

Appendix D

Final Quality Assurance Project Plan

**Quality Assurance Project Plan
Remedial Investigation**

October 2012

**Crowley Marine Services 8th Avenue S. Site
8th Avenue Terminals, Inc.**
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Section 1: Introduction

The purpose of this Quality Assurance Project Plan (QAPP) is to identify the quality assurance and quality control (QA/QC) protocols necessary to achieve the project-specific data quality objectives for sample collection and analysis during the remedial investigation at the 8th Avenue Terminals, Inc. site. The objectives for the investigation activities as well as the background, project description, project organization and schedule, and sampling procedures are described in the Final Remedial Investigation/Feasibility Study Work Plan (Work Plan).

Section 2: Quality Objectives

The data quality objectives (DQOs) for this project are to describe and implement field and laboratory procedures that ensure: 1) data will be representative of actual environmental conditions, and 2) data are of known and acceptable quality. Measurements will be made to yield accurate and precise results representative of the media and conditions measured. Data will be calculated and reported in units consistent with those used by regulatory agencies to allow for comparability of data.

Accuracy, precision, completeness, representativeness, comparability, and sensitivity are terms used to describe the quality of analytical data. Routine procedures for measuring precision and accuracy include use of quality control samples (i.e., replicate analyses, check or laboratory control samples, matrix spikes, and procedural blanks). These indicators of data quality are discussed below.

2.1 Precision

Precision is an appraisal of the reproducibility of a set of measurements. Precision can be better defined as the variability of a group of measurements compared to their average value. Variability for environmental monitoring programs contains both an analytical component and a field component.

Analytical precision will be evaluated by the analyses of matrix spike duplicate and laboratory duplicate samples, which can be mathematically expressed as the relative percent difference (RPD) between duplicate sample analyses. RPD is calculated using the following equation:

$$RPD = \frac{C_1 - C_2}{\overline{C}} \times 100$$

where:

C1 = First concentration value or recovery value measured for a variable

C2 = Second concentration value or recovery value measured for a variable

The frequency of the performance of matrix spike duplicate and laboratory duplicate samples, where applicable, is usually one per batch (which typically consists of up to 20 samples) for each sample matrix received.

Field duplicate samples will be submitted blind to the laboratory as a means to determine field variability. Frequency of field duplicate samples is discussed in Section 4.2.

Precision quantities will be calculated for analyses with method reporting limits of the same order of magnitude and with detected concentrations greater than or equal to five times the method reporting limits. In instances where no criteria have been established (e.g., field duplicates), relative percent difference project goals will be 50 percent for well-homogenized soil samples and 30 percent for water samples.

2.2 Bias and Accuracy

Bias is the systematic or persistent distortion of a measurement process that causes error in one direction. Accuracy refers to how close a measurement is to the true value. Bias and accuracy will be evaluated by the analysis of matrix spike samples and laboratory control samples and can be mathematically expressed as the percent recovery of an analyte that has been used to fortify a field sample or clean laboratory matrix sample at a known concentration prior to analysis. The percent recovery (R) for a matrix spike sample is calculated as follows:

$$R = \frac{(SSR - SR)}{SA} * 100$$

Where:

SSR = Spiked sample result

SR = Sample result

SA = Spike added.

The following calculation is used to determine R for a laboratory control sample or reference material:

$$R = \frac{RM}{RC} * 100$$

Where:

RM = Reference material result

RC = Known reference concentration

Results of matrix spike and laboratory control samples will be evaluated to the laboratory's control limits. Control limits are defined as the mean recovery, plus or minus three standard deviations, of the 20 data points, with the warning limits set as the mean, plus or minus two standard deviations. The laboratory will review the QC samples and surrogate standard recoveries for each analysis to ensure that internal QC data lie within the limits of acceptability. The laboratory will investigate any suspect trends and take appropriate corrective actions

Field blank samples and method blank samples will also be used to evaluate bias of the data. Results for field and method blanks can reflect systematic bias that results from contamination of samples during collection or analysis. Analytes detected in field or method blank samples will be evaluated as potential indicators of bias.

2.3 Representativeness

Representativeness concerns the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Where appropriate, sampling locations will be selected on both systematic and biased (judgmental) sampling bases in an attempt to spatially cover the study

area. Sampling locations and methods for selection of those sampling locations are presented in the Work Plan.

2.4 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system. Completeness will be measured for each set of data received by dividing the number of valid measurements actually obtained by the number of valid measurements that were planned. Although 100 percent is the goal for completeness, 90 percent is the minimum acceptable level.

2.5 Comparability

Comparability is a qualitative QA criterion that expresses the confidence in the ability to compare one data set with another. Comparability among data sets is achieved through the use of similar sampling procedures and analytical methods. Sampling procedures will be performed as specified in the Work Plan. Analytical procedures will be conducted according to the methods discussed in this QAPP.

2.6 Sensitivity

Sensitivity is the capability of a method or instrument to discriminate between measurement responses representing different levels of the variable of interest. The method detection limit (MDL) is defined as the statistically calculated minimum amount that can be measured with 99 percent confidence that the reported value is greater than zero. MDLs are specified in the individual methods and are developed by the laboratory for each analyte of interest representing the aqueous and solid matrices within the capability of an analytical method.

The method reporting limit (MRL) or practical quantitation limit (PQL) is the lowest value to which the laboratory will report an unqualified quantitative result for an analyte. The PQL is always greater than the statistically determined MDL. The PQLs required for this project are such that data can be compared to the lowest possible applicable, relevant, and appropriate requirements (ARARs) suitable for the site. PQLs are discussed in greater detail in Section 3.

Section 3: Analytical Procedures

The analytical laboratory(s) selected to analyze samples for this project will be certified by Washington State Department of Ecology (Ecology) for all the analytical methods required for the project. The analytical methods for the analyses, applicable sample containers, and holding times are summarized in Table 1. Target PQLs are summarized in Table 2.

The potentially liable parties (PLPs) shall submit a summary of analytical methods, PQLs and MDLs from their selected laboratories to Ecology for review and approval prior to the start of field sampling activities.

Analysis of the soil, sediment, and/or catch basin solids samples will be performed using the following methods:

- Method NWTPH-Dx: Diesel-range organics (DRO) and heavy oil-range organics (HO) by GC/FID [Ecology 1997]. A silica gel cleanup step will be used on all soil/solids samples.
- Method NWTPH-Gx: Gasoline-range organics (GRO) by GC/FID (Ecology 1997).
- Method 8270D: Semivolatile organic compounds (SVOCs) including polynuclear aromatic hydrocarbons (PAHs) by gas chromatography/mass spectrometry (GC/MS) with select ion monitoring (EPA 2007).
- Method 8082A: Polychlorinated biphenyls (PCBs) by GC/ECD [U.S. Environmental Protection Agency (EPA) 2007].
- Method 6020: Antimony, arsenic, beryllium, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc by ICP/MS (EPA 2007).
- Method 7195: Hexavalent chromium by coprecipitation (EPA 2007).
- Method 7471: Mercury by cold vapor (EPA 2007).
- Method 8260C: Volatile organic compounds (VOCs) by GC/MS (EPA 2007).
- Method 8290: Dioxins and furans by high-resolution (HR) GC/MS (EPA 2007).
- Method 9060: Total organic carbon (TOC) by carbonaceous analyzer (EPA 2007).
- ASTM D-422: Grain size by sieve and hydrometer (ASTM 2007).

Analysis of the groundwater and/or storm water samples will be performed using the following methods:

- Method 8270D: SVOCs including PAHs by gas chromatography/mass spectrometry (GC/MS) with select ion monitoring (EPA 2007).
- Method NWTPH-Dx: DRO and HO by GC/FID (Ecology, 1997). A silica gel cleanup step will be used on all water samples.

- Method NWTPH-Gx: GRO by GC/FID (Ecology 1997).
- Method 8260C: VOCs by GC/MS (EPA 20076).
- Method 8082A: PCBs by GC/ECD (EPA 2007).
- Method 200.8: Total and dissolved antimony, arsenic, beryllium, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc by ICP/MS (EPA Office of Water 1999).
- Method 1631E: Mercury by cold vapor atomic fluorescence (EPA 2002).
- Method 7196A: Hexavalent chromium by colorimetric method (EPA 2007).
- Method SM2540C/D: Total dissolved solids (TDS) and total suspended solids (TSS) by gravimetric method (American Public Health Association 1998).
- Method SM4500-Cl E: Chloride by auto-ferricyanide method (American Public Health Association 1998).
- Method 9060M: TOC by carbonaceous analyzer (EPA 2007).
- Method 415.3: Dissolved organic carbon (DOC) by TOC instrument system (EPA Office of Water 2009).

Any special analytical method employed will be determined with laboratory concurrence prior to beginning sample analysis. In addition, field parameters will be measured during groundwater sampling as outlined in the Work Plan.

Section 4: Quality Control

QC samples will be assessed for both field and laboratory operations to evaluate overall precision/bias and accuracy throughout the project. Field QC samples will include field duplicate and blank samples. The types and frequency of QC samples are discussed below.

4.1 Laboratory Quality Control

Laboratory QC parameters, criteria, and frequency will be performed in accordance with the analytical methods referenced in Section 3. Comparison of QC sample results against established criteria is performed during the data validation process as described in Section 7.3. Laboratory QC data may include:

- Laboratory control and laboratory duplicate samples
- Matrix spikes and matrix spike duplicate samples
- Laboratory duplicates
- Surrogate standards
- Internal standards
- Method and instrument blanks
- Post-digestion spikes.

The frequency of analysis for laboratory control samples, matrix spike samples, matrix spike duplicate samples, laboratory duplicate samples, and method blank samples will be one for every 20 samples or one per batch, where applicable, or as specified in the analytical methods. Surrogate spikes and internal standards will be added to samples as required by the methods. Laboratory control limits and performance-based criteria presented in the methods will be used to establish the acceptability of the data or the need for re-analysis of a sample. Analytical data will be evaluated by the laboratory based on the following criteria, where applicable:

- Performance of analytical method tests
 - Holding times
 - Matrix spike and matrix spike duplicate results
 - Calibration data using check compound and system performance check with compound analysis results
 - Laboratory blank sample analysis results
 - Interference check sample analysis results
 - Laboratory check sample analysis results

- Comparison of calibration and sample analyses
- Linearity of response and linear range.
- Analytical results of internal standards and the calculation of percent recoveries
- Reporting limits obtained
- Accuracy and precision of matrix spike/matrix spike duplicate analysis
- Comparison of the percentage of missing or undetected substances among duplicate samples.

During data validation, analytical results will be evaluated against the performance criteria noted in this QAPP and the individual analytical methods.

4.2 Field Quality Control Samples

Field duplicate samples are designed to monitor overall sampling and analytical precision. In general, duplicate samples will be collected at a frequency of approximately one duplicate sample per 20 samples or one duplicate sample per batch of samples if less than 20 samples are collected.

Soil and/or sediment field duplicate samples will consist of collecting a sample, homogenizing the sample, and splitting the sample into two equal aliquots. If the sample is to be analyzed for volatile organics the sample will not be homogenized before collection of primary or duplicate sample.

For duplicate water samples, sample containers will be alternately filled. The locations for duplicate sample collection will be determined in the field. Duplicate samples will be treated as separate samples from the originals (assigned unique sample numbers), and not identified to the laboratory as duplicate samples. Field duplicate samples will be documented on the daily field report, in the field logbook, or other appropriate field form.

Trip blank samples will also be collected. Volatile organic samples are susceptible to contamination by diffusion of organic contaminants through the sample vials. Therefore, trip blank samples will be submitted to monitor for possible sampling contamination during shipment if VOC analyses are performed. Trip blank samples will be prepared by the analytical laboratory by filling volatile organic analysis (VOA) vials with organic-free water and shipping the blank samples with the clean sample containers. Trip blank samples will accompany the sample containers through collection and shipment to the laboratory and will be stored with the samples.

Section 5: Data Management

5.1 Documentation and Records

Records will be maintained documenting activities performed and data generated during implementation of the Work Plan. The types of documents that will be generated during implementation of the Work Plan are discussed below.

5.1.1 Field Documentation

Field personnel will document their field activities on either a daily field log or in a field logbook and complete other field forms applicable to the field activities being performed. The daily field logs and field logbooks will document information regarding who was present during field activities (field personnel, subcontractors, visitors), weather conditions, work conducted that day, problems encountered and corrective actions, if any, etc. Field logs will be filed in the project files.

Field logbooks and other types of field forms (e.g., groundwater purge and sample forms, boring log/well construction logs, test pit excavation logs) will be used to record data obtained during various field activities. The individual field personnel will be responsible for maintaining these forms. Field daily logs, field logbooks, and other field forms will then be archived in the project files.

5.1.2 Laboratory Documentation

Records related to sample analysis will be documented by the laboratory. The laboratory will be required to submit data that are supported by sufficient backup information and QC results to enable reviewers to determine the quality of the data. The laboratory will submit the data in electronic and paper format. The paper format (i.e., hard copy) data packages from the laboratory will consist of the following information, where applicable:

- A cover letter for each sample batch will include a summary of any QC, sample, shipment, or analytical problems, and will document internal decisions. Problems will be outlined and final solutions documented. A copy of the signed chain-of-custody form for each batch of samples will be included in the deliverable.
- Sample concentrations will be reported on standard data sheets in proper units and to the appropriate number of significant figures. For undetected values, the lower limit of detection for each compound will be reported separately for each sample. Dates of sample extraction or preparation and analysis will be included.
- Method blank results.
- Surrogate percent recoveries.
- Laboratory duplicate results, where applicable.
- Laboratory control sample results, where applicable, with percent recoveries and spiking concentrations.

- Matrix spike/matrix spike duplicate percent recoveries, with spiking concentrations and calculated relative percent differences.
- A list of the detection limits calculated for laboratory instruments for all analytes.
- Laboratory data qualifier codes appended to analyte concentrations, as appropriate, and a summary of code definitions.

Sample holding times will be calculated by comparing the date of sample collection (shown on the chain-of-custody form) with the date of sample extraction/analysis. Analytical laboratory deliverables will be validated.

The analytical laboratory will routinely archive raw laboratory data, including initial and continuing calibration data, chromatograms, and quantitation reports for at least 5 years.

5.2 Instrument/Equipment Calibration and Frequency

Field instruments will be operated, calibrated, and maintained by qualified personnel, according to manufacturer's guidelines and recommendations. At a minimum, instruments will be calibrated before use each day or more frequently as necessary. Calibration records will be recorded in the daily field log, field logbook, or other appropriate forms.

Laboratory instruments will be calibrated and maintained in accordance with the requirements of analytical methods and normal operating standards associated with good laboratory practices. Calibration requirements are specified in each laboratory's QA manual. Calibration records are documented in laboratory logbooks.

5.3 Instrument/Equipment Testing, Inspection, and Maintenance

Sampling equipment that will be used during field activities is discussed in the Work Plan. Preventive maintenance of equipment is essential if project resources are to provide accurate results and are to be used cost-effectively. Preventive maintenance will take two forms: 1) implementation of a schedule of preventive maintenance activities to reduce downtime and maintain accuracy of measurement systems and 2) availability of critical spare parts and backup systems and equipment.

Qualified operators will perform routine inspections and maintenance for field instruments in accordance with manufacturers' recommendations. Field equipment will be inspected prior to the start of sampling activities. Maintenance activities, if performed, will be documented in the daily field log or field logbook. As most types of field equipment that will be used for this project are standard (i.e., used frequently in environmental sampling), replacement parts are readily available. The field personnel will be responsible for maintaining the field equipment.

The laboratory's QA manual discusses preventive maintenance for laboratory equipment and instruments. Maintenance and inspection records are documented in laboratory logbooks.

Section 6: Audits and Reports

6.1 Performance Evaluation Audits

Performance evaluation audits are an independent means of establishing the quality of measurement data by analysis of samples provided specifically for the evaluation.

During a performance evaluation audit, the performance of the laboratory technicians and the instrumentation or analytical systems on which they work are evaluated. A performance evaluation audit is accomplished by providing performance evaluation samples containing specific pollutants (in appropriate matrices) whose identities and/or concentrations are unknown to the technician. Laboratories participate in both internal and external performance testing to examine the overall laboratory performance as well as to qualify for various federal, state, and independent certification programs.

The laboratory will be responsible for implementing corrective action for analytical procedures. Corrective action procedures are described in the individual methods or are described in the laboratory's QA manual. If QC data are unacceptable, the cause will be determined and corrected. Corrective actions that affect the integrity of the project analytical data will require re-analysis of the affected sample or qualifying of these data in the final data report. If corrective actions are warranted by a laboratory, the laboratory will document and forward the corrective action(s).

6.2 System and Technical Laboratory Audits

System and technical audits are performed by the laboratory QA Manager according to a predetermined schedule and when requested by laboratory management. An independent audit may be conducted should corrective actions be needed during implementation of the Work Plan (e.g., a laboratory repeatedly does not meet QC criteria, or overall performance of the laboratory is questionable). This audit will be project-specific and will focus only on the performance of the laboratory for this project. A laboratory audit report will be prepared, if necessary.

6.3 Field Operations

A readiness review will be conducted prior to initiation of each field task requiring sampling to verify that the necessary preparations have been made for efficient and effective completion of the task-related field activities. The Project Manager will verify that the necessary field equipment has been assembled for the field activity and that the applicable subcontractors, if necessary, have been scheduled. Any deficiencies noted during this readiness review will be corrected prior to initiation of field activities.

Field personnel are required to maintain continual communication with project members during the duration of field activities. Thereby, should issues arise during field activities, corrective actions can be implemented.

Section 7: Data Tracking, Reduction, and Validation

7.1 Sample Data Tracking System

During field activities, field personnel will be responsible for overseeing field measurements and data recording. Information on field forms will be verified that the following conditions have been met:

- Samples are properly documented in daily field logs, field logbooks and/or other field forms appropriate to the field activities being conducted.
- Chain-of-custody forms are complete and accurate.
- Samples collected are properly documented and field forms are completed.
- Samples and analyses specified in the Work Plan have been collected.
- Correct number of field QC samples was collected.

In addition, upon receipt of samples at the laboratory, it will be verified that samples were received at the appropriate temperature and in good condition (i.e., no excessive headspace, broken sample containers, etc.). If a sample does not arrive at the laboratory at the appropriate temperature or the integrity of the sample is in question, the potential implication of the anomaly will be evaluated and a course of action will be determined.

7.2 Data Reduction

Both field and laboratory data will be collected during implementation of the Work Plan. Data obtained during sample collection will be manually entered onto daily field logs, field logs book, and other field forms.

The laboratory will provide analytical data in electronic and/or paper form. Electronic data will be loaded into project databases and verified with the paper copy.

Some data from these sources (such as sample location name and coordinates, water levels, and field parameters) may also be manually entered into project databases or various programs such as computer-aided drafting and design (CADD). Manually entered data will be reviewed by a second individual.

The central data management tool for the laboratory is the laboratory information management system (LIMS). The LIMS is used for sample processing, including sample log-in and tracking, instrument data storage and processing, generating data reports, and verifying results. Data collected from each laboratory instrument, either manually or electronically, are reviewed and confirmed by the analyst prior to reporting. Laboratory records including chain-of-custody forms, bench sheets, and analytical results, whether in electronic or hard copy format, are stored chronologically by batch or project.

7.3 Data Review, Verification, and Validation

Field and laboratory data generated during implementation of the Work Plan will be reviewed, verified, and validated. Field data entered into databases will be verified. Errors identified during the verification of data will be corrected prior to release of the final data.

The laboratory is responsible for verifying analytical results prior to the submittal of the final laboratory data report. Initially, all analytical data generated by the laboratory are verified by the laboratory. During the analysis process, the analyst and the laboratory QA Manager verify that the results have met various performance-based control limits (e.g., surrogate recoveries and continuing calibration). Non-conformance of various method QC requirements and control limits warrants the re-analysis and/or re-extraction of a sample.

Finally, the data will be verified and validated based on the quality objectives specified in this QAPP and performance-based criteria specified in the analytical methods in accordance with applicable portions of EPA's Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review (EPA 2004; 2008). If data do not meet required criteria, they will be flagged with data qualifiers as specified under the action portion of each requirement of the functional guidelines (EPA 2004; 2008).

Data verification and validation will be conducted to assess the laboratory's performance in meeting the quality objectives identified in the QAPP (e.g., reporting limits and control limits) and performance-based criteria specified in the analytical methods. The components to be evaluated during the data validation process are summarized below:

- Holding times
- Method blank results
- Surrogate recovery results for organic analyses
- Laboratory control sample results
- Field duplicate results
- Field blank results
- Laboratory duplicate results, where applicable
- Matrix spike/matrix spike duplicate (MS/MSD) results for all relevant analyses
- Completeness
- Reported detection limits for analyses

If data do not meet the quality objectives and required criteria, they will be flagged with data qualifiers as specified under the action portion of each requirement of the functional guidelines (EPA 2004; 2008). Typical data qualifiers include, but are not limited to, "J," used to indicate an estimated value, "B," used to indicate blank contamination, and "R," used to indicate a rejected value. The findings of the data validation will be presented in the Remedial Investigation Report. Limitations to the usability of the data will also be discussed in the report.

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Tables

TABLE 1: SUMMARY OF SAMPLE CONTAINERS, PRESERVATIVES, AND HOLDING TIMES^(a)

Analyte	Method	Soil/Sediment			Groundwater/Stormwater		
		Container	Preservative	Holding Time	Container	Preservative	Holding Time
Total/Dissolved Metals	EPA 6020/200.8	4 oz.WMG	Cool≤6°C	6 Months	500 mL HDPE	HNO ₃ , Cool≤6°C	6 Months
Total Mercury	EPA 7471	4 oz.WMG	Cool≤6°C	28 Days			
Total/Dissolved Mercury	EPA 1631				500 mL fluoropolymer or glass; collection by EPA Method 1669	HCl or BrCl	48 hours/ 28 Days ^(b)
Hexavalent Chromium	EPA 7195/7196	4 oz.WMG	Cool≤6°C	28 Days	500 mL HDPE	Filter, NaOH, Cool≤6°C	24 hours/ 28 Days ^(c)
SVOCs/Phenols/PAHs	EPA 8270D-SIM	8 oz.WMG	Cool≤6°C	14 Days	2-500 mL AG	Cool≤6°C	7 Days
Gas Range TPH	NWTPH-Gx	2-40 ml vial/ 1-2 oz.WMGS	Cool≤6°C, 2xMethanol	14 Days	2-40 mL AGV	HCl, Cool≤6°C	2 Days/ 14 Days ^(d)
Diesel/Oil Range TPH	NWTPH-Dx	8 oz.WMG	Cool≤6°C	14 Days	2-500 mL AG	Cool≤6°C	7 Days
Dioxins/Furans	EPA 8290	250 mL AWMG	Frozen	1 year	1 Liter AG	Cool≤4°C	14 Days
PCB Aroclors	EPA 8082	8 oz.WMG	Cool≤6°C	14 Days	2-500 mL AG	Cool≤6°C	7 Days
Total Organic Carbon	EPA 9060 / Plumb 1981	4 oz.WMG	Cool≤4°C	14 Days	250 mL AG	NH ₂ SO ₄ , Cool≤6°C	28 Days
Dissolved Organic Carbon	EPA 415.3				500 mL HDPE	HNO ₃ , Cool≤6°C	48 hours/ 28 Days ^(b)
Grain Size	ASTM D-422	16 oz. WMG	None	6 Months			
Total Suspended Solids	SM 2450D				1,000 ml HDPE	Cool≤6°C	7 Days
Total Dissolved Solids	SM 2450C				1,000 ml HDPE	Cool≤6°C	7 Days
Chloride	SM 4500-Cl E				500 mL HDPE	Cool≤6°C	28 Days
VOCs	EPA 8260C	4-40 mL vial/ 1-2 oz. WMGS	Cool≤6°C, 2xSodium Bisulfate, 2xMethanol	14 Days	3-40 mL vial; collection by EPA Method 5035	HCl, Cool≤6°C	2 Days/ 14 Days ^(d)

Notes:

- (a) All sampling requirements and holding times to be verified by PLPs prior to any sample collection activities.
- (b) Holding time is 48 hours if unpreserved, 28 days otherwise.
- (c) Holding time is 24 hours if unpreserved, 28 days otherwise.
- (d) Holding time is 2 days if unpreserved, 14 days otherwise.

Abbreviations:

°C = degrees Celsius	oz. = ounce
AG = amber glass boston round bottle	PCB = polychlorinated biphenyls
AGV = amber glass vial	SM = Standard Method
AWMG = amber wide mouth glass jar	TPH = total petroleum hydrocarbons
BrCl = bromine monochloride	EPA = United States Environmental Protection Agency
H ₂ SO ₄ = sulfuric acid	VOCs = volatile organic compounds
HCl = hydrochloric acid	SIM = select ion monitoring
HDPE = high density polypropylene	SVOCs = semivolatile organic compounds
HNO ₃ = nitric acid	WMG = wide mouth glass jar
mL = milliliters	WMGS = wide mouth glass jar with Septa

Grayed cells indicate that analyte will not be sampled for that matrix.

TABLE 2: SUMMARY OF TARGET PQLs^(a)

Analyte	Soil / CB Solids / Sediment Target PQL ^(b) µg/kg	Groundwater / Surfacewater Target PQL ^(b) µg/L
Metals		
Total/Dissolved Antimony	200	0.2
Total/Dissolved Arsenic	200	0.2
Total/Dissolved Beryllium	200	0.2
Total/Dissolved Barium	500	0.5
Total/Dissolved Cadmium	100	0.1
Total/Dissolved Chromium (total)	500	0.5
Total/Dissolved Chromium (hexavalent)	100	10
Total/Dissolved Copper	500	0.5
Total/Dissolved Lead	100	0.1
Total/Dissolved Mercury	25	0.0005 ^(c)
Total/Dissolved Nickel	500	0.5
Total/Dissolved Selenium	500	0.5
Total/Dissolved Silver	200	0.2
Total/Dissolved Thallium	200	0.2
Total/Dissolved Zinc	4000	4
Volatile Organic Compounds		
1,1,1,2-Tetrachloroethane	1.0	0.2
1,1,1-Trichloroethane	1.0	0.2
1,1,2,2-Tetrachloroethane	1.0	0.2
1,1,2-Trichloro-1,2,2-Trifluoroethane	2.0	0.2
1,1,2-Trichloroethane	1.0	0.2
1,1-Dichloroethane	1.0	0.2
1,1-Dichloroethene	1.0	0.2
1,1-Dichloropropene	1.0	0.2
1,2,3-Trichlorobenzene	5.0	0.5
1,2,3-Trichloropropane	2.0	0.5
1,2,4-Trichlorobenzene	5.0	0.5
1,2,4-Trimethylbenzene	1.0	0.2
1,2-Dibromo-3-Chloropropane	5.0	0.5
1,2-Dibromoethane	1.0	0.2
1,2-Dichlorobenzene	1.0	0.2
1,2-Dichloroethane	1.0	0.2
1,2-Dichloropropane	1.0	0.2
1,3,5-Trimethylbenzene	1.0	0.2
1,3-Dichlorobenzene	1.0	0.2
1,3-Dichloropropane	1.0	0.2
1,4-Dichlorobenzene	1.0	0.2
2,2-Dichloropropane	1.0	0.2
2-Butanone	5.0	5
2-Chloroethyl Vinyl Ether	5.0	1
2-Chlorotoluene	1.0	0.2
2-Hexanone	5.0	5
4-Chlorotoluene	1.0	0.2
4-Isopropyl Toluene	1.0	0.2
4-Methyl-2-Pentanone	5.0	5
Acetone	5.0	5
Acrolein	50	5
Acrylonitrile	5.0	1
Benzene	1.0	0.2
Bromobenzene	1.0	0.2
Bromochloromethane	1.0	0.2
Bromodichloromethane	1.0	0.2
Bromoethane	2.0	0.2

TABLE 2: SUMMARY OF TARGET PQLs^(a)

Analyte	Soil / CB Solids / Sediment Target PQL ^(b) µg/kg	Groundwater / Surfacewater Target PQL ^(b) µg/L
Volatile Organic Compounds, Cont'd		
Bromoform	1.0	0.2
Bromomethane	1.0	1
Carbon Disulfide	1.0	0.2
Carbon Tetrachloride	1.0	0.2
Chlorobenzene	1.0	0.2
Chlorodibromomethane	1.0	0.2
Chloroethane	1.0	0.2
Chloroform	1.0	0.2
Chloromethane	1.0	0.5
cis-1,2-Dichloroethene	1.0	0.2
cis-1,3-Dichloropropene	1.0	0.2
Dibromomethane	1.0	0.2
Ethyl Benzene	1.0	0.2
Hexachloro-1,3-Butadiene	5.0	0.5
Iodomethane (Methyl Iodide)	1.0	1
Isopropyl Benzene	1.0	0.2
m,p-Xylene	1.0	0.4
Methylene Chloride	2.0	1
Methyl-t-butyl ether (MTBE)	1.0	0.5
Naphthalene	5.0	0.5
n-Butylbenzene	1.0	0.2
n-Propyl Benzene	1.0	0.2
o-Xylene	1.0	0.2
s-Butylbenzene	1.0	0.2
Styrene	1.0	0.2
t-Butylbenzene	1.0	0.2
Tetrachloroethene	1.0	0.2
Toluene	1.0	0.2
trans-1,2-Dichloroethene	1.0	0.2
trans-1,3-Dichloropropene	1.0	0.2
trans-1,4-Dichloro-2-Butene	5.0	1
Trichloroethene	1.0	0.2
Trichlorofluoromethane	1.0	0.2
Vinyl Acetate	5.0	0.2
Vinyl Chloride	1.0	0.2
Semi-Volatile Organic Compounds: Low Level PAHs		
1-Methylnaphthalene	5	0.1
2-Methylnaphthalene	5	0.1
Acenaphthene	5	0.1
Acenaphthylene	5	0.1
Anthracene	5	0.1
Benzo(a)anthracene	5	0.01
Benzo(a)Pyrene	5	0.01
Benzo(g,h,i)Perylene	5	0.1
Benzo(b)fluoranthene	5	0.01
Benzo(k)fluoranthene	5	0.01
Chrysene	5	0.01
Dibenz(a,h)Anthracene	5	0.01
Dibenzofuran	5	0.1
Fluoranthene	5	0.1
Fluorene	5	0.1
Indeno(1,2,3-cd)Pyrene	5	0.01
Naphthalene	5	0.1
Phenanthrene	5	0.1
Pyrene	5	0.1

TABLE 2: SUMMARY OF TARGET PQLs^(a)

Analyte	Soil / CB Solids / Sediment Target PQL ^(b) µg/kg	Groundwater / Surfacewater Target PQL ^(b) µg/L
Semi-Volatile Organic Compounds (excluding PAHs)		
1,2,4-Trichlorobenzene	5	1
1,2-Dichlorobenzene	5	1
1,3-Dichlorobenzene	5	1
1,4-Dichlorobenzene	5	1
2,2'-oxybis(1-Chloropropane)	20	1
2,3,4,6-Tetrachlorophenol	20	1
2,4,5-Trichlorophenol	100	5
2,4,6-Trichlorophenol	100	3
2,4-Dichlorophenol	20	3
2,4-Dimethylphenol	40	3
2,4-Dinitrophenol	850	20
2,4-Dinitrotoluene	100	3
2,6-Dinitrotoluene	100	3
2-Chloronaphthalene	20	1
2-Chlorophenol	20	1
2-Methylphenol	5	1
2-Nitroaniline	100	3
2-Nitrophenol	100	3
3,3'-Dichlorobenzidine	150	5
3-Nitroaniline	100	3
4,6-Dinitro-2-methylphenol	200	10
4-Bromophenyl-phenylether	20	1
4-Chloro-3-methylphenol	100	3
4-Chloroaniline	270	5
4-Chlorophenyl-phenylether	20	1
4-Methylphenol	10	2
4-Nitroaniline	100	3
4-Nitrophenol	100	10
Benzoic acid	400	20
Benzyl alcohol	20	2
Bis(2-Chloroethoxy)methane	20	1
Bis(2-Chloroethyl)ether	20	1
bis(2-Ethylhexyl)phthalate	25	3
Butylbenzylphthalate	5	1
Carbazole	20	1
Diethylphthalate	5	1
Dimethylphthalate	5	1
Di-n-butylphthalate	20	1
Di-n-octylphthalate	20	1
Hexachlorobenzene	5	1
Hexachlorobutadiene	5	3
Hexachlorocyclopentadiene	400	5
Hexachloroethane	20	2
Isophorone	20	1
Nitrobenzene	20	1
N-Nitroso-di-n-propylamine	25	1
N-Nitrosodiphenylamine	12	3
Pentachlorophenol	50	0.5
Phenol	5	1

TABLE 2: SUMMARY OF TARGET PQLs^(a)

Analyte	Soil / CB Solids / Sediment Target PQL ^(b) µg/kg	Groundwater / Surfacewater Target PQL ^(b) µg/L
Polychlorinated Biphenyl Aroclors		
Aroclor 1016	4	0.01
Aroclor 1221	4	0.01
Aroclor 1232	4	0.01
Aroclor 1242	4	0.01
Aroclor 1248	4	0.01
Aroclor 1254	4	0.01
Aroclor 1260	4	0.01
Dioxins/Furans^(d)		
2,3,7,8-TCDD	5.00E-05	--
1,2,3,7,8-PECDD	5.00E-05	--
1,2,3,4,7,8-HXCDD	5.00E-05	--
1,2,3,6,7,8-HXCDD	5.00E-05	--
1,2,3,7,8,9-HXCDD	5.00E-05	--
1,2,3,4,6,7,8-HPCDD	5.00E-05	--
OCDD	5.00E-05	--
2,3,7,8-TCDF	5.00E-05	--
1,2,3,7,8-PECDF	5.00E-05	--
2,3,4,7,8-PECDF	5.00E-05	--
1,2,3,4,7,8-HXCDF	5.00E-05	--
1,2,3,6,7,8-HXCDF	5.00E-05	--
1,2,3,7,8,9-HXCDF	5.00E-05	--
2,3,4,6,7,8-HXCDF	5.00E-05	--
1,2,3,4,6,7,8-HPCDF	5.00E-05	--
1,2,3,4,7,8,9-HPCDF	5.00E-05	--
OCDF	5.00E-05	--
Total Petroleum Hydrocarbons		
Gas Range	5000	250
Oil Range	10000	200
Diesel Range	5000	100

Notes:

- (a) Target PQL values presented in this table are based on LOQ values from Analytical Resources, Inc. (ARI) of Seattle, Washington, unless otherwise noted.
 (b) PQLs from selected analytical laboratories to be verified by PLPs and submitted to Ecology for approval prior to start of field sampling activities.
 (c) Target PQL based on minimum level of quantitation for EPA Method 1631, Revision E (EPA 2002).
 (d) Target PQLs for dioxins/furans are from AXYS Analytical Services, Ltd. of Sydney, B.C.

Abbreviations:

-- = not applicable/available
 µg/kg = micrograms per kilogram
 µg/L = micrograms per liter
 PQL = Practical Quantitation Limit
 LOQ - Limit of Quantitation

ECOLOGY RESOLUTION OF DISPUTE LETTER



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

May 23, 2013

Mr. Stephen Wilson
Director, Safety, Security, Quality & Environment Stewardship
Crowley Maritime Corporation
1102 SW Massachusetts Street
Seattle, WA 98134

**Re: Resolution of Dispute of November 16, 2012
Approval of RI/FS Work Plan with Revisions
Crowley Marine Services 8th Avenue S. Site
Agreed Order No. DE 6721**

Dear Mr. Wilson:

On November 2, 2012, the Washington Department of Ecology (Ecology) issued the approved Remedial Investigation/Feasibility (RI/FS) Study Work Plan (Plan), October 2012, to 8th Avenue Terminals to be implemented within 30 days. On November 16, 2012, 8th Avenue Terminals submitted a request for dispute resolution concerning the Plan.

Ecology and 8th Avenue Terminals reached an agreement to resolve the dispute and implement the Plan with some revisions. The revisions to the Plan are described below and in the enclosure to this letter. The Plan is approved as revised and field work may begin, to be completed within 12 months as required by the Agreed Order Exhibit C - Schedule of Deliverables.

