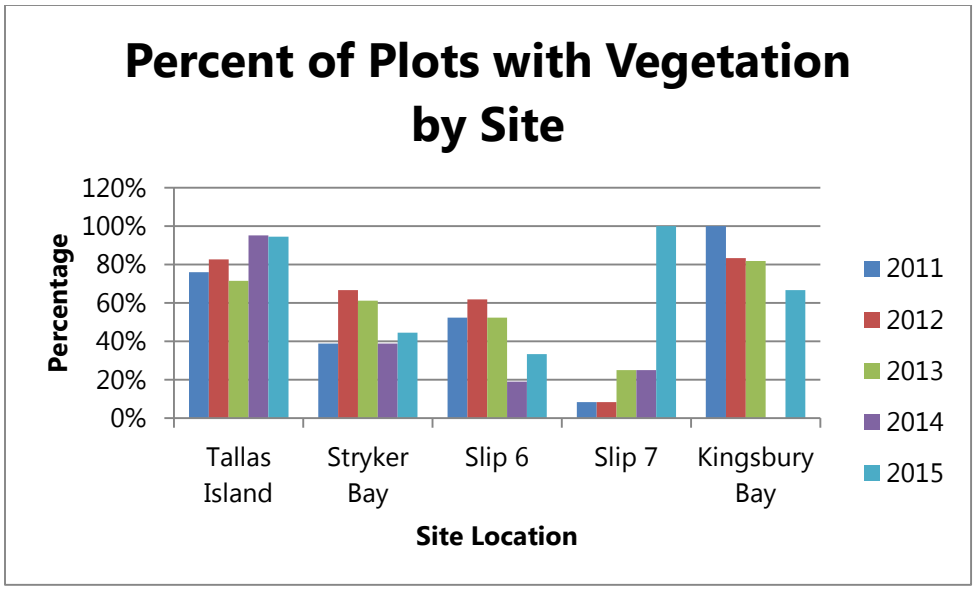
Coverage and species richness results are comparable to expectations for recently restored sites. Slip 7 has a bathymetry that is the least conducive to SAV growth due to the depth of water (mean plot depth = 7.73 feet) and most exposure to potential wave energy impacts. Twelve plots are monitored, but only four of those are within the depth range conducive to aquatic plant growth. Plants were found at all four of those plots, which gives an artificially high percentage of SAV coverage. Slip 6 has the lowest percentage of plots with SAV and has the lowest species richness. Of all the sites, Tallas Island had nearly complete coverage of SAV and the greatest number of aquatic plant species in 2015, indicating it has recovered well from disturbance; and the anticipated re-vegetation of the dredged area is occurring. Stryker Bay and Slip 6 may continue to increase in SAV coverage over time given the number of species present in 2011, 2012, 2013, 2014, and 2015, even though SAV coverage has not yet recovered from the 2012 flood, and has not yet adjusted to the higher water levels.

Monitoring results from the upland areas indicate increased coverage – ranging from 87% coverage to more than 100% across the sites. Vegetation management was completed in 2012 and 2014 in the upland areas for several invasive species including tansy, thistle, knapweed and sweet clover.

Table 14 2011-2015 SAV Comparison

2011	Tallas Island	Stryker Bay	Slip 6	Slip 7	Kingsbury Bay	Totals
Number of Sampling Plots	25	18	21	12	12	88
Sample Plots with Vegetation	19	7	11	1	12	50
Number of Plant Species per Site	24	18	16	7	19	84
Percent of Sample Plots with Vegetation	76.0%	38.9%	52.4%	8.3%	100.0%	NA
2012	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay**	**Totals**
Number of Sampling Plots	23	18	21	12	12	86
Sample Plots with Vegetation	19	12	13	1	10	55
Number of Plant Species per Site	21	9	9	2	12	53
Percent of Sample Plots with Vegetation	82.6%	66.7%	61.9%	8.3%	83.3%	NA
2013	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay**	**Totals**
Number of Sampling Plots	21	18	21	12	11	83
Sample Plots with Vegetation	15	11	11	3	9	49
Number of Plant Species per Site	13	5	6	1	6	31
Percent of Sample Plots with Vegetation	71.4%	61.1%	52.4%	25.0%	81.8%	NA
2014	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay ***	**Totals**
Number of Sampling Plots	21	18	21	12	--	72
Sample Plots with Vegetation	20	7	4	3	--	34
Number of Plant Species per Site	17	6	8	4	--	35
Percent of Sample Plots with Vegetation	95.2%	38.9%	19.0%	25.0%	--	NA
2015	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay**	**Totals**
Number of Sampling Plots	18	18	21	4	12	73
Sample Plots with Vegetation	17	8	7	4	8	44
Number of Plant Species per Site	10	6	3	4	6	28
Percent of Sample Plots with Vegetation	94.4%	44.4%	33.3%	100%	66.7%	NA

*not sampled in 2014



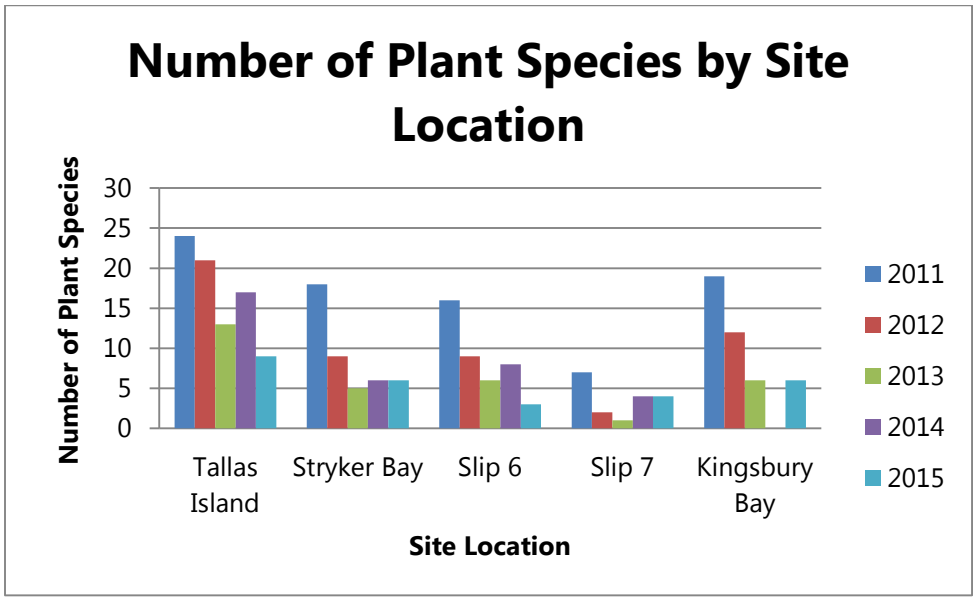


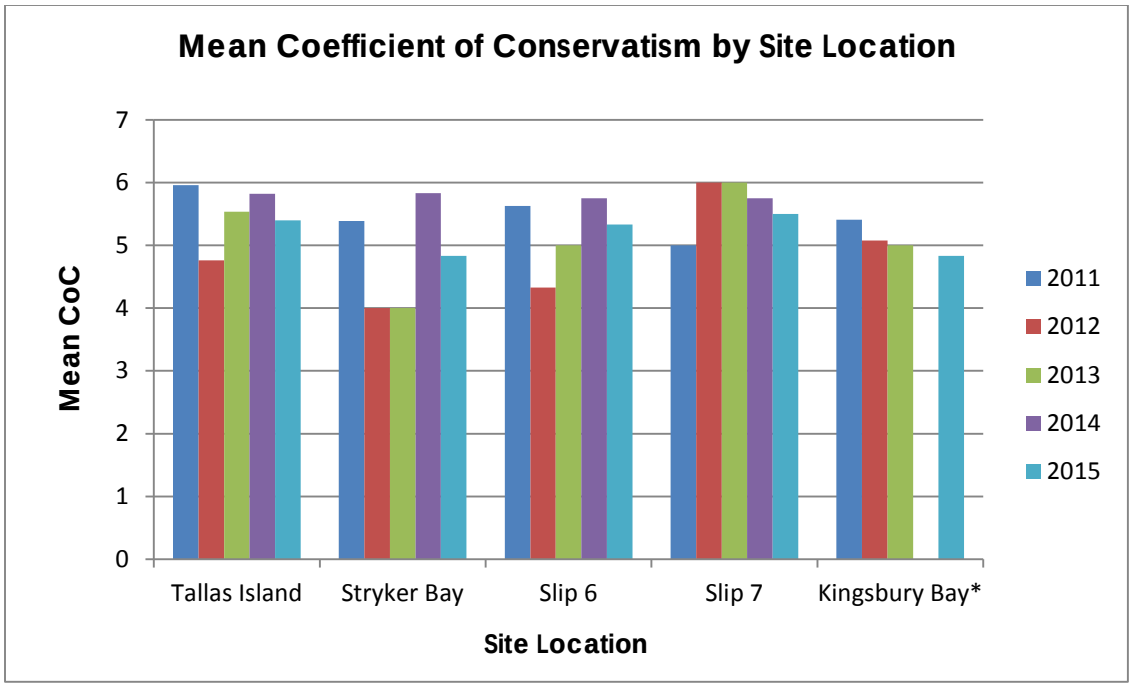
Figure 11 2011-2015 SAV Comparison

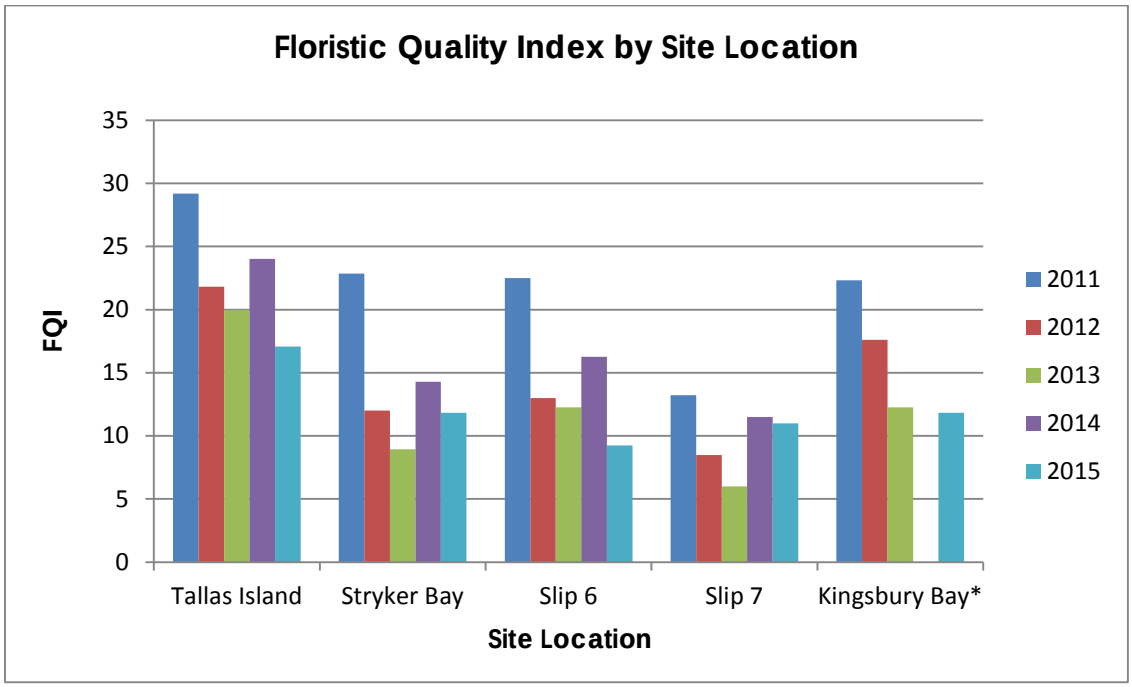
The characteristics of the SAV community across all sites were assessed with regard to the FQI and mean coefficient of conservatism values (Table 15, Figure 12). At all sites, the number of plant species has declined every year except for 2014, which showed a small increase.

Table 15 2011 – 2015 SAV Comparison – Mean CoC, Floristic Quality

2011	Tallas Island	Stryker Bay	Slip 6	Slip 7	Kingsbury Bay
Mean Coefficient of Conservatism	5.96	5.39	5.63	5	5.41
Floristic Quality Index	29.19	22.86	22.5	13.23	22.31
Number of Plant Species per Site	24	18	16	7	19
Percent of Sample Plots with Vegetation	76.0%	38.9%	52.4%	8.3%	100.0%
2012	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay**
Mean Coefficient of Conservatism	4.76	4	4.33	6	5.08
Floristic Quality Index	21.82	12	13	8.49	17.61
Number of Plant Species per Site	21	9	9	2	12
Percent of Sample Plots with Vegetation	82.6%	66.7%	61.9%	8.3%	83.3%
2013	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay**
Mean Coefficient of Conservatism	5.5	5.0	4.0	5.0	6.0
Floristic Quality Index	20.0	12.2	8.9	12.2	6.0
Number of Plant Species per Site	13	5	6	1	6
Percent of Sample Plots with Vegetation	71.4%	61.1%	52.4%	25.0%	81.8%
2014	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay***
Mean Coefficient of Conservatism	5.8	5.8	5.8	5.8	--
Floristic Quality Index	24.0	14.3	16.3	11.5	--
Number of Plant Species per Site	17	6	8	4	--
Percent of Sample Plots with Vegetation	95.2%	38.9%	19.0%	25.0%	--
2015	**Tallas Island**	**Stryker Bay**	**Slip 6**	**Slip 7**	**Kingsbury Bay**
Mean Coefficient of Conservatism	5.4	4.8	5.3	5.5	4.8
Floristic Quality Index	17.1	11.8	9.2	11.0	11.8
Number of Plant Species per Site	10	6	3	4	6
Percent of Sample Plots with Vegetation	94.4%	44.4%	33.3%	100%	66.7%

*Kingsbury Bay not sampled in 2014





*Kingsbury Bay not sampled in 2014

Figure 12 2011-2015 SAV Comparison – Floristic Quality

All upland vegetation monitoring sites have shown an increase in the number of plant species, percent absolute cover and the presence of non-native plant species between 2011 and 2015 (Table 16). The overall increase in percent absolute cover seems to show that the upland restoration is proceeding well, and having a greater diversity of plant species shows the presence of improved habitat.

Table 16 Upland Site Comparisons, 2011 – 2015

Site	Number of Species					Absolute Cover (%)					Non-native species				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Site: 59-UV-01	10	19	25	24	29	100	95	34/ 145	34/ 112	87/ 181	Yes	Yes	Yes	Yes	Yes
Site: 59-UV-02	13	17	15	16	18	50	50	88	109	167	No	No	No	Yes	Yes
Site: 54-UV-01	6	21	18	22	26	60	60	107	92	154	No	No	No	Yes	Yes
Site: 54-UV-02	12	15	12	19	11	40	40	90	108	123	Yes	Yes	Yes	Yes	Yes
Site: 54-UV-03	11	25	19	27	26	75	75	85	93	105	No	No	No	Yes	Yes
Site: 54-UV-04	21	35	30	31	30	95	95	92	105	114	Yes	Yes	Yes	Yes	Yes

2.7 Benthic Bioaccumulation Monitoring

Benthic bioaccumulation monitoring is planned in order to assess recovery of the benthic invertebrate communities at the SLRIDT site. Monitoring is scheduled for in 2017 to confirm that the cap is preventing the upward migration of COC at the SLRIDT site and that human health and environment are being protected.

Bioaccumulation sampling plans call for assessments to be performed at both the capped areas at the SLRIDT site and the North Bay reference area (US EPA, 2000). If this sampling event provides similar results between North Bay and the SLRIDT site then no other bioaccumulation sampling will be conducted unless the tiered approach to long term monitoring indicates otherwise, in accordance with the LTM&M plan. Following the tiered approach to sampling, bioaccumulation sampling will be necessary only if there are two consecutive sample results at a particular location that exceed the PRAOs for PAHs or other triggers for Tier III as discussed in the sections above.

3.0 Conclusions and Recommendations

3.1 Pore Water

Pore water sampling was completed near the base of the BAZ to evaluate potential PAH migration into the cap from underlying PAH-impacted sediment. Target PAH compound concentrations were less than detection limits and/or FCVs in 23 of the 28 samples. Four sample locations contained naphthalene at concentrations exceeding FCVs: SB-PW-02 in Stryker Bay; S7-PW-06, S7-PW-08, and S7-PW-10 located in the filled (upland) portion of Slip 7 (Figure 2). These four samples represent the only locations where a compound-specific FCV (naphthalene) was exceeded. The sum of the PAH to FCV ratios exceeded 1 at these four location and at S6-PW-01. No individual PAH exceeded FCVs in the sample from S6-PW-01. Additionally, no other PAH compound concentrations exceeded FCVs in any sample.

Tier I and an expanded Tier II sampling plan will be implemented in 2016. The expanded Tier II sampling will include three additional PAH pore water sample points to evaluate the lateral extent of the potentially impacted pore water in the vicinity of Slip 7. Pore water samples will also be collected at depths of ½ the BAZ to evaluate vertical extents. This area near Slip 7 is in an upland area (wet meadow) and does not represent a benthic environment. The area in Stryker Bay where FCVs are exceeded has been delineated.

3.2 Cap Stability

Cap thickness measurements and probing to determine the presence of gravel and cobbles in aquatic areas were conducted in June. The thickness measurements were consistent with past measurements and probing confirmed that armor material is in place at these locations.

The heads of Stryker Bay and the CAD have areas of erosion where overland runoff has formed channels in the above-water cap material. These areas were surveyed in 2015 to confirm that the cap in these areas is thinner than designed, and repairs are planned for the spring of 2016.

The inspection transect at the south end of the 59th Avenue West Peninsula crosses an upland area which is well-vegetated and no erosional areas were observed.

The dock wall along the western edge of Slip 6 (CAD) appears to be intact, and has no visible deficiencies. The only remnants of the previously installed silt fences along the eastern shore of Slip 6 (CAD) are a few wooden stakes.

The 54th Avenue West Peninsula had some unauthorized vehicle activity in 2013 and 2014, with a well-worn road crossing the culvert at the north end of Slip 7 to gain access to the peninsula. This roadway is still evident, although it appears that there has been no more traffic accessing the site from that location. Boulders were placed across this entry point in late fall of 2014 to block vehicular access and repairs were made to the most eroded areas near the southwestern shoreline of the peninsula. Ruts remain, and are inundated, due to higher water levels. The cobble armor along the southern end of this peninsula appears to be intact, with much of the cobble still underwater.

Conditions along the Slip 7 dock wall appear to be similar to the 2013 and 2014 inspections, with several areas where the soil behind the dock wall has washed out.

Tallas Island shoreline inspections completed during the vegetation survey in August 2015 observed similar conditions to 2014, including the area of deposition at the mouth of Knowlton Creek.

3.3 Vegetation Monitoring

Tallas Island has nearly complete coverage of SAV and the greatest number of aquatic plant species in 2015, indicating it has recovered well from disturbance; and the expected re-vegetation of the dredged area is occurring. Stryker Bay, Slip 6, and Slip 7 should continue to increase in SAV coverage over time.

The upland and wetland buffer monitoring plots have generally continued to increase in the number of species as well as the total vegetative cover (Table 16). Each of these sites, when compared to the new upland and wetland reference sites, showed a similar number of different plant species, and although they only had up to 5 species in common, all showed good percent cover.

Average estuary water levels have risen considerably during the last three years. Between 2011 and 2012, there was essentially no change in average water elevation. There was an average water surface elevation increase of about 7 inches between 2012 and 2013, and more than 10 inches between 2013 and 2014. The average water level in 2015 appears to be similar to 2014. A review of lake level data showed that the average water level has risen more than 16 inches since 2011. (NOAA, 2015) These changes were observed in the sampling location water depths. The overall average water level rise of more than 16 inches since 2011 may be negatively influencing SAV establishment in some locations; Slip 7 has a bathymetry that is the least conducive to SAV growth due to the depth of water (mean sampling depth in 2015 = 7.73 feet) and most influenced by wave energy impacts.

Overall, vegetation is recovering gradually on the upland areas that have been monitored. The submerged aquatic vegetation is not recovering as quickly. Possible causes include lack of plant propagules, such as seeds or roots in the sediment, the drastic impact of the 2012 flood, and/or the dramatic increase in water levels from 2011 until 2015. Comparisons between SLRIDT, TICMP, and a similar plant survey by Natural Resources Research Institute (NRRI) completed near 40th Avenue West (Brady, et al 2010) were made using the most similar communities. This comparison showed that many similarities exist in the number of plant species and community species composition, as well as in the number of plots in which plants were found.

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Tables

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	NW-PW-01		NW-PW-01		NW-PW-01		S6-PW-01		S6-PW-01			
	Date	11/07/2013		11/12/2014		6/04/2015		11/08/2013		10/30/2014			
	Depth												
	Sample Type	N		N		N		N		N		FD	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs												
Effective Date	03/24/2003												
SVOCs													
2-Methylnaphthalene	72.16 ug/l	0.023 j ug/l	0.00032 a	< 0.041 ug/l	0.00028	< 0.040 ug/l	0.00028	1.2 ug/l	0.017	0.79 ug/l	0.011	0.87 ug/l	0.012
Acenaphthene	55.85 ug/l	0.013 j ug/l	0.00023 a	< 0.041 ug/l	0.00037	< 0.040 ug/l	0.00036	0.31 ug/l	0.0056	0.25 ug/l	0.0045	0.28 ug/l	0.0050
Acenaphthylene	306.9 ug/l	< 0.0047 ug/l	0.0000077	< 0.041 ug/l	0.000067	< 0.040 ug/l	0.000065	1.1 * ug/l	0.0036 a	0.67 ug/l	0.0022	0.73 ug/l	0.0024
Anthracene	20.73 ug/l	< 0.0059 ug/l	0.00014	< 0.041 ug/l	0.00099	< 0.040 ug/l	0.00096	0.014 j ug/l	0.00068 a	< 0.044 ug/l	0.0011	< 0.044 ug/l	0.0011
Benzo(a)anthracene	2.227 ug/l	< 0.0016 ug/l	0.00036	< 0.041 ug/l	0.0092	< 0.040 ug/l	0.0090	< 0.0016 ug/l	0.00036	< 0.044 ug/l	0.0099	< 0.044 ug/l	0.0099
Benzo(a)pyrene	0.9008 ug/l	< 0.0010 ug/l	0.00056	< 0.041 ug/l	0.023	< 0.040 ug/l	0.022	< 0.0010 ug/l	0.00056	< 0.044 ug/l	0.024	< 0.044 ug/l	0.024
Benzo(b)fluoranthene	0.6774 ug/l	--	--	< 0.041 ug/l	0.030	< 0.040 ug/l	0.030	--	--	< 0.044 ug/l	0.032	< 0.044 ug/l	0.032
Benzo(b&j)fluoranthene	0.6774 ug/l	< 0.0018 ug/l	0.0013	--	--	--	--	< 0.0017 ug/l	0.0013	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.0020 ug/l	0.0023	< 0.041 ug/l	0.047	< 0.040 ug/l	0.046	< 0.0019 ug/l	0.0022	< 0.044 ug/l	0.050	< 0.044 ug/l	0.050
Benzo(k)fluoranthene	0.6415 ug/l	< 0.0034 ug/l	0.0027	< 0.041 ug/l	0.032	< 0.040 ug/l	0.031	< 0.0033 ug/l	0.0026	< 0.044 ug/l	0.034	< 0.044 ug/l	0.034
Chrysene	2.042 ug/l	< 0.0016 ug/l	0.00039	< 0.041 ug/l	0.010	< 0.040 ug/l	0.010	< 0.0015 ug/l	0.00037	< 0.044 ug/l	0.011	< 0.044 ug/l	0.011
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.0016 ug/l	0.0028	< 0.041 ug/l	0.073	< 0.040 ug/l	0.071	< 0.0015 ug/l	0.0027	< 0.044 ug/l	0.078	< 0.044 ug/l	0.078
Fluoranthene	7.109 ug/l	< 0.0041 ug/l	0.00029	< 0.041 ug/l	0.0029	< 0.040 ug/l	0.0028	< 0.0040 ug/l	0.00028	< 0.044 ug/l	0.0031	< 0.044 ug/l	0.0031
Fluorene	39.9 ug/l	< 0.0064 ug/l	0.000080	< 0.041 ug/l	0.00051	< 0.040 ug/l	0.00050	0.31 ug/l	0.0078	0.19 ug/l	0.0048	0.22 ug/l	0.0055
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.0020 ug/l	0.0036	< 0.041 ug/l	0.075	< 0.040 ug/l	0.073	< 0.0019 ug/l	0.0035	< 0.044 ug/l	0.080	< 0.044 ug/l	0.080
Naphthalene	193.5 ug/l	1.2 ug/l	0.0062	< 0.041 ug/l	0.00011	< 0.040 ug/l	0.00010	69 ug/l	0.36	50.7 ug/l	0.26	51.4 ug/l	0.27
Phenanthrene	19.13 ug/l	< 0.0068 ug/l	0.00018	< 0.041 ug/l	0.0011	< 0.040 ug/l	0.0010	0.097 ug/l	0.0051	0.070 ug/l	0.0037	0.092 ug/l	0.0048
Pyrene	10.11 ug/l	< 0.0043 ug/l	0.00021	< 0.041 ug/l	0.0020	< 0.040 ug/l	0.0020	< 0.0041 ug/l	0.00020	< 0.044 ug/l	0.0022	< 0.044 ug/l	0.0022
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.022 a		0.31		0.30		0.41 a		0.61		0.62	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S6-PW-01		S6-PW-02		S6-PW-02		S6-PW-02		S6-PW-03	
	Date	6/03/2015		11/08/2013		10/31/2014		6/03/2015		11/14/2013	
	Depth									2 ft	
	Sample Type	N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs										
Effective Date	03/24/2003										
SVOCs											
2-Methylnaphthalene	72.16 ug/l	5.1 * ug/l	0.071 a	0.0053 j ug/l	0.000073 a	< 0.043 ug/l	0.00030	< 0.041 ug/l	0.00028	0.016 j ug/l	0.00022 a
Acenaphthene	55.85 ug/l	0.47 ug/l	0.0084	0.0079 j ug/l	0.00014 a	< 0.043 ug/l	0.00038	< 0.041 ug/l	0.00037	< 0.0050 ug/l	0.000045
Acenaphthylene	306.9 ug/l	4.3 ug/l	0.014	< 0.0046 ug/l	0.0000075	< 0.043 ug/l	0.00007	< 0.041 ug/l	0.00007	< 0.0046 ug/l	0.0000075
Anthracene	20.73 ug/l	0.14 ug/l	0.0068	< 0.0057 ug/l	0.00014	< 0.043 ug/l	0.0010	< 0.041 ug/l	0.0010	< 0.0057 ug/l	0.00014
Benzo(a)anthracene	2.227 ug/l	< 0.040 ug/l	0.0090	< 0.0016 ug/l	0.00036	< 0.043 ug/l	0.0097	< 0.041 ug/l	0.0092	< 0.0016 ug/l	0.00036
Benzo(a)pyrene	0.9008 ug/l	< 0.040 ug/l	0.022	< 0.0010 ug/l	0.00056	< 0.043 ug/l	0.024	< 0.041 ug/l	0.023	< 0.0010 ug/l	0.00056
Benzo(b)fluoranthene	0.6774 ug/l	< 0.040 ug/l	0.030	--	--	< 0.043 ug/l	0.032	< 0.041 ug/l	0.030	--	--
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	< 0.0017 ug/l	0.0013	--	--	--	--	< 0.0017 ug/l	0.0013
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.040 ug/l	0.046	< 0.0019 ug/l	0.0022	< 0.043 ug/l	0.049	< 0.041 ug/l	0.047	< 0.0019 ug/l	0.0022
Benzo(k)fluoranthene	0.6415 ug/l	< 0.040 ug/l	0.031	< 0.0033 ug/l	0.0026	< 0.043 ug/l	0.034	< 0.041 ug/l	0.032	< 0.0033 ug/l	0.0026
Chrysene	2.042 ug/l	< 0.040 ug/l	0.010	< 0.0015 ug/l	0.00037	< 0.043 ug/l	0.011	< 0.041 ug/l	0.010	< 0.0015 ug/l	0.00037
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.040 ug/l	0.071	< 0.0015 ug/l	0.0027	< 0.043 ug/l	0.076	< 0.041 ug/l	0.073	< 0.0015 ug/l	0.0027
Fluoranthene	7.109 ug/l	< 0.040 ug/l	0.0028	< 0.0040 ug/l	0.00028	< 0.043 ug/l	0.003	< 0.041 ug/l	0.0029	< 0.0040 ug/l	0.00028
Fluorene	39.9 ug/l	2.1 * ug/l	0.053 a	< 0.0062 ug/l	0.000078	< 0.043 ug/l	0.00054	< 0.041 ug/l	0.00051	< 0.0062 ug/l	0.000078
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.040 ug/l	0.073	< 0.0019 ug/l	0.0035	< 0.043 ug/l	0.078	< 0.041 ug/l	0.075	< 0.0019 ug/l	0.0035
Naphthalene	193.5 ug/l	130 ug/l	0.67	0.01 jb ug/l	0.000052 a	< 0.043 ug/l	0.00011	0.049 ug/l	0.00025	0.021 jb ug/l	0.00011 a
Phenanthrene	19.13 ug/l	1.1 ug/l	0.058	< 0.0066 ug/l	0.00017	< 0.043 ug/l	0.0011	< 0.041 ug/l	0.0011	< 0.0066 ug/l	0.00017
Pyrene	10.11 ug/l	< 0.040 ug/l	0.0020	< 0.0041 ug/l	0.0002	< 0.043 ug/l	0.0021	< 0.041 ug/l	0.0020	< 0.0041 ug/l	0.00020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		1.2 a		0.015 a		0.32		0.31		0.015 a	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S6-PW-03		S6-PW-04		S6-PW-04		S6-PW-04		S6-PW-05		S6-PW-05	
	Date	6/03/2015		11/08/2013		10/31/2014		6/03/2015		11/08/2013		10/31/2014	
	Depth												
	Sample Type	N		N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs												
Effective Date	03/24/2003												
SVOCs													
2-Methylnaphthalene	72.16 ug/l	< 0.040 ug/l	0.00028	< 0.0049 ug/l	0.000034	< 0.041 ug/l	0.00028	< 0.041 ug/l	0.00028	0.0058 j ug/l	0.000080 a	< 0.043 ug/l	0.00030
Acenaphthene	55.85 ug/l	0.055 ug/l	0.0010	< 0.0050 ug/l	0.000045	< 0.041 ug/l	0.00037	< 0.041 ug/l	0.00037	0.085 ug/l	0.0015	< 0.043 ug/l	0.00038
Acenaphthylene	306.9 ug/l	< 0.040 ug/l	0.000065	< 0.0046 ug/l	0.0000075	< 0.041 ug/l	0.000067	< 0.041 ug/l	0.000067	0.028 * ug/l	0.000091 a	< 0.043 ug/l	0.00007
Anthracene	20.73 ug/l	< 0.040 ug/l	0.0010	< 0.0057 ug/l	0.00014	< 0.041 ug/l	0.00099	< 0.041 ug/l	0.0010	< 0.0057 ug/l	0.00014	< 0.043 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	< 0.040 ug/l	0.0090	< 0.0016 ug/l	0.00036	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092	< 0.0016 ug/l	0.00036	< 0.043 ug/l	0.0097
Benzo(a)pyrene	0.9008 ug/l	< 0.040 ug/l	0.022	< 0.0010 ug/l	0.00056	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023	< 0.0010 ug/l	0.00056	< 0.043 ug/l	0.024
Benzo(b)fluoranthene	0.6774 ug/l	< 0.040 ug/l	0.030	--	--	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030	--	--	< 0.043 ug/l	0.032
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	< 0.0017 ug/l	0.0013	--	--	--	--	< 0.0017 ug/l	0.0013	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.040 ug/l	0.046	< 0.0019 ug/l	0.0022	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047	< 0.0019 ug/l	0.0022	< 0.043 ug/l	0.049
Benzo(k)fluoranthene	0.6415 ug/l	< 0.040 ug/l	0.031	< 0.0033 ug/l	0.0026	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032	< 0.0033 ug/l	0.0026	< 0.043 ug/l	0.034
Chrysene	2.042 ug/l	< 0.040 ug/l	0.010	< 0.0015 ug/l	0.00037	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010	< 0.0015 ug/l	0.00037	< 0.043 ug/l	0.011
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.040 ug/l	0.071	< 0.0015 ug/l	0.0027	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073	< 0.0015 ug/l	0.0027	< 0.043 ug/l	0.076
Fluoranthene	7.109 ug/l	< 0.040 ug/l	0.0028	< 0.0040 ug/l	0.00028	< 0.041 ug/l	0.0029	< 0.041 ug/l	0.0029	< 0.0040 ug/l	0.00028	< 0.043 ug/l	0.0030
Fluorene	39.9 ug/l	< 0.040 ug/l	0.00050	< 0.0062 ug/l	0.000078	< 0.041 ug/l	0.00051	< 0.041 ug/l	0.00051	0.0064 j ug/l	0.00016 a	< 0.043 ug/l	0.00054
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.040 ug/l	0.073	< 0.0019 ug/l	0.0035	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075	< 0.0019 ug/l	0.0035	< 0.043 ug/l	0.078
Naphthalene	193.5 ug/l	< 0.040 ug/l	0.00010	0.04 jb ug/l	0.00021 a	< 0.041 ug/l	0.00011	< 0.041 ug/l	0.00011	0.02 jb ug/l	0.00010 a	< 0.043 ug/l	0.00011
Phenanthrene	19.13 ug/l	< 0.040 ug/l	0.0010	< 0.0066 ug/l	0.00017	< 0.041 ug/l	0.0011	< 0.041 ug/l	0.0011	< 0.0066 ug/l	0.00017	< 0.043 ug/l	0.0011
Pyrene	10.11 ug/l	< 0.040 ug/l	0.0020	< 0.0041 ug/l	0.00020	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020	< 0.0041 ug/l	0.00020	< 0.043 ug/l	0.0021
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.30		0.015 a		0.31		0.31		0.016 a		0.32	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S6-PW-05		S6-PW-06		S6-PW-06		S6-PW-06		S7-PW-01		S7-PW-01	
	Date	6/03/2015		11/08/2013		10/31/2014		6/03/2015		11/08/2013		10/30/2014	
	Depth												
	Sample Type	N		N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs												
Effective Date	03/24/2003												
SVOCs													
2-Methylnaphthalene	72.16 ug/l	< 0.041 ug/l	0.00028	0.0075 j ug/l	0.00010 a	< 0.043 ug/l	0.00030	< 0.041 ug/l	0.00028	0.0051 j ug/l	0.000071 a	3.6 ug/l	0.050
Acenaphthene	55.85 ug/l	0.14 ug/l	0.0025	< 0.0050 ug/l	0.000045	< 0.043 ug/l	0.00038	< 0.041 ug/l	0.00037	< 0.0051 ug/l	0.000046	3.6 ug/l	0.064
Acenaphthylene	306.9 ug/l	< 0.041 ug/l	0.000067	< 0.0046 ug/l	0.0000075	< 0.043 ug/l	0.00007	< 0.041 ug/l	0.00007	< 0.0047 ug/l	0.0000077	0.14 ug/l	0.00046
Anthracene	20.73 ug/l	< 0.041 ug/l	0.0010	< 0.0057 ug/l	0.00014	< 0.043 ug/l	0.0010	< 0.041 ug/l	0.0010	< 0.0059 ug/l	0.00014	0.48 ug/l	0.023
Benzo(a)anthracene	2.227 ug/l	< 0.041 ug/l	0.0092	< 0.0016 ug/l	0.00036	< 0.043 ug/l	0.0097	< 0.041 ug/l	0.0092	< 0.0016 ug/l	0.00036	< 0.043 ug/l	0.0097
Benzo(a)pyrene	0.9008 ug/l	< 0.041 ug/l	0.023	< 0.0010 ug/l	0.00056	< 0.043 ug/l	0.024	< 0.041 ug/l	0.023	< 0.0010 ug/l	0.00056	< 0.043 ug/l	0.024
Benzo(b)fluoranthene	0.6774 ug/l	< 0.041 ug/l	0.030	--	--	< 0.043 ug/l	0.032	< 0.041 ug/l	0.030	--	--	< 0.043 ug/l	0.032
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	< 0.0017 ug/l	0.0013	--	--	--	--	< 0.0018 ug/l	0.0013	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.041 ug/l	0.047	< 0.0019 ug/l	0.0022	< 0.043 ug/l	0.049	< 0.041 ug/l	0.047	< 0.0020 ug/l	0.0023	< 0.043 ug/l	0.049
Benzo(k)fluoranthene	0.6415 ug/l	< 0.041 ug/l	0.032	< 0.0033 ug/l	0.0026	< 0.043 ug/l	0.034	< 0.041 ug/l	0.032	< 0.0034 ug/l	0.0027	< 0.043 ug/l	0.034
Chrysene	2.042 ug/l	< 0.041 ug/l	0.010	< 0.0015 ug/l	0.00037	< 0.043 ug/l	0.011	< 0.041 ug/l	0.010	0.0025 j ug/l	0.0012 a	< 0.043 ug/l	0.011
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.041 ug/l	0.073	< 0.0015 ug/l	0.0027	< 0.043 ug/l	0.076	< 0.041 ug/l	0.073	< 0.0016 ug/l	0.0028	< 0.043 ug/l	0.076
Fluoranthene	7.109 ug/l	< 0.041 ug/l	0.0029	0.0047 j ug/l	0.00066 a	< 0.043 ug/l	0.0030	< 0.041 ug/l	0.0029	0.0061 j ug/l	0.00086 a	0.081 ug/l	0.011
Fluorene	39.9 ug/l	< 0.041 ug/l	0.00051	< 0.0062 ug/l	0.000078	< 0.043 ug/l	0.00054	< 0.041 ug/l	0.00051	< 0.0064 ug/l	0.000080	3.0 ug/l	0.075
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.041 ug/l	0.075	< 0.0019 ug/l	0.0035	< 0.043 ug/l	0.078	< 0.041 ug/l	0.075	< 0.0020 ug/l	0.0036	< 0.043 ug/l	0.078
Naphthalene	193.5 ug/l	< 0.041 ug/l	0.00011	0.011 jb ug/l	0.000057 a	< 0.043 ug/l	0.00011	< 0.041 ug/l	0.00011	0.1 ug/l	0.00052	310 ug/l	1.6
Phenanthrene	19.13 ug/l	< 0.041 ug/l	0.0011	< 0.0066 ug/l	0.00017	< 0.043 ug/l	0.0011	< 0.041 ug/l	0.0011	< 0.0068 ug/l	0.00018	1.9 ug/l	0.099
Pyrene	10.11 ug/l	< 0.041 ug/l	0.0020	0.0042 j ug/l	0.00042 a	< 0.043 ug/l	0.0021	< 0.041 ug/l	0.0020	0.0055 j ug/l	0.00054 a	< 0.043 ug/l	0.0021
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.31		0.015 a		0.32		0.31		0.017 a		2.2	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S7-PW-01		S7-PW-02		S7-PW-02		S7-PW-02		S7-PW-03		S7-PW-03	
	Date	6/04/2015		11/08/2013		10/30/2014		6/04/2015		11/08/2013		10/30/2014	
	Depth												
	Sample Type	N		N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs												
Effective Date	03/24/2003												
SVOCs													
2-Methylnaphthalene	72.16 ug/l	< 0.040 ug/l	0.00028	0.013 j ug/l	0.00018 a	< 0.045 ug/l	0.00031	< 0.040 ug/l	0.00028	< 0.0060 ug/l	0.000042	< 0.043 ug/l	0.00030
Acenaphthene	55.85 ug/l	< 0.040 ug/l	0.00036	1.2 ug/l	0.021	0.25 ug/l	0.0045	0.080 ug/l	0.0014	0.039 ug/l	0.00070	0.25 ug/l	0.0045
Acenaphthylene	306.9 ug/l	< 0.040 ug/l	0.000065	< 0.0060 ug/l	0.0000098	< 0.045 ug/l	0.000073	< 0.040 ug/l	0.000065	< 0.0056 ug/l	0.0000091	< 0.043 ug/l	0.00007
Anthracene	20.73 ug/l	< 0.040 ug/l	0.0010	0.022 j ug/l	0.0011 a	< 0.045 ug/l	0.0011	< 0.040 ug/l	0.0010	< 0.0070 ug/l	0.00017	< 0.043 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	< 0.040 ug/l	0.0090	< 0.0021 ug/l	0.00047	< 0.045 ug/l	0.010	< 0.040 ug/l	0.0090	< 0.0019 ug/l	0.00043	< 0.043 ug/l	0.0097
Benzo(a)pyrene	0.9008 ug/l	< 0.040 ug/l	0.022	< 0.0013 ug/l	0.00072	< 0.045 ug/l	0.025	< 0.040 ug/l	0.022	< 0.0012 ug/l	0.00067	< 0.043 ug/l	0.024
Benzo(b)fluoranthene	0.6774 ug/l	< 0.040 ug/l	0.030	--	--	< 0.045 ug/l	0.033	< 0.040 ug/l	0.030	--	--	< 0.043 ug/l	0.032
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	< 0.0022 ug/l	0.0016	--	--	--	--	< 0.0021 ug/l	0.0016	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.040 ug/l	0.046	< 0.0026 ug/l	0.0030	< 0.045 ug/l	0.051	< 0.040 ug/l	0.046	< 0.0024 ug/l	0.0027	< 0.043 ug/l	0.049
Benzo(k)fluoranthene	0.6415 ug/l	< 0.040 ug/l	0.031	< 0.0043 ug/l	0.0034	< 0.045 ug/l	0.035	< 0.040 ug/l	0.031	< 0.0040 ug/l	0.0031	< 0.043 ug/l	0.034
Chrysene	2.042 ug/l	< 0.040 ug/l	0.010	< 0.0020 ug/l	0.00049	< 0.045 ug/l	0.011	< 0.040 ug/l	0.010	< 0.0018 ug/l	0.00044	< 0.043 ug/l	0.011
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.040 ug/l	0.071	< 0.0020 ug/l	0.0035	< 0.045 ug/l	0.080	< 0.040 ug/l	0.071	< 0.0019 ug/l	0.0034	< 0.043 ug/l	0.076
Fluoranthene	7.109 ug/l	< 0.040 ug/l	0.0028	0.01 j ug/l	0.0014 a	< 0.045 ug/l	0.0032	< 0.040 ug/l	0.0028	< 0.0048 ug/l	0.00034	< 0.043 ug/l	0.003
Fluorene	39.9 ug/l	< 0.040 ug/l	0.00050	0.27 ug/l	0.0068	0.088 ug/l	0.0022	< 0.040 ug/l	0.0005	0.019 j ug/l	0.00048 a	0.097 ug/l	0.0024
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.040 ug/l	0.073	< 0.0026 ug/l	0.0047	< 0.045 ug/l	0.082	< 0.040 ug/l	0.073	< 0.0024 ug/l	0.0044	< 0.043 ug/l	0.078
Naphthalene	193.5 ug/l	< 0.040 ug/l	0.00010	0.071 b ug/l	0.00037 a	< 0.045 ug/l	0.00012	< 0.040 ug/l	0.00010	0.04 jb ug/l	0.00021 a	< 0.043 ug/l	0.00011
Phenanthrene	19.13 ug/l	< 0.040 ug/l	0.0010	0.072 ug/l	0.0038	< 0.045 ug/l	0.0012	< 0.040 ug/l	0.0010	< 0.0080 ug/l	0.00021	< 0.043 ug/l	0.0011
Pyrene	10.11 ug/l	< 0.040 ug/l	0.0020	0.0091 j ug/l	0.0009 a	< 0.045 ug/l	0.0022	< 0.040 ug/l	0.0020	< 0.0050 ug/l	0.00025	< 0.043 ug/l	0.0021
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.30		0.054 a		0.34		0.30		0.019 a		0.33	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S7-PW-03		S7-PW-04		S7-PW-04		S7-PW-04		S7-PW-05	
	Date	6/15/2015		11/14/2013		10/30/2014		6/04/2015		11/07/2013	
	Depth			1.5 ft							
	Sample Type	N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs										
Effective Date	03/24/2003										
SVOCs											
2-Methylnaphthalene	72.16 ug/l	< 0.040 ug/l	0.00028	0.02 j ug/l	0.00028 a	< 0.043 ug/l	0.00030	< 0.040 ug/l	0.00028	0.026 j* ug/l	0.00036 a
Acenaphthene	55.85 ug/l	0.074 ug/l	0.0013	< 0.0056 ug/l	0.000050	0.052 ug/l	0.00093	< 0.040 ug/l	0.00036	< 0.0053 ug/l	0.000047
Acenaphthylene	306.9 ug/l	< 0.040 ug/l	0.000065	< 0.0052 ug/l	0.0000085	< 0.043 ug/l	0.00007	< 0.040 ug/l	0.00007	< 0.0049 ug/l	0.0000080
Anthracene	20.73 ug/l	< 0.040 ug/l	0.0010	0.0078 j ug/l	0.00038 a	< 0.043 ug/l	0.0010	< 0.040 ug/l	0.0010	0.0092 j* ug/l	0.00044 a
Benzo(a)anthracene	2.227 ug/l	< 0.040 ug/l	0.0090	< 0.0018 ug/l	0.00040	< 0.043 ug/l	0.0097	< 0.040 ug/l	0.0090	< 0.0017 ug/l	0.00038
Benzo(a)pyrene	0.9008 ug/l	< 0.040 ug/l	0.022	< 0.0011 ug/l	0.00061	< 0.043 ug/l	0.024	< 0.040 ug/l	0.022	< 0.0011 ug/l	0.00061
Benzo(b)fluoranthene	0.6774 ug/l	< 0.040 ug/l	0.030	--	--	< 0.043 ug/l	0.032	< 0.040 ug/l	0.030	--	--
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	< 0.0019 ug/l	0.0014	--	--	--	--	< 0.0018 ug/l	0.0013
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.040 ug/l	0.046	< 0.0022 ug/l	0.0025	< 0.043 ug/l	0.049	< 0.040 ug/l	0.046	< 0.0021 ug/l	0.0024
Benzo(k)fluoranthene	0.6415 ug/l	< 0.040 ug/l	0.031	< 0.0037 ug/l	0.0029	< 0.043 ug/l	0.034	< 0.040 ug/l	0.031	< 0.0035 ug/l	0.0027
Chrysene	2.042 ug/l	< 0.040 ug/l	0.010	< 0.0017 ug/l	0.00042	< 0.043 ug/l	0.011	< 0.040 ug/l	0.010	< 0.0016 ug/l	0.00039
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.040 ug/l	0.071	< 0.0017 ug/l	0.0030	< 0.043 ug/l	0.076	< 0.040 ug/l	0.071	< 0.0016 ug/l	0.0028
Fluoranthene	7.109 ug/l	< 0.040 ug/l	0.0028	< 0.0044 ug/l	0.00031	< 0.043 ug/l	0.0030	< 0.040 ug/l	0.0028	< 0.0042 ug/l	0.00030
Fluorene	39.9 ug/l	0.042 ug/l	0.0011	0.024 ug/l	0.00060	< 0.043 ug/l	0.00054	< 0.040 ug/l	0.00050	< 0.0066 ug/l	0.000083
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.040 ug/l	0.073	< 0.0022 ug/l	0.0040	< 0.043 ug/l	0.078	< 0.040 ug/l	0.073	< 0.0021 ug/l	0.0038
Naphthalene	193.5 ug/l	1.4 ug/l	0.0072	0.038 jb ug/l	0.0002 a	< 0.043 ug/l	0.00011	< 0.040 ug/l	0.00010	1.3 * ug/l	0.0067 a
Phenanthrene	19.13 ug/l	0.046 ug/l	0.0024	0.013 j ug/l	0.00068 a	< 0.043 ug/l	0.0011	< 0.040 ug/l	0.0010	< 0.0070 ug/l	0.00018
Pyrene	10.11 ug/l	< 0.040 ug/l	0.0020	< 0.0046 ug/l	0.00023	< 0.043 ug/l	0.0021	< 0.040 ug/l	0.0020	< 0.0044 ug/l	0.00022
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.31		0.018 a		0.32		0.30		0.023 a	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S7-PW-05		S7-PW-05		S7-PW-06				S7-PW-06	
	Date	11/12/2014		6/04/2015		11/07/2013				11/12/2014	
	Depth										
	Sample Type	N		N		N		FD		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs										
Effective Date	03/24/2003										
SVOCs											
2-Methylnaphthalene	72.16 ug/l	< 0.041 ug/l	0.00028	< 0.041 ug/l	0.00028	22 * ug/l	0.3 a	25 ug/l	0.35	13.6 ug/l	0.19
Acenaphthene	55.85 ug/l	< 0.041 ug/l	0.00037	0.046 ug/l	0.00082	12 * ug/l	0.21 a	10 ug/l	0.18	8.5 ug/l	0.15
Acenaphthylene	306.9 ug/l	< 0.041 ug/l	0.000067	< 0.041 ug/l	0.000067	33 * ug/l	0.11 a	34 * ug/l	0.11 a	23.6 ug/l	0.077
Anthracene	20.73 ug/l	< 0.041 ug/l	0.00099	< 0.041 ug/l	0.0010	0.091 * ug/l	0.0044 a	0.2 * ug/l	0.0096 a	< 0.040 ug/l	0.00096
Benzo(a)anthracene	2.227 ug/l	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092	0.0080 j ug/l	0.0036 a	< 0.0017 ug/l	0.00038	< 0.040 ug/l	0.0090
Benzo(a)pyrene	0.9008 ug/l	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023	0.0026 j ug/l	0.0029 a	< 0.0011 ug/l	0.00061	< 0.040 ug/l	0.022
Benzo(b)fluoranthene	0.6774 ug/l	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030	--	--	--	--	< 0.040 ug/l	0.030
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	--	--	< 0.0019 ug/l	0.0014	< 0.0018 ug/l	0.0013	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047	< 0.0022 ug/l	0.0025	< 0.0021 ug/l	0.0024	< 0.040 ug/l	0.046
Benzo(k)fluoranthene	0.6415 ug/l	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032	< 0.0037 ug/l	0.0029	< 0.0035 ug/l	0.0027	< 0.040 ug/l	0.031
Chrysene	2.042 ug/l	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010	0.0043 j* ug/l	0.0021 a	< 0.0016 ug/l	0.00039	< 0.040 ug/l	0.0098
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073	< 0.0017 ug/l	0.0030	< 0.0016 ug/l	0.0028	< 0.040 ug/l	0.071
Fluoranthene	7.109 ug/l	< 0.041 ug/l	0.0029	< 0.041 ug/l	0.0029	< 0.0044 ug/l	0.00031	< 0.0042 ug/l	0.00030	< 0.040 ug/l	0.0028
Fluorene	39.9 ug/l	< 0.041 ug/l	0.00051	< 0.041 ug/l	0.00051	3 * ug/l	0.075 a	3.2 ug/l	0.080	3.4 ug/l	0.085
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075	< 0.0022 ug/l	0.0040	< 0.0021 ug/l	0.0038	< 0.040 ug/l	0.073
Naphthalene	193.5 ug/l	< 0.041 ug/l	0.00011	< 0.041 ug/l	0.00011	1200 * ug/l	6.2 a	1200 ug/l	6.2	1210 ug/l	6.3
Phenanthrene	19.13 ug/l	< 0.041 ug/l	0.0011	< 0.041 ug/l	0.0011	1.8 * ug/l	0.094 a	1.3 ug/l	0.068	1.9 ug/l	0.099
Pyrene	10.11 ug/l	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020	< 0.0046 ug/l	0.00023	< 0.0044 ug/l	0.00022	< 0.040 ug/l	0.0020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.31		0.31		7.0 a		7.0 a		7.2	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S7-PW-06		S7-PW-07		S7-PW-08				S7-PW-09	
	Date	6/04/2015		6/04/2015		6/04/2015				6/04/2015	
	Depth										
	Sample Type	N		N		N		FD		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs										
Effective Date	03/24/2003										
SVOCs											
2-Methylnaphthalene	72.16 ug/l	6.1 ug/l	0.085	< 0.041 ug/l	0.00028	0.89 ug/l	0.012	1.0 ug/l	0.014	< 0.041 ug/l	0.00028
Acenaphthene	55.85 ug/l	9.3 ug/l	0.167	< 0.041 ug/l	0.00037	30.9 ug/l	0.55	29.9 ug/l	0.54	0.11 ug/l	0.0020
Acenaphthylene	306.9 ug/l	3.4 ug/l	0.011	< 0.041 ug/l	0.00007	1.1 ug/l	0.0036	1.3 ug/l	0.0042	< 0.041 ug/l	0.000067
Anthracene	20.73 ug/l	0.091 ug/l	0.0044	< 0.041 ug/l	0.0010	0.060 ug/l	0.0029	< 0.041 ug/l	0.0010	< 0.041 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092
Benzo(a)pyrene	0.9008 ug/l	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023
Benzo(b)fluoranthene	0.6774 ug/l	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047
Benzo(k)fluoranthene	0.6415 ug/l	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032
Chrysene	2.042 ug/l	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073
Fluoranthene	7.109 ug/l	0.049 ug/l	0.0069	< 0.041 ug/l	0.0029	< 0.041 ug/l	0.0029	< 0.041 ug/l	0.0029	< 0.041 ug/l	0.0029
Fluorene	39.9 ug/l	0.55 ug/l	0.014	< 0.041 ug/l	0.00051	0.12 ug/l	0.0030	0.12 ug/l	0.0030	< 0.041 ug/l	0.00051
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075
Naphthalene	193.5 ug/l	750 ug/l	3.9	< 0.041 ug/l	0.00011	657 ug/l	3.4	664 ug/l	3.4	< 0.041 ug/l	0.00011
Phenanthrene	19.13 ug/l	0.36 ug/l	0.019	< 0.041 ug/l	0.0011	0.051 ug/l	0.0027	0.047 ug/l	0.0025	< 0.041 ug/l	0.0011
Pyrene	10.11 ug/l	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		4.5		0.31		4.3		4.3		0.31	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	S7-PW-10		SB-PW-01		SB-PW-01		SB-PW-01	
	Date	6/15/2015		11/06/2013		10/31/2014		6/03/2015	
	Depth								
	Sample Type	N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs								
Effective Date	03/24/2003								
SVOCs									
2-Methylnaphthalene	72.16 ug/l	164 ug/l	2.3	0.011 j ug/l	0.00015 a	< 0.044 ug/l	0.00030	< 0.040 ug/l	0.00028
Acenaphthene	55.85 ug/l	26.1 ug/l	0.47	< 0.0051 ug/l	0.000046	< 0.044 ug/l	0.00039	0.25 ug/l	0.0045
Acenaphthylene	306.9 ug/l	106 ug/l	0.35	< 0.0047 ug/l	0.0000077	< 0.044 ug/l	0.000072	< 0.040 ug/l	0.000065
Anthracene	20.73 ug/l	0.89 ug/l	0.043	< 0.0059 ug/l	0.00014	< 0.044 ug/l	0.0011	< 0.040 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	< 0.80 ug/l	0.18	0.0039 j ug/l	0.0018 a	< 0.044 ug/l	0.0099	< 0.040 ug/l	0.0090
Benzo(a)pyrene	0.9008 ug/l	< 0.80 ug/l	0.44	0.0030 j ug/l	0.0033 a	< 0.044 ug/l	0.024	< 0.040 ug/l	0.022
Benzo(b)fluoranthene	0.6774 ug/l	< 0.80 ug/l	0.59	--	--	< 0.044 ug/l	0.032	< 0.040 ug/l	0.030
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	< 0.0018 ug/l	0.0013	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.80 ug/l	0.91	< 0.0020 ug/l	0.0023	< 0.044 ug/l	0.050	< 0.040 ug/l	0.046
Benzo(k)fluoranthene	0.6415 ug/l	< 0.80 ug/l	0.62	< 0.0034 ug/l	0.0027	< 0.044 ug/l	0.034	< 0.040 ug/l	0.031
Chrysene	2.042 ug/l	< 0.80 ug/l	0.20	0.0036 j ug/l	0.0018 a	< 0.044 ug/l	0.011	< 0.040 ug/l	0.010
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.80 ug/l	1.4	0.0049 j ug/l	0.017 a	< 0.044 ug/l	0.078	< 0.040 ug/l	0.071
Fluoranthene	7.109 ug/l	< 0.80 ug/l	0.056	< 0.0041 ug/l	0.00029	< 0.044 ug/l	0.0031	< 0.040 ug/l	0.0028
Fluorene	39.9 ug/l	39.6 ug/l	0.99	< 0.0064 ug/l	0.000080	< 0.044 ug/l	0.00055	0.10 ug/l	0.0025
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.80 ug/l	1.5	< 0.0020 ug/l	0.0036	< 0.044 ug/l	0.080	< 0.040 ug/l	0.073
Naphthalene	193.5 ug/l	4540 ug/l	23	0.29 ug/l	0.0015	< 0.044 ug/l	0.00011	0.051 ug/l	0.00026
Phenanthrene	19.13 ug/l	3.7 ug/l	0.19	< 0.0068 ug/l	0.00018	< 0.044 ug/l	0.0012	< 0.040 ug/l	0.0010
Pyrene	10.11 ug/l	< 0.80 ug/l	0.040	< 0.0043 ug/l	0.00021	< 0.044 ug/l	0.0022	< 0.040 ug/l	0.0020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		34		0.037 a		0.33		0.31	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	SB-PW-02				SB-PW-02			
	Date	11/06/2013				10/31/2014			
	Depth								
	Sample Type	N		FD		N		FD	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs								
Effective Date	03/24/2003								
SVOCs									
2-Methylnaphthalene	72.16 ug/l	32 ug/l	0.44	35 ug/l	0.49	23.9 ug/l	0.33	25.5 ug/l	0.35
Acenaphthene	55.85 ug/l	8.2 ug/l	0.15	8.2 ug/l	0.15	6.7 ug/l	0.12	7.0 ug/l	0.13
Acenaphthylene	306.9 ug/l	14 * ug/l	0.046 a	14 * ug/l	0.046 a	9.4 ug/l	0.031	9.8 ug/l	0.032
Anthracene	20.73 ug/l	0.31 ug/l	0.015	0.33 ug/l	0.016	0.48 ug/l	0.023	0.50 ug/l	0.024
Benzo(a)anthracene	2.227 ug/l	< 0.0016 ug/l	0.00036	< 0.0016 ug/l	0.00036	< 0.044 ug/l	0.0099	< 0.043 ug/l	0.0097
Benzo(a)pyrene	0.9008 ug/l	< 0.0010 ug/l	0.00056	< 0.0010 ug/l	0.00056	< 0.044 ug/l	0.024	< 0.043 ug/l	0.024
Benzo(b)fluoranthene	0.6774 ug/l	--	--	--	--	< 0.044 ug/l	0.032	< 0.043 ug/l	0.032
Benzo(b&j)fluoranthene	0.6774 ug/l	< 0.0017 ug/l	0.0013	< 0.0017 ug/l	0.0013	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.0019 ug/l	0.0022	< 0.0019 ug/l	0.0022	< 0.044 ug/l	0.050	< 0.043 ug/l	0.049
Benzo(k)fluoranthene	0.6415 ug/l	< 0.0033 ug/l	0.0026	< 0.0033 ug/l	0.0026	< 0.044 ug/l	0.034	< 0.043 ug/l	0.034
Chrysene	2.042 ug/l	< 0.0015 ug/l	0.00037	< 0.0015 ug/l	0.00037	< 0.044 ug/l	0.011	< 0.043 ug/l	0.011
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.0015 ug/l	0.0027	< 0.0015 ug/l	0.0027	< 0.044 ug/l	0.078	< 0.043 ug/l	0.076
Fluoranthene	7.109 ug/l	< 0.0040 ug/l	0.00028	< 0.0040 ug/l	0.00028	< 0.044 ug/l	0.0031	< 0.043 ug/l	0.003
Fluorene	39.9 ug/l	5.6 ug/l	0.14	5.9 ug/l	0.15	5.5 ug/l	0.14	5.7 ug/l	0.14
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.0019 ug/l	0.0035	< 0.0019 ug/l	0.0035	< 0.044 ug/l	0.080	< 0.043 ug/l	0.078
Naphthalene	193.5 ug/l	750 ug/l	3.9	710 ug/l	3.7	610 ug/l	3.2	659 ug/l	3.4
Phenanthrene	19.13 ug/l	2.4 ug/l	0.13	2.6 ug/l	0.14	3.3 ug/l	0.17	3.5 ug/l	0.18
Pyrene	10.11 ug/l	< 0.0041 ug/l	0.00020	< 0.0041 ug/l	0.00020	< 0.044 ug/l	0.0022	< 0.043 ug/l	0.0021
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		4.8 a		4.7 a		4.3		4.6	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	SB-PW-02				SB-PW-03		SB-PW-03		SB-PW-03	
	Date	6/03/2015				11/06/2013		10/31/2014		6/03/2015	
	Depth										
	Sample Type	N		FD		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs										
Effective Date	03/24/2003										
SVOCs											
2-Methylnaphthalene	72.16 ug/l	22.6 ug/l	0.31	22.9 ug/l	0.32	0.0085 j ug/l	0.00012 a	< 0.043 ug/l	0.00030	< 0.040 ug/l	0.00028
Acenaphthene	55.85 ug/l	7.1 ug/l	0.13	7.0 ug/l	0.13	0.15 ug/l	0.0027	0.33 ug/l	0.0059	0.38 ug/l	0.0068
Acenaphthylene	306.9 ug/l	8.3 ug/l	0.027	8.2 ug/l	0.027	< 0.0046 ug/l	0.0000075	< 0.043 ug/l	0.000070	< 0.040 ug/l	0.000065
Anthracene	20.73 ug/l	0.36 ug/l	0.017	0.36 ug/l	0.017	< 0.0057 ug/l	0.00014	< 0.043 ug/l	0.0010	< 0.040 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092	< 0.0016 ug/l	0.00036	< 0.043 ug/l	0.0097	< 0.040 ug/l	0.0090
Benzo(a)pyrene	0.9008 ug/l	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023	< 0.0010 ug/l	0.00056	< 0.043 ug/l	0.024	< 0.040 ug/l	0.022
Benzo(b)fluoranthene	0.6774 ug/l	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030	--	--	< 0.043 ug/l	0.032	< 0.040 ug/l	0.030
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	--	--	< 0.0017 ug/l	0.0013	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047	< 0.0019 ug/l	0.0022	< 0.043 ug/l	0.049	< 0.040 ug/l	0.046
Benzo(k)fluoranthene	0.6415 ug/l	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032	< 0.0033 ug/l	0.0026	< 0.043 ug/l	0.034	< 0.040 ug/l	0.031
Chrysene	2.042 ug/l	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010	< 0.0015 ug/l	0.00037	< 0.043 ug/l	0.011	< 0.040 ug/l	0.010
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073	< 0.0015 ug/l	0.0027	< 0.043 ug/l	0.076	< 0.040 ug/l	0.071
Fluoranthene	7.109 ug/l	0.060 ug/l	0.0084	0.059 ug/l	0.0083	< 0.0040 ug/l	0.00028	< 0.043 ug/l	0.003	< 0.040 ug/l	0.0028
Fluorene	39.9 ug/l	5.1 ug/l	0.13	5.0 ug/l	0.13	< 0.0062 ug/l	0.000078	< 0.043 ug/l	0.00054	< 0.040 ug/l	0.00050
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075	< 0.0019 ug/l	0.0035	< 0.043 ug/l	0.078	< 0.040 ug/l	0.073
Naphthalene	193.5 ug/l	801 ug/l	4.1	848 ug/l	4.4	0.16 ug/l	0.00083	< 0.043 ug/l	0.00011	< 0.040 ug/l	0.00010
Phenanthrene	19.13 ug/l	3.2 ug/l	0.17	3.2 ug/l	0.17	< 0.0066 ug/l	0.00017	< 0.043 ug/l	0.0011	< 0.040 ug/l	0.0010
Pyrene	10.11 ug/l	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020	< 0.0041 ug/l	0.00020	< 0.043 ug/l	0.0021	< 0.040 ug/l	0.0020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		5.2		5.5		0.018 a		0.33		0.31	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	SB-PW-04		SB-PW-04		SB-PW-04		SB-PW-05		SB-PW-05		SB-PW-05	
	Date	11/06/2013		10/31/2014		6/03/2015		11/06/2013		10/31/2014		6/03/2015	
	Depth												
	Sample Type	N		N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs												
Effective Date	03/24/2003												
SVOCs													
2-Methylnaphthalene	72.16 ug/l	0.021 j ug/l	0.00029 a	< 0.044 ug/l	0.00030	< 0.041 ug/l	0.00028	0.043 j ug/l	0.0006 a	< 0.043 ug/l	0.00030	< 0.041 ug/l	0.00028
Acenaphthene	55.85 ug/l	< 0.0050 ug/l	0.000045	< 0.044 ug/l	0.00039	< 0.041 ug/l	0.00037	0.19 ug/l	0.0034	0.15 ug/l	0.0027	0.19 ug/l	0.0034
Acenaphthylene	306.9 ug/l	< 0.0046 ug/l	0.0000075	< 0.044 ug/l	0.000072	< 0.041 ug/l	0.000067	< 0.0046 ug/l	0.0000075	0.057 ug/l	0.00019	< 0.041 ug/l	0.000067
Anthracene	20.73 ug/l	< 0.0057 ug/l	0.00014	< 0.044 ug/l	0.0011	< 0.041 ug/l	0.0010	< 0.0057 ug/l	0.00014	< 0.043 ug/l	0.0010	< 0.041 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	0.0042 j ug/l	0.0019 a	< 0.044 ug/l	0.0099	< 0.041 ug/l	0.0092	0.0028 j ug/l	0.0013 a	< 0.043 ug/l	0.0097	< 0.041 ug/l	0.0092
Benzo(a)pyrene	0.9008 ug/l	0.0028 j ug/l	0.0031 a	< 0.044 ug/l	0.024	< 0.041 ug/l	0.023	< 0.0010 ug/l	0.00056	< 0.043 ug/l	0.024	< 0.041 ug/l	0.023
Benzo(b)fluoranthene	0.6774 ug/l	--	--	< 0.044 ug/l	0.032	< 0.041 ug/l	0.030	--	--	< 0.043 ug/l	0.032	< 0.041 ug/l	0.030
Benzo(b&j)fluoranthene	0.6774 ug/l	0.0076 j ug/l	0.011 a	--	--	--	--	< 0.0017 ug/l	0.0013	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.0019 ug/l	0.0022	< 0.044 ug/l	0.050	< 0.041 ug/l	0.047	< 0.0019 ug/l	0.0022	< 0.043 ug/l	0.049	< 0.041 ug/l	0.047
Benzo(k)fluoranthene	0.6415 ug/l	0.0080 j ug/l	0.012 a	< 0.044 ug/l	0.034	< 0.041 ug/l	0.032	< 0.0033 ug/l	0.0026	< 0.043 ug/l	0.034	< 0.041 ug/l	0.032
Chrysene	2.042 ug/l	0.0064 j ug/l	0.0031 a	< 0.044 ug/l	0.011	< 0.041 ug/l	0.010	0.0025 j ug/l	0.0012 a	< 0.043 ug/l	0.011	< 0.041 ug/l	0.010
Dibenz(a,h)anthracene	0.2825 ug/l	0.0051 j ug/l	0.018 a	< 0.044 ug/l	0.078	< 0.041 ug/l	0.073	0.0021 j ug/l	0.0074 a	< 0.043 ug/l	0.076	< 0.041 ug/l	0.073
Fluoranthene	7.109 ug/l	< 0.0040 ug/l	0.00028	< 0.044 ug/l	0.0031	< 0.041 ug/l	0.0029	< 0.0040 ug/l	0.00028	< 0.043 ug/l	0.0030	< 0.041 ug/l	0.0029
Fluorene	39.9 ug/l	< 0.0062 ug/l	0.000078	< 0.044 ug/l	0.00055	< 0.041 ug/l	0.00051	< 0.0062 ug/l	0.000078	< 0.043 ug/l	0.00054	0.065 ug/l	0.0016
Indeno(1,2,3-cd)pyrene	0.275 ug/l	0.0092 j ug/l	0.033 a	< 0.044 ug/l	0.080	< 0.041 ug/l	0.075	< 0.0019 ug/l	0.0035	< 0.043 ug/l	0.078	< 0.041 ug/l	0.075
Naphthalene	193.5 ug/l	0.38 ug/l	0.0020	< 0.044 ug/l	0.00011	< 0.041 ug/l	0.00011	14 ug/l	0.072	33.0 ug/l	0.17	< 0.041 ug/l	0.00011
Phenanthrene	19.13 ug/l	0.0086 j ug/l	0.00045 a	< 0.044 ug/l	0.0012	< 0.041 ug/l	0.0011	< 0.0066 ug/l	0.00017	< 0.043 ug/l	0.0011	< 0.041 ug/l	0.0011
Pyrene	10.11 ug/l	< 0.0041 ug/l	0.00020	< 0.044 ug/l	0.0022	< 0.041 ug/l	0.0020	< 0.0041 ug/l	0.00020	< 0.043 ug/l	0.0021	< 0.041 ug/l	0.0020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.089 a		0.33		0.31		0.097 a		0.49		0.31	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	SB-PW-06		SB-PW-06		SB-PW-06		SB-PW-06		SB-PW-07	
	Date	11/06/2013		11/06/2013		10/31/2014		6/03/2015		6/03/2015	
	Depth										
	Sample Type	N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs										
Effective Date	03/24/2003										
SVOCs											
2-Methylnaphthalene	72.16 ug/l	0.07 ug/l	0.00097	0.13 ug/l	0.0018	0.13 ug/l	0.0018	0.11 ug/l	0.0015	< 0.041 ug/l	0.00028
Acenaphthene	55.85 ug/l	0.051 ug/l	0.00091	0.083 ug/l	0.0015	0.10 ug/l	0.0018	0.11 ug/l	0.0020	1.7 ug/l	0.030
Acenaphthylene	306.9 ug/l	< 0.0046 ug/l	0.0000075	< 0.0046 ug/l	0.0000075	0.057 ug/l	0.00019	0.049 ug/l	0.00016	< 0.041 ug/l	0.000067
Anthracene	20.73 ug/l	< 0.0057 ug/l	0.00014	< 0.0057 ug/l	0.00014	< 0.043 ug/l	0.0010	< 0.041 ug/l	0.0010	< 0.041 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	< 0.0016 ug/l	0.00036	< 0.0016 ug/l	0.00036	< 0.043 ug/l	0.0097	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092
Benzo(a)pyrene	0.9008 ug/l	< 0.0010 ug/l	0.00056	< 0.0010 ug/l	0.00056	< 0.043 ug/l	0.024	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023
Benzo(b)fluoranthene	0.6774 ug/l	--	--	--	--	< 0.043 ug/l	0.032	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030
Benzo(b&j)fluoranthene	0.6774 ug/l	< 0.0017 ug/l	0.0013	< 0.0017 ug/l	0.0013	--	--	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.0019 ug/l	0.0022	< 0.0019 ug/l	0.0022	< 0.043 ug/l	0.049	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047
Benzo(k)fluoranthene	0.6415 ug/l	< 0.0033 * ug/l	0.0026 a	< 0.0033 * ug/l	0.0026 a	< 0.043 ug/l	0.034	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032
Chrysene	2.042 ug/l	< 0.0015 ug/l	0.00037	< 0.0015 ug/l	0.00037	< 0.043 ug/l	0.011	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.0015 * ug/l	0.0027 a	< 0.0015 * ug/l	0.0027 a	< 0.043 ug/l	0.076	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073
Fluoranthene	7.109 ug/l	< 0.0040 ug/l	0.00028	< 0.0040 ug/l	0.00028	< 0.043 ug/l	0.0030	< 0.041 ug/l	0.0029	< 0.041 ug/l	0.0029
Fluorene	39.9 ug/l	0.017 j ug/l	0.00043 a	0.03 ug/l	0.00075	< 0.043 ug/l	0.00054	< 0.041 ug/l	0.00051	0.30 ug/l	0.0075
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.0019 ug/l	0.0035	< 0.0019 ug/l	0.0035	< 0.043 ug/l	0.078	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075
Naphthalene	193.5 ug/l	2.9 ug/l	0.015	5 ug/l	0.026	3.3 ug/l	0.017	2.3 ug/l	0.012	0.49 ug/l	0.0025
Phenanthrene	19.13 ug/l	< 0.0066 ug/l	0.00017	0.0092 j ug/l	0.00048 a	< 0.043 ug/l	0.0011	< 0.041 ug/l	0.0011	< 0.041 ug/l	0.0011
Pyrene	10.11 ug/l	< 0.0041 ug/l	0.00020	< 0.0041 ug/l	0.00020	< 0.043 ug/l	0.0021	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.031 a		0.044 a		0.34		0.32		0.35	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 1
Porewater Analytical Data Summary
SLRIDT Site
XIK Corporation