1. The RI described in the Plan will be implemented in two phases. Figure 1 shows the currently planned sampling locations for both phases. The schedule for field work for both phases is subject to Exhibit C of the Agreed Order No. DE 6721.
2. Phase 1 of the RI consists of the sampling locations shown in Figure 2. For Phase 1, 8th Avenue Terminals will:
 - a. Drill and sample 15 soil borings according to the Plan Section 4.2.2. Samples collected for archiving at depths of 2.5, 7.5, and 12.5 feet will be analyzed if required by Ecology based on sample-specific indications.



- b. Install 16 monitoring wells and conduct two quarterly low-tide groundwater sampling events and one high-high tide groundwater sampling event (Sections 4.2.3, 4.2.4). Well EMW-2S will be relocated due to logistical issues with the planned location. Wells HC-4 and HC-19 will be replaced with a deep monitoring well near CMW-7 and sampled and analyzed according to the requirements for the other deep wells.
 - c. Soil samples for dioxins and furans will be performed in the borings shown on Table 2 of the Revised Work Plan for the Phase 1 borings, except at the 10' depths. Samples from the 10' depth will be archived and analyzed upon sample-specific indications.
 - d. Sample intertidal (riprap bank under pier) sediments (Sections 4.2.7).
 - e. Commence the stormwater assessment including one catch basin solids and one stormwater sampling event prior to cleaning catch basins, and one additional stormwater sampling event (Sections 4.2.5, 4.2.6). All other tasks described in these sections will be performed in Phase 1 including investigating the two remaining Parcel F sumps. Further sampling events for the stormwater and catch basins will be conducted in Phase 2, as negotiated after the completion of Phase 1.
 - f. Conduct geophysical survey (Section 4.2.9).
 - g. Survey boring and monitoring well locations and elevations (Section 4.2.12).
 - h. Observe and sample any sheet pile wall and riprap seeps (Sections 4.2.7).
 - i. Observe tenant operations and interview personnel (Section 4.2.10).
 - j. Provide field data and any other RI information to Ecology upon request.
 - k. Provide laboratory data to Ecology upon receipt from the lab.
3. Phase 2 of the RI currently consists of the sampling locations shown in Figure 3. For Phase 2, 8th Avenue Terminals will:
- a. Evaluate Phase 1 data jointly with Ecology to update the conceptual site model as necessary; identify preliminary soil and groundwater cleanup levels; revise the contaminants of potential concern as appropriate; and determine if changes to the planned Phase 2 sampling program (including soil, groundwater, catch basin solids, stormwater, and sediment sampling, the sample analytical parameters, and additional groundwater elevation monitoring during low and high tides) are warranted.

Mr. Stephen Wilson

May 23, 2013

Page 3

- b. If no modifications to the scope of work are approved by Ecology, then 8th Avenue Terminals will implement Phase 2 according to the Plan and as shown in Figure 3.
 - c. Upon agreement with Ecology on any changes to Phase 2, prepare an amendment to the Sampling and Analysis Plan to incorporate any modifications to the field work for Phase 2. The amendment is subject to Ecology approval.
 - d. Upon Ecology approval, commence performing the remaining sampling shown in Figure 3 as modified by the amendment, if applicable, within 30 days of Ecology's notification to proceed.
4. 8th Avenue Terminals will provide schedules for field work for Phases 1 and 2 upon Ecology's approval of the Plan and and Phase 2 amendment.

Ecology appreciates working with 8th Avenue Terminals to resolve this dispute and looks forward to beginning field work for the remedial investigation. If you have any questions regarding this letter, please contact me at (425) 649-7219 or victoria.sutton@ecy.wa.gov.

Sincerely,



Victoria Sutton
Toxics Cleanup Program

By certified mail: 7005 1820 0004 5364 5534

Enclosures

ENCLOSURE

Resolution of additional technical issues discussed during the dispute resolution meetings are as follows:

From: Mike Staton [mailto:mstaton@slrconsulting.com]
Sent: Thursday, December 20, 2012 9:42 AM
To: Sutton, Victoria (ECY)
Cc: Stephen Wilson (stephen.wilson@crowley.com); Josh Lipsky (jlipsky@cascadialaw.com)
Subject: Additional Issues of Discussion for First Phase of Remedial Investigation, 8th Avenue Terminals Site

Hi Vicki – Thanks again for meeting with us yesterday. We ran out of time to discuss all aspects of the scope of work for the first phase of the RI, and so I'm writing to summarize those items that were missed. For several of those items, we are including our suggested compromise or recommendation for that work.

- 1) Ecology's work plan states that all of the soil samples be analyzed for all of the contaminants of potential concern (COPCs) at the site, except for TPH as gasoline at many of the boring locations. Based on the historical and current operations at the property and the previous investigation results, it appears that the full suite of VOCs should only be included as COPCs at three of the potential contaminant source areas (the dredge fill areas, the former pipe and chain manufacturing area, and the aluminum window manufacturing area), and that benzene, toluene, ethylbenzene, and xylenes (BTEX) are the only VOC analytes that should be COPCs for the other potential contaminant source areas. We suggest that the soil samples from the proposed borings at the dredge fill areas, the former pipe and chain manufacturing area, and the former aluminum window manufacturing area are analyzed for the all of the COPCs including the full suite of VOCs, and that the soil samples from the proposed borings at all of the other potential contaminant source areas at the property are analyzed for BTEX instead of the full suite of VOCs, and all of the other COPCs.

Ecology's response: Phase 1 soil borings include 15 of 69 proposed, therefore, all soil samples for this phase of work are required to be analyzed for VOCs according to the Plan. Based on the results obtained in Phase 1, VOCs may or may not be required for specified soil samples in Phase 2. Soil samples requiring VOC analysis in Phase 2 will be evaluated upon completion of Phase 1.

- 2) It is our understanding that we will be submitting to you our laboratory's PQLs for all of the analytes, and you will determine if those PQLs are acceptable for the first phase of the RI.

Ecology's response: The PQL review is complete. The PQLs are acceptable to begin the first phase of the RI. As the RI progresses, care should be taken to achieve the lowest possible PQLs for contaminants that may require a cleanup level lower than the current PQL to assure that adequate data will be collected for the RI.

- 3) Ecology's work plan states that the groundwater samples collected from the high tide sampling event will be analyzed for the full suite of COPCs for the site. We proposed the high tide sampling event in our work plan to further evaluate groundwater potability and the potential matrix interference affects (primarily due to brackish conditions) on arsenic and selenium concentrations. To meet those objectives, we proposed to collect groundwater samples from the wells located near the shoreline and from 10 selected wells located further inland, and analyze the samples from total and dissolved metals, salinity, and total suspended solids. Since the surface water that enters the property will dilute the contaminant concentrations, we don't see a technical reason to analyze the high tide groundwater samples for any of the other COPCs.

Ecology's response: The high-high tide sampling event as described in the Revised Work Plan Section 4.2.4 limits the analyses to be performed similar to those requested. One high-high tide sampling event is required during Phase 1. Further sampling required for groundwater potability and site hydrogeology will be determined for Phase 2 of the remedial investigation.

- 4) In addition to the groundwater monitoring associated with the low and high tide sampling events, Ecology's work plan includes two more water level monitoring events to assess the effect of the sheet pile seawall as a barrier to groundwater flow. We have re-installed the stilling well on the pier to measure the water levels in Slip 4, and we propose to measure the water levels in Slip 4 during each groundwater sampling event to show the different groundwater and surface water elevations. Prior to each sampling event, we will have several people measuring water levels in the monitoring wells and the stilling well, and we will start at the wells near the seawall and move inland. We believe that the previous tidal study conducted by SLR in 2008 and the groundwater and surface water monitoring data that will be collected during the proposed groundwater sampling events will provide sufficient evidence that the seawall is acting as a barrier to groundwater flow, and that the two additional monitoring events should not be necessary.

Ecology's response: Phase 1 of the remedial investigation requires the installation of 16 additional monitoring wells. Information needed to fully evaluate site hydrogeology throughout the site will be determined upon completion of Phase 1 and conducted in Phase 2.

- 5) Ecology's work plan includes two separate catch basin solids sampling events. The first event would occur before the cleaning of the basins, and the second event would be conducted approximately 6 months after cleaning, including samples from two of the new basins on Parcel F. Since all of the catch basins were cleaned during 2009 and the property operations have not significantly changed since that time, we believe that any variations in the sample concentrations between the two events would be minimal. As a compromise, we propose to conduct one catch basin sampling event but add samples from two of the new catch basins on Parcel F to that event.

Ecology's response: The catch basin sampling is intended to determine if contaminants are reaching the Duwamish River through the stormwater pathway. The first event will be performed prior to cleaning along with one stormwater sampling event. This sampling event will determine if contaminants are present in the catch basins. The lines will then be cleaned and the video inspection, survey, Parcel F sump evaluation, and other tasks performed as described in Section 4.2.5. One catch basin sampling event, the video inspection, and other tasks are required in Phase 1. Upon completion, additional catch basin sampling, including Parcel F catch basins, and any other stormwater system evaluations will be performed as written, or modified for Phase 2 based on the Phase 1 data.

- 6) Our work plan included the collection of stormwater samples from the downgradient catch basin of three of the conveyance lines during one precipitation event with at least 0.1 inches of precipitation over a 24 hour period. Ecology's work plan includes the collection of stormwater samples at the outfall of each of the six conveyance lines during five different precipitation events with at least 0.1 inches of precipitation over a 24 hour period. Based on the property operations and the proximity of the conveyance lines, this seems excessive but we would like to hear your thoughts on the issue. As a compromise, we would agree to conduct two different sampling events from the outfalls of three of the conveyance lines; however, the sampled conveyance lines from the second event would be different from the first event.

Ecology's response: For the first sampling event, all six stormwater lines will be analyzed. Upon review of the data, certain lines may or may not be eliminated. A minimum of five sampling events must be conducted during the remedial investigation to allow for adequate characterization of the highly variable stormwater media. Two stormwater sampling events will be performed during Phase 1, one of which will be completed prior to cleaning the catch basins.

Additional technical issues raised by 8th Avenue Terminals comments on this resolution agreement on February 7, 2013:

- 7) Samples collected below 15' are not required to be analyzed.

Ecology's response: In order to determine vertical extent of contamination and have data on soil contamination if groundwater is shown to be contaminated, certain samples may be required to be analyzed below this depth.

- 8) Potential analyses of archived soil samples collected at depths of 2.5, 7.5, and 12.5 feet will no longer be required unless the field screening results indicate that the sample at one of those depths is the most impacted sample in a boring, or if metals shavings, slag-like materials, or burned or partially burned materials and ash are present.

Ecology's response: Analysis of samples from these depths may be required by Ecology under certain sample-specific conditions, such as changes in lithology, but may not be required only to narrow the vertical delineation of contaminants. If adjacent samples are

contaminated and these samples are not analyzed, the entire vertical column analyzed will be assumed to be contaminated.

- 9) Soil samples will not be analyzed for dioxins/furans unless burned or partially burned materials or ash are present in the sample.

Ecology's response: Analysis for dioxins and furans is not related to the visible presence of burned materials or ash. Samples collected in the borings scheduled for dioxin analyses must be performed at the 1 and 5 feet depths. Analyses of samples from the 10' will be archived and analyzed if needed instead of automatically analyzed.

- 10) Soil sample analyses for hexavalent chromium will be by EPA Method 7196A instead of EPA Method 7195; soil sample analyses for metals (except mercury) will be by EPA Method 200.8 instead of EPA Method 6020; and soil sample analyses for mercury will be by EPA Method 1631E instead of EPA Method 7471.

Ecology's response: These methods are acceptable for the RI provided that the lowest possible PQLs are achieved for contaminants that may require a cleanup level lower than the current PQL to assure that adequate data will be collected for the RI.

- 11) Due to logistical issues, it is not reasonably possible to install well EMW-2S. The groundwater monitoring program includes the sampling of existing wells HC-4 and HC-19; however, HC-4 cannot be located and appears to have been destroyed, and HC-19 is located beneath an area of wood chip storage and will not likely be accessible during the RI.

Ecology's response: Well EMW-2S will be relocated to a nearby area to obtain the required data. Instead of replacing Wells HC-4 and HC-19, an additional deep well (16D) near CMW-7 will be installed.








Please note Section VIII.O. of the Agreed Order requires that 8th Avenue Terminals provide for continued implementation of all requirements of this Order and any remedial actions found to be necessary as a result of this Order regardless of any transfer of interest in any portion of the Site; therefore any operations conducted by tenants at the property must allow for access during the RI.

- 12) The catch basin solids sampling program includes analysis of selected samples for dioxins/furans; however, if burned or partially burned materials or ash are not encountered in any of the soil borings during the RI, then analysis of catch basin solids samples for dioxins/furans will not be required.

Ecology's response: Because analysis of soil samples for dioxins and furans is still required without visible evidence of these materials, the catch basins are required to be analyzed for dioxins and furans as planned.



**Legend
Remedial Investigation**

-  Phase 1 Deep Soil Boring
-  Phase 1 Shallow Well
-  Phase 1 Deep Well
-  Phase 1 Intertidal Sample
-  Phase 2 Shallow Soil Borings
-  Phase 2 Deep Soil Borings
-  Phase 2 In-Water Sediment Sample

0 65 130 260 Feet




FIGURE 1
Slip 4 Lower Duwamish Waterway
Crowley Marine Services 8th Avenue S
7400 8th Avenue South
Seattle, WA



1951 WSDOT Aerial Photograph



Legend
Phase 1
Remedial Investigation

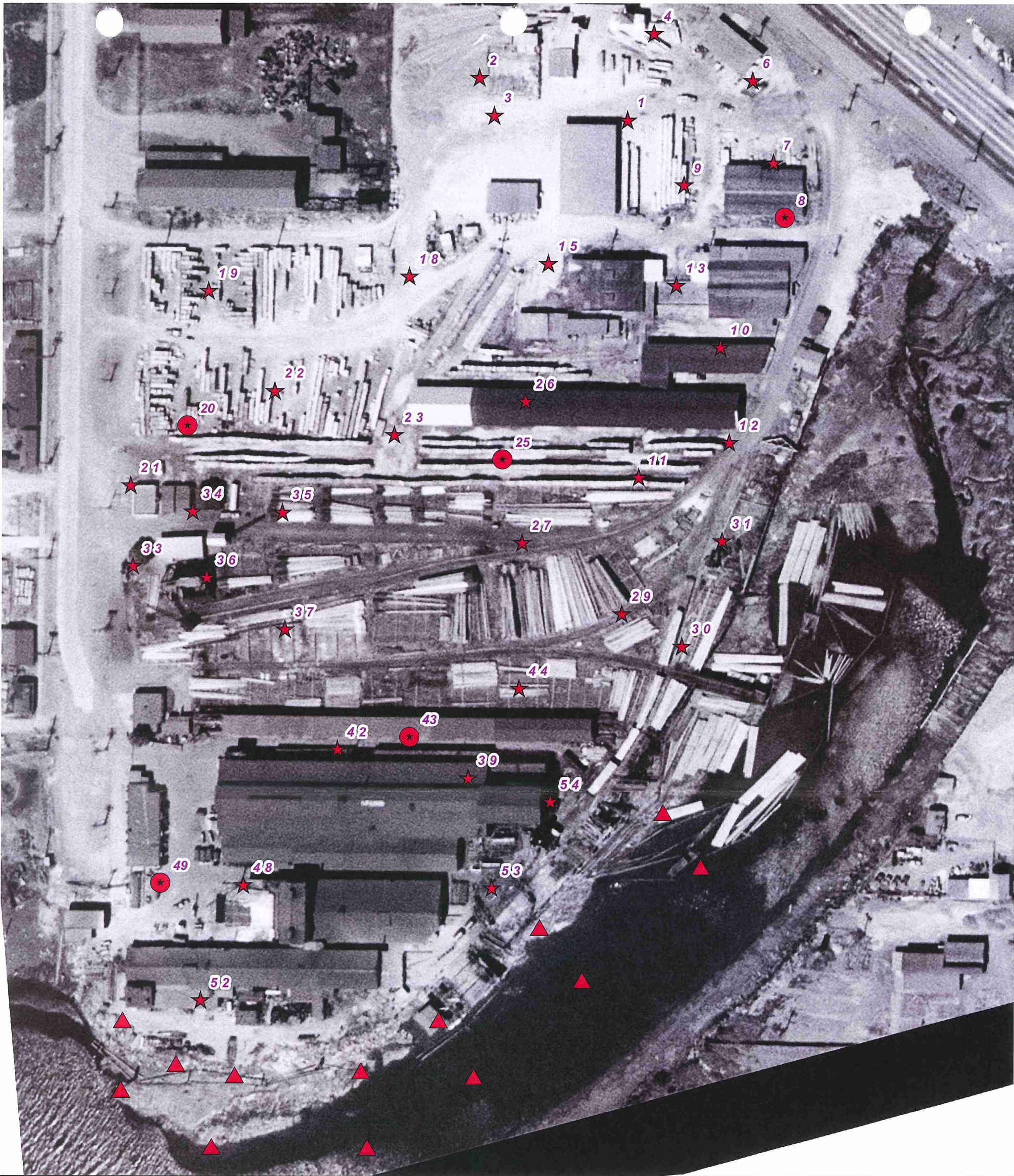
- Phase 1 Shallow Soil Boring
- Phase 1 Deep Soil Boring
- ⊗ Phase 1 Shallow Well
- ⊕ Phase 1 Deep Well
- ✱ Phase 1 Intertidal Sample

0 65 130 260 Feet

FIGURE 2
 Slip 4 Lower Duwamish Waterway
 Crowley Marine Services 8th Avenue S
 7400 8th Avenue South
 Seattle, WA



1951 WSDOT Aerial Photograph



0 65 130 260 Feet

Legend
Phase 2
Remedial Investigation

- ★ Phase 2 Shallow Soil Borings
- ★ (with red circle) Phase 2 Deep Soil Borings
- ▲ Phase 2 In-Water Sediment Sample

FIGURE 3
 Slip 4 Lower Duwamish Waterway
 Crowley Marine Services 8th Avenue S
 7400 8th Avenue South
 Seattle, WA



1951 WSDOT Aerial Photograph

FINAL DATA GAPS REPORT



global environmental solutions

8th Avenue Terminals, Inc. Site

Final Data Gaps Report

SLR Ref: 101.00205.00030

October 2014

FINAL DATA GAPS REPORT
FIRST PHASE OF REMEDIAL INVESTIGATION
8TH AVENUE TERMINALS, INC. SITE
SEATTLE, WASHINGTON

Prepared for
8th Avenue Terminals, Inc.
October 31, 2014

Prepared by
SLR International Corporation
22118 20th Avenue SE, Suite G202
Bothell, Washington 98021

Project 101.00205.00030

**Final Data Gaps Report
First Phase of Remedial Investigation
8th Avenue Terminals, Inc. Site
Seattle, Washington**

The material and data in this report were prepared under the supervision and direction of the undersigned.



Michael D. Staton, L.G.
Principal Geologist

10/31/14
Date

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1 INTRODUCTION

On October 12, 2009, 8th Avenue Terminals, Inc. (8th Avenue Terminals), entered into an Agreed Order (No. DE 6721) with the Washington Department of Ecology (Ecology) to complete a remedial investigation and feasibility study (RI/FS), and prepare a draft cleanup action plan (DCAP) for the 8th Avenue Terminals site (the “site”). The site is defined by the extent of contamination caused by the release of hazardous substances at the 8th Avenue Terminals property at 7400 8th Avenue South in Seattle, Washington. The 8th Avenue Terminals property is located along the northeast bank of the Duwamish Waterway and the west bank of Slip 4, and includes the southwestern part of Slip 4 (see Figure 1).

This RI/FS process is part of Ecology’s effort to investigate properties adjacent to the federal Lower Duwamish Waterway (LDW) Superfund Site for potential ongoing sources of contamination to the Superfund Site. In early 2008, Ecology issued a Site Hazard Ranking of “2” for the 8th Avenue Terminals property, in large part due to the perceived potential of contaminants on the property to migrate to Duwamish Waterway (primarily Slip 4) sediments. In response, Crowley Marine Services, Inc. (Crowley) independently conducted an investigation at the property to assess the potential contaminant migration pathways to the waterway. A report that presented the results of the investigation was submitted to Ecology on August 1, 2008 [SLR International Corporation (SLR), 2008].

Under an Ecology Agreed Order, 8th Avenue Terminals was required to provide additional data and analysis to determine the potential risks to the Duwamish Waterway posed by the property, to determine if active cleanup of the 8th Avenue Terminals property is necessary and, if so, to facilitate the selection of a cleanup alternative. More specifically, the RI will determine the nature and extent of contamination and assess the potential risks to human health and the environment. The FS will identify, screen, and evaluate potential remedial measures. Based on the results of the RI/FS, the DCAP will present a proposed remedial action, as necessary, to address the contamination at the site.

After years of negotiation of an RI scope of work, 8th Avenue Terminals agreed to conduct the scope of work in Ecology’s RI/FS Work Plan (work plan) dated October 2012 (Ecology, 2012) after modifications to the scope were accepted by both parties (Ecology, 2013). In accordance with WAC 173-340-350(6) and (7)(a), the RI is being conducted in phases to address critical questions, focus the sampling on data gaps, prevent the collection of unnecessary data, and increase the efficiency of the

investigation. The first phase of the RI was conducted from May 2013 through February 2014. The first phase of the RI consisted of collecting the data necessary to assess the potential contaminant source areas that have limited data, to better understand contaminant fate and transport and the potential receptors, and to further evaluate the applicable or relevant and appropriate requirements (ARARs) for the site. After preliminarily identifying the appropriate ARARs for the site, the preliminary conceptual site model was revised and preliminary soil and groundwater cleanup levels were developed for the contaminants of potential concern (COPCs) in accordance with WAC 173-340-350(9)(a). This report describes the field activities during the first phase of the RI, presents the results of the work, including the revised preliminary conceptual site model and the proposed preliminary soil and groundwater cleanup levels, and identifies the remaining investigation data gaps.

The second phase of the RI will address the remaining investigation data gaps, thereby completing the investigation of the nature and extent of the contamination at the site and the assessment of any potential risks to human health and the environment presented by the contamination.

2 BACKGROUND

2.1 General Property Information

The 8th Avenue Terminals property is located in the southern part of Seattle, Washington, along the Duwamish Waterway (see Figure 1). The property is located north of the Duwamish Waterway, between Slip 4 and 8th Avenue South, and to the south of South Garden Street (see Figure 2). The property includes the southwestern part of Slip 4. The property address is 7400 8th Avenue South.

The property is divided into two parcels (designated D and F), and 8th Avenue Terminals owns both parcels. The boundary between Parcel D (southern parcel) and Parcel F (northern parcel) is shown on Figure 3. Since October 2009, the central and southern portions of Parcel D have been leased to Organic Fuel Processors, who uses the property to receive, grind, and store wood that can be used to make compost or to produce alternative fuel. Organic Fuel Processors subleases the southern and southeastern portions of Parcel D to KRS Marine, who uses the property to load/unload cargo from barges and to maintain equipment. Since December 2009, Parcel F and the northern part of Parcel D have been leased to First Student, Inc. (First Student). First Student uses the property to schedule, stage, and park school buses. In October 2010, Organic Fuel Processors expanded their lease area to include the eastern part of the property (including the eastern part of Parcel D and the southeastern part of Parcel F; see Figure 3).

The southwestern edge of the 8th Avenue Terminals property, along the Duwamish Waterway, consists of boulder riprap that is approximately 110 feet long and extends to the bottom of the riverbank. The southern and eastern edges of the upland portion of the property, along Slip 4, are bordered with a sheet pile seawall that is approximately 1,035 feet long and extends to a depth of 43 feet below ground surface (approximately 15 feet below the bottom of Slip 4). The seawall was built in the early 1980s to allow for the construction of an adjoining pier. In 2012, the northern portion of the pier was removed as part of the City of Seattle's remediation of the sediments in the northern part of Slip 4. Based on a plan drawing of the seawall construction (Marine Power & Equipment Co. Inc., 1982), approximately 5,500 cubic yards of sloughed material from the top of the bank was dredged during the construction of the wall. The dredged material and approximately 14,500 cubic yards of imported material were used to re-grade the surface of Parcel D. The approximate locations where the dredged material was backfilled are shown on Figure 2.

The subject property is located in an industrial area of Seattle, and is bounded to the west by 8th Avenue South and an auto body repair shop; to the north by South Garden Street, a Markey Machinery Company facility, and a metals recycling facility; to the east by City of Seattle property and Slip 4; and to the south by the Duwamish Waterway. The City of Seattle property, which was purchased from Crowley in 2007, includes a narrow strip of land between Parcel F and Slip 4 that extends around the north end of Slip 4, and also includes the northern part of Slip 4 (see Figure 2). A Boeing facility and an Emerald Services facility are located along the east side of Slip 4. The Boeing property also includes the southeastern part of Slip 4.

2.2 Current Physical Characteristics

2.2.1 Upland Surface Cover

With the exception of the northern part of Parcel F, the entire upland portion of the 8th Avenue Terminals property is capped with asphalt or concrete. The surface pavement was installed in the early 1980s. The unpaved area of Parcel F is covered with gravel or limited vegetation (e.g., trees, shrubs). The banks along Slip 4 and the Duwamish Waterway consist of a sheet pile seawall and boulder riprap.

2.2.2 Upland Property Structures

Except for along the waterway and along the northeastern property line, the property is bounded by a chain-link fence, and two access gates are located on 8th Avenue South. On Parcel D, the only structures include office trailers, an equipment maintenance shop, and wood chip storage bins in the southwestern part of the property, and a pier along Slip 4 (see Figure 3). There are two loading ramps located in the southern part of the pier. The pier was constructed in the early 1980s and the office trailers were installed from the mid-1980s to the mid-1990s. The equipment maintenance shop and the wood chip storage bins were constructed in 2009.

On Parcel F, the structures consist of modular office buildings and several unused structures. These unused structures consist of a large canopy, two former shipping container repair shops, a former office building, and two empty silos (see Figure 3). Based on a review of aerial photographs, the former office building and the silos were constructed between 1946 and 1960. The canopy and the western former container repair shop were constructed during the 1960s, and the eastern former container repair shop was constructed during the 1980s. The modular office buildings were installed in 2009 and 2010. Currently, there are no aboveground storage tanks (ASTs) and no known underground storage tanks (USTs) at the property. However, there is no documentation

of the removal of a 5,000-gallon fuel oil UST that was located in the northwestern part of Parcel F.

2.2.3 Storm Water Drainage System

The storm water drainage system on Parcel D was installed in the early 1980s after the installation of the sheet pile seawall and the placement of approximately 20,000 cubic yards of fill across the upland portion of Parcel D. After the installation of the drainage system, most of the property surface was paved with asphalt or concrete. On Parcel D, there are currently 32 storm water catch basins that are connected to 6 storm water conveyance lines that have outfalls into Slip 4 and the Duwamish Waterway; however, Organic Fuel Processors has closed 4 of the catch basins. The approximate locations of the catch basins, conveyance lines, and outfalls (designated as OF1 through OF6) are shown on Figure 3. Outfalls OF1, OF2, OF3, OF4, and OF6 discharge storm water from both the First Student facility and the Organic Fuel Processors facility. Outfall OF5 only discharges storm water from the Organic Fuel Processors facility.

The northern portion of the previous storm water drainage system on Parcel F (northern conveyance line), which includes the unpaved portion of the property, was installed prior to 1946. The installation date of the southern portion of the previous drainage system on Parcel F (southern conveyance line) is not known. Prior to August 2012, the drainage system on Parcel F consisted of three storm water catch basins that were connected to the northern conveyance line, and four catch basins that were connected to the southern conveyance line (see Figure 3). Based on the results of a video inspection in September 2010, both conveyance lines were blocked with soil at several locations (SLR, 2010). According to a Layrite Concrete Products drawing (titled “Plant Layout”) dated June 1946, and an unnamed preliminary drawing, dated approximately 1990, in Crowley’s files, there were previously three additional catch basins on the northern conveyance line (see Figure 3). There is currently no field evidence of those catch basins.

In October 2010, SLR inspected two pipes from the easternmost known catch basin (previously designated FSCB4) on the southern conveyance line to try to find an outfall line from the Parcel F drainage system that extends to Slip 4. An 8-inch-diameter pipe ran to the east from the catch basin to a buried catch basin, where two, 4-inch-diameter pipes exited the basin (SLR, 2010). The 4-inch pipes extended to the east or northeast of the buried catch basin and at distances of approximately 10 and 25 feet, the pipes were blocked with soil. There was also an 8-inch-diameter pipe that exited the eastern part of FSCB4 (at a depth above the other 8-inch-diameter line) and extended approximately 50 feet to the northeast, where it was blocked with soil. Since the direction of the 8-inch-diameter line was to the north of Slip 4 and it sat above the other 8-inch-diameter line in FSCB4, it is unlikely that this line was an outfall line to Slip 4 (see Figure 3). During the City of Seattle’s sediment removal action at the northern part of Slip 4 in 2011 and 2012, two, 6-inch-diameter outfall lines were encountered along the northwestern bank of the

slip. The lines were cut below the final grade of the bank and capped [Integral Consulting, Inc. (Integral Consulting, 2012)]. The approximate locations of the caps on both of the former outfall lines are shown on Figure 3. Based on the locations of the outfall lines, it appears that both of the 4-inch-diameter pipes from the buried catch basin were expanded to 6 inches in diameter, and extended to Slip 4.

Due to poor storm water drainage on Parcel F, 8th Avenue Terminals constructed a replacement storm water drainage system on Parcel F in July and August 2012, and abandoned the previous system. The replacement system consists of three catch basins along a northern conveyance line and three catch basins along a southern conveyance line that are connected at a conveyance vault (CV1) that is located approximately 45 feet southeast of the eastern former container repair shop (see Figure 3). The northern and southern conveyance lines are located near the previous conveyance lines. To discharge the water from Parcel F, a conveyance line was installed between CV1 and the existing northern storm water drain line (D Line #6) on Parcel D, and a deeper conveyance vault (CV2) was installed and connected to D Line #6 to allow for storm water flow via gravity from Parcel F. The collected storm water from Parcel F is now discharged to Slip 4 via outfall OF6 (SLR, 2012).

During the installation of the replacement drainage system, partially buried storm water catch basins were discovered approximately 6 feet northeast of conveyance vault CV2 and approximately 60 feet south of the eastern former container repair shop (see Figure 3). The catch basin near CV2 was plumbed to D Line #6, and the catch basin to the south of the eastern former container repair shop was connected to the previous southern conveyance line. After constructing the replacement system, the previous drainage system on Parcel F, including the two discovered catch basins, was abandoned. The lid and ring of each basin were removed, the solids in each basin were extracted and hauled off-site for disposal, and the basins, including the ends of the conveyance lines, were filled with cement (SLR, 2012).

In addition to the storm water drainage system described above, there are three inactive or abandoned equipment wash water collection sumps in the northern and central portions of Parcel F. The locations of the sumps are shown on Figure 3. Based on an inspection by SLR in September 2010, each of the sumps contained limited solids and there were no inlet or outlet lines (SLR, 2010). In the walls of the sump beneath the canopy, there is evidence of several 6-inch-diameter holes (possible inlets and/or outlets) that were filled with concrete. The sumps are up to five feet deep. During the abandonment of the previous storm water drainage system on Parcel F, the northeastern wash water collection sump was abandoned by removing the lid and filling it with cement (SLR, 2012).

In November 2009, all of the previous storm water catch basins and portions of the previous conveyance lines on Parcel F were cleaned by Gary Merlino Construction

Company. Alaska Logistics, a previous property tenant, cleaned the catch basins in the southern portion of Parcel D in 2006 and 2008 (SLR, 2008).

Organic Fuel Processors and First Student operate and maintain their portions of the storm water drainage system under the conditions of Industrial Stormwater General Permits. They have installed a filter insert and an outlet trap in most of the active catch basins as part of the storm water protection best management practices that are being conducted at the property. Organic Fuel Processors also sweeps their portion of the facility on a daily basis.

2.3 Off-Property Drainage into Slip 4

In the Lower Duwamish Waterway area, there are both public and private storm drain systems that convey collected storm water runoff into the waterway (including into Slip 4). Most of the waterfront properties utilize privately owned systems that discharge directly into the waterway.

Prior to the formation of the Municipality of Metropolitan Seattle (Metro, now part of King County) in 1958, Seattle and other surrounding communities operated small treatment plants that discharged to Lake Washington, the Duwamish Waterway, and Puget Sound (Ecology, 2006). One of these treatment plants, the Diagonal treatment plant, was constructed on East Marginal Way in 1939. The Duwamish interceptor, which conveyed storm water and municipal/industrial wastewater to the Diagonal treatment plant, included a pump station with a 36-inch emergency overflow and storm water bypass at the head (northern end) of Slip 4.

There are currently five public storm water outfalls located at the head of Slip 4 and six private storm water outfalls located along the eastern end of Slip 4. The locations of the outfalls are shown on a figure by Ecology that is presented in Appendix A. The private outfalls are from the Boeing Plant 2 facility and from the First South Properties site that is operated by Emerald Services. The public outfalls into Slip 4 include the following:

- King County (KC) Airport Storm Drain #3/PS44 Emergency Overflow (60-inch-diameter pipe) – Conveys storm water runoff from the northern portion of King County International Airport and encompasses approximately 290 acres of the Slip 4 drainage area.
- North Boeing Field Storm Drain (24-inch-diameter pipe) – Collects storm water runoff from an approximate one-acre area at the northern end of King County International Airport.
- I-5 Storm Drain (72-inch-diameter pipe) – A Highway I-5 storm drain collects runoff from approximately 1½ miles of highway, from 44 acres of single family

residential property located east of I-5, and from 1 to 2 acres at the north end of the King County International Airport.

- Georgetown Flume (72-inch-diameter pipe) – The Georgetown Flume was originally constructed to discharge cooling water from the Georgetown Steam Plant (GTSP) after the Duwamish River was straightened in 1916 (Ecology, 2006). The 6.5-foot-wide flume, which was replaced with underground piping in 2009, previously consisted of concrete, wooden, and piped sections. The flume extended approximately 2,500 feet across the north end of King County International Airport from the GTSP to the head of Slip 4. The new 72-inch-diameter pipe also discharges to the head of Slip 4.
- East Marginal Way Emergency Overflow (36-inch-diameter pipe) – King County’s East Marginal Way pump station is connected to the East Marginal Way emergency overflow. There has not been a recorded overflow from this pump station since record keeping began in the 1970s (Ecology, 2006).

The combined sewer service area in the Slip 4 basin encompasses approximately 6,200 acres and the storm drain basin covers approximately 467 acres (Ecology, 2006). The Slip 4 drainage basin is depicted on a figure by Ecology that is presented in Appendix A.

In 2005, Seattle Public Utilities (SPU) installed solids traps at 10 locations in the KC Airport Storm Drain #3/PS44 Emergency Overflow and in the I-5 SD to passively collect solids samples. In addition, in-line solids samples were collected from several of the trap locations, as well as an additional location. The sample results showed that at least one of the solids samples contained total polychlorinated biphenyls (PCBs), bis(2-ethylhexyl)phthalate (BEHP) and mercury concentrations greater than the cleanup screening levels (CSLs), and two of the samples contained zinc concentrations greater than the sediment quality standard (SQS; Ecology, 2006). SPU also collected in-line solids samples from the several locations along the Georgetown Flume. The sample results showed that at least one of the samples contained total PCBs, lead, mercury, and zinc concentrations greater than the CSLs, and BEHP and polycyclic aromatic hydrocarbons (PAHs) concentrations greater than the SQSs (Ecology, 2006). The total PCB concentrations in the samples were up to approximately 43 times greater than the CSL.

In 2005, SPU collected solids samples from an oil/water separator and two storm water catch basins at the First South Properties site. The analytical results showed that the samples collected from the oil/water separator and one of the catch basins contained zinc, BEHP, butyl benzyl phthalate, dimethyl phthalate, and/or di-n-octyl phthalate concentrations that exceeded the SMS (Ecology, 2006).

Based on the elevated contaminant concentrations in the solids samples from the Georgetown Steam Plant Flume, the City of Seattle removed the solids in the flume,

replaced the flume with an underground storm drain pipe that discharges into Slip 4 in 2009, and removed PCB-impacted soil from two Seattle City Light substations located next to the flume. In August 2008, the City of Seattle, King County, and Boeing entered into an Agreed Order with Ecology to conduct an RI/FS at the North Boeing Field/Georgetown Steam Plant Site. The purposes of the RI are to define the nature and extent of the soil and groundwater contamination at the site, to try to identify the sources of the known impacted solids in the site storm water drainage systems, and to determine if contamination at the site is contributing to the sediment impacts in the Lower Duwamish Waterway. The results of the ongoing investigation activities have shown that elevated concentrations of PCBs are present in the storm drain system at North Boeing Field, and that storm water from North Boeing Field is a source of PCBs in the Slip 4 sediments [United States Environmental Protection Agency (EPA), 2010]. To limit further impacts to the sediments in Slip 4, Boeing installed and operates a stormwater treatment system at North Boeing Field to remove PCBs and other hazardous substances from the storm water prior to discharge to Slip 4.

2.4 Property History

From 1889 to approximately 1916, the 8th Avenue Terminals property was agricultural land, primarily open field pasture (Weston, 1988), that was adjacent to a meander of the Duwamish River (presently Slip 4). A private residence appears to have occupied the northern part of Parcel F (Hart Crowser, 1989a). With the dredging of the east and west waterways, the Duwamish Waterway was established in its present course and Slip 4 was isolated in its present configuration by 1916. Beginning in approximately 1918, the southern part of Parcel D was used for the manufacturing of hydraulic equipment and metal pipes (primarily by Washington Supply & Manufacturing Company and Hydraulic Supply Manufacturing Company), and the central part of Parcel D was occupied by sawmill operations (primarily by Pankrantz Lumber Company). By 1922, the southeastern part of Parcel F (and the northeastern part of Parcel D) was occupied by an excelsior (wood shavings) manufacturing company (Washington Excelsior and Manufacturing Company), and the northern part of Parcel F was used for the manufacturing and storage of concrete products (Peerless Concrete Products) (Hart Crowser, 1991). Based on the soils encountered in the borings that were drilled during the previous investigations at the property, there is no evidence that wood waste from the historic operations was buried on the property.

By 1950, the hydraulic equipment and metal pipe manufacturing operations on Parcel D had added a chain manufacturing facility at the southern end of the property, and the sawmill operations were no longer present (Hart Crowser, 1989b). Puget Timber Company's creosote treatment facility, which started in the early 1940s and included wood pole and post treatment in a dip tank operation, occupied the western portion of the former sawmill site on Parcel D. By 1950, the Washington Excelsior and Manufacturing

Company operations and the concrete products manufacturing operations (replaced by Layrite Concrete Products) on Parcel F were still present; however, the concrete storage area had expanded to the southwestern part of Parcel F and the northwestern end of Parcel D, and an aluminum window and sash manufacturing facility was present in the eastern part of Parcel F. By 1981, all of the structures on Parcel D and a few of the structures on Parcel F had been demolished. Figures 4 and 5 depict the historic business activities at Parcels D and F from approximately 1918 to 1949 and from 1950 to 1974, respectively.

There were three petroleum USTs and one oil AST located on Parcel F, and an oil AST (in a vault) was located on Parcel D. The former locations of the tanks are shown on Figure 2. An 8,000-gallon diesel UST and a 2,000-gallon gasoline UST on Parcel F were removed in 1989 (Hart Crowser, 1989a). The remedial action associated with the removal of the USTs are described in Section 3.2 of this report. The oil AST associated with the excelsior manufacturing operations on Parcel F was removed by 1985, and the oil AST associated with the pipe manufacturing operations on Parcel D was removed prior to 1981. There is no documentation of the removal of a 5,000-gallon fuel oil tank that was located in the northwestern part of Parcel F.

By 1985, the Parcel D surface and the southern part of the Parcel F surface had been paved, and the seawall and pier along Slip 4 had been constructed. From the mid-1980s through September 2009, the property was used for cargo storage and distribution. Since October 2009, the south-central portion of the upland part of Parcel D has been used to receive, grind, and store wood that can be used to make compost or produce alternative fuel. The southern and southeastern portions of the upland part of Parcel D have also been used to load/unload cargo from barges and to maintain equipment. Since December 2009, Parcel F and the northern part of Parcel D have been used to schedule, stage, and park school buses. Beginning in October 2010, Organic Fuel Processors expanded their lease area to include the eastern part of the property (including the eastern part of Parcel D and the southeastern part of Parcel F), and that area is primarily used for equipment storage.

Crowley owned the property from 1992 through 2008. In October 2008, Crowley transferred the property to 8th Avenue Terminals. Crowley and 8th Avenue Terminals are subsidiaries of Crowley Maritime Corporation. 8th Avenue Terminals is the current property owner.

2.5 Environmental Setting

2.5.1 Regional Geology

The 8th Avenue Terminals site is located in the Duwamish River valley. The Duwamish River valley is a former marine embayment that was an extension of the Puget Sound embayment as recently as approximately 5,000 years ago (Luzier, 1969). The Duwamish

River valley incises an extensive glacial drift plain that extends across much of south King County (Woodward et. al., 1995). In general, the elevation of the glacial drift plain varies from approximately 400 to 600 feet, and the elevation of the Duwamish River valley varies from approximately 10 to 75 feet (Woodward et. al., 1995). Near the site, the elevation of the drift plain is approximately 100 to 125 feet and the elevation of the Duwamish River valley is approximately 5 to 20 feet.

The alluvial deposits in the lower Duwamish River valley include “medium- to fine-grained sand and silt that was deposited in a delta complex when the valley was a submerged marine embayment; these sediments generally do not yield appreciable volumes of water to wells” (Woodward et. al. 1995).

2.5.2 Regional Hydrogeology

In general, the groundwater within the Duwamish Valley is unconfined within the valley alluvium at depths up to 10 feet below ground surface (bgs) (Booth and Herman, 1998). Regionally, the valley alluvium is a single, large aquifer system. The maximum depth of the alluvial aquifer in the LDW basin extends to roughly 100 feet bgs.

Site-specific studies in the LDW basin often subdivide the alluvial aquifer into shallow, intermediate, and deep zones (Windward Environmental, LLC, 2010). The shallow zone is generally located within the fill and/or younger alluvium, and the deep zone is generally located within the older alluvium. Shallow aquifer zones in the LDW basin are predominantly located in silty layers within interbedded sandier aquifer soils. In many areas, these shallow aquifers contain large amounts of organic material associated with the original river delta.

The flow characteristics of the aquifer zones vary depending on the nature of the materials that make up the local alluvium, the proximity to the river, and local tidal fluctuations. The elevation gradient between the glacially overridden deposits in the uplands and the LDW sediments creates a regional flow system with significant hydraulic potential for the transport of groundwater from the upland areas to the LDW.

2.5.3 Surface Water

The southern and southeastern ends of the 8th Avenue Terminals property extend into the Duwamish Waterway and Slip 4 (see Figure 2). The eastern boundary of the northern part of Parcel D is located just within Slip 4 or adjacent to Slip 4 (at the sheet pile seawall). The southeastern corner of Parcel F is also located adjacent to Slip 4.

Slip 4 is located on the east bank of the Duwamish Waterway, approximately 2.8 miles from the southern end of Harbor Island. The slip is approximately 1,400 feet long, with an average width of 200 feet, and encompasses approximately 6.4 acres (Integral Consulting, 2006).

The Duwamish Waterway and Slip 4 are directly connected to Puget Sound and are tidally influenced. From July 17 through 18, 2008, the water level fluctuation in a stilling well in Slip 4 was over 13 feet in response to Puget Sound tides (SLR, 2008). In 2011, Boeing conducted a salinity study in Slip 4, and the salinity measurements during three sampling events indicated that the water in Slip 4 is brackish (AMEC Geomatrix, 2011).

3 PREVIOUS INVESTIGATION RESULTS

This section details the types and distribution of the known contaminants at the 8th Avenue Terminals property. Based on our understanding of the historical and current operations at the property, SLR identified six potential contaminant source areas at the upland area of the property. The potential contaminant source areas and the rationale for their selection include the following:

- Former Concrete Products Manufacturing and Storage Operations on Parcels F and D (based on the storage and use of gasoline and fuel oil, and the potential effects of pH adjustment on metals in soil)
- Former Aluminum Window Manufacturing Operations on Parcel F (based on the storage and use of diesel fuel and the potential storage and use of lubricating oils and cleaning fluids)
- Former Sawmill Operations on Parcel D and Former Excelsior Factory and Press Operations on Parcel F [based on the storage and use of oil (excelsior operations only), the potential storage and use of lubricating oils, and the potential accumulation and burial of impacted ash due to the operation of a refuse burner, boiler house, and chimney]
- Former Wood Treating Operations on Parcel D (based on storage and use of wood treating chemicals, and the potential accumulation and burial of impacted ash due to the operation of a boiler)
- Former Pipe and Chain Manufacturing Operations on Parcel D (based on the storage and use of heating oil, the potential storage and use of lubricating oils and cleaning fluids, and the potential generation of metals shavings/slag)
- Dredge Fill Areas on Parcels D and F (based on dredging and filling of potentially impacted materials from the bank along Slip 4 and the Duwamish Waterway)

The locations of the potential contaminant sources and the estimated potential source areas are shown on Figures 6, 7, 8, and 9. After identifying the potential contaminant source areas, the nature and extent of upland contamination associated with each potential source area were evaluated on a preliminary basis using the data collected during previous investigations conducted in 1989 (Hart Crowser, 1989a and Hart Crowser, 1989b), 1990 (Hart Crowser, 1990 and Landau, 1990), 1994 (SEACOR, 1994), 2008 (SLR, 2008), 2009 [Strata Environmental (Strata), 2010], 2010 (SLR, 2010), and 2011 (SLR, 2011c). This section also describes the results of the previous catch basin solids sampling at the

8th Avenue Terminals property and includes a summary of the results of the previous sediment investigations in Slip 4.

In accordance with WAC 173-340-350(7)(b), preliminary screening levels (PSLs) have been selected to guide the scope of the first phase of the RI. The primary aim of the PSLs is to determine appropriate data quality objectives for the RI. Specifically, PSLs are used to determine the preliminary contaminants of potential concern (COPCs) for each media, and to ensure that the sample analytical methods and method reporting limits (MRLs) are appropriate.

As part of the LDW source control efforts, the EPA and Ecology signed an interagency Memorandum of Understanding (MOU) dividing work responsibilities for the LDW. The MOU identifies Ecology as the lead agency for source control work, and Ecology has developed a comprehensive database of potential ARARs and associated screening levels (Ecology, 2011b) for data comparison. In accordance with Ecology's request, the PSLs set at the most stringent of these potential ARARs or in accordance with the draft cleanup levels for the Paccar site in south Seattle were used to evaluate the previous data at the 8th Avenue Terminals property.

Tables that summarize the pathways and potential ARARs used to identify the PSLs are presented in Appendix B. The previous soil, groundwater, and catch basin solids sample analytical data and the PSLs for those media are presented in Tables 1 through 24.

3.1 Environmental Conditions at Potential Contaminant Source Areas

SLR evaluated the previous investigation methods and the technical quality of the previous analytical data, and determined that the sampling methods were appropriate and that all of the analytical data can be used to characterize the site conditions. The MRLs of many of the analyzed compounds for the soil and groundwater samples were lower than the very conservative PSLs; however, most of the samples contained one or more non-detect analyte at MRLs that exceeded the PSLs.

The previous soil, groundwater, and catch basin solids sample analytical data, as well as the associated PSLs and analytical method practical quantitative limits (PQLs), are presented in Tables 1 through 24. Based on a comparison of the PSLs and the previous soil sample analytical data at each potential contaminant source area, a description of the environmental conditions at each potential source area prior to the first phase of the RI is presented below. Due to the potential for impacted groundwater to migrate beyond a potential source area, the environmental conditions of the groundwater beneath the upland portion of the property are discussed separately from the descriptions of the conditions at each potential source area.

3.1.1 Former Concrete Products Manufacturing and Storage Operations

From the 1920s through the early 1980s, a concrete products manufacturing operation was present on Parcel F. The operations were initially located only in the northern part of Parcel F, but by the mid-1940s, concrete products storage were also stored at the southwestern part of Parcel F and the northwestern end of Parcel D. By the mid-1940s, a building that housed the drying kiln and boiler, as well as four additional small buildings that housed mixers, were located in the northwestern part of Parcel F (see Figure 6). By 1960, an office building, three aggregate storage silos, and a storage shed were located in the northeastern part of Parcel F. By 1969, the existing canopy and an existing storage shed (designated on Figure 2 as the western Former Container Repair Shop due to post-1980 property operations) were constructed in the southern and west-central parts of Parcel F, respectively. A fuel oil UST was located in the northwestern part of Parcel F and a gasoline UST was located in the northeastern part of Parcel F (see Figure 6). The gasoline UST was removed in 1988. It is unknown if the fuel oil UST was removed. All of the structures were demolished in the early 1980s, except the office, two of the silos, the canopy, and the western storage shed.

The potential contaminant sources associated with the former concrete products manufacturing and storage operation include the storage and use of fuel oil and gasoline, the use of equipment wash water collection sumps (possible dry wells), and the potential effects of pH adjustment due to precipitation flowing across concrete products and infiltrating into the soil. The gasoline tank was removed in 1988, and the three soil samples collected from the sidewalls and floor of the excavation, as well as the sample collected from a stockpile of excavated soil that was placed back in the excavation, were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Two of the sidewall samples (designated GST-1 and GST-3) and the stockpile sample (designated Gas – 2nd Stockpile) contained total xylene concentrations greater than the PSL (see Table 7). It is not known why the samples were not analyzed for total petroleum hydrocarbons (TPH) as gasoline.

At or near the former concrete products manufacturing and storage area, a total of 44 soil borings were previously drilled and sampled, 6 surface soil samples were collected, and 2 trench samples and a test pit excavation sample were collected (see Figures 7 and 8). The soil samples were analyzed for PAHs, phenols, phthalates, PCBs, metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and/or zinc), VOCs, and/or petroleum hydrocarbons. The sample analytical results showed that at least one of the soil samples from borings FMW-2, SB-1, SB-2, SB-4, SB-9, SB-10, SLR-1, SLR-2, SLR-3, SLR-5, SLR-6, and SLR-7, from trench samples Trench2-1-8' and Trench4-1-3', and from test pit TP100810 contained PAH [acenaphthene, anthracene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and/or pyrene]

concentrations that exceeded the soil PSLs (see Tables 2 and 6). Surface soil sample FSS2 contained PAH (fluorene, phenanthrene, and pyrene) concentrations greater than the PSLs. The PAH concentrations above the PSLs typically occurred near the former drying kilns (see Figure 5), the eastern former container repair shop, the former aluminum window manufacturing plant, the existing canopy, and the former excelsior factory and press (see Figure 10). Only the former drying kilns are associated with the former concrete products manufacturing and storage operations. Based on the depth and areas of PAH concentrations greater than the PSLs, it appears that the sources were petroleum spills that primarily occurred after the former concrete products manufacturing operations had ceased.

A soil sample collected from boring FB-4, at a depth of approximately 11 feet bgs, contained a BEHP concentration that exceeded the PSL (see Table 5). FB4 was located near western former container repair shop (see Figure 7). Soil samples collected from boring SLR-5, at depths of approximately 3 and 6 feet bgs, contained diesel-range organics (DRO) and/or heavy oil-range organics (HO) concentrations that exceeded the PSLs (see Table 3). A soil sample collected from test pit TP100810, at a depth of approximately 9.5 feet bgs, contained an HO concentration that exceeded the PSL. Surface soil sample SS-2 contained ethylbenzene and total xylenes concentrations that exceeded the PSLs (see Table 7). The petroleum hydrocarbon concentrations greater than the PSLs are located beneath the eastern former container repair shop and near the former aluminum window manufacturing plant. As described above, petroleum hydrocarbon concentrations greater than the PSLs are also located at the former gasoline UST.

At least one soil sample from borings FMW-2, FB-4, HA-1, HA-6, HA-8, HA-9, HA-11, HA-12, HC-8, MW-1(1994), SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-8, SB-9, SB-10, SB-11, SLR-1, SLR-2, SLR-3, and SLR-7, and from trenches Trench2 and Trench4 contained metals (arsenic, barium, cadmium, copper, lead, mercury, selenium, silver, thallium, and/or zinc) concentrations that exceeded the PSLs (see Table 1). The PSL exceedances for each metal typically occurred in localized areas. Since there is no known source of metals at the former concrete products manufacturing operations area, the concentrations may reflect background conditions or the potential effect of rainfall washing over the stored concrete products, which could cause a slight increase of pH of the water that infiltrated into the soil. The higher pH could have promoted precipitation of metals in the soil. The estimated areas that contained arsenic concentrations greater than the PSL are presented on Figure 11.

Surface soil samples SS-4 and SS-5 contained PCB (aroclor 1260 and aroclor 1248, respectively) concentrations that exceeded the PSL (see Figure 12). SS-4 was located near a former concrete products storage shed and SS-5 was located beneath the former drying kiln building (see Figure 5). The sources of the PCBs are not known; however, it may have been due to leakage of oil from a former electrical transformer or it may have

been in materials of the former concrete products storage shed or the former drying kiln building.

Based on a comparison of the previous soil sample analytical results and the PSLs, the preliminary soil COPCs at the former concrete products manufacturing and storage operations are PAHs, BEHP, DRO, HO, ethylbenzene, total xylenes, PCBs, arsenic, barium, cadmium, copper, lead, mercury, selenium, silver, thallium, and zinc.

3.1.2 Former Aluminum Window Manufacturing Operation

From the late 1940s through the 1970s, an aluminum window and sash manufacturing operation was present at the eastern end of Parcel F. The operation included one building that was constructed in the late 1940s (see Figure 5). A diesel UST was located along the northern end of the building. The UST was removed in 1988, and the building was demolished during the 1990s. The potential contaminant sources associated with the former aluminum window manufacturing operation include the storage and use of diesel and the potential storage and use of lubricating oils and cleaning fluids. During the soil excavation to remove the diesel UST, the soil samples collected from the sidewalls and floor of the excavation did not contain BTEX concentrations greater than the PSLs (see Table 7). The sidewall and floor samples, as well as two soil samples from a stockpile that was placed back in the excavation, did not contain detectable TPH concentrations.

At or near the former aluminum window manufacturing area, a total of 8 soil borings were drilled and sampled, 1 surface soil sample was collected, and 1 test pit excavation sample was collected (see Figure 7). The soil samples were analyzed for PAHs, phenols, phthalates, PCBs, metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and/or zinc), VOCs, and/or petroleum hydrocarbons. The sample analytical results showed that at least one soil sample from borings SB-9 and SLR-6, as well as the soil sample from test pit TP100810, contained PAHs [acenaphthene, anthracene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and/or pyrene] concentrations that exceeded the PSLs (see Tables 2 and 6). The sample from TP100810 also contained an HO concentration that exceeded the PSL (see Table 3). SB-9 was located near the eastern former container repair shop, and SLR-6 and TP100810 were located near the former aluminum window manufacturing plant (see Figure 10).

At least one soil sample from borings HA-11, MW-1(1994), SB-8, and SB-9 contained metals (barium, cadmium, lead, mercury, selenium, and/or zinc) concentrations that exceeded the PSLs. The metals concentrations greater than the PSLs occur in localized areas near the eastern former container repair shop and the former aluminum window manufacturing plant.

Based on a comparison of the previous soil sample analytical results and the PSLs, the preliminary soil COPCs at the former aluminum window manufacturing area are PAHs, HO, barium, cadmium, lead, mercury, selenium, and zinc.

3.1.3 Former Sawmill Operations and Excelsior Factory and Press Area

From 1917 to 1941, sawmill operations were present in the central part of Parcel D. The structures associated with the operations consisted of a mill building, a boiler house, three wood bins, a fuel bin, and a refuse burner (see Figure 4). All of the structures, which were constructed prior to 1920, were demolished before 1946.

From the 1920s through the 1970s, an excelsior (wood shavings) manufacturing operation was present at the southeastern part of Parcel F and the northeast corner of Parcel D. The structures associated with the operation included a warehouse, three factory and press buildings, a chimney, and two cottonwood storage sheds that were constructed in the 1920s (see Figure 5). An oil AST (likely heating oil) was located along the northwestern part of the warehouse building, and a pole-mounted electrical transformer was located along the northern end of the northern factory and press building. The southern factory and press building and associated chimney were demolished in the late 1940s or the 1950s. All of the other structures were demolished and the AST and the transformer were removed during the early 1980s.

The potential contaminant sources associated with the former sawmill operations include the potential storage and use of lubricating oils, and the incineration of unspecified refuse and potential accumulation and burial of ash. The potential contaminant sources associated with the former excelsior manufacturing operations include the oil AST and the potential storage and use of lubricating oils at the factory and press area, and the potential burning of wood and accumulation and burial of ash (based on the presence of a chimney).

At or near the former sawmill and excelsior factory and press operation areas, a total of 9 soil borings were drilled and sampled, and 2 trench samples and 1 surface soil sample were collected (see Figures 7 and 8). According to the soil boring logs, no evidence of buried ash was observed in any of the borings. The soil samples were analyzed for PAHs, phenols, phthalates, PCBs, metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and/or zinc), VOCs, and/or petroleum hydrocarbons. The soil sample analytical results showed that at least one of the samples collected from CMW-3, DB8, DB10, SLR-3, SLR-4, and Trench1 contained PAH [acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and/or pyrene] concentrations that exceeded the PSLs (see Table 2). CMW-3 was located at a sand and dredge fill area, DB8 was located within the

former treated pole storage area, and DB10, SLR-3, SLR-4, Trench1, and Trench4 are located near the former excelsior factory and press operations and manufacturing and warehouse operations (see Figure 10). At least one of the samples from CMW-3 and DB10 contained PCB (aroclor 1254 and aroclor 1260, respectively) concentrations that exceeded the PSLs (see Table 3). As stated above, CMW-3 was located at a sand and dredge fill area and DB10 was located near the former excelsior factory and press (see Figure 12).

At least one of the samples from borings CMW-3, DB8, DB10, HA-9, SB-7, and SLR-3 and from Trench1 contained metals (arsenic, barium, cadmium, copper, lead, mercury, thallium, and/or zinc) concentrations greater than the PSLs (see Table 1). The metals concentrations greater than the PSLs occur in localized areas near the former excelsior factory and press and the former excelsior manufacturing and warehouse; however, at the western and eastern parts of the former sawmill operations area (at the former treated pole storage area and the eastern sand and dredge fill area, respectively), the metals (particularly arsenic) concentrations greater than the PSLs extend over larger areas beyond the former sawmill area. The estimated areas of arsenic concentrations greater than the PSL are shown on Figure 11.

Since DB8 was located at the former treated pole storage area and PAHs and metals concentrations above the PSLs are present in the soil at the former wood treating operations area (as described in Section 3.1.4), the impacted soil at DB8 is likely associated with the former wood treating operations and not the former sawmill operations (see Figures 10 and 11). Since CMW-3 was located within an area of sand and dredge fill and several contaminants not typically associated with sawmills (PCBs and metals) are present in the soil at that location, the impacted soil at CMW-3 is likely associated with the dredge fill and not the former sawmill operations (see Figures 10 and 11).

Based on a comparison of the previous soil sample analytical results and the PSLs, the preliminary soil COPCs at the former sawmill and excelsior factory and press area are PAHs, PCBs, arsenic, barium, cadmium, copper, lead, mercury, thallium, and zinc. Since there were a limited number of samples collected from the former sawmill and excelsior factory and press area and semi-volatile petroleum hydrocarbons are often associated with sawmills, the preliminary soil COPCs also include DRO and HO. Since none of the previous soil samples from the area were analyzed for dioxins or furans and a potential contaminant source is the potential burning of wood and unspecified refuse and the accumulation and burial of ash, the preliminary soil COPCs also include dioxins and furans.

3.1.4 Former Wood Treating Operations

From the early 1940s to approximately 1957, a wood treating operation was present in the northwestern part of Parcel D; however, there is no available information about the type of wood treatment process or the chemicals used in the process. The structures initially associated with the operation consisted of an office, a garage, a boiler building, two creosote tanks, and a pole dipping tank (see Figure 5). In 1954, a pump house building that contained some tanks was constructed. A treated pole storage area was located to the east of the structures. The pole dipping tank was removed prior to 1960, and the garage and boiler building were demolished prior to 1969. All of the other structures were demolished by the early 1980s.

The potential contaminant sources associated with the former wood treating operation include the storage and use of wood treating chemicals, and the potential burning of wood (in the boiler) and the accumulation and burial of ash. At or near the former wood treating operation, a total of 26 soil borings were drilled and sampled (see Figure 8). According to the soil boring logs, evidence of buried ash was not observed in any of the borings. The soil samples were analyzed for PAHs, phenols, phthalates, PCBs, metals (arsenic, cadmium, chromium, copper, lead, nickel, and/or zinc), VOCs, and/or petroleum hydrocarbons. The sample analytical results showed that at least one of the soil samples from borings DB1, DMW2, DMW3, DB8, DB9, DB11, DB12, and HC-102 contained PAH [acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)-anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and/or pyrene] concentrations that exceeded the PSLs (see Tables 2 and 6). The PAH concentrations greater than the PSLs are located near the former tank locations and the former treated pole storage area, and extend to the south of the former wood treating operations area (see Figure 10). The source of the PAHs is likely the wood treating operations.

At least one of the soil samples from borings DMW2, DB11, DB12, and HC-13 contained BEHP, pentachlorophenol, 2,4,6-trichlorophenol, 2-methylphenol, phenol, and/or 2,4-dimethylphenol concentrations that exceeded the PSLs (see Tables 4 and 5). Samples from DMW2 and DB11 also contained toluene, ethylbenzene and/or total xylenes concentrations greater than the PSLs, and samples from DMW2 and DMW3 contained acetone concentrations greater than the PSL (see Table 7). DMW2, DB11, DB12, and HC-13 were located near the former tanks and pump house, the former creosote tanks, and the former pole dipping tank (see Figure 8). At least one of the soil samples from borings DB9, DB11, DB12, and HC-1 contained PCB (aroclor 1254 or aroclor 1260) concentrations that exceeded the PSLs (see Table 3). The PCB concentrations greater than the PSLs occur near the former tanks and former garage, and at the former treated pole storage area (see Figure 12). The source of the PCBs at the former wood treating operations area is not known.

At least one of the soil samples collected from borings DB1, DMW2, DMW3, DB8, DB9, HC-1, HC-1A, HC-5, HC-8, HC-9, HC-10, HC-11, HC-13, HC-14, HC-16, HC-17, and HC-19 contained arsenic concentrations that exceeded the PSL (see Table 1). The arsenic concentrations greater than the PSL occur throughout most of the former wood treating operations area and extends to the south-southeast of the area (see Figure 11). Samples from DMW2, DMW3, DB8, and DB-9 also contained cadmium, copper, lead and/or zinc concentrations that exceeded the PSLs. Soil samples collected from boring DB11 contained lead concentrations that exceeded the PSLs. The source of the metals is likely the former wood treating operations.

Based on a comparison of the previous soil sample analytical results and the PSLs, the preliminary soil COPCs at the former wood treating area are PAHs, BEHP, pentachlorophenol, 2,4-dimethylphenol, 2,4,6-trichlorophenol, 2-methylphenol, phenol, acetone, toluene, ethylbenzene, total xylenes, PCBs, arsenic, cadmium, copper, lead, and zinc. TPH concentrations greater than 2,000 mg/kg were detected in soil samples from boring DB11, and even though there is no PSL for TPH, the PSLs for gasoline range organics (GRO), DRO, and HO are 2,000 mg/kg or below. Therefore, the preliminary soil COPCs also include petroleum hydrocarbons (GRO, DRO, and HO). Since none of the previous soil samples from the area were analyzed for dioxins or furans and a potential contaminant source is the potential burning of wood (in the boiler) and the accumulation and burial of ash, the preliminary soil COPCs also include dioxins and furans.

3.1.5 Former Pipe and Chain Manufacturing Operations

From 1918 to the mid-1970s, a hydraulic equipment and metal pipes manufacturing operation was present in the southern part of Parcel D. The initial structures associated with the operations consisted of two offices, a garage, a pipe manufacturing building, a blacksmith shop, and a pipe dipping shop (see Figures 4 and 5). The pipe dipping shop included a furnace and two dipping kettles. Pipe drying and storage skids were located to the west of the pipe dipping shop. In the late 1930s, the operations were expanded to include chain manufacturing at the southern end of the property, and a chain manufacturing and coating building, a compressor house, and an acetylene generator shed were constructed. In the 1940s, the pipe manufacturing building was expanded to the south, the two office buildings were expanded, and a travelling crane was installed to the north of the pipe manufacturing building (see Figure 5). An annealing oven was installed at the southwest corner of the chain manufacturing building and a sandblast operation was located at the eastern end of the building. The blacksmith operations were discontinued during the 1940s. A 1,000-gallon oil AST (likely heating oil) was located along the east side of the southern office building. All of the structures were demolished and the oil AST was removed during the late 1970s.

The potential contaminant sources associated with the former pipe and chain manufacturing operation include the storage and use of heating oil, the potential storage and use of lubricating oils and cleaning fluids, the pipe dipping operations, the potential generation of metals shavings/slag, and the potential burning of wood (in the furnace and oven) and accumulation and burial of ash. At or near the former pipe and chain manufacturing operation, a total of 17 soil borings were drilled and sampled (see Figures 8 and 9). According to the soil boring logs, evidence of buried ash was not observed in any of the borings. The soil samples were analyzed for PAHs, phenols, phthalates, PCBs, metals (arsenic, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, and/or zinc), VOCs, and/or petroleum hydrocarbons. The soil sample analytical results showed that at least one of the samples collected from borings CMW-5, CMW-6, CMW-7, DB4, DB5, DMW6, DB7, DB13, HC-101, HC-103, HC-104, HC-105, HC-106, HC-107, and HC-110 contained PAH [acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)-anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and/or pyrene] concentrations that exceeded the PSLs (see Tables 2 and 6). The PAH concentrations greater than the PSLs are located beneath the former pipe manufacturing building and extend to the south-southwest, beneath the chain manufacturing operations area (see Figure 10). PAH concentrations greater than the PSLs also extend to the north of the former pipe manufacturing building. The likely source of the PAH-impacted soil is the use of lubricating oils at the former pipe and chain manufacturing areas.

At least one soil sample collected from borings DMW6 and DB7 contained BEHP, phenol, 2-methylphenol, 2,4-dimethylphenol, and/or pentachlorophenol concentrations that exceeded the PSLs (see Tables 4 and 5). Soil samples from boring DMW6 also contained ethylbenzene and total xylenes concentrations greater than the PSLs (see Table 7). At least one soil sample from borings CMW-7, HC-103, and HC-106 contained GRO, DRO, and/or HO concentrations that exceeded the PSLs (see Table 3). The phenol, phthalate, VOC, and petroleum hydrocarbon exceedances occurred in localized areas near or beneath the former pipe and chain manufacturing buildings. DMW6 and DB7 were also located near the southern dredge fill area.

At least one soil sample collected from borings CMW-6, CMW-7, DMW6, DB7, and HC-4 contained PCB (aroclor 1254) concentrations that exceeded the PSL (see Table 3). The PCB exceedances occurred near the former pipe and chain manufacturing buildings (see Figure 12), and the sources of the PCBs are not known; however, they may have been due to PCBs in the building materials. DMW6 and DB7 were also located near a dredge fill area, and PCBs could have been present in the fill.

At least one soil sample collected from borings CMW-5, CMW-6, CMW-7, DB4, DB5, DMW6, DB7, HC-103, HC-104, HC-106, HC-107, and HC-110 contained arsenic concentrations that exceeded the PSL (see Table 1). Samples from CMW-5, CMW-6,

CMW-7, DB5, DMW6, and DB7 also contained barium, cadmium, copper, lead, mercury, nickel, and/or zinc concentrations that exceeded the PSLs. The metals-impacted soil occurs beneath the former pipe manufacturing building and extends south-southwest to the former chain manufacturing area (see Figure 11). The metals-impacted soil also extends to the north and east of the former pipe manufacturing building. The sources of the metals-impacted soil are likely associated with the pipe and chain manufacturing operations and possibly dredge fill that was placed beneath the eastern part of the former location of the pipe manufacturing building.

Based on a comparison of the previous soil sample analytical results and the PSLs, the preliminary soil COPCs at the former pipe and chain manufacturing area are PAHs, phenol, 2-methylphenol, 2,4-dimethylphenol, pentachlorophenol, BEHP, ethylbenzene, total xylenes, GRO, DRO, HO, PCBs, arsenic, barium, cadmium, copper, lead, mercury, nickel, and zinc. Since none of the previous soil samples from the area were analyzed for dioxins or furans and a potential contaminant source is the potential burning of wood (in the furnace and oven) and accumulation and burial of ash, the preliminary soil COPCs also include dioxins and furans.

3.1.6 Dredge Fill Areas

In the early 1980s, approximately 5,500 cubic yards of sloughed material from the top of the bank along Slip 4 and the Duwamish Waterway were dredged during the construction of the sheet pile seawall. The dredging locations are shown on Figure 6. The dredged material and approximately 14,500 cubic yards of imported material were used to re-grade the surface of Parcel D. According to an unnamed drawing that was in Crowley's files, there are three areas of dredge fill and two areas of dredge and sand fill at the property. The dredge and sand fill was used to backfill portions of the excavated area inland of the seawall. The approximate locations where the dredged material was backfilled are shown on Figures 6, 7, 8, and 9.

During the dredging activities, potentially impacted soil from the bank and potentially impacted sediment in Slip 4 and the Lower Duwamish Waterway could have been excavated and used as fill. Based on the historic operations in the southern and southeastern parts of the property (former pipe and chain manufacturing) and the previous soil sample analytical results from that area, as well as the previous sediment sample analytical results from Slip 4 (see Section 3.5), the potential contaminants in the dredge fill include PAHs, PCBs, phenols, phthalates, metals, VOCs, DRO, HO, and dioxins and furans. At or near the dredge fill areas, a total of 10 soil borings were drilled and sampled, and 1 trench sample was collected (see Figures 7, 8, and 9). None of the borings were located at the northern and eastern dredge fill areas. The soil samples were analyzed for PAHs, phenols, phthalates, PCBs, metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and/or zinc), VOCs, and/or petroleum hydrocarbons. The soil sample analytical results showed that the samples

collected from borings CMW-3, CMW-4, CMW-5, DMW6, DB7, DB13, and HC-107 and from trench sample SCV-12' contained PAH [acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)-anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and/or pyrene] concentrations that exceeded the PSLs (see Tables 2 and 6). CMW-3, CMW-4, and SCV-12' were located at or near the southern sand and dredge fill area, and DMW6, DB7, DB13, CMW-5, and HC-107 were located at or near the southern dredge fill area (see Figure 10). The elevated PAH concentrations in the soil at CMW-3, CMW-4, and SCV-12' are likely due to the dredge fill; however, the elevated PAH concentrations in the soil at DMW6, DB7, DB13, CMW-5, and HC-107 may be due to the dredge fill or the former pipe manufacturing operations.

At least one soil sample collected from borings CMW-3, CMW-4, DMW6, and DB7 contained PCB (aroclor 1254) concentrations that exceeded the PSL (see Table 3). Samples from DMW6 and DB7 also contained phenol, 2-methylphenol, 2,4-dimethylphenol, and/or pentachlorophenol concentrations that exceeded the PSLs (see Table 4). The sample from CMW-4 also contained BEHP, butyl benzyl phthalate, dibutyl phthalate, and di-n-octyl phthalate concentrations that exceeded the PSLs (see Table 5). CMW-3 and CMW-4 were located at the southern sand and dredge fill area (see Figure 12) and the PCBs at that area were likely present in the dredge fill. DMW6 and DB7 were located near the southern dredge fill area and the former pipe manufacturing building, and the PCBs at those locations may have been due to PCBs in the materials of the former pipe manufacturing building or to PCBs in the dredge fill. The phenols and phthalates also could have been present in the dredge fill.

Soil samples collected from boring DMW6 contained acetone, chlorobenzene, ethylbenzene, and/or total xylenes concentrations greater than the PSLs (see Table 7). The VOCs may have been present in the dredge fill or may have been due to the former pipe manufacturing operations.