	Location	SB-PW-08		SB-PW-09		SB-PW-10		SW-PW-01		SW-PW-01		SW-PW-01	
	Date	6/03/2015		6/03/2015		6/15/2015		11/06/2013		10/31/2014		6/03/2015	
	Depth												
	Sample Type	N		N		N		N		N		N	
		Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio	Sample Concentration	Concentration/ FCV ratio
Parameter	EPA's FCVs												
Effective Date	03/24/2003												
SVOCs													
2-Methylnaphthalene	72.16 ug/l	< 0.041 ug/l	0.00028	4.2 ug/l	0.058	0.047 ug/l	0.00065	0.0088 j ug/l	0.00012 a	< 0.044 ug/l	0.00030	< 0.040 ug/l	0.00028
Acenaphthene	55.85 ug/l	< 0.041 ug/l	0.00037	2.0 ug/l	0.036	3.1 ug/l	0.056	< 0.0050 ug/l	0.000045	< 0.044 ug/l	0.00039	< 0.040 ug/l	0.00036
Acenaphthylene	306.9 ug/l	< 0.041 ug/l	0.00007	1.5 ug/l	0.0049	0.24 ug/l	0.00078	< 0.0046 ug/l	0.0000075	< 0.044 ug/l	0.000072	< 0.040 ug/l	0.00007
Anthracene	20.73 ug/l	< 0.041 ug/l	0.0010	0.10 ug/l	0.0048	0.042 ug/l	0.0020	< 0.0057 ug/l	0.00014	< 0.044 ug/l	0.0011	< 0.040 ug/l	0.0010
Benzo(a)anthracene	2.227 ug/l	< 0.041 ug/l	0.0092	< 0.041 ug/l	0.0092	< 0.040 ug/l	0.0090	< 0.0016 ug/l	0.00036	< 0.044 ug/l	0.0099	< 0.040 ug/l	0.0090
Benzo(a)pyrene	0.9008 ug/l	< 0.041 ug/l	0.023	< 0.041 ug/l	0.023	< 0.040 ug/l	0.022	< 0.0010 ug/l	0.00056	< 0.044 ug/l	0.024	< 0.040 ug/l	0.022
Benzo(b)fluoranthene	0.6774 ug/l	< 0.041 ug/l	0.030	< 0.041 ug/l	0.030	< 0.040 ug/l	0.030	--	--	< 0.044 ug/l	0.032	< 0.040 ug/l	0.030
Benzo(b&j)fluoranthene	0.6774 ug/l	--	--	--	--	--	--	< 0.0017 ug/l	0.0013	--	--	--	--
Benzo(g,h,i)perylene	0.4391 ug/l	< 0.041 ug/l	0.047	< 0.041 ug/l	0.047	< 0.040 ug/l	0.046	< 0.0019 ug/l	0.0022	< 0.044 ug/l	0.050	< 0.040 ug/l	0.046
Benzo(k)fluoranthene	0.6415 ug/l	< 0.041 ug/l	0.032	< 0.041 ug/l	0.032	< 0.040 ug/l	0.031	< 0.0033 ug/l	0.0026	< 0.044 ug/l	0.034	< 0.040 ug/l	0.031
Chrysene	2.042 ug/l	< 0.041 ug/l	0.010	< 0.041 ug/l	0.010	< 0.040 ug/l	0.010	< 0.0015 ug/l	0.00037	< 0.044 ug/l	0.011	< 0.040 ug/l	0.010
Dibenz(a,h)anthracene	0.2825 ug/l	< 0.041 ug/l	0.073	< 0.041 ug/l	0.073	< 0.040 ug/l	0.071	< 0.0015 ug/l	0.0027	< 0.044 ug/l	0.078	< 0.040 ug/l	0.071
Fluoranthene	7.109 ug/l	< 0.041 ug/l	0.0029	< 0.041 ug/l	0.0029	< 0.040 ug/l	0.0028	< 0.0040 ug/l	0.00028	< 0.044 ug/l	0.0031	< 0.040 ug/l	0.0028
Fluorene	39.9 ug/l	< 0.041 ug/l	0.00051	1.4 ug/l	0.035	0.98 ug/l	0.025	< 0.0062 ug/l	0.000078	< 0.044 ug/l	0.00055	< 0.040 ug/l	0.00050
Indeno(1,2,3-cd)pyrene	0.275 ug/l	< 0.041 ug/l	0.075	< 0.041 ug/l	0.075	< 0.040 ug/l	0.073	< 0.0019 ug/l	0.0035	< 0.044 ug/l	0.080	< 0.040 ug/l	0.073
Naphthalene	193.5 ug/l	< 0.041 ug/l	0.00011	74.0 ug/l	0.38	0.72 ug/l	0.0037	0.076 b ug/l	0.00039 a	< 0.044 ug/l	0.00011	< 0.040 ug/l	0.00010
Phenanthrene	19.13 ug/l	< 0.041 ug/l	0.0011	0.70 ug/l	0.037	0.32 ug/l	0.017	< 0.0066 ug/l	0.00017	< 0.044 ug/l	0.0012	< 0.040 ug/l	0.0010
Pyrene	10.11 ug/l	< 0.041 ug/l	0.0020	< 0.041 ug/l	0.0020	< 0.040 ug/l	0.0020	< 0.0041 ug/l	0.00020	< 0.044 ug/l	0.0022	< 0.040 ug/l	0.0020
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)		0.31		0.86		0.40		0.015 a		0.33		0.30	

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 2
Porewater Analytical Data - QA/QC
SLRIDT Site
XIK Corporation

Location Date Sample Type	QC 11/12/2013 Method Blank	QC 11/14/2013 Method Blank	QC 11/16/2013 Method Blank	QC 11/03/2014 Method Blank	QC 11/04/2014 Method Blank	QC 11/17/2014 Method Blank	QC 6/08/2015 Method Blank	QC 6/09/2015 Method Blank	QC 6/10/2015 Method Blank	QC 6/17/2015 Method Blank
Parameter										
SVOCs										
2-Methylnaphthalene	< 0.0049 ug/l	< 0.0049 ug/l	< 0.0049 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Acenaphthene	< 0.0050 ug/l	< 0.0050 ug/l	< 0.0050 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Acenaphthylene	< 0.0046 ug/l	< 0.0046 ug/l	< 0.0046 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Anthracene	< 0.0057 ug/l	< 0.0057 ug/l	< 0.0057 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Benz(a)anthracene	< 0.0016 ug/l	< 0.0016 ug/l	< 0.0016 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Benzo(a)pyrene	< 0.0010 ug/l	< 0.0010 ug/l	< 0.0010 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Benzo(b)fluoranthene	--	--	--	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Benzo(b&j)fluoranthene	< 0.0017 ug/l	< 0.0017 ug/l	< 0.0017 ug/l	--	--	--				
Benzo(g,h,i)perylene	< 0.0019 ug/l	< 0.0019 ug/l	< 0.0019 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Benzo(k)fluoranthene	< 0.0033 ug/l	< 0.0033 ug/l	< 0.0033 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Chrysene	< 0.0015 ug/l	< 0.0015 ug/l	< 0.0015 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Dibenz(a,h)anthracene	< 0.0015 ug/l	< 0.0015 ug/l	< 0.0015 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Fluoranthene	< 0.0040 ug/l	< 0.0040 ug/l	< 0.0040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Fluorene	< 0.0062 ug/l	< 0.0062 ug/l	< 0.0062 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Indeno(1,2,3-cd)pyrene	< 0.0019 ug/l	< 0.0019 ug/l	< 0.0019 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Naphthalene	**0.0155 j ug/l**	**0.0163 j ug/l**	**0.0146 j ug/l**	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Phenanthrene	< 0.0066 ug/l	< 0.0066 ug/l	< 0.0066 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l
Pyrene	< 0.0041 ug/l	< 0.0041 ug/l	< 0.0041 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l	< 0.040 ug/l

j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 3
Porewater Analytical Data
Relative Percent Difference
SLRIDT Site
XIK Corporation

	Location	S6-PW-01			S7-PW-06			SB-PW-02			SB-PW-02		
	Sample Date	10/30/2014			11/07/2013			10/31/2014			11/06/2013		
	Sample Type Code	N	FD	RPD %	N	FD	RPD %	N	FD	RPD %	N	FD	RPD %
Chemical Name	Analysis Location												
SVOCs													
2-Methylnaphthalene	Lab	**0.79 ug/l**	**0.87 ug/l**	**9.6**	**22 * ug/l**	**25 ug/l**	**13**	**23.9 ug/l**	**25.5 ug/l**	**6.5**	**32 ug/l**	**35 ug/l**	**9.0**
Acenaphthene	Lab	**0.25 ug/l**	**0.28 ug/l**	**11**	**12 * ug/l**	**10 ug/l**	**18**	**6.7 ug/l**	**7.0 ug/l**	**4.4**	**8.2 ug/l**	**8.2 ug/l**	**0**
Acenaphthylene	Lab	**0.67 ug/l**	**0.73 ug/l**	**8.6**	**33 * ug/l**	**34 * ug/l**	**3.0**	**9.4 ug/l**	**9.8 ug/l**	**4.2**	**14 * ug/l**	**14 * ug/l**	**0**
Anthracene	Lab	< 0.044 ug/l	< 0.044 ug/l		**0.091 * ug/l**	**0.2 * ug/l**	**75**	**0.48 ug/l**	**0.50 ug/l**	**4.1**	**0.31 ug/l**	**0.33 ug/l**	**6.3**
Benz(a)anthracene	Lab	< 0.044 ug/l	< 0.044 ug/l		**0.0080 j ug/l**	< 0.0017 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0016 ug/l	< 0.0016 ug/l	
Benzo(a)pyrene	Lab	< 0.044 ug/l	< 0.044 ug/l		**0.0026 j ug/l**	< 0.0011 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0010 ug/l	< 0.0010 ug/l	
Benzo(b)fluoranthene	Lab	< 0.044 ug/l	< 0.044 ug/l		--	--		< 0.044 ug/l	< 0.043 ug/l		--	--	
Benzo(b&j)fluoranthene	Lab	--	--		< 0.0019 ug/l	< 0.0018 ug/l		--	--		< 0.0017 ug/l	< 0.0017 ug/l	
Benzo(g,h,i)perylene	Lab	< 0.044 ug/l	< 0.044 ug/l		< 0.0022 ug/l	< 0.0021 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0019 ug/l	< 0.0019 ug/l	
Benzo(k)fluoranthene	Lab	< 0.044 ug/l	< 0.044 ug/l		< 0.0037 ug/l	< 0.0035 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0033 ug/l	< 0.0033 ug/l	
Chrysene	Lab	< 0.044 ug/l	< 0.044 ug/l		**0.0043 j* ug/l**	< 0.0016 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0015 ug/l	< 0.0015 ug/l	
Dibenz(a,h)anthracene	Lab	< 0.044 ug/l	< 0.044 ug/l		< 0.0017 ug/l	< 0.0016 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0015 ug/l	< 0.0015 ug/l	
Fluoranthene	Lab	< 0.044 ug/l	< 0.044 ug/l		< 0.0044 ug/l	< 0.0042 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0040 ug/l	< 0.0040 ug/l	
Fluorene	Lab	**0.19 ug/l**	**0.22 ug/l**	**15**	**3 * ug/l**	**3.2 ug/l**	**6.5**	**5.5 ug/l**	**5.7 ug/l**	**3.6**	**5.6 ug/l**	**5.9 ug/l**	**5.2**
Indeno(1,2,3-cd)pyrene	Lab	< 0.044 ug/l	< 0.044 ug/l		< 0.0022 ug/l	< 0.0021 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0019 ug/l	< 0.0019 ug/l	
Naphthalene	Lab	**50.7 ug/l**	**51.4 ug/l**	**1.4**	**1200 * ug/l**	**1200 ug/l**	**0**	**610 ug/l**	**659 ug/l**	**7.7**	**750 ug/l**	**710 ug/l**	**5.5**
Phenanthrene	Lab	**0.070 ug/l**	**0.092 ug/l**	**27**	**1.8 * ug/l**	**1.3 ug/l**	**32**	**3.3 ug/l**	**3.5 ug/l**	**5.9**	**2.4 ug/l**	**2.6 ug/l**	**8.0**
Pyrene	Lab	< 0.044 ug/l	< 0.044 ug/l		< 0.0046 ug/l	< 0.0044 ug/l		< 0.044 ug/l	< 0.043 ug/l		< 0.0041 ug/l	< 0.0041 ug/l	
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)	Barr Calculation	**0.61 ug/l**	**0.62 ug/l**	**1.6**	**7.0 a ug/l**	**7.0 a ug/l**	**0**	**4.3 ug/l**	**4.6 ug/l**	**6.7**	**4.8 a ug/l**	**4.7 a ug/l**	**2.1**

* = Estimated value, QA/QC criteria not met

a = Estimated value, calculated using some or all values that are estimates.

j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

%RPD = | (N - FD) / (N + FD) / 2 | X 100
Where: N = 1st Value
FD = 2nd Value

Table 3
Porewater Analytical Data
Relative Percent Difference
SLRIDT Site
XIK Corporation

	Location	S7-PW-08			SB-PW-02		
	Sample Date	06/04/2015			06/03/2015		
	Sample Type Code	N	FD	RPD %	N	FD	RPD %
Chemical Name	Analysis Location						
SVOCs							
2-Methylnaphthalene	Lab	0.89 ug/l	1.0 ug/l		22.6 ug/l	22.9 ug/l	
Acenaphthene	Lab	**30.9 ug/l**	**29.9 ug/l**	**3.3**	**7.1 ug/l**	**7.0 ug/l**	**1.4**
Acenaphthylene	Lab	**1.1 ug/l**	**1.3 ug/l**	**17**	**8.3 ug/l**	**8.2 ug/l**	**1.2**
Anthracene	Lab	**0.060 ug/l**	< 0.041 ug/l		**0.36 ug/l**	**0.36 ug/l**	**0**
Benz(a)anthracene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Benzo(a)pyrene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Benzo(b)fluoranthene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Benzo(b&j)fluoranthene	Lab						
Benzo(g,h,i)perylene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Benzo(k)fluoranthene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Chrysene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Dibenz(a,h)anthracene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Fluoranthene	Lab	< 0.041 ug/l	< 0.041 ug/l		**0.060 ug/l**	**0.059 ug/l**	**1.7**
Fluorene	Lab	**0.12 ug/l**	**0.12 ug/l**	**0**	**5.1 ug/l**	**5.0 ug/l**	**2.0**
Indeno(1,2,3-cd)pyrene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
Naphthalene	Lab	**657 ug/l**	**664 ug/l**	**1.1**	**801 ug/l**	**848 ug/l**	**5.7**
Phenanthrene	Lab	**0.051 ug/l**	**0.047 ug/l**	**8.2**	**3.2 ug/l**	**3.2 ug/l**	**0**
Pyrene	Lab	< 0.041 ug/l	< 0.041 ug/l		< 0.041 ug/l	< 0.041 ug/l	
PAH Ratio (USEPA FCV) Additive Model Porewater Value (ND=1/2)	Barr Calculation	**4.3 ug/l**	**4.3 ug/l**	**0**	**5.2 ug/l**	**5.4 ug/l**	**3.8**

* = Estimated value, QA/QC criteria not met
a = Estimated value, calculated using some or all va
j = Reported value is less than the stated laboratory

%RPD = | (N - FD) / (N + FD) / 2 | X 100
Where: N = 1st Value
FD = 2nd Value

Table 4
Porewater Sample Depths, Bulk Sediment Core and Cap Thickness Information
SLRIDT Site
XIK Corporation

Location ID	Date	Cap depth (feet) determined in cores or probes	SedPt install depth (feet)	Comments, Sediment description (feet)
SB-PW-01	6/2/2015	--	2.1	3 attempts
SB-PW-02	6/2/2015	--	2.8	
SB-PW-03	6/2/2015	--	2.6	
SB-PW-04	6/2/2015	--	3	
SB-PW-05	6/2/2015	--	2.2	
SB-PW-06	6/2/2015	--	2.7	
SB-PW-07	6/2/2015	--	3	
SB-PW-08	6/2/2015	--	1.5	2 attempts
SB-PW-09	6/2/2015	--	1.25	2 attempts
SB-PW-10	6/12/2015	--	1.7	Top of Mat
S6-PW-01	6/2/2015	--	3	
S6-PW-02	6/2/2015	--	3	
S6-PW-03	6/2/2015	--	6	Set in sand below environmental media, as fine grained media was clogging the SedPoint
S6-PW-04	6/2/2015	--	3	
S6-PW-05	6/2/2015	--	3	
S6-PW-06	6/2/2015	--	3	
S7-PW-01	6/2/2015	--	1.5	8.75' water
S7-PW-02	6/3/2015	--	1.75	
S7-PW-03	6/12/2015	--	1.5	3 attempts, first 2 bent rod tip
S7-PW-04	6/2/2015	--	1.5	13' water
S7-PW-05	11/12/2014	--	3.0	sample point remained in place from previous year
S7-PW-06	11/12/2014	--	3.0	sample point remained in place from previous year
S7-PW-07	6/3/2015	--	1.75	2 attempts, friction refusal
S7-PW-08	6/3/2015	--	1.9	
S7-PW-09	6/3/2015	--	1.5	
S7-PW-10	6/12/2015	--	1.7	at root mat surface
SW-PW-01	6/3/2015	--	3.0	
NW-PW-01	11/12/2014	--	3.0	sample point remained in place from previous year
SB-BS-01	6/6/2015	2.1	--	0-0.5' Organic Silt
				0.5-2.1' Limestone cap sand
SB-BS-02	6/6/2015	2.2	--	0-0.25' Organic Silt
				0.25-2.2' Limestone cap sand
SB-BS-03	6/6/2015	1.5	--	0-0.25' Organic Silt
				0.25-1.5' Limestone cap sand
SB-BS-04	6/5/2015	1.2	--	0-0.7' Organic Silt
				0.7-0.75' Limestone fines
				0.75-1.2' Limestone cap sand
SB-BS-05	6/6/2015	2.3	--	0-0.6' Organic Silt
				0.6-2.3' Limestone cap sand
SB-BS-06	6/6/2015	2	--	0-0.4' Organic Silt
				0.4-2.0' Limestone cap sand
SB-BS-07	6/6/2015	1.8	--	0-0.3' Organic Silt
				0.3-1.8' Limestone cap sand
SB-BS-08	6/6/2015	2.2	--	0-0.25' Organic Silt
				0.25-2.2' Limestone cap sand
SB-BS-09	6/6/2015	2.5	--	0-2' Organic Silt/Limestone cap sand mix
				2-2.5' Limestone cap sand. Faint petroleum hydrocarbon-like odor
S6-BS-01	6/8/2015	2	--	0-0.6' Organic Silt
				0.6-1.5' Red cap sand
				1.5-2.0' Limestone cap sand
S6-BS-02	6/8/2015	5	--	0-1.25' Organic Silt
				1.25-4.0' Red cap sand
				4.0-5.0' Limestone cap sand
S6-BS-03	6/8/2015	4.25	--	0-3.25' Organic Silt
				3.25-4.0' Red cap sand
				4.0-4.25' Limestone cap sand
S6-BS-04	6/8/2015	3	--	0-0.5' Organic Silt
				0.5-3.0' Limestone and Red cap sand mix

Table 4
Porewater Sample Depths, Bulk Sediment Core and Cap Thickness Information
SLRIDT Site
XIK Corporation

Location ID	Date	Cap depth (feet) determined in cores or probes	SedPt install depth (feet)	Comments, Sediment description (feet)				
S6-BS-05	6/8/2015	4.2	--	0-0.5' Organic Silt	2 attempts			
				0.5-3.2' Red cap sand				
				3.2-4.2' Limestone cap sand				
S6-BS-06	6/8/2015	4	--	0-1.75' Organic Silt				
				1.75-3.0' Red cap sand				
				3.0-4.0' Limestone cap sand				
SW-BS-01	6/9/2015	3.33	--	0-3.33' Red cap sand				
NW-BS-01	6/9/2015	3.5	--	0-0.3' Organic Silt				
				0.3-3.5' Red cap sand				
				3.5-3.7' Dark brown sand w/gravel, probable native				
S7-BS-01	6/10/2015	2.7	--	0-0.5' Organic Silt				
				0.5-2.7' Red cap sand				
				2.7-3.0' Dark brown organic silt				
S7-BS-02	6/11/2015	2.3	--	0-0.5' Organic Silt				
				0.5-2.3' Red cap sand				
S7-BS-03	6/11/2015	1.8	--	0-0.5' Organic Silt				
				0.5-1.8' Red cap sand				
				1.8-2.0' Dark brown silt				
S7-BS-04	6/10/2015	3.5	--	0-0.5' Organic Silt				
				0.5-3.5' Red cap sand				
				3.5-4' Dark brown organic silt				
S7-BS-05	6/9/2015	2.7	--	0-0.5' Organic Silt				
				0.5-2.7' Red cap sand				
S7-BS-06	6/9/2015	3.3	--	0-0.8' Organic Silt				
				0.8-2.5' Red cap sand				
				2.5-3.3' Limestone cap sand				
				3.3-3.7' probable native impacted soil				
SB-CT-01	6/11/2015	2.14	--					
SB-CT-02	6/11/2015	5.01	--					
SB-CT-03	6/11/2015	2.57	--					
S6-CT-01	6/11/2015	6.53	--					
S6-CT-02	6/11/2015	4.67	--					
S6-CT-03	6/11/2015	5.62	--					
S6-CT-04	6/11/2015	4.47	--					
S7-CT-01	6/11/2015	4.34	--					
S7-CT-02	6/11/2015	2.5	--	0-0.8' Organic Silt				
				0.8-2.5' Red cap sand				
				2.5-3.0' Silt, apparent petroleum hydrocarbon-like staining 2.8-3.0'.				
S7-CT-03	6/11/2015	1.8	--	0-0.5' Organic Silt				
				0.5-1.8' Red cap sand				
S7-CT-04	6/11/2015	4.22	--					

Table 5
Sediment Analytical Data Summary
SLRIDT Site
XIK Corporation

		Location	NW-BS-01	NW-BS-01	NW-BS-01 RE	S6-BS-01	S6-BS-01	S6-BS-02	S6-BS-02	S6-BS-03	S6-BS-03	S6-BS-04	S6-BS-04	S6-BS-05		S6-BS-05
		Date	11/01/2013	6/09/2015	6/09/2015	10/22/2013	6/08/2015	10/24/2013	6/08/2015	10/24/2013	6/08/2015	10/22/2013	6/08/2015	10/24/2013		6/08/2015
		Depth	3 ft	3 - 3.3 ft	3 - 3.3 ft	3 ft	1.8 - 2.1 ft	3 ft	3 - 3.3 ft	3 ft	4 - 4.25 ft	3 ft	2.7 - 3 ft	3 ft	3 ft	3 - 3.3 ft
		Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
Parameter	Analysis Location	XIK SLRIDT Sum of 17 PAHs Criteria														
Exceedance Key		No Exceed														
General Parameters																
Moisture	Lab		--	17.9 %	17.9 %	--	14.0 %	--	18.3 %	--	21.8 %	--	15.6 %	--	--	10.3 %
Solids, percent	Lab		83 % wt	--	--	82 % wt	--	83 % wt	--	85 % wt	--	81 % wt	--	93 % wt	84 % wt	--
SVOCs																
2-Methylnaphthalene	Lab		0.00067 j mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0022 j mg/kg	< 0.0116 mg/kg	0.012 mg/kg	< 0.0122 mg/kg	0.00046 j mg/kg	< 0.0128 mg/kg	0.00062 j mg/kg	< 0.0118 mg/kg	< 0.00042 mg/kg	0.00066 j mg/kg	< 0.0111 mg/kg
Acenaphthene	Lab		< 0.00033 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.00087 j mg/kg	< 0.0116 mg/kg	< 0.00032 mg/kg	< 0.0122 mg/kg	< 0.00032 mg/kg	< 0.0128 mg/kg	< 0.00034 mg/kg	< 0.0118 mg/kg	0.00057 j mg/kg	0.00075 j mg/kg	< 0.0111 mg/kg
Acenaphthylene	Lab		< 0.00045 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0014 j* mg/kg	< 0.0116 mg/kg	0.0027 * mg/kg	< 0.0122 mg/kg	< 0.00044 mg/kg	< 0.0128 mg/kg	< 0.00046 mg/kg	< 0.0118 mg/kg	< 0.00040 mg/kg	< 0.00044 mg/kg	< 0.0111 mg/kg
Anthracene	Lab		< 0.00048 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0016 j mg/kg	< 0.0116 mg/kg	0.0033 mg/kg	< 0.0122 mg/kg	< 0.00047 mg/kg	< 0.0128 mg/kg	< 0.00049 mg/kg	< 0.0118 mg/kg	< 0.00043 mg/kg	0.00079 j mg/kg	< 0.0111 mg/kg
Benzo(a)anthracene	Lab		< 0.00046 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0032 mg/kg	< 0.0116 mg/kg	0.01 mg/kg	< 0.0122 mg/kg	< 0.00044 mg/kg	< 0.0128 mg/kg	< 0.00047 mg/kg	< 0.0118 mg/kg	< 0.00041 mg/kg	0.0023 j mg/kg	< 0.0111 mg/kg
Benzo(a)pyrene	Lab		< 0.00025 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0030 mg/kg	< 0.0116 mg/kg	0.0096 mg/kg	< 0.0122 mg/kg	< 0.00024 mg/kg	< 0.0128 mg/kg	0.00029 j mg/kg	< 0.0118 mg/kg	< 0.00022 mg/kg	0.0019 j mg/kg	< 0.0111 mg/kg
Benzo(b&j)fluoranthene	Lab		< 0.00066 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0035 j mg/kg	< 0.0116 mg/kg	0.012 mg/kg	< 0.0122 mg/kg	< 0.00064 mg/kg	< 0.0128 mg/kg	< 0.00068 mg/kg	< 0.0118 mg/kg	< 0.00059 mg/kg	0.0023 j mg/kg	< 0.0111 mg/kg
Benzo(g,h,i)perylene	Lab		< 0.00036 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0025 mg/kg	< 0.0116 mg/kg	0.0087 mg/kg	< 0.0122 mg/kg	< 0.00035 mg/kg	< 0.0128 mg/kg	< 0.00037 mg/kg	< 0.0118 mg/kg	< 0.00032 mg/kg	0.0015 j mg/kg	< 0.0111 mg/kg
Benzo(k)fluoranthene	Lab		< 0.00073 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0022 j mg/kg	< 0.0116 mg/kg	0.0053 mg/kg	< 0.0122 mg/kg	< 0.00071 mg/kg	< 0.0128 mg/kg	< 0.00075 mg/kg	< 0.0118 mg/kg	< 0.00065 mg/kg	0.0014 j mg/kg	< 0.0111 mg/kg
Chrysene	Lab		< 0.00083 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0041 mg/kg	< 0.0116 mg/kg	0.012 mg/kg	< 0.0122 mg/kg	< 0.00081 mg/kg	< 0.0128 mg/kg	< 0.00086 mg/kg	< 0.0118 mg/kg	< 0.00074 mg/kg	0.0032 mg/kg	< 0.0111 mg/kg
Dibenz(a,h)anthracene	Lab		< 0.00029 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.00063 j mg/kg	< 0.0116 mg/kg	0.0021 j mg/kg	< 0.0122 mg/kg	< 0.00028 mg/kg	< 0.0128 mg/kg	< 0.00030 mg/kg	< 0.0118 mg/kg	< 0.00026 mg/kg	0.00041 j mg/kg	< 0.0111 mg/kg
Fluoranthene	Lab		< 0.0012 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0051 mg/kg	< 0.0116 mg/kg	0.017 mg/kg	< 0.0122 mg/kg	< 0.0011 mg/kg	< 0.0128 mg/kg	< 0.0012 mg/kg	< 0.0118 mg/kg	< 0.0010 mg/kg	0.0043 mg/kg	< 0.0111 mg/kg
Fluorene	Lab		< 0.00039 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	< 0.00040 mg/kg	< 0.0116 mg/kg	< 0.00039 mg/kg	< 0.0122 mg/kg	< 0.00038 mg/kg	< 0.0128 mg/kg	< 0.00041 mg/kg	< 0.0118 mg/kg	< 0.00035 mg/kg	< 0.00039 mg/kg	< 0.0111 mg/kg
Indeno(1,2,3-cd)pyrene	Lab		< 0.00071 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0023 j mg/kg	< 0.0116 mg/kg	0.0075 mg/kg	< 0.0122 mg/kg	< 0.00069 mg/kg	< 0.0128 mg/kg	< 0.00073 mg/kg	< 0.0118 mg/kg	< 0.00063 mg/kg	0.0013 j mg/kg	< 0.0111 mg/kg
Naphthalene	Lab		0.0012 j mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.027 mg/kg	< 0.0116 mg/kg	0.0088 mg/kg	< 0.0122 mg/kg	0.00078 jb mg/kg	< 0.0128 mg/kg	0.00098 jb mg/kg	< 0.0118 mg/kg	0.00072 jb mg/kg	0.0011 jb mg/kg	< 0.0111 mg/kg
Phenanthrene	Lab		< 0.0019 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0035 mg/kg	< 0.0116 mg/kg	0.013 mg/kg	< 0.0122 mg/kg	< 0.0019 mg/kg	< 0.0128 mg/kg	< 0.0020 mg/kg	< 0.0118 mg/kg	< 0.0017 mg/kg	0.0030 mg/kg	< 0.0111 mg/kg
Pyrene	Lab		< 0.00064 mg/kg	< 0.0122 * mg/kg	< 0.0121 h mg/kg	0.0046 mg/kg	< 0.0116 mg/kg	0.015 mg/kg	< 0.0122 mg/kg	< 0.00063 mg/kg	< 0.0128 mg/kg	< 0.00066 mg/kg	< 0.0118 mg/kg	< 0.00057 mg/kg	0.0035 mg/kg	< 0.0111 mg/kg
Sum of Total PAH Compounds, NDs at 1/2	Barr Calculation	13.7 mg/kg	0.0066 a mg/kg	0.104 a mg/kg	0.103 a mg/kg	0.068 a mg/kg	0.099 mg/kg	0.14 a mg/kg	0.104 mg/kg	0.0059 a mg/kg	0.109 mg/kg	0.0068 a mg/kg	0.100 mg/kg	0.0056 a mg/kg	0.029 a mg/kg	0.094 mg/kg

N = Sample Type: Normal
FD = Sample Type: Field Duplicate
* = Estimated value, QA/QC criteria not met.
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 5
Sediment Analytical Data Summary
SLRIDT Site
XIK Corporation