At least one soil sample collected from borings CMW-3, CMW-4, CMW-5, DMW6, DB7, and HC-107 contained arsenic concentrations that exceeded the PSL (see Table 1). Samples from CMW-3, CMW-4, CMW-5, DMW6, and DB7 also contained barium, cadmium, copper, lead, mercury, nickel, and/or zinc concentrations that exceeded the PSLs. The soil samples from borings CMW-1 and CMW-2a contained barium concentrations that exceeded the PSL. The source of the metals-impacted soil at CMW-3 and CMW-4 (at the southern sand and dredge fill area) is likely dredge fill, and the source of the metals-impacted soil at CMW-5, DMW6, and DB7 (the southern dredge fill area) may be the dredge fill or the former pipe manufacturing operations (see Figure 11). The barium concentrations at CMW-1 and CMW-2a (at the northern and southern sand and dredge fill areas, respectively) are likely due to the dredge fill.

Based on a comparison of the previous soil sample analytical results and the PSLs, the preliminary soil COPCs at the dredge fill areas are PAHs, PCBs, phenol, 2-methylphenol, 2,4-dimethylphenol, pentachlorophenol, BEHP, butyl benzyl phthalate, dibutyl phthalate, di-n-octyl phthalate, acetone, chlorobenzene, ethylbenzene, total xylenes, arsenic, barium, cadmium, copper, lead, mercury, nickel, and zinc. TPH concentrations greater than 2,000 mg/kg were detected in soil samples from borings DMW6 and DB13, and even though there is no PSL for TPH, the PSLs for GRO, DRO, and HO are 2,000 mg/kg or below. Therefore, the preliminary soil COPCs also include petroleum hydrocarbons (GRO, DRO, and HO).

3.1.7 Groundwater Conditions

During the previous investigations at the 8th Avenue Terminals property, a total of 27 groundwater monitoring wells were installed and at least one groundwater sample was collected from each well. The wells are located throughout the upland portion of the property, and seven of the wells (CMW-1 through CMW-7) are located within 50 feet of the Duwamish Waterway (see Figure 2). The previous groundwater samples were analyzed for PAHs, phenols, phthalates, PCBs, metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and/or zinc), VOCs, and/or petroleum hydrocarbons. The groundwater sample analytical results showed that at least one of the samples from wells CMW-2, CMW-3, CMW-4, CMW-5, CMW-6, DMW-2, DMW-3, DMW-6, HC-19, and HC-20 contained PAH [acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzofuran, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and/or pyrene] concentrations that exceeded the groundwater PSLs (see Tables 11 and 15). There are two areas of PAH concentrations in the groundwater that exceed the PSLs. The larger area begins at the west-central part of the property (at the former wood treating area) and extends approximately 580 feet to the southeast (hydraulically downgradient), to the sheet pile seawall (see Figure 13). The alignment of the PAH-impacted groundwater corresponds to the general groundwater flow direction during low-tide conditions in that area, as shown on Figures 20 and 24. The second area of PAH concentrations greater than the PSLs occurs along the sheet pile seawall, at the southern sand and dredge fill area. Based on the areas of PAH concentrations in the soil greater than the PSLs (see Figure 10), the PAH concentrations in the groundwater are likely due to releases at the former wood treating area and the former pipe and chain manufacturing area (the western area of PAH-impacted groundwater), and to PAHs in the dredge fill at the southern sand and dredge fill area (the eastern area of PAH-impacted groundwater).

In July 1994, groundwater samples from wells MW-1(1994) and MW-2 contained DRO and HO concentrations that exceeded the PSLs (see Table 12). MW-1(1994) was located near the former diesel UST at the former aluminum window manufacturing plant (see Figure 7), and the DRO and HO concentrations were likely due to releases from the

storage or fueling operations. MW-2 was located near the north side of the eastern former container repair shop, and the DRO and HO concentrations were likely due to localized petroleum spills that occurred after the former concrete products manufacturing operations had ceased. MW-1(1994) and MW-2 were abandoned several years ago, and in August 2011, two groundwater monitoring wells (SLR-2 and SLR-6) were installed in the vicinities of MW-1(1994) and MW-2 (see Figure 7). The groundwater samples collected from SLR-2 and SLR-6 in August 2011 did not contain detectable DRO or HO concentrations.

At least one groundwater sample from wells CMW-1, CMW-2, CMW-3, CMW-4, CMW-5, CMW-6, CMW-7, DMW-2, DMW-3, DMW-6, FMW-1, FMW-2, HC-1, MW-1(1988), SLR-1, SLR-2, SLR-3, and SLR-7 contained total and/or dissolved arsenic concentrations that exceeded the PSL (see Tables 9 and 10). The arsenic concentrations greater than the PSLs occur throughout almost the entire upland portion of the property (see Figure 14). Based on the arsenic concentrations in soil (see Figure 11), the arsenic concentrations in the groundwater beneath the west-central and southern parts of the property appear to be due to releases at the former wood treating area and the former pipe and chain manufacturing area. However, based on the relatively consistent arsenic concentrations in the groundwater, including in the northeastern part of the property where the arsenic concentrations in the soil are localized (see Figure 11), it appears that the arsenic concentrations in the groundwater could also reflect background conditions.

At least one groundwater sample from wells CMW-1, CMW-2, CMW-3, CMW-4, CMW-5, CMW-6, and CMW-7 contained barium and selenium concentrations that exceeded the PSLs (see Tables 9 and 10). At least one groundwater sample from CMW-1, CMW-2, CMW-3, CMW-4, CMW-6, CMW-7, DMW-6, FMW-1, FMW-3, HC-2, HC-4, MW-1(1988), SLR-3, and SLR-6 contained copper concentrations that exceeded the PSL. At least one groundwater sample from CMW-2, CMW-3, CMW-4, CMW-6, and SLR-3 contained lead concentrations that exceeded the PSL. At least one groundwater sample from CMW-1, DMW-3, and SLR-3 contained nickel concentrations that exceeded the PSL. Groundwater samples from HC-1 and SLR-3 contained cadmium concentrations that exceeded the PSL, and a sample from SLR-6 contained a mercury concentration that was greater than the PSL. Samples from CMW-2, HC-1, and MW-1(1988) contained antimony concentrations that exceeded the PSL, and samples from CMW-1 and DMW-2 contained zinc concentrations that exceeded the PSL. The groundwater sample analytical results show that the higher metals concentrations in the groundwater are typically located within 50 feet of the Lower Duwamish Waterway (at wells CMW-1 through CMW-7) instead of further inland where many of the potential metals sources are located.

Based on a comparison of the previous groundwater sample analytical results and the PSLs, the preliminary groundwater COPCs are PAHs, DRO, HO, antimony, arsenic, barium, cadmium, copper, lead, mercury, nickel, selenium, and zinc.

3.2 Previous Remedial Action

In November 1988, Hart Crowser directed the removal of the 8,000-gallon diesel UST and the 2,000-gallon gasoline UST from the northeastern part of Parcel F. The former locations of the tanks are shown on Figure 7. During the excavations, a total of 50 cubic yards of petroleum hydrocarbon-impacted soil was removed and hauled off-site for disposal at a landfill (Hart Crowser, 1989a). Sidewall and floor samples were collected from each excavation and the sample analytical results are discussed in Section 3.1.

3.3 Storm Water Catch Basin Solids Quality

During a joint Seattle Public Utilities (SPU)/Ecology inspection of the 8th Avenue Terminals property in 2004, a solids sample was collected from one of the storm water catch basins (DP4CB3; designated by SPU as CB37) on Parcel D (Ecology, 2006). The sample was analyzed for PAHs, phthalates, PCBs, metals (arsenic, copper, lead, mercury, and zinc), and petroleum hydrocarbons. The analytical results showed that the sample contained PAH [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, and phenanthrene] concentrations that exceeded the catch basin solids PSLs (see Table 18). The sample also contained lead, zinc, BEHP, butyl benzyl phthalate, and dimethyl phthalate concentrations that exceeded the PSLs (see Tables 17 and 21). Catch basin DP4CB3 is located in the central part of Parcel D (see Figure 3).

In July 2008, SPU collected a composite solids sample (designated CB123-071908) from two catch basins (DP3CB1 and DP5CB1) on Parcel D (Ecology, 2009). The sample was analyzed for PAHs, phenols, phthalates, PCBs, metals (arsenic, copper, lead, mercury, and zinc), and petroleum hydrocarbons. The analytical results showed that the sample contained PAH [anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene] concentrations that exceeded the PSLs (see Table 18). The sample also contained arsenic, lead, zinc, and butyl benzyl phthalate concentrations that exceeded the PSLs (see Tables 17 and 21). Catch basins DP3CB1 and DP5CB1 are located at the southern and southeastern ends of the upland portion of the property (see Figure 3).

In December 2009, Strata collected solids samples (designated STORM-5, STORM-13, and STORM-14) from three catch basins (DP6CB1, DP3CB5, and DP4CB3, respectively) on Parcel D (Strata, 2010). The samples were analyzed for PAHs, metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), VOCs, and petroleum hydrocarbons. The analytical results showed that the sample from DP6CB1 contained arsenic, chromium, and lead concentrations that exceeded the PSLs (see Table 17). The sample from DP3CB5 contained PAH [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene], arsenic, chromium, lead, and

total xylenes concentrations that exceeded the PSLs (see Tables 17, 18, and 23). The sample from DP4CB3 contained PAH (anthracene and chrysene), arsenic, chromium, lead, zinc, and total xylenes concentrations that exceeded the PSLs. DP3CB5 and DP4CB3 are located in the central part of Parcel D, and DP6CB1 is located in the northeastern part of Parcel D (see Figure 3).

Based on the previous storm water catch basin solids sample analytical results, the preliminary catch basin solids COPCs on Parcel D are PAHs, arsenic, chromium, lead, zinc, total xylenes, BEHP, butyl benzyl phthalate, and dimethyl phthalate.

Catch basin solids samples have not previously been collected from any of the catch basins on Parcel F; however, as discussed in Section 2.2.3, the current storm water drainage system on Parcel F was installed in July and August 2012, and the previous drainage system components on Parcel F were abandoned. The previous system components were abandoned by removing the lid and ring of each basin, removing the solids from each basin, and filling the basins and the ends of the conveyance lines with cement (SLR, 2012). The solids from the catch basins were hauled off-site for disposal at a licensed facility.

3.4 Previous Sediment Dredging on 8th Avenue Terminals Property

In May 1980, Marine Power & Equipment Company, Inc. (Marine Power & Equipment) applied for a permit from the U.S. Army Corps of Engineers (Corps) to dredge approximately 85,000 cubic yards of sediment from the western side of Slip 4. This dredging was part of the construction of the pier and berthing facility on the current 8th Avenue Terminals property. The Corps issued a dredging permit on January 27, 1981, and the project was completed prior to April 10, 1981 [PTI Environmental Services (PTI), 1995]. Cross sections of the slip prior to dredging indicated that the maximum depth of the slip was approximately 3 feet below the mean lower low water (-3 feet MLLW) level. The post-dredging depth of the western portion of the slip was -15.2 feet MLLW. The dredged material was disposed in open water at the 4-Mile Rock disposal site in Elliott Bay. There are no known records of any sampling associated with the work, except for a letter by the EPA that states that the material to be dredged has relatively high concentrations of sulfides (EPA, 1980). Copies of the Corp's records for the dredging permit, including figures that show plan and cross-sectional views of the planned dredging area are presented in Appendix C.

In 1996, American Construction Co., Inc., under the supervision of Hartmann and Associates, Inc., and on behalf of Crowley, dredged a total of approximately 10,977 cubic yards of sediment and underlying material from the southwestern part of Slip 4. The approximate area of dredging is shown on Figure 3. The dredging, which was a

maintenance activity to allow for continued pier access by barges and tugboats, deepened the Crowley-owned portion of the slip to approximately -15 feet MLLW. Prior to the dredging, sediment samples were collected in 1994 and 1995 to characterize the material for potential open-water disposal under the Puget Sound Dredged Disposal Analysis (PSDDA) program. In 1994, PTI collected surface sediment samples from eight locations (designated 1 through 8) in the southern part of Slip 4, including three (locations 1, 2, and 3) from the planned dredging area. The approximate locations of the surface sediment samples are shown on Figure 15. The samples were analyzed for metals, semi-volatile organic compounds (SVOCs), and PCBs. None of the samples from the planned dredging area contained contaminant concentrations that exceeded the PSDDA maximum levels (MLs) (PTI, 1995). In 1995, the planned dredging area was divided into four dredged material management units (DMMUs), and two sediment cores were collected and composited from each DMMU. The approximate locations of the sediment cores are shown on Figure 15. The samples were analyzed for metals, SVOCs, PCBs, and volatile organic compounds (VOCs), and only the composite sample from DMMU 1 contained a contaminant (fluoranthene) concentration that exceeded a PSDDA ML (PTI, 1996). All four samples were subsequently analyzed for bioassay and/or bioaccumulation testing, and based on the toxicity results, only the sediments from DMMU 2 were suitable for disposal at a PSDDA site. A total of 2,285 cubic yards of dredged material from DMMU 2 was disposed at a PSDDA open water disposal site, and 8,692 cubic yards of material from the other three DMMUs were disposed at the Columbia Ridge Landfill in Arlington, Oregon. There are no records of any post-dredging sediment sample analytical results.

3.5 Sediment Quality

As described in Section 3.4, Marine Power & Equipment dredged approximately 85,000 cubic yards of sediment from the western side of Slip 4 in 1981. This dredging was part of the construction of the pier and berthing facility on the property. The dredging activities deepened Slip 4 and the Duwamish River, within the entire current 8th Avenue Terminals property area and beyond the current property line to the west, southwest, and north, by more than 12 feet (to an elevation of -15.2 feet MLLW). Figures that depict the dredging area are presented in Appendix C. Based on cross sections of the dredging activities that are presented in Appendix C, it appears that the dredging removed all of the sediments and extended to the top of the underlying native soil. The dredged material was disposed in open water at the 4-Mile Rock disposal site in Elliott Bay. There are no known records of any sampling associated with the work, except for a letter by the EPA that states that the material to be dredged had relatively high concentrations of sulfides (EPA, 1980). However, the 1981 dredging activities likely removed any sediment on the property that had been impacted by historic sources at the property or by neighboring historic sources.

From 1983 through 1988, a total of 11 surface sediment samples were collected from Slip 4 during investigations by the EPA, Metro, PTI and Tetra Tech, and HartCrowser (Landau, 1990). Seven of the samples were located on or adjacent to the current 8th Avenue Terminals property. The investigation results showed that the total PCB concentrations were highest at the head of Slip 4 and decreased with distance towards the 8th Avenue Terminals property and the mouth of the slip. A figure by Landau that shows the surface sediment sample locations and the total PCB concentrations (in mg/kg dry weight) is presented in Appendix D. Since the total organic carbon concentrations in the samples are not known, we could not compare the total PCB data to Ecology's sediment management standards (SMS; WAC 173-204).

In 1990, Landau collected surface sediment samples (SL-4-1 through SL-4-12) at 12 locations throughout Slip 4, including at 4 locations (SL-4-1 through SL-4-4) within or adjacent to the current 8th Avenue Terminals property. Landau also collected subsurface sediment cores (SL-4-1A through SL-4-12A) that were up to 10 feet deep at 12 locations throughout Slip 4. Most of the core locations (including the 4 cores within or adjacent to the current 8th Avenue Terminals property) were at the same locations as the surface sediment samples. Landau figures that show the approximate locations of the surface sediment samples and sediment cores are presented in Appendix D. The samples were analyzed for metals, PCBs, and SVOCs. The sample analytical results showed that the highest PCB concentrations in the surface and subsurface samples were at the head of the slip and decreased with distance toward the mouth (Landau, 1990). Lead and BEHP were also present at the head of the slip at concentrations greater than the SMS sediment quality standard (SQS). The four surface sediment samples located within or adjacent to the 8th Avenue Terminals property contained total PCB concentrations that exceeded the SQS. Surface sediment samples SL-4-3 and SL-4-4 also contained phenol concentrations above the SMS cleanup screening level (CSL), and SL-4-4 contained a benzoic acid concentration greater than the CSL. Subsurface sediment samples from SL-4-3A (at 2 to 3 feet deep) and SL-4-4A (at 2.5 to 4 feet deep) contained total PCB concentrations that exceeded the CSL, and samples from SL-4-2A (at 2 to 3.75 feet deep) and SL-4-3A (at 4 to 6 feet deep) contained total PCB concentrations that exceeded the SQS. The sample from SL-4-2A (at 2 to 3.75 feet deep) also contained PAH [acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, pyrene, chrysene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, fluoranthene, dibenzofuran, and phenanthrene] concentrations above the CSLs and benzo(g,h,i)perylene and anthracene concentrations greater than the SQSs. The sample from SL-4-3A (at 2 to 3 feet deep) also contained a BEHP concentration that exceeded the SQS.

As discussed in Section 3.4, PTI collected surface sediment samples and sediment core samples from Slip 4 in 1994 and 1995 to characterize the material to be dredged in 1996 from the current 8th Avenue Terminals property. In 1994, PTI collected surface sediment samples from eight locations (designated 1 through 8) in the southern part of Slip 4,

including three (locations 1, 2, and 3) from the planned dredging area. The approximate locations of the surface sediment samples are shown on Figure 15. The samples were analyzed for metals, SVOCs, and PCBs. The sample analytical results showed that samples 7 and 8, which were located east and northeast of the 8th Avenue Terminals property, contained total PCB concentrations that exceeded the CSL (PTI, 1995). All of the samples, including the three samples from the planned dredging area, contained total PCB concentrations that exceeded the SQS. In 1995, the planned dredging area was divided into four DMMUs, and two sediment cores were collected and composited from each DMMU. The approximate locations of the sediment cores are shown on Figure 15. The samples were analyzed for metals, SVOCs, PCBs, and VOCs. The sample analytical results showed that all four samples contained total PCB concentrations that exceeded the SQS (PTI, 1996). The sample from DMMU 1 also contained PAH [benzo(g,h,i)perylene, benzo(a)anthracene, benzo(a)pyrene, fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenanthrene] concentrations that exceeded the SQSs. In 1996, American Construction Co., Inc., on behalf of Crowley, dredged a total of approximately 10,977 cubic yards of sediment and underlying material from the southwestern part of Slip 4. The approximate area of dredging is shown on Figure 3. The dredging, which was a maintenance activity to allow for continued pier access by barges and tugboats, deepened the Crowley-owned portion of the slip to approximately -15 feet MLLW. There are no records of any post-dredging sample analytical results.

During several investigations that were conducted in 1998 and 1999, surface sediment samples were collected from a total of 29 locations in Slip 4, including at the mouth of the slip (Integral, 2005). Three of the samples were located on the 8th Avenue Terminals property. Figures by Integral that show the locations of the 1998 and 1999 surface sediment samples are presented in Appendix D. Total PCBs concentrations exceeded the CSL in nearly all of the surface samples located in the northern part of the slip, and exceeded the SQS (but less than the CSL) in several of the samples located in the southern part of the slip. From the 8th Avenue Terminals property, a total PCB concentration greater than the CSL was detected at a sample (DR181) located at the northeast corner of the property, and a PCB concentration greater than the SQS (but less than the CSL) was detected at a sample (EST170) located at the east-central part of the property (see Integral Figure 2 in Appendix D).

In 2004, additional surface sediment samples were collected at 29 locations and sediment cores (up to 12 feet deep) were collected at 11 locations in Slip 4. In addition, one intertidal sample was collected along the eastern shore of Slip 4 and bank samples were collected at six locations. Eight of the surface sediment samples and three of the core samples were located on 8th Avenue Terminals property. Figures by Integral that show the locations of the 2004 samples are presented in Appendix D. The PCB concentrations in six of the surface samples, including in one sample (SG16) from the northern part of the 8th Avenue Terminals property, exceeded the SQS but were less than the CSL (Ecology, 2006, and Integral, 2005). PCB concentrations exceeded the CSL at three

surface sample locations at the head of the slip and at the intertidal area along the eastern bank of the slip (Integral, 2005). At two surface sediment sample locations in the northeastern part of Slip 4, BEHP and/or PAH concentrations exceeded the CSLs. At sample SG16 (at the northern part of the 8th Avenue Terminals property), BEHP and phenol concentrations were slightly above the SQSs.

In 2004, subsurface sediment samples were analyzed at 9 of the 11 core locations, including at 1 of the core locations on the 8th Avenue Terminals property. PCB concentrations exceeded the CSL in six of the cores, and exceeded the SQS, but were less than the CSL, in two of the cores [including the core (SC06) at the northern end of the 8th Avenue Terminals property]. The PCB concentrations greater than the CSL occurred at locations in the northern part of Slip 4, at depths ranging from 0 to 8 feet. Mercury concentrations exceeded the CSL at three cores located near the head of the slip, and silver concentrations exceeded the CSL at one core location near the head of the slip (Integral, 2004).

The PCB concentrations in the 2004 surface sediment samples were typically lower than the concentrations in the surface sediment samples collected during the 1990s. In all cases, the total PCB concentrations in the 2004 surface sediment samples were lower than the concentrations in the top interval (0 to 2 feet) of the collocated core (Integral, 2006). The top interval core samples contained composited surface and subsurface sediment. Within Slip 4, the highest PCB concentrations were found at the head (north end) of the slip (near the five public storm water outfalls described in Section 2.3), with concentrations decreasing toward the mouth (Ecology, 2006).

In 2010, as part of the RI/FS at the North Boeing Field/Georgetown Steam Plant, SAIC collected surface sediment samples (0 to 10 centimeters depth) at 20 locations in the northern part of Slip 4. None of the samples were located on the 8th Avenue Terminals property. A figure by SAIC that shows the 2010 surface sediment sample locations is presented in Appendix D. The purpose of the work was to model the potential for recontamination of the sediments after the City of Seattle's planned remediation of the northern part of Slip 4 was completed. All of the samples were analyzed for PCBs, metals, and SVOCs, and six composited samples were analyzed for dioxins and furans. The sample analytical results showed that the PAHs, PCBs, lead, mercury, zinc, BEHP, and dioxin toxicity equivalent quotient (TEQ) concentrations decreased with distance away from the head of the slip, and that the storm water drainage system discharges at the head of Slip 4 were the primary sources of the sediment contamination in the slip (SAIC, 2010).

In addition to the sediment sampling in Slip 4, a subsurface sediment core (SC45) was collected in 2006 from the Duwamish River, approximately 110 feet south of the southwestern corner of the 8th Avenue Terminals property, and a surface sediment sample (741) was collected from the river, approximately 80 feet southwest of the southwestern

corner of the property. A figure by SAIC that shows the locations of SC45 and 741 is presented in Appendix D. The 2- and 4-foot deep samples from SC45 contained PCB concentrations that exceeded the SQS (SAIC, 2008). Sample 741 contained PAH (fluorene and phenanthrene) concentrations that exceeded the CSL, and benzo(a)anthracene, fluoranthene, chrysene, dibenzofuran, and indeno(1,2,3-cd)pyrene concentrations that exceeded the SQSs, but were below the CSLs. The sources of the PCBs and PAHs at SC45 and 741, respectively, are not known.

After Ecology determined that the sources of the impacted sediments in the northern part of Slip 4 had been adequately controlled, the City of Seattle conducted a cleanup of the contaminated sediments in the Slip 4 Early Action Area (EAA) of the LDW Superfund Site. From October 2011 through February 2012, the EAA was conducted within the City of Seattle property at the northern part of Slip 4. The work included: 1) dredging and off-site disposal of sediments from the northern end of Slip 4, 2) installing a sand/gravel cap over the remaining impacted sediments within the City of Seattle property, and 3) bank excavation and surface capping (Integral, 2007). The work also included the removal of the northern 440-foot-long section of the pier along Parcel D. Prior to and immediately after the EAA, the City of Seattle collected surface sediment samples from four locations (designated BD-1, BD-2, BD-3, and BD-4) at the northern end of the 8th Avenue Terminals property (within the EAA boundary sampling area) to assess the potential impacts from the remedial action to the neighboring sediments. PCB concentrations exceeded the SQS at two of the sample locations (BD-2 and BD-4) prior to construction (in August 2011), and at all four sample locations following construction on February 2, 2012 (Integral, 2012). Following placement of 9 inches of waterway cap material over the boundary area on the subject property in February 2012, PCB concentrations in surface sediment samples collected on February 14, 2012, were less than the SQS at each of the four sample locations.

In October 2012, the City of Seattle collected eight surface sediment samples (SG-18, SB-20, SG-21, SG-22, SG-24, SG-25, SL4-2, and SL4-3) on the 8th Avenue Terminals property to determine if the EA construction activities impacted the surface sediments further southwest of the EAA boundary area. Only the five northernmost samples were analyzed and the other three samples were archived. The two northernmost samples (SG-18 and SL4-3) contained PCB concentrations that exceeded the SQS (Integral, 2013). A figure by Integral that shows the locations of the 2011 and 2012 surface sediment samples on the 8th Avenue Terminals property is presented in Appendix D.

Based on the previous surface sample analytical results and the subsurface sediment/soil sample analytical results, the storm water drainage system discharges at the head of Slip 4 were the primary sources of the sediment contamination in the slip. Based on the distribution of the contamination, there is no evidence of any significant contaminant source from the historic or current operations at the 8th Avenue Terminals property, or the 1981 dredging removed any historic sediment contamination from the property. The only

potential exception is that the PCB and PAH contamination in the Duwamish River (at samples SC45 and 741) may have been due to sources at the property.

4 FIRST PHASE OF REMEDIAL INVESTIGATION

The first phase of the RI was conducted from May through October 2013 in accordance with Ecology's RI/FS Work Plan (Ecology, 2012), after modifications to the scope were accepted by 8th Avenue Terminals and Ecology (Ecology, 2013). The objectives of the first phase of the RI were: 1) to assess the potential contaminant source areas that had limited data, 2) to try to delineate the lateral and vertical extents of the COPCs, 3) to better understand contaminant fate and transport, and the potential receptors, and 4) to further evaluate the ARARs for the site. To better understand contaminant fate and transport, the first phase of the RI included the assessment of several possible contaminant migration pathways for their potential to impact sediments in the Lower Duwamish Waterway (including Slip 4). These pathways included:

- Direct discharges
- Soil erosion
- Storm water discharges
- Sheet flow
- Groundwater discharges and seeps
- Barge operations or any other activities at the 8th Avenue Terminals property
- Spills, dumping, leaks, housekeeping, and management practices

The RI fieldwork and analytical procedures were conducted in accordance with the RI/FS Work Plan's Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) (Ecology, 2012), after modifications were accepted by 8th Avenue Terminals and Ecology (Ecology, 2013). A detailed description of the RI activities is provided below.

4.1 Drill and Sample Soil Borings

To assess the potential contaminant source areas that had limited data and to try to delineate the lateral and vertical extents of the COPCs, a total of 31 soil borings were drilled at the subject property from June 10 through 19, 2013. A total of 11 of the borings were completed as shallow groundwater monitoring wells and 5 of the borings were completed as deep groundwater monitoring wells, as described in Section 4.2. The locations of the soil borings and groundwater monitoring wells are shown on Figure 2. The locations of the borings and wells for the first phase of the RI were in accordance with Ecology's RI/FS Work Plan and the negotiated revisions (Ecology, 2013); however,

a few of the borings or wells were moved up to 70 feet from their planned locations due to logistical issues, after obtaining verbal approval by Ecology.

Environmental Services Network (ESN) of Lacey, Washington, and Holocene Drilling, Inc. (Holocene) of Puyallup, Washington, drilled and sampled the soil borings under the direction of an SLR geologist. All of the borings were drilled by using hydraulic push-probe methods. Almost all of the shallow soil borings were extended to a depth of approximately 20 feet bgs; however, two of the shallow borings (EB-50 and EB-51) met refusal at a depth of approximately 10 feet bgs. The six deeper soil borings (EB-16, EMW-4D, EMW-10D, EMW-14D, EMW-15D, and EMW-16D) were extended to depths ranging from approximately 44 to 50 feet bgs. After drilling and sampling each boring that was not completed as a monitoring well, ESN or Holocene abandoned the boring by filling with hydrated bentonite.

During the drilling of each boring, soil samples were collected on a continuous basis by using 1.5-inch-diameter acetate liners within the drilling rods. SLR personnel logged the encountered soils, and screened each sample for the potential presence of contamination by using visual appearance (staining or sheen), odor, and photoionization detector (PID) readings. The field screening results showed that an oily coating with a creosote-like odor was present on the soil in deep boring EMW-10D (at the former wood treating operations area) at depths ranging from approximately 24 feet to the bottom of the boring (50 feet bgs). There was no evidence of product on the soil in any of the other borings. Charred wood and/or ash were present in several borings (EB-28, EB-45, EMW-3S, EMW-5S, EMW-6S) at depths ranging from approximately 4.8 to 11 feet bgs. Copies of the soil boring logs are provided in Appendix E.

4.1.1.1 Soil Sample Analyses

In accordance with the negotiated RI scope of work (Ecology, 2012 and Ecology, 2013), a minimum of three soil samples were collected from each of the borings for laboratory analysis. The samples collected at depths of approximately 1, 5, and 10 feet bgs were submitted to Friedman & Bruya, Inc. (F&B) in Seattle, Washington, for analysis. The soil samples collected at depths of approximately 15 feet bgs from selected borings were also submitted to F&B for analysis. However, if the field screening results indicated the potential presence of contamination at depths different than the designated sampling depths, then that soil was submitted for analysis in addition to the samples described above. Additional soil samples were also collected at depths of approximately 2.5, 7.5, and 12.5 feet bgs in the shallow soil borings, and archived by F&B for potential follow-up analyses. Additional soil samples were also collected at depths of approximately 2.5, 7.5, 12.5, 15, 20, 25, 30, 35, 40, 45, and 50 feet bgs from the deep soil borings, and archived by F&B for potential follow-up analyses. The analyzed soil samples collected from each each soil boring are listed in Tables 1 through 8.

All of the soil samples were submitted for analysis of the following:

- DRO and HO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- Metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8
- Mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A
- VOCs by EPA Method 8260C

Additionally, soil samples collected from the borings (EB-5, EB-32, EMW-2S, EMW-12S, EMW-13S, and EMW-16D) located in proximity to the former USTs, the former garage, and the equipment maintenance shop were also submitted for analysis of GRO by Northwest Method NWTPH-Gx. Soil samples from borings EB-24, EB-46, and EB-51 that exhibited petroleum hydrocarbon-like odors were analyzed for GRO, DRO, and HO.

To assess the potential presence of hexavalent chromium, the two soil samples (EB-32-5.0 and EB-38-5.0) that contained the greatest total chromium concentrations were analyzed for hexavalent chromium by EPA Method 7196A. To assess the potential presence of dioxin and furans near the former chimney, former refuse burner, and former oven/incinerator building, selected soil samples collected from borings EB-14, EB-28, EB-46, EMW-5S, and EMW-9S were collected and submitted to SGS Analytical Perspectives, Inc. (SGS), in Wilmington, North Carolina, for analysis of dioxins and furans by EPA Method 8290. Due to the presence of charred wood and/or ash, selected soil samples from borings EB-45, EMW-3S, and EMW-6S were also submitted to SGS for analysis of dioxins and furans.

4.2 Monitoring Well Installation and Development

As discussed in Section 4.1, a total of 16 groundwater monitoring wells were installed in June 2013. ESN installed 11 shallow wells that were screened across the water table (approximately 5 to 20 feet bgs), and Holocene installed five deeper wells in the unconfined aquifer that were screened from approximately 40 to 50 feet bgs. The locations of the wells are shown on Figure 2.

The borings for the shallow wells and deep wells were initially drilled by using hydraulic push-probe methods, with soil samples collected on a continuous basis as described in Section 4.1. After collecting the soil samples, the borings were re-drilled by using hollow-stem auger drilling methods. Each of the wells were constructed of 2-inch-diameter, Schedule 40 PVC casing and screen (0.010-inch-wide slots). Each screen was

15 feet long (shallow wells) or 10 feet long (deep wells). The screened interval for the shallow wells intercepted the groundwater table with at least 1 foot of screen above the seasonal high groundwater table. The screened interval for the deep wells was over 30 feet below the high seasonal groundwater table. The casing of each well was attached to the screen and extended to approximately 6 inches bgs. A filter pack consisting of 10/20 silica sand was installed from the bottom of each well to approximately 2 feet above the uppermost screen slot. A hydrated bentonite seal was installed above the filter pack to approximately 1 foot bgs, and a traffic-rated, flush-grade, steel well vault was installed in concrete at the ground surface. Following installation, ESN developed the shallow wells and Holocene developed the deeper wells by using surging and pumping methods. The well construction details are presented on the soil boring logs in Appendix E.

During June 2013, SLR attempted to locate the monitoring wells [HC-1, HC-2, MW-1 (1988), MW-1 (1994), MW-2, MW-3, FMW-1, FMW-2, and FMW-3] installed from 1988 to 1994 that were reportedly abandoned or destroyed. There was no evidence at the ground surface of wells HC-1, HC-2, MW-1 (1988), MW-1 (1994), MW-2, FMW-1, or FMW-3. However, FMW-2 was found with the monument lid missing and the monument full of soil. During the geophysical survey conducted in August 2013 (described in Section 4.7), MW-3 was discovered under several inches of gravel. ESN abandoned FMW-2 in June 2013 and abandoned MW-3 in September 2013 by over-drilling the well casing and filling the borehole with hydrated bentonite, in accordance with the requirements of WAC 173-160.

Based on previous visual inspections, the six remaining groundwater monitoring wells (DMW2, DMW3, DMW6, HC-4, HC-19, and HC-20) that were installed in 1989 or 1990 contained damaged or improperly constructed surface seals. In June 2013, ESN inspected the wells (except HC-19) to determine if they could be repaired prior to conducting the first groundwater monitoring event. Well HC-19 was not found and is likely located under a pile of wood chips. ESN replaced the well vaults at DMW2, DMW3, DMW6, HC-4 and HC-20, and developed each of these wells by using surging and pumping methods in June 2013.

4.3 Conduct Groundwater Monitoring

After installing the monitoring wells, three groundwater monitoring events were conducted between July and October 2013. The first monitoring event occurred at least 7 days after the development of the newly installed wells and the re-development of the wells that were installed in 1989 and 1990. The first monitoring event was conducted from July 10 through July 12, 2013, during seasonal low-low tide conditions in the Lower Duwamish Waterway. The second monitoring event was conducted from September 23 through September 26, 2013, during seasonal high-high tide conditions in the waterway.

The third monitoring event was conducted from September 30 through October 2, 2013, during seasonal low tide conditions.

During the monitoring events, SLR personnel measured the depth to groundwater at each of the accessible monitoring wells on July 10, September 23, and October 2, 2013. On September 23rd and October 2nd, wells CMW-4, SLR-1, and/or EMW-15D were inaccessible due to puddles of storm water submerging the wells. In addition to measuring the depths to groundwater in the wells, SLR personnel also measured the depth to the surface water of Slip 4 in a stilling well installed at the northeastern end of the pier (see Figure 2). The depths to groundwater and surface water measurements for each event were collected within a 1-hour time span, and coincided with published times for low or high tide conditions in the waterway. Measurements were collected no earlier than 30 minutes before each tidal extreme, and the well caps were opened at least 1 hour prior to measurement to allow for equilibration of water levels in the wells. Each depth to groundwater and surface water was measured to the nearest 0.01 foot by using an electronic water level meter. The depth to groundwater and surface water measurements were converted to elevations, relative to the NAVD 88 datum, based on the results of a well elevation survey conducted by Signature Survey & Mapping (Signature), as described in Section 4.10. The depth to groundwater and surface water measurements and the groundwater and surface water elevations are presented in Table 39.

With the exception of wells HC-4 and HC-19, groundwater samples were collected from each of the wells at the subject property during the monitoring events. The sampling of well HC-4 was not included in the scope of work, but it was mistakenly sampled during the high-high tide monitoring event. As described above, HC-19 could not be located.