		Location	S6-BS-06	S6-BS-06	S7-BS-01	S7-BS-01	S7-BS-01 RE	S7-BS-02	S7-BS-02	S7-BS-03	S7-BS-03	S7-BS-04		S7-BS-04	S7-BS-04 RE	S7-BS-05
		Date	10/24/2013	6/08/2015	10/24/2013	6/10/2015	6/10/2015	10/31/2013	6/11/2015	10/31/2013	6/11/2015	10/24/2013		6/10/2015	6/10/2015	10/25/2013
		Depth	3 ft	3 - 3.3 ft	3 ft	1.5 - 1.8 ft	1.5 - 1.8 ft	1.5 ft	1.5 - 1.8 ft	1.5 ft	1.5 - 1.8 ft	1.5 ft	1.5 ft	1.5 - 1.8 ft	1.5 - 1.8 ft	3 ft
		Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N
Parameter	Analysis Location	XIK SLRIDT Sum of 17 PAHs Criteria														
Exceedance Key		No Exceed														
General Parameters																
Moisture	Lab		--	18.0 %	--	20.9 %	20.9 %	--	20.8 %	--	12.3 %	--	--	20.7 %	20.7 %	--
Solids, percent	Lab		83 % wt	--	83 % wt	--	--	80 % wt	--	76 % wt	--	79 % wt	81 % wt	--	--	89 % wt
SVOCs																
2-Methylnaphthalene	Lab		0.00051 j mg/kg	< 0.0122 mg/kg	0.0041 mg/kg	< 0.0126 * mg/kg	0.0173 h mg/kg	0.0069 mg/kg	< 0.0126 mg/kg	0.014 mg/kg	< 0.0113 mg/kg	0.0037 mg/kg	0.011 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	0.00078 j mg/kg
Acenaphthene	Lab		< 0.00033 mg/kg	< 0.0122 mg/kg	0.00098 j mg/kg	< 0.0126 * mg/kg	< 0.0126 h mg/kg	0.0064 mg/kg	< 0.0126 mg/kg	0.0062 mg/kg	< 0.0113 mg/kg	0.0012 j mg/kg	< 0.00033 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00030 mg/kg
Acenaphthylene	Lab		< 0.00045 mg/kg	< 0.0122 mg/kg	0.0023 j* mg/kg	< 0.0126 * mg/kg	0.0389 h mg/kg	0.0013 j mg/kg	< 0.0126 mg/kg	< 0.00049 * mg/kg	< 0.0113 mg/kg	0.0017 j* mg/kg	0.0021 j* mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00042 mg/kg
Anthracene	Lab		< 0.00048 mg/kg	< 0.0122 mg/kg	0.0077 mg/kg	0.0282 * mg/kg	0.11 h mg/kg	0.0035 mg/kg	< 0.0126 mg/kg	0.013 mg/kg	< 0.0113 mg/kg	0.0031 mg/kg	0.0055 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00045 mg/kg
Benzo(a)anthracene	Lab		< 0.00046 mg/kg	< 0.0122 mg/kg	0.0066 mg/kg	0.0362 * mg/kg	0.124 h mg/kg	0.0037 mg/kg	< 0.0126 mg/kg	0.02 mg/kg	< 0.0113 mg/kg	0.0055 mg/kg	0.0098 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	0.00048 j mg/kg
Benzo(a)pyrene	Lab		< 0.00025 mg/kg	< 0.0122 mg/kg	0.0048 mg/kg	0.0353 * mg/kg	0.136 h mg/kg	0.0033 mg/kg	< 0.0126 mg/kg	0.017 mg/kg	< 0.0113 mg/kg	0.0056 mg/kg	0.0080 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	0.00049 j mg/kg
Benzo(b&j)fluoranthene	Lab		< 0.00066 mg/kg	< 0.0122 mg/kg	0.0078 mg/kg	0.0582 * mg/kg	0.226 h mg/kg	0.0045 j mg/kg	< 0.0126 mg/kg	0.021 mg/kg	0.0151 mg/kg	0.0091 mg/kg	0.012 mg/kg	< 0.0126 * mg/kg	0.0172 h mg/kg	0.00090 j mg/kg
Benzo(g,h,i)perylene	Lab		< 0.00036 mg/kg	< 0.0122 mg/kg	0.0029 mg/kg	0.0185 * mg/kg	0.0765 h mg/kg	< 0.00037 mg/kg	< 0.0126 mg/kg	0.0065 mg/kg	< 0.0113 mg/kg	0.0044 mg/kg	0.0060 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	0.00065 j mg/kg
Benzo(k)fluoranthene	Lab		< 0.00074 mg/kg	< 0.0122 mg/kg	0.0038 mg/kg	0.0237 * mg/kg	0.0795 h mg/kg	0.0021 j mg/kg	< 0.0126 mg/kg	0.011 mg/kg	< 0.0113 mg/kg	0.0041 mg/kg	0.0051 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00068 mg/kg
Chrysene	Lab		< 0.00084 mg/kg	< 0.0122 mg/kg	0.01 mg/kg	0.0556 * mg/kg	0.175 h mg/kg	0.0041 mg/kg	< 0.0126 mg/kg	0.021 mg/kg	< 0.0113 mg/kg	0.0075 mg/kg	0.013 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00078 mg/kg
Dibenz(a,h)anthracene	Lab		< 0.00029 mg/kg	< 0.0122 mg/kg	0.00087 j mg/kg	< 0.0126 * mg/kg	0.0226 h mg/kg	0.00052 j mg/kg	< 0.0126 mg/kg	0.0026 mg/kg	< 0.0113 mg/kg	0.0010 j mg/kg	0.0014 j mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00027 mg/kg
Fluoranthene	Lab		< 0.0012 mg/kg	< 0.0122 mg/kg	0.016 mg/kg	0.0680 * mg/kg	0.236 h mg/kg	0.0072 mg/kg	< 0.0126 mg/kg	0.037 mg/kg	0.0186 mg/kg	0.011 mg/kg	0.022 mg/kg	0.0146 * mg/kg	0.0185 h mg/kg	< 0.0011 mg/kg
Fluorene	Lab		< 0.00040 mg/kg	< 0.0122 mg/kg	0.0034 mg/kg	< 0.0126 * mg/kg	0.0257 h mg/kg	0.0082 mg/kg	< 0.0126 mg/kg	0.012 mg/kg	< 0.0113 mg/kg	0.0025 mg/kg	0.0052 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00037 mg/kg
Indeno(1,2,3-cd)pyrene	Lab		< 0.00071 mg/kg	< 0.0122 mg/kg	0.0033 mg/kg	0.0178 * mg/kg	0.0737 h mg/kg	0.0018 j mg/kg	< 0.0126 mg/kg	0.0089 mg/kg	< 0.0113 mg/kg	0.0047 mg/kg	0.0060 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.00066 mg/kg
Naphthalene	Lab		0.00094 jb mg/kg	< 0.0122 mg/kg	0.048 mg/kg	0.0320 * mg/kg	0.203 h mg/kg	0.027 mg/kg	< 0.0126 mg/kg	0.09 * mg/kg	< 0.0113 mg/kg	0.011 * mg/kg	0.02 * mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	0.00091 jb mg/kg
Phenanthrene	Lab		< 0.0020 mg/kg	< 0.0122 mg/kg	0.011 mg/kg	0.0245 * mg/kg	0.0879 h mg/kg	0.0080 mg/kg	< 0.0126 mg/kg	0.036 mg/kg	< 0.0113 mg/kg	0.0061 mg/kg	0.013 mg/kg	< 0.0126 * mg/kg	< 0.0125 h mg/kg	< 0.0018 mg/kg
Pyrene	Lab		< 0.00065 mg/kg	< 0.0122 mg/kg	0.012 mg/kg	0.0525 * mg/kg	0.17 h mg/kg	0.0055 mg/kg	< 0.0126 mg/kg	0.027 mg/kg	0.0137 mg/kg	0.0093 mg/kg	0.019 mg/kg	< 0.0126 * mg/kg	0.0176 h mg/kg	0.00068 j mg/kg
Sum of Total PAH Compounds, NDs at 1/2	Barr Calculation	13.7 mg/kg	0.0064 a mg/kg	0.104 mg/kg	0.15 a mg/kg	0.482 a mg/kg	1.81 a mg/kg	0.094 a mg/kg	0.107 mg/kg	0.34 a mg/kg	0.127 mg/kg	0.092 a mg/kg	0.16 a mg/kg	0.115 a mg/kg	0.141 a mg/kg	0.0083 a mg/kg

N = Sample Type: Normal
FD = Sample Type: Field Duplicate
* = Estimated value, QA/QC criteria not met.
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 5
Sediment Analytical Data Summary
SLRIDT Site
XIK Corporation

		Location	S7-BS-05	S7-BS-05 RE	S7-BS-06	S7-BS-06		S7-BS-06 RE		SB-BS-01	SB-BS-01	SB-BS-02	SB-BS-02	SB-BS-03	SB-BS-03	SB-BS-04
		Date	6/09/2015	6/09/2015	10/25/2013	6/09/2015		6/09/2015		10/21/2013	6/06/2015	10/22/2013	6/06/2015	10/22/2013	6/06/2015	10/21/2013
		Depth	2.7 ft	2.7 ft	3 ft	3 - 3.3 ft	3 - 3.3 ft	3 - 3.3 ft	3 - 3.3 ft	2.1 ft	1.8 - 2.1 ft	2.8 ft	2.2 - 2.5 ft	2.3 ft	2.9 - 3.2 ft	3 ft
		Sample Type	N	N	N	N	FD	N	FD	N	N	N	N	N	N	N
Parameter	Analysis Location	XIK SLRIDT Sum of 17 PAHs Criteria														
Exceedance Key		No Exceed														
General Parameters																
Moisture	Lab		11.8 %	11.8 %	--	7.6 %	6.8 %	7.6 %	6.8 %	--	13.6 %	--	8.2 %	--	29.2 %	--
Solids, percent	Lab		--	--	92 % wt	--	--	--	--	93 % wt	--	95 % wt	--	85 % wt	--	89 % wt
SVOCs																
2-Methylnaphthalene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.0070 mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	0.0176 h mg/kg	0.00071 j mg/kg	< 0.0116 mg/kg	0.0036 mg/kg	< 0.0109 mg/kg	0.00064 j mg/kg	< 0.0141 mg/kg	0.00057 j mg/kg
Acenaphthene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.038 mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	0.00090 j mg/kg	< 0.0116 mg/kg	0.0014 j mg/kg	< 0.0109 mg/kg	< 0.00032 mg/kg	< 0.0141 mg/kg	< 0.00030 mg/kg
Acenaphthylene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.0042 * mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	0.0146 h mg/kg	< 0.00040 mg/kg	< 0.0116 mg/kg	0.0010 j* mg/kg	< 0.0109 mg/kg	< 0.00044 mg/kg	< 0.0141 mg/kg	< 0.00042 mg/kg
Anthracene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.00043 mg/kg	< 0.0108 * mg/kg	0.0151 * mg/kg	< 0.0108 h mg/kg	0.0258 h mg/kg	< 0.00043 mg/kg	< 0.0116 mg/kg	0.00085 j mg/kg	< 0.0109 mg/kg	< 0.00047 mg/kg	< 0.0141 mg/kg	< 0.00045 mg/kg
Benzo(a)anthracene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.00050 j mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00041 mg/kg	< 0.0116 mg/kg	< 0.00040 mg/kg	< 0.0109 mg/kg	0.00062 j mg/kg	< 0.0141 mg/kg	0.00045 j mg/kg
Benzo(a)pyrene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.00047 j mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00022 mg/kg	< 0.0116 mg/kg	< 0.00022 mg/kg	< 0.0109 mg/kg	0.00061 j mg/kg	< 0.0141 mg/kg	0.00042 j mg/kg
Benzo(b&j)fluoranthene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.00071 j mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00059 mg/kg	< 0.0116 mg/kg	< 0.00057 mg/kg	< 0.0109 mg/kg	0.00069 j mg/kg	< 0.0141 mg/kg	< 0.00061 mg/kg
Benzo(g,h,i)perylene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.00033 mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00032 mg/kg	< 0.0116 mg/kg	< 0.00032 mg/kg	< 0.0109 mg/kg	< 0.00035 mg/kg	< 0.0141 mg/kg	< 0.00034 mg/kg
Benzo(k)fluoranthene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.00066 mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00065 mg/kg	< 0.0116 mg/kg	< 0.00064 mg/kg	< 0.0109 mg/kg	< 0.00072 mg/kg	< 0.0141 mg/kg	< 0.00068 mg/kg
Chrysene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.00079 j mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00074 mg/kg	< 0.0116 mg/kg	< 0.00073 mg/kg	< 0.0109 mg/kg	< 0.00082 mg/kg	< 0.0141 mg/kg	< 0.00078 mg/kg
Dibenz(a,h)anthracene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.00026 mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00026 mg/kg	< 0.0116 mg/kg	< 0.00025 mg/kg	< 0.0109 mg/kg	< 0.00028 mg/kg	< 0.0141 mg/kg	< 0.00027 mg/kg
Fluoranthene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.0011 mg/kg	< 0.0108 * mg/kg	0.0400 * mg/kg	< 0.0108 h mg/kg	0.0631 h mg/kg	< 0.0010 mg/kg	< 0.0116 mg/kg	< 0.0010 mg/kg	< 0.0109 mg/kg	< 0.0011 mg/kg	< 0.0141 mg/kg	< 0.0011 mg/kg
Fluorene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.00035 mg/kg	0.0124 * mg/kg	0.0214 * mg/kg	0.0153 h* mg/kg	0.0284 h* mg/kg	< 0.00035 mg/kg	< 0.0116 mg/kg	0.0026 mg/kg	< 0.0109 mg/kg	< 0.00039 mg/kg	< 0.0141 mg/kg	< 0.00037 mg/kg
Indeno(1,2,3-cd)pyrene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.00064 mg/kg	< 0.0108 * mg/kg	< 0.0107 * mg/kg	< 0.0108 h mg/kg	< 0.0107 h mg/kg	< 0.00063 mg/kg	< 0.0116 mg/kg	< 0.00062 mg/kg	< 0.0109 mg/kg	< 0.00070 mg/kg	< 0.0141 mg/kg	< 0.00066 mg/kg
Naphthalene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.094 mg/kg	0.119 * mg/kg	0.0607 * mg/kg	0.0949 h* mg/kg	0.139 h* mg/kg	0.0016 jb mg/kg	< 0.0116 mg/kg	0.0097 mg/kg	0.0186 mg/kg	0.0019 jb mg/kg	< 0.0141 mg/kg	0.00098 jb mg/kg
Phenanthrene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	< 0.0017 mg/kg	0.0173 * mg/kg	0.0631 * mg/kg	0.0310 h* mg/kg	0.0757 h* mg/kg	< 0.0017 mg/kg	< 0.0116 mg/kg	0.0058 mg/kg	< 0.0109 mg/kg	< 0.0019 mg/kg	< 0.0141 mg/kg	< 0.0018 mg/kg
Pyrene	Lab		< 0.0113 * mg/kg	< 0.0112 h mg/kg	0.00080 j mg/kg	< 0.0108 * mg/kg	0.0258 * mg/kg	< 0.0108 h* mg/kg	0.0411 h* mg/kg	< 0.00057 mg/kg	< 0.0116 mg/kg	< 0.00056 mg/kg	< 0.0109 mg/kg	0.00083 j mg/kg	< 0.0141 mg/kg	0.00081 j mg/kg
Sum of Total PAH Compounds, NDs at 1/2	Barr Calculation	13.7 mg/kg	0.096 a mg/kg	0.095 a mg/kg	0.15 a mg/kg	0.224 a mg/kg	0.285 a mg/kg	0.217 a mg/kg	0.453 a mg/kg	0.0073 a mg/kg	0.099 mg/kg	0.028 a mg/kg	0.106 mg/kg	0.0090 a mg/kg	0.120 mg/kg	0.0071 a mg/kg

N = Sample Type: Normal
FD = Sample Type: Field Duplicate
* = Estimated value, QA/QC criteria not met.
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 5
Sediment Analytical Data Summary
SLRIDT Site
XIK Corporation

		Location	SB-BS-04	SB-BS-05	SB-BS-05	SB-BS-06	SB-BS-06	SW-BS-01	SW-BS-01	SW-BS-01 RE
		Date	6/05/2015	10/22/2013	6/06/2015	10/22/2013	6/06/2015	11/01/2013	6/09/2015	6/09/2015
		Depth	0.9 - 1.2 ft	2.2 ft	2 - 2.3 ft	2.7 ft	2.2 - 2.5 ft	3 ft	3 - 3.3 ft	3 - 3.3 ft
		Sample Type	N	N	N	N	N	N	N	N
Parameter	Analysis Location	XIK SLRIDT Sum of 17 PAHs Criteria								
Exceedance Key		No Exceed								
General Parameters										
Moisture	Lab		28.8 %	--	13.7 %	--	14.9 %	--	16.1 %	16.1 %
Solids, percent	Lab		--	92 % wt	--	88 % wt	--	86 % wt	--	--
SVOCs										
2-Methylnaphthalene	Lab		< 0.0140 mg/kg	0.00049 j mg/kg	< 0.0116 mg/kg	0.0018 j mg/kg	< 0.0117 mg/kg	0.0011 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Acenaphthene	Lab		< 0.0140 mg/kg	0.00057 j mg/kg	< 0.0116 mg/kg	0.00077 j mg/kg	< 0.0117 mg/kg	< 0.00031 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Acenaphthylene	Lab		< 0.0140 mg/kg	< 0.00041 mg/kg	< 0.0116 mg/kg	0.00051 j* mg/kg	< 0.0117 mg/kg	< 0.00043 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Anthracene	Lab		< 0.0140 mg/kg	< 0.00043 mg/kg	< 0.0116 mg/kg	< 0.00045 mg/kg	< 0.0117 mg/kg	0.00056 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Benzo(a)anthracene	Lab		< 0.0140 mg/kg	< 0.00041 mg/kg	< 0.0116 mg/kg	0.00072 j mg/kg	< 0.0117 mg/kg	0.00078 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Benzo(a)pyrene	Lab		< 0.0140 mg/kg	< 0.00023 mg/kg	< 0.0116 mg/kg	0.00057 j mg/kg	< 0.0117 mg/kg	< 0.00024 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Benzo(b&j)fluoranthene	Lab		< 0.0140 mg/kg	< 0.00059 mg/kg	< 0.0116 mg/kg	0.00075 j mg/kg	< 0.0117 mg/kg	0.00091 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Benzo(g,h,i)perylene	Lab		< 0.0140 mg/kg	< 0.00033 mg/kg	< 0.0116 mg/kg	< 0.00034 mg/kg	< 0.0117 mg/kg	0.00041 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Benzo(k)fluoranthene	Lab		< 0.0140 mg/kg	< 0.00066 mg/kg	< 0.0116 mg/kg	< 0.00069 mg/kg	< 0.0117 mg/kg	< 0.00070 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Chrysene	Lab		< 0.0140 mg/kg	< 0.00075 mg/kg	< 0.0116 mg/kg	0.00092 j mg/kg	< 0.0117 mg/kg	0.00096 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Dibenz(a,h)anthracene	Lab		< 0.0140 mg/kg	< 0.00026 mg/kg	< 0.0116 mg/kg	< 0.00027 mg/kg	< 0.0117 mg/kg	< 0.00028 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Fluoranthene	Lab		< 0.0140 mg/kg	< 0.0011 mg/kg	< 0.0116 mg/kg	0.0014 j mg/kg	< 0.0117 mg/kg	0.0013 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Fluorene	Lab		< 0.0140 mg/kg	< 0.00036 mg/kg	< 0.0116 mg/kg	0.00070 j mg/kg	< 0.0117 mg/kg	0.00061 j mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Indeno(1,2,3-cd)pyrene	Lab		< 0.0140 mg/kg	< 0.00064 mg/kg	< 0.0116 mg/kg	< 0.00067 mg/kg	< 0.0117 mg/kg	< 0.00068 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Naphthalene	Lab		< 0.0140 mg/kg	0.0018 jb mg/kg	< 0.0116 mg/kg	0.0095 mg/kg	< 0.0117 mg/kg	0.0076 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Phenanthrene	Lab		< 0.0140 mg/kg	< 0.0018 mg/kg	< 0.0116 mg/kg	< 0.0018 mg/kg	< 0.0117 mg/kg	< 0.0019 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Pyrene	Lab		< 0.0140 mg/kg	< 0.00058 mg/kg	< 0.0116 mg/kg	0.0014 j mg/kg	< 0.0117 mg/kg	< 0.00062 mg/kg	< 0.0119 * mg/kg	< 0.0118 h mg/kg
Sum of Total PAH Compounds, NDs at 1/2	Barr Calculation	13.7 mg/kg	0.119 mg/kg	0.0071 a mg/kg	0.099 mg/kg	0.021 a mg/kg	0.099 mg/kg	0.017 a mg/kg	0.101 a mg/kg	0.100 a mg/kg

N = Sample Type: Normal
FD = Sample Type: Field Duplicate
* = Estimated value, QA/QC criteria not met.
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 6
Sediment Analytical Data - QA/QC
SLRIDT Site
XIK Corporation

Location Date Sample Type	QC 10/28/2013 Method Blank	QC 11/04/2013 Method Blank	QC 11/04/2013 Method Blank	QC 11/11/2013 Method Blank	QC 6/19/2015 Method Blank	QC 6/20/2015 Method Blank	QC 6/22/2015 Method Blank	QC 6/25/2015 Method Blank
Parameter								
General Parameters								
Solids, percent	**0.0288 j % wt**	**0.0308 j % wt**	--	--	--	--	--	--
SVOCs								
2-Methylnaphthalene	--	--	< 0.00039 mg/kg	< 0.00039 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Acenaphthene	--	--	< 0.00027 mg/kg	< 0.00027 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Acenaphthylene	--	--	< 0.00037 mg/kg	< 0.00037 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Anthracene	--	--	< 0.00040 mg/kg	< 0.00040 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Benzo(a)anthracene	--	--	< 0.00038 mg/kg	< 0.00038 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Benzo(a)pyrene	--	--	< 0.00021 mg/kg	< 0.00021 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Benzo(b&j)fluoranthene	--	--	< 0.00054 mg/kg	< 0.00054 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Benzo(g,h,i)perylene	--	--	< 0.00030 mg/kg	< 0.00030 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Benzo(k)fluoranthene	--	--	< 0.00061 mg/kg	< 0.00061 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Chrysene	--	--	< 0.00069 mg/kg	< 0.00069 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Dibenz(a,h)anthracene	--	--	< 0.00024 mg/kg	< 0.00024 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Fluoranthene	--	--	< 0.00097 mg/kg	< 0.00097 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Fluorene	--	--	< 0.00033 mg/kg	< 0.00033 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Indeno(1,2,3-cd)pyrene	--	--	< 0.00059 mg/kg	< 0.00059 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Naphthalene	--	--	**0.000593 j mg/kg**	< 0.00049 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Phenanthrene	--	--	< 0.0016 mg/kg	< 0.0016 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg
Pyrene	--	--	< 0.00053 mg/kg	< 0.00053 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg	< 0.0100 mg/kg

j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

Table 7
Sediment Analytical Data
Relative Percent Difference
SLRIDT Site
XIK Corporation

	Location	S6-BS-05			S7-BS-04			S7-BS-06		
	Sample Date	10/24/2013			10/24/2013			06/09/2015		
	Depth Interval	3 ft	3 ft	RPD %	1.5 ft	1.5 ft	RPD %	3 - 3.3 ft	3 - 3.3 ft	RPD %
	Sample Type	N	FD		N	FD		N	FD	
Chemical Name	Analysis Location									
General Parameters										
Moisture	Lab	--	--		--	--		**7.6 %**	**6.8 %**	**11**
Solids, percent	Lab	**93 % wt**	**84 % wt**	**10**	**79 % wt**	**81 % wt**	**2.5**	--	--	
SVOCs										
2-Methylnaphthalene	Lab	< 0.00042 mg/kg	**0.00066 j mg/kg**		**0.0037 mg/kg**	**0.011 mg/kg**	**99**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Acenaphthene	Lab	**0.00057 j mg/kg**	**0.00075 j mg/kg**	**27 a**	**0.0012 j mg/kg**	< 0.00033 mg/kg		< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Acenaphthylene	Lab	< 0.00040 mg/kg	< 0.00044 mg/kg		**0.0017 j* mg/kg**	**0.0021 j* mg/kg**	**21 a**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Anthracene	Lab	< 0.00043 mg/kg	**0.00079 j mg/kg**		**0.0031 mg/kg**	**0.0055 mg/kg**	**56**	< 0.0108 * mg/kg	**0.0151 * mg/kg**	
Benzo(a)anthracene	Lab	< 0.00041 mg/kg	**0.0023 j mg/kg**		**0.0055 mg/kg**	**0.0098 mg/kg**	**56**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Benzo(a)pyrene	Lab	< 0.00022 mg/kg	**0.0019 j mg/kg**		**0.0056 mg/kg**	**0.0080 mg/kg**	**35**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Benzo(b&j)fluoranthene	Lab	< 0.00059 mg/kg	**0.0023 j mg/kg**		**0.0091 mg/kg**	**0.012 mg/kg**	**28**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Benzo(g,h,i)perylene	Lab	< 0.00032 mg/kg	**0.0015 j mg/kg**		**0.0044 mg/kg**	**0.0060 mg/kg**	**31**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Benzo(k)fluoranthene	Lab	< 0.00065 mg/kg	**0.0014 j mg/kg**		**0.0041 mg/kg**	**0.0051 mg/kg**	**22**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Chrysene	Lab	< 0.00074 mg/kg	**0.0032 mg/kg**		**0.0075 mg/kg**	**0.013 mg/kg**	**54**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Dibenz(a,h)anthracene	Lab	< 0.00026 mg/kg	**0.00041 j mg/kg**		**0.0010 j mg/kg**	**0.0014 j mg/kg**	**33 a**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Fluoranthene	Lab	< 0.0010 mg/kg	**0.0043 mg/kg**		**0.011 mg/kg**	**0.022 mg/kg**	**67**	< 0.0108 * mg/kg	**0.0400 * mg/kg**	
Fluorene	Lab	< 0.00035 mg/kg	< 0.00039 mg/kg		**0.0025 mg/kg**	**0.0052 mg/kg**	**70**	**0.0124 * mg/kg**	**0.0214 * mg/kg**	**53 a**
Indeno(1,2,3-cd)pyrene	Lab	< 0.00063 mg/kg	**0.0013 j mg/kg**		**0.0047 mg/kg**	**0.0060 mg/kg**	**24**	< 0.0108 * mg/kg	< 0.0107 * mg/kg	
Naphthalene	Lab	**0.00072 jb mg/kg**	**0.0011 jb mg/kg**	**N/A**	**0.011 * mg/kg**	**0.02 * mg/kg**	**58 a**	**0.119 * mg/kg**	**0.0607 * mg/kg**	**65 a**
Phenanthrene	Lab	< 0.0017 mg/kg	**0.0030 mg/kg**		**0.0061 mg/kg**	**0.013 mg/kg**	**72**	**0.0173 * mg/kg**	**0.0631 * mg/kg**	**114 a**
Pyrene	Lab	< 0.00057 mg/kg	**0.0035 mg/kg**		**0.0093 mg/kg**	**0.019 mg/kg**	**69**	< 0.0108 * mg/kg	**0.0258 * mg/kg**	
Sum of Total PAH Compounds, NDs at 1/2	Barr Calculation	**0.0056 a mg/kg**	**0.029 a mg/kg**	**135 a**	**0.092 a mg/kg**	**0.16 a mg/kg**	**54 a**	**0.224 a mg/kg**	**0.285 a mg/kg**	**24 a**

* = Estimated value, QA/QC criteria not met.
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

%RPD = | (N - FD) / (N + FD) / 2 | X 100
Where: N = 1st Value
FD = 2nd Value

Table 7
Sediment Analytical Data
Relative Percent Difference
SLRIDT Site
XIK Corporation

	Location	S7-BS-06		
	Sample Date	06/09/2015		
	Depth Interval	3 - 3.3 ft	3 - 3.3 ft	RPD %
	Sample Type	N	FD	
Chemical Name	Analysis Location			
General Parameters				
Moisture	Lab	**7.6 %**	**6.8 %**	**11**
Solids, percent	Lab	--	--	
SVOCs				
2-Methylnaphthalene	Lab	< 0.0108 mg/kg	**0.0176 mg/kg**	
Acenaphthene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Acenaphthylene	Lab	< 0.0108 h mg/kg	**0.0146 h mg/kg**	
Anthracene	Lab	< 0.0108 h mg/kg	**0.0258 h mg/kg**	
Benzo(a)anthracene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Benzo(a)pyrene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Benzo(b&j)fluoranthene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Benzo(g,h,i)perylene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Benzo(k)fluoranthene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Chrysene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Dibenz(a,h)anthracene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Fluoranthene	Lab	< 0.0108 h mg/kg	**0.0631 h mg/kg**	
Fluorene	Lab	**0.0153 h* mg/kg**	**0.0284 h* mg/kg**	**60 a**
Indeno(1,2,3-cd)pyrene	Lab	< 0.0108 h mg/kg	< 0.0107 h mg/kg	
Naphthalene	Lab	**0.0949 h* mg/kg**	**0.139 h* mg/kg**	**38 a**
Phenanthrene	Lab	**0.0310 h* mg/kg**	**0.0757 h* mg/kg**	**84 a**
Pyrene	Lab	< 0.0108 h* mg/kg	**0.0411 h* mg/kg**	
Sum of Total PAH Compounds, NDs at 1/2	Barr Calculation	**0.217 a mg/kg**	**0.453 a mg/kg**	**70 a**

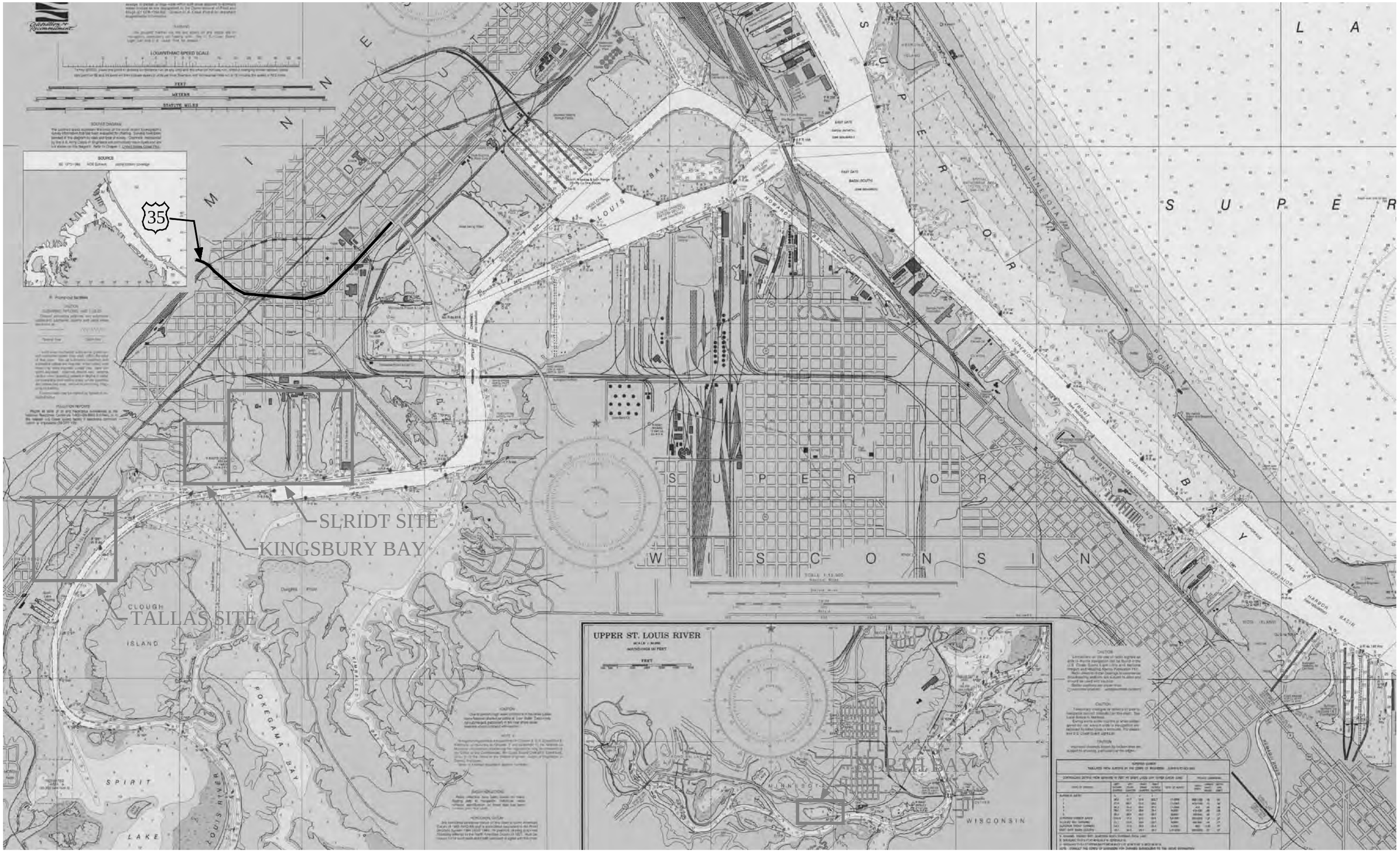
* = Estimated value, QA/QC criteria not met.
a = Estimated value, calculated using some or all values that are estimates.
b = Potential false positive value based on blank data validation procedures.
j = Reported value is less than the stated laboratory quantitation limit and is considered an estimated value.

%RPD = | (N - FD) / (N + FD) / 2 | X 100
Where: N = 1st Value
FD = 2nd Value

Table 8
Photo Location Numbers and Degrees
SLRIDT Site
XIK Corporation

Location #	Degrees	Degrees
1	150	225
2	150	220
3	30	330
4	255	330
5	165	240
6	50	120
7	145	215
8	50	130
9	145	215
10	55	125
11	140	215
12	170	245
13	50	130
14	145	215
15	190	260
16	50	125
17	190	260
18	100	170
19	35	320
20	35	320
21	190	270
22	145	215
23	145	215
24	235	330
25	145	215
26	235	330

Figures



CADD USER: Brian L. Jurek FILE: M:\CAD\23690B77 SLRIDT\2012\LTM\FIGURES\FIGURE 1 – SLRIDT LONG TERM MONITORING SITE LOCATION.DWG PLOT SCALE: 1:2 PLOT DATE: 4/16/2012 8:39 AM

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
				5/31/11	DRAFT SUBMITTED
E				4/16/12	DRAFT SUBMITTED
D					
C					
B					
A					

XIK CORPORATION
DULUTH, MN

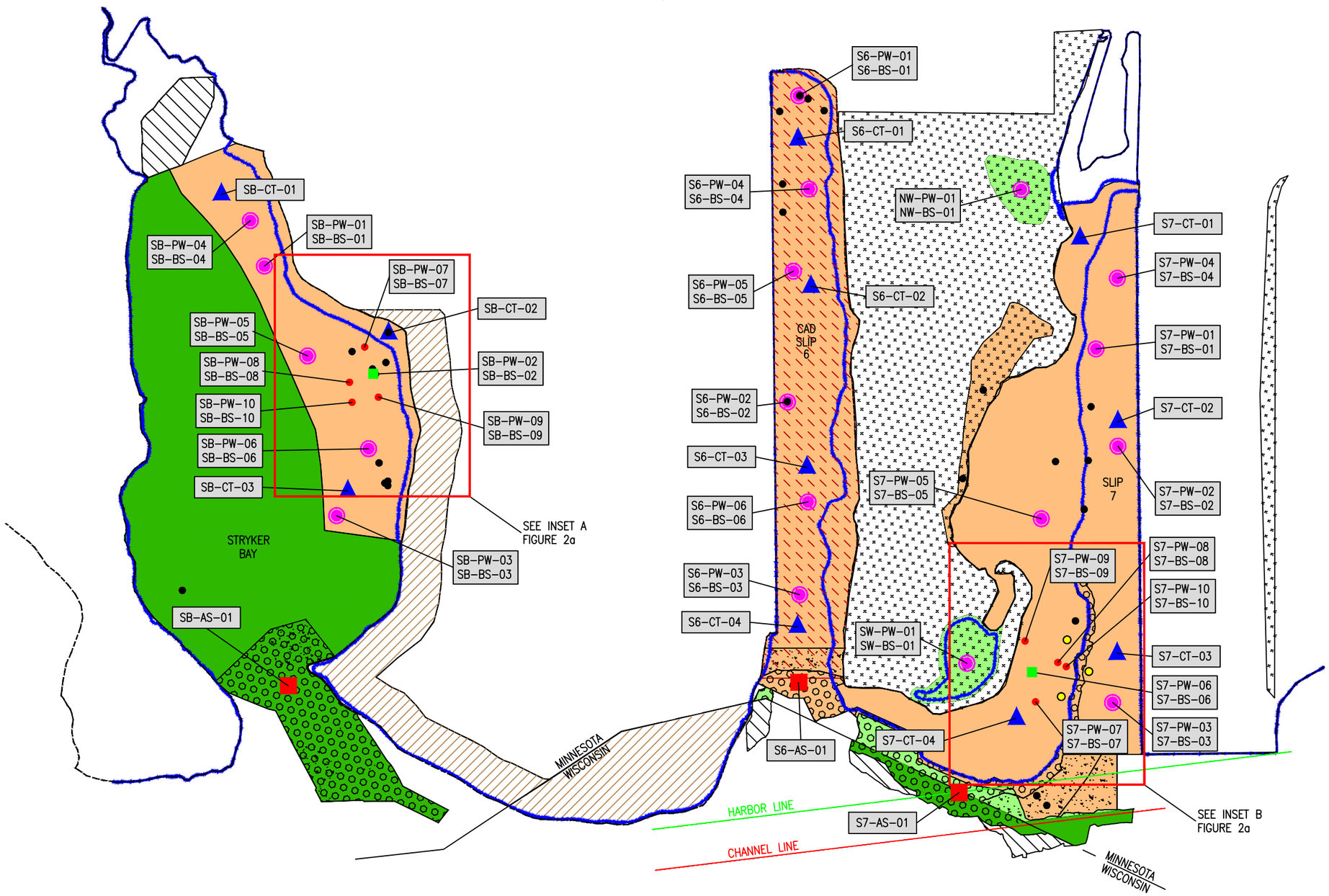
SLRIDT
DULUTH, MN

FIGURE 1 – TALLAS ISLAND AND SLRIDT SITE LOCATION MAP

BARR PROJECT No. 23690B77
CLIENT PROJECT No.
DWG. No.
REV. No.

NOTE: 0.3 = FCV SUM OF RATIOS OF ALL PAHs

0 200 400
SCALE:



LEGEND

- CAP THICKNESS SURVEY LOCATION
- AGGREGATE SURVEY CONFIRMATION LOCATION
- BULK SEDIMENT & PORE WATER SAMPLE LOCATION
- CONFIRMED LOCATION WHERE TIER I LEVEL EXCEEDED
- PRE-RAs NAPHTHALENE SEDIMENT >1000 ppm
- ADDITIONAL POINTS FOR TIER II POREWATER SAMPLING IN 2015
- ADDITIONAL POINTS FOR TIER II POREWATER SAMPLING IN 2016
- COBBLES (FILL MATERIAL)
- DREDGED & COVERED
- DREDGED & CAPPED
- CAD (CONTAINED AQUATIC DISPOSAL FILLED WITH DREDGE MATERIAL)
- CAP IN PLACE (FILLED)
- DREDGE
- GRAVEL
- RIPARIAN BUFFER ZONE ON HALLETT PROPERTY
- RIPARIAN BUFFER ZONE ON XIK PROPERTY
- PRE RESPONSE ACTION SHORELINE
- POST RESPONSE ACTION SHORELINE

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
E					
D					
C					
B					
A				7/12/12	DRAFT SUBMITTED

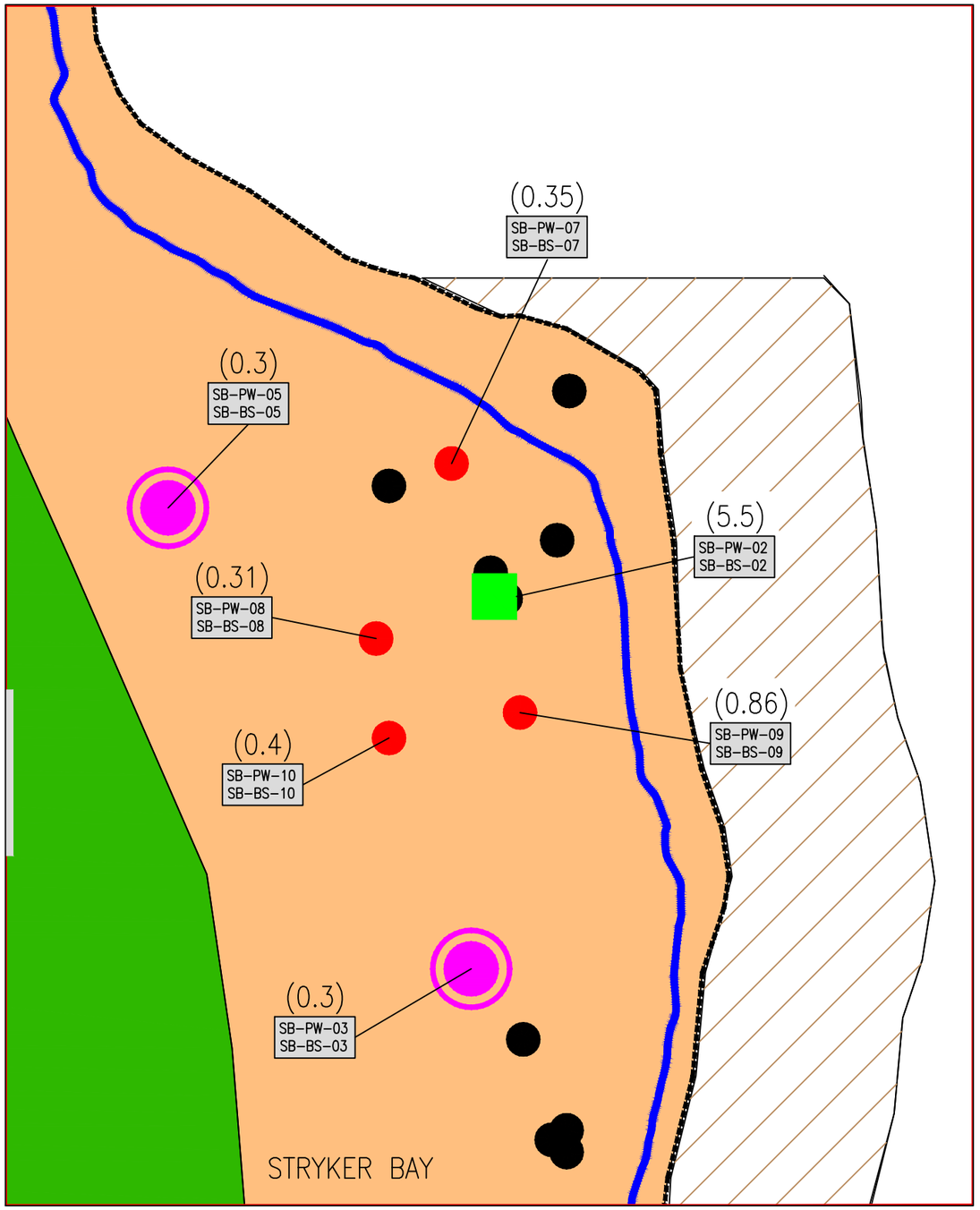
XIK CORPORATION
DULUTH, MN

SLRIDT
DULUTH, MN

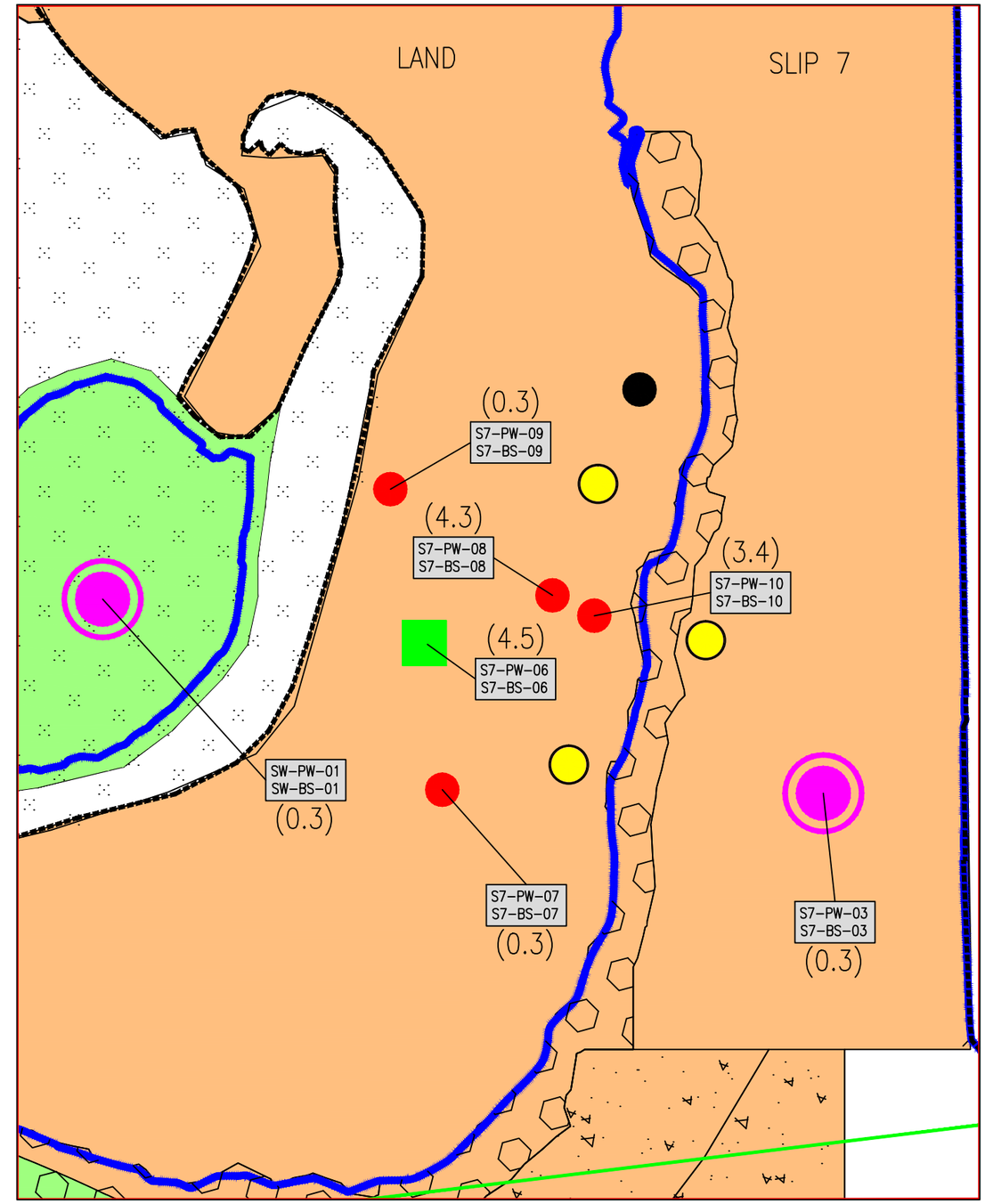
FIGURE 2 – SAMPLE MONITORING LOCATIONS JUNE 2015

BARR PROJECT No. 23690B77
CLIENT PROJECT No.
DWG. No.
REV. No.

CADD USER: Brian L. Jurek FILE: C:\USERS\BLJ\DESKTOP\SLRIDT\LTM\FIGURE 2 – SAMPLE MONITORING LOCATIONS 2015 REPORT.DWG PLOT SCALE: 1:2 PLOT DATE: 10/30/2015 12:29 PM



INSET A



INSET B

CADD USER: Brian L. Jurek FILE: C:\USERS\BLJ\DESKTOP\SLRIDT\LTM\FIGURE 2A - SAMPLE MONITORING LOCATIONS 2015 REPORT.DWG PLOT SCALE: 1:2 PLOT DATE: 10/30/2015 12:30 PM

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
E					
D					
C					
B					
A				7/12/12	DRAFT SUBMITTED

XIK CORPORATION
DULUTH, MN

SLRIDT
DULUTH, MN

FIGURE 2a – SAMPLE
MONITORING LOCATIONS JUNE 2015

BARR PROJECT No. 23690B77
CLIENT PROJECT No.
DWG. No.
REV. No.

CADD USER: Brian L. Jurek FILE: E:\SLRIDT BACKUP\BLJ\CIVIL 3D PROJECTS\SLRIDT\2011\LTM\FIGURES\FIGURE 4 - ANNUAL PHOTO LOCATIONS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/2/2012 11:55 AM

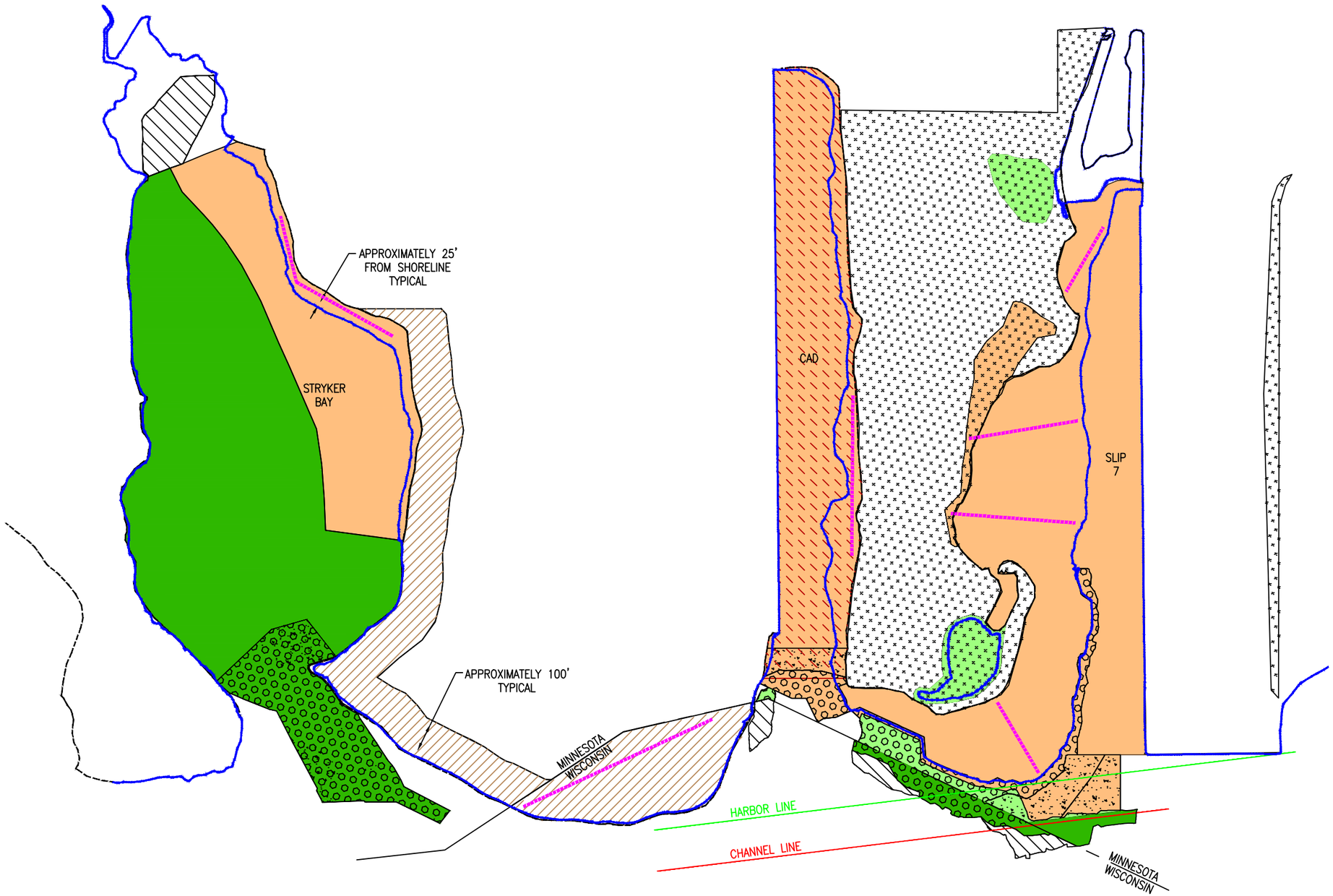
NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
				5/31/11	DRAFT SUBMITTED
				4/02/12	REVISED PHOTO LOCATIONS

XIK CORPORATION
DULUTH, MN

SLRIDT
DULUTH, MN

FIGURE 3 – ANNUAL PHOTO LOCATIONS

BARR PROJECT No. 23690B77
CLIENT PROJECT No.
DWG. No.
REV. No.



LEGEND

- COBBLES (FILL MATERIAL)
- DREDGED & COVERED
- DREDGED & CAPPED
- CAD (CONTAINED AQUATIC DISPOSAL FILLED WITH DREDGE MATERIAL)
- CAP IN PLACE (FILLED)
- DREDGE
- GRAVEL
- RIPARIAN BUFFER ZONE ON HALLETT PROPERTY
- RIPARIAN BUFFER ZONE ON XIK PROPERTY
- PRE RESPONSE ACTION SHORELINE
- POST RESPONSE ACTION SHORELINE
- INSPECTION TRANSECTS ABOVE WATER

0 200 400
SCALE:

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
E					
D					
C					
B					
A				7/12/12	REFERENCED FROM RD/RAP FIGURE 1-2

XIK CORPORATION
DULUTH, MN

SLRIDT
DULUTH, MN

FIGURE 4
SLRIDT CAP AND RIPARIAN BUFFER ZONE INSPECTION TRANSECTS ABOVE WATER

BARR PROJECT No. 23690B77
CLIENT PROJECT No.
DWG. No.
REV. No.