During each monitoring event, each of the wells were purged with a peristaltic pump and dedicated polyethylene tubing, by using low-flow methods (0.3 liters per minute). Field parameters of pH, specific conductance, temperature, dissolved oxygen, and oxygen-reduction (redox) potential were measured during purging. The groundwater samples were collected following stabilization of the field parameters. The final field parameter measurements prior to collecting each groundwater sample are presented in Table 40. The peristaltic pump was used to collect the sample set at each well. The groundwater samples collected during the two low tide monitoring events were submitted to F&B for analysis of the following:

- Total and dissolved metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8
- Total and dissolved mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A

- DRO and HO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- VOCs by EPA Method 8260C
- Total suspended solids (TSS) by Standard Method 2540D
- Total dissolved solids (TDS) by Standard Method 2540C
- Chloride by Standard Method SM4500

All of the groundwater samples collected for analysis of dissolved metals were field filtered by using a 0.45 micron in-line disposable filter. To evaluate potential matrix interferences (primarily due to brackish conditions), all of the groundwater samples collected during the second low tide monitoring event (in October 2013) were submitted to Applied Speciation and Consulting, LLC (Applied Speciation), in Bothell, Washington, for analysis of dissolved arsenic, copper, and selenium by EPA Method 1638 ICP-DRC-MS (ICP-DRC-MS). The samples were not analyzed by F&B for dissolved arsenic, copper, and selenium by EPA Method 200.8.

Ecology's RI/FS Work Plan stated that the five groundwater samples from the first low tide groundwater sampling event that contained the greatest total chromium concentrations will be re-analyzed for hexavalent chromium. However, due to the short laboratory holding time for hexavalent chromium in water samples (1 day), total chromium analytical results could not be attained prior to the expiration of holding times. Therefore, groundwater samples were not analyzed for hexavalent chromium.

The groundwater samples collected during the high tide monitoring event were submitted to F&B for analysis of the following:

- Total and dissolved antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc by EPA Method 200.8
- TSS by Standard Method 2540D
- TDS by Standard Method 2540C
- Chloride by Standard Method SM4500

To evaluate potential matrix interferences, the samples from wells CMW-4, EMW-10D, EMW-13S, and EMW-15D were submitted to Applied Speciation for analysis of dissolved arsenic, barium, copper, and selenium by ICP-DRC-MS.

4.4 Sample Storm Water Catch Basins

Between June 6 and June 11, 2013, SLR personnel collected solids samples from two of the catch basins within each of the six storm water conveyance lines on Parcel D. Solids samples were collected from catch basins DP1CB2, DP1CB3, DP2CB2, DP2CB5, DP3CB1, DP3CB3, DP4CB2, DP4CB4, DP5CB1, DP5CB4, DP6CB1, and DP6CB4.

The locations of the catch basins and the underground storm water conveyance lines are shown on Figure 3.

Due to the presence of filter inserts in the majority of the catch basins (preventing accumulation of solids within most of the catch basins), SLR personnel collected the samples from the solids that had accumulated in the filter inserts within the catch basins designated for sampling. Catch basins DP4CB4 and DP6CB6 did not contain filter inserts and the solids samples were collected from those basins. Prior to sampling, standing water was present in catch basins DP4CB4 and DP6CB6, and the water was slowly extracted by using a vacuum pump to minimize any disturbance of the solids. The extracted water was poured into an adjacent catch basin.

Each of the catch basin solids samples were collected after removing the lid of the basin and using a decontaminated stainless steel spoon to remove solids from either the filter insert or from the bottom of the basin at several locations (from each corner and the center of the basin). The sample was composited in a decontaminated stainless steel bowl, and an SLR geologist described the material in accordance with the Unified Soil Classification System. The solids ranged from sandy silt to sandy gravel with abundant organic debris (leaves, evergreen needles, wood chips) and trash (plastic wrappers, cigarettes). A petroleum hydrocarbon-like odor and sheen were observed on the water in catch basins DP4CB4 and DP6CB4.

The catch basin solids samples were submitted to F&B for analysis of the following:

- Metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8
- Mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A
- DRO and HO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- VOCs by EPA Method 8260C
- Grain Size by ASTM D-422
- Total Organic Carbon (TOC) by EPA Method 9060

Additionally, the solids samples collected from catch basins DP4CB4 and DP6CB1 located near the former chimney and former refuse burner were submitted to SGS for analysis of dioxins and furans by EPA Method 8290.

Between July 29 and August 8, 2013, after the catch basin solids sampling, each active catch basin located on Parcel D was cleaned by Everson's Econo-Vac, Inc. (Econo-Vac) of Orting, Washington. During the cleaning activities performed by Econo-Vac, SLR

personnel inspected the catch basins for the potential presence of holes or cracks that could be a contaminant migration pathway between the storm water drainage system and the subsurface soil and groundwater. During the inspection, the lid and filter insert, if present, were removed, and SLR personnel used a flashlight to thoroughly inspect the conditions of each catch basin. There were no observed holes or deep cracks in each catch basin that could allow subsurface soil to enter a basin, and there were no holes or cracks at depths below the potential high water level in the basins that could allow storm water to seep into the subsurface.

During the inspection of the catch basins, Econo-Vac conducted video inspections of the storm water conveyance lines on Parcel D for the potential presence of cracks. Due to the presence of thick deposits of solids in several of the lines, Econo-Vac cleaned the lines prior to the final video inspections. After completion of the video inspections, copies of the video recordings were submitted to Ecology (SLR, 2013b). The results of the inspections showed that a pipe joint on D Line #1 was separated and offset by less than approximately two inches. The location of the offset pipe joint is shown on Figure 3. There were no other separated and offset pipe joints, and there were no observed holes or cracks in the lines.

To determine where any of the storm water drainage system components are below the groundwater table, Signature Survey and Mapping, PLLC (Signature) of Shoreline, Washington, surveyed the elevation of the base of each catch basin and the invert elevation of each drain pipe (at the catch basins) and each outfall, as described in Section 4.10. The storm water drainage system elevation data are provided in Table 41. The shallow groundwater elevations during seasonal high-high tide conditions on September 23, 2013 (see Table 39), were compared with the elevations of the storm water drainage system components. The elevation data showed that only the bottom of conveyance vault CV2 is below the groundwater table during high tide conditions. Most of the drainage system components are several feet above the groundwater table.

To further evaluate if groundwater could be entering the storm water drainage system, SLR personnel observed each of the storm water outfalls on July 23, 2013, when it was not raining and the water level in the waterway (including Slip 4) was just below the outfalls (during a falling tide). Water was observed trickling from outfall OF6 when there was no water discharging from the other outfalls. However, the high tide water level in Slip 4 on July 23rd was above the bottom of outfall OF6 and since the flapper valve on the outfall wasn't sealing correctly, it appeared that surface water flowed through outfall OF6 and into nearby conveyance vault CV2 (see Figure 3). After the water level in Slip 4 subsided to below OF6, the surface water that had collected in CV2 was trickling out through the poorly sealed flapper valve. Since the high groundwater table on July 23rd occurred at a depth below the effluent line from CV2, the water observed trickling out of OF6 could not have been groundwater.

4.5 Sample Storm Water

To assess the potential impacts to the Lower Duwamish Waterway from storm water discharge, storm water samples were collected from each of the six storm water outfalls (OF1 through OF6) at the subject property on June 26, 2013. The locations of the outfalls are shown on Figure 3. The samples were collected during a precipitation event with 0.56 inches of rainfall over a 24-hour period, and preceded by at least 24 hours of no greater than a trace of precipitation. To minimize any surface water influence on the samples, the samples were collected during low tide conditions in the Duwamish Waterway when the outfalls were above the surface water level. The storm water samples were grab samples collected directly from the outfalls.

The storm water samples were submitted to F&B for analysis of the following:

- Total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8
- Total mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A
- DRO and HO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- VOCs by EPA Method 8260C
- TSS by Standard Method 2540D
- Chloride by Method SM4500
- TOC by EPA Method 9060M

During the storm water sampling event, SLR personnel observed the storm water sheet flow at the subject property to further evaluate the potential for sheet flow discharges to the Duwamish Waterway (including Slip 4). Storm water flowed to catch basins and to large puddles scattered throughout the property that drained to nearby catch basins. SLR did not observe any direct flow of storm water on the property into the waterway (including Slip 4), except for very limited flow that occurred on the sloped concrete surfaces beneath the two loading ramps at the southern part of Parcel D. This limited flow was due to rain falling directly onto the edges of the concrete surfaces, which are the only areas not covered by the ramps. The property surface does not slope toward the ramps and there is a curb at the top of each ramp. During heavy rainfall events, some storm water may flow off the ends of the pier and the ramps into Slip 4. The pier and ramps are flat and do not slope back toward the interior of the property.

A second storm water sampling event was scheduled for October 2013. However, from October 2013 through January 2014, SLR was not able to conduct that sampling event because there was not a qualifying rainfall event (at least 0.1 inches in 24 hours that was

preceded by at least 24 hours of no greater than a trace of precipitation) when the weekday daytime tide conditions allowed for access to the outfalls. The second storm water sampling event will occur during February 2014 or during the second phase of the RI.

4.6 Observe Sheet Pile Seawall and Riprap Bank

On July 23 and 24, 2013, SLR personnel inspected the sheet pile seawall and boulder riprap that border Parcel D and the southeast corner of Parcel F to identify any groundwater seeps during seasonal low-low tide conditions, and to collect intertidal sediment samples. SLR personnel measured the depths to groundwater in eight monitoring wells (CMW-1 through CMW-6, CMW-4, EMW-3S, and EMW-13S) located adjacent to the seawall to determine the groundwater elevations behind the wall. During the inspection of the sheet pile seawall, SLR personnel discovered that the wall extends to the western property boundary. This section of the wall, which extends west-northwest of the pier, is not depicted on the plan drawing of the pier and wall. SLR and 8th Avenue Terminals have not been able to locate as-built drawings of the wall; therefore, the depth of the westernmost section of the wall is not known.

SLR personnel observed a total of 24 groundwater seeps in the sheet pile seawall and one groundwater seep at the bottom of the riprap. Holes and cracks were visible in the wall at most of the seep locations. Groundwater was flowing or dripping through the wall at 14 of the seep locations, and was slowly seeping along the wall at 10 locations. The groundwater seep at the bottom of the riprap was a steady flow of water; however, we could not sample it due to safety concerns. Since many of the seeps on the seawall were located in the same areas and there was limited flow from 10 of the seeps, SLR collected seep samples (designated Seep 1 through Seep 5) from 5 of the locations that had sufficient flow to allow for sampling. The locations of the seep samples are shown on Figure 3.

The groundwater seep samples were submitted to F&B for analysis of the following:

- Total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8
- Total mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A
- DRO and HO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- VOCs by EPA Method 8260C
- TSS by Standard Method 2540D

- Chloride by Method SM4500
- TOC by EPA Method 9060M

During the inspection of the riprap, SLR personnel observed that intertidal sediment was present at several locations within the riprap. In accordance with the RI/FS Work Plan (Ecology, 2012), the collection of intertidal sediment samples would be attempted at each end of the existing pier and in proximity to storm water drainage system outfalls OF2, OF3, OF4, and OF5. On July 23 and 24, 2013, SLR personnel collected five intertidal sediment samples (IS-1 through IS-5) at locations near each of the pier and near outfalls OF2, OF3, and OF4. There was no sediment on the riprap near outfall OF5. The intertidal sediment sample locations are shown on Figure 3.

The intertidal sediment samples were submitted to F&B for analysis of the following:

- Metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8
- Mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A
- DRO and HO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- VOCs by EPA Method 8260C
- Grain Size by ASTM D-422
- Total Organic Carbon (TOC) by EPA Method 9060

During the inspection of the riprap, SLR personnel looked for exposed soil within the boulders. We did not observe any soil, and based on the presence of the sheet pile seawall behind the riprap on the property and the presence of asphalt on the upland surface near the seawall, it would not be possible for soil from the upland area to erode into the riprap. Based on the inspections conducted by SLR in 2013 and in 2008 (SLR, 2008), there is no exposed soil along the upland edges of the 8th Avenue Terminals property that can erode into the Duwamish Waterway or Slip 4.

4.7 Conduct Geophysical Surveys

Geophysical surveys were conducted at the subject property on August 21, 2013, in accordance with the scope of work presented in the Work Plan for Geophysical Surveys (SLR, 2013a). The objectives of the surveys were to determine if the former fuel oil UST at the northwestern part of Parcel F was still present, and to identify the locations of any remaining buried pipes and catch basins associated with historical storm water drainage system on Parcel F, including any pipes connected to the inactive or former wash water

sumps. The geophysical surveys were conducted at eight locations; at the former fuel oil UST, the two inactive sumps, the abandoned sump, the three potentially buried catch basins that were shown on a 1946 drawing or a 1990 drawing in Crowley's files, and at the two buried partial catch basins that were discovered in 2010 (described in Section 2.2.3). The locations of the geophysical survey transects are shown on Figure 16.

Applied Professional Services, Inc. (APS) of North Bend, Washington, conducted the geophysical surveys under the direction of SLR personnel. At each of the survey areas, both electromagnetic (EM) and ground-penetrating radar (GPR) surveys were conducted along several east-west and north-south transects that were 20 to 60 feet long and 5 feet apart from each other (see Figure 16). The results of the surveys showed that the former UST and the former drainage system catch basins and lines are no longer present. There was an anomaly observed at the location of the former UST, but it appeared to only be a buried piece of metal that is approximately 3 feet by 3 feet in size. The survey also showed that there are no underground pipes connected to the inactive or former wash water sumps. During one of the surveys, a buried groundwater monitoring well (MW-3) was discovered in poor condition and was subsequently abandoned (described in Section 4.2).

4.8 Observe Property Tenant Operations and Interview Personnel

On May 31 and October 31, 2013, SLR personnel conducted visits to the subject property to observe the tenants' (Organic Fuel Processors, First Student, and KRS Marine) operations and to interview their personnel. The objectives of the work were: 1) to evaluate the potential for direct discharges into the Duwamish Waterway (including Slip 4), 2) to evaluate the barge operations and other activities at the property regarding the potential to impact the waterway, 3) to find out if any spills, dumping, or leaks have occurred, 4) to evaluate housekeeping and hazardous substance management practices, and 5) to find out if the tenants were complying with their Industrial Stormwater General Permit requirements. As detailed in SLR's letter to Ecology dated November 4, 2013 (SLR, 2013c), the potential for direct discharges into the Duwamish Waterway and the potential for the barge operations and other property operations to impact the waterway are low. Based on interviews and the observed lack of evidence of spills or releases, it appears that no significant spills or leaks have recently occurred.

The hazardous substance management and housekeeping practices at the property appear to be acceptable; however, First Student should more frequently maintain or replace their storm water catch basin filters and pumice-filled wattles. Despite the implementation of a number of best management practices, Organic Fuel Processors is having difficulty meeting their storm water discharge limits for turbidity, copper, and zinc. To address this issue, Ecology is requiring Organic Fuel Processors to install and operate a storm water

treatment system at the property. Except for one zinc exceedance in the fourth quarter of 2012, First Student has been in compliance with their storm water discharge limits. However, First Student discharges to four outfalls that are monitored by Organic Fuel Processors and since they do not appear to be maintaining their catch basin filters adequately, First Student's operations could be contributing to Organic Fuel Processors' discharge limit exceedances.

4.9 Waste Disposal

The soil generated by the drilling activities, and the wastewater generated by the cleaning of the drilling and sampling equipment and the development and purging of the wells were temporarily stored at the 8th Avenue Terminals property in properly labeled 55-gallon drums. The water and solids generated by the cleaning of the Parcel D catch basins and storm drain lines were temporarily stored in 10-cubic yard and 20-cubic yard roll-off containers, respectively. After characterizing the waste materials in accordance with the requirements of the disposal facilities, the soil, solids, and water were hauled off site for disposal at licensed facilities.

Approximately 8.5 tons of non-hazardous soil (including solids from the drainage lines) were transported to the Chemical Waste Management of the Northwest facility in Arlington, Oregon for disposal. Approximately 300 gallons of non-regulated wastewater were transported to Marine Vacuum's (MarVac) facility in Seattle, Washington for disposal. Approximately 5.3 cubic yards of catch basin solids were also transported to the MarVac facility for disposal. Approximately 14,500 gallons of wastewater from the cleaning of the storm water drainage system were transported to King County's wastewater treatment facility in Renton, Washington, for disposal.

4.10 Surveying

Signature Surveying & Mapping (Signature) surveyed the horizontal positions and vertical elevations of the RI soil borings and groundwater monitoring wells (ground surface and top of well casing), the Slip 4 stilling well, and the existing pre-RI monitoring wells. Signature also surveyed the horizontal positions of the storm water drainage system catch basins, the vertical elevations of the rim and bottom of each basin, and the vertical elevations of the invert of each drain pipe (in the catch basins) and of each outfall. Signature surveyed the horizontal positions of the groundwater seep samples and intertidal sediment samples, and the horizontal positions of the property buildings and pier. The horizontal positions were surveyed to the nearest 0.1-foot relative to Washington State Plane Coordinate System, North Zone. The vertical elevations were surveyed to the nearest 0.01-foot, relative to the NAVD 88 datum.

The elevation of the top of each monitoring well casing and stilling well pipe is presented in Table 39, and the ground surface elevations of the RI soil borings and monitoring wells are presented on the soil boring logs (see Appendix E). The elevations of the storm water drainage system components and the outfalls are presented in Table 41. The horizontal positions of the soil borings, monitoring wells, groundwater seep samples, and intertidal sediment samples are presented in Table 42, and the horizontal positions of the storm water drainage system catch basins, conveyance vaults, and outfalls are presented in Table 43. Based on the surveyed horizontal positions, the locations of the property buildings and pier, as well as the borings, monitoring wells, seep samples, and intertidal sediment samples, are shown on Figures 2 and 3.

5 SITE GEOLOGY AND HYDROGEOLOGY

5.1 Site Geology

The surficial geology beneath the upland portion of the 8th Avenue Terminals property generally consists of 5 to 17 feet of sand or silt fill. The thickness of the fill is greatest adjacent to the sheet pile seawall. The fill contains concrete, brick, wood, and other debris in the southern and eastern parts of the property, near the seawall. The fill is underlain by a sand unit to a depth of at least 50 feet bgs. Cross sectional views of the geology beneath the property (Sections A-A' and B-B') are shown on Figures 18 and 19. The locations of the cross sections are shown on Figure 17.

5.2 Site Hydrogeology

The upland portion of the 8th Avenue Terminals property is mostly paved, and storm water on the property is directed into Slip 4 and the Duwamish Waterway through catch basins, underground piping, and outfalls. As a result, the local groundwater flow system beneath the property does not receive significant recharge from precipitation. The shallow groundwater beneath the property is unconfined and occurs in the fill soils and the underlying sand unit to a depth of at least 50 feet bgs (the maximum depth of investigation).

A sheet pile seawall and associated pier were constructed along the eastern and southern perimeter of Parcel D in the early 1980s. The location of the seawall is shown on Figure 2. The plan drawings do not show the sheet pile seawall extending from the western end of the pier to the western property line; however, sheet pile that is similar to the seawall is visible above the riprap to the west of the pier. The sheet pile seawall consists of interlocking sheets of steel plate. The design elevation of the bottom of the seawall was approximately -29 feet, which is approximately 45 feet below the ground surface along the pier (see Figure 18).

The construction of the seawall apparently included excavating the area where the concrete bulkhead for the pier would be built. After the sheet pile seawall was installed, clean sand and gravel fill were placed along the base of the seawall (on the water side) and covered with riprap that was supported by a toe trench. The excavated area on the inland side of the sheet pile seawall was backfilled; however, the backfill type was not

specified on the design drawings. An unnamed Crowley drawing shows that sand and dredge fill was used to backfill two parts of the excavated area on the inland side of the seawall (see Figure 2).

5.2.1 2008 Tidal Study

In July 2008, SLR conducted a tidal study and evaluated the data to assess the interactions between the Duwamish Waterway (including Slip 4) and the shallow groundwater beneath the property. Groundwater elevations were monitored at wells CMW-4, CMW-5, CMW-6, CMW-7, DMW-3, and DMW-6, and in a Slip 4 stilling well through at least one full tidal cycle. Depths to water varied from approximately 7 to more than 16 feet below grade (SLR, 2008). At the highest high tide on July 17, 2008, the water elevation in Slip 4 (in a stilling well) was 9.29 feet above the NAVD 88 datum, and the groundwater elevations in the monitoring wells ranged from 4.99 to 6.33 feet above the NAVD 88 datum. At the lowest low tide on July 18, 2008, the water elevation in Slip 4 was 4.01 feet below the NAVD 88 datum, and the groundwater elevations in the monitoring wells ranged from 0.79 to 3.66 feet above the NAVD 88 datum.

Groundwater and surface water elevations measured during the 2008 tidal study demonstrated that the seawall was acting as a barrier to flow between the shallow groundwater and the water in Slip 4 (SLR, 2008). During high tide conditions, the monitoring well (CMW-7) with the greatest tidal response and shortest response time (time lag) was located approximately 80 feet east of the southwestern end of the seawall (see Figure 2). In the monitored wells located further toward the middle of the seawall (CMW-6, CMW-5, and CMW-4), the tidal response lessened and time lag increased with distance away from the southwestern end of the seawall. During low tide conditions, the greatest tidal response was also at CMW-7, and the response lessened with distance away from the southwestern end of the seawall. However, the time lag was greatest at CMW-7.

5.2.2 Results of 2013 Groundwater Monitoring

During the first phase of the RI, groundwater monitoring data were collected from the shallow and deep groundwater monitoring wells on July 10, 2013 (during seasonal low tide conditions in the Lower Duwamish Waterway), September 23, 2013 (during seasonal high-high tide conditions), and October 2, 2013 (during seasonal low tide conditions). The deep groundwater wells are screened within the unconfined aquifer at depths of approximately 40 to 50 feet bgs. During each groundwater monitoring event, the depth of the surface water in Slip 4 was measured at the stilling well that was installed at the northeastern end of the pier (see Figure 20). The groundwater and surface water monitoring data from the 2013 events are presented in Table 39, and groundwater elevation contour maps for both the shallow and deeper groundwater during each monitoring event are presented as Figures 20 through 25.

5.2.2.1 Shallow Groundwater Conditions

The shallow groundwater flow beneath the property during the high-high tide conditions on September 23, 2013, is illustrated on Figure 22. The groundwater elevation data indicate that the sheet pile seawall acts as a barrier to surface water during rising tides, which is consistent with the 2008 high tide data (SLR, 2008). Shallow flow during rising tides appears to primarily consist of surface water flowing inland around the ends of the seawall (through riprap areas) and recharging the groundwater beneath the property.

The shallow groundwater flow during low-low tide conditions on July 10, 2013, and during low tide conditions on October 2, 2013, are illustrated on Figures 20 and 24, respectively. The July and October 2013 groundwater elevation data indicated that the sheet pile seawall also acts as a barrier to groundwater during falling tides, which is consistent with the 2008 low tide data (SLR, 2008). Shallow flow during falling tides appears to primarily consist of groundwater flowing towards Slip 4 and the Duwamish Waterway around the ends of the seawall (through riprap areas).

Figure 18 shows the inferred hydrogeologic conditions at cross section A-A' during high-high tide conditions and low-low tide conditions (the location of cross section A-A' is shown on Figure 17). This cross section depicts how the seawall acts as an effective barrier to flow during both high and low tide conditions, as water levels across the seawall are offset by several feet.

5.2.2.2 Deeper Groundwater Conditions

The deeper groundwater flow within the unconfined aquifer beneath the property during high-high tide conditions on September 23, 2013, is illustrated on Figure 23. The deeper groundwater flow beneath the property during low-low tide conditions on July 10, 2013, and during low tide conditions on October 2, 2013, are illustrated on Figures 21 and 25, respectively.

Groundwater flow within a deeper part of the aquifer, at depths of approximately 40 to 50 feet bgs, exhibits a tidal influence with flows toward Slip 4 and the Duwamish Waterway during low tide conditions, and flows inland during high tide conditions.

5.2.2.3 Gradients

Horizontal hydraulic gradients were not calculated for the 2013 groundwater monitoring events because the data could not be corrected for tidal response lag times. However, the shallow groundwater data collected from wells located in the southern part of the property over a tidal cycle in 2008 indicated that the horizontal hydraulic gradient beneath the southern part of the property was approximately 0.004 to 0.009 feet/foot, and steepened to approximately 0.10 feet/foot in the area between well CMW-7 and the Duwamish

Waterway (SLR, 2008). The net horizontal hydraulic gradient between CMW-7 and the Duwamish Waterway over a full tidal cycle averaged approximately 0.004 feet/foot, from Parcel D towards the waterway.

Vertical gradients at four nested shallow and deep well pairs (CMW-4/EMW-15D, CMW-6/EMW-14D, CMW-7/EMW-16D, and DMW-3/EMW-10D) were calculated for the low-low tide event on July 10, 2013, and for the high-high tide event on September 23, 2013. The results indicated that there was a net downwards gradient adjacent to the sheet pile seawall (ranging from -0.024 to -0.0004 feet/foot) during low tide conditions, and a net upwards gradient adjacent to the seawall (ranging from 0.0046 to 0.010 feet/foot) during high tide conditions. The shallow wells exhibited a dampened tidal response relative to the deeper wells, which further supports the conclusion of the 2008 tidal study (SLR, 2008) that the sheet pile seawall acts as a barrier to surface water flow. The inland vertical gradient, as measured at well pair DMW-3/EMW-10D, was less pronounced but indicated upwards flow during both high and low tides (ranging from 0.0042 to 0.0057 feet/foot).

6 CONCEPTUAL SITE MODEL

This section of the work plan synthesizes the data collected during the previous investigations and the first phase of the RI (presented in Section 7) into a conceptual model of COPC occurrence, movement, and potential exposures.

6.1 Source Characterization

Since the early 1980s, the 8th Avenue Terminals property has only been used for cargo storage and distribution, for grinding and storage of wood, and for school bus parking. Since the early 1980s, we are unaware of any releases of hazardous substances at the property, and there are currently limited potential sources of hazardous substance releases at the property. Based on the historical industrial operations, six potential contaminant source areas were identified at the property (as described in Section 3). For each potential source area, any contaminant that was present in the soil or groundwater at a concentration that exceeded the lowest potentially applicable cleanup level (proposed preliminary cleanup levels presented in Section 7.1) was identified as a COPC for soil or groundwater. The COPCs for soil are PAHs, PCBs, DRO, HO, GRO, 1,1-dichloroethene, 2-methylnaphthalene, dibenzofuran, di-n-octyl-phthalate, 2-methylphenol, dioxins, furans, antimony, arsenic, barium, cadmium, chromium, copper, lead, nickel, and zinc. The COPCs for groundwater are benzo(a)anthracene, chrysene, arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc.

6.2 Fate and Transport of Contaminants

Figure 26 is a graphical representation of the fate and transport of the COPCs at the 8th Avenue Terminals property. After any releases at the upland area of the property, the contaminants would initially have been located in surface soils (surface spills or impacted ash accumulation) or subsurface soils (UST releases, placement of impacted dredge fill, or burial of impacted ash or partially burned debris). Metals, PCBs, PAHs, semi-volatile petroleum hydrocarbons, phthalates, dioxins, and furans in soil exist primarily in two phases: adsorbed to soil particles and dissolved in soil pore water. Where present, volatile petroleum hydrocarbons and VOCs also exist in the vapor phase.

As rain falls on the ground surface and infiltrates the subsurface, contaminants in surface soils and subsurface soils can dissolve in the rainwater and percolate through the

subsurface soils. Some of the contaminant mass remains in the subsurface soils, in the phases listed previously, and some of the contaminant mass eventually reaches the groundwater. After the early 1980s, pavement has minimized rainwater infiltration across most of the property, limiting the leaching of contaminants from soil to groundwater. The northern portion of Parcel F is not paved, and rainwater infiltration is likely to be greater in that portion of the property. Groundwater levels are tidally influenced, and contaminants may move between subsurface soils and groundwater as the water levels rise and fall.

As discussed in Section 4.6, the riprap located along the southwestern bank of the upland property area was inspected in July 2013 to determine if exposed soil was present that could potentially erode during major rainfall events, or by contact with surface water during certain tidal events, and migrate to surface water of the Lower Duwamish Waterway (including Slip 4). During the inspection of the riprap, SLR personnel observed that the sheet pile seawall extended to the western property line, and the wall would prevent soil from eroding into the riprap. No exposed soil was observed between the riprap boulders, and transport of soil in the river bank to surface water and sediment in the Duwamish Waterway and Slip 4 is not considered a complete exposure pathway.

As described in Section 4.5, storm water sheet flow from Parcels D and F into Slip 4 is limited to the sloped concrete surfaces beneath the two loading ramps on Parcel D. Therefore, contaminants in surface soil are not transported directly to surface water through storm water sheet flow. Storm water on the upland portion of the property is directed into catch basins that discharge to Slip 4 and the Duwamish Waterway. Based on the storm water conveyance system at the property, contaminants on paved surfaces (such as from surface spills) or on unpaved surfaces (such as contaminants in surface soil) may be picked up and transported by storm water to surface water and to sediment in Slip 4 and the Duwamish Waterway. As described in Section 4.4, the storm water drainage system on Parcel D was thoroughly inspected in August 2013. The results of the inspection showed that a pipe joint was separated and offset at one location on D Line #1, and storm water could drain into the subsurface soil and groundwater at that location. Except at the one separated pipe joint, which will be repaired, no leaks were identified in the catch basins or drain lines, and it is unlikely that contaminants in the drainage system can be released to subsurface soil and groundwater.

The COPCs below the groundwater table exist primarily in two phases: a dissolved phase or sorbed to the soil particles in the water-bearing zone. Groundwater beneath the property is hydraulically connected to the Duwamish Waterway (including Slip 4). A sheet pile seawall acts as a barrier to direct flow between shallow groundwater beneath most of Parcel D and surface water in Slip 4, but direct and re-directed flow occurs through the riprap near the ends of the seawall. In addition, the deeper groundwater within the unconfined aquifer, at depths below 45 feet, likely flows under the sheet pile seawall. Therefore, depending on their location beneath the property, contaminants in

groundwater could discharge to surface water and sediment in the Duwamish Waterway and Slip 4. Under such conditions, migration to sediment could theoretically occur either directly through groundwater flow to sediment, or indirectly through sediment-surface water interactions following groundwater discharge to surface water.

Volatile contaminants in surface and subsurface soil are present in the vapor phase. After volatilization, these contaminants can be transported to the surface to outdoor air and to indoor air. However, the resulting outdoor air concentrations are expected to be minimal due to instantaneous dispersion and mixing that occurs at the soil-air interface. Vapors may enter indoor air if volatile contaminants are present in the subsurface beneath or near a slab-on-grade building. At the 8th Avenue Terminals property, the identified volatile COPCs for soil (GRO and 1,1-dichloroethene) were only present at a few localized areas, and no enclosed, slab-on-grade buildings are located at the property. Contaminant transport to indoor air is therefore not currently expected to be a potentially complete transport pathway at the property; however, it is our understanding that the property, if sold to the current potential buyer, may be redeveloped as a dredged sediment loading/transport facility. Future slab-on-grade buildings may be constructed near areas where volatile contaminants are present in the subsurface.

Non-volatile COPCs present in surface soil may be transported to ambient air in the form of suspended particulates (i.e., dust). However, due to the limited use of the unpaved portion of the property (parking of bus drivers' cars at the north-central part of Parcel F and limited industrial use at the eastern end of Parcel F) and the typically wet climate of the property area, dust generation is expected to be minimal.

Based on a terrestrial ecological evaluation (TEE) conducted by SLR in 2013 for the 8th Avenue Terminals site, the site qualifies for an exclusion from further evaluation because there is less than 0.25 acres of contiguous undeveloped land on or within 500 feet of any area of the site. The completed TEE Form is presented in Appendix F. Since terrestrial plants and other biota have a minimal presence at the property, terrestrial ecological receptors are not expected to have significant exposure to soil or groundwater at the property, and risks are considered acceptable under the TEE. Also, humans are unlikely to hunt and consume terrestrial biota, and tissue consumption of terrestrial biota does not represent a relevant exposure medium for humans.

Aquatic plants can take up contaminants from the sediments and surface water through their roots and leaves. Aquatic biota can also accumulate chemicals in surface water and sediment through ingestion, dermal contact, and respiration. Aquatic biota can therefore potentially act as additional contaminated media.

The following environmental media have, or may have, become contaminated and could be acting as sources of exposure for humans, terrestrial biota, or aquatic biota:

- Surface soil

- Subsurface soil
- Ambient air
- Groundwater
- Surface water
- Sediment

6.3 Potential Receptors

6.3.1 Human Receptors

Most of Parcel F and the northwestern and north-central parts of Parcel D are used to stage and park school buses, and for First Student's administrative offices. School bus drivers are present on this portion of the property for a few hours a day, before and after driving their bus routes, and are primarily in the offices when on the property.

The central portion of Parcel D is used to receive, grind, and store wood that can be used to make compost or produce alternative fuel. The southeastern portion of Parcel F and the eastern portion of Parcel D are also used to infrequently receive wood. The southern and southeastern portions of Parcel D are used to load/unload cargo from barges. At these parts of the property, industrial workers, who are expected to work typical eight-hour workdays, are present on the property, and are primarily outdoor workers. These workers may spend a portion of their time in the office trailers and the equipment maintenance shop. Property visitors, such as truck drivers, may also be present occasionally for short periods of time.

Trespassers are unlikely to enter the property due to the presence of a fence and locking gates that prevent access along the north and west sides, and the presence of Slip 4 and the Duwamish Waterway along the east and south sides. Fishermen in boats are occasionally present in Slip 4.

The property is currently for sale. It is our understanding that the current potential buyer may redevelop the property as a dredged sediment loading/transportation facility. Even if the current potential property sale is not completed, because the property is zoned as industrial and is located in an industrial-zoned area, future property uses are expected to be industrial in nature. Therefore, potential future receptors include industrial workers, who could spend most of their time either outdoors or indoors if new buildings are constructed. Construction workers may also be present on the property in the future. Fishermen accessing Slip 4 from the water will likely continue to be present in the future.

6.3.2 Ecological Receptors

With the exception of the northern part of Parcel F, the entire property is capped with asphalt or concrete. The unpaved portion of Parcel F is covered with gravel and has

limited vegetation (e.g., trees, shrubs). The bus operations and the industrial activities at the subject property, and the industrial operations at surrounding properties, present a constant human disturbance. At present, the subject property offers limited, disturbed terrestrial habitat. Based on the results of the TEE for the property (see Section 6.2), terrestrial ecological receptors are not included in this conceptual site model.

The eastern and southeastern parts of the property are located adjacent to Slip 4 of the Lower Duwamish Waterway, and the southern part of the property is adjacent to the main channel of the Lower Duwamish Waterway. The Lower Duwamish Waterway is tidally influenced, with water levels in Slip 4 varying more than 13 feet in response to Puget Sound tides. In 2011, Boeing conducted a salinity study of Slip 4, and the salinity measurements during three sampling events indicated that the water in Slip 4 is brackish (AMEC Geomatrix, 2011). Aquatic species are present in the Lower Duwamish Waterway, including benthic invertebrates, shellfish, and resident and migratory fish (Striplin Environmental Associates, 2004).

6.4 Potential Exposures

6.4.1 Exposures to Human Receptors

6.4.1.1 Currently Known Exposures

The human receptors currently present at the property include industrial workers that are assumed to be on the property five days a week for standard eight-hour workdays, and school bus drivers that are assumed to be on the property five days a week for a few hours per day. Property visitors are also on the property for short periods of time and on an irregular basis. Fishermen in boats are occasionally present in Slip 4.

The property is almost entirely covered with asphalt or concrete, and the portion that is not paved is used for parking of the school bus drivers' cars or for limited industrial activities (the eastern end of Parcel F). Therefore, human receptors currently present on the property may be exposed to soils through dermal contact or incidental ingestion, although the exposure would likely be minimal. Exposure through inhalation of windblown dust, although limited, is also potentially relevant for this property since vehicle activity on the unpaved portion of the property may disturb exposed soils and create dust. However, construction activities and heavy vehicle activity are not presently occurring within the unpaved portion of the property and dust generation under current conditions is expected to be minimal. Direct soil contact and inhalation of particulates therefore represent potentially complete exposure pathways for current human receptors at the property, although exposures are not expected to be significant.

Volatile COPCs were identified in the soil at the property; however, since there are no enclosed slab-on-grade buildings at the property, any volatile contaminant vapors will not

likely enter any buildings. Vapor intrusion from soil to indoor air is considered an incomplete exposure pathway for current industrial workers. Outdoor air concentrations are expected to be minimal due to instantaneous dispersion and mixing that occurs at the soil-air interface. Inhalation of vapors in outdoor air is considered a potentially complete, but insignificant pathway for current industrial workers.

Contaminants in groundwater and in storm water can migrate to surface water and sediment in the adjacent Slip 4 and Duwamish Waterway. Contaminants may then be taken up by aquatic and sediment-dwelling organisms such as fish and shellfish, which may be consumed by people fishing or harvesting shellfish in the area. Fishermen in boats have been observed in Slip 4 and fish consumption is therefore currently considered to be a potentially complete exposure pathway for off-site receptors. Shellfish harvesting has not been observed, and is unlikely to occur in Slip 4 since the land surrounding the slip consists of private property, preventing public access from the shore and any boat moorage. Dermal contact with sediments by net fishermen in Slip 4 and the Lower Duwamish Waterway is also a potentially complete exposure pathway.

Due to the industrial nature of the area and the industrial use of the waterway, swimming is not expected to occur in the vicinity of the property. Therefore, consumption of surface water is considered an incomplete pathway for off-site receptors. However, dermal contact with surface water by net fishermen in Slip 4 and the Lower Duwamish Waterway is considered a potentially complete pathway for off-site receptors.

Based on salinity measurements in July 2008 (SLR, 2008) and chloride concentrations (converted to salinity) in groundwater samples collected during the first phase of the RI (see Table 44), the shallow groundwater within 50 feet of the Lower Duwamish Waterway or Slip 4 is brackish in nature (salinity concentrations of 1.5 to 20 parts per thousand). The deeper groundwater within the uppermost water-bearing zone (at approximately 40 to 50 feet) is also brackish (salinity concentrations of 3.5 to 4.9 parts per thousand) within at least 450 feet of the Lower Duwamish Waterway or Slip 4. The brackish conditions in the uppermost water-bearing zone throughout most, if not all, of the property make the groundwater unsuitable for human consumption. No drinking water wells are present on the property, and drinking water is supplied by the City of Seattle. Based on existing data, consumption of groundwater is therefore an incomplete pathway for human receptors at the property.

6.4.1.2 Potential Future Exposures

The property is currently for sale. It is our understanding that the current potential buyer may redevelop the property as a dredged sediment loading/transportation facility. Even if the current potential property sale is not completed, because the property is zoned as industrial and is located in an industrial-zoned area, future property uses are expected to be industrial in nature. The property is in an industrial-zoned area, and this is not expected to change in the foreseeable future. Any future activities at the property can

therefore be assumed to be industrial in nature. Potential future receptors are likely to include industrial workers with similar exposures as current workers. Construction workers could also be present if development becomes necessary for future uses. Fishermen accessing Slip 4 from the water will likely continue to be intermittently present in the future. If slab-on-grade buildings are constructed in the future over locations where VOCs are present at elevated concentrations in soil, vapor intrusion into future buildings may be a complete exposure pathway.

Future construction workers could be exposed to contaminants in surface and subsurface soil, and in shallow groundwater through dermal contact or incidental ingestion during excavation activities. In the case of significant redevelopment and/or removal of pavement, inhalation of windblown dust may also occur. These exposure pathways are therefore considered potentially complete for the future construction worker receptor.

Since subsurface soils could become exposed if construction activities occur on the property in the future, direct subsurface soil contact pathways (including ingestion and dermal contact) and inhalation of windblown particulates in ambient air generated from subsurface soil are also potentially complete for future industrial worker and property visitor receptors. Future exposure pathways for the off-site fisherman receptor are the same as the current exposure pathways.

6.4.2 Exposures to Ecological Receptors

6.4.2.1 Currently Known Exposures

There is currently limited habitat to encourage visits by terrestrial wildlife. Due to the limited terrestrial habitat and ongoing human disturbance at the property, terrestrial receptors are not expected to spend significant amounts of time, or conduct nesting or breeding activities on the property. Based on these factors, as well as the TEE conducted by SLR, which resulted in the property being qualified for exclusion from further evaluation, terrestrial ecological receptors and pathways were not included in this conceptual site model.

Aquatic receptors in Slip 4 and the Duwamish Waterway could be exposed to contaminants through ingestion of and direct contact with surface water and sediment, through respiration, and through ingestion of plants and prey that may have accumulated contaminants from the environment. These exposure pathways are therefore considered potentially complete for aquatic receptors.

6.4.2.2 Potential Future Exposures

Future exposure pathways for aquatic ecological receptors are the same as the current exposure pathways. Current and future potential human health and ecological receptors, and exposure pathways are illustrated on Figure 27.

7 NATURE AND EXTENT OF CONTAMINATION

This section describes the development of proposed preliminary cleanup levels for soil and groundwater, and presents the results of a comparison of the data from the previous investigations and the first phase of the RI to the preliminary cleanup levels. At this time, preliminary cleanup levels have not been identified for sediment, and the sample analytical results for the intertidal sediment samples were compared to the preliminary screening levels described in Section 3. The catch basin solids sample analytical results and the storm water sample analytical results were also compared to the preliminary screening levels described in Section 3.

7.1 Proposed Preliminary Cleanup Levels

The basis for the preliminary cleanup levels is protection of the highest beneficial use of each site media, including protection of human health and the environment, and ensuring that all federal, state, and local regulations are met. The development of preliminary cleanup levels was conducted in accordance with MTCA requirements for site cleanups and in parallel with the source control program elements for the Lower Duwamish Waterway to prevent recontamination of sediments.

After completing the first phase of the RI, proposed preliminary cleanup levels were identified for soil and groundwater. The preliminary screening levels were retained for the intertidal sediment; however, after the EPA has issued its Record of Decision, the sediment data should be compared to the EPA's contaminant-specific cleanup levels for the Lower Duwamish Waterway Superfund Site. The catch basins solids and storm water data were compared to the preliminary screening levels to evaluate potential contaminant migration pathways to the Lower Duwamish Waterway. Since storm water and catch basin solids are not considered environmental media, cleanup levels will not be established.

As detailed in the conceptual site model (see Section 6), the basis for the preliminary soil and groundwater cleanup levels included the following.

- **Land Use and Area Zoning:** The property is zoned as industrial, located within an industrial-zoned area, and currently used for industrial purposes. It is likely that the property will remain industrial in nature for the foreseeable future. The

site's industrial land use was considered when establishing preliminary cleanup levels for the protectiveness of human and ecological populations at the site [WAC 173-340-708(3)].

- **Water Use Determination:** Preliminary groundwater cleanup levels are based on the highest beneficial use and the reasonable maximum exposure expected to occur under both current and potential future site use conditions. Because of its brackish nature, the groundwater beneath the property is not considered potable, consistent with WAC 173-340-720(2). Therefore, preliminary cleanup levels for groundwater are based on discharge to surface water and sediment.
- **Use of Empirical Data:** In accordance with WAC 173-340-747(3)(f) and WAC 173-340-747(9), groundwater and soil concentrations were used to evaluate the potential for soil contamination to cause an exceedance of future groundwater cleanup levels.
- **Fate and Transport Mechanisms:** Site-specific fate and transport information was collected during the RI to update the conceptual site model. This information affects the analysis of fate and transport properties for upland soils and groundwater, and include groundwater gradients, aquifer properties, and geochemical properties.
- **Points of Compliance:** A point of compliance is the location established in accordance with WAC 173-340-720(8) and 173-340-745(7) where cleanup levels will be attained. Points of compliance for a given media may differ by exposure pathway. This includes both standard and conditional points of compliance.

7.1.1 Preliminary Groundwater Cleanup Levels

Cleanup levels for groundwater were selected based on protection of surface water or sediment (marine and freshwater values for either ecological receptors or human health). The groundwater beneath the property is brackish as a result of its connectivity to the brackish surface water in the Lower Duwamish Waterway; therefore, the groundwater and surface water are non-potable. Values such as federal maximum contaminant levels (MCLs) and human health protective risk-based values that include ingestion of drinking water as an exposure pathway were therefore not included in the analysis of potentially applicable cleanup levels. Ecological values based on acute exposures were also not included; chronic values are more representative of potential exposure scenarios at the property and are also generally more conservative.

The potential ARARs from which the groundwater cleanup levels were selected included: surface water values for the protection of aquatic life (chronic values for marine and freshwater), surface water MTCA Method B human health values (based on general,

tribal child, and tribal adult fish consumption), surface water MTCA Method B values for environmental effects, organoleptic effects values, and groundwater to sediment protection values. If the lowest potential cleanup level was below the background concentration established by Ecology, the background concentration was selected as the cleanup level. If the selected cleanup level was below the PQL, then the PQL was selected as the cleanup level [WAC 173-340-700(6)(d)]. The preliminary groundwater cleanup levels are presented in Tables 9 through 16.

Since the groundwater cleanup levels are based on protection of surface water or sediment, shallow and deeper points of compliance were established near the Duwamish Waterway (including Slip 4). Because the shallow groundwater discharges to the waterway around each end of the sheet pile seawall and at the northern end of Slip 4 (north of the wall), the shallow wells (CMW-1, CMW-7, EMW-3S, EMW-12S) located within 100 feet of the each end of the wall and within 100 feet of the northern end of Slip 4 (north of the wall) were identified as groundwater compliance points. Since it appears that deeper groundwater flows under the seawall, the deep wells (EMW-4D, EMW-14D, EMW-15D, and EMW-16D) located within 100 feet of the seawall were identified as groundwater compliance points. The groundwater analytical data were compared to the preliminary cleanup levels at those compliance points.

7.1.2 Preliminary Soil Cleanup Levels

The preliminary soil cleanup levels were identified on a chemical-specific basis. For the chemicals detected above the preliminary groundwater cleanup levels at the groundwater point of compliance wells, soil cleanup levels were developed based on protection of surface water (through leaching to groundwater and then transport to surface water), as well as direct contact. For all other chemicals, soil cleanup levels were based only on direct contact.

Since the groundwater and surface water are non-potable, human health-protective, risk-based values for protection of groundwater as a drinking water resource were excluded from the analysis of applicable soil cleanup levels. Ecological values based on acute surface water exposures were also excluded; chronic values are more representative of potential exposure scenarios at the site and are also generally more conservative.

The potential ARARs from which the soil cleanup levels were selected included: surface water protection values for aquatic life (chronic values for marine and freshwater) and human health (based on consumption of aquatic organisms and including some values for protection of groundwater based on tribal consumption of aquatic organisms), surface water organoleptic effects-based values, and MTCA Method B soil direct contact values. If the lowest potential cleanup level was below the background concentration established by Ecology, the background concentration was selected as the cleanup level. If the

selected cleanup level was below the PQL, then the PQL was selected as the cleanup level.

For some chemicals detected in soil above the preliminary screening levels, MTCA Method B values are not available from CLARC. These include petroleum hydrocarbons (including GRO, DRO, and HO, as well as TPH), lead, and several other chemicals. For GRO, DRO, HO, TPH, and lead, Method A industrial soil cleanup levels were used. For the other chemicals where neither Method B nor Method A industrial values were available (acenaphthylene, total chromium, 1,4-dichlorobenzene, di-n-octyl-phthalate, and thallium), preliminary soil cleanup levels were either calculated using Method B equations (e.g., for 1,4-dichlorobenzene, di-n-octyl-phthalate, and thallium), or values for surrogate chemicals were used (e.g., for acenaphthylene and total chromium).

Toxicity values were not available from the sources listed in WAC 173-740-708(7) and WAC 173-740-708(8) for these chemicals. Therefore, the EPA's Regional Screening Level (RSL) tables were used to identify toxicity values for these chemicals. Sources of toxicity values as provided in the RSL tables for these chemicals include California EPA, PPRTV, and ATSDR toxicity values. Because toxicity values were not available in the RSL tables for total chromium or acenaphthylene, cleanup levels for surrogate chemicals were used for these two chemicals. For total chromium, the MTCA Method B value for chromium III was used. For acenaphthylene, the MTCA Method B value for acenaphthene was used. Where preliminary cleanup levels were calculated using MTCA Method B equations, the lower (i.e., more conservative) of the cancer and non-cancer based values were selected as the preliminary cleanup levels. The preliminary soil cleanup levels are presented in Tables 1 through 8.

7.2 Sample Analytical Results

The data collected during the 2013 RI activities, as well as during the previous investigation or remediation activities at the subject property (soil and catch basin solids data only), were compared to the applicable preliminary cleanup levels (soil and groundwater) or preliminary screening levels (catch basin solids, storm water, and intertidal sediments). The results of the data analysis are summarized below.

7.2.1 Groundwater Sample Analytical Results

Because the preliminary cleanup levels for groundwater were selected based on protection of surface water and sediment, the RI groundwater data were compared to the preliminary cleanup levels at the selected groundwater compliance wells (shallow wells CMW-1, CMW-7, EMW-3S, and EMW-12S, and deep wells EMW-4D, EMW-14D, EMW-15D, and EMW-16D). The low-tide groundwater samples were analyzed for PAHs, total and dissolved metals, PCBs, VOCs, SVOCs, and petroleum hydrocarbons, and the high-tide samples were analyzed for total and dissolved metals. The sample analytical results

showed that one or more samples from at least one of the groundwater compliance wells contained PAH [benzo(a)anthracene and chrysene] and metals (arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc) concentrations that exceeded the preliminary cleanup levels. PCBs, VOCs, SVOCs (including phenols and phthalates), and petroleum hydrocarbons were not detected in any of the groundwater samples from the compliance wells at concentrations greater than the preliminary cleanup levels. The groundwater sample analytical results for the first phase of the RI, as well as the previous investigations, are presented in Tables 9 through 16. Copies of the laboratory reports for the groundwater samples from the first phase of the RI are presented in Appendix G.

For the purposes of evaluating the lateral and vertical extents of the PAH- and metals-impacted groundwater, the preliminary groundwater cleanup levels were applied to not just the data from the compliance wells, but also to the data from all of the wells at the property. The distribution of the groundwater COPCs [benzo(a)anthracene, chrysene, arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc] at the property are presented below.

7.2.1.1 PAHs

Benzo(a)anthracene and chrysene were the only PAHs detected in at least one of the groundwater compliance wells at concentrations that exceeded the preliminary groundwater cleanup levels (0.0042 and 0.0038 µg/L, respectively) (see Table 11). The distributions of benzo(a)anthracene and chrysene in groundwater beneath the property are similar, with the primary sources located at the former pipe manufacturing area and more minor sources at the former wood treating area and/or possibly to the west of the property (see Figures 28 and 29). There is also a source of chrysene in groundwater at the former excelsior factory and press area.

In 2013, the benzo(a)anthracene concentrations greater than the preliminary cleanup level occurred in the shallow groundwater throughout most of Parcel D and at the southeastern corner of Parcel F (see Figure 28). Benzo(a)anthracene concentrations in one deep groundwater sample from EMW-4D and EMW-14D (near the seawall) also exceeded the preliminary cleanup level. The lateral extents of the benzo(a)anthracene-impacted groundwater were delineated in all directions, except to the west of shallow well H-20, which is located along the western property line. The vertical extents of the benzo(a)anthracene-impacted groundwater were not delineated at deep wells EMW-4D and EMW-14D.

In 2013, chrysene concentrations greater than the preliminary cleanup level occurred in the shallow groundwater throughout Parcel D, except for the western end of the property. Chrysene concentrations greater than the preliminary cleanup level also occurred at localized areas at the western end and middle part of Parcel F (see Figure 29). A deep groundwater sample from deep well EMW-14D contained a chrysene concentration that

exceeded the preliminary cleanup level. The lateral extents of the chrysene-impacted groundwater were delineated in all directions, except to the west of shallow well EMW-7S, which is located along the western property line. The vertical extent of the chrysene-impacted groundwater was not delineated at deep well EMW-14D.

A groundwater seep sample (Seep-4) contained benzo(a)anthracene and chrysene concentrations greater than the preliminary cleanup levels (see Table 11); however, it is our understanding that the sheet pile seawall will be repaired or replaced to eliminate the seeps.

7.2.1.2 Metals

Arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc were detected in at least one of the groundwater compliance wells at concentrations that exceeded the preliminary cleanup levels (see Tables 9 and 10). The September 2013 sample from compliance well EMW-3S contained a total mercury concentration (0.0072 µg/L) that exceeded the preliminary cleanup level (0.0052 µg/L); however, the sample did not contain a dissolved mercury concentration above the PQL (0.0015 µg/L). Because mercury was only detected in one sample from a compliance well at a concentration above the preliminary cleanup level and the dissolved mercury concentration in that sample was below the PQL, mercury was not identified as a groundwater COPC.

In 2013, the groundwater samples collected from the compliance wells during the two low tide events and the high tide event were analyzed for total and dissolved metals. While the metals concentrations in the wells fluctuated due to tidal influence, the analytical results showed that where COPC concentrations exceeded the preliminary cleanup levels, the concentrations were consistently above the cleanup levels (see Tables 9 and 10). The differences in the metals concentrations after analysis of the same samples by dissolved and total metals methods were typically limited.

7.2.1.2.1 Arsenic

The total and dissolved arsenic concentrations in at least one 2013 groundwater sample collected from every well at the property exceeded the preliminary cleanup level (0.87 µg/L). All of the groundwater seep samples also contained arsenic concentrations that exceeded the preliminary cleanup level. The highest concentrations of arsenic were located on Parcel D near the southern sand and dredge fill area, near the former pipe and chain manufacturing operation areas, and near the former treated pole storage area (see Figure 30). Based on the arsenic concentrations (up to 19.1 µg/L) at the monitoring well (EMW-1S) located at the northern (upgradient) end of the property, elevated arsenic concentrations from off-property sources are migrating onto the subject property.

During the high tide monitoring event (in September 2013), groundwater samples from wells CMW-4, EMW-10D, EMW-13S, and EMW-15D were submitted to Applied Speciation for analysis of dissolved arsenic, barium, copper, and selenium by ICP-DRC-

MS in an effort to evaluate these analyte concentrations after eliminating any matrix interference (primarily from brackish water conditions). During the second low tide monitoring event (in October 2013), all of the groundwater samples were submitted to Applied Speciation for analysis of dissolved arsenic, copper, and selenium by ICP-DRC-MS, and the samples were not analyzed by F&B for dissolved arsenic, copper, and selenium by EPA Method 200.8. When comparing the dissolved arsenic concentrations analyzed by EPA Method 200.8 and ICP-DRC-MS, the concentrations were typically lower when using ICP-DRC-MS, particularly at the groundwater compliance wells. After analysis by ICP-DRC-MS, the dissolved arsenic concentrations (up to 1.56 µg/L) only slightly exceeded the preliminary cleanup level at compliance wells CMW-1, EMW-3S, EMW-4D, EMW-14D, EMW-15D, and EMW-16D. The greater reductions in arsenic concentrations at wells located near the waterway and Slip 4 indicate that brackish water conditions are affecting the arsenic analyses by Method 200.8.

The lateral and vertical extents of the arsenic-impacted groundwater have not been delineated; however, there appear to be off-property sources of arsenic (background conditions) that would prevent the delineation of the arsenic-impacted groundwater.

7.2.1.2.2 *Barium*

The total and dissolved barium concentrations exceeded the preliminary cleanup level (122 µg/L) in at least one of the 2013 groundwater samples from four of the compliance wells (EMW-3S, EMW-4D, EMW-14D, and EMW-16D), as well as five additional shallow wells on the property (CMW-3, CMW-4, CMW-6, EMW-11S, and EMW-13S). With the exception of well EMW-11S, all the barium concentrations greater than the preliminary cleanup level were at wells located along the sheet pile wall. EMW-11S is located near the western property line and the barium at that location may be due to an off-property source. When comparing the results of dissolved barium concentrations analyzed by EPA Method 200.8 and ICP-DRC-MS, the concentrations were typically similar when using both methods. None of the groundwater seep samples contained barium concentrations greater than the preliminary cleanup levels.

Except to the west of well EMW-11S (west of the property), the lateral extents of the barium-impacted groundwater have been delineated. Due to presence of barium concentrations greater than the preliminary cleanup level at deep wells EMW-4D, EMW-14D, and EMW-16D, the vertical extents of the barium-impacted groundwater have not been delineated.

7.2.1.2.3 *Cadmium*

The cadmium concentrations in the 2013 groundwater samples were inconsistent. Only the samples from shallow well SLR-3 consistently contained total cadmium concentrations greater than the preliminary cleanup level (0.25 µg/L) (see Table 9). Total cadmium concentrations exceeded the preliminary cleanup level in the July 2013 samples from wells CMW-4, EMW-2S, EMW-3S, EMW-8S, EMW-9S, and EMW-10D, but not

during subsequent sampling events. At least one sample from wells CMW-1, CMW-4, CMW-6, EMW-4D, EMW-8S, and SLR-3 contained dissolved cadmium concentrations that exceeded the preliminary cleanup level (see Table 10). The cadmium concentrations greater than the preliminary cleanup level were located at the eastern part of Parcel F, the central part of Parcel D, and at localized areas behind the sheet pile seawall.

The lateral extents of the cadmium-impacted groundwater have been delineated, except to the north of well EMW-3S (and northeast of well EMW-2S). Due to presence of cadmium concentrations greater than the preliminary cleanup level at deep wells EMW-4D and EMW-10D, the vertical extents of the cadmium-impacted groundwater have not been delineated.

7.2.1.2.4 Copper

The total and dissolved copper concentrations in at least one of the 2013 groundwater samples from wells CMW-1, CMW-2, CMW-3, CMW-4, CMW-6, CMW-7, EMW-3S, EMW-4D, EMW-10D, EMW-11S, EMW-13S, EMW-14D, EMW-15D, EMW-16D, SLR-3, and SLR-6 exceeded the preliminary cleanup level (2.4 µg/L). Total copper concentrations in one sample from SLR-1 and SLR-2, as well as in all of the groundwater seep samples, also exceeded the preliminary cleanup level. However, when comparing the dissolved copper concentrations analyzed by EPA Method 200.8 and ICP-DRC-MS, the concentrations were typically much lower when using ICP-DRC-MS. After analysis by ICP-DRC-MS, only the samples from compliance well CMW-7 and from shallow wells CMW-4, CMW-6, EMW-11S, EMW-13S, and SLR-6 contained dissolved copper concentrations that exceeded the preliminary cleanup level. The ICP-DRC-MS results show that there are matrix interferences that are affecting the copper concentrations when analyzed by Method 2008.

Based on the ICP-DRC-MS results, the copper concentrations greater than the preliminary cleanup level are located in shallow groundwater located within 50 feet of the southern part of the sheet pile seawall, and at localized areas near the western property boundary (at EMW-11S) and at the eastern part of Parcel F (at SLR-6).

Except to the west of well EMW-11S (west of the property), the lateral extents of the copper-impacted groundwater have been delineated. The vertical extents of the copper-impacted groundwater have been defined.

7.2.1.2.5 Lead

The total lead concentrations in at least one of the 2013 groundwater samples from wells CMW-2, CMW-3, CMW-4, DMW-2, EMW-1S, EMW-3S, EMW-11S, EMW-13S, SLR-1, SLR-3, and SLR-6 exceeded the preliminary cleanup level (0.54 µg/L); however, the dissolved lead concentrations only exceeded the preliminary cleanup level in samples from wells CMW-1, CMW-6, and SLR-3. The dissolved lead concentrations greater than the preliminary cleanup level only occurred in localized areas near the northern sand and

dredge fill area, near the former sandblast area, and near the former excelsior factory and press area. Based on the dissolved lead concentrations, the lateral and vertical extents of the lead-impacted groundwater have been effectively delineated.

None of the groundwater seep samples contained lead concentrations that exceeded the preliminary cleanup level.

7.2.1.2.6 *Nickel*

The total and dissolved nickel concentrations in at least one of the 2013 groundwater samples from shallow wells CMW-1 and CMW-4, and from deep well EMW-16D exceeded the preliminary cleanup level (8.2 µg/L). Also, dissolved nickel concentrations in two of the samples from well EMW-3 exceeded the preliminary cleanup level. The shallow groundwater that contained nickel concentrations greater than the preliminary cleanup level was located near the sand and dredge fill areas and hydraulically downgradient of the former aluminum window manufacturing plant. Nickel concentrations greater than the preliminary cleanup level also occurred in the deeper groundwater near the former sandblast area. The areas of nickel-impacted groundwater are located within 50 feet of the Lower Duwamish Waterway or Slip 4, and the analyzed nickel concentrations by Method 200.8 may be affected by matrix interferences.

A groundwater seep sample (Seep-3) contained a nickel concentration that exceeded the preliminary cleanup level. The other seep samples contained nickel concentrations below the preliminary cleanup level.

7.2.1.2.7 *Selenium*

The total and dissolved selenium concentrations in at least one of the 2013 groundwater samples from shallow wells CMW-1, CMW-2, CMW-3, CMW-4, CMW-6, CMW-7, EMW-3S, EMW-13S, and SLR-3, and from all of the deep wells exceeded the preliminary cleanup level (5 µg/L). All of the groundwater seep samples also contained selenium concentrations greater than the preliminary cleanup level. However, when analyzing the samples for dissolved selenium by ICP-DRC-MS, all of the selenium concentrations were below the preliminary cleanup level. The ICP-DRC-MS results indicate that there are matrix interferences that are affecting the selenium concentrations when analyzed by Method 2008. Since the selenium concentrations at the groundwater compliance wells were below the preliminary cleanup level when using the ICP-DRC-MS method, selenium was eliminated as a groundwater COPC.

7.2.1.2.8 *Zinc*

The total zinc concentrations in at least one of the 2013 groundwater samples from wells CMW-1, CMW-4, CMW-6, EMW-3S, and SLR-1 exceeded the preliminary cleanup level (32.6 µg/L); however, the dissolved zinc concentrations only exceeded the preliminary cleanup level in samples from wells CMW-1, CMW-6, and EMW-3S. The dissolved zinc concentrations greater than the preliminary cleanup level only occurred in

localized areas near the northern sand and dredge fill area, near the former sandblast area, and hydraulically downgradient of the former aluminum window manufacturing area. Based on the dissolved zinc concentrations, the lateral and vertical extents of the zinc-impacted groundwater have been effectively delineated.

A groundwater seep sample (Seep-3) contained a zinc concentration that exceeded the preliminary cleanup level. The other seep samples contained zinc concentrations below the preliminary cleanup level.

7.2.2 Soil Sample Analytical Results

The soil sample analytical data were compared to the preliminary cleanup levels at all of the RI soil sample locations, as well as the previous soil sample locations, throughout the subject property. Soil samples collected during the RI were analyzed for PAHs, metals, PCBs, VOCs, SVOCs, phenols, phthalates, petroleum hydrocarbons, and dioxins/furans. The sample analytical results showed that at least one soil sample at the property contained PAHs, metals, PCBs, VOCs, SVOCs, petroleum hydrocarbons, and/or dioxins/furans concentrations that exceeded the preliminary cleanup levels. The soil sample analytical results for the first phase of the RI, as well as the previous investigations and remedial actions, are presented in Tables 1 through 8. Copies of the laboratory reports for the soil samples from the first phase of the RI are presented in Appendix H.

7.2.2.1 PAHs

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, and/or phenanthrene concentrations greater than their respective preliminary cleanup levels were detected in at least one soil sample from 69 of the borings, and in all of the test pit and trench samples (see Table 2). Of the PAH compounds detected at concentrations greater than the preliminary cleanup levels, benzo(a)pyrene and benzo(a)anthracene were the most common, and almost all of the other PAH exceedances were at locations where there were benzo(a)pyrene and/or benzo(a)anthracene exceedances. The PAH concentrations greater than the preliminary cleanup levels occur throughout most of the property. The only areas that did not contain detectable PAHs (the western and northern parts of Parcel F) may be due to the previous use of method reporting limits that were greater than the preliminary cleanup levels. The estimated areas of benzo(a)anthracene concentrations greater than the preliminary cleanup levels are shown on Figure 31. The lateral extents of the PAH-impacted soil were not delineated to the north, northeast, northwest (localized areas beyond the property line), or west (beyond the property line).

PAH concentrations greater than the preliminary cleanup levels occurred in soil samples collected at depths between 2 and 50 feet bgs. The primary sources of the PAH-impacted

soil include the former wood treating area and the former pipe manufacturing area. The highest PAH concentrations (greater than 100 mg/kg) were present in borings DMW-6, DB-11, and EMW-10D. The PAH-impacted soil extended beyond the bottoms of DMW-6, DB-11, and EMW-10D, the latter of which was sampled to a depth of 50 feet bgs. Although most of the PAH-impacted soil appears limited to less than 11 feet bgs, the vertical extent of the impacted soil was not delineated at several locations.

7.2.2.2 Metals

Antimony, arsenic, barium, cadmium, chromium, copper, lead, nickel, and/or zinc concentrations greater than their respective preliminary cleanup levels were detected in at least one soil sample from 80 of the soil borings, and in 2 of the trench samples (see Table 1). Of the metals detected at concentrations greater than the preliminary cleanup levels, arsenic and lead were the most common, and almost all of the other metals exceedances were at locations where there were arsenic and/or lead exceedances. The arsenic concentrations greater than the preliminary cleanup level (7 mg/kg) occur throughout most of Parcel D, the central part of Parcel F, and in localized areas at the western and eastern parts of Parcel F (see Figure 32). The lateral extents of the main area of arsenic-impacted soil have not been delineated to the west, and the lateral extents of two localized areas of arsenic-impacted soil at the western part of Parcel F have not been delineated.

The lead concentrations greater than the preliminary cleanup level (25 mg/kg) occur throughout most of Parcel D, in two large areas in the central part of Parcel F, and in localized areas at the western and eastern parts of Parcel F (see Figure 33). The lateral extents of the main area of lead-impacted soil have not been delineated to the west, beyond the property line. The western and northeastern extents of the long area of lead-impacted soil on Parcel F and the northern extent of the northern area of lead-impacted soil have not been delineated. Also, the lateral extents of a localized of lead-impacted soil at the western part of Parcel F have not been delineated.

The primary sources of the arsenic- and lead-impacted soil appear to be located at the former wood treating operations area, the former pipe and chain manufacturing areas, the former concrete products manufacturing and storage area, and the dredge fill areas. Although most of the metals-impacted soil appears limited to less than 10 feet bgs, the vertical extent of the impacted soil was not delineated at several locations.

Chromium only exceeded the preliminary cleanup level (117 mg/kg) in one soil sample (from boring EB-38 at a depth of 5 feet). That sample, as well as a sample from SB-32 that contained a chromium concentration of 84.2 mg/kg were analyzed for the presence of hexavalent chromium. Neither sample contained detectable concentrations of hexavalent chromium.

7.2.2.3 PCBs

PCB aroclor concentrations exceeded their respective preliminary cleanup levels in only five soil samples collected at the property: aroclor 1254 in samples from borings CMW-7, DMW-6, and EB-41; aroclor 1248 in surface soil sample SS-5; and aroclor 1260 in a sample from boring DB-12 (see Table 3). The PCB concentrations greater than the preliminary cleanup levels were typically detected between 0 and 5 feet bgs; however, the elevated aroclor 1260 concentration at DB-12 occurred at a depth of 11.5 feet bgs, and the vertical extent of the impacted soil was not delineated at that location. The PCB concentrations greater than the preliminary cleanup levels occur at localized areas near the former pipe and chain manufacturing areas, the former pole dipping tank, and the former drying kilns. The sources of the PCB-impacted soil are not known, but it could have been due to PCBs in the former building materials. The lateral extents of the areas of PCB-impacted soil have been effectively delineated.

7.2.2.4 VOCs

There was only one soil sample that contained a VOC analyte concentration greater than the preliminary cleanup level (see Table 7). The sample collected from boring FMW-2, at a depth of 8 feet bgs, contained a 1,1-dichloroethene concentration (0.20 mg/kg) that exceeded the preliminary cleanup level (0.026 mg/kg). FMW-2 was located at the western part of Parcel F, near Othello Street (see Figure 2). The lateral extent of the 1,1-dichloroethene-impacted soil was not delineated to the north, off of the property, but the vertical extent of the impacted soil was delineated. Based on the very limited VOC contamination at the subject property, the source of the 1,1-dichloroethene-impacted soil may be from the neighboring Markey Machinery Company facility.

7.2.2.5 SVOCs

In addition to the phenols and phthalates discussed below, there were two SVOC compounds (2-methylnaphthalene and dibenzofuran) detected in soil samples at concentrations exceeding their respective preliminary cleanup levels (see Table 6). Dibenzofuran exceeded the preliminary cleanup level in only three samples collected from borings DMW-6, DB11, and EMW-10D at depths between 4.5 and 35 feet bgs. Similar to other PAH compounds described in Section 7.2.2.1, 2-methylnaphthalene concentrations greater than the preliminary cleanup level occur throughout most of the property. The greatest 2-methylnaphthalene and dibenzofuran concentrations were present at the west and central portions of Parcel D in the vicinity of the former pipe manufacturing operations area and the former wood treating area, consistent with the highest PAH concentrations.

7.2.2.5.1 *Phenols*

The soil sample analytical results showed that 2-methylphenol was the only phenol compound detected at concentrations greater than its preliminary cleanup level (see Table 4). At least one soil sample from borings DMW-6, EB-32, and HC-13 contained 2-methylphenol concentrations that exceeded the preliminary cleanup level (0.0064 mg/kg). DMW-6, EB-32, and HC-13 were located at the former pipe manufacturing operations area and the former wood treating operations area (see Figure 2). The lateral extents of the areas of 2-methylphenol-impacted soil have been delineated, and the vertical extents are delineated, except at HC-13, which was only sampled at a depth of 2.5 feet bgs.

7.2.2.5.2 *Phthalates*

Di-n-octyl phthalate was detected in a soil sample from boring CMW-4, at a depth of 5 feet bgs, at a concentration (0.34 mg/kg) that exceeded the preliminary cleanup level (0.058 mg/kg). CMW-4 is located near the southern sand and dredge fill area (see Figure 2). The lateral extents of the di-n-octyl phthalate-impacted soil have been delineated, but the vertical extent was not defined. No other phthalate compounds were detected in any of the soil samples at concentrations greater than the preliminary cleanup levels (see Table 5).

7.2.2.6 Petroleum Hydrocarbons

Because there are no existing data that would allow for the calculation of a site-specific, risk-based MTCA Method B soil cleanup level for TPH, the petroleum hydrocarbon concentrations were compared to MTCA Method A cleanup levels for GRO, DRO, and HO. Since DRO and HO impacts are more prevalent than GRO, the previous TPH concentrations were compared to the Method A cleanup levels for DRO and HO (2,000 mg/kg for both). TPH, DRO, and/or HO concentrations greater than the preliminary cleanup levels were detected in at least one soil sample from borings CMW-7, DB-5, DB-11, EB-16, EB-24, EB-40, EMW-7S, EMW-10D, and SLR-5, and from test pit TP100810 (see Table 3). GRO concentrations greater than the preliminary cleanup level (30 mg/kg) were detected in at least one soil sample from borings CMW-7 and EB-51; however, the detected GRO concentration at CMW-7 was likely due to overlap from DRO on the chromatogram.

The TPH, DRO, and HO concentrations greater than the preliminary cleanup levels were at localized areas at the former pipe and chain manufacturing areas, near the former oil tank at the western end of Parcel D, near the former wood treating operations area, near the former pole treatment area, in both former container repair shops (one near an inactive sump), and near the aluminum window manufacturing plant. The storage and use of semi-volatile petroleum hydrocarbons at those areas were the likely sources of the semi-volatile petroleum hydrocarbon-impacted soil. HO-impacted soil also occurs at a localized area near the western property line (at EMW-7S), and the source of the impacted soil at that location is likely releases from the current bus staging operations or

spills from the adjacent parking area along 8th Avenue South. The gasoline-impacted soil is at the former chain manufacturing area, but the source of the gasoline at that area is likely spills from the more recent property operations.

The lateral extents of each area of petroleum hydrocarbon-impacted soil have been effectively delineated, except at the area near the western property boundary (at EMW-7S). The vertical extent of each area of impacted soil has been defined, except for the GRO-impacted soil at EB-51 and the HO-impacted soil at test pit TP100810.