CADD USER: Brian L. Jurek FILE: M:\CAD\23690B77 SLRIDT\2012\LTM\FIGURES\FIGURE 7 - SLRIDT CAP AND RIPARIAN BUFFER ZONE INSPECTION TRANSECTS 060812_BAR.DWG PLOT SCALE: 1:2 PLOT DATE: 7/12/2012 7:49 AM

Barr Footer: ArcGIS 10.3.1, 2015-10-23 16:00 File: I:\Projects\23\69\B77\Maps\Report\SLRIDT_LongTermMonitoring\2015\Figure 7 Stryker Bay Slip 6_7 Vegetation Monitoring.mxd User: rre

Vegetation

- No Vegetation Observed
- Vegetation Observed
- Reference Site
- Shoreline
- Transect
- Minnesota Rail Lines

Imagery; 2013 St. Louis County Pictometry

N

Feet
300 0 300 600

Meters
100 0 100 200

BARR

Figure 5

SLRIDT VEGETATION MONITORING

KINGSBURY BAY, STRYKER BAY, SLIP 6, SLIP 7

SLRIDT
XIK Corporation
Duluth, Minnesota

Vegetation

- Vegetation Observed
- No Vegetation Observed
- Shoreline
- Transect
- Minnesota Rail Lines

Imagery; 2013 St. Louis County Pictometry

N

Feet
200 0 200 400

Meters
50 0 50 100

BARR

Figure 6

SLRIDT VEGETATION MONITORING

TALLAS ISLAND

SLRIDT
XIK Corporation
Duluth, Minnesota

FIGURE 7

SLRIDT
VEGETATION EVALUATION
Duluth, MN

Barr Footer: ArcGIS 10.0, 2012-05-31 11:00 File: I:\projects\23\69\B77\Users\TPT\Vegetation Evaluation May 2012.mxd User: JLC

Appendices

Appendix A

QA/QC Evaluation and Analytical Reports

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

June 24, 2015

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on June 04, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on June 24, 2015 to include all 3 pages of the COC.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
Project Manager

Enclosures

cc: Data Distribution

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10309050001	**SB-PW-01**	Water	06/03/15 13:05	06/04/15 18:20
10309050002	**SB-PW-02**	Water	06/03/15 14:45	06/04/15 18:20
10309050003	**DUP-1**	Water	06/03/15 00:00	06/04/15 18:20
10309050004	**SB-PW-03**	Water	06/03/15 15:10	06/04/15 18:20
10309050005	**SB-PW-04**	Water	06/03/15 12:45	06/04/15 18:20
10309050006	**SB-PW-05**	Water	06/03/15 13:30	06/04/15 18:20
10309050007	**SB-PW-06**	Water	06/03/15 14:55	06/04/15 18:20
10309050008	**SB-PW-07**	Water	06/03/15 13:45	06/04/15 18:20
10309050009	**SB-PW-08**	Water	06/03/15 14:05	06/04/15 18:20
10309050010	**SB-PW-09**	Water	06/03/15 14:25	06/04/15 18:20
10309050011	**S6-PW-01**	Water	06/03/15 15:35	06/04/15 18:20
10309050012	**S6-PW-02**	Water	06/03/15 16:20	06/04/15 18:20
10309050013	**S6-PW-03**	Water	06/03/15 16:50	06/04/15 18:20
10309050014	**S6-PW-04**	Water	06/03/15 15:55	06/04/15 18:20
10309050015	**S6-PW-05**	Water	06/03/15 16:05	06/04/15 18:20
10309050016	**S6-PW-06**	Water	06/03/15 16:35	06/04/15 18:20
10309050017	**NW-PW-01**	Water	06/04/15 12:00	06/04/15 18:20
10309050018	**SW-PW-01**	Water	06/03/15 10:45	06/04/15 18:20
10309050019	**S7-PW-01**	Water	06/04/15 08:40	06/04/15 18:20
10309050020	**S7-PW-02**	Water	06/04/15 08:55	06/04/15 18:20
10309050022	**S7-PW-04**	Water	06/04/15 08:20	06/04/15 18:20
10309050023	**S7-PW-05**	Water	06/04/15 11:40	06/04/15 18:20
10309050024	**S7-PW-06**	Water	06/04/15 11:20	06/04/15 18:20
10309050025	**S7-PW-07**	Water	06/04/15 10:40	06/04/15 18:20
10309050026	**S7-PW-08**	Water	06/04/15 10:50	06/04/15 18:20
10309050027	**DUP-2**	Water	06/04/15 00:00	06/04/15 18:20
10309050028	**S7-PW-09**	Water	06/04/15 11:05	06/04/15 18:20

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
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(612)607-1700

SAMPLE ANALYTE COUNT

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10309050001	**SB-PW-01**	EPA 8270D by SIM	AS1	19
10309050002	**SB-PW-02**	EPA 8270D by SIM	AS1	19
10309050003	**DUP-1**	EPA 8270D by SIM	AS1	19
10309050004	**SB-PW-03**	EPA 8270D by SIM	LT	19
10309050005	**SB-PW-04**	EPA 8270D by SIM	LT	19
10309050006	**SB-PW-05**	EPA 8270D by SIM	LT	19
10309050007	**SB-PW-06**	EPA 8270D by SIM	LT	19
10309050008	**SB-PW-07**	EPA 8270D by SIM	LT	19
10309050009	**SB-PW-08**	EPA 8270D by SIM	LT	19
10309050010	**SB-PW-09**	EPA 8270D by SIM	LT	19
10309050011	**S6-PW-01**	EPA 8270D by SIM	LT	19
10309050012	**S6-PW-02**	EPA 8270D by SIM	LT	19
10309050013	**S6-PW-03**	EPA 8270D by SIM	LT	19
10309050014	**S6-PW-04**	EPA 8270D by SIM	LT	19
10309050015	**S6-PW-05**	EPA 8270D by SIM	LT	19
10309050016	**S6-PW-06**	EPA 8270D by SIM	LT	19
10309050017	**NW-PW-01**	EPA 8270D by SIM	LT	19
10309050018	**SW-PW-01**	EPA 8270D by SIM	LT	19
10309050019	**S7-PW-01**	EPA 8270D by SIM	LT	19
10309050020	**S7-PW-02**	EPA 8270D by SIM	LT	19
10309050022	**S7-PW-04**	EPA 8270D by SIM	LT	19
10309050023	**S7-PW-05**	EPA 8270D by SIM	LT	19
10309050024	**S7-PW-06**	EPA 8270D by SIM	LT	19
10309050025	**S7-PW-07**	EPA 8270D by SIM	LT	19
10309050026	**S7-PW-08**	EPA 8270D by SIM	LT	19
10309050027	**DUP-2**	EPA 8270D by SIM	LT	19
10309050028	**S7-PW-09**	EPA 8270D by SIM	LT	19

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-01 **Lab ID: 10309050001** Collected: 06/03/15 13:05 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.25**	ug/L	0.040	0.0032	1	06/08/15 18:10	06/09/15 16:20	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/08/15 18:10	06/09/15 16:20	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0044	1	06/08/15 18:10	06/09/15 16:20	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/08/15 18:10	06/09/15 16:20	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/08/15 18:10	06/09/15 16:20	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0076	1	06/08/15 18:10	06/09/15 16:20	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/08/15 18:10	06/09/15 16:20	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/08/15 18:10	06/09/15 16:20	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/08/15 18:10	06/09/15 16:20	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0096	1	06/08/15 18:10	06/09/15 16:20	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/08/15 18:10	06/09/15 16:20	206-44-0	
Fluorene	**0.10**	ug/L	0.040	0.0056	1	06/08/15 18:10	06/09/15 16:20	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/08/15 18:10	06/09/15 16:20	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/08/15 18:10	06/09/15 16:20	91-57-6	
Naphthalene	**0.051**	ug/L	0.040	0.0091	1	06/08/15 18:10	06/09/15 16:20	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.012	1	06/08/15 18:10	06/09/15 16:20	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0064	1	06/08/15 18:10	06/09/15 16:20	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%.	52-125		1	06/08/15 18:10	06/09/15 16:20	321-60-8	
p-Terphenyl-d14 (S)	81	%.	62-125		1	06/08/15 18:10	06/09/15 16:20	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-02 **Lab ID: 10309050002** Collected: 06/03/15 14:45 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**7.1**	ug/L	0.041	0.0033	1	06/08/15 18:10	06/09/15 16:42	83-32-9	
Acenaphthylene	**8.3**	ug/L	0.041	0.0040	1	06/08/15 18:10	06/09/15 16:42	208-96-8	
Anthracene	**0.36**	ug/L	0.041	0.0045	1	06/08/15 18:10	06/09/15 16:42	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/08/15 18:10	06/09/15 16:42	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/08/15 18:10	06/09/15 16:42	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/08/15 18:10	06/09/15 16:42	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/08/15 18:10	06/09/15 16:42	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/08/15 18:10	06/09/15 16:42	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/08/15 18:10	06/09/15 16:42	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/08/15 18:10	06/09/15 16:42	53-70-3	
Fluoranthene	**0.060**	ug/L	0.041	0.0058	1	06/08/15 18:10	06/09/15 16:42	206-44-0	
Fluorene	**5.1**	ug/L	0.041	0.0057	1	06/08/15 18:10	06/09/15 16:42	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/08/15 18:10	06/09/15 16:42	193-39-5	
2-Methylnaphthalene	**22.6**	ug/L	4.1	0.42	100	06/08/15 18:10	06/09/15 18:09	91-57-6	
Naphthalene	**801**	ug/L	4.1	0.93	100	06/08/15 18:10	06/09/15 18:09	91-20-3	
Phenanthrene	**3.2**	ug/L	0.041	0.013	1	06/08/15 18:10	06/09/15 16:42	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/08/15 18:10	06/09/15 16:42	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%.	52-125		1	06/08/15 18:10	06/09/15 16:42	321-60-8	
p-Terphenyl-d14 (S)	66	%.	62-125		1	06/08/15 18:10	06/09/15 16:42	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: DUP-1 **Lab ID: 10309050003** Collected: 06/03/15 00:00 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**7.0**	ug/L	0.041	0.0033	1	06/08/15 18:10	06/09/15 17:04	83-32-9	
Acenaphthylene	**8.2**	ug/L	0.041	0.0041	1	06/08/15 18:10	06/09/15 17:04	208-96-8	
Anthracene	**0.36**	ug/L	0.041	0.0045	1	06/08/15 18:10	06/09/15 17:04	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0031	1	06/08/15 18:10	06/09/15 17:04	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/08/15 18:10	06/09/15 17:04	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0079	1	06/08/15 18:10	06/09/15 17:04	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0056	1	06/08/15 18:10	06/09/15 17:04	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/08/15 18:10	06/09/15 17:04	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/08/15 18:10	06/09/15 17:04	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0099	1	06/08/15 18:10	06/09/15 17:04	53-70-3	
Fluoranthene	**0.059**	ug/L	0.041	0.0058	1	06/08/15 18:10	06/09/15 17:04	206-44-0	
Fluorene	**5.0**	ug/L	0.041	0.0058	1	06/08/15 18:10	06/09/15 17:04	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/08/15 18:10	06/09/15 17:04	193-39-5	
2-Methylnaphthalene	**22.9**	ug/L	4.1	0.43	100	06/08/15 18:10	06/09/15 18:31	91-57-6	
Naphthalene	**848**	ug/L	4.1	0.94	100	06/08/15 18:10	06/09/15 18:31	91-20-3	
Phenanthrene	**3.2**	ug/L	0.041	0.013	1	06/08/15 18:10	06/09/15 17:04	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0066	1	06/08/15 18:10	06/09/15 17:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	52-125		1	06/08/15 18:10	06/09/15 17:04	321-60-8	
p-Terphenyl-d14 (S)	69	%.	62-125		1	06/08/15 18:10	06/09/15 17:04	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-03 **Lab ID: 10309050004** Collected: 06/03/15 15:10 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.38**	ug/L	0.040	0.0032	1	06/09/15 18:05	06/18/15 01:15	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/09/15 18:05	06/18/15 01:15	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0044	1	06/09/15 18:05	06/18/15 01:15	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 01:15	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 01:15	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0076	1	06/09/15 18:05	06/18/15 01:15	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/09/15 18:05	06/18/15 01:15	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/09/15 18:05	06/18/15 01:15	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/09/15 18:05	06/18/15 01:15	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0096	1	06/09/15 18:05	06/18/15 01:15	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/09/15 18:05	06/18/15 01:15	206-44-0	
Fluorene	**<0.040**	ug/L	0.040	0.0056	1	06/09/15 18:05	06/18/15 01:15	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/09/15 18:05	06/18/15 01:15	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/09/15 18:05	06/18/15 01:15	91-57-6	
Naphthalene	**<0.040**	ug/L	0.040	0.0091	1	06/09/15 18:05	06/18/15 01:15	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.012	1	06/09/15 18:05	06/18/15 01:15	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0064	1	06/09/15 18:05	06/18/15 01:15	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	77	%.	52-125		1	06/09/15 18:05	06/18/15 01:15	321-60-8	
p-Terphenyl-d14 (S)	87	%.	62-125		1	06/09/15 18:05	06/18/15 01:15	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-04 **Lab ID: 10309050005** Collected: 06/03/15 12:45 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.041**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 01:37	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 01:37	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 01:37	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 01:37	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 01:37	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 01:37	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 01:37	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/09/15 18:05	06/18/15 01:37	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/09/15 18:05	06/18/15 01:37	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/09/15 18:05	06/18/15 01:37	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 01:37	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 01:37	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/09/15 18:05	06/18/15 01:37	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 01:37	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 01:37	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 01:37	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 01:37	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	62	%.	52-125		1	06/09/15 18:05	06/18/15 01:37	321-60-8	
p-Terphenyl-d14 (S)	83	%.	62-125		1	06/09/15 18:05	06/18/15 01:37	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-05 **Lab ID: 10309050006** Collected: 06/03/15 13:30 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.19**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 01:59	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 01:59	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 01:59	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 01:59	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/09/15 18:05	06/18/15 01:59	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 01:59	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 01:59	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/09/15 18:05	06/18/15 01:59	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/09/15 18:05	06/18/15 01:59	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0098	1	06/09/15 18:05	06/18/15 01:59	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 01:59	206-44-0	
Fluorene	**0.065**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 01:59	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 01:59	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 01:59	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 01:59	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 01:59	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 01:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%.	52-125		1	06/09/15 18:05	06/18/15 01:59	321-60-8	
p-Terphenyl-d14 (S)	83	%.	62-125		1	06/09/15 18:05	06/18/15 01:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-06 **Lab ID: 10309050007** Collected: 06/03/15 14:55 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.11**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 02:20	83-32-9	
Acenaphthylene	**0.049**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 02:20	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 02:20	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 02:20	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 02:20	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 02:20	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 02:20	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/09/15 18:05	06/18/15 02:20	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/09/15 18:05	06/18/15 02:20	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/09/15 18:05	06/18/15 02:20	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 02:20	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 02:20	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/09/15 18:05	06/18/15 02:20	193-39-5	
2-Methylnaphthalene	**0.11**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 02:20	91-57-6	
Naphthalene	**2.3**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 02:20	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 02:20	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 02:20	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	69	%.	52-125		1	06/09/15 18:05	06/18/15 02:20	321-60-8	
p-Terphenyl-d14 (S)	81	%.	62-125		1	06/09/15 18:05	06/18/15 02:20	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-07 **Lab ID: 10309050008** Collected: 06/03/15 13:45 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**1.7**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 02:42	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 02:42	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 02:42	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 02:42	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 02:42	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 02:42	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 02:42	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/09/15 18:05	06/18/15 02:42	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/09/15 18:05	06/18/15 02:42	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/09/15 18:05	06/18/15 02:42	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 02:42	206-44-0	
Fluorene	**0.30**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 02:42	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/09/15 18:05	06/18/15 02:42	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 02:42	91-57-6	
Naphthalene	**0.49**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 02:42	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 02:42	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 02:42	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	64	%.	52-125		1	06/09/15 18:05	06/18/15 02:42	321-60-8	
p-Terphenyl-d14 (S)	82	%.	62-125		1	06/09/15 18:05	06/18/15 02:42	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-08 **Lab ID: 10309050009** Collected: 06/03/15 14:05 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.041**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 03:04	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 03:04	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 03:04	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 03:04	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 03:04	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 03:04	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 03:04	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/09/15 18:05	06/18/15 03:04	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/09/15 18:05	06/18/15 03:04	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/09/15 18:05	06/18/15 03:04	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 03:04	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 03:04	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/09/15 18:05	06/18/15 03:04	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 03:04	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 03:04	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 03:04	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 03:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	68	%.	52-125		1	06/09/15 18:05	06/18/15 03:04	321-60-8	
p-Terphenyl-d14 (S)	82	%.	62-125		1	06/09/15 18:05	06/18/15 03:04	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SB-PW-09 **Lab ID: 10309050010** Collected: 06/03/15 14:25 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**2.0**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 03:25	83-32-9	
Acenaphthylene	**1.5**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 03:25	208-96-8	
Anthracene	**0.10**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 03:25	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 03:25	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 03:25	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 03:25	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 03:25	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/09/15 18:05	06/18/15 03:25	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/09/15 18:05	06/18/15 03:25	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/09/15 18:05	06/18/15 03:25	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 03:25	206-44-0	
Fluorene	**1.4**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 03:25	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/09/15 18:05	06/18/15 03:25	193-39-5	
2-Methylnaphthalene	**4.2**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 03:25	91-57-6	
Naphthalene	**74.0**	ug/L	0.41	0.093	10	06/09/15 18:05	06/18/15 07:28	91-20-3	
Phenanthrene	**0.70**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 03:25	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 03:25	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	52-125		1	06/09/15 18:05	06/18/15 03:25	321-60-8	
p-Terphenyl-d14 (S)	81	%.	62-125		1	06/09/15 18:05	06/18/15 03:25	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S6-PW-01 **Lab ID: 10309050011** Collected: 06/03/15 15:35 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.47**	ug/L	0.040	0.0033	1	06/09/15 18:05	06/18/15 03:47	83-32-9	
Acenaphthylene	**4.3**	ug/L	0.040	0.0040	1	06/09/15 18:05	06/18/15 03:47	208-96-8	
Anthracene	**0.14**	ug/L	0.040	0.0045	1	06/09/15 18:05	06/18/15 03:47	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 03:47	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 03:47	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0077	1	06/09/15 18:05	06/18/15 03:47	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/09/15 18:05	06/18/15 03:47	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/09/15 18:05	06/18/15 03:47	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/09/15 18:05	06/18/15 03:47	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0097	1	06/09/15 18:05	06/18/15 03:47	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/09/15 18:05	06/18/15 03:47	206-44-0	
Fluorene	**2.1**	ug/L	0.040	0.0057	1	06/09/15 18:05	06/18/15 03:47	86-73-7	M1
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/09/15 18:05	06/18/15 03:47	193-39-5	
2-Methylnaphthalene	**5.1**	ug/L	0.040	0.0042	1	06/09/15 18:05	06/18/15 03:47	91-57-6	M1
Naphthalene	**130**	ug/L	0.81	0.18	20	06/09/15 18:05	06/18/15 07:49	91-20-3	M1
Phenanthrene	**1.1**	ug/L	0.040	0.013	1	06/09/15 18:05	06/18/15 03:47	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0065	1	06/09/15 18:05	06/18/15 03:47	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	72	%.	52-125		1	06/09/15 18:05	06/18/15 03:47	321-60-8	
p-Terphenyl-d14 (S)	81	%.	62-125		1	06/09/15 18:05	06/18/15 03:47	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S6-PW-02 **Lab ID: 10309050012** Collected: 06/03/15 16:20 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.041**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 04:52	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 04:52	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 04:52	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 04:52	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/09/15 18:05	06/18/15 04:52	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 04:52	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 04:52	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/09/15 18:05	06/18/15 04:52	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/09/15 18:05	06/18/15 04:52	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0098	1	06/09/15 18:05	06/18/15 04:52	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 04:52	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 04:52	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 04:52	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 04:52	91-57-6	
Naphthalene	**0.049**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 04:52	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 04:52	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 04:52	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	76	%.	52-125		1	06/09/15 18:05	06/18/15 04:52	321-60-8	
p-Terphenyl-d14 (S)	89	%.	62-125		1	06/09/15 18:05	06/18/15 04:52	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S6-PW-03 **Lab ID: 10309050013** Collected: 06/03/15 16:50 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.055**	ug/L	0.040	0.0033	1	06/09/15 18:05	06/18/15 05:14	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/09/15 18:05	06/18/15 05:14	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0045	1	06/09/15 18:05	06/18/15 05:14	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 05:14	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 05:14	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0077	1	06/09/15 18:05	06/18/15 05:14	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/09/15 18:05	06/18/15 05:14	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/09/15 18:05	06/18/15 05:14	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/09/15 18:05	06/18/15 05:14	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0097	1	06/09/15 18:05	06/18/15 05:14	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/09/15 18:05	06/18/15 05:14	206-44-0	
Fluorene	**<0.040**	ug/L	0.040	0.0057	1	06/09/15 18:05	06/18/15 05:14	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/09/15 18:05	06/18/15 05:14	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/09/15 18:05	06/18/15 05:14	91-57-6	
Naphthalene	**<0.040**	ug/L	0.040	0.0092	1	06/09/15 18:05	06/18/15 05:14	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.013	1	06/09/15 18:05	06/18/15 05:14	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0065	1	06/09/15 18:05	06/18/15 05:14	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	52-125		1	06/09/15 18:05	06/18/15 05:14	321-60-8	
p-Terphenyl-d14 (S)	83	%.	62-125		1	06/09/15 18:05	06/18/15 05:14	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S6-PW-04 **Lab ID: 10309050014** Collected: 06/03/15 15:55 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.041**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 05:36	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 05:36	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 05:36	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 05:36	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/09/15 18:05	06/18/15 05:36	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 05:36	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 05:36	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/09/15 18:05	06/18/15 05:36	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/09/15 18:05	06/18/15 05:36	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0098	1	06/09/15 18:05	06/18/15 05:36	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 05:36	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 05:36	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 05:36	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 05:36	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 05:36	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 05:36	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 05:36	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	66	%.	52-125		1	06/09/15 18:05	06/18/15 05:36	321-60-8	
p-Terphenyl-d14 (S)	83	%.	62-125		1	06/09/15 18:05	06/18/15 05:36	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S6-PW-05 **Lab ID: 10309050015** Collected: 06/03/15 16:05 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.14**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 05:57	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 05:57	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 05:57	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 05:57	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 05:57	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 05:57	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 05:57	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/09/15 18:05	06/18/15 05:57	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/09/15 18:05	06/18/15 05:57	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/09/15 18:05	06/18/15 05:57	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 05:57	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 05:57	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/09/15 18:05	06/18/15 05:57	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 05:57	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 05:57	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 05:57	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 05:57	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%.	52-125		1	06/09/15 18:05	06/18/15 05:57	321-60-8	
p-Terphenyl-d14 (S)	87	%.	62-125		1	06/09/15 18:05	06/18/15 05:57	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S6-PW-06 **Lab ID: 10309050016** Collected: 06/03/15 16:35 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.041**	ug/L	0.041	0.0033	1	06/09/15 18:05	06/18/15 06:19	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/09/15 18:05	06/18/15 06:19	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/09/15 18:05	06/18/15 06:19	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 06:19	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/09/15 18:05	06/18/15 06:19	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/09/15 18:05	06/18/15 06:19	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/09/15 18:05	06/18/15 06:19	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/09/15 18:05	06/18/15 06:19	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/09/15 18:05	06/18/15 06:19	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/09/15 18:05	06/18/15 06:19	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/09/15 18:05	06/18/15 06:19	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0057	1	06/09/15 18:05	06/18/15 06:19	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/09/15 18:05	06/18/15 06:19	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/09/15 18:05	06/18/15 06:19	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/09/15 18:05	06/18/15 06:19	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/09/15 18:05	06/18/15 06:19	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/09/15 18:05	06/18/15 06:19	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	77	%.	52-125		1	06/09/15 18:05	06/18/15 06:19	321-60-8	
p-Terphenyl-d14 (S)	85	%.	62-125		1	06/09/15 18:05	06/18/15 06:19	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: NW-PW-01 **Lab ID: 10309050017** Collected: 06/04/15 12:00 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM		Preparation Method: EPA 3510						
Acenaphthene	**<0.040**	ug/L	0.040	0.0032	1	06/10/15 22:27	06/13/15 20:10	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/10/15 22:27	06/13/15 20:10	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0044	1	06/10/15 22:27	06/13/15 20:10	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 20:10	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 20:10	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0077	1	06/10/15 22:27	06/13/15 20:10	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/10/15 22:27	06/13/15 20:10	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/10/15 22:27	06/13/15 20:10	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/10/15 22:27	06/13/15 20:10	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0096	1	06/10/15 22:27	06/13/15 20:10	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 20:10	206-44-0	
Fluorene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 20:10	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/10/15 22:27	06/13/15 20:10	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/10/15 22:27	06/13/15 20:10	91-57-6	
Naphthalene	**<0.040**	ug/L	0.040	0.0092	1	06/10/15 22:27	06/13/15 20:10	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.012	1	06/10/15 22:27	06/13/15 20:10	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0064	1	06/10/15 22:27	06/13/15 20:10	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	72	%.	52-125		1	06/10/15 22:27	06/13/15 20:10	321-60-8	
p-Terphenyl-d14 (S)	83	%.	62-125		1	06/10/15 22:27	06/13/15 20:10	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: SW-PW-01 **Lab ID: 10309050018** Collected: 06/03/15 10:45 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.040**	ug/L	0.040	0.0032	1	06/09/15 18:05	06/18/15 06:41	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/09/15 18:05	06/18/15 06:41	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0044	1	06/09/15 18:05	06/18/15 06:41	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 06:41	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/09/15 18:05	06/18/15 06:41	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0076	1	06/09/15 18:05	06/18/15 06:41	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/09/15 18:05	06/18/15 06:41	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/09/15 18:05	06/18/15 06:41	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/09/15 18:05	06/18/15 06:41	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0096	1	06/09/15 18:05	06/18/15 06:41	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/09/15 18:05	06/18/15 06:41	206-44-0	
Fluorene	**<0.040**	ug/L	0.040	0.0056	1	06/09/15 18:05	06/18/15 06:41	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/09/15 18:05	06/18/15 06:41	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/09/15 18:05	06/18/15 06:41	91-57-6	
Naphthalene	**<0.040**	ug/L	0.040	0.0091	1	06/09/15 18:05	06/18/15 06:41	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.012	1	06/09/15 18:05	06/18/15 06:41	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0064	1	06/09/15 18:05	06/18/15 06:41	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	74	%.	52-125		1	06/09/15 18:05	06/18/15 06:41	321-60-8	
p-Terphenyl-d14 (S)	87	%.	62-125		1	06/09/15 18:05	06/18/15 06:41	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-01 **Lab ID: 10309050019** Collected: 06/04/15 08:40 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.040**	ug/L	0.040	0.0033	1	06/10/15 22:27	06/13/15 20:31	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/10/15 22:27	06/13/15 20:31	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0045	1	06/10/15 22:27	06/13/15 20:31	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 20:31	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 20:31	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0077	1	06/10/15 22:27	06/13/15 20:31	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/10/15 22:27	06/13/15 20:31	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/10/15 22:27	06/13/15 20:31	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/10/15 22:27	06/13/15 20:31	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0097	1	06/10/15 22:27	06/13/15 20:31	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 20:31	206-44-0	
Fluorene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 20:31	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/10/15 22:27	06/13/15 20:31	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/10/15 22:27	06/13/15 20:31	91-57-6	
Naphthalene	**<0.040**	ug/L	0.040	0.0092	1	06/10/15 22:27	06/13/15 20:31	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.013	1	06/10/15 22:27	06/13/15 20:31	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0065	1	06/10/15 22:27	06/13/15 20:31	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	79	%.	52-125		1	06/10/15 22:27	06/13/15 20:31	321-60-8	
p-Terphenyl-d14 (S)	88	%.	62-125		1	06/10/15 22:27	06/13/15 20:31	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-02 **Lab ID: 10309050020** Collected: 06/04/15 08:55 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.080**	ug/L	0.040	0.0033	1	06/10/15 22:27	06/13/15 20:53	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/10/15 22:27	06/13/15 20:53	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0045	1	06/10/15 22:27	06/13/15 20:53	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 20:53	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 20:53	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0077	1	06/10/15 22:27	06/13/15 20:53	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/10/15 22:27	06/13/15 20:53	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/10/15 22:27	06/13/15 20:53	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/10/15 22:27	06/13/15 20:53	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0097	1	06/10/15 22:27	06/13/15 20:53	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 20:53	206-44-0	
Fluorene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 20:53	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/10/15 22:27	06/13/15 20:53	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/10/15 22:27	06/13/15 20:53	91-57-6	
Naphthalene	**<0.040**	ug/L	0.040	0.0092	1	06/10/15 22:27	06/13/15 20:53	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.013	1	06/10/15 22:27	06/13/15 20:53	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0065	1	06/10/15 22:27	06/13/15 20:53	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%.	52-125		1	06/10/15 22:27	06/13/15 20:53	321-60-8	
p-Terphenyl-d14 (S)	84	%.	62-125		1	06/10/15 22:27	06/13/15 20:53	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-04 **Lab ID: 10309050022** Collected: 06/04/15 08:20 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**<0.040**	ug/L	0.040	0.0033	1	06/10/15 22:27	06/13/15 21:15	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/10/15 22:27	06/13/15 21:15	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0045	1	06/10/15 22:27	06/13/15 21:15	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 21:15	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/10/15 22:27	06/13/15 21:15	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0077	1	06/10/15 22:27	06/13/15 21:15	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/10/15 22:27	06/13/15 21:15	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/10/15 22:27	06/13/15 21:15	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/10/15 22:27	06/13/15 21:15	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0097	1	06/10/15 22:27	06/13/15 21:15	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 21:15	206-44-0	
Fluorene	**<0.040**	ug/L	0.040	0.0057	1	06/10/15 22:27	06/13/15 21:15	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/10/15 22:27	06/13/15 21:15	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/10/15 22:27	06/13/15 21:15	91-57-6	
Naphthalene	**<0.040**	ug/L	0.040	0.0092	1	06/10/15 22:27	06/13/15 21:15	91-20-3	
Phenanthrene	**<0.040**	ug/L	0.040	0.013	1	06/10/15 22:27	06/13/15 21:15	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0065	1	06/10/15 22:27	06/13/15 21:15	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	83	%.	52-125		1	06/10/15 22:27	06/13/15 21:15	321-60-8	
p-Terphenyl-d14 (S)	87	%.	62-125		1	06/10/15 22:27	06/13/15 21:15	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-05 **Lab ID: 10309050023** Collected: 06/04/15 11:40 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM		Preparation Method: EPA 3510						
Acenaphthene	**0.046**	ug/L	0.041	0.0033	1	06/10/15 22:27	06/13/15 21:36	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/10/15 22:27	06/13/15 21:36	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/10/15 22:27	06/13/15 21:36	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/10/15 22:27	06/13/15 21:36	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/10/15 22:27	06/13/15 21:36	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/10/15 22:27	06/13/15 21:36	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/10/15 22:27	06/13/15 21:36	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/10/15 22:27	06/13/15 21:36	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/10/15 22:27	06/13/15 21:36	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/10/15 22:27	06/13/15 21:36	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 21:36	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0057	1	06/10/15 22:27	06/13/15 21:36	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/10/15 22:27	06/13/15 21:36	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/10/15 22:27	06/13/15 21:36	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/10/15 22:27	06/13/15 21:36	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/10/15 22:27	06/13/15 21:36	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/10/15 22:27	06/13/15 21:36	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%.	52-125		1	06/10/15 22:27	06/13/15 21:36	321-60-8	
p-Terphenyl-d14 (S)	84	%.	62-125		1	06/10/15 22:27	06/13/15 21:36	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-06 **Lab ID: 10309050024** Collected: 06/04/15 11:20 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**9.3**	ug/L	0.041	0.0033	1	06/10/15 22:27	06/13/15 21:58	83-32-9	
Acenaphthylene	**3.4**	ug/L	0.041	0.0040	1	06/10/15 22:27	06/13/15 21:58	208-96-8	
Anthracene	**0.091**	ug/L	0.041	0.0045	1	06/10/15 22:27	06/13/15 21:58	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/10/15 22:27	06/13/15 21:58	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/10/15 22:27	06/13/15 21:58	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/10/15 22:27	06/13/15 21:58	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/10/15 22:27	06/13/15 21:58	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/10/15 22:27	06/13/15 21:58	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/10/15 22:27	06/13/15 21:58	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0098	1	06/10/15 22:27	06/13/15 21:58	53-70-3	
Fluoranthene	**0.049**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 21:58	206-44-0	
Fluorene	**0.55**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 21:58	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/10/15 22:27	06/13/15 21:58	193-39-5	
2-Methylnaphthalene	**6.1**	ug/L	0.041	0.0042	1	06/10/15 22:27	06/13/15 21:58	91-57-6	
Naphthalene	**750**	ug/L	4.1	0.93	100	06/10/15 22:27	06/15/15 15:00	91-20-3	
Phenanthrene	**0.36**	ug/L	0.041	0.013	1	06/10/15 22:27	06/13/15 21:58	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/10/15 22:27	06/13/15 21:58	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	81	%.	52-125		1	06/10/15 22:27	06/13/15 21:58	321-60-8	
p-Terphenyl-d14 (S)	89	%.	62-125		1	06/10/15 22:27	06/13/15 21:58	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-07 **Lab ID: 10309050025** Collected: 06/04/15 10:40 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM		Preparation Method: EPA 3510						
Acenaphthene	**<0.041**	ug/L	0.041	0.0033	1	06/10/15 22:27	06/13/15 22:20	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0040	1	06/10/15 22:27	06/13/15 22:20	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/10/15 22:27	06/13/15 22:20	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/10/15 22:27	06/13/15 22:20	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0030	1	06/10/15 22:27	06/13/15 22:20	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/10/15 22:27	06/13/15 22:20	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/10/15 22:27	06/13/15 22:20	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0038	1	06/10/15 22:27	06/13/15 22:20	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0053	1	06/10/15 22:27	06/13/15 22:20	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0097	1	06/10/15 22:27	06/13/15 22:20	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 22:20	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0057	1	06/10/15 22:27	06/13/15 22:20	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0056	1	06/10/15 22:27	06/13/15 22:20	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0042	1	06/10/15 22:27	06/13/15 22:20	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0093	1	06/10/15 22:27	06/13/15 22:20	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/10/15 22:27	06/13/15 22:20	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/10/15 22:27	06/13/15 22:20	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%.	52-125		1	06/10/15 22:27	06/13/15 22:20	321-60-8	
p-Terphenyl-d14 (S)	83	%.	62-125		1	06/10/15 22:27	06/13/15 22:20	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-08 **Lab ID: 10309050026** Collected: 06/04/15 10:50 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**30.9**	ug/L	0.21	0.017	5	06/10/15 22:27	06/15/15 08:50	83-32-9	
Acenaphthylene	**1.1**	ug/L	0.041	0.0041	1	06/10/15 22:27	06/13/15 22:41	208-96-8	
Anthracene	**0.060**	ug/L	0.041	0.0045	1	06/10/15 22:27	06/13/15 22:41	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0031	1	06/10/15 22:27	06/13/15 22:41	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/10/15 22:27	06/13/15 22:41	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0079	1	06/10/15 22:27	06/13/15 22:41	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0056	1	06/10/15 22:27	06/13/15 22:41	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/10/15 22:27	06/13/15 22:41	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/10/15 22:27	06/13/15 22:41	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0099	1	06/10/15 22:27	06/13/15 22:41	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 22:41	206-44-0	
Fluorene	**0.12**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 22:41	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/10/15 22:27	06/13/15 22:41	193-39-5	
2-Methylnaphthalene	**0.89**	ug/L	0.041	0.0043	1	06/10/15 22:27	06/13/15 22:41	91-57-6	
Naphthalene	**657**	ug/L	4.1	0.94	100	06/10/15 22:27	06/15/15 15:22	91-20-3	
Phenanthrene	**0.051**	ug/L	0.041	0.013	1	06/10/15 22:27	06/13/15 22:41	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0066	1	06/10/15 22:27	06/13/15 22:41	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	82	%.	52-125		1	06/10/15 22:27	06/13/15 22:41	321-60-8	
p-Terphenyl-d14 (S)	86	%.	62-125		1	06/10/15 22:27	06/13/15 22:41	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: DUP-2 **Lab ID: 10309050027** Collected: 06/04/15 00:00 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**29.9**	ug/L	0.20	0.016	5	06/10/15 22:27	06/15/15 09:34	83-32-9	
Acenaphthylene	**1.3**	ug/L	0.041	0.0040	1	06/10/15 22:27	06/13/15 23:03	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/10/15 22:27	06/13/15 23:03	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/10/15 22:27	06/13/15 23:03	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/10/15 22:27	06/13/15 23:03	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/10/15 22:27	06/13/15 23:03	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/10/15 22:27	06/13/15 23:03	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/10/15 22:27	06/13/15 23:03	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/10/15 22:27	06/13/15 23:03	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0098	1	06/10/15 22:27	06/13/15 23:03	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 23:03	206-44-0	
Fluorene	**0.12**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 23:03	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/10/15 22:27	06/13/15 23:03	193-39-5	
2-Methylnaphthalene	**1.0**	ug/L	0.041	0.0042	1	06/10/15 22:27	06/13/15 23:03	91-57-6	
Naphthalene	**664**	ug/L	4.1	0.93	100	06/10/15 22:27	06/15/15 15:44	91-20-3	
Phenanthrene	**0.047**	ug/L	0.041	0.013	1	06/10/15 22:27	06/13/15 23:03	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0065	1	06/10/15 22:27	06/13/15 23:03	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	79	%.	52-125		1	06/10/15 22:27	06/13/15 23:03	321-60-8	
p-Terphenyl-d14 (S)	83	%.	62-125		1	06/10/15 22:27	06/13/15 23:03	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Sample: S7-PW-09 **Lab ID: 10309050028** Collected: 06/04/15 11:05 Received: 06/04/15 18:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**0.11**	ug/L	0.041	0.0033	1	06/10/15 22:27	06/13/15 23:24	83-32-9	
Acenaphthylene	**<0.041**	ug/L	0.041	0.0041	1	06/10/15 22:27	06/13/15 23:24	208-96-8	
Anthracene	**<0.041**	ug/L	0.041	0.0045	1	06/10/15 22:27	06/13/15 23:24	120-12-7	
Benzo(a)anthracene	**<0.041**	ug/L	0.041	0.0030	1	06/10/15 22:27	06/13/15 23:24	56-55-3	
Benzo(a)pyrene	**<0.041**	ug/L	0.041	0.0031	1	06/10/15 22:27	06/13/15 23:24	50-32-8	
Benzo(b)fluoranthene	**<0.041**	ug/L	0.041	0.0078	1	06/10/15 22:27	06/13/15 23:24	205-99-2	
Benzo(g,h,i)perylene	**<0.041**	ug/L	0.041	0.0055	1	06/10/15 22:27	06/13/15 23:24	191-24-2	
Benzo(k)fluoranthene	**<0.041**	ug/L	0.041	0.0039	1	06/10/15 22:27	06/13/15 23:24	207-08-9	
Chrysene	**<0.041**	ug/L	0.041	0.0054	1	06/10/15 22:27	06/13/15 23:24	218-01-9	
Dibenz(a,h)anthracene	**<0.041**	ug/L	0.041	0.0098	1	06/10/15 22:27	06/13/15 23:24	53-70-3	
Fluoranthene	**<0.041**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 23:24	206-44-0	
Fluorene	**<0.041**	ug/L	0.041	0.0058	1	06/10/15 22:27	06/13/15 23:24	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.041**	ug/L	0.041	0.0057	1	06/10/15 22:27	06/13/15 23:24	193-39-5	
2-Methylnaphthalene	**<0.041**	ug/L	0.041	0.0043	1	06/10/15 22:27	06/13/15 23:24	91-57-6	
Naphthalene	**<0.041**	ug/L	0.041	0.0094	1	06/10/15 22:27	06/13/15 23:24	91-20-3	
Phenanthrene	**<0.041**	ug/L	0.041	0.013	1	06/10/15 22:27	06/13/15 23:24	85-01-8	
Pyrene	**<0.041**	ug/L	0.041	0.0066	1	06/10/15 22:27	06/13/15 23:24	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	77	%.	52-125		1	06/10/15 22:27	06/13/15 23:24	321-60-8	
p-Terphenyl-d14 (S)	88	%.	62-125		1	06/10/15 22:27	06/13/15 23:24	1718-51-0	

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

QC Batch: OEXT/29486 — Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3510 — Analysis Description: 8270D PAH by SIM MSSV
Associated Lab Samples: 10309050001, 10309050002, 10309050003

METHOD BLANK: 1987572 — Matrix: Water
Associated Lab Samples: 10309050001, 10309050002, 10309050003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	<0.040	0.040	06/09/15 18:02	
Acenaphthene	ug/L	<0.040	0.040	06/09/15 18:02	
Acenaphthylene	ug/L	<0.040	0.040	06/09/15 18:02	
Anthracene	ug/L	<0.040	0.040	06/09/15 18:02	
Benzo(a)anthracene	ug/L	<0.040	0.040	06/09/15 18:02	
Benzo(a)pyrene	ug/L	<0.040	0.040	06/09/15 18:02	
Benzo(b)fluoranthene	ug/L	<0.040	0.040	06/09/15 18:02	
Benzo(g,h,i)perylene	ug/L	<0.040	0.040	06/09/15 18:02	
Benzo(k)fluoranthene	ug/L	<0.040	0.040	06/09/15 18:02	
Chrysene	ug/L	<0.040	0.040	06/09/15 18:02	
Dibenz(a,h)anthracene	ug/L	<0.040	0.040	06/09/15 18:02	
Fluoranthene	ug/L	<0.040	0.040	06/09/15 18:02	
Fluorene	ug/L	<0.040	0.040	06/09/15 18:02	
Indeno(1,2,3-cd)pyrene	ug/L	<0.040	0.040	06/09/15 18:02	
Naphthalene	ug/L	<0.040	0.040	06/09/15 18:02	
Phenanthrene	ug/L	<0.040	0.040	06/09/15 18:02	
Pyrene	ug/L	<0.040	0.040	06/09/15 18:02	
2-Fluorobiphenyl (S)	%.	77	52-125	06/09/15 18:02	
p-Terphenyl-d14 (S)	%.	88	62-125	06/09/15 18:02	

LABORATORY CONTROL SAMPLE & LCSD: 1987573 1987574

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Methylnaphthalene	ug/L	1	0.88	0.73	88	73	37-125	19	20	
Acenaphthene	ug/L	1	0.80	0.67	80	67	44-125	18	20	
Acenaphthylene	ug/L	1	0.84	0.71	84	71	44-125	17	20	
Anthracene	ug/L	1	0.91	0.83	91	83	55-125	9	20	
Benzo(a)anthracene	ug/L	1	0.83	0.79	83	79	56-125	4	20	
Benzo(a)pyrene	ug/L	1	0.93	0.87	93	87	61-125	6	20	
Benzo(b)fluoranthene	ug/L	1	0.96	0.90	96	90	60-125	5	20	
Benzo(g,h,i)perylene	ug/L	1	0.88	0.82	88	82	53-125	7	20	
Benzo(k)fluoranthene	ug/L	1	0.87	0.80	87	80	59-125	8	20	
Chrysene	ug/L	1	0.84	0.80	84	80	61-125	4	20	
Dibenz(a,h)anthracene	ug/L	1	0.86	0.78	86	78	51-125	10	20	
Fluoranthene	ug/L	1	0.87	0.83	87	83	64-125	5	20	
Fluorene	ug/L	1	0.86	0.76	86	76	52-125	12	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.86	0.80	86	80	54-125	7	20	
Naphthalene	ug/L	1	0.82	0.71	82	71	35-125	14	20	
Phenanthrene	ug/L	1	0.83	0.77	83	77	55-125	8	20	
Pyrene	ug/L	1	0.88	0.85	88	85	59-125	4	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

LABORATORY CONTROL SAMPLE & LCSD: 1987573 1987574

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Fluorobiphenyl (S)	%.				72	60	52-125			
p-Terphenyl-d14 (S)	%.				85	80	62-125			

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

QC Batch: OEXT/29517 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3510 | Analysis Description: 8270D PAH by SIM MSSV
Associated Lab Samples: 10309050004, 10309050005, 10309050006, 10309050007, 10309050008, 10309050009, 10309050010, 10309050011, 10309050012, 10309050013, 10309050014, 10309050015, 10309050016, 10309050018

METHOD BLANK: 1989326 | Matrix: Water
Associated Lab Samples: 10309050004, 10309050005, 10309050006, 10309050007, 10309050008, 10309050009, 10309050010, 10309050011, 10309050012, 10309050013, 10309050014, 10309050015, 10309050016, 10309050018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	<0.040	0.040	06/17/15 23:48	
Acenaphthene	ug/L	<0.040	0.040	06/17/15 23:48	
Acenaphthylene	ug/L	<0.040	0.040	06/17/15 23:48	
Anthracene	ug/L	<0.040	0.040	06/17/15 23:48	
Benzo(a)anthracene	ug/L	<0.040	0.040	06/17/15 23:48	
Benzo(a)pyrene	ug/L	<0.040	0.040	06/17/15 23:48	
Benzo(b)fluoranthene	ug/L	<0.040	0.040	06/17/15 23:48	
Benzo(g,h,i)perylene	ug/L	<0.040	0.040	06/17/15 23:48	
Benzo(k)fluoranthene	ug/L	<0.040	0.040	06/17/15 23:48	
Chrysene	ug/L	<0.040	0.040	06/17/15 23:48	
Dibenz(a,h)anthracene	ug/L	<0.040	0.040	06/17/15 23:48	
Fluoranthene	ug/L	<0.040	0.040	06/17/15 23:48	
Fluorene	ug/L	<0.040	0.040	06/17/15 23:48	
Indeno(1,2,3-cd)pyrene	ug/L	<0.040	0.040	06/17/15 23:48	
Naphthalene	ug/L	<0.040	0.040	06/17/15 23:48	
Phenanthrene	ug/L	<0.040	0.040	06/17/15 23:48	
Pyrene	ug/L	<0.040	0.040	06/17/15 23:48	
2-Fluorobiphenyl (S)	%.	67	52-125	06/17/15 23:48	
p-Terphenyl-d14 (S)	%.	90	62-125	06/17/15 23:48	

LABORATORY CONTROL SAMPLE: 1989327

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	1	0.77	77	37-125	
Acenaphthene	ug/L	1	0.77	77	44-125	
Acenaphthylene	ug/L	1	0.80	80	44-125	
Anthracene	ug/L	1	1.0	102	55-125	
Benzo(a)anthracene	ug/L	1	0.85	85	56-125	
Benzo(a)pyrene	ug/L	1	0.90	90	61-125	
Benzo(b)fluoranthene	ug/L	1	1.0	100	60-125	
Benzo(g,h,i)perylene	ug/L	1	0.90	90	53-125	
Benzo(k)fluoranthene	ug/L	1	0.91	91	59-125	
Chrysene	ug/L	1	0.83	83	61-125	
Dibenz(a,h)anthracene	ug/L	1	0.90	90	51-125	
Fluoranthene	ug/L	1	0.89	89	64-125	
Fluorene	ug/L	1	0.83	83	52-125	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.88	88	54-125	
Naphthalene	ug/L	1	0.76	76	35-125	

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

LABORATORY CONTROL SAMPLE: 1989327

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	1	0.80	80	55-125	
Pyrene	ug/L	1	0.90	90	59-125	
2-Fluorobiphenyl (S)	%.			63	52-125	
p-Terphenyl-d14 (S)	%.			84	62-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1989328 1989329

Parameter	Units	10309050011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/L	5.1	1	1	6.6	6.6	155	150	53-125	1	30	M1
Acenaphthene	ug/L	0.47	1	1	1.3	1.4	86	87	44-125	1	30	
Acenaphthylene	ug/L	4.3	1	1	5.4	5.5	115	119	52-125	1	30	
Anthracene	ug/L	0.14	1	1	1.0	1.0	87	89	56-125	1	30	
Benzo(a)anthracene	ug/L	<0.040	1	1	0.89	0.91	88	89	51-125	1	30	
Benzo(a)pyrene	ug/L	<0.040	1	1	0.96	0.96	94	94	64-125	1	30	
Benzo(b)fluoranthene	ug/L	<0.040	1	1	1.1	1.1	103	103	61-125	0	30	
Benzo(g,h,i)perylene	ug/L	<0.040	1	1	0.93	0.94	91	92	53-125	2	30	
Benzo(k)fluoranthene	ug/L	<0.040	1	1	0.88	0.90	86	89	59-125	2	30	
Chrysene	ug/L	<0.040	1	1	0.83	0.86	81	85	56-125	4	30	
Dibenz(a,h)anthracene	ug/L	<0.040	1	1	0.94	0.95	92	93	42-125	1	30	
Fluoranthene	ug/L	<0.040	1	1	0.96	0.96	92	92	54-125	0	30	
Fluorene	ug/L	2.1	1	1	3.4	3.5	124	137	45-125	4	30	M1
Indeno(1,2,3-cd)pyrene	ug/L	<0.040	1	1	0.91	0.94	90	92	44-125	3	30	
Naphthalene	ug/L	130	1	1	95.2	92.9	-3400	-3630	51-125	2	30	E,M1
Phenanthrene	ug/L	1.1	1	1	2.0	2.2	96	108	61-125	6	30	
Pyrene	ug/L	<0.040	1	1	0.95	0.96	93	94	63-125	1	30	
2-Fluorobiphenyl (S)	%.						74	71	52-125			
p-Terphenyl-d14 (S)	%.						81	82	62-125			

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

QC Batch: OEXT/29538 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3510 | Analysis Description: 8270D PAH by SIM MSSV
Associated Lab Samples: 10309050017, 10309050019, 10309050020, 10309050022, 10309050023, 10309050024, 10309050025, 10309050026, 10309050027, 10309050028

METHOD BLANK: 1990501 | Matrix: Water
Associated Lab Samples: 10309050017, 10309050019, 10309050020, 10309050022, 10309050023, 10309050024, 10309050025, 10309050026, 10309050027, 10309050028

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	<0.040	0.040	06/13/15 18:00	
Acenaphthene	ug/L	<0.040	0.040	06/13/15 18:00	
Acenaphthylene	ug/L	<0.040	0.040	06/13/15 18:00	
Anthracene	ug/L	<0.040	0.040	06/13/15 18:00	
Benzo(a)anthracene	ug/L	<0.040	0.040	06/13/15 18:00	
Benzo(a)pyrene	ug/L	<0.040	0.040	06/13/15 18:00	
Benzo(b)fluoranthene	ug/L	<0.040	0.040	06/13/15 18:00	
Benzo(g,h,i)perylene	ug/L	<0.040	0.040	06/13/15 18:00	
Benzo(k)fluoranthene	ug/L	<0.040	0.040	06/13/15 18:00	
Chrysene	ug/L	<0.040	0.040	06/13/15 18:00	
Dibenz(a,h)anthracene	ug/L	<0.040	0.040	06/13/15 18:00	
Fluoranthene	ug/L	<0.040	0.040	06/13/15 18:00	
Fluorene	ug/L	<0.040	0.040	06/13/15 18:00	
Indeno(1,2,3-cd)pyrene	ug/L	<0.040	0.040	06/13/15 18:00	
Naphthalene	ug/L	<0.040	0.040	06/13/15 18:00	
Phenanthrene	ug/L	<0.040	0.040	06/13/15 18:00	
Pyrene	ug/L	<0.040	0.040	06/13/15 18:00	
2-Fluorobiphenyl (S)	%.	77	52-125	06/13/15 18:00	
p-Terphenyl-d14 (S)	%.	92	62-125	06/13/15 18:00	

LABORATORY CONTROL SAMPLE & LCSD: 1990502 1990503

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Methylnaphthalene	ug/L	1	0.91	0.90	91	90	37-125	1	20	
Acenaphthene	ug/L	1	0.85	0.83	85	83	44-125	3	20	
Acenaphthylene	ug/L	1	0.85	0.83	85	83	44-125	3	20	
Anthracene	ug/L	1	0.86	0.83	86	83	55-125	3	20	
Benzo(a)anthracene	ug/L	1	0.89	0.82	89	82	56-125	9	20	
Benzo(a)pyrene	ug/L	1	0.90	0.84	90	84	61-125	6	20	
Benzo(b)fluoranthene	ug/L	1	1.0	0.91	100	91	60-125	9	20	
Benzo(g,h,i)perylene	ug/L	1	0.74	0.66	74	66	53-125	12	20	
Benzo(k)fluoranthene	ug/L	1	0.91	0.84	91	84	59-125	7	20	
Chrysene	ug/L	1	0.83	0.75	83	75	61-125	10	20	
Dibenz(a,h)anthracene	ug/L	1	0.63	0.56	63	56	51-125	13	20	
Fluoranthene	ug/L	1	1.0	0.90	100	90	64-125	10	20	
Fluorene	ug/L	1	0.93	0.89	93	89	52-125	4	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.77	0.73	77	73	54-125	6	20	
Naphthalene	ug/L	1	0.83	0.82	83	82	35-125	1	20	

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

LABORATORY CONTROL SAMPLE & LCSD: 1990502 1990503

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Phenanthrene	ug/L	1	0.89	0.86	89	86	55-125	4	20	
Pyrene	ug/L	1	1.1	0.96	106	96	59-125	10	20	
2-Fluorobiphenyl (S)	%.				74	75	52-125			
p-Terphenyl-d14 (S)	%.				87	84	62-125			

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QUALIFIERS

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSSV/12492

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSSV/12530

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23690B77.00 2015 010 SLR REV
Pace Project No.: 10309050

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10309050001	**SB-PW-01**	EPA 3510	OEXT/29486	EPA 8270D by SIM	MSSV/12492
10309050002	**SB-PW-02**	EPA 3510	OEXT/29486	EPA 8270D by SIM	MSSV/12492
10309050003	**DUP-1**	EPA 3510	OEXT/29486	EPA 8270D by SIM	MSSV/12492
10309050004	**SB-PW-03**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050005	**SB-PW-04**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050006	**SB-PW-05**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050007	**SB-PW-06**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050008	**SB-PW-07**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050009	**SB-PW-08**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050010	**SB-PW-09**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050011	**S6-PW-01**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050012	**S6-PW-02**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050013	**S6-PW-03**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050014	**S6-PW-04**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050015	**S6-PW-05**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050016	**S6-PW-06**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050017	**NW-PW-01**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050018	**SW-PW-01**	EPA 3510	OEXT/29517	EPA 8270D by SIM	MSSV/12557
10309050019	**S7-PW-01**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050020	**S7-PW-02**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050022	**S7-PW-04**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050023	**S7-PW-05**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050024	**S7-PW-06**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050025	**S7-PW-07**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050026	**S7-PW-08**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050027	**DUP-2**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530
10309050028	**S7-PW-09**	EPA 3510	OEXT/29538	EPA 8270D by SIM	MSSV/12530

Chain of Custody

BARR

4700 West 77th Street
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COC 1 of 3

Project Number: 23690B77.00 2015 010

Project Name: SLRIDT Long-Term Monitoring

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 41443

Project Manager: GMP

Project QC Contact: AAN/JET

Sampled by: IGM/BJL2

Laboratory: PACE

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	Water: VOCs (HCl) #1	Water: SVOCs (unpreserved) #2	Water: Dissolved Metals (HNO_3)	Water: Total Metals (HNO_3)	Water: General (unpreserved) #3	Water: Diesel Range Organics (HCl)	Water: Nutrients (H_2SO_4) #4	Water: SLRIDT 17 PAHs	Soil: VOCs (tared MeOH) #1	Soil: GRO, BTEX (tared MeOH) #1	Soil: DRO (tared unpreserved)	Soil: Metals (unpreserved)	Soil: SVOCs (unpreserved) #2	Soil: % Solids (plastic vial, unpres.)	Total Number Of Containers	
1.	SB-PW-01				06/03/2015	1305	X		X										X							2	001
2.	SB-PW-02					1445			X																		002
3.	DUP-1					--					X																003
4.	SB-PW-03					1510			X																		004
5.	SB-PW-04					1245																					005
6.	SB-PW-05					1330																					006
7.	SB-PW-06					1455																					007
8.	SB-PW-07					1345																					008
9.	SB-PW-08					1405																					009
10.	SB-PW-09					1425																					010

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	Y (N)	6-4-15	1345	[signature]	6/4/15	1345
[signature]	(Y) N	6/4/15	1435	[signature]	6/4/15	1545
				[signature]	6/4/15	1820
				[signature]	6-4-15	1820

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☒ Other: Lab Courier

Air Bill Number:

T = 0.6, 0.4, 2.2, 2.2, 1.8, 1.0

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

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Chain of Custody

BARR

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

COC 2 of 3

Project Number: 23690377.00 2015 010

Project Name: SLRIDT Long-Term Monitoring

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 41444

Project Manager: GMP

Project QC Contact: AAN/JET

Sampled by: IGM/BJL

Laboratory: PACE

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	Water: VOCs (HCl) #1	Water: SVOCs (unpreserved) #2	Water: Dissolved Metals (HNO_3)	Water: Total Metals (HNO_3)	Water: General (unpreserved) #3	Water: Diesel Range Organics (HCl)	Water: Nutrients (H_2SO_4) #4	Water: SLRIDT 17 PAHs	Soil: VOCs (tared MeOH) #1	Soil: GRO, BTEX (tared MeOH) #1	Soil: DRO (tared unpreserved)	Soil: Metals (unpreserved)	Soil: SVOCs (unpreserved) #2	Soil: % Solids (plastic vial, unpres.)	Total Number Of Containers	
1.	SG-PW-01				06/03/2015	1535	X		X																	2	011
2.	SG-PW-02				↓	1620	↓		↓										↓							↓	012
3.	SG-PW-03					1650																					013
4.	SG-PW-04					1555																					014
5.	SG-PW-05					1605																					015
6.	SG-PW-06					1635			↓																	↓	016
7.	MS/MSD-1				↓	1535					X															1	SG-PW-01 ~~017~~
8.	NW-PW-01				06/04/2015	1200																				2	05 6/5/15 ~~018~~ 17
9.	SW-PW-01				06/03/2015	1045	↓		↓										↓							2	~~019~~ 18
10.																											