7.2.2.7 Dioxins and Furans

At least one of the soil samples from borings EB-28, EB-45, EMW-5S, EMW-6S, and EMW-9S contained 2,3,7,8-TCDD toxicity equivalent quotient (TEQ) concentrations that exceeded the preliminary cleanup level (see Table 8). EB-28, EB-45, and EMW-9S were located at the eastern part of Parcel D (see Figure 34), and the sources of the dioxin-impacted soil are likely buried ash and/or charred wood from the former refuse burner and/or the former boiler house operations. EMW-5S was located near the former chimney, and the sources of the impacted soil are likely buried ash and/or charred wood from the former chimney operations. Charred wood was present in the soil at boring EMW-6S, which is located at the western part of Parcel F, and the dioxin source appears to be associated with the fill at that location. The highest dioxin concentrations were detected at depths between 2.5 and 7.5 feet bgs, and the vertical extent of the impacted soil was delineated at each area, except at EMW-9S. Due to the limited number of sample locations, the lateral extents of each area of dioxin-impacted soil were not delineated.

7.2.3 Catch Basin Solids Sample Analytical Results

The catch basin solids sample analytical results from the first phase of the RI, as well as from the previous sampling events, were compared to the preliminary screening levels to evaluate if catch basin solids may be part of potential contaminant migration pathways to the Lower Duwamish Waterway. Cleanup levels will not be established for catch basin solids. Since the sampled catch basins are located in paved areas of the property (on Parcel D) and recent inspections showed that there are no cracks or holes that would allow subsurface soil to enter the catch basins (see Section 4.4), there are no complete pathways between contaminated surface soil or subsurface soil and the sampled catch basins. Therefore, the catch basin solids sample analytical results are representative of contaminant sources from property operations within the past 30 years (after surface paving) and are not indicative of subsurface impacts to the storm water drainage system.

The catch basin solids samples collected during the first phase of the RI were analyzed for PAHs, metals, PCBs, VOCs, SVOCs, petroleum hydrocarbons, and dioxins/furans. The catch basin solids sample analytical results for the first phase of the RI, as well as for the previous sampling events are presented in Tables 17 through 24. Copies of the

laboratory reports for the catch basin solids samples from the first phase of the RI are presented in Appendix I.

7.2.3.1 PAHs

All of the RI samples contained benzo(a)anthracene, benzo(b)fluoranthene, and chrysene concentrations greater than their respective preliminary screening levels, and benzo(a)pyrene concentrations greater than the preliminary screening level were detected in all of the RI samples, except for one sample that had an elevated PQL (see Table 18). In addition, anthracene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene were detected in at least one of the RI or previous catch basin samples at concentrations greater than the preliminary screening levels.

7.2.3.2 Metals

All of the catch basin solids samples contained lead concentrations greater than the preliminary screening level (40 mg/kg), and over 75 percent of the samples contained arsenic, chromium, and zinc concentrations that exceeded their respective preliminary screening levels (see Table 17). In addition, antimony, cadmium, copper, mercury, selenium, and thallium were detected at concentrations greater than their preliminary screening levels in one or two of the samples.

7.2.3.3 PCBs

None of the catch basin solids samples contained detectable PCB concentrations (see Table 19).

7.2.3.4 VOCs

Samples from seven of the catch basins contained total xylenes concentrations that exceeded the preliminary screening level (0.003 mg/kg; see Table 23). The total xylenes exceedances were at all of the sampled catch basins, except DP4CB2, on D Lines #3, #4, and #5, which are located across the eastern half of Parcel D.

With the exception of ethylbenzene, which exceeded the preliminary screening level (0.01 mg/kg) in the duplicate sample collected from basin DP3CB1 (it was not detected in the original sample), no other VOCs were detected at concentrations that exceeded the preliminary screening levels.

7.2.3.5 SVOCs

A concentration of benzyl alcohol (2 mg/kg) exceeded the preliminary screening level (0.057 mg/kg) in the sample collected from catch basin DP1CP2 (see Table 22). Except

for the phthalates discussed below, no other SVOC, including phenols (see Table 20), was detected at concentrations greater than the preliminary screening levels in any of the catch basin solids samples.

7.2.3.5.1 *Phthalates*

All of the sampled catch basins, except DP1CB3, DP3CB3, and DP6CB1 contained BEHP, butyl benzyl phthalate, diethyl phthalate, and/or dimethyl phthalate concentrations that exceeded the preliminary screening levels (see Table 21). BEHP was the most commonly detected phthalate and it was present in nine of the sampled catch basins at concentrations greater than the preliminary screening levels. The greatest BEHP concentrations were at catch basins located in the eastern half of Parcel D.

7.2.3.6 Petroleum Hydrocarbons

HO, DRO, and GRO concentrations in the catch basin solids samples were up to 21,000, 6,000, and 9.6 mg/kg, respectively; however, there are no preliminary screening levels for petroleum hydrocarbons (see Table 19).

7.2.3.7 Dioxins and Furans

The samples collected from catch basins DP4CB4 and DP6CB1 contained 2,3,7,8-TCDD TEQ concentrations of 5.77E-05 and 2.36E-04 mg/kg, respectively, that exceeded the preliminary screening level (2.2E-06 mg/kg; see Table 24). None of the other catch basin solids samples was analyzed for dioxins or furans.

7.2.4 Storm Water Sample Analytical Results

The storm water sample analytical results from the first phase of the RI were compared to the preliminary screening levels to evaluate if storm water may be part of potential contaminant migration pathways to the Lower Duwamish Waterway. Cleanup levels will not be established for storm water. The storm water samples were analyzed for PAHs, total metals, PCBs, VOCs, SVOCs, and petroleum hydrocarbons. The storm water sample analytical results are presented in Tables 25 through 31, and copies of the laboratory reports for the storm water samples are presented in Appendix J.

7.2.4.1 PAHs

Chrysene concentrations exceeded the preliminary screening level (0.0038 µg/L) in the samples from all of the outfalls, except OF4 (see Table 26). The samples from outfalls OF2 and OF3 also contained benzo(a)anthracene and benzo(b)fluoranthene concentrations greater than the preliminary screening levels (0.0042 and 0.0052 µg/L, respectively). The storm water samples did not contain any other PAH compounds at concentrations greater than the preliminary screening levels.

7.2.4.2 Metals

The storm water samples from all of the outfalls contained concentrations of barium, copper, and zinc that exceeded the preliminary screening levels (2, 2.4, and 56 µg/L, respectively) (see Table 25). The samples from all of the outfalls, except OF1, contained lead concentrations that exceeded the preliminary screening level (2.5 µg/L). The sample from OF4 also contained a mercury concentration that exceeded the preliminary screening level (0.012 µg/L).

7.2.4.3 PCBs

None of the storm water samples contained detectable PCB concentrations (see Table 27).

7.2.4.4 VOCs

None of the storm water samples contained VOC concentrations greater than the preliminary screening levels (see Table 31).

7.2.4.5 SVOCs

Except for the BEHP detections discussed below, none of the storm water samples contained SVOCs, including phenols (see Table 28), at concentrations greater than the preliminary screening levels (see Table 30).

7.2.4.5.1 *Phthalates*

The storm water samples from all of the outfalls, except OF5, contained BEHP concentrations that exceeded the preliminary screening level (1.2 µg/L; see Table 29). There were no other phthalate compounds detected at concentrations greater than the preliminary screening levels in any of the samples.

7.2.4.6 Petroleum Hydrocarbons

HO concentrations exceeded the preliminary screening level in the storm water samples collected from outfalls OF2 and OF3. The concentrations of the other petroleum hydrocarbons did not exceed the preliminary screening levels.

7.2.5 Intertidal Sediment Sample Analytical Results

The preliminary screening levels were used to evaluate the intertidal sediment sample analytical results from the first phase of the RI; however, after the EPA has issued its Record of Decision, the sediment data should be compared to the EPA's contaminant-specific cleanup levels for the Lower Duwamish Waterway Superfund Site. The sediment samples were analyzed for PAHs, metals, PCBs, SVOCs, petroleum hydrocarbons, and dioxins/furans. The intertidal sediment sample analytical results are

presented in Tables 32 through 38, and copies of the laboratory reports for the intertidal sediment samples are presented in Appendix K.

Based on the sediment sample locations near the current ends of the pier and near storm water drainage system outfalls, the storm water drainage system is the only potential significant on-property source of impacts to the intertidal sediments.

7.2.5.1 PAHs

All of the intertidal sediment samples contained concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene that exceeded the respective preliminary screening levels (see Table 33). The other PAH compounds were not detected at concentrations greater than the preliminary screening levels in any of the samples.

Based on the elevated PAH concentrations in the catch basin solids samples, the storm water drainage system at the subject property could be contributing to the PAH-impacted sediments. However, as described in Section 3.5, elevated PAH concentrations were present in the sediments at the northern part of Slip 4 prior to the remediation of the EAA, and the PAH impacts extended onto the 8th Avenue Terminals property.

7.2.5.2 Metals

Arsenic concentrations in all of the intertidal sediment samples exceeded the preliminary screening level (3.10 mg/kg), and chromium and lead concentrations exceeded the preliminary screening levels (35.6 and 40 mg/kg, respectively) in four of the five sediment samples. Sample IS-1 contained an antimony concentration that exceeded the preliminary screening level (7.30 mg/kg). The concentrations of the other analyzed metals were below preliminary screening levels in all of the samples (see Table 32).

Lead was detected in all of the catch basin solids samples at concentrations greater than the preliminary catch basin solids screening levels, and arsenic and chromium were present in almost all of the catch basin solids samples at concentrations greater than the preliminary screening levels; therefore, it appears that the storm water drainage system at the subject property may be contributing to the lead-, arsenic-, and chromium-impacted sediment. However, as described in Section 3.5, elevated lead concentrations were present at the northern part of Slip 4 sediments prior to the remediation of the EAA. The lead-impacted sediments on the subject property are likely also due to storm water discharges from off-property sources at the head of Slip 4.

7.2.5.3 PCBs

The total PCB concentrations in all of the intertidal sediment samples exceeded the preliminary screening level (0.23 mg/kg; see Table 34). Because PCBs were not detected

in any of the catch basin solids samples or storm water samples from the subject property, the storm water drainage system at the subject property is not a source of the PCB-impacted sediments on the subject property. As described in Section 3.5, the sediment investigation results prior to the remediation of the Slip 4 EAA showed that total PCB concentrations were greatest at the head of Slip 4 and decreased with distance towards the 8th Avenue Terminals property and the mouth of the slip.

7.2.5.4 SVOCs

Except for the phthalates discussed below, none of the intertidal sediment samples contained concentrations of SVOCs, including phenols (see Table 35) that exceeded the preliminary screening levels (see Table 37).

7.2.5.4.1 *Phthalates*

Samples IS-1 and IS-2 contained BEHP and butyl benzyl phthalate concentrations, respectively, that exceeded the preliminary sediment screening levels (see Table 36). IS-1 and IS-2 are located along the southern shoreline of the property (see Figure 3). No other phthalate compounds were detected at concentrations above the preliminary screening levels in any of the sediment samples.

BEHP and butyl benzyl phthalate were detected in catch basin solids samples at concentrations greater than the preliminary catch basin solids screening levels; therefore, the storm water drainage system at the property could be contributing to the phthalate-impacted sediments. However, as described in Section 3.5, elevated BEHP concentrations were present at the northern part of Slip 4 prior to the remediation of the EAA, and the BEHP impacts extended onto the 8th Avenue Terminals property.

7.2.5.5 Petroleum Hydrocarbons

All of the intertidal sediment samples contained detectable concentrations of DRO and HO (see Table 34); however, there are no preliminary sediment screening levels for DRO and HO.

7.2.5.6 Dioxins and Furans

All of the intertidal sediment samples contained 2,3,7,8-TCDD TEQ concentrations that exceeded the preliminary sediment screening level (2.20E-06 mg/kg; see Table 38). Because both of the catch basin solids samples from the property that were analyzed for dioxins/furans contained 2,3,7,8-TCDD TEQ concentrations greater than the preliminary catch basin solids screening level, it appears that the storm water drainage system at the property may be contributing to the dioxin-impacted sediments. However, as described in Section 3.5, elevated dioxin TEQ concentrations were present at the northern part of Slip 4 prior to the remediation of the EAA, and the dioxin impacts likely extended onto the 8th Avenue Terminals property.

8 REMAINING INVESTIGATION DATA GAPS

The purpose of the RI is to determine the nature and extent of the contamination at the subject property and to assess the potential risks to human health and the environment. Based on the results of the first phase of the RI, SLR has identified several investigation data gaps that should be addressed to complete the objectives of the RI. These data gaps are described below.

Groundwater Data Gaps

- We have assumed that the observed westernmost arm of the sheet pile seawall extends to the same depth as the rest of the wall; however, there are no records to verify that assumption. Since the seawall serves as a barrier to shallow groundwater flow, the depth of that section of the seawall is needed to determine if the shallow groundwater flows around the western end of the observed seawall or the western end of the pier.
- Additional groundwater sampling should be conducted at the groundwater compliance wells to further evaluate the groundwater COPCs for the site.
- The lateral extent of PAH-impacted groundwater has not been delineated to the west of the property (west of HC-20 and EMW-7S), and the vertical extents of the PAH-impacted groundwater have not been defined at wells EMW-4D and EMW-14D.
- The preliminary cleanup level for arsenic is based on a regional background concentration; however, groundwater samples from the upgradient wells (EMW-1S, EMW-6S, and EMW-7S) on the property contained arsenic concentrations much greater than the preliminary cleanup level. Additional groundwater sampling is needed at the upgradient wells and possibly upgradient of the property to evaluate the arsenic concentrations flowing onto the property (background conditions). After the background arsenic concentration for the property has been established, then it may be possible to delineate the lateral and vertical extents of the arsenic-impacted groundwater.
- The lateral extents of the barium- and copper-impacted groundwater have not been delineated to the west of the property (west of EMW-11S), and the lateral extent of

cadmium-impacted groundwater has not been delineated to the north of well EMW-3 (and northeast of well EMW-2S).

- The vertical extents of the barium-impacted groundwater have not been delineated near the seawall (at EMW-4D, EMW-14D, and EMW-16D), and the vertical extents of the cadmium-impacted groundwater are not delineated near the seawall (at EMW-4D) or below the former wood treating operations area (at EMW-10D).
- Nickel analysis by ICP-DRC-MS is needed to evaluate if matrix interferences have been affecting the concentrations that were analyzed by EPA Method 200.8. After establishing if the ICP-DRC-MS or 200.8 method is appropriate for nickel, then the lateral and vertical extents can be properly evaluated.

Soil Data Gaps

- The source and the lateral and vertical extents of the oily substance with a creosote-like odor in deep boring EMW-10D (at the former wood treating operations area) have not been determined.
- The lateral extents of the PAH-impacted soil have not been delineated to the north, northeast, northwest, and west, and the vertical extents of the impacted soil have not been determined at several locations throughout the property.
- The lateral extents of the main area of arsenic- and lead-impacted soil have not been delineated to the west of the property, and the lateral extents of two localized areas of arsenic-impacted soil at the western part of Parcel F are not defined. The western and northeastern extents of the long area of lead-impacted soil on Parcel F and the northern extent of the northern area of lead-impacted soil (north of the property) have not been delineated. Also, the lateral extents of a localized area of lead-impacted soil at the western part of Parcel F are not defined.
- The vertical extents of the arsenic- and lead-impacted soil have not been delineated at several locations throughout the property.
- The vertical extents of the PCB-impacted soil at boring DB-12, the 2-methylphenol-impacted soil at boring HC-13, and the di-n-octyl phthalate-impacted soil at boring CMW-4 have not been defined.
- The source of 1,1-dichloroethene in soil at FMW-2 has not been determined, and may be associated with activities at the neighboring Markey Machinery Company facility.
- The preliminary soil cleanup levels for petroleum hydrocarbons are very conservative (MTCA Method A levels) because the data necessary to calculate a

site-specific, risk-based Method B cleanup level for TPH have not been collected. After collecting the data and calculating the Method B cleanup level, the existing data can be evaluated to determine if the lateral and vertical extents of the petroleum hydrocarbon-impacted soil have been delineated.

- The source of petroleum hydrocarbons in the soil at EMW-7S has not been identified and may be associated with off-property activities.
- The lateral extents of each area of dioxin-impacted soil have not been delineated, and the vertical extent of the impacted soil is not defined at boring EMW-9S.

Catch Basin Solids and Storm Water Data Gaps

- Any data gaps associated with catch basin solids and storm water will be evaluated after the second sampling events have been completed.

Sediment Data Gaps

- The sediment data are difficult to evaluate because the contaminants are primarily due to off-property sources. Based on the previous sediment dredging on the 8th Avenue Terminals property, the extensive sediment sampling that has been conducted in the Lower Duwamish Waterway and Slip 4, including on the subject property, and the EPA's planned remedial action for the Lower Duwamish Waterway Superfund Site, we do not believe that there are any remaining sediment data gaps for the RI.

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**Table 1
Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington**

Location	Sample ID	Sample Date	Approximate Sample Depth (Feet)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Hexavalent Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)
Preliminary Soil Cleanup Levels^a (mg/kg)				5.0	7.0	100.6	160	1.0	117	240	36	25	2.0	48	0.91	400	NV	86
Preliminary Soil Screening Levels^b (mg/kg)				5.0	7.0	23.1	10	1.0	117	0.10	36	25	0.07	38	0.91	0.079	0.044	86
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.42	0.11	0.052	0.086	0.20	0.47	0.10	0.071	0.050	0.002	0.21	0.91	0.079	0.044	0.97
SLR-1	SLR1-1	8/22/2011	1 - 1.5	0.60	3.56	NA	0.28 U	0.23	6.02	NA	8.09	5.45	0.025 U	5.54	0.85 U	0.27 U	0.13 U	17.6
SLR-1	SLR1-6	8/22/2011	6 - 6.5	0.16 U	2.75	NA	0.28 U	0.15 U	9.02	NA	18.4	2.96	0.035	7.37	0.85 U	0.27 U	0.13 U	18.3
SLR-1	SLR1-10	8/22/2011	10 - 10.5	0.20	3.57	NA	0.28 U	0.16	10.1	NA	18.2	3.74	0.11	7.55	0.85 U	0.27 U	0.13 U	19
SLR-2	SLR2-1	8/19/2011	1 - 1.5	0.27	3.55	NA	0.28 U	0.15 U	6.58	NA	9.97	17.2	0.049	4.61	0.85 U	0.27 U	0.13 U	62.9
SLR-2	SLR2-6	8/22/2011	6 - 6.5	0.89	3.82	NA	0.28 U	0.67	16.3	NA	52.1	41.2	0.13	9.17	0.85 U	0.27 U	0.13 U	348
SLR-2	SLR2-10	8/19/2011	10 - 10.5	0.23	5.69	NA	0.31	0.28	13.7	NA	26.2	5.21	0.043	12.4	0.85 U	0.27 U	0.13 U	36.8
SLR-3	SLR3-1	8/19/2011	1 - 1.5	3.12	6.94	NA	0.28 U	1.73	17.5	NA	36.2	105	0.071	17.6	0.85 U	0.27 U	0.13 U	321
SLR-3	SLR3-6	8/22/2011	6 - 6.5	0.42	2.6	NA	0.28 U	0.16	8.11	NA	14.6	2.65	0.029	6.53	0.85 U	0.27 U	0.13 U	23.4
SLR-3	SLR3-10	8/19/2011	10 - 10.5	0.16 U	2.06	NA	0.28 U	0.15 U	6.96	NA	12.7	1.83	0.051	4.2	0.85 U	0.27 U	0.13 U	14
SLR-4	SLR4-1	8/19/2011	1 - 1.5	0.16 U	2.02	NA	0.28 U	0.15 U	10	NA	9.26	2.07	0.025 U	17.2	0.85 U	0.27 U	0.13 U	20.8
SLR-4	SLR4-5	8/19/2011	5 - 5.5	0.75	3.57	NA	0.28 U	0.16	11.2	NA	9.98	2.56	0.025 U	19.5	0.85 U	0.27 U	0.13 U	22.9
SLR-4	SLR4-10	8/19/2011	10 - 10.5	0.16 U	2.36	NA	0.28 U	0.17	7.86	NA	12.4	2.23	0.025 U	5.94	0.85 U	0.27 U	0.13 U	19.2
SLR-5	SLR5-3	8/22/2011	3 - 3.5	0.36	2.64	NA	0.28 U	0.20	7.91	NA	22.2	8.75	0.033	7.31	0.85 U	0.27 U	0.13 U	29.6
SLR-5	SLR5-6	8/22/2011	6 - 6.5	0.73	2.35	NA	0.28 U	0.15 U	8.35	NA	16.1	2.32	0.028	6.98	0.85 U	0.27 U	0.13 U	22.6
SLR-5	SLR5-10	8/22/2011	10 - 10.5	0.18	1.16	NA	0.28 U	0.15 U	6.17	NA	11.3	3.91	0.025 U	4.94	0.85 U	0.27 U	0.13 U	22.3
SLR-6	SLR6-1	8/19/2011	1 - 1.5	0.45	4.67	NA	0.28 U	0.21	8.33	NA	12.4	12.8	0.035	6.12	0.85 U	0.27 U	0.13 U	42.7
SLR-6	SLR6-5	8/19/2011	5 - 5.5	0.16 U	2.54	NA	0.28 U	0.15 U	8.85	NA	14.9	2.48	0.025 U	6.91	0.85 U	0.27 U	0.13 U	61.5
SLR-6	SLR6-10	8/19/2011	10 - 10.5	0.20	4.3	NA	0.28 U	0.15 U	8.95	NA	17.9	2.48	0.033	7.2	0.85 U	0.27 U	0.13 U	19.2
SLR-7	SLR7-1	8/22/2011	1 - 1.5	0.16 U	1.4	NA	0.28 U	0.15 U	4.34	NA	6.27	1.24	0.033	3.6	0.85 U	0.27 U	0.13 U	12.6
SLR-7	SLR7-5	8/22/2011	5 - 5.5	4.78	7.65	NA	0.28 U	0.50	8.55	NA	27.4	21.3	0.036	11.5	0.85 U	0.27 U	0.13 U	58.6
SLR-7	SLR7-10	8/22/2011	10 - 10.5	0.20	3.46	NA	0.28 U	0.15	9.95	NA	17.4	3.11	0.039	6.95	0.85 U	0.27 U	0.13 U	18.2
SS-1	SS1	11/8/1988	0 - 0.5	1 U	0.2 U	NA	0.01 U	0.01 U	0.1 U	NA	0.1 U	0.1 U	0.005 U	0.1 U	0.2 U	0.1 U	1 U	2
SS-2	SS2	11/8/1988	0 - 0.5	1 U	0.2 U	NA	0.01 U	0.01 U	0.1 U	NA	0.1 U	0.1 U	0.005 U	0.1 U	0.3	0.1 U	1 U	0.4
SS-3	SS3	11/8/1988	0 - 0.5	1 U	0.2 U	NA	0.01 U	0.01 U	0.1 U	NA	0.1 U	0.1 U	0.005 U	0.1 U	0.2 U	0.1 U	1 U	0.7
SS-4	SS4	11/8/1988	0 - 0.5	1 U	0.2 U	NA	0.01 U	0.01 U	0.1 U	NA	0.1 U	0.1 U	0.005 U	0.1 U	0.2 U	0.1 U	1 U	1.5
SS-5	SS5	11/8/1988	0 - 0.5	1 U	0.2 U	NA	0.01 U	0.01	0.1 U	NA	0.1 U	0.1 U	0.005 U	0.1 U	0.2 U	0.1 U	1 U	1.5
Trench 1-1	TRENCH1-1-8'	7/19/2012	8	1.02	4.04	NA	0.21 U	0.20	8.31	NA	13.3	12.3	0.052	7.5	0.69 U	0.049	0.061	48
Trench 1-2	TRENCH1-2-9'	7/19/2012	9	1.32	4.79	NA	0.21 U	0.45	9.32	NA	21.8	37.4	0.18	7.96	0.69 U	0.064	0.07	87.7
Trench 2-1	TRENCH2-1-8'	7/24/2012	8	0.15	2.65	NA	0.21	0.14	8.68	NA	13.5	2.26	0.17	6.53	0.69 U	0.079	0.054	19.9
Trench 4-1	TRENCH4-1-3.0'	7/26/2012	3	0.21	1.62	NA	0.21 U	0.12	3.81	NA	7.31	1.72	0.014	3.33	0.28 U	0.039 U	0.047 U	12.5

Notes:
Detected values in bold and highlighted in orange exceed the preliminary soil cleanup levels.
Detected values in bold and highlighted in yellow exceed the preliminary soil screening levels.
Non-detected values highlighted in blue exceed the preliminary soil cleanup levels.
mg/kg = milligrams per kilogram.
NA = Not analyzed
NR = Not recorded
NV = No available value.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
JK = The laboratory report noted that the analyte was positively identified and the reported result is an estimate with unknown bias.
^a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.
^b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher.

Table 2
Soil Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (feet)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(ghi)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)	Total cPAHs (U=1/2 MRL)	Total cPAHs (U=0)	
Preliminary Soil Cleanup Levels^a (mg/kg)				4,800	4,800	24,000	0.00040	0.13	1.37	0.031	13.7	0.004	0.14	3,200	3,200	1.37	1,600	0.10	2,400	NV	NV	
Preliminary Soil Screening Levels^b (mg/kg)				0.017	0.069	0.22	0.00040	0.00022	0.00063	0.031	0.00065	0.003	0.0010	0.16	0.024	0.0009	0.00047	0.10	0.00032	1.0	NV	NV
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.00014	0.000091	0.000088	0.00018	0.00022	0.00018	0.00034	0.00036	0.00019	0.00034	0.00028	0.00015	0.00062	0.00022	0.00032	0.00026	0.00032	NV	NV
TP100810	TP100810-9.5	1/1/2010	9.5	0.5	0.5	0.5	0.54	0.81	0.83	0.64	0.61	1.2	0.5	1.6	0.5	0.61 J	0.79	2.9	1.7	1.131	1.131	
Trench 1-1	TRENCH1-1-8'	7/19/2012	8	0.069	0.0039	0.39	0.035	0.025	0.036	0.016	0.013	0.082	0.0049	0.13	0.069	0.019	0.2	0.2	0.098	0.03661	0.03661	
Trench 1-2	TRENCH1-2-9'	7/19/2012	9	0.077	0.093	0.67	0.41	0.44	0.57	0.27	0.2	0.6	0.096	0.98	0.18	0.32	0.046	0.86	0.98	0.6056	0.6056	
Trench 2-1	TRENCH2-1-8'	7/24/2012	8	0.0013	0.00012 U	0.00018 U	0.00046	0.00083 U	0.00115 U	0.0009 U	0.00121 U	0.00055 U	0.00081 U	0.00013 U	0.0053	0.0009 U	0.011	0.0019	0.00016 U	0.00067	4.6E-05	
Trench 4-1	TRENCH4-1-3.0'	7/26/2012	3	0.00057	0.00012 U	0.00047	0.0022	0.0026	0.0032	0.0021	0.00121 U	0.0032	0.0004	0.0038	0.00074	0.0022	0.00063	0.0036	0.0045	0.00349	0.00343	

Notes:
Detected values in bold and highlighted in orange exceed the preliminary soil cleanup levels.
Detected values in bold and highlighted in yellow exceed the preliminary soil screening levels.
Non-detected values highlighted in blue exceed the preliminary soil cleanup levels.
Results that exceed the screening levels due to possible interference from laboratory contamination are highlighted in purple.
mg/kg = milligrams per kilogram
NA = Not Analyzed
ND = Analyte not detected; however, detection limit not available.
NR = Not Recorded
U = The laboratory report noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
B = The laboratory report noted that the analyte detected in sample and method blank and the reported result is sample concentration without blank correction or associated quantitation limit.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
K = The laboratory report noted that the reported result with unknown bias.
J = The laboratory report noted that the analyte was positively identified and the reported result is an estimate.
M = The laboratory report noted that the analyte was positively identified and the reported result is an estimate and that the analyte detected in sample and method blank and the presence may be attributable to field/lab contamination.
a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.
b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher.

**Table 3
Soil Sample Analytical Results - PCBs and Petroleum Hydrocarbons
8th Avenue Terminals, Inc. Site
Seattle, Washington**

Location	Sample ID	Sample Date	Sample Depth (Feet)	PCBs							Petroleum Hydrocarbons				
				Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Gasoline Range Organics (mg/kg)	Diesel Range Organics (mg/kg)	Heavy Oil Range Organics (mg/kg)	Total Petroleum Hydrocarbons (mg/kg)	
				5.6	0.033	0.033	0.033	0.033	0.033	0.5	0.5	30	2,000	2,000	2,000
				0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	30	200	2,000	2,000
				0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.2	11.8	21	21
SLR-2	SLR2-1	8/19/2011	1 - 1.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-2	SLR2-6	8/22/2011	6 - 6.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	67	NA
SLR-2	SLR2-10	8/19/2011	10 - 10.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-3	SLR3-1	8/19/2011	1 - 1.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-3	SLR3-6	8/22/2011	6 - 6.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-3	SLR3-10	8/19/2011	10 - 10.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-4	SLR4-1	8/19/2011	1 - 1.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-4	SLR4-5	8/19/2011	5 - 5.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-4	SLR4-10	8/19/2011	10 - 10.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-5	SLR5-3	8/22/2011	3 - 3.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	18,000	6,300	NA
SLR-5	SLR5-6	8/22/2011	6 - 6.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	2.6	3,800	2,000	NA
SLR-5	SLR5-7.5	8/22/2011	7.5 - 8	NA	NA	NA	NA	NA	NA	NA	NA	80	39.2 U	NA	NA
SLR-5	SLR5-10	8/22/2011	10 - 10.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	29	77	NA
SLR-6	SLR6-1	8/19/2011	1 - 1.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-6	SLR6-5	8/19/2011	5 - 5.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-6	SLR6-10	8/19/2011	10 - 10.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-7	SLR7-1	8/22/2011	1 - 1.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SLR-7	SLR7-5	8/22/2011	5 - 5.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	350	760	NA
SLR-7	SLR7-10	8/22/2011	10 - 10.5	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.5 U	25.9 U	39.2 U	NA
SS-1	SS1	11/8/1988	0 - 0.5	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.078 U	0.078 U	0.078 U	NA	NA	NA	NA
SS-2	SS2	11/8/1988	0 - 0.5	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.088 U	0.088 U	0.088 U	NA	NA	NA	NA
SS-3	SS3	11/8/1988	0 - 0.5	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.075 U	0.075 U	0.075 U	NA	NA	NA	NA
SS-4	SS4	11/8/1988	0 - 0.5	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.079 U	NA	NA	NA	NA
SS-5	SS5	11/8/1988	0 - 0.5	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.89	0.079 U	0.079 U	NA	NA	NA	NA
TP100810	TP100810-9.5	1/1/2010	9.5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	15,000 X	16,000	NA
TRENCH 1-1	TRENCH1-1-8'	7/19/2012	8	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1	9 U	27 U	NA
TRENCH 1-2	TRENCH1-2-9'	7/19/2012	9	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	2	100	350	NA
TRENCH 2-1	TRENCH2-1-8'	7/24/2012	8	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.5 U	23	74	NA
TRENCH 4-1	TRENCH4-1-3.0'	7/26/2012	3	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.5 U	22 U	11 U	NA

Notes:
 Detected values in bold and highlighted in orange exceed the preliminary soil cleanup levels.
 Detected values in bold and highlighted in yellow exceed the preliminary soil screening levels
 Non-detected values highlighted in blue exceed the preliminary soil cleanup levels
 mg/kg = milligrams per kilogram.
 NA = Not analyzed
 ND = Analyte not detected; however, the detection limit was not available
 NR = Not recorded.
 U = The laboratory report noted that the analyte was not detected at or above the reported result
 UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate
 E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range
 X = The laboratory report noted that the sample chromatograph pattern did not resemble the fuel standard used for quantification. The detected concentration was likely due to overlap from oil-range hydrocarbon
 a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.
 b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher

Table 4
Soil Sample Analytical Results - Phenols
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Feet)	2,3,4,5-Tetrachlorophenol (mg/kg)	2,3,4-Trichlorophenol (mg/kg)	2,3,5,6-Tetrachlorophenol (mg/kg)	2,3,6-Trichlorophenol (mg/kg)	2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)	2,4-Dichlorophenol (mg/kg)	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2-Chlorophenol (mg/kg)	2-Methylphenol(o-Cresol) (mg/kg)	2-Nitrophenol (mg/kg)	3,4,5-Trichlorophenol (mg/kg)	3-Methylphenol and 4-Methylphenol coelution (mg/kg)	4,6-Dinitro-2-Methylphenol (mg/kg)	4-Chloro-3-methylphenol (mg/kg)	4-Methylphenol(p-Cresol) (mg/kg)	4-Nitrophenol (mg/kg)	Pentachlorophenol (mg/kg)	Phenol (mg/kg)
			Preliminary Soil Cleanup Levels ^a (mg/kg)	NV	NV	NV	NV	8,000	80	240	1,600	160	400	0.0064	NV	NV	0.05	NV	NV	NV	NV	2.5	24,000
			Preliminary Soil Screening Levels ^b (mg/kg)	NV	NV	NV	NV	0.0097	0.008	0.0058	0.019	0.014	0.0062	0.0064	0.0083	NV	0.014	0.011	0.0044	NV	0.018	0.0062	0.043
			2013 Laboratory Practical Quantitation Limits (mg/kg)	NV	NV	NV	NV	0.0097	0.008	0.0058	0.019	0.014	0.0062	0.0064	0.0083	NV	0.014	0.011	0.0044	NV	0.018	0.0062	0.0054
EB-5	EB-5-1.0	6/18/2013	0.5 - 1.5	NA	NA	NA	NA	0.96 U	0.8 U	0.58 U	1.9 U	1.4 U	0.62 U	0.64 U	0.82 U	NA	1.4 U	1.1 U	0.44 U	NA	1.8 U	0.62 UJ	0.54 U
EB-5	EB-5-5.0	6/18/2013	4.5 - 5.5	NA	NA	NA	NA	0.96 U	0.8 U	0.58 U	1.9 U	1.4 U	0.62 U	0.64 U	0.82 U	NA	1.4 U	1.1 U	0.44 U	NA	1.8 U	0.62 UJ	0.54 U
EB-5	EB-5-10.0	6/18/2013	9 - 11	NA	NA	NA	NA	0.096 U	0.08 U	0.058 U	0.19 U	0.14 U	0.062 U	0.064 U	0.082 U	NA	0.14 U	0.11 U	0.044 U	NA	0.18 U	0.062 UJ	0.054 U
EB-5	EB-93-10.0(dupl.)	6/18/2013	9 - 11	NA	NA	NA	NA	0.48 U	0.4 U	0.29 U	0.93 U	0.69 U	0.31 U	0.32 U	0.41 U	NA	0.72 U	0.53 U	0.22 U	NA	0.89 U	0.31 UJ	0.27 U
EB-5	EB-5-12.5	6/18/2013	12 - 13	NA	NA	NA	NA	0.0096 U	0.008 U	0.0058 U	0.019 UJ	0.014 U	0.0062 U	0.0064 U	0.0082 U	NA	0.014 U	0.011 U	0.0044 U	NA	0.018 U	0.0062 U	0.0054 U