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	Y (N)	6-4-15	1345	[signature]	6/4/15	1345
[signature]	(Y) N	6/4/15	1435	[signature]	6/4/15	1545

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number: [signature] 6/4/15 1820; [signature] 6-4-15 1820

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

T = 0.6, 0.4, 2.2, 2.2, 2.8, 1.6

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10 504050

Chain of Custody

BARR

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

COC 3 of 3

Project Number: 23691077.00 2015 010

Project Name: SLRIDT Long-Term Monitoring

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 41445

Project Manager: GMP

Project QC Contact: AAN/JET

Sampled by: IGM/BJL2

Laboratory: PACE

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Matrix:	Type: Grab	Type: Comp.	Type: QC	Water: VOCs (HCl) #1	Water: SVOCs (unpreserved) #2	Water: Dissolved Metals (HNO_3)	Water: Total Metals (HNO_3)	Water: General (unpreserved) #3	Water: Diesel Range Organics (HCl)	Water: Nutrients (H_2SO_4) #4	Water: SLRIDT 17 PAHs	Soil: VOCs (tared MeOH) #1	Soil: GRO, BTEX (tared MeOH) #1	Soil: DRO (tared unpreserved)	Soil: Metals (unpreserved)	Soil: SVOCs (unpreserved) #2	Soil: % Solids (plastic vial, unpres.)	Total Number Of Containers	
1.	S7-PW-01				06/04/2015	0840	X			X										X							2	~~020~~ 019
2.	S7-PW-02					0855																						024 020
3.	S7-PW-03					0910																						HOLD! 022 021
4.	S7-PW-04					0820																						023 022
5.	S7-PW-05					1140																						024 023
6.	S7-PW-06					1120																						025 024
7.	S7-PW-07					1040																						026 025
8.	S7-PW-08					1050																						027 026
9.	DUP-2					--						X															1	028 027
10.	S7-PW-09					1105				X																	2	029 028

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	Y (N)	6-4-15	1345	[signature]	6/4/15	1345
[signature]	(Y) N	6/4/15	1435	[signature]	6/4/15	1515

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other:

Air Bill Number: [signature] 6/4/15 1820 PACE 6-4-15 1820

T = 0.6, 0.4, 2.2, 2.2, 1.8, 1.6

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

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Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: BARR

Project #: WO# : 10309050

10309050

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ SpeeDee ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☑ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 04, 02, 2.0, 2.5, 1.6, 1.4 **Cooler Temp Corrected (°C):** 06, 0.4, 2.2, 2.2, 1.8, 1.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 6-4-15 / AF

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: **Date:** 6/5/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 30, 2015

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on July 30, 2015 to add 2-methyl naphthalene and to change the client ID.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
Project Manager

Enclosures

cc: Data Distribution

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10309558001	**SB-BS-01 1.8-2.1**	Solid	06/06/15 10:40	06/09/15 18:00
10309558002	**SB-BS-02 2.2-2.5**	Solid	06/06/15 13:25	06/09/15 18:00
10309558003	**SB-BS-03 2.9-3.2**	Solid	06/06/15 14:20	06/09/15 18:00
10309558004	**SB-BS-04 0.9-1.2**	Solid	06/05/15 13:45	06/09/15 18:00
10309558005	**SB-BS-05 2.0-2.3**	Solid	06/06/15 11:30	06/09/15 18:00
10309558006	**SB-BS-06 2.2-2.5**	Solid	06/06/15 14:05	06/09/15 18:00
10309558007	**S6-BS-01 1.8-2.1**	Solid	06/08/15 08:20	06/09/15 18:00
10309558008	**S6-BS-02 3.0-3.3**	Solid	06/08/15 09:55	06/09/15 18:00
10309558009	**S6-BS-03 4.0-4.25**	Solid	06/08/15 10:30	06/09/15 18:00
10309558010	**S6-BS-04 2.7-3.0**	Solid	06/08/15 08:50	06/09/15 18:00
10309558011	**S6-BS-05 3.0-3.3**	Solid	06/08/15 09:20	06/09/15 18:00
10309558012	**S6-BS-06 3.0-3.3**	Solid	06/08/15 10:10	06/09/15 18:00

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10309558001	**SB-BS-01 1.8-2.1**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558002	**SB-BS-02 2.2-2.5**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558003	**SB-BS-03 2.9-3.2**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558004	**SB-BS-04 0.9-1.2**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558005	**SB-BS-05 2.0-2.3**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558006	**SB-BS-06 2.2-2.5**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558007	**S6-BS-01 1.8-2.1**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558008	**S6-BS-02 3.0-3.3**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558009	**S6-BS-03 4.0-4.25**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558010	**S6-BS-04 2.7-3.0**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558011	**S6-BS-05 3.0-3.3**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10309558012	**S6-BS-06 3.0-3.3**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: SB-BS-01 1.8-2.1 **Lab ID: 10309558001** Collected: 06/06/15 10:40 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**13.6**	%	0.10	0.10	1		06/19/15 14:28		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.6**	ug/kg	11.6	0.42	1	06/19/15 14:42	06/22/15 12:15	83-32-9	
Acenaphthylene	**<11.6**	ug/kg	11.6	0.39	1	06/19/15 14:42	06/22/15 12:15	208-96-8	
Anthracene	**<11.6**	ug/kg	11.6	0.36	1	06/19/15 14:42	06/22/15 12:15	120-12-7	
Benzo(a)anthracene	**<11.6**	ug/kg	11.6	0.21	1	06/19/15 14:42	06/22/15 12:15	56-55-3	
Benzo(a)pyrene	**<11.6**	ug/kg	11.6	0.23	1	06/19/15 14:42	06/22/15 12:15	50-32-8	
Benzo(b)fluoranthene	**<11.6**	ug/kg	11.6	0.40	1	06/19/15 14:42	06/22/15 12:15	205-99-2	
Benzo(g,h,i)perylene	**<11.6**	ug/kg	11.6	0.41	1	06/19/15 14:42	06/22/15 12:15	191-24-2	
Benzo(k)fluoranthene	**<11.6**	ug/kg	11.6	0.46	1	06/19/15 14:42	06/22/15 12:15	207-08-9	
Chrysene	**<11.6**	ug/kg	11.6	0.28	1	06/19/15 14:42	06/22/15 12:15	218-01-9	
Dibenz(a,h)anthracene	**<11.6**	ug/kg	11.6	0.50	1	06/19/15 14:42	06/22/15 12:15	53-70-3	
Fluoranthene	**<11.6**	ug/kg	11.6	0.25	1	06/19/15 14:42	06/22/15 12:15	206-44-0	
Fluorene	**<11.6**	ug/kg	11.6	0.36	1	06/19/15 14:42	06/22/15 12:15	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.6**	ug/kg	11.6	0.44	1	06/19/15 14:42	06/22/15 12:15	193-39-5	
2-Methylnaphthalene	**<11.6**	ug/kg	11.6	0.47	1	06/19/15 14:42	06/22/15 12:15	91-57-6	
Naphthalene	**<11.6**	ug/kg	11.6	0.43	1	06/19/15 14:42	06/22/15 12:15	91-20-3	
Phenanthrene	**<11.6**	ug/kg	11.6	0.29	1	06/19/15 14:42	06/22/15 12:15	85-01-8	
Pyrene	**<11.6**	ug/kg	11.6	0.28	1	06/19/15 14:42	06/22/15 12:15	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	70	%.	55-125		1	06/19/15 14:42	06/22/15 12:15	321-60-8	
p-Terphenyl-d14 (S)	78	%.	30-150		1	06/19/15 14:42	06/22/15 12:15	1718-51-0	

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
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(612)607-1700

ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: SB-BS-02 2.2-2.5 **Lab ID: 10309558002** Collected: 06/06/15 13:25 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**8.2**	%	0.10	0.10	1		06/19/15 14:28		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<10.9**	ug/kg	10.9	0.39	1	06/19/15 14:42	06/22/15 12:36	83-32-9	
Acenaphthylene	**<10.9**	ug/kg	10.9	0.37	1	06/19/15 14:42	06/22/15 12:36	208-96-8	
Anthracene	**<10.9**	ug/kg	10.9	0.33	1	06/19/15 14:42	06/22/15 12:36	120-12-7	
Benzo(a)anthracene	**<10.9**	ug/kg	10.9	0.20	1	06/19/15 14:42	06/22/15 12:36	56-55-3	
Benzo(a)pyrene	**<10.9**	ug/kg	10.9	0.21	1	06/19/15 14:42	06/22/15 12:36	50-32-8	
Benzo(b)fluoranthene	**<10.9**	ug/kg	10.9	0.38	1	06/19/15 14:42	06/22/15 12:36	205-99-2	
Benzo(g,h,i)perylene	**<10.9**	ug/kg	10.9	0.39	1	06/19/15 14:42	06/22/15 12:36	191-24-2	
Benzo(k)fluoranthene	**<10.9**	ug/kg	10.9	0.44	1	06/19/15 14:42	06/22/15 12:36	207-08-9	
Chrysene	**<10.9**	ug/kg	10.9	0.27	1	06/19/15 14:42	06/22/15 12:36	218-01-9	
Dibenz(a,h)anthracene	**<10.9**	ug/kg	10.9	0.47	1	06/19/15 14:42	06/22/15 12:36	53-70-3	
Fluoranthene	**<10.9**	ug/kg	10.9	0.24	1	06/19/15 14:42	06/22/15 12:36	206-44-0	
Fluorene	**<10.9**	ug/kg	10.9	0.34	1	06/19/15 14:42	06/22/15 12:36	86-73-7	
Indeno(1,2,3-cd)pyrene	**<10.9**	ug/kg	10.9	0.42	1	06/19/15 14:42	06/22/15 12:36	193-39-5	
2-Methylnaphthalene	**<10.9**	ug/kg	10.9	0.45	1	06/19/15 14:42	06/22/15 12:36	91-57-6	
Naphthalene	**18.6**	ug/kg	10.9	0.40	1	06/19/15 14:42	06/22/15 12:36	91-20-3	
Phenanthrene	**<10.9**	ug/kg	10.9	0.27	1	06/19/15 14:42	06/22/15 12:36	85-01-8	
Pyrene	**<10.9**	ug/kg	10.9	0.26	1	06/19/15 14:42	06/22/15 12:36	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	69	%.	55-125		1	06/19/15 14:42	06/22/15 12:36	321-60-8	
p-Terphenyl-d14 (S)	80	%.	30-150		1	06/19/15 14:42	06/22/15 12:36	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: SB-BS-03 2.9-3.2 **Lab ID: 10309558003** Collected: 06/06/15 14:20 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**29.2**	%	0.10	0.10	1		06/19/15 14:28		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<14.1**	ug/kg	14.1	0.51	1	06/19/15 14:42	06/22/15 12:58	83-32-9	
Acenaphthylene	**<14.1**	ug/kg	14.1	0.48	1	06/19/15 14:42	06/22/15 12:58	208-96-8	
Anthracene	**<14.1**	ug/kg	14.1	0.43	1	06/19/15 14:42	06/22/15 12:58	120-12-7	
Benzo(a)anthracene	**<14.1**	ug/kg	14.1	0.26	1	06/19/15 14:42	06/22/15 12:58	56-55-3	
Benzo(a)pyrene	**<14.1**	ug/kg	14.1	0.28	1	06/19/15 14:42	06/22/15 12:58	50-32-8	
Benzo(b)fluoranthene	**<14.1**	ug/kg	14.1	0.49	1	06/19/15 14:42	06/22/15 12:58	205-99-2	
Benzo(g,h,i)perylene	**<14.1**	ug/kg	14.1	0.50	1	06/19/15 14:42	06/22/15 12:58	191-24-2	
Benzo(k)fluoranthene	**<14.1**	ug/kg	14.1	0.57	1	06/19/15 14:42	06/22/15 12:58	207-08-9	
Chrysene	**<14.1**	ug/kg	14.1	0.35	1	06/19/15 14:42	06/22/15 12:58	218-01-9	
Dibenz(a,h)anthracene	**<14.1**	ug/kg	14.1	0.61	1	06/19/15 14:42	06/22/15 12:58	53-70-3	
Fluoranthene	**<14.1**	ug/kg	14.1	0.31	1	06/19/15 14:42	06/22/15 12:58	206-44-0	
Fluorene	**<14.1**	ug/kg	14.1	0.44	1	06/19/15 14:42	06/22/15 12:58	86-73-7	
Indeno(1,2,3-cd)pyrene	**<14.1**	ug/kg	14.1	0.54	1	06/19/15 14:42	06/22/15 12:58	193-39-5	
2-Methylnaphthalene	**<14.1**	ug/kg	14.1	0.58	1	06/19/15 14:42	06/22/15 12:58	91-57-6	
Naphthalene	**<14.1**	ug/kg	14.1	0.52	1	06/19/15 14:42	06/22/15 12:58	91-20-3	
Phenanthrene	**<14.1**	ug/kg	14.1	0.35	1	06/19/15 14:42	06/22/15 12:58	85-01-8	
Pyrene	**<14.1**	ug/kg	14.1	0.34	1	06/19/15 14:42	06/22/15 12:58	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%.	55-125		1	06/19/15 14:42	06/22/15 12:58	321-60-8	
p-Terphenyl-d14 (S)	77	%.	30-150		1	06/19/15 14:42	06/22/15 12:58	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: SB-BS-04 0.9-1.2 **Lab ID: 10309558004** Collected: 06/05/15 13:45 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**28.8**	%	0.10	0.10	1		06/19/15 14:29		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<14.0**	ug/kg	14.0	0.51	1	06/19/15 14:42	06/22/15 13:20	83-32-9	
Acenaphthylene	**<14.0**	ug/kg	14.0	0.48	1	06/19/15 14:42	06/22/15 13:20	208-96-8	
Anthracene	**<14.0**	ug/kg	14.0	0.43	1	06/19/15 14:42	06/22/15 13:20	120-12-7	
Benzo(a)anthracene	**<14.0**	ug/kg	14.0	0.26	1	06/19/15 14:42	06/22/15 13:20	56-55-3	
Benzo(a)pyrene	**<14.0**	ug/kg	14.0	0.28	1	06/19/15 14:42	06/22/15 13:20	50-32-8	
Benzo(b)fluoranthene	**<14.0**	ug/kg	14.0	0.49	1	06/19/15 14:42	06/22/15 13:20	205-99-2	
Benzo(g,h,i)perylene	**<14.0**	ug/kg	14.0	0.50	1	06/19/15 14:42	06/22/15 13:20	191-24-2	
Benzo(k)fluoranthene	**<14.0**	ug/kg	14.0	0.56	1	06/19/15 14:42	06/22/15 13:20	207-08-9	
Chrysene	**<14.0**	ug/kg	14.0	0.35	1	06/19/15 14:42	06/22/15 13:20	218-01-9	
Dibenz(a,h)anthracene	**<14.0**	ug/kg	14.0	0.60	1	06/19/15 14:42	06/22/15 13:20	53-70-3	
Fluoranthene	**<14.0**	ug/kg	14.0	0.31	1	06/19/15 14:42	06/22/15 13:20	206-44-0	
Fluorene	**<14.0**	ug/kg	14.0	0.43	1	06/19/15 14:42	06/22/15 13:20	86-73-7	
Indeno(1,2,3-cd)pyrene	**<14.0**	ug/kg	14.0	0.54	1	06/19/15 14:42	06/22/15 13:20	193-39-5	
2-Methylnaphthalene	**<14.0**	ug/kg	14.0	0.57	1	06/19/15 14:42	06/22/15 13:20	91-57-6	
Naphthalene	**<14.0**	ug/kg	14.0	0.52	1	06/19/15 14:42	06/22/15 13:20	91-20-3	
Phenanthrene	**<14.0**	ug/kg	14.0	0.35	1	06/19/15 14:42	06/22/15 13:20	85-01-8	
Pyrene	**<14.0**	ug/kg	14.0	0.34	1	06/19/15 14:42	06/22/15 13:20	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	61	%.	55-125		1	06/19/15 14:42	06/22/15 13:20	321-60-8	
p-Terphenyl-d14 (S)	70	%.	30-150		1	06/19/15 14:42	06/22/15 13:20	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: SB-BS-05 2.0-2.3 **Lab ID: 10309558005** Collected: 06/06/15 11:30 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**13.7**	%	0.10	0.10	1		06/19/15 14:29		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.6**	ug/kg	11.6	0.42	1	06/19/15 14:42	06/22/15 13:42	83-32-9	
Acenaphthylene	**<11.6**	ug/kg	11.6	0.39	1	06/19/15 14:42	06/22/15 13:42	208-96-8	
Anthracene	**<11.6**	ug/kg	11.6	0.36	1	06/19/15 14:42	06/22/15 13:42	120-12-7	
Benzo(a)anthracene	**<11.6**	ug/kg	11.6	0.21	1	06/19/15 14:42	06/22/15 13:42	56-55-3	
Benzo(a)pyrene	**<11.6**	ug/kg	11.6	0.23	1	06/19/15 14:42	06/22/15 13:42	50-32-8	
Benzo(b)fluoranthene	**<11.6**	ug/kg	11.6	0.40	1	06/19/15 14:42	06/22/15 13:42	205-99-2	
Benzo(g,h,i)perylene	**<11.6**	ug/kg	11.6	0.41	1	06/19/15 14:42	06/22/15 13:42	191-24-2	
Benzo(k)fluoranthene	**<11.6**	ug/kg	11.6	0.46	1	06/19/15 14:42	06/22/15 13:42	207-08-9	
Chrysene	**<11.6**	ug/kg	11.6	0.28	1	06/19/15 14:42	06/22/15 13:42	218-01-9	
Dibenz(a,h)anthracene	**<11.6**	ug/kg	11.6	0.50	1	06/19/15 14:42	06/22/15 13:42	53-70-3	
Fluoranthene	**<11.6**	ug/kg	11.6	0.25	1	06/19/15 14:42	06/22/15 13:42	206-44-0	
Fluorene	**<11.6**	ug/kg	11.6	0.36	1	06/19/15 14:42	06/22/15 13:42	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.6**	ug/kg	11.6	0.44	1	06/19/15 14:42	06/22/15 13:42	193-39-5	
2-Methylnaphthalene	**<11.6**	ug/kg	11.6	0.47	1	06/19/15 14:42	06/22/15 13:42	91-57-6	
Naphthalene	**<11.6**	ug/kg	11.6	0.43	1	06/19/15 14:42	06/22/15 13:42	91-20-3	
Phenanthrene	**<11.6**	ug/kg	11.6	0.29	1	06/19/15 14:42	06/22/15 13:42	85-01-8	
Pyrene	**<11.6**	ug/kg	11.6	0.28	1	06/19/15 14:42	06/22/15 13:42	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%.	55-125		1	06/19/15 14:42	06/22/15 13:42	321-60-8	
p-Terphenyl-d14 (S)	79	%.	30-150		1	06/19/15 14:42	06/22/15 13:42	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: SB-BS-06 2.2-2.5 **Lab ID: 10309558006** Collected: 06/06/15 14:05 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**14.9**	%	0.10	0.10	1		06/19/15 14:29		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.7**	ug/kg	11.7	0.42	1	06/19/15 14:42	06/22/15 14:04	83-32-9	
Acenaphthylene	**<11.7**	ug/kg	11.7	0.40	1	06/19/15 14:42	06/22/15 14:04	208-96-8	
Anthracene	**<11.7**	ug/kg	11.7	0.36	1	06/19/15 14:42	06/22/15 14:04	120-12-7	
Benzo(a)anthracene	**<11.7**	ug/kg	11.7	0.22	1	06/19/15 14:42	06/22/15 14:04	56-55-3	
Benzo(a)pyrene	**<11.7**	ug/kg	11.7	0.23	1	06/19/15 14:42	06/22/15 14:04	50-32-8	
Benzo(b)fluoranthene	**<11.7**	ug/kg	11.7	0.41	1	06/19/15 14:42	06/22/15 14:04	205-99-2	
Benzo(g,h,i)perylene	**<11.7**	ug/kg	11.7	0.41	1	06/19/15 14:42	06/22/15 14:04	191-24-2	
Benzo(k)fluoranthene	**<11.7**	ug/kg	11.7	0.47	1	06/19/15 14:42	06/22/15 14:04	207-08-9	
Chrysene	**<11.7**	ug/kg	11.7	0.29	1	06/19/15 14:42	06/22/15 14:04	218-01-9	
Dibenz(a,h)anthracene	**<11.7**	ug/kg	11.7	0.50	1	06/19/15 14:42	06/22/15 14:04	53-70-3	
Fluoranthene	**<11.7**	ug/kg	11.7	0.26	1	06/19/15 14:42	06/22/15 14:04	206-44-0	
Fluorene	**<11.7**	ug/kg	11.7	0.36	1	06/19/15 14:42	06/22/15 14:04	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.7**	ug/kg	11.7	0.45	1	06/19/15 14:42	06/22/15 14:04	193-39-5	
2-Methylnaphthalene	**<11.7**	ug/kg	11.7	0.48	1	06/19/15 14:42	06/22/15 14:04	91-57-6	
Naphthalene	**<11.7**	ug/kg	11.7	0.43	1	06/19/15 14:42	06/22/15 14:04	91-20-3	
Phenanthrene	**<11.7**	ug/kg	11.7	0.29	1	06/19/15 14:42	06/22/15 14:04	85-01-8	
Pyrene	**<11.7**	ug/kg	11.7	0.28	1	06/19/15 14:42	06/22/15 14:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	74	%.	55-125		1	06/19/15 14:42	06/22/15 14:04	321-60-8	
p-Terphenyl-d14 (S)	81	%.	30-150		1	06/19/15 14:42	06/22/15 14:04	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: S6-BS-01 1.8-2.1 **Lab ID: 10309558007** Collected: 06/08/15 08:20 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**14.0**	%	0.10	0.10	1		06/19/15 14:29		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.6**	ug/kg	11.6	0.42	1	06/20/15 19:32	06/21/15 19:37	83-32-9	
Acenaphthylene	**<11.6**	ug/kg	11.6	0.39	1	06/20/15 19:32	06/21/15 19:37	208-96-8	
Anthracene	**<11.6**	ug/kg	11.6	0.36	1	06/20/15 19:32	06/21/15 19:37	120-12-7	
Benzo(a)anthracene	**<11.6**	ug/kg	11.6	0.21	1	06/20/15 19:32	06/21/15 19:37	56-55-3	
Benzo(a)pyrene	**<11.6**	ug/kg	11.6	0.23	1	06/20/15 19:32	06/21/15 19:37	50-32-8	
Benzo(b)fluoranthene	**<11.6**	ug/kg	11.6	0.40	1	06/20/15 19:32	06/21/15 19:37	205-99-2	
Benzo(g,h,i)perylene	**<11.6**	ug/kg	11.6	0.41	1	06/20/15 19:32	06/21/15 19:37	191-24-2	
Benzo(k)fluoranthene	**<11.6**	ug/kg	11.6	0.46	1	06/20/15 19:32	06/21/15 19:37	207-08-9	
Chrysene	**<11.6**	ug/kg	11.6	0.29	1	06/20/15 19:32	06/21/15 19:37	218-01-9	
Dibenz(a,h)anthracene	**<11.6**	ug/kg	11.6	0.50	1	06/20/15 19:32	06/21/15 19:37	53-70-3	
Fluoranthene	**<11.6**	ug/kg	11.6	0.25	1	06/20/15 19:32	06/21/15 19:37	206-44-0	
Fluorene	**<11.6**	ug/kg	11.6	0.36	1	06/20/15 19:32	06/21/15 19:37	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.6**	ug/kg	11.6	0.44	1	06/20/15 19:32	06/21/15 19:37	193-39-5	
2-Methylnaphthalene	**<11.6**	ug/kg	11.6	0.47	1	06/20/15 19:32	06/21/15 19:37	91-57-6	
Naphthalene	**<11.6**	ug/kg	11.6	0.43	1	06/20/15 19:32	06/21/15 19:37	91-20-3	
Phenanthrene	**<11.6**	ug/kg	11.6	0.29	1	06/20/15 19:32	06/21/15 19:37	85-01-8	
Pyrene	**<11.6**	ug/kg	11.6	0.28	1	06/20/15 19:32	06/21/15 19:37	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	59	%.	55-125		1	06/20/15 19:32	06/21/15 19:37	321-60-8	
p-Terphenyl-d14 (S)	75	%.	30-150		1	06/20/15 19:32	06/21/15 19:37	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: S6-BS-02 3.0-3.3 **Lab ID: 10309558008** Collected: 06/08/15 09:55 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**18.3**	%	0.10	0.10	1		06/19/15 14:29		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.2**	ug/kg	12.2	0.44	1	06/20/15 19:32	06/22/15 08:59	83-32-9	
Acenaphthylene	**<12.2**	ug/kg	12.2	0.42	1	06/20/15 19:32	06/22/15 08:59	208-96-8	
Anthracene	**<12.2**	ug/kg	12.2	0.38	1	06/20/15 19:32	06/22/15 08:59	120-12-7	
Benzo(a)anthracene	**<12.2**	ug/kg	12.2	0.23	1	06/20/15 19:32	06/22/15 08:59	56-55-3	
Benzo(a)pyrene	**<12.2**	ug/kg	12.2	0.24	1	06/20/15 19:32	06/22/15 08:59	50-32-8	
Benzo(b)fluoranthene	**<12.2**	ug/kg	12.2	0.43	1	06/20/15 19:32	06/22/15 08:59	205-99-2	
Benzo(g,h,i)perylene	**<12.2**	ug/kg	12.2	0.43	1	06/20/15 19:32	06/22/15 08:59	191-24-2	
Benzo(k)fluoranthene	**<12.2**	ug/kg	12.2	0.49	1	06/20/15 19:32	06/22/15 08:59	207-08-9	
Chrysene	**<12.2**	ug/kg	12.2	0.30	1	06/20/15 19:32	06/22/15 08:59	218-01-9	
Dibenz(a,h)anthracene	**<12.2**	ug/kg	12.2	0.53	1	06/20/15 19:32	06/22/15 08:59	53-70-3	
Fluoranthene	**<12.2**	ug/kg	12.2	0.27	1	06/20/15 19:32	06/22/15 08:59	206-44-0	
Fluorene	**<12.2**	ug/kg	12.2	0.38	1	06/20/15 19:32	06/22/15 08:59	86-73-7	
Indeno(1,2,3-cd)pyrene	**<12.2**	ug/kg	12.2	0.47	1	06/20/15 19:32	06/22/15 08:59	193-39-5	
2-Methylnaphthalene	**<12.2**	ug/kg	12.2	0.50	1	06/20/15 19:32	06/22/15 08:59	91-57-6	
Naphthalene	**<12.2**	ug/kg	12.2	0.45	1	06/20/15 19:32	06/22/15 08:59	91-20-3	
Phenanthrene	**<12.2**	ug/kg	12.2	0.30	1	06/20/15 19:32	06/22/15 08:59	85-01-8	
Pyrene	**<12.2**	ug/kg	12.2	0.29	1	06/20/15 19:32	06/22/15 08:59	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	57	%.	55-125		1	06/20/15 19:32	06/22/15 08:59	321-60-8	
p-Terphenyl-d14 (S)	70	%.	30-150		1	06/20/15 19:32	06/22/15 08:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: S6-BS-03 4.0-4.25 **Lab ID: 10309558009** Collected: 06/08/15 10:30 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**21.8**	%	0.10	0.10	1		06/19/15 14:30		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.8**	ug/kg	12.8	0.46	1	06/20/15 19:32	06/21/15 20:21	83-32-9	
Acenaphthylene	**<12.8**	ug/kg	12.8	0.43	1	06/20/15 19:32	06/21/15 20:21	208-96-8	
Anthracene	**<12.8**	ug/kg	12.8	0.39	1	06/20/15 19:32	06/21/15 20:21	120-12-7	
Benzo(a)anthracene	**<12.8**	ug/kg	12.8	0.24	1	06/20/15 19:32	06/21/15 20:21	56-55-3	
Benzo(a)pyrene	**<12.8**	ug/kg	12.8	0.25	1	06/20/15 19:32	06/21/15 20:21	50-32-8	
Benzo(b)fluoranthene	**<12.8**	ug/kg	12.8	0.45	1	06/20/15 19:32	06/21/15 20:21	205-99-2	
Benzo(g,h,i)perylene	**<12.8**	ug/kg	12.8	0.45	1	06/20/15 19:32	06/21/15 20:21	191-24-2	
Benzo(k)fluoranthene	**<12.8**	ug/kg	12.8	0.51	1	06/20/15 19:32	06/21/15 20:21	207-08-9	
Chrysene	**<12.8**	ug/kg	12.8	0.31	1	06/20/15 19:32	06/21/15 20:21	218-01-9	
Dibenz(a,h)anthracene	**<12.8**	ug/kg	12.8	0.55	1	06/20/15 19:32	06/21/15 20:21	53-70-3	
Fluoranthene	**<12.8**	ug/kg	12.8	0.28	1	06/20/15 19:32	06/21/15 20:21	206-44-0	
Fluorene	**<12.8**	ug/kg	12.8	0.39	1	06/20/15 19:32	06/21/15 20:21	86-73-7	
Indeno(1,2,3-cd)pyrene	**<12.8**	ug/kg	12.8	0.49	1	06/20/15 19:32	06/21/15 20:21	193-39-5	
2-Methylnaphthalene	**<12.8**	ug/kg	12.8	0.52	1	06/20/15 19:32	06/21/15 20:21	91-57-6	
Naphthalene	**<12.8**	ug/kg	12.8	0.47	1	06/20/15 19:32	06/21/15 20:21	91-20-3	
Phenanthrene	**<12.8**	ug/kg	12.8	0.32	1	06/20/15 19:32	06/21/15 20:21	85-01-8	
Pyrene	**<12.8**	ug/kg	12.8	0.31	1	06/20/15 19:32	06/21/15 20:21	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	58	%.	55-125		1	06/20/15 19:32	06/21/15 20:21	321-60-8	
p-Terphenyl-d14 (S)	68	%.	30-150		1	06/20/15 19:32	06/21/15 20:21	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: S6-BS-04 2.7-3.0 **Lab ID: 10309558010** Collected: 06/08/15 08:50 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**15.6**	%	0.10	0.10	1		06/19/15 14:30		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.8**	ug/kg	11.8	0.43	1	06/20/15 19:32	06/21/15 20:42	83-32-9	
Acenaphthylene	**<11.8**	ug/kg	11.8	0.40	1	06/20/15 19:32	06/21/15 20:42	208-96-8	
Anthracene	**<11.8**	ug/kg	11.8	0.36	1	06/20/15 19:32	06/21/15 20:42	120-12-7	
Benzo(a)anthracene	**<11.8**	ug/kg	11.8	0.22	1	06/20/15 19:32	06/21/15 20:42	56-55-3	
Benzo(a)pyrene	**<11.8**	ug/kg	11.8	0.23	1	06/20/15 19:32	06/21/15 20:42	50-32-8	
Benzo(b)fluoranthene	**<11.8**	ug/kg	11.8	0.41	1	06/20/15 19:32	06/21/15 20:42	205-99-2	
Benzo(g,h,i)perylene	**<11.8**	ug/kg	11.8	0.42	1	06/20/15 19:32	06/21/15 20:42	191-24-2	
Benzo(k)fluoranthene	**<11.8**	ug/kg	11.8	0.47	1	06/20/15 19:32	06/21/15 20:42	207-08-9	
Chrysene	**<11.8**	ug/kg	11.8	0.29	1	06/20/15 19:32	06/21/15 20:42	218-01-9	
Dibenz(a,h)anthracene	**<11.8**	ug/kg	11.8	0.51	1	06/20/15 19:32	06/21/15 20:42	53-70-3	
Fluoranthene	**<11.8**	ug/kg	11.8	0.26	1	06/20/15 19:32	06/21/15 20:42	206-44-0	
Fluorene	**<11.8**	ug/kg	11.8	0.36	1	06/20/15 19:32	06/21/15 20:42	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.8**	ug/kg	11.8	0.45	1	06/20/15 19:32	06/21/15 20:42	193-39-5	
2-Methylnaphthalene	**<11.8**	ug/kg	11.8	0.48	1	06/20/15 19:32	06/21/15 20:42	91-57-6	
Naphthalene	**<11.8**	ug/kg	11.8	0.44	1	06/20/15 19:32	06/21/15 20:42	91-20-3	
Phenanthrene	**<11.8**	ug/kg	11.8	0.29	1	06/20/15 19:32	06/21/15 20:42	85-01-8	
Pyrene	**<11.8**	ug/kg	11.8	0.28	1	06/20/15 19:32	06/21/15 20:42	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	55	%.	55-125		1	06/20/15 19:32	06/21/15 20:42	321-60-8	
p-Terphenyl-d14 (S)	71	%.	30-150		1	06/20/15 19:32	06/21/15 20:42	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: S6-BS-05 3.0-3.3 **Lab ID: 10309558011** Collected: 06/08/15 09:20 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**10.3**	%	0.10	0.10	1		06/19/15 14:30		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.1**	ug/kg	11.1	0.40	1	06/20/15 19:32	06/21/15 21:04	83-32-9	
Acenaphthylene	**<11.1**	ug/kg	11.1	0.38	1	06/20/15 19:32	06/21/15 21:04	208-96-8	
Anthracene	**<11.1**	ug/kg	11.1	0.34	1	06/20/15 19:32	06/21/15 21:04	120-12-7	
Benzo(a)anthracene	**<11.1**	ug/kg	11.1	0.21	1	06/20/15 19:32	06/21/15 21:04	56-55-3	
Benzo(a)pyrene	**<11.1**	ug/kg	11.1	0.22	1	06/20/15 19:32	06/21/15 21:04	50-32-8	
Benzo(b)fluoranthene	**<11.1**	ug/kg	11.1	0.39	1	06/20/15 19:32	06/21/15 21:04	205-99-2	
Benzo(g,h,i)perylene	**<11.1**	ug/kg	11.1	0.39	1	06/20/15 19:32	06/21/15 21:04	191-24-2	
Benzo(k)fluoranthene	**<11.1**	ug/kg	11.1	0.45	1	06/20/15 19:32	06/21/15 21:04	207-08-9	
Chrysene	**<11.1**	ug/kg	11.1	0.27	1	06/20/15 19:32	06/21/15 21:04	218-01-9	
Dibenz(a,h)anthracene	**<11.1**	ug/kg	11.1	0.48	1	06/20/15 19:32	06/21/15 21:04	53-70-3	
Fluoranthene	**<11.1**	ug/kg	11.1	0.24	1	06/20/15 19:32	06/21/15 21:04	206-44-0	
Fluorene	**<11.1**	ug/kg	11.1	0.34	1	06/20/15 19:32	06/21/15 21:04	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.1**	ug/kg	11.1	0.43	1	06/20/15 19:32	06/21/15 21:04	193-39-5	
2-Methylnaphthalene	**<11.1**	ug/kg	11.1	0.46	1	06/20/15 19:32	06/21/15 21:04	91-57-6	
Naphthalene	**<11.1**	ug/kg	11.1	0.41	1	06/20/15 19:32	06/21/15 21:04	91-20-3	
Phenanthrene	**<11.1**	ug/kg	11.1	0.28	1	06/20/15 19:32	06/21/15 21:04	85-01-8	
Pyrene	**<11.1**	ug/kg	11.1	0.27	1	06/20/15 19:32	06/21/15 21:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	63	%.	55-125		1	06/20/15 19:32	06/21/15 21:04	321-60-8	
p-Terphenyl-d14 (S)	76	%.	30-150		1	06/20/15 19:32	06/21/15 21:04	1718-51-0	

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ANALYTICAL RESULTS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Sample: S6-BS-06 3.0-3.3 **Lab ID: 10309558012** Collected: 06/08/15 10:10 Received: 06/09/15 18:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**18.0**	%	0.10	0.10	1		06/19/15 14:30		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.2**	ug/kg	12.2	0.44	1	06/20/15 19:32	06/21/15 21:26	83-32-9	
Acenaphthylene	**<12.2**	ug/kg	12.2	0.41	1	06/20/15 19:32	06/21/15 21:26	208-96-8	
Anthracene	**<12.2**	ug/kg	12.2	0.37	1	06/20/15 19:32	06/21/15 21:26	120-12-7	
Benzo(a)anthracene	**<12.2**	ug/kg	12.2	0.22	1	06/20/15 19:32	06/21/15 21:26	56-55-3	
Benzo(a)pyrene	**<12.2**	ug/kg	12.2	0.24	1	06/20/15 19:32	06/21/15 21:26	50-32-8	
Benzo(b)fluoranthene	**<12.2**	ug/kg	12.2	0.43	1	06/20/15 19:32	06/21/15 21:26	205-99-2	
Benzo(g,h,i)perylene	**<12.2**	ug/kg	12.2	0.43	1	06/20/15 19:32	06/21/15 21:26	191-24-2	
Benzo(k)fluoranthene	**<12.2**	ug/kg	12.2	0.49	1	06/20/15 19:32	06/21/15 21:26	207-08-9	
Chrysene	**<12.2**	ug/kg	12.2	0.30	1	06/20/15 19:32	06/21/15 21:26	218-01-9	
Dibenz(a,h)anthracene	**<12.2**	ug/kg	12.2	0.52	1	06/20/15 19:32	06/21/15 21:26	53-70-3	
Fluoranthene	**<12.2**	ug/kg	12.2	0.27	1	06/20/15 19:32	06/21/15 21:26	206-44-0	
Fluorene	**<12.2**	ug/kg	12.2	0.38	1	06/20/15 19:32	06/21/15 21:26	86-73-7	
Indeno(1,2,3-cd)pyrene	**<12.2**	ug/kg	12.2	0.47	1	06/20/15 19:32	06/21/15 21:26	193-39-5	
2-Methylnaphthalene	**<12.2**	ug/kg	12.2	0.50	1	06/20/15 19:32	06/21/15 21:26	91-57-6	
Naphthalene	**<12.2**	ug/kg	12.2	0.45	1	06/20/15 19:32	06/21/15 21:26	91-20-3	
Phenanthrene	**<12.2**	ug/kg	12.2	0.30	1	06/20/15 19:32	06/21/15 21:26	85-01-8	
Pyrene	**<12.2**	ug/kg	12.2	0.29	1	06/20/15 19:32	06/21/15 21:26	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	67	%.	55-125		1	06/20/15 19:32	06/21/15 21:26	321-60-8	
p-Terphenyl-d14 (S)	77	%.	30-150		1	06/20/15 19:32	06/21/15 21:26	1718-51-0	

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

QC Batch: MPRP/55356 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10309558001, 10309558002, 10309558003, 10309558004, 10309558005, 10309558006, 10309558007, 10309558008, 10309558009, 10309558010, 10309558011, 10309558012

SAMPLE DUPLICATE: 2000141

Parameter	Units	10309558001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.6	11.6	16	30	

SAMPLE DUPLICATE: 2000142

Parameter	Units	10309771003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	0.76	0.77	1	30	

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

QC Batch: OEXT/29676 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3550 | Analysis Description: 8270D Solid PAH by SIM MSSV
Associated Lab Samples: 10309558001, 10309558002, 10309558003, 10309558004, 10309558005, 10309558006

METHOD BLANK: 2000160 | Matrix: Solid
Associated Lab Samples: 10309558001, 10309558002, 10309558003, 10309558004, 10309558005, 10309558006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/kg	<10.0	10.0	06/22/15 07:53	
Acenaphthene	ug/kg	<10.0	10.0	06/22/15 07:53	
Acenaphthylene	ug/kg	<10.0	10.0	06/22/15 07:53	
Anthracene	ug/kg	<10.0	10.0	06/22/15 07:53	
Benzo(a)anthracene	ug/kg	<10.0	10.0	06/22/15 07:53	
Benzo(a)pyrene	ug/kg	<10.0	10.0	06/22/15 07:53	
Benzo(b)fluoranthene	ug/kg	<10.0	10.0	06/22/15 07:53	
Benzo(g,h,i)perylene	ug/kg	<10.0	10.0	06/22/15 07:53	
Benzo(k)fluoranthene	ug/kg	<10.0	10.0	06/22/15 07:53	
Chrysene	ug/kg	<10.0	10.0	06/22/15 07:53	
Dibenz(a,h)anthracene	ug/kg	<10.0	10.0	06/22/15 07:53	
Fluoranthene	ug/kg	<10.0	10.0	06/22/15 07:53	
Fluorene	ug/kg	<10.0	10.0	06/22/15 07:53	
Indeno(1,2,3-cd)pyrene	ug/kg	<10.0	10.0	06/22/15 07:53	
Naphthalene	ug/kg	<10.0	10.0	06/22/15 07:53	
Phenanthrene	ug/kg	<10.0	10.0	06/22/15 07:53	
Pyrene	ug/kg	<10.0	10.0	06/22/15 07:53	
2-Fluorobiphenyl (S)	%.	64	55-125	06/22/15 07:53	
p-Terphenyl-d14 (S)	%.	78	30-150	06/22/15 07:53	

LABORATORY CONTROL SAMPLE: 2000161

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/kg	33.3	27.1	81	50-125	
Acenaphthene	ug/kg	33.3	25.2	76	53-125	
Acenaphthylene	ug/kg	33.3	27.0	81	53-125	
Anthracene	ug/kg	33.3	30.6	92	61-125	
Benzo(a)anthracene	ug/kg	33.3	29.5	89	62-125	
Benzo(a)pyrene	ug/kg	33.3	31.2	94	64-125	
Benzo(b)fluoranthene	ug/kg	33.3	32.1	96	66-125	
Benzo(g,h,i)perylene	ug/kg	33.3	32.1	96	59-125	
Benzo(k)fluoranthene	ug/kg	33.3	32.8	98	61-125	
Chrysene	ug/kg	33.3	29.0	87	63-125	
Dibenz(a,h)anthracene	ug/kg	33.3	33.4	100	59-125	
Fluoranthene	ug/kg	33.3	31.5	94	64-125	
Fluorene	ug/kg	33.3	28.1	84	57-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	32.0	96	58-125	
Naphthalene	ug/kg	33.3	26.1	78	52-125	
Phenanthrene	ug/kg	33.3	28.8	86	60-125	
Pyrene	ug/kg	33.3	31.4	94	63-125	

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

LABORATORY CONTROL SAMPLE: 2000161

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			67	55-125	
p-Terphenyl-d14 (S)	%.			80	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2000162 2000163

Parameter	Units	10309952002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/kg	ND	36	36.1	27.5	30.5	74	82	41-125	10	30	
Acenaphthene	ug/kg	ND	36	36.1	29.2	31.2	75	80	39-125	7	30	
Acenaphthylene	ug/kg	ND	36	36.1	29.3	31.8	76	83	30-150	8	30	
Anthracene	ug/kg	ND	36	36.1	39.2	38.9	87	86	30-150	1	30	
Benzo(a)anthracene	ug/kg	0.035 mg/kg	36	36.1	69.7	64.7	97	83	30-150	7	30	
Benzo(a)pyrene	ug/kg	0.041 mg/kg	36	36.1	77.9	74.2	103	93	30-150	5	30	
Benzo(b)fluoranthene	ug/kg	0.049 mg/kg	36	36.1	93.7	86.2	125	104	30-150	8	30	
Benzo(g,h,i)perylene	ug/kg	0.026 mg/kg	36	36.1	60.7	58.3	97	90	30-150	4	30	
Benzo(k)fluoranthene	ug/kg	0.021 mg/kg	36	36.1	51.6	47.6	84	72	30-150	8	30	
Chrysene	ug/kg	0.036 mg/kg	36	36.1	71.8	67.7	99	88	30-150	6	30	
Dibenz(a,h)anthracene	ug/kg	0.011 mg/kg	36	36.1	43.4	43.2	90	89	30-150	1	30	
Fluoranthene	ug/kg	0.067 mg/kg	36	36.1	106	100	107	92	30-150	5	30	
Fluorene	ug/kg	ND	36	36.1	32.0	33.0	83	86	30-146	3	30	
Indeno(1,2,3-cd)pyrene	ug/kg	0.023 mg/kg	36	36.1	57.0	52.3	94	80	30-150	9	30	
Naphthalene	ug/kg	ND	36	36.1	25.0	27.6	66	73	30-131	10	30	
Phenanthrene	ug/kg	0.026 mg/kg	36	36.1	57.9	55.0	88	80	30-150	5	30	
Pyrene	ug/kg	0.056 mg/kg	36	36.1	95.3	91.6	109	98	30-150	4	30	
2-Fluorobiphenyl (S)	%.						60	64	55-125			
p-Terphenyl-d14 (S)	%.						76	77	30-150			

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QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

QC Batch: OEXT/29683 | Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3550 | Analysis Description: 8270D Solid PAH by SIM MSSV
Associated Lab Samples: 10309558007, 10309558008, 10309558009, 10309558010, 10309558011, 10309558012

METHOD BLANK: 2001220 | Matrix: Solid
Associated Lab Samples: 10309558007, 10309558008, 10309558009, 10309558010, 10309558011, 10309558012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/kg	<10.0	10.0	06/21/15 17:05	
Acenaphthene	ug/kg	<10.0	10.0	06/21/15 17:05	
Acenaphthylene	ug/kg	<10.0	10.0	06/21/15 17:05	
Anthracene	ug/kg	<10.0	10.0	06/21/15 17:05	
Benzo(a)anthracene	ug/kg	<10.0	10.0	06/21/15 17:05	
Benzo(a)pyrene	ug/kg	<10.0	10.0	06/21/15 17:05	
Benzo(b)fluoranthene	ug/kg	<10.0	10.0	06/21/15 17:05	
Benzo(g,h,i)perylene	ug/kg	<10.0	10.0	06/21/15 17:05	
Benzo(k)fluoranthene	ug/kg	<10.0	10.0	06/21/15 17:05	
Chrysene	ug/kg	<10.0	10.0	06/21/15 17:05	
Dibenz(a,h)anthracene	ug/kg	<10.0	10.0	06/21/15 17:05	
Fluoranthene	ug/kg	<10.0	10.0	06/21/15 17:05	
Fluorene	ug/kg	<10.0	10.0	06/21/15 17:05	
Indeno(1,2,3-cd)pyrene	ug/kg	<10.0	10.0	06/21/15 17:05	
Naphthalene	ug/kg	<10.0	10.0	06/21/15 17:05	
Phenanthrene	ug/kg	<10.0	10.0	06/21/15 17:05	
Pyrene	ug/kg	<10.0	10.0	06/21/15 17:05	
2-Fluorobiphenyl (S)	%.	58	55-125	06/21/15 17:05	
p-Terphenyl-d14 (S)	%.	79	30-150	06/21/15 17:05	

LABORATORY CONTROL SAMPLE: 2001221

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/kg	33.3	28.0	84	50-125	
Acenaphthene	ug/kg	33.3	25.2	76	53-125	
Acenaphthylene	ug/kg	33.3	24.9	75	53-125	
Anthracene	ug/kg	33.3	25.8	77	61-125	
Benzo(a)anthracene	ug/kg	33.3	25.7	77	62-125	
Benzo(a)pyrene	ug/kg	33.3	27.9	84	64-125	
Benzo(b)fluoranthene	ug/kg	33.3	28.9	87	66-125	
Benzo(g,h,i)perylene	ug/kg	33.3	27.0	81	59-125	
Benzo(k)fluoranthene	ug/kg	33.3	28.0	84	61-125	
Chrysene	ug/kg	33.3	24.5	74	63-125	
Dibenz(a,h)anthracene	ug/kg	33.3	28.6	86	59-125	
Fluoranthene	ug/kg	33.3	28.4	85	64-125	
Fluorene	ug/kg	33.3	26.6	80	57-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	27.6	83	58-125	
Naphthalene	ug/kg	33.3	25.3	76	52-125	
Phenanthrene	ug/kg	33.3	25.4	76	60-125	
Pyrene	ug/kg	33.3	26.9	81	63-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

LABORATORY CONTROL SAMPLE: 2001221

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			64	55-125	
p-Terphenyl-d14 (S)	%.			73	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2001222 2001223

Parameter	Units	10310278002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/kg	ND	34.9	35	25.4	26.4	73	75	41-125	4	30	
Acenaphthene	ug/kg	ND	34.9	35	23.5	24.1	67	69	39-125	2	30	
Acenaphthylene	ug/kg	ND	34.9	35	23.1	23.8	66	68	30-150	3	30	
Anthracene	ug/kg	ND	34.9	35	26.0	26.2	74	75	30-150	1	30	
Benzo(a)anthracene	ug/kg	ND	34.9	35	25.9	26.0	74	74	30-150	0	30	
Benzo(a)pyrene	ug/kg	ND	34.9	35	28.4	28.4	81	81	30-150	0	30	
Benzo(b)fluoranthene	ug/kg	ND	34.9	35	29.0	29.2	83	83	30-150	1	30	
Benzo(g,h,i)perylene	ug/kg	ND	34.9	35	27.8	28.0	80	80	30-150	1	30	
Benzo(k)fluoranthene	ug/kg	ND	34.9	35	27.2	28.4	78	81	30-150	4	30	
Chrysene	ug/kg	ND	34.9	35	25.1	25.1	72	72	30-150	0	30	
Dibenz(a,h)anthracene	ug/kg	ND	34.9	35	29.0	29.1	83	83	30-150	0	30	
Fluoranthene	ug/kg	ND	34.9	35	28.3	28.6	81	81	30-150	1	30	
Fluorene	ug/kg	ND	34.9	35	25.4	26.0	73	74	30-146	3	30	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	34.9	35	27.7	28.0	79	80	30-150	1	30	
Naphthalene	ug/kg	ND	34.9	35	23.2	24.4	66	69	30-131	5	30	
Phenanthrene	ug/kg	ND	34.9	35	25.3	25.7	71	72	30-150	2	30	
Pyrene	ug/kg	ND	34.9	35	27.6	27.8	79	79	30-150	0	30	
2-Fluorobiphenyl (S)	%.						55	56	55-125			
p-Terphenyl-d14 (S)	%.						67	65	30-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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(612)607-1700

QUALIFIERS

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, Inc.
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23690B77.00 2015 010 SLRI REV
Pace Project No.: 10309558

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10309558001	**SB-BS-01 1.8-2.1**	ASTM D2974	MPRP/55356		
10309558002	**SB-BS-02 2.2-2.5**	ASTM D2974	MPRP/55356		
10309558003	**SB-BS-03 2.9-3.2**	ASTM D2974	MPRP/55356		
10309558004	**SB-BS-04 0.9-1.2**	ASTM D2974	MPRP/55356		
10309558005	**SB-BS-05 2.0-2.3**	ASTM D2974	MPRP/55356		
10309558006	**SB-BS-06 2.2-2.5**	ASTM D2974	MPRP/55356		
10309558007	**S6-BS-01 1.8-2.1**	ASTM D2974	MPRP/55356		
10309558008	**S6-BS-02 3.0-3.3**	ASTM D2974	MPRP/55356		
10309558009	**S6-BS-03 4.0-4.25**	ASTM D2974	MPRP/55356		
10309558010	**S6-BS-04 2.7-3.0**	ASTM D2974	MPRP/55356		
10309558011	**S6-BS-05 3.0-3.3**	ASTM D2974	MPRP/55356		
10309558012	**S6-BS-06 3.0-3.3**	ASTM D2974	MPRP/55356		
10309558001	**SB-BS-01 1.8-2.1**	EPA 3550	OEXT/29676	EPA 8270D by SIM	MSSV/12593
10309558002	**SB-BS-02 2.2-2.5**	EPA 3550	OEXT/29676	EPA 8270D by SIM	MSSV/12593
10309558003	**SB-BS-03 2.9-3.2**	EPA 3550	OEXT/29676	EPA 8270D by SIM	MSSV/12593
10309558004	**SB-BS-04 0.9-1.2**	EPA 3550	OEXT/29676	EPA 8270D by SIM	MSSV/12593
10309558005	**SB-BS-05 2.0-2.3**	EPA 3550	OEXT/29676	EPA 8270D by SIM	MSSV/12593
10309558006	**SB-BS-06 2.2-2.5**	EPA 3550	OEXT/29676	EPA 8270D by SIM	MSSV/12593
10309558007	**S6-BS-01 1.8-2.1**	EPA 3550	OEXT/29683	EPA 8270D by SIM	MSSV/12591
10309558008	**S6-BS-02 3.0-3.3**	EPA 3550	OEXT/29683	EPA 8270D by SIM	MSSV/12591
10309558009	**S6-BS-03 4.0-4.25**	EPA 3550	OEXT/29683	EPA 8270D by SIM	MSSV/12591
10309558010	**S6-BS-04 2.7-3.0**	EPA 3550	OEXT/29683	EPA 8270D by SIM	MSSV/12591
10309558011	**S6-BS-05 3.0-3.3**	EPA 3550	OEXT/29683	EPA 8270D by SIM	MSSV/12591
10309558012	**S6-BS-06 3.0-3.3**	EPA 3550	OEXT/29683	EPA 8270D by SIM	MSSV/12591

Chain of Custody

BARR

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

COC 1 of 2

Project Number: 23690B77.00 2015 010

Project Name: SLRIDT LTMM

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 41453

Project Manager: GMP

Project QC Contact: AAN/JET

Sampled by: IGM/BJZ2

Laboratory: Pace

Number of Containers/Preservative

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	Water: VOCs (HCl) #1	Water: SVOCs (unpreserved) #2	Water: Dissolved Metals (HNO_3)	Water: Total Metals (HNO_3)	Water: General (unpreserved) #3	Water: Diesel Range Organics (HCl)	Water: Nutrients (H_2SO_4) #4	Soil: VOCs (tared MeOH) #1	Soil: GRO, BTEX (tared MeOH) #1	Soil: DRO (tared unpreserved)	Soil: Metals (unpreserved)	Soil: SVOCs (unpreserved) #2	Soil: % Solids (plastic vial, unpres.)	Soil: PAH (SLRIDT 17)	Total Number Of Containers	
1.	SB-BS-01	1.8 ~~0.5~~	2.1 ~~0.9~~	Ft	6/6/15	1040		X	X														X	X	2	001
2.	SB-BS-02	2.2	2.5		6/6/15	1325		X	X														X	X	2	002
3.	SB-BS-03	2.9	3.2		6/6/15	1420		X	X														X	X	2	003
4.	SB-BS-04	0.9 ~~0.5~~	1.2 ~~0.9~~		6/5/15	1345		X	X														X	X	2	004
5.	SB-BS-05	2.0	2.3		6/6/15	1130		X	X														X	X	2	005
6.	SB-BS-06	2.2	2.5		6/6/15	1405		X	X														X	X	2	006
7.	S6-BS-01	1.8	2.1		6/8/15	0820		X	X														X	X	3	007
8.	S6-BS-02	3.0 ~~4.7~~	3.3 ~~5.0~~		6/8/15	~~0955~~		X	X														X	X	2	008
9.	S6-BS-03	4.0	4.25		6/8/15	1030		X	X														X	X	2	009
10.	S6-BS-04	2.7	3.0		6/8/15	0850		X	X														X	X	2	010

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	(Y) N	6/8/15	1300	[signature]	6/8/15	1300
[signature]	(Y) N	6/9/15	1530	[signature]	6/8/15	1530
				[signature]	6/9/15	1800

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other:

Air Bill Number:

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

Chain of Custody

BARR

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

COC 2 of 2

Project Number: 23690877.00 2015 010

Project Name: SLRIDT LTMM

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 41452

Project Manager: GMP

Project QC Contact: AAN/JET

Sampled by: IGM/BJL2

Laboratory: Pace

Number of Containers/Preservative

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Matrix:	Type: Grab	Type: Comp.	Type: QC	Water: VOCs (HCl) #1	Water: SVOCs (unpreserved) #2	Water: Dissolved Metals (HNO_3)	Water: Total Metals (HNO_3)	Water: General (unpreserved) #3	Water: Diesel Range Organics (HCl)	Water: Nutrients (H_2SO_4) #4	Water:	Water:	Water:	Soil: VOCs (tared MeOH) #1	Soil: GRO, BTEX (tared MeOH) #1	Soil: DRO (tared unpreserved)	Soil: Metals (unpreserved)	Soil: SVOCs (unpreserved) #2	Soil: % Solids (plastic vial, unpres.)	Soil: PAH (SLRIDT 17)	Soil:	Soil:	Total Number Of Containers	
1. S6-BS-05	~~3.1~~ 3.0	~~3.2~~ 3.3	ft	6/8/15	0920		X		X																	X				2		OIL
2. S6-BS-06	3.0	3.3	ft	6/8/15	1010		X		X																	X				2		OIL
3.																																
4.																																
5.																																
6.																																
7.																																
8.																																
9.																																
10.																																

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	(Y) N	6/8/15	1300	[signature]	6/8/15	1300
[signature]	(Y) N	6/9/15	1530	[signature]	6/9/15	1530

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number: [signature] 6/9/15 ROC

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

H:RLG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09/01/09

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Client Name: BARR

Project #: WO# : 10309558

10309558

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☑ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.3 **Cooler Temp Corrected (°C):** 3.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** 0.2 **Date and Initials of Person Examining Contents:** LM 6/9/15

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☑ No	☐ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: SL				
All containers needing acid/base preservation have been checked?	☐ Yes	☑ No	☐ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☑ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☑ No	☐ N/A	Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased): _____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: CB **Date:** 6/10/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 30, 2015

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on June 11, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised on July 20, 2015 to add the re-extracted PAH results.

This report was revised on July 30, 2015 to add results for 2-methyl naphthalene.

This report was revised for a second time on July 30th, 2015 to include the 8270 SIM results for sample 012 and 015 that were missing from the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Julie Bowser for
Chris Bremer
chris.bremer@pacelabs.com
Project Manager

Enclosures

cc: Data Distribution

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10310004001	**NW-BS-01 (3.0-3.3')**	Solid	06/09/15 10:00	06/11/15 17:50
10310004002	**SW-BS-01 (3.0-3.3')**	Solid	06/09/15 09:30	06/11/15 17:50
10310004003	**S7-BS-01 (1.5-1.8')**	Solid	06/10/15 10:10	06/11/15 17:50
10310004004	**S7-BS-02 (1.5-1.8')**	Solid	06/11/15 09:20	06/11/15 17:50
10310004005	**S7-BS-03 (1.5-1.8')**	Solid	06/11/15 08:30	06/11/15 17:50
10310004006	**S7-BS-04 (1.5-1.8')**	Solid	06/10/15 09:25	06/11/15 17:50
10310004007	**S7-BS-05 (2.7-2.7')**	Solid	06/09/15 14:10	06/11/15 17:50
10310004008	**S7-BS-06 (3.0-3.3')**	Solid	06/09/15 11:15	06/11/15 17:50
10310004009	**DUP-2**	Solid	06/09/15 00:00	06/11/15 17:50
10310004010	**NW-BS-01 (3.0-3.3')-RE**	Solid	06/09/15 10:00	06/11/15 17:50
10310004011	**SW-BS-01 (3.0-3.3')-RE**	Solid	06/09/15 09:30	06/11/15 17:50
10310004012	**S7-BS-01 (1.5-1.8')-RE**	Solid	06/10/15 10:10	06/11/15 17:50
10310004013	**S7-BS-04 (1.5-1.8')-RE**	Solid	06/10/15 09:25	06/11/15 17:50
10310004014	**S7-BS-05 (2.7-2.7')-RE**	Solid	06/09/15 14:10	06/11/15 17:50
10310004015	**S7-BS-06 (3.0-3.3')-RE**	Solid	06/09/15 11:15	06/11/15 17:50
10310004016	**DUP-2-RE**	Solid	06/09/15 00:00	06/11/15 17:50

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SAMPLE ANALYTE COUNT

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10310004001	**NW-BS-01 (3.0-3.3')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004002	**SW-BS-01 (3.0-3.3')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004003	**S7-BS-01 (1.5-1.8')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004004	**S7-BS-02 (1.5-1.8')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004005	**S7-BS-03 (1.5-1.8')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004006	**S7-BS-04 (1.5-1.8')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004007	**S7-BS-05 (2.7-2.7')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004008	**S7-BS-06 (3.0-3.3')**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004009	**DUP-2**	ASTM D2974	JDL	1
		EPA 8270D by SIM	LT	19
10310004010	**NW-BS-01 (3.0-3.3')-RE**	ASTM D2974	CB	1
		EPA 8270D by SIM	LT	19
10310004011	**SW-BS-01 (3.0-3.3')-RE**	ASTM D2974	CB	1
		EPA 8270D by SIM	LT	19
10310004012	**S7-BS-01 (1.5-1.8')-RE**	ASTM D2974	CB	1
		EPA 8270D by SIM	LT	19
10310004013	**S7-BS-04 (1.5-1.8')-RE**	ASTM D2974	CB	1
		EPA 8270D by SIM	LT	19
10310004014	**S7-BS-05 (2.7-2.7')-RE**	ASTM D2974	CB	1
		EPA 8270D by SIM	LT	19
10310004015	**S7-BS-06 (3.0-3.3')-RE**	ASTM D2974	CB	1
		EPA 8270D by SIM	LT	19
10310004016	**DUP-2-RE**	ASTM D2974	CB	1
		EPA 8270D by SIM	LT	19

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PROJECT NARRATIVE

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Date: July 30, 2015

Case Narrative:

Surrogate recoveries for samples 003, 006, 008 and 009 were below control limits. The samples were re-extracted past the recommended holding time. The re-extracted data indicated passing surrogate recoveries and some of the reported analytes were not confirmed. All of the non-confirmed compounds were <30% higher in concentration in the re-extracted data. The in hold data is reported here.

003 - Surrogate recovery = 69%. Acenaphthene concentration was not confirmed but was <30% higher.

006 - Surrogate recovery = 73%. Pyrene and benzo(b)fluoranthene concentrations were not confirmed but were <30% higher.

008 - Surrogate recovery = 62%. Phenanthrene concentration was not confirmed but was <30% higher.

009 - Surrogate recovery = 76%. Naphthalene, acenaphthylene, anthracene and pyrene concentrations were not confirmed but were <30% higher.

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: NW-BS-01 (3.0-3.3') **Lab ID: 10310004001** Collected: 06/09/15 10:00 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**17.9**	%	0.10	0.10	1		06/24/15 16:22		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.2**	ug/kg	12.2	0.44	1	06/22/15 19:49	06/25/15 07:51	83-32-9	
Acenaphthylene	**<12.2**	ug/kg	12.2	0.41	1	06/22/15 19:49	06/25/15 07:51	208-96-8	
Anthracene	**<12.2**	ug/kg	12.2	0.37	1	06/22/15 19:49	06/25/15 07:51	120-12-7	
Benzo(a)anthracene	**<12.2**	ug/kg	12.2	0.22	1	06/22/15 19:49	06/25/15 07:51	56-55-3	
Benzo(a)pyrene	**<12.2**	ug/kg	12.2	0.24	1	06/22/15 19:49	06/25/15 07:51	50-32-8	
Benzo(b)fluoranthene	**<12.2**	ug/kg	12.2	0.43	1	06/22/15 19:49	06/25/15 07:51	205-99-2	
Benzo(g,h,i)perylene	**<12.2**	ug/kg	12.2	0.43	1	06/22/15 19:49	06/25/15 07:51	191-24-2	
Benzo(k)fluoranthene	**<12.2**	ug/kg	12.2	0.49	1	06/22/15 19:49	06/25/15 07:51	207-08-9	
Chrysene	**<12.2**	ug/kg	12.2	0.30	1	06/22/15 19:49	06/25/15 07:51	218-01-9	
Dibenz(a,h)anthracene	**<12.2**	ug/kg	12.2	0.52	1	06/22/15 19:49	06/25/15 07:51	53-70-3	
Fluoranthene	**<12.2**	ug/kg	12.2	0.27	1	06/22/15 19:49	06/25/15 07:51	206-44-0	
Fluorene	**<12.2**	ug/kg	12.2	0.38	1	06/22/15 19:49	06/25/15 07:51	86-73-7	
Indeno(1,2,3-cd)pyrene	**<12.2**	ug/kg	12.2	0.47	1	06/22/15 19:49	06/25/15 07:51	193-39-5	
2-Methylnaphthalene	**<12.2**	ug/kg	12.2	0.50	1	06/22/15 19:49	06/25/15 07:51	91-57-6	
Naphthalene	**<12.2**	ug/kg	12.2	0.45	1	06/22/15 19:49	06/25/15 07:51	91-20-3	
Phenanthrene	**<12.2**	ug/kg	12.2	0.30	1	06/22/15 19:49	06/25/15 07:51	85-01-8	
Pyrene	**<12.2**	ug/kg	12.2	0.29	1	06/22/15 19:49	06/25/15 07:51	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	32	%.	55-125		1	06/22/15 19:49	06/25/15 07:51	321-60-8	1M,S0
p-Terphenyl-d14 (S)	52	%.	30-150		1	06/22/15 19:49	06/25/15 07:51	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: SW-BS-01 (3.0-3.3') **Lab ID: 10310004002** Collected: 06/09/15 09:30 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**16.1**	%	0.10	0.10	1		06/24/15 16:23		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.9**	ug/kg	11.9	0.43	1	06/22/15 19:49	06/25/15 08:13	83-32-9	
Acenaphthylene	**<11.9**	ug/kg	11.9	0.40	1	06/22/15 19:49	06/25/15 08:13	208-96-8	
Anthracene	**<11.9**	ug/kg	11.9	0.36	1	06/22/15 19:49	06/25/15 08:13	120-12-7	
Benzo(a)anthracene	**<11.9**	ug/kg	11.9	0.22	1	06/22/15 19:49	06/25/15 08:13	56-55-3	
Benzo(a)pyrene	**<11.9**	ug/kg	11.9	0.23	1	06/22/15 19:49	06/25/15 08:13	50-32-8	
Benzo(b)fluoranthene	**<11.9**	ug/kg	11.9	0.41	1	06/22/15 19:49	06/25/15 08:13	205-99-2	
Benzo(g,h,i)perylene	**<11.9**	ug/kg	11.9	0.42	1	06/22/15 19:49	06/25/15 08:13	191-24-2	
Benzo(k)fluoranthene	**<11.9**	ug/kg	11.9	0.48	1	06/22/15 19:49	06/25/15 08:13	207-08-9	
Chrysene	**<11.9**	ug/kg	11.9	0.29	1	06/22/15 19:49	06/25/15 08:13	218-01-9	
Dibenz(a,h)anthracene	**<11.9**	ug/kg	11.9	0.51	1	06/22/15 19:49	06/25/15 08:13	53-70-3	
Fluoranthene	**<11.9**	ug/kg	11.9	0.26	1	06/22/15 19:49	06/25/15 08:13	206-44-0	
Fluorene	**<11.9**	ug/kg	11.9	0.37	1	06/22/15 19:49	06/25/15 08:13	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.9**	ug/kg	11.9	0.46	1	06/22/15 19:49	06/25/15 08:13	193-39-5	
2-Methylnaphthalene	**<11.9**	ug/kg	11.9	0.49	1	06/22/15 19:49	06/25/15 08:13	91-57-6	
Naphthalene	**<11.9**	ug/kg	11.9	0.44	1	06/22/15 19:49	06/25/15 08:13	91-20-3	
Phenanthrene	**<11.9**	ug/kg	11.9	0.29	1	06/22/15 19:49	06/25/15 08:13	85-01-8	
Pyrene	**<11.9**	ug/kg	11.9	0.28	1	06/22/15 19:49	06/25/15 08:13	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	43	%.	55-125		1	06/22/15 19:49	06/25/15 08:13	321-60-8	1M,S0
p-Terphenyl-d14 (S)	70	%.	30-150		1	06/22/15 19:49	06/25/15 08:13	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-01 (1.5-1.8') **Lab ID: 10310004003** Collected: 06/10/15 10:10 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**20.9**	%	0.10	0.10	1		06/24/15 16:23		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.6**	ug/kg	12.6	0.46	1	06/22/15 19:49	06/25/15 08:35	83-32-9	
Acenaphthylene	**<12.6**	ug/kg	12.6	0.43	1	06/22/15 19:49	06/25/15 08:35	208-96-8	
Anthracene	**28.2**	ug/kg	12.6	0.39	1	06/22/15 19:49	06/25/15 08:35	120-12-7	
Benzo(a)anthracene	**36.2**	ug/kg	12.6	0.23	1	06/22/15 19:49	06/25/15 08:35	56-55-3	
Benzo(a)pyrene	**35.3**	ug/kg	12.6	0.25	1	06/22/15 19:49	06/25/15 08:35	50-32-8	
Benzo(b)fluoranthene	**58.2**	ug/kg	12.6	0.44	1	06/22/15 19:49	06/25/15 08:35	205-99-2	
Benzo(g,h,i)perylene	**18.5**	ug/kg	12.6	0.45	1	06/22/15 19:49	06/25/15 08:35	191-24-2	
Benzo(k)fluoranthene	**23.7**	ug/kg	12.6	0.51	1	06/22/15 19:49	06/25/15 08:35	207-08-9	
Chrysene	**55.6**	ug/kg	12.6	0.31	1	06/22/15 19:49	06/25/15 08:35	218-01-9	
Dibenz(a,h)anthracene	**<12.6**	ug/kg	12.6	0.54	1	06/22/15 19:49	06/25/15 08:35	53-70-3	
Fluoranthene	**68.0**	ug/kg	12.6	0.28	1	06/22/15 19:49	06/25/15 08:35	206-44-0	
Fluorene	**<12.6**	ug/kg	12.6	0.39	1	06/22/15 19:49	06/25/15 08:35	86-73-7	
Indeno(1,2,3-cd)pyrene	**17.8**	ug/kg	12.6	0.49	1	06/22/15 19:49	06/25/15 08:35	193-39-5	
2-Methylnaphthalene	**<12.6**	ug/kg	12.6	0.52	1	06/22/15 19:49	06/25/15 08:35	91-57-6	
Naphthalene	**32.0**	ug/kg	12.6	0.47	1	06/22/15 19:49	06/25/15 08:35	91-20-3	
Phenanthrene	**24.5**	ug/kg	12.6	0.31	1	06/22/15 19:49	06/25/15 08:35	85-01-8	
Pyrene	**52.5**	ug/kg	12.6	0.30	1	06/22/15 19:49	06/25/15 08:35	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	50	%.	55-125		1	06/22/15 19:49	06/25/15 08:35	321-60-8	2M,S0
p-Terphenyl-d14 (S)	65	%.	30-150		1	06/22/15 19:49	06/25/15 08:35	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-02 (1.5-1.8') **Lab ID: 10310004004** Collected: 06/11/15 09:20 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**20.8**	%	0.10	0.10	1		06/24/15 16:23		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.6**	ug/kg	12.6	0.45	1	06/25/15 16:27	06/26/15 08:54	83-32-9	
Acenaphthylene	**<12.6**	ug/kg	12.6	0.43	1	06/25/15 16:27	06/26/15 08:54	208-96-8	
Anthracene	**<12.6**	ug/kg	12.6	0.39	1	06/25/15 16:27	06/26/15 08:54	120-12-7	
Benzo(a)anthracene	**<12.6**	ug/kg	12.6	0.23	1	06/25/15 16:27	06/26/15 08:54	56-55-3	
Benzo(a)pyrene	**<12.6**	ug/kg	12.6	0.25	1	06/25/15 16:27	06/26/15 08:54	50-32-8	
Benzo(b)fluoranthene	**<12.6**	ug/kg	12.6	0.44	1	06/25/15 16:27	06/26/15 08:54	205-99-2	
Benzo(g,h,i)perylene	**<12.6**	ug/kg	12.6	0.45	1	06/25/15 16:27	06/26/15 08:54	191-24-2	
Benzo(k)fluoranthene	**<12.6**	ug/kg	12.6	0.50	1	06/25/15 16:27	06/26/15 08:54	207-08-9	
Chrysene	**<12.6**	ug/kg	12.6	0.31	1	06/25/15 16:27	06/26/15 08:54	218-01-9	
Dibenz(a,h)anthracene	**<12.6**	ug/kg	12.6	0.54	1	06/25/15 16:27	06/26/15 08:54	53-70-3	
Fluoranthene	**<12.6**	ug/kg	12.6	0.28	1	06/25/15 16:27	06/26/15 08:54	206-44-0	
Fluorene	**<12.6**	ug/kg	12.6	0.39	1	06/25/15 16:27	06/26/15 08:54	86-73-7	
Indeno(1,2,3-cd)pyrene	**<12.6**	ug/kg	12.6	0.48	1	06/25/15 16:27	06/26/15 08:54	193-39-5	
2-Methylnaphthalene	**<12.6**	ug/kg	12.6	0.51	1	06/25/15 16:27	06/26/15 08:54	91-57-6	
Naphthalene	**<12.6**	ug/kg	12.6	0.47	1	06/25/15 16:27	06/26/15 08:54	91-20-3	
Phenanthrene	**<12.6**	ug/kg	12.6	0.31	1	06/25/15 16:27	06/26/15 08:54	85-01-8	
Pyrene	**<12.6**	ug/kg	12.6	0.30	1	06/25/15 16:27	06/26/15 08:54	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	76	%.	55-125		1	06/25/15 16:27	06/26/15 08:54	321-60-8	
p-Terphenyl-d14 (S)	86	%.	30-150		1	06/25/15 16:27	06/26/15 08:54	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-03 (1.5-1.8') **Lab ID: 10310004005** Collected: 06/11/15 08:30 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**12.3**	%	0.10	0.10	1		06/24/15 16:23		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.3**	ug/kg	11.3	0.41	1	06/25/15 16:27	06/26/15 09:15	83-32-9	
Acenaphthylene	**<11.3**	ug/kg	11.3	0.38	1	06/25/15 16:27	06/26/15 09:15	208-96-8	
Anthracene	**<11.3**	ug/kg	11.3	0.35	1	06/25/15 16:27	06/26/15 09:15	120-12-7	
Benzo(a)anthracene	**<11.3**	ug/kg	11.3	0.21	1	06/25/15 16:27	06/26/15 09:15	56-55-3	
Benzo(a)pyrene	**<11.3**	ug/kg	11.3	0.22	1	06/25/15 16:27	06/26/15 09:15	50-32-8	
Benzo(b)fluoranthene	**15.1**	ug/kg	11.3	0.40	1	06/25/15 16:27	06/26/15 09:15	205-99-2	
Benzo(g,h,i)perylene	**<11.3**	ug/kg	11.3	0.40	1	06/25/15 16:27	06/26/15 09:15	191-24-2	
Benzo(k)fluoranthene	**<11.3**	ug/kg	11.3	0.45	1	06/25/15 16:27	06/26/15 09:15	207-08-9	
Chrysene	**<11.3**	ug/kg	11.3	0.28	1	06/25/15 16:27	06/26/15 09:15	218-01-9	
Dibenz(a,h)anthracene	**<11.3**	ug/kg	11.3	0.49	1	06/25/15 16:27	06/26/15 09:15	53-70-3	
Fluoranthene	**18.6**	ug/kg	11.3	0.25	1	06/25/15 16:27	06/26/15 09:15	206-44-0	
Fluorene	**<11.3**	ug/kg	11.3	0.35	1	06/25/15 16:27	06/26/15 09:15	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.3**	ug/kg	11.3	0.44	1	06/25/15 16:27	06/26/15 09:15	193-39-5	
2-Methylnaphthalene	**<11.3**	ug/kg	11.3	0.46	1	06/25/15 16:27	06/26/15 09:15	91-57-6	
Naphthalene	**<11.3**	ug/kg	11.3	0.42	1	06/25/15 16:27	06/26/15 09:15	91-20-3	
Phenanthrene	**<11.3**	ug/kg	11.3	0.28	1	06/25/15 16:27	06/26/15 09:15	85-01-8	
Pyrene	**13.7**	ug/kg	11.3	0.27	1	06/25/15 16:27	06/26/15 09:15	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	73	%.	55-125		1	06/25/15 16:27	06/26/15 09:15	321-60-8	
p-Terphenyl-d14 (S)	87	%.	30-150		1	06/25/15 16:27	06/26/15 09:15	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-04 (1.5-1.8') **Lab ID: 10310004006** Collected: 06/10/15 09:25 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**20.7**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.6**	ug/kg	12.6	0.45	1	06/22/15 19:49	06/25/15 11:29	83-32-9	
Acenaphthylene	**<12.6**	ug/kg	12.6	0.43	1	06/22/15 19:49	06/25/15 11:29	208-96-8	
Anthracene	**<12.6**	ug/kg	12.6	0.39	1	06/22/15 19:49	06/25/15 11:29	120-12-7	
Benzo(a)anthracene	**<12.6**	ug/kg	12.6	0.23	1	06/22/15 19:49	06/25/15 11:29	56-55-3	
Benzo(a)pyrene	**<12.6**	ug/kg	12.6	0.25	1	06/22/15 19:49	06/25/15 11:29	50-32-8	
Benzo(b)fluoranthene	**<12.6**	ug/kg	12.6	0.44	1	06/22/15 19:49	06/25/15 11:29	205-99-2	
Benzo(g,h,i)perylene	**<12.6**	ug/kg	12.6	0.44	1	06/22/15 19:49	06/25/15 11:29	191-24-2	
Benzo(k)fluoranthene	**<12.6**	ug/kg	12.6	0.50	1	06/22/15 19:49	06/25/15 11:29	207-08-9	
Chrysene	**<12.6**	ug/kg	12.6	0.31	1	06/22/15 19:49	06/25/15 11:29	218-01-9	
Dibenz(a,h)anthracene	**<12.6**	ug/kg	12.6	0.54	1	06/22/15 19:49	06/25/15 11:29	53-70-3	
Fluoranthene	**14.6**	ug/kg	12.6	0.28	1	06/22/15 19:49	06/25/15 11:29	206-44-0	
Fluorene	**<12.6**	ug/kg	12.6	0.39	1	06/22/15 19:49	06/25/15 11:29	86-73-7	
Indeno(1,2,3-cd)pyrene	**<12.6**	ug/kg	12.6	0.48	1	06/22/15 19:49	06/25/15 11:29	193-39-5	
2-Methylnaphthalene	**<12.6**	ug/kg	12.6	0.51	1	06/22/15 19:49	06/25/15 11:29	91-57-6	
Naphthalene	**<12.6**	ug/kg	12.6	0.47	1	06/22/15 19:49	06/25/15 11:29	91-20-3	
Phenanthrene	**<12.6**	ug/kg	12.6	0.31	1	06/22/15 19:49	06/25/15 11:29	85-01-8	
Pyrene	**<12.6**	ug/kg	12.6	0.30	1	06/22/15 19:49	06/25/15 11:29	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	50	%.	55-125		1	06/22/15 19:49	06/25/15 11:29	321-60-8	2M,S0
p-Terphenyl-d14 (S)	74	%.	30-150		1	06/22/15 19:49	06/25/15 11:29	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-05 (2.7-2.7') **Lab ID: 10310004007** Collected: 06/09/15 14:10 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**11.8**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.3**	ug/kg	11.3	0.41	1	06/22/15 19:49	06/25/15 11:51	83-32-9	
Acenaphthylene	**<11.3**	ug/kg	11.3	0.38	1	06/22/15 19:49	06/25/15 11:51	208-96-8	
Anthracene	**<11.3**	ug/kg	11.3	0.35	1	06/22/15 19:49	06/25/15 11:51	120-12-7	
Benzo(a)anthracene	**<11.3**	ug/kg	11.3	0.21	1	06/22/15 19:49	06/25/15 11:51	56-55-3	
Benzo(a)pyrene	**<11.3**	ug/kg	11.3	0.22	1	06/22/15 19:49	06/25/15 11:51	50-32-8	
Benzo(b)fluoranthene	**<11.3**	ug/kg	11.3	0.40	1	06/22/15 19:49	06/25/15 11:51	205-99-2	
Benzo(g,h,i)perylene	**<11.3**	ug/kg	11.3	0.40	1	06/22/15 19:49	06/25/15 11:51	191-24-2	
Benzo(k)fluoranthene	**<11.3**	ug/kg	11.3	0.45	1	06/22/15 19:49	06/25/15 11:51	207-08-9	
Chrysene	**<11.3**	ug/kg	11.3	0.28	1	06/22/15 19:49	06/25/15 11:51	218-01-9	
Dibenz(a,h)anthracene	**<11.3**	ug/kg	11.3	0.49	1	06/22/15 19:49	06/25/15 11:51	53-70-3	
Fluoranthene	**<11.3**	ug/kg	11.3	0.25	1	06/22/15 19:49	06/25/15 11:51	206-44-0	
Fluorene	**<11.3**	ug/kg	11.3	0.35	1	06/22/15 19:49	06/25/15 11:51	86-73-7	
Indeno(1,2,3-cd)pyrene	**<11.3**	ug/kg	11.3	0.44	1	06/22/15 19:49	06/25/15 11:51	193-39-5	
2-Methylnaphthalene	**<11.3**	ug/kg	11.3	0.46	1	06/22/15 19:49	06/25/15 11:51	91-57-6	
Naphthalene	**<11.3**	ug/kg	11.3	0.42	1	06/22/15 19:49	06/25/15 11:51	91-20-3	R1
Phenanthrene	**<11.3**	ug/kg	11.3	0.28	1	06/22/15 19:49	06/25/15 11:51	85-01-8	
Pyrene	**<11.3**	ug/kg	11.3	0.27	1	06/22/15 19:49	06/25/15 11:51	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	50	%.	55-125		1	06/22/15 19:49	06/25/15 11:51	321-60-8	1M,S0
p-Terphenyl-d14 (S)	63	%.	30-150		1	06/22/15 19:49	06/25/15 11:51	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-06 (3.0-3.3') **Lab ID: 10310004008** Collected: 06/09/15 11:15 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**7.6**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<10.8**	ug/kg	10.8	0.39	1	06/22/15 19:49	06/25/15 12:56	83-32-9	
Acenaphthylene	**<10.8**	ug/kg	10.8	0.37	1	06/22/15 19:49	06/25/15 12:56	208-96-8	
Anthracene	**<10.8**	ug/kg	10.8	0.33	1	06/22/15 19:49	06/25/15 12:56	120-12-7	
Benzo(a)anthracene	**<10.8**	ug/kg	10.8	0.20	1	06/22/15 19:49	06/25/15 12:56	56-55-3	
Benzo(a)pyrene	**<10.8**	ug/kg	10.8	0.21	1	06/22/15 19:49	06/25/15 12:56	50-32-8	
Benzo(b)fluoranthene	**<10.8**	ug/kg	10.8	0.38	1	06/22/15 19:49	06/25/15 12:56	205-99-2	
Benzo(g,h,i)perylene	**<10.8**	ug/kg	10.8	0.38	1	06/22/15 19:49	06/25/15 12:56	191-24-2	
Benzo(k)fluoranthene	**<10.8**	ug/kg	10.8	0.43	1	06/22/15 19:49	06/25/15 12:56	207-08-9	
Chrysene	**<10.8**	ug/kg	10.8	0.27	1	06/22/15 19:49	06/25/15 12:56	218-01-9	
Dibenz(a,h)anthracene	**<10.8**	ug/kg	10.8	0.46	1	06/22/15 19:49	06/25/15 12:56	53-70-3	
Fluoranthene	**<10.8**	ug/kg	10.8	0.24	1	06/22/15 19:49	06/25/15 12:56	206-44-0	
Fluorene	**12.4**	ug/kg	10.8	0.33	1	06/22/15 19:49	06/25/15 12:56	86-73-7	
Indeno(1,2,3-cd)pyrene	**<10.8**	ug/kg	10.8	0.42	1	06/22/15 19:49	06/25/15 12:56	193-39-5	
2-Methylnaphthalene	**<10.8**	ug/kg	10.8	0.44	1	06/22/15 19:49	06/25/15 12:56	91-57-6	
Naphthalene	**119**	ug/kg	10.8	0.40	1	06/22/15 19:49	06/25/15 12:56	91-20-3	
Phenanthrene	**17.3**	ug/kg	10.8	0.27	1	06/22/15 19:49	06/25/15 12:56	85-01-8	
Pyrene	**<10.8**	ug/kg	10.8	0.26	1	06/22/15 19:49	06/25/15 12:56	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	46	%.	55-125		1	06/22/15 19:49	06/25/15 12:56	321-60-8	2M,S0
p-Terphenyl-d14 (S)	72	%.	30-150		1	06/22/15 19:49	06/25/15 12:56	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: DUP-2 **Lab ID: 10310004009** Collected: 06/09/15 00:00 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**6.8**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<10.7**	ug/kg	10.7	0.39	1	06/22/15 19:49	06/25/15 13:18	83-32-9	
Acenaphthylene	**<10.7**	ug/kg	10.7	0.36	1	06/22/15 19:49	06/25/15 13:18	208-96-8	
Anthracene	**15.1**	ug/kg	10.7	0.33	1	06/22/15 19:49	06/25/15 13:18	120-12-7	
Benzo(a)anthracene	**<10.7**	ug/kg	10.7	0.20	1	06/22/15 19:49	06/25/15 13:18	56-55-3	
Benzo(a)pyrene	**<10.7**	ug/kg	10.7	0.21	1	06/22/15 19:49	06/25/15 13:18	50-32-8	
Benzo(b)fluoranthene	**<10.7**	ug/kg	10.7	0.37	1	06/22/15 19:49	06/25/15 13:18	205-99-2	
Benzo(g,h,i)perylene	**<10.7**	ug/kg	10.7	0.38	1	06/22/15 19:49	06/25/15 13:18	191-24-2	
Benzo(k)fluoranthene	**<10.7**	ug/kg	10.7	0.43	1	06/22/15 19:49	06/25/15 13:18	207-08-9	
Chrysene	**<10.7**	ug/kg	10.7	0.26	1	06/22/15 19:49	06/25/15 13:18	218-01-9	
Dibenz(a,h)anthracene	**<10.7**	ug/kg	10.7	0.46	1	06/22/15 19:49	06/25/15 13:18	53-70-3	
Fluoranthene	**40.0**	ug/kg	10.7	0.23	1	06/22/15 19:49	06/25/15 13:18	206-44-0	
Fluorene	**21.4**	ug/kg	10.7	0.33	1	06/22/15 19:49	06/25/15 13:18	86-73-7	
Indeno(1,2,3-cd)pyrene	**<10.7**	ug/kg	10.7	0.41	1	06/22/15 19:49	06/25/15 13:18	193-39-5	
2-Methylnaphthalene	**<10.7**	ug/kg	10.7	0.44	1	06/22/15 19:49	06/25/15 13:18	91-57-6	
Naphthalene	**60.7**	ug/kg	10.7	0.40	1	06/22/15 19:49	06/25/15 13:18	91-20-3	
Phenanthrene	**63.1**	ug/kg	10.7	0.27	1	06/22/15 19:49	06/25/15 13:18	85-01-8	
Pyrene	**25.8**	ug/kg	10.7	0.26	1	06/22/15 19:49	06/25/15 13:18	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	29	%.	55-125		1	06/22/15 19:49	06/25/15 13:18	321-60-8	2M,S0
p-Terphenyl-d14 (S)	69	%.	30-150		1	06/22/15 19:49	06/25/15 13:18	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: NW-BS-01 (3.0-3.3')-RE **Lab ID: 10310004010** Collected: 06/09/15 10:00 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**17.9**	%	0.10	0.10	1		06/24/15 16:22		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.1**	ug/kg	12.1	0.44	1	06/25/15 16:27	06/26/15 09:36	83-32-9	H2
Acenaphthylene	**<12.1**	ug/kg	12.1	0.41	1	06/25/15 16:27	06/26/15 09:36	208-96-8	H2
Anthracene	**<12.1**	ug/kg	12.1	0.37	1	06/25/15 16:27	06/26/15 09:36	120-12-7	H2
Benzo(a)anthracene	**<12.1**	ug/kg	12.1	0.22	1	06/25/15 16:27	06/26/15 09:36	56-55-3	H2
Benzo(a)pyrene	**<12.1**	ug/kg	12.1	0.24	1	06/25/15 16:27	06/26/15 09:36	50-32-8	H2
Benzo(b)fluoranthene	**<12.1**	ug/kg	12.1	0.42	1	06/25/15 16:27	06/26/15 09:36	205-99-2	H2
Benzo(g,h,i)perylene	**<12.1**	ug/kg	12.1	0.43	1	06/25/15 16:27	06/26/15 09:36	191-24-2	H2
Benzo(k)fluoranthene	**<12.1**	ug/kg	12.1	0.49	1	06/25/15 16:27	06/26/15 09:36	207-08-9	H2
Chrysene	**<12.1**	ug/kg	12.1	0.30	1	06/25/15 16:27	06/26/15 09:36	218-01-9	H2
Dibenz(a,h)anthracene	**<12.1**	ug/kg	12.1	0.52	1	06/25/15 16:27	06/26/15 09:36	53-70-3	H2
Fluoranthene	**<12.1**	ug/kg	12.1	0.26	1	06/25/15 16:27	06/26/15 09:36	206-44-0	H2
Fluorene	**<12.1**	ug/kg	12.1	0.37	1	06/25/15 16:27	06/26/15 09:36	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<12.1**	ug/kg	12.1	0.46	1	06/25/15 16:27	06/26/15 09:36	193-39-5	H2
2-Methylnaphthalene	**<12.1**	ug/kg	12.1	0.49	1	06/25/15 16:27	06/26/15 09:36	91-57-6	H2
Naphthalene	**<12.1**	ug/kg	12.1	0.45	1	06/25/15 16:27	06/26/15 09:36	91-20-3	H2
Phenanthrene	**<12.1**	ug/kg	12.1	0.30	1	06/25/15 16:27	06/26/15 09:36	85-01-8	H2
Pyrene	**<12.1**	ug/kg	12.1	0.29	1	06/25/15 16:27	06/26/15 09:36	129-00-0	H2
Surrogates									
2-Fluorobiphenyl (S)	66	%.	55-125		1	06/25/15 16:27	06/26/15 09:36	321-60-8	
p-Terphenyl-d14 (S)	90	%.	30-150		1	06/25/15 16:27	06/26/15 09:36	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: SW-BS-01 (3.0-3.3')-RE **Lab ID: 10310004011** Collected: 06/09/15 09:30 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**16.1**	%	0.10	0.10	1		06/24/15 16:23		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.8**	ug/kg	11.8	0.43	1	06/25/15 16:27	06/26/15 09:57	83-32-9	H2
Acenaphthylene	**<11.8**	ug/kg	11.8	0.40	1	06/25/15 16:27	06/26/15 09:57	208-96-8	H2
Anthracene	**<11.8**	ug/kg	11.8	0.36	1	06/25/15 16:27	06/26/15 09:57	120-12-7	H2
Benzo(a)anthracene	**<11.8**	ug/kg	11.8	0.22	1	06/25/15 16:27	06/26/15 09:57	56-55-3	H2
Benzo(a)pyrene	**<11.8**	ug/kg	11.8	0.23	1	06/25/15 16:27	06/26/15 09:57	50-32-8	H2
Benzo(b)fluoranthene	**<11.8**	ug/kg	11.8	0.41	1	06/25/15 16:27	06/26/15 09:57	205-99-2	H2
Benzo(g,h,i)perylene	**<11.8**	ug/kg	11.8	0.42	1	06/25/15 16:27	06/26/15 09:57	191-24-2	H2
Benzo(k)fluoranthene	**<11.8**	ug/kg	11.8	0.47	1	06/25/15 16:27	06/26/15 09:57	207-08-9	H2
Chrysene	**<11.8**	ug/kg	11.8	0.29	1	06/25/15 16:27	06/26/15 09:57	218-01-9	H2
Dibenz(a,h)anthracene	**<11.8**	ug/kg	11.8	0.51	1	06/25/15 16:27	06/26/15 09:57	53-70-3	H2
Fluoranthene	**<11.8**	ug/kg	11.8	0.26	1	06/25/15 16:27	06/26/15 09:57	206-44-0	H2
Fluorene	**<11.8**	ug/kg	11.8	0.37	1	06/25/15 16:27	06/26/15 09:57	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<11.8**	ug/kg	11.8	0.45	1	06/25/15 16:27	06/26/15 09:57	193-39-5	H2
2-Methylnaphthalene	**<11.8**	ug/kg	11.8	0.48	1	06/25/15 16:27	06/26/15 09:57	91-57-6	H2
Naphthalene	**<11.8**	ug/kg	11.8	0.44	1	06/25/15 16:27	06/26/15 09:57	91-20-3	H2
Phenanthrene	**<11.8**	ug/kg	11.8	0.29	1	06/25/15 16:27	06/26/15 09:57	85-01-8	H2
Pyrene	**<11.8**	ug/kg	11.8	0.28	1	06/25/15 16:27	06/26/15 09:57	129-00-0	H2
Surrogates									
2-Fluorobiphenyl (S)	75	%.	55-125		1	06/25/15 16:27	06/26/15 09:57	321-60-8	
p-Terphenyl-d14 (S)	87	%.	30-150		1	06/25/15 16:27	06/26/15 09:57	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-01 (1.5-1.8')-RE **Lab ID: 10310004012** Collected: 06/10/15 10:10 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**20.9**	%	0.10	0.10	1		06/24/15 16:23		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.6**	ug/kg	12.6	0.45	1	06/25/15 16:27	06/26/15 10:17	83-32-9	H2
Acenaphthylene	**38.9**	ug/kg	12.6	0.43	1	06/25/15 16:27	06/26/15 10:17	208-96-8	H2
Anthracene	**110**	ug/kg	12.6	0.39	1	06/25/15 16:27	06/26/15 10:17	120-12-7	H2
Benzo(a)anthracene	**124**	ug/kg	12.6	0.23	1	06/25/15 16:27	06/26/15 10:17	56-55-3	H2
Benzo(a)pyrene	**136**	ug/kg	12.6	0.25	1	06/25/15 16:27	06/26/15 10:17	50-32-8	H2
Benzo(b)fluoranthene	**226**	ug/kg	12.6	0.44	1	06/25/15 16:27	06/26/15 10:17	205-99-2	H2
Benzo(g,h,i)perylene	**76.5**	ug/kg	12.6	0.44	1	06/25/15 16:27	06/26/15 10:17	191-24-2	H2
Benzo(k)fluoranthene	**79.5**	ug/kg	12.6	0.50	1	06/25/15 16:27	06/26/15 10:17	207-08-9	H2
Chrysene	**175**	ug/kg	12.6	0.31	1	06/25/15 16:27	06/26/15 10:17	218-01-9	H2
Dibenz(a,h)anthracene	**22.6**	ug/kg	12.6	0.54	1	06/25/15 16:27	06/26/15 10:17	53-70-3	H2
Fluoranthene	**236**	ug/kg	12.6	0.28	1	06/25/15 16:27	06/26/15 10:17	206-44-0	H2
Fluorene	**25.7**	ug/kg	12.6	0.39	1	06/25/15 16:27	06/26/15 10:17	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**73.7**	ug/kg	12.6	0.48	1	06/25/15 16:27	06/26/15 10:17	193-39-5	H2
2-Methylnaphthalene	**17.3**	ug/kg	12.6	0.51	1	06/25/15 16:27	06/26/15 10:17	91-57-6	H2
Naphthalene	**203**	ug/kg	12.6	0.47	1	06/25/15 16:27	06/26/15 10:17	91-20-3	H2
Phenanthrene	**87.9**	ug/kg	12.6	0.31	1	06/25/15 16:27	06/26/15 10:17	85-01-8	H2
Pyrene	**170**	ug/kg	12.6	0.30	1	06/25/15 16:27	06/26/15 10:17	129-00-0	H2
Surrogates									
2-Fluorobiphenyl (S)	69	%.	55-125		1	06/25/15 16:27	06/26/15 10:17	321-60-8	
p-Terphenyl-d14 (S)	81	%.	30-150		1	06/25/15 16:27	06/26/15 10:17	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-04 (1.5-1.8')-RE **Lab ID: 10310004013** Collected: 06/10/15 09:25 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**20.7**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<12.5**	ug/kg	12.5	0.45	1	06/25/15 16:27	06/26/15 10:38	83-32-9	H2
Acenaphthylene	**<12.5**	ug/kg	12.5	0.42	1	06/25/15 16:27	06/26/15 10:38	208-96-8	H2
Anthracene	**<12.5**	ug/kg	12.5	0.38	1	06/25/15 16:27	06/26/15 10:38	120-12-7	H2
Benzo(a)anthracene	**<12.5**	ug/kg	12.5	0.23	1	06/25/15 16:27	06/26/15 10:38	56-55-3	H2
Benzo(a)pyrene	**<12.5**	ug/kg	12.5	0.25	1	06/25/15 16:27	06/26/15 10:38	50-32-8	H2
Benzo(b)fluoranthene	**17.2**	ug/kg	12.5	0.44	1	06/25/15 16:27	06/26/15 10:38	205-99-2	H2
Benzo(g,h,i)perylene	**<12.5**	ug/kg	12.5	0.44	1	06/25/15 16:27	06/26/15 10:38	191-24-2	H2
Benzo(k)fluoranthene	**<12.5**	ug/kg	12.5	0.50	1	06/25/15 16:27	06/26/15 10:38	207-08-9	H2
Chrysene	**<12.5**	ug/kg	12.5	0.31	1	06/25/15 16:27	06/26/15 10:38	218-01-9	H2
Dibenz(a,h)anthracene	**<12.5**	ug/kg	12.5	0.54	1	06/25/15 16:27	06/26/15 10:38	53-70-3	H2
Fluoranthene	**18.5**	ug/kg	12.5	0.27	1	06/25/15 16:27	06/26/15 10:38	206-44-0	H2
Fluorene	**<12.5**	ug/kg	12.5	0.39	1	06/25/15 16:27	06/26/15 10:38	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<12.5**	ug/kg	12.5	0.48	1	06/25/15 16:27	06/26/15 10:38	193-39-5	H2
2-Methylnaphthalene	**<12.5**	ug/kg	12.5	0.51	1	06/25/15 16:27	06/26/15 10:38	91-57-6	H2
Naphthalene	**<12.5**	ug/kg	12.5	0.46	1	06/25/15 16:27	06/26/15 10:38	91-20-3	H2
Phenanthrene	**<12.5**	ug/kg	12.5	0.31	1	06/25/15 16:27	06/26/15 10:38	85-01-8	H2
Pyrene	**17.6**	ug/kg	12.5	0.30	1	06/25/15 16:27	06/26/15 10:38	129-00-0	H2
Surrogates									
2-Fluorobiphenyl (S)	73	%.	55-125		1	06/25/15 16:27	06/26/15 10:38	321-60-8	
p-Terphenyl-d14 (S)	82	%.	30-150		1	06/25/15 16:27	06/26/15 10:38	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-05 (2.7-2.7')-RE **Lab ID: 10310004014** Collected: 06/09/15 14:10 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**11.8**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<11.2**	ug/kg	11.2	0.40	1	06/25/15 16:27	06/26/15 10:59	83-32-9	H2
Acenaphthylene	**<11.2**	ug/kg	11.2	0.38	1	06/25/15 16:27	06/26/15 10:59	208-96-8	H2
Anthracene	**<11.2**	ug/kg	11.2	0.34	1	06/25/15 16:27	06/26/15 10:59	120-12-7	H2
Benzo(a)anthracene	**<11.2**	ug/kg	11.2	0.21	1	06/25/15 16:27	06/26/15 10:59	56-55-3	H2
Benzo(a)pyrene	**<11.2**	ug/kg	11.2	0.22	1	06/25/15 16:27	06/26/15 10:59	50-32-8	H2
Benzo(b)fluoranthene	**<11.2**	ug/kg	11.2	0.39	1	06/25/15 16:27	06/26/15 10:59	205-99-2	H2
Benzo(g,h,i)perylene	**<11.2**	ug/kg	11.2	0.40	1	06/25/15 16:27	06/26/15 10:59	191-24-2	H2
Benzo(k)fluoranthene	**<11.2**	ug/kg	11.2	0.45	1	06/25/15 16:27	06/26/15 10:59	207-08-9	H2
Chrysene	**<11.2**	ug/kg	11.2	0.28	1	06/25/15 16:27	06/26/15 10:59	218-01-9	H2
Dibenz(a,h)anthracene	**<11.2**	ug/kg	11.2	0.48	1	06/25/15 16:27	06/26/15 10:59	53-70-3	H2
Fluoranthene	**<11.2**	ug/kg	11.2	0.25	1	06/25/15 16:27	06/26/15 10:59	206-44-0	H2
Fluorene	**<11.2**	ug/kg	11.2	0.35	1	06/25/15 16:27	06/26/15 10:59	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<11.2**	ug/kg	11.2	0.43	1	06/25/15 16:27	06/26/15 10:59	193-39-5	H2
2-Methylnaphthalene	**<11.2**	ug/kg	11.2	0.46	1	06/25/15 16:27	06/26/15 10:59	91-57-6	H2
Naphthalene	**<11.2**	ug/kg	11.2	0.42	1	06/25/15 16:27	06/26/15 10:59	91-20-3	H2
Phenanthrene	**<11.2**	ug/kg	11.2	0.28	1	06/25/15 16:27	06/26/15 10:59	85-01-8	H2
Pyrene	**<11.2**	ug/kg	11.2	0.27	1	06/25/15 16:27	06/26/15 10:59	129-00-0	H2
Surrogates									
2-Fluorobiphenyl (S)	78	%.	55-125		1	06/25/15 16:27	06/26/15 10:59	321-60-8	
p-Terphenyl-d14 (S)	89	%.	30-150		1	06/25/15 16:27	06/26/15 10:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: S7-BS-06 (3.0-3.3')-RE **Lab ID: 10310004015** Collected: 06/09/15 11:15 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**7.6**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<10.8**	ug/kg	10.8	0.39	1	06/25/15 16:27	06/26/15 11:20	83-32-9	H2
Acenaphthylene	**<10.8**	ug/kg	10.8	0.37	1	06/25/15 16:27	06/26/15 11:20	208-96-8	H2
Anthracene	**<10.8**	ug/kg	10.8	0.33	1	06/25/15 16:27	06/26/15 11:20	120-12-7	H2
Benzo(a)anthracene	**<10.8**	ug/kg	10.8	0.20	1	06/25/15 16:27	06/26/15 11:20	56-55-3	H2
Benzo(a)pyrene	**<10.8**	ug/kg	10.8	0.21	1	06/25/15 16:27	06/26/15 11:20	50-32-8	H2
Benzo(b)fluoranthene	**<10.8**	ug/kg	10.8	0.38	1	06/25/15 16:27	06/26/15 11:20	205-99-2	H2
Benzo(g,h,i)perylene	**<10.8**	ug/kg	10.8	0.38	1	06/25/15 16:27	06/26/15 11:20	191-24-2	H2
Benzo(k)fluoranthene	**<10.8**	ug/kg	10.8	0.43	1	06/25/15 16:27	06/26/15 11:20	207-08-9	H2
Chrysene	**<10.8**	ug/kg	10.8	0.27	1	06/25/15 16:27	06/26/15 11:20	218-01-9	H2
Dibenz(a,h)anthracene	**<10.8**	ug/kg	10.8	0.46	1	06/25/15 16:27	06/26/15 11:20	53-70-3	H2
Fluoranthene	**<10.8**	ug/kg	10.8	0.24	1	06/25/15 16:27	06/26/15 11:20	206-44-0	H2
Fluorene	**15.3**	ug/kg	10.8	0.33	1	06/25/15 16:27	06/26/15 11:20	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<10.8**	ug/kg	10.8	0.42	1	06/25/15 16:27	06/26/15 11:20	193-39-5	H2
2-Methylnaphthalene	**<10.8**	ug/kg	10.8	0.44	1	06/25/15 16:27	06/26/15 11:20	91-57-6	H2
Naphthalene	**94.9**	ug/kg	10.8	0.40	1	06/25/15 16:27	06/26/15 11:20	91-20-3	H2
Phenanthrene	**31.0**	ug/kg	10.8	0.27	1	06/25/15 16:27	06/26/15 11:20	85-01-8	H2
Pyrene	**<10.8**	ug/kg	10.8	0.26	1	06/25/15 16:27	06/26/15 11:20	129-00-0	H2
Surrogates									
2-Fluorobiphenyl (S)	62	%.	55-125		1	06/25/15 16:27	06/26/15 11:20	321-60-8	
p-Terphenyl-d14 (S)	87	%.	30-150		1	06/25/15 16:27	06/26/15 11:20	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Sample: DUP-2-RE **Lab ID: 10310004016** Collected: 06/09/15 00:00 Received: 06/11/15 17:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight	Analytical Method: ASTM D2974								
Percent Moisture	**6.8**	%	0.10	0.10	1		06/24/15 16:24		
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550								
Acenaphthene	**<10.7**	ug/kg	10.7	0.38	1	06/25/15 16:27	06/26/15 12:23	83-32-9	H2
Acenaphthylene	**14.6**	ug/kg	10.7	0.36	1	06/25/15 16:27	06/26/15 12:23	208-96-8	H2
Anthracene	**25.8**	ug/kg	10.7	0.33	1	06/25/15 16:27	06/26/15 12:23	120-12-7	H2
Benzo(a)anthracene	**<10.7**	ug/kg	10.7	0.20	1	06/25/15 16:27	06/26/15 12:23	56-55-3	H2
Benzo(a)pyrene	**<10.7**	ug/kg	10.7	0.21	1	06/25/15 16:27	06/26/15 12:23	50-32-8	H2
Benzo(b)fluoranthene	**<10.7**	ug/kg	10.7	0.37	1	06/25/15 16:27	06/26/15 12:23	205-99-2	H2
Benzo(g,h,i)perylene	**<10.7**	ug/kg	10.7	0.38	1	06/25/15 16:27	06/26/15 12:23	191-24-2	H2
Benzo(k)fluoranthene	**<10.7**	ug/kg	10.7	0.43	1	06/25/15 16:27	06/26/15 12:23	207-08-9	H2
Chrysene	**<10.7**	ug/kg	10.7	0.26	1	06/25/15 16:27	06/26/15 12:23	218-01-9	H2
Dibenz(a,h)anthracene	**<10.7**	ug/kg	10.7	0.46	1	06/25/15 16:27	06/26/15 12:23	53-70-3	H2
Fluoranthene	**63.1**	ug/kg	10.7	0.23	1	06/25/15 16:27	06/26/15 12:23	206-44-0	H2
Fluorene	**28.4**	ug/kg	10.7	0.33	1	06/25/15 16:27	06/26/15 12:23	86-73-7	H2
Indeno(1,2,3-cd)pyrene	**<10.7**	ug/kg	10.7	0.41	1	06/25/15 16:27	06/26/15 12:23	193-39-5	H2
2-Methylnaphthalene	**17.6**	ug/kg	10.7	0.44	1	06/25/15 16:27	06/26/15 12:23	91-57-6	H2
Naphthalene	**139**	ug/kg	10.7	0.40	1	06/25/15 16:27	06/26/15 12:23	91-20-3	H2
Phenanthrene	**75.7**	ug/kg	10.7	0.27	1	06/25/15 16:27	06/26/15 12:23	85-01-8	H2
Pyrene	**41.1**	ug/kg	10.7	0.26	1	06/25/15 16:27	06/26/15 12:23	129-00-0	H2
Surrogates									
2-Fluorobiphenyl (S)	76	%.	55-125		1	06/25/15 16:27	06/26/15 12:23	321-60-8	
p-Terphenyl-d14 (S)	90	%.	30-150		1	06/25/15 16:27	06/26/15 12:23	1718-51-0	

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QUALITY CONTROL DATA

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

QC Batch: MPRP/55496 | Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10310004001, 10310004002, 10310004003, 10310004004, 10310004005, 10310004006, 10310004007, 10310004008, 10310004009

SAMPLE DUPLICATE: 2004719

Parameter	Units	10310004007 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	11.8	11.9	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

QC Batch: OEXT/29696 — Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3550 — Analysis Description: 8270D Solid PAH by SIM MSSV
Associated Lab Samples: 10310004001, 10310004002, 10310004003, 10310004006, 10310004007, 10310004008, 10310004009

METHOD BLANK: 2002094 — Matrix: Solid
Associated Lab Samples: 10310004001, 10310004002, 10310004003, 10310004006, 10310004007, 10310004008, 10310004009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/kg	<10.0	10.0	06/25/15 08:57	
Acenaphthene	ug/kg	<10.0	10.0	06/25/15 08:57	
Acenaphthylene	ug/kg	<10.0	10.0	06/25/15 08:57	
Anthracene	ug/kg	<10.0	10.0	06/25/15 08:57	
Benzo(a)anthracene	ug/kg	<10.0	10.0	06/25/15 08:57	
Benzo(a)pyrene	ug/kg	<10.0	10.0	06/25/15 08:57	
Benzo(b)fluoranthene	ug/kg	<10.0	10.0	06/25/15 08:57	
Benzo(g,h,i)perylene	ug/kg	<10.0	10.0	06/25/15 08:57	
Benzo(k)fluoranthene	ug/kg	<10.0	10.0	06/25/15 08:57	
Chrysene	ug/kg	<10.0	10.0	06/25/15 08:57	
Dibenz(a,h)anthracene	ug/kg	<10.0	10.0	06/25/15 08:57	
Fluoranthene	ug/kg	<10.0	10.0	06/25/15 08:57	
Fluorene	ug/kg	<10.0	10.0	06/25/15 08:57	
Indeno(1,2,3-cd)pyrene	ug/kg	<10.0	10.0	06/25/15 08:57	
Naphthalene	ug/kg	<10.0	10.0	06/25/15 08:57	
Phenanthrene	ug/kg	<10.0	10.0	06/25/15 08:57	
Pyrene	ug/kg	<10.0	10.0	06/25/15 08:57	
2-Fluorobiphenyl (S)	%.	58	55-125	06/25/15 08:57	
p-Terphenyl-d14 (S)	%.	84	30-150	06/25/15 08:57	

LABORATORY CONTROL SAMPLE: 2002095

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/kg	33.3	24.3	73	50-125	
Acenaphthene	ug/kg	33.3	23.4	70	53-125	
Acenaphthylene	ug/kg	33.3	23.3	70	53-125	
Anthracene	ug/kg	33.3	27.4	82	61-125	
Benzo(a)anthracene	ug/kg	33.3	27.7	83	62-125	
Benzo(a)pyrene	ug/kg	33.3	29.3	88	64-125	
Benzo(b)fluoranthene	ug/kg	33.3	28.8	87	66-125	
Benzo(g,h,i)perylene	ug/kg	33.3	28.6	86	59-125	
Benzo(k)fluoranthene	ug/kg	33.3	30.3	91	61-125	
Chrysene	ug/kg	33.3	26.1	78	63-125	
Dibenz(a,h)anthracene	ug/kg	33.3	30.2	90	59-125	
Fluoranthene	ug/kg	33.3	29.0	87	64-125	
Fluorene	ug/kg	33.3	26.2	78	57-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	28.9	87	58-125	
Naphthalene	ug/kg	33.3	22.6	68	52-125	
Phenanthrene	ug/kg	33.3	26.0	78	60-125	
Pyrene	ug/kg	33.3	28.0	84	63-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

LABORATORY CONTROL SAMPLE: 2002095

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			63	55-125	
p-Terphenyl-d14 (S)	%.			80	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2002096 2002097

Parameter	Units	10310004007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/kg	<11.3	37.8	37.6	19.6	28.1	51	73	41-125	36	30	R1
Acenaphthene	ug/kg	<11.3	37.8	37.6	22.8	26.5	60	70	39-125	15	30	
Acenaphthylene	ug/kg	<11.3	37.8	37.6	22.7	27.1	60	72	30-150	17	30	
Anthracene	ug/kg	<11.3	37.8	37.6	33.9	35.5	90	94	30-150	5	30	
Benzo(a)anthracene	ug/kg	<11.3	37.8	37.6	28.3	29.3	75	78	30-150	3	30	
Benzo(a)pyrene	ug/kg	<11.3	37.8	37.6	29.4	30.3	76	79	30-150	3	30	
Benzo(b)fluoranthene	ug/kg	<11.3	37.8	37.6	29.1	34.7	74	89	30-150	17	30	
Benzo(g,h,i)perylene	ug/kg	<11.3	37.8	37.6	27.7	28.7	72	75	30-150	4	30	
Benzo(k)fluoranthene	ug/kg	<11.3	37.8	37.6	27.1	27.4	71	72	30-150	1	30	
Chrysene	ug/kg	<11.3	37.8	37.6	28.1	29.3	72	76	30-150	4	30	
Dibenz(a,h)anthracene	ug/kg	<11.3	37.8	37.6	29.1	30.2	77	80	30-150	4	30	
Fluoranthene	ug/kg	<11.3	37.8	37.6	31.5	32.4	80	83	30-150	3	30	
Fluorene	ug/kg	<11.3	37.8	37.6	28.2	29.7	75	79	30-146	5	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<11.3	37.8	37.6	28.4	29.5	74	77	30-150	4	30	
Naphthalene	ug/kg	<11.3	37.8	37.6	18.2	26.0	48	69	30-131	36	30	R1
Phenanthrene	ug/kg	<11.3	37.8	37.6	28.8	29.4	74	75	30-150	2	30	
Pyrene	ug/kg	<11.3	37.8	37.6	31.0	31.4	79	81	30-150	1	30	
2-Fluorobiphenyl (S)	%.						43	61	55-125			S0
p-Terphenyl-d14 (S)	%.						67	72	30-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

QC Batch: OEXT/29769 — Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3550 — Analysis Description: 8270D Solid PAH by SIM MSSV
Associated Lab Samples: 10310004004, 10310004005, 10310004010, 10310004011, 10310004012, 10310004013, 10310004014, 10310004015, 10310004016

METHOD BLANK: 2006170 — Matrix: Solid
Associated Lab Samples: 10310004004, 10310004005, 10310004010, 10310004011, 10310004012, 10310004013, 10310004014, 10310004015, 10310004016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/kg	<10.0	10.0	06/26/15 08:13	
Acenaphthene	ug/kg	<10.0	10.0	06/26/15 08:13	
Acenaphthylene	ug/kg	<10.0	10.0	06/26/15 08:13	
Anthracene	ug/kg	<10.0	10.0	06/26/15 08:13	
Benzo(a)anthracene	ug/kg	<10.0	10.0	06/26/15 08:13	
Benzo(a)pyrene	ug/kg	<10.0	10.0	06/26/15 08:13	
Benzo(b)fluoranthene	ug/kg	<10.0	10.0	06/26/15 08:13	
Benzo(g,h,i)perylene	ug/kg	<10.0	10.0	06/26/15 08:13	
Benzo(k)fluoranthene	ug/kg	<10.0	10.0	06/26/15 08:13	
Chrysene	ug/kg	<10.0	10.0	06/26/15 08:13	
Dibenz(a,h)anthracene	ug/kg	<10.0	10.0	06/26/15 08:13	
Fluoranthene	ug/kg	<10.0	10.0	06/26/15 08:13	
Fluorene	ug/kg	<10.0	10.0	06/26/15 08:13	
Indeno(1,2,3-cd)pyrene	ug/kg	<10.0	10.0	06/26/15 08:13	
Naphthalene	ug/kg	<10.0	10.0	06/26/15 08:13	
Phenanthrene	ug/kg	<10.0	10.0	06/26/15 08:13	
Pyrene	ug/kg	<10.0	10.0	06/26/15 08:13	
2-Fluorobiphenyl (S)	%.	78	55-125	06/26/15 08:13	
p-Terphenyl-d14 (S)	%.	90	30-150	06/26/15 08:13	

LABORATORY CONTROL SAMPLE: 2006171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/kg	33.3	27.1	81	50-125	
Acenaphthene	ug/kg	33.3	27.8	84	53-125	
Acenaphthylene	ug/kg	33.3	27.0	81	53-125	
Anthracene	ug/kg	33.3	30.4	91	61-125	
Benzo(a)anthracene	ug/kg	33.3	29.9	90	62-125	
Benzo(a)pyrene	ug/kg	33.3	32.0	96	64-125	
Benzo(b)fluoranthene	ug/kg	33.3	33.9	102	66-125	
Benzo(g,h,i)perylene	ug/kg	33.3	32.2	97	59-125	
Benzo(k)fluoranthene	ug/kg	33.3	29.8	90	61-125	
Chrysene	ug/kg	33.3	26.0	78	63-125	
Dibenz(a,h)anthracene	ug/kg	33.3	32.8	98	59-125	
Fluoranthene	ug/kg	33.3	31.1	93	64-125	
Fluorene	ug/kg	33.3	30.3	91	57-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	31.7	95	58-125	
Naphthalene	ug/kg	33.3	25.8	77	52-125	

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QUALITY CONTROL DATA

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

LABORATORY CONTROL SAMPLE: 2006171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/kg	33.3	27.8	84	60-125	
Pyrene	ug/kg	33.3	30.5	92	63-125	
2-Fluorobiphenyl (S)	%.			69	55-125	
p-Terphenyl-d14 (S)	%.			89	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2007656 2007657

Parameter	Units	10310004014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2-Methylnaphthalene	ug/kg	<11.2	37.6	37.6	29.1	30.5	76	80	41-125	5	30	
Acenaphthene	ug/kg	<11.2	37.6	37.6	29.9	31.2	79	83	39-125	4	30	
Acenaphthylene	ug/kg	<11.2	37.6	37.6	29.6	30.8	79	82	30-150	4	30	
Anthracene	ug/kg	<11.2	37.6	37.6	34.8	34.1	92	91	30-150	2	30	
Benzo(a)anthracene	ug/kg	<11.2	37.6	37.6	34.7	32.6	92	86	30-150	6	30	
Benzo(a)pyrene	ug/kg	<11.2	37.6	37.6	37.3	33.6	97	87	30-150	10	30	
Benzo(b)fluoranthene	ug/kg	<11.2	37.6	37.6	39.8	37.6	101	95	30-150	6	30	
Benzo(g,h,i)perylene	ug/kg	<11.2	37.6	37.6	36.7	33.8	95	87	30-150	8	30	
Benzo(k)fluoranthene	ug/kg	<11.2	37.6	37.6	32.4	31.2	85	81	30-150	4	30	
Chrysene	ug/kg	<11.2	37.6	37.6	29.8	28.4	76	72	30-150	5	30	
Dibenz(a,h)anthracene	ug/kg	<11.2	37.6	37.6	36.4	30.8	97	82	30-150	17	30	
Fluoranthene	ug/kg	<11.2	37.6	37.6	36.7	36.7	93	93	30-150	0	30	
Fluorene	ug/kg	<11.2	37.6	37.6	32.9	34.1	87	90	30-146	4	30	
Indeno(1,2,3-cd)pyrene	ug/kg	<11.2	37.6	37.6	36.6	31.3	97	83	30-150	15	30	
Naphthalene	ug/kg	<11.2	37.6	37.6	27.3	28.8	73	76	30-131	5	30	
Phenanthrene	ug/kg	<11.2	37.6	37.6	31.7	31.8	82	82	30-150	0	30	
Pyrene	ug/kg	<11.2	37.6	37.6	35.7	34.9	91	89	30-150	3	30	
2-Fluorobiphenyl (S)	%.						81	78	55-125			
p-Terphenyl-d14 (S)	%.						89	87	30-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1M	Sample was re-extracted out of hold to confirm data, data was confirmed.
2M	Sample was re-extracted out of hold to confirm data, data was not confirmed.
H2	Extraction or preparation was conducted outside of the recognized method holding time.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23/69-0B77.00 2015 010 REV 2
Pace Project No.: 10310004

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10310004001	**NW-BS-01 (3.0-3.3')**	ASTM D2974	MPRP/55496		
10310004002	**SW-BS-01 (3.0-3.3')**	ASTM D2974	MPRP/55496		
10310004003	**S7-BS-01 (1.5-1.8')**	ASTM D2974	MPRP/55496		
10310004004	**S7-BS-02 (1.5-1.8')**	ASTM D2974	MPRP/55496		
10310004005	**S7-BS-03 (1.5-1.8')**	ASTM D2974	MPRP/55496		
10310004006	**S7-BS-04 (1.5-1.8')**	ASTM D2974	MPRP/55496		
10310004007	**S7-BS-05 (2.7-2.7')**	ASTM D2974	MPRP/55496		
10310004008	**S7-BS-06 (3.0-3.3')**	ASTM D2974	MPRP/55496		
10310004009	**DUP-2**	ASTM D2974	MPRP/55496		
10310004010	**NW-BS-01 (3.0-3.3')-RE**	ASTM D2974	MPRP/56160		
10310004011	**SW-BS-01 (3.0-3.3')-RE**	ASTM D2974	MPRP/56160		
10310004012	**S7-BS-01 (1.5-1.8')-RE**	ASTM D2974	MPRP/56160		
10310004013	**S7-BS-04 (1.5-1.8')-RE**	ASTM D2974	MPRP/56160		
10310004014	**S7-BS-05 (2.7-2.7')-RE**	ASTM D2974	MPRP/56160		
10310004015	**S7-BS-06 (3.0-3.3')-RE**	ASTM D2974	MPRP/56160		
10310004016	**DUP-2-RE**	ASTM D2974	MPRP/56160		
10310004001	**NW-BS-01 (3.0-3.3')**	EPA 3550	OEXT/29696	EPA 8270D by SIM	MSSV/12621
10310004002	**SW-BS-01 (3.0-3.3')**	EPA 3550	OEXT/29696	EPA 8270D by SIM	MSSV/12621
10310004003	**S7-BS-01 (1.5-1.8')**	EPA 3550	OEXT/29696	EPA 8270D by SIM	MSSV/12621
10310004004	**S7-BS-02 (1.5-1.8')**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004005	**S7-BS-03 (1.5-1.8')**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004006	**S7-BS-04 (1.5-1.8')**	EPA 3550	OEXT/29696	EPA 8270D by SIM	MSSV/12621
10310004007	**S7-BS-05 (2.7-2.7')**	EPA 3550	OEXT/29696	EPA 8270D by SIM	MSSV/12621
10310004008	**S7-BS-06 (3.0-3.3')**	EPA 3550	OEXT/29696	EPA 8270D by SIM	MSSV/12621
10310004009	**DUP-2**	EPA 3550	OEXT/29696	EPA 8270D by SIM	MSSV/12621
10310004010	**NW-BS-01 (3.0-3.3')-RE**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004011	**SW-BS-01 (3.0-3.3')-RE**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004012	**S7-BS-01 (1.5-1.8')-RE**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004013	**S7-BS-04 (1.5-1.8')-RE**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004014	**S7-BS-05 (2.7-2.7')-RE**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004015	**S7-BS-06 (3.0-3.3')-RE**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630
10310004016	**DUP-2-RE**	EPA 3550	OEXT/29769	EPA 8270D by SIM	MSSV/12630

WJQ 10004

Chain of Custody

BARR

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

COC 1 of 1

Project Number: 23690877.00 2015 010

Project Name: SLRIOT LTMM

Sample Origination State: MN (use two letter postal state abbreviation)

COC Number: № 41454

Project Manager: GMP

Project QC Contact: AAN / JET

Sampled by: BJZ 2

Laboratory: Pace

	Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Matrix:	Type: Grab	Type: Comp.	Type: QC	VOCs (HCl) #1	SVOCs (unpreserved) #2	Dissolved Metals (HNO_3)	Total Metals (HNO_3)	General (unpreserved) #3	Diesel Range Organics (HCl)	Nutrients (H_2SO_4) #4			VOCs (tared MeOH) #1	GRO, BTEX (tared MeOH) #1	DRO (tared unpreserved)	Metals (unpreserved)	SVOCs (unpreserved) #2	% Solids (plastic vial, unpres.)	SLRIOT PAH 17		Total Number Of Containers	
1.	NW-BS-01	3.0	3.3	Ft	6-9-15	1000		X		X																	X	X		2	001
2.	SW-BS-01	3.0	3.3	Ft	6-9-15	0930		X		X																	X	X		2	002
3.	S7-BS-01	1.5	1.8	Ft	6-10-15	1010		X		X																	X	X		2	003
4.	S7-BS-02	1.5	1.8	Ft	6-11-15	0920		X		X																	X	X		2	004
5.	S7-BS-03	1.5	1.8	Ft	6-11-15	0830		X		X																	X	X		2	005
6.	S7-BS-04	1.5	1.8	Ft	6-10-15	0925		X		X																	X	X		2	006
7.	S7-BS-05	2.7	2.7	Ft	6-9-15	1410		X		X																	X	X		4	Plus MS/MSD 007
8.	S7-BS-06	3.0	3.3	Ft	6-9-15	1115		X		X																	X	X		2	008
9.	DUP-2	—	—	—	6-9-15	—		X		X																	X	X		2	009
10.																															

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	Y N	6-11-15	1125	[signature]	6/11/15	1125
[signature]	Y N	6/11/15	1530	[signature]	6/11/15	1530

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number: [signature] 6/11/15 1750 PACE 6/4/15 1750

T=5.5°C

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

HRL GISTFORMS\Chain Of Custody Form 2009 RLG Rev. 09\01\09

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Barr

Project #: WO#: 10310004

10310004

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ SpeeDee ☐ Other:_____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:_____ **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☑ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 5.5 **Cooler Temp Corrected (°C):** 5.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** 0.2 **Date and Initials of Person Examining Contents:** LM 4/11/15

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed:_____ Lot # of added preservative:_____
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):_____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____ **Date:** 5/6/15/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

June 25, 2015

Andrea Nord
Barr Engineering
4700 West 77th Street
Minneapolis, MN 55435

RE: Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Dear Andrea Nord:
Enclosed are the analytical results for sample(s) received by the laboratory on June 16, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Chris Bremer
chris.bremer@pacelabs.com
Project Manager

Enclosures

cc: Data Distribution

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10310587001	**S7-PW-03**	Water	06/15/15 08:50	06/16/15 18:04
10310587002	**S7-PW-10**	Water	06/15/15 09:00	06/16/15 18:04
10310587003	**SB-PW-10**	Water	06/15/15 09:30	06/16/15 18:04

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SAMPLE ANALYTE COUNT

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10310587001	**S7-PW-03**	EPA 8270D by SIM	AS1	19
10310587002	**S7-PW-10**	EPA 8270D by SIM	AS1	19
10310587003	**SB-PW-10**	EPA 8270D by SIM	AS1	19

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Sample: S7-PW-03 **Lab ID: 10310587001** Collected: 06/15/15 08:50 Received: 06/16/15 18:04 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM		Preparation Method: EPA 3510						
Acenaphthene	**0.074**	ug/L	0.040	0.0032	1	06/17/15 22:48	06/22/15 12:34	83-32-9	
Acenaphthylene	**<0.040**	ug/L	0.040	0.0040	1	06/17/15 22:48	06/22/15 12:34	208-96-8	
Anthracene	**<0.040**	ug/L	0.040	0.0044	1	06/17/15 22:48	06/22/15 12:34	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/17/15 22:48	06/22/15 12:34	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/17/15 22:48	06/22/15 12:34	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0076	1	06/17/15 22:48	06/22/15 12:34	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/17/15 22:48	06/22/15 12:34	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/17/15 22:48	06/22/15 12:34	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/17/15 22:48	06/22/15 12:34	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0096	1	06/17/15 22:48	06/22/15 12:34	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/17/15 22:48	06/22/15 12:34	206-44-0	
Fluorene	**0.042**	ug/L	0.040	0.0056	1	06/17/15 22:48	06/22/15 12:34	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/17/15 22:48	06/22/15 12:34	193-39-5	
2-Methylnaphthalene	**<0.040**	ug/L	0.040	0.0042	1	06/17/15 22:48	06/22/15 12:34	91-57-6	
Naphthalene	**1.4**	ug/L	0.040	0.0091	1	06/17/15 22:48	06/22/15 12:34	91-20-3	
Phenanthrene	**0.046**	ug/L	0.040	0.012	1	06/17/15 22:48	06/22/15 12:34	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0064	1	06/17/15 22:48	06/22/15 12:34	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	78	%.	52-125		1	06/17/15 22:48	06/22/15 12:34	321-60-8	
p-Terphenyl-d14 (S)	87	%.	62-125		1	06/17/15 22:48	06/22/15 12:34	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Sample: S7-PW-10 **Lab ID: 10310587002** Collected: 06/15/15 09:00 Received: 06/16/15 18:04 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**26.1**	ug/L	0.80	0.064	20	06/17/15 22:48	06/22/15 14:58	83-32-9	
Acenaphthylene	**106**	ug/L	0.80	0.079	20	06/17/15 22:48	06/22/15 14:58	208-96-8	
Anthracene	**0.89**	ug/L	0.80	0.088	20	06/17/15 22:48	06/22/15 14:58	120-12-7	
Benzo(a)anthracene	**<0.80**	ug/L	0.80	0.059	20	06/17/15 22:48	06/22/15 14:58	56-55-3	
Benzo(a)pyrene	**<0.80**	ug/L	0.80	0.060	20	06/17/15 22:48	06/22/15 14:58	50-32-8	
Benzo(b)fluoranthene	**<0.80**	ug/L	0.80	0.15	20	06/17/15 22:48	06/22/15 14:58	205-99-2	
Benzo(g,h,i)perylene	**<0.80**	ug/L	0.80	0.11	20	06/17/15 22:48	06/22/15 14:58	191-24-2	
Benzo(k)fluoranthene	**<0.80**	ug/L	0.80	0.076	20	06/17/15 22:48	06/22/15 14:58	207-08-9	
Chrysene	**<0.80**	ug/L	0.80	0.11	20	06/17/15 22:48	06/22/15 14:58	218-01-9	
Dibenz(a,h)anthracene	**<0.80**	ug/L	0.80	0.19	20	06/17/15 22:48	06/22/15 14:58	53-70-3	
Fluoranthene	**<0.80**	ug/L	0.80	0.11	20	06/17/15 22:48	06/22/15 14:58	206-44-0	
Fluorene	**39.6**	ug/L	0.80	0.11	20	06/17/15 22:48	06/22/15 14:58	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.80**	ug/L	0.80	0.11	20	06/17/15 22:48	06/22/15 14:58	193-39-5	
2-Methylnaphthalene	**164**	ug/L	0.80	0.083	20	06/17/15 22:48	06/22/15 14:58	91-57-6	
Naphthalene	**4540**	ug/L	80.0	18.2	2000	06/17/15 22:48	06/22/15 15:46	91-20-3	
Phenanthrene	**3.7**	ug/L	0.80	0.25	20	06/17/15 22:48	06/22/15 14:58	85-01-8	
Pyrene	**<0.80**	ug/L	0.80	0.13	20	06/17/15 22:48	06/22/15 14:58	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	75	%.	52-125		20	06/17/15 22:48	06/22/15 14:58	321-60-8	D4
p-Terphenyl-d14 (S)	79	%.	62-125		20	06/17/15 22:48	06/22/15 14:58	1718-51-0	

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ANALYTICAL RESULTS

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Sample: SB-PW-10 **Lab ID: 10310587003** Collected: 06/15/15 09:30 Received: 06/16/15 18:04 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510								
Acenaphthene	**3.1**	ug/L	0.040	0.0032	1	06/17/15 22:48	06/22/15 13:16	83-32-9	
Acenaphthylene	**0.24**	ug/L	0.040	0.0040	1	06/17/15 22:48	06/22/15 13:16	208-96-8	
Anthracene	**0.042**	ug/L	0.040	0.0044	1	06/17/15 22:48	06/22/15 13:16	120-12-7	
Benzo(a)anthracene	**<0.040**	ug/L	0.040	0.0030	1	06/17/15 22:48	06/22/15 13:16	56-55-3	
Benzo(a)pyrene	**<0.040**	ug/L	0.040	0.0030	1	06/17/15 22:48	06/22/15 13:16	50-32-8	
Benzo(b)fluoranthene	**<0.040**	ug/L	0.040	0.0076	1	06/17/15 22:48	06/22/15 13:16	205-99-2	
Benzo(g,h,i)perylene	**<0.040**	ug/L	0.040	0.0054	1	06/17/15 22:48	06/22/15 13:16	191-24-2	
Benzo(k)fluoranthene	**<0.040**	ug/L	0.040	0.0038	1	06/17/15 22:48	06/22/15 13:16	207-08-9	
Chrysene	**<0.040**	ug/L	0.040	0.0053	1	06/17/15 22:48	06/22/15 13:16	218-01-9	
Dibenz(a,h)anthracene	**<0.040**	ug/L	0.040	0.0096	1	06/17/15 22:48	06/22/15 13:16	53-70-3	
Fluoranthene	**<0.040**	ug/L	0.040	0.0057	1	06/17/15 22:48	06/22/15 13:16	206-44-0	
Fluorene	**0.98**	ug/L	0.040	0.0056	1	06/17/15 22:48	06/22/15 13:16	86-73-7	
Indeno(1,2,3-cd)pyrene	**<0.040**	ug/L	0.040	0.0056	1	06/17/15 22:48	06/22/15 13:16	193-39-5	
2-Methylnaphthalene	**0.047**	ug/L	0.040	0.0042	1	06/17/15 22:48	06/22/15 13:16	91-57-6	
Naphthalene	**0.72**	ug/L	0.040	0.0091	1	06/17/15 22:48	06/22/15 13:16	91-20-3	
Phenanthrene	**0.32**	ug/L	0.040	0.012	1	06/17/15 22:48	06/22/15 13:16	85-01-8	
Pyrene	**<0.040**	ug/L	0.040	0.0064	1	06/17/15 22:48	06/22/15 13:16	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	78	%.	52-125		1	06/17/15 22:48	06/22/15 13:16	321-60-8	
p-Terphenyl-d14 (S)	84	%.	62-125		1	06/17/15 22:48	06/22/15 13:16	1718-51-0	

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QUALITY CONTROL DATA

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

QC Batch: OEXT/29635 — Analysis Method: EPA 8270D by SIM
QC Batch Method: EPA 3510 — Analysis Description: 8270D PAH by SIM MSSV
Associated Lab Samples: 10310587001, 10310587002, 10310587003

METHOD BLANK: 1997068 — Matrix: Water
Associated Lab Samples: 10310587001, 10310587002, 10310587003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	<0.040	0.040	06/22/15 07:01	
Acenaphthene	ug/L	<0.040	0.040	06/22/15 07:01	
Acenaphthylene	ug/L	<0.040	0.040	06/22/15 07:01	
Anthracene	ug/L	<0.040	0.040	06/22/15 07:01	
Benzo(a)anthracene	ug/L	<0.040	0.040	06/22/15 07:01	
Benzo(a)pyrene	ug/L	<0.040	0.040	06/22/15 07:01	
Benzo(b)fluoranthene	ug/L	<0.040	0.040	06/22/15 07:01	
Benzo(g,h,i)perylene	ug/L	<0.040	0.040	06/22/15 07:01	
Benzo(k)fluoranthene	ug/L	<0.040	0.040	06/22/15 07:01	
Chrysene	ug/L	<0.040	0.040	06/22/15 07:01	
Dibenz(a,h)anthracene	ug/L	<0.040	0.040	06/22/15 07:01	
Fluoranthene	ug/L	<0.040	0.040	06/22/15 07:01	
Fluorene	ug/L	<0.040	0.040	06/22/15 07:01	
Indeno(1,2,3-cd)pyrene	ug/L	<0.040	0.040	06/22/15 07:01	
Naphthalene	ug/L	<0.040	0.040	06/22/15 07:01	
Phenanthrene	ug/L	<0.040	0.040	06/22/15 07:01	
Pyrene	ug/L	<0.040	0.040	06/22/15 07:01	
2-Fluorobiphenyl (S)	%.	84	52-125	06/22/15 07:01	
p-Terphenyl-d14 (S)	%.	88	62-125	06/22/15 07:01	

LABORATORY CONTROL SAMPLE & LCSD: 1997069 1997070

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Methylnaphthalene	ug/L	1	0.79	0.83	79	83	37-125	4	20	
Acenaphthene	ug/L	1	0.79	0.80	79	80	44-125	2	20	
Acenaphthylene	ug/L	1	0.78	0.79	78	79	44-125	1	20	
Anthracene	ug/L	1	0.90	0.91	90	91	55-125	1	20	
Benzo(a)anthracene	ug/L	1	0.85	0.87	85	87	56-125	2	20	
Benzo(a)pyrene	ug/L	1	0.94	0.93	94	93	61-125	1	20	
Benzo(b)fluoranthene	ug/L	1	0.99	1.0	99	100	60-125	1	20	
Benzo(g,h,i)perylene	ug/L	1	0.91	0.87	91	87	53-125	5	20	
Benzo(k)fluoranthene	ug/L	1	0.82	0.86	82	86	59-125	5	20	
Chrysene	ug/L	1	0.78	0.80	78	80	61-125	3	20	
Dibenz(a,h)anthracene	ug/L	1	0.87	0.81	87	81	51-125	7	20	
Fluoranthene	ug/L	1	0.89	0.90	89	90	64-125	1	20	
Fluorene	ug/L	1	0.85	0.88	85	88	52-125	2	20	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.92	0.91	92	91	54-125	1	20	
Naphthalene	ug/L	1	0.75	0.78	75	78	35-125	4	20	
Phenanthrene	ug/L	1	0.82	0.84	82	84	55-125	2	20	
Pyrene	ug/L	1	0.89	0.91	89	91	59-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

LABORATORY CONTROL SAMPLE & LCSD: 1997069 1997070

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
2-Fluorobiphenyl (S)	%.				74	77	52-125			
p-Terphenyl-d14 (S)	%.				87	87	62-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSSV/12592

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D4 Sample was diluted due to the presence of high levels of target analytes.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 23/69-0B77.00 2015 010 SLRIDT
Pace Project No.: 10310587

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10310587001	**S7-PW-03**	EPA 3510	OEXT/29635	EPA 8270D by SIM	MSSV/12592
10310587002	**S7-PW-10**	EPA 3510	OEXT/29635	EPA 8270D by SIM	MSSV/12592
10310587003	**SB-PW-10**	EPA 3510	OEXT/29635	EPA 8270D by SIM	MSSV/12592

10510/01

Chain of Custody

BARR

4700 West 77th Street
Minneapolis, MN 55435-4803
(952) 832-2600

COC 1 of 1

Project Number: 23690877.00 2015 010

Project Name: SLRIOT LTMM

Sample Origination State MN (use two letter postal state abbreviation)

COC Number: № 41463

Project Manager: GMP

Project QC Contact: AAN/JET

Sampled by: SJH2/BSC2

Laboratory: Pace

Location	Start Depth	Stop Depth	Depth Unit (m./ft. or in.)	Collection Date (mm/dd/yyyy)	Collection Time (hh:mm)	Matrix: Water	Matrix: Soil	Type: Grab	Type: Comp.	Type: QC	Water: VOCs (HCl) #1	Water: SVOCs (unpreserved) #2	Water: Dissolved Metals (HNO_3)	Water: Total Metals (HNO_3)	Water: General (unpreserved) #3	Water: Diesel Range Organics (HCl)	Water: Nutrients (H_2SO_4) #4	Water: SLRIOT 17 PAHs	Soil: VOCs (tared MeOH) #1	Soil: GRO, BTEX (tared MeOH) #1	Soil: DRO (tared unpreserved)	Soil: Metals (unpreserved)	Soil: SVOCs (unpreserved) #2	Soil: % Solids (plastic vial, unpres.)	Total Number Of Containers	
1. SJ-PW-03	—	—	—	6/15/15	0850	X		X										X							2	001
2. SJ-PW-10	—	—	—	6/15/15	0900	X		X										X							2	002
3. SB-PW-10	—	—	—	6/15/15	0930	X		X										X							2	003
4.																										
5.																										
6.																										
7.																										
8.																										
9.																										
10.																										

Common Parameter/Container - Preservation Key

#1 - Volatile Organics = BTEX, GRO, TPH, 8260 Full List
#2 - Semivolatile Organics = PAHs, PCP, Dioxins, 8270 Full List, Herbicide/Pesticide/PCBs
#3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate
#4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

Relinquished By:	On Ice?	Date	Time	Received by:	Date	Time
[signature]	(Y) N	6/15/15	1040	[signature]	6/15/15	1040
[signature]	(Y) N	6/16/15	1535	[signature]	6/16/15	1575

Samples Shipped VIA: ☐ Air Freight ☐ Federal Express ☐ Sampler ☐ Other: _____

Air Bill Number: [illegible] 6/19/15 1004 T=0.5°C

Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator

H:\RLG\STDFORMS\Chain Of Custody Form 2009 RLG Rev. 09\01\09

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: **F-MN-L-213-rev.13**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Barr

Project #: WO#: 10310587

10310587

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ SpeeDee ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☐ B88A9130516413 ☑ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 0.3 **Cooler Temp Corrected (°C):** 0.5 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** KAC 06/16/15

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☐ Yes	☑ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☑ No	☐ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: CB **Date:** 6/17/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical	Document Name: **Sample Container Count**	Document Revised: 30Jul2014 Page 1 of 1
	Document No.: F-MN-C-090-Rev.04	Issuing Authority: Pace Minnesota Quality Office

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Client: _____ **Project #:** _____ **COC ID:** _____ **COC Page:** ____ of ____

Sample Line Item	BP1U	BP2U	BP3U	BP3S	BP3N	AG1U	AG1H	AG3S	AGIT	JGFU	JGCU	BJFU	WPDU	VG9M	VG9H	GN	SP5T	DWC
☐	Check the box to the left to indicate that the container(s) received for line items _____ - _____ are identical to the container(s) documented for line item 1 for this CoC.																	
1						2												
2						2												
3						2												
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Comments: _____

Container Codes:

AG1H	1 L amber glass HCL	BP1N	1 L plastic HNO3	DG9C	40 mL vial with ascorbic acid	VG9B	40 mL clear VOA vial Na Bisulfate
AG1S	1 L amber glass H2SO4	BP1S	1 L plastic H2SO4	DG9T	40 mL amber VOA vial Na Thio	VG9H	40 mL clear VOA vial HCl
AG1T	1 L amber glass Na Thiosulfate	BP1U	1 L plastic unpreserved	DG9U	40 mL amber VOA vial	VG9M	40 mL clear VOA vial MeOH
AG1U	1 L amber glass unpreserved	BP1Z	1 L plastic NaOH, Zn Ac	DWC	Dry weight container	VG9S	40 mL clear VOA vial H2SO4
AG2H	500 mL amber glass HCl	BP2A	500 mL plastic NaOH	EZH	25 g Encore	VG9T	40 mL clear VOA vial Na Thiosulfate
AG2N	500 mL amber glass HNO3	BP2N	500 mL plastic HNO3	GJ	1 Gallon jug	VG9U	40 mL clear VOA vial
AG2S	500 mL amber glass H2SO4	BP2S	500 mL plastic H2SO4	GN	General unpreserved	VG9W	40 mL clear VOA vial DI Water/stir bar
AG2U	500 mL amber unpreserved	BP2U	500 mL plastic unpreserved	GNN	General preserved with Nitric Acid	VSG	Headspace septa vial and HCl
AG3H	250 mL amber glass HCl	BP2Z	500 mL NaOH, Zn Ac	GNS	General with H_2SO_4	WGFX	4 oz wide jar and wipe Hexane
AG3S	250 mL amber glass H2SO4	BP3A	250 mL plastic NaOH, Asc Acid	JGCU	8 oz clear wide jar	WPDU	16 oz clear wide mouth jar
AG3U	250 mL amber glass unpreserved	BP3N	250 mL plastic HNO3	JGFM	4 oz amber wide jar MeOH	XAD	XAD trap
AG4S	120 mL amber glass H2SO4	BP3S	250 mL plastic H2SO4	JGFU	4 oz wide jar		
AG4U	125 mL amber glass unpreserved	BP3U	250 mL plastic unpreserved	PB	Clear zip-lock bag		
BJFM	4 oz clear jar MeOH	BP3Z	250 mL plastic NaOH, Zn Ac	PUF	Polyurethane Foam		
BJFU	4 oz amber tared weight	BP4N	125 mL plastic HNO3	SP5T	120 mL Coliform NA Thiosulfate		
BJTM	2 oz clear MeOH	BP4U	125 mL plastic unpreserved	T	Tedlar Bag		
BJTU	2 oz clear wide jar	C	Air Cassettes	TDT	Thermal desorption tube		
BP1A	1 L plastic NaOH	DG9H	40 mL amber VOA vial HCl	U	Summa Can		

Appendix B

Photo Locations Photo Log

Photo Location Photographs – SLRIDT, 10/5/2015

Location 1, North end of Stryker Bay, 150^0

Location 1, North end of Stryker Bay, 225^0

Location 2, Central east shoreline of Stryker Bay, 150^0

Location 2, Central east shoreline of Stryker Bay, 220^0

Location 3, Point at south end of Stryker Bay, 30^0

Location 3, Point at south end of Stryker Bay, 330^0

Location 4, South end of the 59th Ave. W. Peninsula, 255^0

Location 4, South end of the 59th Ave. W. Peninsula, 330^0

Location 5, Southeast shore of the 59th Ave. W. Peninsula, 165^0

Location 5, Southeast shore of the 59th Ave. W. Peninsula, 240^0

Location 6, South end of dock wall along Slip 6/CAD, 50^0

Location 6, South end of dock wall along Slip 6/CAD, 120^0

Location 7, South end of dock wall along Slip 6/CAD, 145^0

Location 7, South end of dock wall along Slip 6/CAD, 215^0

Location 8, Central dock wall along Slip 6/CAD, 50^0

Location 8, Central dock wall along Slip 6/CAD, 130^0

Location 9, Central dock wall along Slip 6/CAD, 145^0

Location 9, Central dock wall along Slip 6/CAD, 215^0

Location 10, North end of Slip 6/CAD, 55^0

Location 10, North end of Slip 6/CAD, 125^0

Location 11, North end of Slip 6/CAD, 140^0

Location 11, North end of Slip 6/CAD, 215^0

Location 12, North end of the 54th Ave. W. Peninsula, 170^0

Location 12, North end of the 54th Ave. W. Peninsula, 245^0

Location 13, Adjacent to the North Wetlands, 50^0

Location 13, Adjacent to the North Wetlands, 130^0

Location 14, Northcentral area of the 54th Ave. W. Peninsula, 145^0

Location 14, Northcentral area of the 54th Ave. W. Peninsula, 215^0

Location 15, Southcentral area of the 54th Ave. W. Peninsula, 190^0

Location 15, Southcentral area of the 54th Ave. W. Peninsula, 260^0

Location 16, Top of hill at the south end of the 54th Ave. W. Peninsula, 50^0

Location 16, Top of hill at the south end of the 54th Ave. W. Peninsula, 125^0

Location 17, Southwest corner of the 54th Ave. W. Peninsula, 190^0

Location 17, Southwest corner of the 54th Ave. W. Peninsula, 260^0

Location 18, Southwest corner of the 54th Ave. W. Peninsula, 100^0

Location 18, Southwest corner of the 54th Ave. W. Peninsula, 170^0

Location 19, Western shore of Slip 7, 35^0

Location 19, Western shore of Slip 7, 320^0

Location 20, Western shore of Slip 7, north of location 19, 35^0

Location 20, Western shore of Slip 7, north of location 19, 320^0

Location 21, At culvert crossing at the north end of Slip 7, 190^0

Location 21, At culvert crossing at the north end of Slip 7, 270^0

Location 22, North end of Slip 7 at dock wall, 145^0

Location 22, North end of Slip 7 at dock wall, 215^0

Location 23, East side of Slip 7, central, along the dock wall, 145^0

Location 23, East side of Slip 7, central, along the dock wall, 215^0

Location 24, East side of Slip 7, central, along the dock wall, 235^0

Location 24, East side of Slip 7, central, along the dock wall, 330^0

Location 25, South end of the Slip 7 dock wall, 145^0

Location 25, South end of the Slip 7 dock wall, 215^0

Location 26, Southernmost end of the Slip 7 dock wall, 235^0

Location 26, Southernmost end of the Slip 7 dock wall, 330^0

Appendix C

Cap Inspection Report Form

SLRIDT SITE INSPECTION REPORT
UPLAND CAP AREAS

Inspector(s): (1) Kinnan Stauber (2) _____ Company: Barr Engineering

Date of Inspection: 10/5/15 Time of Inspection: 10 am to 3pm

Weather: Cloudy/overcast, slight breeze

Temperature: 53 °F Humidity: 82 % Wind: 0-5 mph

Stryker Bay East Shoreline (SB-7)

	Completed By (Initials)	Yes	No	Not Inspected
1. Above average surface water elevation?	KMSZ	X		
2. Cap intact and free of erosion?	KMSZ		X	
3. Cap near French drain free of erosion?	KMSZ		X	
4. Cap protective of environment?	KMSZ	X		
5. Cap free of surface water ponding?	KMSZ	X		
6. Vegetation cover intact?	KMSZ	X		
7. Cap free of animal burrows?	KMSZ	X		
8. Cap free of tar deposits?	KMSZ	X		

Comments: Erosional channels persist, originating from hillside seeps/runoff. Water levels are similar to 2014, but much higher than 2013. ATV tracks from Fremont St. Beach area vegetation sparse, mostly weeds. Limestone exposed in some areas. New building on hill above "armpit".

Slip 6 (CAD) East Shoreline

	Completed By (Initials)	Yes	No	Not Inspected
1. Above average surface water elevation?	KMSZ	X		
2. Cap intact and free of erosion?	KMSZ		X	
3. Cobble at south end protective of Cap?	KMSZ	X		
4. Cap protective of environment?	KMSZ	X		
5. Cap free of surface water ponding?	KMSZ	X	NA	
6. Vegetation cover intact?	KMSZ	X	NA	
7. Cap free of animal burrows?	KMSZ	X		
8. Cap free of tar deposit?	KMSZ	X		
9. CAD dock wall (west side) intact?	KMSZ	X		

Comments: Higher water levels have left no exposed/unvegetated shoreline. Lots of birds foot trefoil, dead spotted knapweed stems, goldenrod, tansy. Area between points is not well-vegetated - grass-planting stripes are still visible. Birch trees that were kept are mostly healthy - although stunted, and some are dead. Remnant silt fence stakes are now inundated ~12 inches

Slip 7 Mudflats (SL7-5/10)

	Completed By (Initials)	Yes	No	Not Inspected
1. Above average surface water elevation?	KMSZ	X		
2. Cap intact and free of erosion?	KMSZ		X	
3. Cobble along shoreline protective of cap?	KMSZ		X	
4. Cap protective of environment?	KMSZ	X		
5. Cap free of surface water ponding?	KMSZ		X	
6. Culvert at north end free of debris?	KMSZ			can't tell
7. Vegetation cover intact?	KMSZ	X		
8. Cap free of animal burrows?	KMSZ	X		
9. Cap free of tar deposits?	KMSZ	X		
10. Pore water monitoring equipment intact?	KMSZ			X
11. Slip 7 dock wall (east side) intact?	KMSZ	X		

Comments: Cobble along shoreline is somewhat protective, but there are areas where it is totally under water, and likely less protective. Many ponded areas, especially in tire ruts. SE corner is inundated by 4-8" of water

Culvert at north end is completely under water

Photos 142+143
Many areas of ponding behind dock wall

Appendix D

Transect Inspection Site Photos

2015 – Cap Inspection/Transect Photos – SLRIDT

Stryker Bay, north end cap erosion

Stryker Bay, north end, French drain with channel outside

Stryker Bay, north end, cattails on hillslope

Stryker Bay, near “armpit”, hillside erosion

59th Ave. W. Peninsula, south end, vegetative cover

59th Ave. W. Peninsula, view from remnant pond area

Slip 6/CAD, eastern shoreline inundation

Slip 6/CAD shoreline area of sparse vegetation cover

54th Ave. W. Peninsula, south end, ponding and protective cobble

54th Ave. W. Peninsula, south hillside ATV tracks

54th Ave. W. south end, truck tracks

54th Ave. W. Peninsula south shore purple loosestrife and shoreline cobbles

54th Ave. W. Peninsula remnant truck tracks

Slip 7, north end area of Phragmites

Slip 7 dock wall, view north from SW corner

Slip 7 dock wall, view east from SW corner

Appendix E

Upland Plant Synopsis by Site

Site: 59-UV-01
Surveyors: KMS and GMH
Date: 9/1/2011
Soil substrate: Sand and gravel
Percent absolute vegetated cover: 100%

Note: at edge of gravel road

Common Name	Scientific Name	Cover class[1]
speckled alder	*Alnus incana* ssp. *rugosa*	3
reed canarygrass	*Phalaris arundinacea*	3
Canada goldenrod	*Solidago canadensis*	2
Canada horseweed	*Conyza canadensis*	1
red-osier dogwood	*Cornus sericea*	1
sweet clover	*Melilotus officinalis*	1
balsam poplar	*Populus balsamifera*	1
white willow	*Salix alba*	1
common tansy	*Tanacetum vulgare*	1
common mullein	*Verbascum thapsus*	1

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-01
Surveyors: KMS2 and KSW
Date: 8/3/2012
Soil substrate: Sand and gravel
Percent absolute vegetated cover: 95%
Reported hill side of plot within annual report at 107%
Note: at edge of gravel beach, plot half beach, half wetland hillside

Common Name	Scientific Name	%cover	Cover class[1]
beach side of plot			
common tansy	*Tanacetum vulgare*	5	2
balsam poplar	*Populus balsamifera*	3	1
	Unknown 2	3	1
white sweet clover	*Melilotus alba*	2	1
	Unknown 1	2	1
Common Timothy	*Phleum pratense*	1	1
Rye	*Elymus sp.*	1	1
Ragweed	*Ambrosia artemisifolia*	1	1
hill side of plot		**18**	
speckled alder	*Alnus incana* ssp. *rugosa*	30	3
Canada goldenrod	*Solidago canadensis*	20	2
Giant goldenrod	*Solidago gigantea*	20	2
common tansy	*Tanacetum vulgare*	15	2
red-osier dogwood	*Cornus sericea*	10	2
Narrow-leaved cattail	*Typha angustifolia*	3	1
Lake sedge	*Carex lacustris*	3	1
Blue-joint grass	*Calamagrostis canadensis*	2	1
reed canarygrass	*Phalaris arundinacea*	1	1
Red raspberry	*Rubus ideaeus*	1	1
Currant	*Ribes*	0.1	1
Touch-me-not	*Impatiens capensis*	0.1	1
		105.2	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-01
Surveyors: KMS2 and KSW
Date: 7/26/2013
Soil substrate: Sand and gravel
Percent absolute vegetated cover: beach side 34%, hill side 146%
Reported hill side of plot within annual report at 145%
Note: at edge of gravel beach, plot half beach, half wetland hillside

Common Name	Scientific Name	%cover	Cover class[1]
beach side of plot			
bladder campion	*Silene conica*	20	2
common tansy	*Tanacetum vulgare*	5	2
balsam poplar	*Populus balsamifera*	3	1
white sweet clover	*Melilotus alba*	3	1
Bird's foot trefoil	*Lotus corniculatus*	1	1
Artemisia	*Artemisia absinthium*	1	1
Ragweed	*Ambrosia artemisifolia*	1	1
hill side of plot		**34**	
speckled alder	*Alnus incana* ssp. *rugosa*	30	3
Canada goldenrod	*Solidago canadensis*	30	3
Giant goldenrod	*Solidago gigantea*	20	2
common tansy	*Tanacetum vulgare*	20	2
reed canarygrass	*Phalaris arundinacea*	15	2
red-osier dogwood	*Cornus sericea*	10	2
Touch-me-not	*Impatiens capensis*	5	2
Narrow-leaved cattail	*Typha angustifolia*	3	1
Lake sedge	*Carex lacustris*	3	1
Blue-joint grass	*Calamagrostis canadensis*	2	1
catnip	*Nepeta cataria*	2	1
Black bulrush	*Scirpus atrovirens*	2	1
Red raspberry	*Rubus ideaeus*	1	1
Currant	*Ribes*	0.1	1
Canada thistle	*Cirsium arvensis*	1	1
Sandbar willow	*Salix interior*	1	1
		145.1	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-01
Surveyors: KSW
Date: 8/28/2014
Soil substrate: Sand and gravel
Percent absolute vegetated cover: beach side 34%, hill side 112%
Reported hill side of plot within annual report at 112%
Note: at edge of gravel beach. Plot half beach, half wetland 3" inundated.

Common Name	Scientific Name	%cover	Cover class[1]
beach side of plot			
yellow sweet clover	*Melilotus officinalis*	20	2
balsam poplar	*Populus balsamifera*	5	2
common tansy	*Tanacetum vulgare*	2	1
bladder campion	*Silene conica*	2	1
Bird's foot trefoil	*Lotus corniculatus*	2	1
stiff goldenrod	*Solidago rigida*	1	1
Knapweed	*Centaurea biebersteinii*	1	1
Artemisia	*Artemisia absinthium*	1	1
		34	
hill side of plot			
speckled alder	*Alnus incana* ssp. *rugosa*	30	3
red-twig dogwood	*Cornus alba*	20	2
common tansy	*Tanacetum vulgare*	20	2
reed canarygrass	*Phalaris arundinacea*	20	2
Giant goldenrod	*Solidago gigantea*	5	1
Canada thistle	*Cirsium arvensis*	3	1
wild mint	*Mentha arvense*	2	1
Blue-joint grass	*Calamagrostis canadensis*	2	1
catnip	*Nepeta cataria*	2	1
Red raspberry	*Rubus ideaeus*	2	1
Touch-me-not	*Impatiens capensis*	1	1
Canada goldenrod	*Solidago canadensis*	1	1
Narrow-leaved cattail	*Typha angustifolia*	1	1
Sandbar willow	*Salix interior*	1	1
Currant	*Ribes*	1	1
Lake sedge	*Carex lacustris*	1	1
		112	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-01
Surveyors: KSW, KMS2
Date: 8/19/2015
Soil substrate: Sand and gravel
Percent absolute vegetated cover: beach side 87%, hill side 181%

Note: at edge of gravel beach, plot half beach, half wetland hillside. 12" inundation.

Common Name	Scientific Name	%cover	Cover class[1]
beach side of plot			
yellow sweet clover	*Melilotus officinalis*	40	3
balsam poplar	*Populus balsamifera (S)*	30	3
common tansy	*Tanacetum vulgare*	5	2
bladder campion	*Silene conica*	5	2
Bird's foot trefoil	*Lotus corniculatus*	2	1
stiff goldenrod	*Solidago rigida*	2	1
Knapweed	*Centaurea biebersteinii*	1	1
Artemisia	*Artemisia absinthium*	1	1
Giant goldenrod	*Solidago gigantea*	1	1
		87	
hill side of plot			
speckled alder	*Alnus incana* ssp. *Rugosa (S)*	60	4
red-twig dogwood	*Cornus alba*	30	3
reed canarygrass	*Phalaris arundinacea*	25	3
Giant goldenrod	*Solidago gigantea*	25	3
Blue-joint grass	*Calamagrostis canadensis*	10	2
common tansy	*Tanacetum vulgare*	5	2
Narrow-leaved cattail	*Typha angustifolia*	5	2
purple loosestrife	*Lythrum salicaria*	5	2
Touch-me-not	*Impatiens capensis*	3	1
Red raspberry	*Rubus ideaeus*	2	1
cattail	*Typha glauca*	2	1
Canada thistle	*Cirsium arvensis*	1	1
wild mint	*Mentha arvense*	1	1
catnip	*Nepeta cataria*	1	1
Canada goldenrod	*Solidago canadensis*	1	1
Sandbar willow	*Salix interior*	1	1
Currant	*Ribes*	1	1
Lake sedge	*Carex lacustris*	1	1
bedstraw	*Gallium sp.*	1	1
meadow horsetail	*Equisetum pratense*	1	1
		181	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-02
Surveyors: KMS and GMH
Date: 9/1/2011
Soil substrate: sand and gravel
Percent absolute vegetated cover: 50%
Note: Point was in the road. Shifted point 10 feet to be within vegetation.

Common Name	Scientific Name	Cover class[1]
bird's foot trefoil	*Lotus corniculatus*	2
alfalfa	*Medicago sativa*	2
common ragweed	*Ambrosia artemisiifolia*	1
lamb's quarters	*Chenopodium album*	1
foxtail barley	*Hordeum jubatum*	1
witchgrass	*Panicum capillare*	1
broadleaf plantain	*Plantago major*	1
Pennsylvania smartweed	*Polygonum pensylvanicum*	1
black-eyed susan	*Rudbeckia hirta*	1
common tansy	*Tanacetum vlugare*	1
red clover	*Trifolium praetense*	1
white clover	*Trifolium repens*	1
grass	*unidentified grass*	1

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-02
Surveyors: KMS2 and KSW
Date: 8/3/2012
Soil substrate: sand and gravel
Percent absolute vegetated cover: 95%
Note: Point was in the road. Shifted point 10 feet west to be within vegetation.

Common Name	Scientific Name	% cover	Cover class[1]
common tansy	*Tanacetum vlugare*	30	3
black-eyed susan	*Rudbeckia hirta*	25	3
white sweet clover	*Melilotus alba*	25	3
bird's foot trefoil	*Lotus corniculatus*	5	2
Oswego tea	*Monarda fistulosa*	2	1
Yellow sweet clover	*Melilotus officianalis*	1	1
cinquefoil	*Potentilla*	1	1
mint	*Mentha*	1	1
Alsike clover	*Trifolium hybridum*	1	1
Rough Bent grass	*Agrostis scabra*	1	1
Nodding Wild Rye	*Elymus canadensis*	1	1
Red-osier dogwood	*Cornus sericea*	0.2	1
thin-leaved wild strawberry	*Fragaria vesca*	0.2	1
pussy toes	*Antennaria*	0.2	1
Quaking aspen	*Populus tremuloides*	0.2	1
white cedar (herbaceous)	*Thuja occidentalis*	0.2	1
Canada goldenrod	*Solidago canadensis*	0.2	1
		94.2	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-02
Surveyors: KMS2 and KSW
Date: 7/26/2013
Soil substrate: sand and gravel
Percent absolute vegetated cover: 88%
Note: Point was in the road. Shifted point 10 feet west to be within vegetation.

Common Name	Scientific Name	% cover	Cover class[1]
common tansy	*Tanacetum vlugare*	35	3
Black-eyed susan	*Rudbeckia hirta*	20	2
Bird's foot trefoil	*Lotus corniculatus*	20	2
Oswego tea	*Monarda fistulosa*	2	1
ox-eye daisy	*Chrysanthemum leucanthemum*	2	1
Yarrow	*Achillea millefolium*	2	1
Spotted knapweed	*Centauria maculosa*	1	1
Giant goldenrod	*Solidago gigantea*	1	1
Rough Bent grass	*Agrostis scabra*	1	1
Nodding Wild Rye	*Elymus canadensis*	1	1
Foxtail barley	*Hordeum jubatum*	1	1
Canada goldenrod	*Solidago canadensis*	1	1
Alsike clover	*Trifolium hybridum*	0.5	1
thin-leaved wild strawberry	*Fragaria vesca*	0.2	1
cinquefoil	*Potentilla*	0.1	1
		87.8	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-02
Surveyors: KSW
Date: 8/28/2014
Soil substrate: sand and gravel
Percent absolute vegetated cover: 109%
Note: Point was in the road. Shifted point 10 feet west to be within vegetation.
Soil is dry, no saturation or inundation.

Common Name	Scientific Name	% cover	Cover class[1]
Oswego tea	*Monarda fistulosa*	20	2
common tansy	*Tanacetum vlugare*	15	2
yellow sweet clover	*Melilotus officinalis*	10	2
Canada goldenrod	*Solidago canadensis*	10	2
Bird's foot trefoil	*Lotus corniculatus*	10	2
stiff goldenrod	*Solidago rigida*	10	2
Kentucky bluegrass	*Poa pratensis*	10	2
flat-top goldenrod	*Euthamia graminifolia*	5	2
Blue-joint grass	*Calamagrostis canadensis*	5	2
Fowl blue grass	*Poa palustris*	5	2
Nodding Wild Rye	*Elymus canadensis*	2	1
Hoary verbena	*Verbena striata*	2	1
Big bluestem	*Andropogon gerardii*	2	1
Alsike clover	*Trifolium hybridum*	1	1
red clover	*Trifolium pratense*	1	1
red-twig dogwood	*Cornus alba*	1	1
tamarack and spruce saplings in area		**109**	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 59-UV-02
Surveyors: KSW, KMS2
Date: 8/19/2015
Soil substrate: sand and gravel
Percent absolute vegetated cover: 167%
Note: Point was in the road. Shifted point 10 feet west to be within vegetation.
Soil is not saturated, not inundated

Common Name	Scientific Name	% cover	Cover class[1]
Bird's foot trefoil	*Lotus corniculatus*	50	4
Oswego tea	*Monarda fistulosa*	30	3
common tansy	*Tanacetum vlugare*	30	3
Canada goldenrod	*Solidago canadensis*	25	3
Kentucky bluegrass	*Poa pratensis*	5	2
Big bluestem	*Andropogon gerardii*	5	2
purple mint family	*Mentha sp.*	5	2
stiff goldenrod	*Solidago rigida*	3	1
Hoary verbena	*Verbena striata*	3	1
yellow sweet clover	*Melilotus officinalis*	2	1
Fowl blue grass	*Poa palustris*	2	1
Nodding Wild Rye	*Elymus canadensis*	2	1
northern white cedar	*Thuja occidentalis*	2	1
flat-top goldenrod	*Euthamia graminifolia*	1	1
Blue-joint grass	*Calamagrostis canadensis*	1	1
red-twig dogwood	*Cornus alba*	1	1
tamarack now 8-10' tall, and spruce saplings are 4'		**167**	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-01
Surveyors: KMS and GMH
Date: 9/1/2011
Soil substrate: Sand
Percent absolute vegetated cover: 60%
Note: Inundated 0-3 inches.

Common Name	Scientific Name	Cover class[1]
softstem bulrush	*Schoenoplectus tabernaemontani*	4
water plantain	*Alisma subcordatum*	2
broadleaf cattail	*Typha latifolia*	2
brown-fruited rush	*Juncus pelocarpus*	1
knotted rush	*Juncus nodosus*	1
arum-leaved arrowhead	*Sagittaria cuneata*	1

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-01
Surveyors: KMS2 and KSW
Date: 8/3/2012
Soil substrate: Loamy sand
Percent absolute vegetated cover: 109%
Note: No inundation.

Common Name	Scientific Name	% cover	Cover class[1]
softstem bulrush	*Schoenoplectus tabernaemontani*	30	3
Canadian rush	*Juncus canadensis*	30	3
Narrow-leaf cattail	*Typha angustifolia*	25	3
Lesser poverty rush	*Juncus tenuis*	5	2
Tussock sedge	*Carex stricta*	5	2
Balsam poplar	*Populus balsamifera (H)*	2	1
Fox sedge	*Carex vulpinoides*	2	1
Woolgrass	*Scirpus cyperinus*	1	1
Giant goldenrod	*Solidago gigantea*	1	1
St. John's wort	*Hypericum majus*	1	1
Reed canary grass	*Phalarus arundinacea*	1	1
Purple loosestrife	*Lythrum salicaria*	1	1
Monkey flower	*Mimulus ringens*	1	1
Rice cut-grass	*Leerisa oryzoides*	1	1
Spreading bent grass	*Agrostis stolonifera*	1	1
Common tansy	*Tanacetum vulgare*	1	1
Pointed broom sedge	*Carex scoparia*	1	1
Duck potato	*Sagittaria latifolia*	0.1	1
Spotted joe pye-weed	*Eupatorium maculatum*	0.1	1
broadleaf plantain	*Plantago major*	0.1	1
Pussy willow	*Salix discolor*	0.1	1
		109.4	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-01
Surveyors: KMS2 and KSW
Date: 7/26/2013
Soil substrate: Loamy sand
Percent absolute vegetated cover: 107%
Note: No inundation.

Common Name	Scientific Name	% cover	Cover class[1]
softstem bulrush	*Schoenoplectus tabernaemontani*	35	3
Canadian rush	*Juncus canadensis*	30	3
Narrow-leaf cattail	*Typha angustifolia*	20	2
Lesser poverty rush	*Juncus tenuis*	5	1
Purple loosestrife	*Lythrum salicaria*	3	1
Monkey flower	*Mimulus ringens*	2	1
Tussock sedge	*Carex stricta*	1	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Fox sedge	*Carex vulpinoides*	1	1
Woolgrass	*Scirpus cyperinus*	1	1
Giant goldenrod	*Solidago gigantea*	1	1
St. John's wort	*Hypericum majus*	1	1
Reed canary grass	*Phalarus arundinacea*	1	1
Rice cut-grass	*Leerisa oryzoides*	1	1
Spreading bent grass	*Agrostis stolonifera*	1	1
Spotted joe pye-weed	*Eupatorium maculatum*	1	1
Pussy willow	*Salix discolor*	1	1
Southern water-plantain	*Alisma subcordatum*	1	1
		107	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-01
Surveyors: KSW
Date: 8/28/2014
Soil substrate: Loamy sand
Percent absolute vegetated cover: 92.1%
Note: 100% inundated, with 3-6" of water.

Common Name	Scientific Name	% cover	Cover class[1]
Canadian rush	*Juncus canadensis*	20	2
dark green bulrush	*Scirpus atrovirens*	10	2
Lesser poverty rush	*Juncus tenuis*	10	2
Woolgrass	*Scirpus cyperinus*	10	2
Narrow-leaf cattail	*Typha angustifolia*	10	2
Reed canary grass	*Phalarus arundinacea*	5	2
Fowl blue grass	*Poa palustris*	5	2
lamp rush	*Juncus effusus*	5	2
Purple loosestrife	*Lythrum salicaria*	2	1
Pussy willow	*Salix discolor (H)*	2	1
meadow willow	*Salix petiolaris)H)*	2	1
Fox sedge	*Carex vulpinoides*	2	1
Stalk grain sedge	*Carex stipata*	2	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Hemlock-water parsnip	*Sium suave*	1	1
Tussock sedge	*Carex stricta*	1	1
American water-plantain	*Alisma subcordatum*	1	1
rice cut grass	*Leersia oryzoides*	1	1
sandbar willow	*Salix interior (H)*	1	1
Small-flower false foxglove	*Agalinis paupercula*	1	1
Nodding ladies tresses	*Spiranthes cernua*	0.1	1
softstem bulrush	*Schoenoplectus tabernaemontani*		
		92.1	

[1] Based on Daubenmire cover classes (1959):
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2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-01
Surveyors: KSW, KMS2
Date: 8/19/2015
Soil substrate: Loamy sand
Percent absolute vegetated cover: 154%
Note: 100% inundated, with 10" of water.

Common Name	Scientific Name	% cover	Cover class[1]
Narrow-leaf cattail	*Typha angustifolia*	25	3
Woolgrass	*Scirpus cyperinus*	20	2
sandbar willow	*Salix interior (H)*	15	2
Canadian rush	*Juncus canadensis*	10	2
dark green bulrush	*Scirpus atrovirens*	10	2
Lesser poverty rush	*Juncus tenuis*	10	2
Pussy willow	*Salix discolor (H)*	10	2
meadow willow	*Salix petiolaris)H)*	10	2
Balsam poplar	*Populus balsamifera (H)*	10	2
lamp rush	*Juncus effusus*	5	2
Purple loosestrife	*Lythrum salicaria*	5	2
softstem bulrush	*Schoenoplectus tabernaemontani*	5	2
common reed	*Phragmites australis*	5	2
Tussock sedge	*Carex stricta*	2	1
Reed canary grass	*Phalarus arundinacea*	1	1
Fox sedge	*Carex vulpinoides*	1	1
Small-flower false foxglove	*Agalinis paupercula*	1	1
Joe pye-weed	*Eupatorium maculatum*	1	1
giant goldenrod	*Solidago gigantea*	1	1
speckled alder	*Alnus incana (H)*	1	1
sensitive fern	*Onoclea sensibilis*	1	1
Northern water horehound	*Lycopus uniflorus*	1	1
meadow horsetail	*Equisetum sp. pratense*	1	1
common scouring rush	*Equisetum hyemale*	1	1
Iris	*Iris versicolor*	1	1
Hardstem bulrush	*Schoenoplectus acutus*	1	1
		154	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-02
Surveyors: KMS and GMH
Date: 9/1/2011
Soil substrate: Sand and gravel
Percent absolute vegetated cover: 40%
Note: Point was located within deer exclusion area. Relocated outside of fencing.

Common Name	Scientific Name	Cover class[1]
bird's foot trefoil	*Lotus corniculatus*	2
black medic	*Medicago lupulina*	2
rabbit-foot clover	*Trifolium arvense*	2
white clover	*Trifolium repens*	2
Virginia wild rye	*Elymus virginicus*	1
hemp nettle	*Galeopsis tetrahit*	1
sandstar knotweed	*Polygonum arenastrum*	1
Pennsylvania smartweed	*Polygonum pensylvaticum*	1
black-eyed susan	*Rudbeckia hirta*	1
yellow foxtail	*Setaria pumila*	1
common tansy	*Tanacetum vulgare*	1
red clover	*Trifolium praetense*	1

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-02
Surveyors: KMS2 and KSW
Date: 8/3/2012
Soil substrate: Gravelly sand
Percent absolute vegetated cover: 81%
Note: Point was located within deer exclusion area, fencing down, area accessible.

Common Name	Scientific Name	% cover	Cover class[1]
White sweet clover	*Melilotus alba*	35	3
black-eyed susan	*Rudbeckia hirta*	30	3
common tansy	*Tanacetum vulgare*	5	2
red clover	*Trifolium praetense*	1	1
White spruce	*Picea glauca (H)*	1	1
bird's foot trefoil	*Lotus corniculatus*	1	1
black medic	*Medicago lupulina*	1	1
Alsike clover	*Trifolium hybridum*	1	1
High-bush cranberry	*Viburnum trilobum (H)*	1	1
Canada wild rye	*Elymus canadensis*	1	1
wild bergamot	*Monarda fistulosa*	1	1
common ragweed	*Ambrosia artemisifolia*	1	1
Foxtail barley	*Hordeum jubatum*	1	1
Hoary verbena	*Verbena stricta*	1	1
Balsam fir	*Abies balsamea*	dead	
		81	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-02
Surveyors: KMS2 and KSW
Date: 7/26/2013
Soil substrate: Gravelly sand
Percent absolute vegetated cover: 90%
Note: Point was located within deer exclusion area, fencing down, area accessible.

Common Name	Scientific Name	% cover	Cover class[1]
common tansy	*Tanacetum vulgare*	20	2
Alsike clover	*Trifolium hybridum*	20	2
bird's foot trefoil	*Lotus corniculatus*	15	2
black-eyed susan	*Rudbeckia hirta*	10	2
Canada wild rye	*Elymus canadensis*	10	2
Ox-eye daisy	*Chrysanthemum leucanthemum*	10	2
White sweet clover	*Melilotus alba*	1	1
red clover	*Trifolium praetense*	1	1
wild bergamot	*Monarda fistulosa*	1	1
Foxtail barley	*Hordeum jubatum*	1	1
Yarrow	*Achillea millefolium*	1	1
Balsam fir	*Abies balsamea*	dead	
		90	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-02
Surveyors: KSW
Date: 8/28/2014
Soil substrate: Gravelly sand
Percent absolute vegetated cover: 108%
Note:

Common Name	Scientific Name	% cover	Cover class[1]
common tansy	*Tanacetum vulgare*	20	2
bird's foot trefoil	*Lotus corniculatus*	20	2
Canada wild rye	*Elymus canadensis*	20	2
Alsike clover	*Trifolium hybridum*	10	2
wild bergamot	*Monarda fistulosa*	10	2
stiff goldenrod	*Solidago rigida*	10	2
black-eyed susan	*Rudbeckia hirta*	5	2
White spruce	*Picea glauca (H)*	2	1
Ox-eye daisy	*Chrysanthemum leucanthemum*	1	1
White sweet clover	*Melilotus officinalis*	1	1
red clover	*Trifolium praetense*	1	1
Big bluestem	*Andropogon gerardii*	1	1
Kentucky bluegrass	*Poa pratensis*	1	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Yarrow	*Achillea millefolium*	1	1
Balsam fir	*Abies balsamea*	1	1
Panic grass	*Panicum*	1	1
Freshwater cord grass	*Spartina pectinata*	1	1
Yellow Indian Grass	*Sorghastrum nutans*	1	1
		108	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-02
Surveyors: KSW, KMS2
Date: 8/19/2015
Soil substrate: Gravelly sand
Percent absolute vegetated cover: 123%
Notes:

Common Name	Scientific Name	% cover	Cover class[1]
bird's foot trefoil	*Lotus corniculatus*	50	4
common tansy	*Tanacetum vulgare*	20	2
Kentucky bluegrass	*Poa pratensis*	20	2
wild bergamot	*Monarda fistulosa*	10	2
stiff goldenrod	*Solidago rigida*	10	2
Canada wild rye	*Elymus canadensis*	5	2
red clover	*Trifolium praetense*	3	1
Big bluestem	*Andropogon gerardii*	2	1
Alsike clover	*Trifolium hybridum*	1	1
black-eyed susan	*Rudbeckia hirta*	1	1
Panic grass	*Panicum sp.*	1	1
		123	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-03
Surveyors: KMS and GMH
Date: 9/1/2011
Soil substrate: Sand
Percent absolute vegetated cover: 75%
Note: wet meadow

Common Name	Scientific Name	Cover class[1]
matted spikerush	*Eleocharis intermedia*	2
rice cutgrass	*Leersia oryzoides*	2
witchgrass	*Panicum capillare*	2
giant bur-reed	*Sparganium eurycarpum*	2
broadleaf cattail	*Typha latifolia*	2
blue vervain	*Verbena hastata*	2
barnyard grass	*Echinochloa crusgalli*	1
flatstem spikerush	*Eleocharis compressa*	1
American water horehound	*Lycopus americanus*	1
arrowleaf tear thumb	*Polygonum sagittatum*	1
softstem bulrush	*Schoenoplectus tabernaemontani*	1

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-03
Surveyors: KMS2 and KSW
Date: 8/3/2012
Soil substrate: Loamy sand
Percent absolute vegetated cover: 104%
Note:

Common Name	Scientific Name	% cover	Cover class[1]
blue vervain	*Verbena hastata*	40	3
river bulrush	*Scirpus fluviatilis*	5	2
Narrow-leaved cattail	*Typha angustifolia*	2	1
Foxtail barley	*Hordeum jubatum*	2	1
Creeping bent-grass	*Agrostis stolonifera*	3	1
Canada rush	*Juncus canadensis*	10	2
Lesser poverty rush	*Juncus tenuis*	10	2
St. John's wort	*Hypericum majus*	1	1
Bebb's sedge	*Carex bebbii*	1	1
Bluejoint grass	*Calamagrostis canadensis*	3	1
Fowl blue-grass	*Poa palustris*	5	2
bird's foot trefoil	*Lotus corniculatus*	1	1
softstem bulrush	*Schoenoplectus tabernaemontani*	5	2
Pussy willow	*Salix discolor*	1	1
spikerush	*Eleocharis obtusa*	1	1
giant bur-reed	*Sparganium eurycarpum*	2	1
Northern water horehound	*Lycopus unifloris*	2	1
Fowl manna grass	*Glyceria striata*	2	1
Nodding wild rye	*Elymus canadensis*	2	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Fox sedge	*Carex vulpinoides*	1	1
Monkey flower	*Mimulus ringens*	1	1
Hardstem bulrush	*Scirpus acutus*	1	1
Pointed broom sedge	*Carex scoparia*	1	1
Reed canary grass	*Phalarus arundinacea*	1	1
		104	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-03
Surveyors: KMS2 and KSW
Date: 7/26/2013
Soil substrate: Loamy sand
Percent absolute vegetated cover: 85%
Note:

Common Name	Scientific Name	% cover	Cover class[1]
blue vervain	*Verbena hastata*	10	2
Lesser poverty rush	*Juncus tenuis*	10	2
Fowl blue-grass	*Poa palustris*	10	2
Northern water horehound	*Lycopus unifloris*	10	2
Fox sedge	*Carex vulpinoides*	10	2
Reed canary grass	*Phalarus arundinacea*	10	2
bird's foot trefoil	*Lotus corniculatus*	5	2
Creeping bent-grass	*Agrostis stolonifera*	3	1
Bluejoint grass	*Calamagrostis canadensis*	3	1
Pointed broom sedge	*Carex scoparia*	3	1
Foxtail barley	*Hordeum jubatum*	2	1
Canada rush	*Juncus canadensis*	2	1
Narrow-leaved cattail	*Typha angustifolia*	1	1
St. John's wort	*Hypericum majus*	1	1
Pussy willow	*Salix discolor*	1	1
rush	*Juncus brevicaudatis*	1	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Monkey flower	*Mimulus ringens*	1	1
Lake sedge	*Carex lacustris*	1	1
		85	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-03
Surveyors: KSW
Date: 8/28/2014
Soil substrate: Loamy sand
Percent absolute vegetated cover: 93%
Note: 30% saturated at the surface, 70% inundated with 1-3".

Common Name	Scientific Name	% cover	Cover class[1]
Lesser poverty rush	*Juncus tenuis*	10	2
Fowl blue grass	*Poa palustris*	10	2
lamp rush	*Juncus effusus*	10	2
Reed canary grass	*Phalarus arundinacea*	10	2
Bluejoint grass	*Calamagrostis canadensis*	10	2
Big bluestem	*Andropogon gerardii*	5	2
Bird's foot trefoil	*Lotus corniculatus*	5	2
Canada rush	*Juncus canadensis*	5	2
Pointed broom sedge	*Carex scoparia*	3	1
Pussy willow	*Salix discolor (H)*	2	1
sandbar willow	*Salix interior*	2	1
Nodding wild rye	*Elymus canadendis*	2	1
River bulrush	*Scirpus fluviatilis*	2	1
Purple loosestrife	*Lythrum salicaria*	2	1
Balsam poplar	*Populus balsamifera (H)*	2	1
Fox sedge	*Carex vulpinoides*	2	1
Bebb's willow	*Salix bebbiana*	1	1
Quaking aspen	*Populus tremuloides*	1	1
Virginia water horehound	*Lycopus virginicus*	1	1
Common milkweed	*Asclepias syriaca*	1	1
Bebb's sedge	*Carex bebbii*	1	1
Woolgrass	*Scirpus cyperinus*	1	1
Hoary verbena	*Verbena striata*	1	1
Yellow Indian Grass	*Sorghastrum nutans*	1	1
Freshwater cord grass	*Spartina pectinata*	1	1
Northern water horehound	*Lycopus unifloris*	1	1
rush	*Juncus brevicaudatis*	1	1
		93	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-03
Surveyors: KSW, KMS2
Date: 8/19/2015
Soil substrate: Loamy sand
Percent absolute vegetated cover: 105%
Note: 100% saturated at the surface, 100% inundated with 2-3".

Common Name	Scientific Name	% cover	Cover class[1]
Reed canary grass	*Phalarus arundinacea*	20	2
Lesser poverty rush	*Juncus tenuis*	10	2
Fowl blue grass	*Poa palustris*	10	2
lamp rush	*Juncus effusus*	10	2
Bird's foot trefoil	*Lotus corniculatus*	10	2
Bluejoint grass	*Calamagrostis canadensis*	5	2
Canada rush	*Juncus canadensis*	5	2
Purple loosestrife	*Lythrum salicaria*	5	2
Woolgrass	*Scirpus cyperinus*	5	2
Pussy willow	*Salix discolor (H)*	4	1
Freshwater cord grass	*Spartina pectinata*	3	1
Pointed broom sedge	*Carex scoparia*	2	1
narrow-panicle rush	*Juncus brevicaudatis*	2	1
dark green bulrush	*Scirpus atrovirens*	2	1
Big bluestem	*Andropogon gerardii*	1	1
sandbar willow	*Salix interior*	1	1
River bulrush	*Scirpus fluviatilis*	1	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Fox sedge	*Carex vulpinoides*	1	1
Bebb's willow	*Salix bebbiana*	1	1
Quaking aspen	*Populus tremuloides (H)*	1	1
Bebb's sedge	*Carex bebbii*	1	1
Yellow Indian Grass	*Sorghastrum nutans*	1	1
Northern water horehound	*Lycopus unifloris*	1	1
speckled alder	*Alnus incana (H)*	1	1
foxglove	*Agalinus sp.*	1	1
		105	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-04
Surveyors: KMS and GMH
Date: 9/1/2011
Soil substrate: Sand and gravel
Percent absolute vegetated cover: 95%
Note: lush wet meadow

Common Name	Scientific Name	Cover class[1]
barnyard grass	*Echinochloa crusgalli*	2
rice cutgrass	*Leersia oryzoides*	2
witchgrass	*Panicum capillare*	2
Pennsylvania smartweed	*Polygonum*	2
softstem bulrush	*Schoenoplectus tabernaemontani*	2
giant bur reed	*Sparganium eurycarpum*	2
broadleaf cattail	*Typha latifolia*	2
grass	*unidentified grass*	2
grass	*unidentified grass*	2
blue vervain	*Verbena hastata*	2
marsh milkweed	*Asclepias incarnata*	1
flatstem spikerush	*Eleocharis compressa*	1
knotted rush	*Juncus nodosus*	1
slender rush	*Juncus tenuis*	1
American water horehound	*Lycopus americanus*	1
purple loosestrife	*Lythrum salicaria*	1
field mint	*Mentha canadensis*	1
monkey flower	*Mimulus ringens*	1
common reed	*Phragmites australis*	1
broadleaf plantain	*Plantago major*	1
grass	*unidentified grass*	1

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-04
Surveyors: KMS2 and KSW
Date: 8/3/2012
Soil substrate: Loam
Percent absolute vegetated cover: 97%
Note: wet meadow

Common Name	Scientific Name	% cover	Cover class[1]
blue vervain	*Verbena hastata*	20	2
Canada wild rye	*Elymus canadensis*	10	2
Blue joint	*Calamagrostis canadensis*	10	2
Lamp rush	*Juncus effusus*	5	2
slender rush	*Juncus tenuis*	5	2
Reed canary grass	*Phalarus arundinacea*	5	2
Fowl blue grass	*Poa paolustris*	5	2
Pointed broom sedge	*Carex scoparia*	2	1
rice cutgrass	*Leersia oryzoides*	2	1
Northern water horehound	*Lycopus uniflorus*	2	1
wild bergamot	*Monarda fistulosa*	2	1
softstem bulrush	*Schoenoplectus tabernaemontani*	4	1
Giant goldenrod	*Solidago gigantea*	2	1
cattail	*Typha angustifolia*	2	1
Field mint	*Mentha arvensis*	2	1
Swamp milkweed	*Asclepias incarnata*	1	1
Flat-top goldentop	*Euthamia graminifolia*	1	1
Rough bent grass	*Agrostis scabra*	1	1
American water plantain	*Alisma subcordatum*	1	1
Canadian rush	*Juncus canadensis*	1	1
American slough grass	*Beckmannia syzigachne*	1	1
bird's foot trefoil	*Lotus corniculatus*	1	1
white sweet clover	*Melilotus alba*	1	1
monkey flower	*Mimulus ringens*	1	1
broadleaf plantain	*Plantago major*	1	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Dark-green bulrush	*Scirpus atrovirens*	1	1
Sandbar willow	*Salix interior (H)*	1	1
Marsh cinquefoil	*Comarum palustris*	1	1
Bearded sedge	*Carex comosa*	1	1
Black-eyed susan	*Rudbeckia hirta*	1	1
parsnip	*Sium suave*	1	1
pussy toes	*Antennaria sp.*	1	1
grass	*Agrostis spp.*	1	1
		97	

[1] Based on Daubenmire cover classes (1959):

Site: 54-UV-04
Surveyors: KMS2 and KSW
Date: 7/26/2013
Soil substrate: Loam
Percent absolute vegetated cover: 92%
Note: wet meadow

Common Name	Scientific Name	% cover	Cover class[1]
Fowl blue grass	*Poa palustris*	20	2
Canada wild rye	*Elymus canadensis*	10	2
Reed canary grass	*Phalarus arundinacea*	10	2
Northern water horehound	*Lycopus uniflorus*	10	2
Blue joint	*Calamagrostis canadensis*	5	2
Lamp rush	*Juncus effusus*	5	2
slender rush	*Juncus tenuis*	5	2
Pointed broom sedge	*Carex scoparia*	5	2
blue vervain	*Verbena hastata*	1	1
wild bergamot	*Monarda fistulosa*	1	1
Giant goldenrod	*Solidago gigantea*	1	1
Field mint	*Mentha arvensis*	1	1
Swamp milkweed	*Asclepias incarnata*	1	1
Flat-top goldentop	*Euthamia graminifolia*	1	1
Rough bent grass	*Agrostis scabra*	1	1
Canadian rush	*Juncus canadensis*	1	1
bird's foot trefoil	*Lotus corniculatus*	1	1
white sweet clover	*Melilotus alba*	1	1
Balsam poplar	*Populus balsamifera (H)*	1	1
Dark-green bulrush	*Scirpus atrovirens*	1	1
Bearded sedge	*Carex comosa*	1	1
Black-eyed susan	*Rudbeckia hirta*	1	1
Porcupine sedge	*Carex hystericina*	1	1
Fox sedge	*Carex vulpinoidea*	1	1
Foxtail barley	*Hordeum jubatum*	1	1
Golden alexander	*Zizia auria*	1	1
Alsike	*Trifolium hybridum*	1	1
Pussy willow	*Salix discolor*	1	1
St. John's Wort	*Hypericum majus*	1	1
Wool-grass	*Scirpus cyperinus*	1	1
		92	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-04
Surveyors: KSW
Date: 8/28/2014
Soil substrate: Loam
Percent absolute vegetated cover: 105%
Note: 50% saturated at surface, 50% inundated within 1" of the surface

Common Name	Scientific Name	% cover	Cover class[1]
Fowl blue grass	*Poa palustris*	30	3
Canada wild rye	*Elymus canadensis*	5	2
Lamp rush	*Juncus effusus*	5	2
slender rush	*Juncus tenuis*	5	2
White sweet clover	*Melilotus officinalis*	5	2
Canadian rush	*Juncus canadensis*	5	2
Flat-top goldenrod	*Euthamia graminifolia*	5	2
Reed canary grass	*Phalarus arundinacea*	5	2
bird's foot trefoil	*Lotus corniculatus*	5	2
Purple loosestrife	*Lythrum salicaria*	3	1
Blue joint	*Calamagrostis canadensis*	3	1
stiff goldenrod	*Solidago rigida*	2	1
Quaking aspen	*Populus tremuloides (H)*	2	1
Balsam poplar	*Populus balsamifera (H)*	2	1
Canada goldenrod	*Solidago canadensis*	2	1
Peach-leaf willow	*Salix amygdaloides (H)*	2	1
Big bluestem	*Andropogon gerardii*	2	1
Yellow Indian Grass	*Sorghastrum nutans*	2	1
Giant goldenrod	*Solidago gigantea*	2	1
Porcupine sedge	*Carex hystericina*	2	1
Narrow-leaf cattail	*Typha angustifolia*	1	1
common tansy	*Tanacetum vulgare*	1	1
Stalk-grain sedge	*Carex stipata*	1	1
Pussy willow	*Salix discolor (H)*	1	1
Black-eyed susan	*Rudbeckia hirta*	1	1
Fox sedge	*Carex vulpinoidea*	1	1
St. John's Wort	*Hypericum majus*	1	1
Wool-grass	*Scirpus cyperinus*	1	1
Bearded sedge	*Carex comosa*	1	1
Golden Alexanders	*Zizia aurea*	1	1
Pointed broom sedge	*Carex scoparia*	1	1
		105	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Site: 54-UV-04
Surveyors: KSW, KMS2
Date: 8/19/2015
Soil substrate: Loam
Percent absolute vegetated cover: 114%
Note: 100% saturated at surface, 80% inundated 1-2"

Common Name	Scientific Name	% cover	Cover class[1]
Wool-grass	*Scirpus cyperinus*	25	3
Purple loosestrife	*Lythrum salicaria*	15	2
Lamp rush	*Juncus effusus*	10	2
slender rush	*Juncus tenuis*	10	2
Reed canary grass	*Phalarus arundinacea*	5	2
meadow willow	*Salix petiolaris*	5	2
sandbar willow	*Salix interior*	5	2
freshwater cord grass	*Spartina pectinata*	5	2
Balsam poplar	*Populus balsamifera (H)*	3	1
Stalk-grain sedge	*Carex stipata*	3	1
Fox sedge	*Carex vulpinoidea*	3	1
Pointed broom sedge	*Carex scoparia*	3	1
Canadian rush	*Juncus canadensis*	2	1
Flat-top goldenrod	*Euthamia graminifolia*	2	1
Blue joint	*Calamagrostis canadensis*	2	1
Pussy willow	*Salix discolor (H)*	2	1
Fowl blue grass	*Poa palustris*	1	1
White sweet clover	*Melilotus officinalis*	1	1
Peach-leaf willow	*Salix amygdaloides (H)*	1	1
Big bluestem	*Andropogon gerardii*	1	1
Yellow Indian Grass	*Sorghastrum nutans*	1	1
Giant goldenrod	*Solidago gigantea*	1	1
Porcupine sedge	*Carex hystericina*	1	1
Narrow-leaf cattail	*Typha angustifolia*	1	1
red osier-dogwood	*Cornus alba*	1	1
speckled alder	*Alnus incana (H)*	1	1
soft-stem club-rush	*Schoenoplectus tabernaemontani*	1	1
water horehound	*Lycopus sp.*	1	1
common spike rush	*Eleocharis palustris*	1	1
dark-green bulrush	*Scirpus atrovirens*	1	1
		114	

[1] Based on Daubenmire cover classes (1959):
1 = 0-5% areal cover
2 = 5-25% areal cover
3 = 25-50% areal cover
4 = 50-75% areal cover
5 = 75-95% areal cover
6 = 95-100% areal cover

Appendix F

Sampling Point Depths

Appendix I - Sampling Point Depths
SLRIDT - St. Louis River, Minnesota

	2011	2012	2013	2014	2015
Tallas Island	depth in feet	depth in feet	depth in feet	depth in feet	depth in feet
TI-AV-01-1/S	5.50	2.17	3.50	3.90	6.40
TI-AV-01-2/C	6.50	6.50			
TI-AV-01-3/N	1.90	3.00	7.00	3.70	7.20
TI-AV-02-1/S	2.10	1.50	2.90	2.40	2.50
TI-AV-02-2/C	6.50	4.50	6.90	3.70	3.90
TI-AV-02-3/N	2.10	1.00	2.30	3.90	3.80
TI-AV-03-1/S	2.30	1.00	3.00	4.00	2.90
TI-AV-03-2/C	4.30	2.50			
TI-AV-03-3/N	2.10	1.83	2.50	3.50	3.30
TI-AV-04-1/S	3.90	2.25	2.70	3.40	2.80
TI-AV-04-2/N	2.30	4.25	3.30	5.00	5.10
TI-AV-05-1/S	1.90	0.83	1.20	3.80	-
TI-AV-05-2/C	6.50	5.50	5.80	5.50	-
TI-AV-05-3/N	7.00	2.25	0.50	1.50	-
TI-AV-06-1/C	5.75	4.08	3.00	5.70	2.50
TI-AV-07-1/S	2.62	1.83	3.20	3.80	3.00
TI-AV-07-2/N	1.15	3.00	2.90	5.90	3.50
TI-AV-08-1/S	5.30	5.50			
TI-AV-08-2/N	1.15		5.80	7.00	2.20
TI-AV-09-1/S	6.50	2.00	2.00	3.50	2.80
TI-AV-09-2/C	1.97	5.17	5.50	4.30	2.50
TI-AV-09-3/N	0.98	2.08	3.50	7.70	-
TI-AV-10-1/S	6.00	6.50	7.00	4.50	4.90
TI-AV-10-2/C	7.00	6.08			
TI-AV-10-3/N	3.28		3.80	7.00	3.90

Mean depth - sample points	3.86	3.27	3.73	4.46	3.72

See FIGURES 2 and 3 for transect locations.

Appendix I - Sampling Point Depths
SLRIDT - St. Louis River, Minnesota

	2011	2012	2013	2014	2015
Stryker Bay	depth in feet	depth in feet	depth in feet	depth in feet	depth in feet
SB-AA-01-W	3.94	3.25	4.90	5.80	5.90
SB-AA-01-C	0.98	4.17	4.00	4.40	3.00
SB-AA-01-E	2.46	0.25	1.90	2.80	2.30
SB-AA-02-W	2.62	3.92	4.20	6.20	4.00
SB-AA-02-C	3.94	3.92	4.50	6.00	5.70
SB-AA-02-E	3.28	1.92	2.80	3.30	4.00
SB-AA-03-W	7.00	5.92	4.50	5.70	5.60
SB-AA-03-C	5.00	5.00	5.80	7.00	6.50
SB-AA-03-E	1.48	2.08	3.00	4.50	4.20
SB-AA-04-W	8.00	6.00	6.90	7.70	6.30
SB-AA-04-C	8.00	6.00	6.70	7.50	7.90
SB-AA-04-E	2.30	2.17	2.50	4.20	3.20
SB-AA-05-W	6.00	5.83	4.50	7.20	5.20
SB-AA-05-C	6.00	5.08	6.00	7.50	7.00
SB-AA-05-E	2.30	2.50	4.20	6.20	4.90
SB-AA-06-W	3.61	3.83	4.50	6.00	3.30
SB-AA-06-C	5.00	3.83	4.20	5.00	5.50
SB-AA-06-E	4.00	4.00	4.50	5.50	4.90

Mean depth - sample points	4.22	3.87	4.42	5.69	4.97

Appendix I - Sampling Point Depths
SLRIDT - St. Louis River, Minnesota

	2011	2012	2013	2014	2015
Slip 6	depth in feet	depth in feet	depth in feet	depth in feet	depth in feet
S6-AA-01-W	5.00	6.20	7.00	6.50	7.00
S6-AA-01-C	5.50	5.00	5.00	6.20	5.70
S6-AA-01-E	3.00	2.50	3.80	4.80	4.80
S6-AA-02-W	3.00	3.00	4.00	4.00	4.80
S6-AA-02-C	3.00	3.83	3.90	4.90	4.90
S6-AA-02-E	3.00	3.08	2.80	4.00	3.70
S6-AA-03-W	1.64	2.00	3.90	3.00	3.30
S6-AA-03-C	5.00	5.00	5.20	6.20	6.00
S6-AA-03-E	5.50	5.50	5.00	5.70	6.50
S6-AA-04-W	5.00	4.25	4.00	5.50	4.50
S6-AA-04-C	5.00	4.83	5.50	5.50	6.00
S6-AA-04-E	1.00	2.33	4.50	6.20	3.40
S6-AA-05-W	3.00	2.83	3.50	4.70	4.90
S6-AA-05-C	5.00	3.17	4.00	5.10	4.90
S6-AA-05-E	2.00	1.50	3.50	4.50	4.10
S6-AA-06-W	2.00	3.00	3.00	4.80	3.80
S6-AA-06-C	5.00	2.83	3.50	4.50	4.00
S6-AA-06-E	2.00	2.50	2.80	4.30	3.80
S6-AA-07-W	3.00	3.00	3.50		4.90
S6-AA-07-C	3.00	3.50	3.80	5.20	5.00
S6-AA-07-E	3.00	3.75	3.90	5.50	4.90

Mean depth - sample points	3.51	3.50	4.10	5.06	4.80

Appendix I - Sampling Point Depths
SLRIDT - St. Louis River, Minnesota

	2011	2012	2013	2014	2015
Slip 7	depth in feet	depth in feet	depth in feet	depth in feet	depth in feet
S7-AA-01-W	10.00	6.75	5.50	7.00	5.70
S7-AA-01-C	32.80	10.00	10.00	10.00	10.00
S7-AA-01-E	32.80	10.00	10.00	10.00	10.00
S7-AA-02-W	10.00	5.50	5.25	10.00	2.50
S7-AA-02-C	20.00	10.00	10.00	10.00	10.00
S7-AA-02-E	35.00	10.00	10.00	10.00	10.00
S7-AA-03-W	12.00	5.00	5.00	3.40	1.50
S7-AA-03-C	20.00	10.00	10.00	10.00	10.00
S7-AA-03-E	35.00	10.00	10.00	10.00	10.00
S7-AA-04-W	8.00	4.50	2.25	10.00	3.00
S7-AA-04-C	12.00	10.00	10.00	10.00	10.00
S7-AA-04-E	38.00	10.00	10.00	10.00	10.00
		10=10+	10=10+	10=10+	10=10+
Mean depth - sample points	22.13	8.48	8.17	9.20	7.73

Appendix I - Sampling Point Depths
SLRIDT - St. Louis River, Minnesota

	2011	2012	2013	2014*	2015
Kingsbury Bay	depth in feet	depth in feet	depth in feet	depth in feet	depth in feet
KB-AA-01-W	4.00	1.83	1.80		2.60
KB-AA-01-C	1.64	2.50			3.60
KB-AA-01-E	0.00	2.50	3.00		3.70
KB-AA-02-W	4.00	3.50	4.20		2.60
KB-AA-02-C	5.00	2.83	3.30		3.60
KB-AA-02-E	4.00	3.00	4.00		4.50
KB-AA-03-W	4.00	4.00	4.30		5.20
KB-AA-03-C	4.00	3.83	4.70		5.10
KB-AA-03-E	3.94	3.08	4.50		4.90
KB-AA-04-W	6.00	4.08	5.00		5.20
KB-AA-04-C	4.26	4.50	5.00		5.90
KB-AA-04-E	1.48	3.50	4.00		5.00

*Kingsbury Bay not surveyed in 2014

Mean depth - sample points	3.53	3.26	3.98		4.33

Appendix G

Aquatic Plant Synopsis for All Locations

Appendix G - AQUATIC PLANT SYNOPSIS 2015
SLRIDT - St. Louis River, Minnesota

CODE	*Scientific*	Common	Tallas Island		Stryker Bay		Slip 6		Slip 7		Kingsbury Bay	
			occurs	#locations	occurs	#locations	occurs	#locations	occurs	#locations	occurs	#locations
CEDE	*Ceratophyllum demersum*	Coontail	X	2	X	1					X	5
ELCA	*Elodea canadensis*	Canada waterweed	X	2	X	4					X	4
	Myriophyllum sibericum	northern watermilfoil	X	8	X	2					X	2
NAFL	*Najas flexilis*	bushy naiad			X	3	X	3	X	1		
	Nuphar variegata	Bullhead pond lily	X	3								
	Nymphaea odorata	white water lily	X	4							X	6
	Potamogeton foliosis	Leafy pondweed							X	1		
PONO	*Potamogeton natans*	Floating leaf pondweed	X	2								
POZO	*Potamogeton richardsonii*	Clasping-leaf pondweed	X	10			X	1	X	2	X	3
	Potamogeton zosteriformis	flatstem pondweed	X	2	X	1						
	Sparganium fluctuans	Floating leaf bur reed	X	1								
	Vallisneria americana	Wild celery/eel-grass	X	16	X	5	X	5	X	3	X	6
	Total # of species		**10**	50	**6**	16	**3**	9	**4**	7	**6**	26

# of sampling points	18	18	21	4	12
with veg	17	8	7	4	8
% of sites with veg.	94.4%	44.4%	33.3%	100.0%	66.7%

Appendix H

Vegetation Survey Site Photos

2015 Vegetation Monitoring – SLRIDT

Slip 7, view north

Slip 7, view south

Slip 7, western shoreline, showing abundance of purple loosestrife

Slip 7, typical vegetation collection on rake

Slip 6, view north

Slip 6, view south

Slip 6, eastern shoreline

Slip 6, typical vegetation collection

Stryker Bay, view south

Stryker Bay, view north

Stryker Bay, typical vegetation collection, large amount

Stryker Bay, typical vegetation collection, small amount

Kingsbury Bay, south end, eastern shoreline

Kingsbury Bay, south end vegetation collection

Kingsbury Bay, north end vegetation collection

Kingsbury Bay, north end

Tallas Island, south end

Tallas Island, north end

Appendix I

Additional Reference Sites

Site: Wetland Reference 1*

Surveyors: KSW, KMS2

Date: 8/19/2015

Soil substrate:

Percent absolute vegetated cover: 134%

Note: 100% saturated at surface, 100% inundated 3-8"

Common Name	Scientific Name	% cover	Cover class[1]
Blue joint	*Calamagrostis canadensis*	60	4
speckled alder	*Alnus incana (H)*	35	3
Reed canary grass	*Phalarus arundinacea*	15	2
Wool-grass	*Scirpus cyperinus*	15	2
Purple loosestrife	*Lythrum salicaria*	5	2
iris	*Iris versicolor*	2	1
Lake sedge	*Carex lacustris*	1	1
Tussock sedge	*Carex stricta*	1	1
		134	

[1] Based on Daubenmire cover classes (1959):

1 = 0-5% areal cover

2 = 5-25% areal cover

3 = 25-50% areal cover

4 = 50-75% areal cover

5 = 75-95% areal cover

6 = 95-100% areal cover

*Located on the 63rd Ave. W. peninsula

Site: Upland Reference 2*

Surveyors: KSW, KMS2

Date: 8/19/2015

Soil substrate:

Percent absolute vegetated cover:

Note: Upland site

Common Name	Scientific Name	% cover	Cover class[1]
common tansy	*Tanacetum vulgare*	50	4
Canada goldenrod	*Solidago canadensis*	30	3
vetch	*Vicia sp.*	20	2
Giant goldenrod	*Solidago gigantea*	10	2
red osier-dogwood	*Cornus alba (L)*	5	2
Reed canary grass	*Phalarus arundinacea*	5	2
red raspberry	*Rubus idaeus*	5	2
Kentucky bluegrass	*Poa pratensis*	5	2
orchard grass	*Dactylus glomerata*	2	1
cinquefoil	*Potentilla sp.*	2	1
common milkweed	*Asclepias syracia*	2	1
thistle	*Cirsium sp.*	2	1

[1] Based on Daubenmire cover classes (1959):

1 = 0-5% areal cover

2 = 5-25% areal cover

3 = 25-50% areal cover

4 = 50-75% areal cover

5 = 75-95% areal cover

6 = 95-100% areal cover

*Located behind the church on 67th and Grand