Table 5
Soil Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Feet)	Bis(2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Dibutyl phthalate (mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
Preliminary Soil Cleanup Levels^a (mg/kg)				71.43	526	8,000	64,000	0.094	0.058
Preliminary Soil Screening Levels^b (mg/kg)				0.047	0.006	0.26	0.2	0.094	0.058
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.013	0.006	0.02	0.004	0.001	0.003
CMW-1	CMW-1-5	6/12/2008	5	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
CMW-2A	CMW-2A-4	6/12/2008	4	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
CMW-3	CMW-3-5	6/12/2008	5	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
CMW-3	CMW-3-10	6/12/2008	10	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
CMW-4	CMW-4-5	6/13/2008	5	1	20	0.54	0.03 U	0.03 U	0.34
CMW-5	CMW-5-5	6/13/2008	5	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
CMW-6	CMW-6-5	6/13/2008	5	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
CMW-7	CMW-7-5	6/13/2008	5	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
CMW-7	CMW-7-7	6/13/2008	7	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
DB1	DB1-5.0	4/17/1990	5	0.99 B	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U
DB1	DB1-6.5	4/17/1990	6.5	1 B	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
DB1	DB1-9.5	4/17/1990	9.5	0.49 B	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
DMW2	DB2-3.5	4/17/1990	3.5	0.48 B	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U
DMW2	DB2-4.5	4/17/1990	4.5	0.76 B	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
DMW2	DB2-7	4/17/1990	7	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U
DMW2	DB2-9.5	4/17/1990	9.5	0.37 B	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U
DMW2	DB2-12	4/17/1990	12	0.27 B	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U
DMW2	DB2-18	4/17/1990	18	0.45	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
DMW3	DB3-2	4/18/1990	2	0.62 B	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U
DMW3	DB3-3.5	4/18/1990	3.5	0.85 B	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
DMW3	DB3-6	4/18/1990	6	0.16 B	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U
DMW3	DB3-7.5	4/18/1990	7.5	0.51 B	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U
DMW3	DB3-9	4/18/1990	9	0.38 B	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U
DMW3	DB3-13.5	4/18/1990	13.5	0.41 B	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
DMW3	DB3-17	4/18/1990	17	0.37 B	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U
DB4	DB4-6.0	4/19/1990	6	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
DB4	DB4-8.5	4/19/1990	8.5	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
DB4	DB4-11.0	4/19/1990	11	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U
DB5	DB5-2.0	4/18/1990	2	0.45 B	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
DB5	DB5-8.0	4/18/1990	8	0.28 B	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U
DB5	DB5-11.0	4/18/1990	11	0.11 B	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U
DMW6	DB6-2	4/19/1990	2	0.39 B	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
DMW6	DB6-4.5	4/19/1990	4.5	3.2 M, B	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U
DMW6	DB6-7	4/19/1990	7	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
DMW6	DB6-10	4/19/1990	10	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U
DMW6	DB6-13	4/19/1990	13	0.09 U	0.009 U	0.09 U	0.009 U	0.009 U	0.009 U
DMW6	DB6-16	4/19/1990	16	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U
DMW6	DB6-18.5	4/19/1990	18.5	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U
DB7	DB7-6.0	4/18/1990	6	0.13 B	0.06 U	0.08 U	0.06 U	0.06 U	0.06 U
DB7	DB7-8.5	4/18/1990	8.5	0.49 B	0.073 U	0.054 J	0.073 U	0.073 U	0.073 U
DB7	DB7-11.5	4/18/1990	11.5	0.62 B	0.17 U	0.17 U	0.14 U	0.14 U	0.14 U
DB8	DB8-5.0	4/19/1990	5	0.043 B	0.063 U	0.063 J	0.063 U	0.063 U	0.063 U
DB8	DB8-8.0	4/19/1990	8	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U
DB8	DB8-11.0	4/19/1990	11	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U
DB9	DB9-5.0	4/19/1990	5	0.06 B	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U
DB9	DB9-8.0	4/19/1990	8	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U
DB9	DB9-11.0	4/19/1990	11	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U
DB10	DB10-5.0	4/20/1990	5	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U
DB10	DB10-8.0	4/20/1990	8	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
DB10	DB10-11.0	4/20/1990	11	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U
DB11	DB11-6.5	4/18/1990	6.5	1 B	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U
DB11	DB11-6.5D(dupl.)	4/18/1990	6.5	0.79 B	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U
DB11	DB11-8.0D(dupl.)	4/18/1990	8	7.1 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
DB11	DB11-9.5	4/18/1990	9.5	0.87 B	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
DB11	DB11-9.5D(dupl.)	4/18/1990	9.5	2.9 J	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U
DB12	DB12-5.0	4/26/1990	5	0.089 J	0.089 U	0.089 U	0.089 U	0.089 U	0.089 U
DB12	DB12-11.5	4/26/1990	11.5	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U

Table 5
Soil Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Feet)	Bis(2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Dibutyl phthalate (mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
Preliminary Soil Cleanup Levels^a (mg/kg)				71.43	526	8,000	64,000	0.094	0.058
Preliminary Soil Screening Levels^b (mg/kg)				0.047	0.006	0.26	0.2	0.094	0.058
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.013	0.006	0.02	0.004	0.001	0.003
DB13	DB13-11.0	4/26/1990	11	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U	0.076 U
DB14	DB14-9.5	4/26/1990	9.5	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U
EB-5	EB-5-1.0	6/18/2013	0.5 - 1.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EB-5	EB-5-5.0	6/18/2013	4.5 - 5.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EB-5	EB-5-10.0	6/18/2013	9 - 11	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EB-5	EB-93-10.0(dupl.)	6/18/2013	9 - 11	0.67 U	0.29 U	1 U	0.2 U	0.06 U	0.17 U
EB-5	EB-5-12.5	6/18/2013	12 - 13	0.013 U	0.0058 U	0.02 U	0.004 U	0.0014	0.0034 U
EB-14	EB-14-1.0	6/17/2013	0.5 - 1.5	6.7 U	2.9 U	10 U	2 U	0.6 U	1.7 U
EB-14	EB-14-5.0	6/17/2013	4.5 - 5.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EB-14	EB-14-10.0	6/17/2013	9.5 - 10.5	0.015 lc	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-16	EB-16-2.5'	6/19/2013	2 - 3	13 U	5.8 U	20 U	4 U	1.2 U	3.4 U
EB-16	EB-16-5.0'	6/19/2013	4.5 - 5.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-16	EB-16-10.0'	6/19/2013	9.5 - 10.5	0.014 lc	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-17	EB-17-1.0	6/17/2013	0.5 - 1.5	0.27 U	0.12 U	0.4 U	0.08 U	0.024 U	0.068 U
EB-17	EB-17-5.75	6/17/2013	5.75 - 6.25	0.67 U	0.29 U	1 U	0.2 U	0.06 U	0.17 U
EB-17	EB-17-10.0	6/17/2013	9.5 - 10.5	0.014 lc	0.0065	0.02 U	0.004 U	0.0012 U	0.0034 UJ
EB-24	EB-24-1.0	6/17/2013	1 - 2	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-24	EB-24-5.0	6/17/2013	4.5 - 5.5	0.27 U	0.12 U	0.4 UJ	0.08 U	0.024 U	0.068 U
EB-24	EB-24-10.0	6/17/2013	9.5 - 10.5	0.017	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-28	EB-28-1.0	6/10/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-28	EB-28-5.0	6/10/2013	4.5 - 5.5	0.27 U	0.12 U	0.4 U	0.08 U	0.024 U	0.068 U
EB-28	EB-28-10.0	6/10/2013	9.5 - 10.5	2.7 U	1.2 U	4 U	0.8 U	0.24 U	0.68 U
EB-32	EB-32-1.0	6/14/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-32	EB-32-5.0	6/14/2013	4.5 - 5.5	2.7 U	1.2 U	4 U	0.8 U	0.24 U	0.68 U
EB-32	EB-32-10.0	6/14/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-32	EB-32-12.5	6/14/2013	12 - 13	0.017 lc	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-38	EB-38-1.0	6/17/2013	0.5 - 1.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EB-38	EB-38-5.0	6/17/2013	4.5 - 5.5	6.7 U	2.9 U	10 U	2 U	0.6 U	1.7 UJ
EB-38	EB-38-10.0	6/17/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-40	EB-40-1.0	6/10/2013	0.5 - 1.5	5.4 U	2.3 U	8 U	1.6 U	0.48 U	1.4 U
EB-40	EB-40-5.0	6/10/2013	4.5 - 5.5	0.27 U	0.12 U	0.4 U	0.08 U	0.024 U	0.068 U
EB-40	EB-40-10.0	6/10/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-41	EB-41-1.0	6/14/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-41	EB-41-5.0	6/14/2013	4.5 - 5.5	6.7 U	2.9 U	10 U	2 U	0.6 U	1.7 U
EB-41	EB-41-10.0	6/14/2013	9 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-41	EB-91-10.0(dupl.)	6/14/2013	9 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-41	EB-41-15.0	6/14/2013	14.5 - 15.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-45	EB-45-1.0	6/10/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-45	EB-45-5.0	6/10/2013	4.5 - 5.5	2.7 U	1.2 U	4 U	0.8 U	0.24 U	0.68 U
EB-45	EB-45-10.0	6/10/2013	9.5 - 10.5	0.15	0.0058 U	0.02 U	0.004 U	0.0028	0.0034 U
EB-45	EB-45-12.5	6/10/2013	12 - 13	0.13 U	NA	NA	NA	NA	NA
EB-46	EB-46-1.0	6/14/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-46	EB-46-2.5	6/14/2013	2 - 3	2.7 U	1.2 U	4 U	0.8 U	0.24 U	0.68 U
EB-46	EB-46-8.0	6/14/2013	7.5 - 8.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-46	EB-46-10.0	6/14/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-47	EB-47-1.0	6/10/2013	0.5 - 1.5	0.27 U	0.12 U	0.4 U	0.08 U	0.024 U	0.068 U
EB-47	EB-47-5.0	6/10/2013	4.5 - 5.5	0.27 U	0.12 U	0.4 U	0.08 U	0.024 U	0.068 U
EB-47	EB-47-10.0	6/10/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-50	EB-50-1.0	6/14/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-50	EB-50-5.0	6/14/2013	4.5 - 5.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-50	EB-50-7.5	6/14/2013	7 - 8	0.67 U	0.29 U	1 U	0.2 U	0.06 U	0.17 U
EB-51	EB-51-1.0	6/13/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EB-51	EB-51-5.0	6/13/2013	4.5 - 5.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EB-51	EB-51-7.5	6/13/2013	7.5 - 8.5	0.4 lc	0.12 U	0.4 U	0.08 U	0.024 U	0.068 U
EB-51	EB-51-10.0	6/13/2013	9 - 10	20 lc, ve	0.58 U	2 U	0.4 U	0.12 U	0.34 U

Table 5
Soil Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Feet)	Bis(2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Dibutyl phthalate (mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
Preliminary Soil Cleanup Levels^a (mg/kg)				71.43	526	8,000	64,000	0.094	0.058
Preliminary Soil Screening Levels^b (mg/kg)				0.047	0.006	0.26	0.2	0.094	0.058
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.013	0.006	0.02	0.004	0.001	0.003
EMW-1S	EMW-1S-2.5	6/12/2013	2 - 3	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-1S	EMW-1S-5.0	6/12/2013	4.5 - 5.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-1S	EMW-1S-10.0	6/12/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-2S	EMW-2S-2.5	6/17/2013	2 - 3	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-2S	EMW-2S-5.0	6/17/2013	4 - 5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-2S	EMW-2S-10.0	6/17/2013	9.5 - 11	0.024 lc	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-3S	EMW-3S-1.0	6/11/2013	0.5 - 1.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EMW-3S	EMW-3S-5.0	6/11/2013	4.5 - 5.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-3S	EMW-3S-10.0	6/11/2013	9.5 - 10.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EMW-3S	EMW-3S-15.0'	6/11/2013	14.5 - 15.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0014	0.0034 U
EMW-3S	EMW-89S-5.0(dupl.)	6/11/2013	14.5 - 15.5	2.7 U	1.2 U	4 U	0.8 U	0.24 U	0.68 U
EMW-4D	EMW-4D-2.5'	6/17/2013	2 - 3	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-4D	EMW-4D-5.0'	6/17/2013	4.5 - 5.5	0.014 lc	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-4D	EMW-4D-7.5'	6/17/2013	7 - 8	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-5S	EMW-5S-1.0	6/13/2013	0.5 - 1.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-5S	EMW-5S-7.50	6/13/2013	7 - 8	0.013 UJ	0.0058 UJ	0.02 UJ	0.004 UJ	0.0012 UJ	0.0034 UJ
EMW-5S	EMW-5S-10.0	6/13/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-6S	EMW-6S-1.0	6/12/2013	0.5 - 1.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EMW-6S	EMW-6S-5.0	6/12/2013	4.5 - 5.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-6S	EMW-6S-10.0	6/12/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-7S	EMW-7S-1.0	6/13/2013	0.5 - 1.5	0.27 U	0.18	0.4 U	0.08 U	0.024 U	0.068 U
EMW-7S	EMW-7S-5.0	6/13/2013	4.5 - 5.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-7S	EMW-7S-10.0	6/13/2013	9.5 - 10.5	0.013 UJ	0.0058 UJ	0.02 UJ	0.004 UJ	0.0012 UJ	0.0034 UJ
EMW-8S	EMW-8S-1.0	6/12/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 UJ	0.004 UJ	0.0012 UJ	0.0034 U
EMW-8S	EMW-8S-5.0	6/12/2013	4.5 - 5.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-8S	EMW-8S-10.0	6/12/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-9S	EMW-9S-1.0	6/13/2013	0.5 - 1.5	0.13 U	0.058 U	0.2 U	0.04 UJ	0.012 UJ	0.034 U
EMW-9S	EMW-9S-5.0	6/13/2013	4.5 - 5.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-9S	EMW-9S-10.0	6/13/2013	9.5 - 10.5	0.13 U	0.058 U	0.2 U	0.04 UJ	0.012 UJ	0.034 UJ
EMW-9S	EMW-9S-12.5	6/13/2013	12 - 13	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-10D	EMW-10D-1.0'	6/19/2013	0.5 - 1.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-10D	EMW-10D-5.0'	6/19/2013	4.5 - 5.5	270 U	120 U	400 U	80 U	24 U	68 U
EMW-10D	EMW-10S-5.0'(dupl.)	6/19/2013	4.5 - 5.5	27 U	12 U	40 U	8 U	2.4 U	6.8 U
EMW-10D	EMW-10D-10.0'	6/19/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-10D	EMW-10D-15.0'	6/19/2013	14.5 - 15.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-10D	EMW-10D-35.0'	6/19/2013	34.5 - 35.5	5.4 U	2.3 U	8 U	1.6 U	0.48 U	1.4 U
EMW-11S	EMW-11S-1.0	6/12/2013	0.5 - 1.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-11S	EMW-11S-5.0	6/12/2013	4.5 - 5.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-11S	EMW-11S-10.0	6/12/2013	9.5 - 10.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-11S	EMW-11S-12.5	6/12/2013	12 - 13	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-12S	EMW-12S-1.0	6/11/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-12S	EMW-12S-5.0	6/11/2013	4.5 - 5.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EMW-12S	EMW-12S-10.0	6/11/2013	9.5 - 10.5	0.038 lc	0.0058 U	0.02 U	0.004 U	0.0026	0.0034 U
EMW-12S	EMW-12S-15.0	6/11/2013	14.5 - 15.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0013	0.0034 UJ
EMW-13S	EMW-13S-1.0	6/11/2013	0.5 - 1.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-13S	EMW-13S-5.0	6/11/2013	4.5 - 5.5	0.043 lc	0.0058 U	0.02 U	0.004 U	0.0012	0.0034 U
EMW-13S	EMW-13S-7.5	6/11/2013	7 - 8	2.7 U	1.2 U	4 U	0.8 U	0.24 U	0.68 U
EMW-14D	EMW-14D-1.0'	6/17/2013	0.5 - 1.5	0.013 U	0.0058 U	0.02 U	0.004 U	0.0012 U	0.0034 U
EMW-14D	EMW-14D-5.0'	6/17/2013	4.5 - 5.5	6.7 U	2.9 U	10 U	2 U	0.6 U	1.7 U
EMW-14D	EMW-14D-10.0'	6/17/2013	9.5 - 10.5	5.4 U	2.3 U	8 U	1.6 U	0.48 U	1.4 U
EMW-14D	EMW-14D-15.0'	6/17/2013	14.5 - 15.5	0.014 lc	0.0058 U	0.02 U	0.004 U	0.0012	0.0034 U
EMW-15D	EMW-15D-1.0'	6/18/2013	0.5 - 1.5	0.027 U	0.012 U	0.04 U	0.008 U	0.0024 U	0.0068 U
EMW-15D	EMW-15D-5.0'	6/18/2013	4.5 - 5.5	5.6 lc	0.85	2 U	0.4 U	0.12 U	0.34 U
EMW-15D	EMW-15D-10.0'	6/18/2013	9.5 - 10.5	1.3 U	0.58 U	2 U	0.4 U	0.12 U	0.34 U
EMW-16D	EMW-16D-1.0'	6/18/2013	0.5 - 1.5	0.27 U	0.12 U	0.4 U	0.08 U	0.024 U	0.068 U
EMW-16D	EMW-16D-5.0'	6/18/2013	4.5 - 5.5	0.13 U	0.058 U	0.2 U	0.04 U	0.012 U	0.034 U
EMW-16D	EMW-16D-10.0'	6/18/2013	9.5 - 10.5	0.013 U	0.0058 U	0.02 UJ	0.004 U	0.0012 U	0.0034 U

Table 5
Soil Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Feet)	Bis(2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Dibutyl phthalate (mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
Preliminary Soil Cleanup Levels^a (mg/kg)				71.43	526	8,000	64,000	0.094	0.058
Preliminary Soil Screening Levels^b (mg/kg)				0.047	0.006	0.26	0.2	0.094	0.058
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.013	0.006	0.02	0.004	0.001	0.003
FMW-1	FB-1-2	4/23/1990	2	0.07	ND U	ND U	ND U	ND U	ND U
FMW-1	FB-1-7	4/23/1990	7	0.077 U	ND U	ND U	ND U	ND U	ND U
FMW-1	FB-1-13	4/23/1990	13	0.087 U	ND U	ND U	ND U	ND U	ND U
FMW-2	FB-2-2	4/20/1990	2	0.1 U	ND U	ND U	ND U	ND U	ND U
FMW-2	FB-2-5.5	4/20/1990	5.5	0.072 U	ND U	ND U	ND U	ND U	ND U
FMW-2	FB-2-8	4/20/1990	8	0.079 U	ND U	ND U	ND U	ND U	ND U
FMW-2	FB-2-18.5	4/20/1990	18.5	0.071 U	ND U	ND U	ND U	ND U	ND U
FMW-3	FB-3-3	4/23/1990	3	0.063 U	ND U	ND U	ND U	ND U	ND U
FMW-3	FB-3-3.5	4/23/1990	3.5	0.081 U	ND U	ND U	ND U	ND U	ND U
FMW-3	FB-3-13.5	4/23/1990	13.5	0.08 U	ND U	ND U	ND U	ND U	ND U
FB-4	FB-4-2	4/20/1990	2	0.06 U	ND U	ND U	ND U	ND U	ND U
FB-4	FB-4-8	4/20/1990	8	0.072 U	ND U	ND U	ND U	ND U	ND U
FB-4	FB-4-11	4/20/1990	11	0.15	ND U	ND U	ND U	ND U	ND U
FB-5	FB-5-2	4/20/1990	2	0.071 U	ND U	ND U	ND U	ND U	ND U
FB-5	FB-5-8	4/20/1990	8	0.078 U	ND U	ND U	ND U	ND U	ND U
FB-5	FB-5-11	4/20/1990	11	0.085 U	ND U	ND U	ND U	ND U	ND U
FSS2	FSS2	6/12/1988	0.5	1.8 U	ND U	ND U	ND U	ND U	ND U
FSS3	FSS3	6/12/1988	0.5	1.7 U	ND U	ND U	ND U	ND U	ND U
SCV-12	SCV-12'	7/17/2012	12	0.42	0.001 U	0.01	0.006	0.001 U	0.002 U
SLR-1	SLR1-1	8/22/2011	1 - 1.5	0.11 U	0.05 U	0.062 U	0.058	0.044 U	0.07 U
SLR-1	SLR1-6	8/22/2011	6 - 6.5	0.11 U	0.05 U	0.062 U	0.055	0.044 U	0.07 U
SLR-1	SLR1-10	8/22/2011	10 - 10.5	0.11 U	0.05 U	0.062 U	0.0079	0.044 U	0.07 U
SLR-2	SLR2-1	8/19/2011	1 - 1.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-2	SLR2-6	8/22/2011	6 - 6.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-2	SLR2-10	8/19/2011	10 - 10.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-3	SLR3-1	8/19/2011	1 - 1.5	1.1 U	0.5 U	0.62 U	0.51 U	0.44 U	0.7 U
SLR-3	SLR3-6	8/22/2011	6 - 6.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-3	SLR3-10	8/19/2011	10 - 10.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-4	SLR4-1	8/19/2011	1 - 1.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-4	SLR4-5	8/19/2011	5 - 5.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-4	SLR4-10	8/19/2011	10 - 10.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-5	SLR5-3	8/22/2011	3 - 3.5	5.5 U	2.5 U	3.1 U	4.3	2.2 U	3.5 U
SLR-5	SLR5-6	8/22/2011	6 - 6.5	5.5 U	2.5 U	3.1 U	3.4	2.2 U	3.5 U
SLR-5	SLR5-10	8/22/2011	10 - 10.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-6	SLR6-1	8/19/2011	1 - 1.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-6	SLR6-5	8/19/2011	5 - 5.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-6	SLR6-10	8/19/2011	10 - 10.5	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U
SLR-7	SLR7-1	8/22/2011	1 - 1.5	0.11 U	0.05 U	0.062 U	0.052	0.044 U	0.07 U
SLR-7	SLR7-5	8/22/2011	5 - 5.5	0.11 U	0.05 U	0.062 U	0.051	0.044 U	0.07 U
SLR-7	SLR7-10	8/22/2011	10 - 10.5	0.11 U	0.05 U	0.062 U	0.051	0.044 U	0.07 U
Trench 1-1	TRENCH1-1-8'	7/19/2012	8	0.043	0.0043	0.0043	0.0074	0.001 U	0.002 U
Trench 1-2	TRENCH1-2-9'	7/19/2012	9	0.27	0.001 U	0.012	0.001 U	0.001 U	0.002 U
Trench 2-1	TRENCH2-1-8'	7/24/2012	8	0.039	0.001 U	0.0047	0.019	0.001 U	0.002 U
Trench 4-1	TRENCH4-1-3.0'	7/26/2012	3	0.05	0.001 U	0.002 U	0.048	0.001 U	0.002 U

Table 5
Soil Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Feet)	Bis(2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Dibutyl phthalate (mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
Preliminary Soil Cleanup Levels^a (mg/kg)				71.43	526	8,000	64,000	0.094	0.058
Preliminary Soil Screening Levels^b (mg/kg)				0.047	0.006	0.26	0.2	0.094	0.058
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.013	0.006	0.02	0.004	0.001	0.003

Notes:
Detected values in bold and highlighted in orange exceed the preliminary soil cleanup levels
Detected values in bold and highlighted in yellow exceed the preliminary soil screening levels
Non-detected values highlighted in blue exceed the preliminary soil cleanup levels
Results that exceed the screening levels due to possible interference from laboratory contamination are highlighted in purple
mg/kg = milligrams per kilogram.
NA = Not analyzed
NR = Not recorded
U = The laboratory report noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
B = The laboratory report noted that the analyte detected in sample and method blank and the reported result is sample concentration without blank correction or associated quantitation limit.
J = The laboratory report noted that the analyte was positively identified and the reported result is an estimate.
M = The laboratory report noted that the reported value is an estimate, but with low spectral match parameters.
lc = The laboratory report noted that the presence of the compound indicated is likely due to laboratory contamination
ve = The laboratory report noted that the estimated concentration calculated for an analyte response above the valid instrument calibration range
^a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.
^b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher.

Table 6
Soil Sample Analytical Results - SVOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Feet)	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	2,4-Dinitrotoluene (mg/kg)	2,6-Dinitrotoluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	2-Nitroaniline (mg/kg)	3,3-Dichlorobenzidine (mg/kg)	4-Bromophenyl phenyl ether (mg/kg)	4-Chloroaniline (mg/kg)	4-Chlorophenyl-Phenylether (mg/kg)	4-Nitroaniline (mg/kg)	Benzoic acid (mg/kg)	Benzyl alcohol (mg/kg)	Bis(2-chloroethoxy) methane (mg/kg)	Bis(2-Chloroethyl)Ether (mg/kg)	Bis(2-chloroisopropyl) ether (mg/kg)	Carbazole (mg/kg)	Dibenzofuran (mg/kg)	Hexachlorobenzene (mg/kg)	Hexachlorobutadiene (mg/kg)	Hexachlorocyclopentadiene (mg/kg)	Hexachloroethane (mg/kg)	Isophorone (mg/kg)	m-Nitroaniline (mg/kg)	Nitrobenzene (mg/kg)	N-Nitrosodi-n-propylamine (mg/kg)	N-Nitrosodiphenylamine (mg/kg)	
Preliminary Soil Cleanup Levels ^a (mg/kg)				800	72,000	0.28	0.0024	160	80	NV	0.043	800	2.2	NV	320	NV	NV	320,000	8,000	NV	0.91	NV	50	80	0.63	13	480	71	1,110	NV	160	14	200	
Preliminary Soil Screening Levels ^b (mg/kg)				0.0034	0.004	0.28	0.0024	NV	NV	NV	0.043	NV	NV	NV	NV	NV	NV	0.68	0.055	NV	NV	NV	50	0.015	0.001	0.002	NV	NV	NV	NV	NV	NV	NV	0.012
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.0034	0.004	0.0027	0.0024	0.0016	0.0018	0.0014	0.001	0.0026	0.007	0.0016	0.18	0.0016	0.018	0.055	0.005	0.0014	0.0016	0.0016	0.002	0.001	0.001	0.002	0.002	0.002	0.003	0.001	0.017	0.003	0.003	0.001
SLR-6	SLR6-1	8/19/2011	1 - 1.5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA	0.03 U	3 U	0.03 U	3 U	0.87 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
SLR-6	SLR6-5	8/19/2011	5 - 5.5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA	0.03 U	3 U	0.03 U	3 U	0.87 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
SLR-6	SLR6-10	8/19/2011	10 - 10.5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA	0.03 U	3 U	0.03 U	3 U	0.87 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
SLR-7	SLR7-1	8/22/2011	1 - 1.5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA	0.03 U	3 U	0.03 U	3 U	0.87 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
SLR-7	SLR7-5	8/22/2011	5 - 5.5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA	0.03 U	3 U	0.03 U	3 U	0.87 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
SLR-7	SLR7-10	8/22/2011	10 - 10.5	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA	0.03 U	3 U	0.03 U	3 U	0.87 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.09 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Trench 1-1	TRENCH1-1-8'	7/19/2012	8	0.001 U	0.005 U	0.002 U	0.003 U	0.001 U	0.001 U	0.002 U	0.034	0.002 U	NA	0.001 U	0.28 U	0.001 U	0.012 U	0.11 U	0.0039	0.001 U	0.002 U	0.002 U	0.32	0.064	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.004 U	0.002 U	0.001 U	0.001 U	0.001 U
Trench 1-2	TRENCH1-2-9'	7/19/2012	9	0.001 U	0.005 U	0.002 U	0.003 U	0.001 U	0.001 U	0.002 U	0.024	0.002 U	NA	0.001 U	0.28 U	0.001 U	0.012 U	0.11 U	0.005	0.001 U	0.002 U	0.002 U	0.12	0.043	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.004 U	0.002 U	0.001 U	0.001 U	0.001 U
Trench 2-1	TRENCH2-1-8'	7/24/2012	8	0.001 U	0.005 U	0.002 U	0.003 U	0.001 U	0.001 U	0.002 U	0.05	0.002 U	NA	0.001 U	0.28 U	0.001 U	0.012 U	0.11 U	0.005	0.001 U	0.002 U	0.002 U	0.003 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.004 U	0.002 U	0.001 U	0.001 U	0.001 U
Trench 4-1	TRENCH4-1-3.0'	7/26/2012	3	0.001 U	0.005 U	0.002 U	0.003 U	0.001 U	0.001 U	0.002 U	0.001 U	0.002 U	NA	0.001 U	0.28 U	0.001 U	0.012 U	0.11 U	0.002 U	0.001 U	0.002 U	0.002 U	0.003 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.004 U	0.002 U	0.001 U	0.001 U	0.001 U

Notes:
Detected values in bold and highlighted in orange exceed the preliminary soil cleanup levels
Detected values in bold and highlighted in yellow exceed the preliminary soil screening levels
Non-detected values highlighted in blue exceed the preliminary soil cleanup levels
mg/kg = milligrams per kilogram.
NA = Not analyzed
NR = Not recorded
U = The laboratory report noted that the analyte was not detected at or above the reported result
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range
J = The laboratory report noted that the analyte was positively identified AND the reported result is an estimate
K = The laboratory report noted that the result was reported with unknown bias
M = The laboratory report noted that the reported value is an estimate, but with low spectral match parameters
^a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.
^b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher.

Table 10
Groundwater Sample Analytical Results - Dissolved Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Lead (µg/L)	Mercury (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Zinc (µg/L)	Total Suspended Solids (mg/L)
Preliminary Groundwater Cleanup Levels^a (µg/L)			3.87	0.87	122.0	4.0	0.25	50	2.4	0.54	0.0052	8.2	5.0	1.53	0.47	32.6	NV
Preliminary Groundwater Screening Levels^b (µg/L)			3.87	0.87	2.0	4.0	0.25	50	2.4	0.54	0.0052	8.2	5.0	1.53	0.47	32.6	NV
2013 Laboratory Practical Quantitation Limits (µg/L)			0.052	0.15	0.25	0.098	0.094	0.14	0.34	0.14	0.00015	0.36	0.56	0.064	0.074	0.61	NV
FMW-2	F/MW2-090490	9/4/1990	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-1	HC01-090490	9/4/1990	NA	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-2	HC2/MWHC2-111788	11/17/1988	10 U	5	NA	1 U	1 U	1	12	5 U	1 U	2	5	1 U	5 U	11	NA
HC-4	HC04-090490	9/4/1990	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-4	HC-4-092413	9/24/2013	1.25 U	0.54 IP	18.3	0.098 U	0.094 U	0.50	2.19	0.14 U	0.0015 U	5.29	1.15 IP	0.064 U	0.074 U	5.22	9.7 U
HC-19	HC19-090490	9/4/1990	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-20	HC20-090490	9/4/1990	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-20	HC-20-0713	7/11/2013	0.49	11	22	0.098 U	0.25 UJ	0.83	0.34 U	0.14 U	0.00042	2.91	0.56 U	0.064 U	0.074 U	14.6	11.2
HC-20	HC-20-092313	9/23/2013	1.25 U	14 IP	21	0.098 U	0.094 U	1.1	2 U	0.14 U	0.0015 U	1.74	0.56 U	0.064 U	0.074 U	8.84	10 U
HC-20	HC-20-100113	10/1/2013	0.36	19.7 ^c	20.1	0.098 U	0.094 U	1.46	0.42 ^c	0.14 U	0.0015 U	1.18	0.09 ^c JT	0.064 U	0.074 U	4.77	9.7 U
MW-1 (1988)	MW-1	11/17/1988	10	6	NA	1 U	1 U	1 U	12	5 U	1 U	2 U	5	1 U	5 U	3	NA
SLR-1	SLR-1-0713	7/11/2013	0.11	1.92	24.2	0.098 U	0.25 UJ	1.63	0.34 U	0.14 U	0.00066	1.5	0.56 U	0.064 U	0.074 U	0.61	10 U
SLR-1	SLR-1-092313	9/23/2013	1.25 U	3.57 IP	27.4	0.098 U	0.094 U	1.52	2 U	0.14 U	0.0015 U	3.11	0.56 U	0.064 U	0.074 U	2.93	10 U
SLR-1	SLR-1-100313	10/3/2013	0.11	2.61 ^c	23	0.098 U	0.094 U	1.92	0.48 ^c	0.14 U	0.0015 U	1.37	0.14 ^c JT	0.064 U	0.074 U	1.27	9.7 U
SLR-2	SLR-2-0713	7/11/2013	1.48	0.51	6.54	0.098 U	0.25 UJ	0.48	1.91	0.14 U	0.00084	2.32	0.56 U	0.064 U	0.074 U	2.3	10 U
SLR-2	SLR-2-092313	9/23/2013	2.46	0.43 IP	5.74	0.098 U	0.094 U	0.40	2.35	0.14 U	0.0015 U	3.7	0.56 U	0.064 U	0.074 U	3.86	10 U
SLR-2	SLR-2-100213	10/2/2013	2.47	0.48 ^c	3.08	0.098 U	0.094 U	0.70	2.36 ^c	0.14 U	0.0027	1.12	0.081 ^c JT	0.064 U	0.074 U	1.81	9.7 U
SLR-3	SLR-3-0713	7/12/2013	0.78	24.3	96.6	0.98 U	2.5 U	32.6	7.86	0.47	0.0038	5.38	6.94	0.64 U	0.074 U	6.81	10 U
SLR-3	SLR-3-092313	9/23/2013	1.25 U	25.1 IP	104	0.98 U	2.32	30.3	2 UJ	3.6	0.002	6.92	7.18 IP	0.64 U	0.074 U	25 U	10 U
SLR-3	SLR-3-100313	10/3/2013	0.70	28.8 ^c	97.7	0.108	2.19	27	5.9 ^c	0.56	0.0037	3.23	1.45 ^c	0.35	0.074 U	4.86	9.7 U
SLR-6	SLR-6-0713	7/12/2013	0.48	0.23	20.6	0.098 U	0.25 U	0.30	2.53	0.14 U	0.0015 U	1.65	0.56 U	0.064 U	0.074 U	0.78	10 U
SLR-6	SLR-6-092313	9/23/2013	1.25 U	0.30 IP	19.6	0.098 U	0.094 U	0.36	3.2	0.14 U	0.0015 U	1.87	0.56 U	0.064 U	0.074 U	4.7	10 U
SLR-6	SLR-6-100113	10/1/2013	0.79	0.50 ^c	14.2	0.098 U	0.094 U	0.42	2.85 ^c	0.14 U	0.0015 U	0.70	0.039 ^c U	0.064 U	0.074 U	7.41	9.7 U
SLR-7	SLR-7-0713	7/11/2013	0.18	1.68	12.3	0.098 U	0.25 UJ	0.51	0.41	0.14 U	0.0015 U	3.8	0.62	0.064 U	0.089	0.90	10 U
SLR-7	SLR-7-092313	9/23/2013	1.25 U	2.3 IP	14.5	0.098 U	0.094 U	0.44	2 U	0.14 U	0.0015 U	6.35	0.56 U	0.064 U	0.074 U	5.01	16
SLR-7	SLR-7-100113	10/1/2013	0.14	2.32 ^c	13.9	0.098 U	0.094 U	0.39	0.74 ^c	0.14 U	0.0015 U	3.93	0.072 ^c U	0.064 U	0.074 U	7.66	9.7 U

Notes:

Detected values in bold and highlighted in orange exceed the preliminary groundwater cleanup levels at the groundwater compliance wells.

Detected values in bold and highlighted in yellow exceed the preliminary groundwater screening levels.

Non-detected values highlighted in blue exceed the preliminary groundwater cleanup levels at the groundwater compliance wells.

Groundwater compliance wells are highlighted in green.

µg/L = micrograms per liter.

mg/L = milligrams per liter.

NA = Not analyzed

NV = No available value.

U = The laboratory report noted that the analyte was not detected at or above the reported result.

UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.

E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.

JT = The laboratory report noted that the analyte was positively identified and the reported result is an estimate below the associated quantitation limit but above the MDL.

IP = The laboratory report noted that compounds in the sample matrix interfered with the quantitation of the analyte.

^a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.

^b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher.

^c Analysis performed via inductively coupled plasma dynamic reaction cell mass spectrometry (ICP-DRC-MS).

**Table 11
Groundwater Sample Analytical Results - PAHs
8th Avenue Terminals Inc. Site
Seattle, Washington**

Location	Sample ID	Sample Date	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo[a]anthracene (µg/L)	Benzo[e]pyrene (µg/L)	Benzo[b]fluoranthene (µg/L)	Benzo(g,h,i)perylene (µg/L)	Benzo(k)fluoranthene (µg/L)	Chrysene (µg/L)	Dibenzo(a,h)anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
Preliminary Groundwater Cleanup Levels^a (µg/L)			2.61	10.8	10.8	0.0042	0.0078	0.0052	0.0044	0.0076	0.0038	0.0040	2.26	2.04	0.007	53.8	4.8	9.8
Preliminary Groundwater Screening Levels^b (µg/L)			2.61	10.8	10.8	0.0042	0.0078	0.0052	0.0044	0.0076	0.0038	0.0040	2.26	2.04	0.007	53.8	4.8	9.8
2013 Laboratory Practical Quantitation Limits (µg/L)			0.0038	0.0025	0.0027	0.0042	0.0078	0.0052	0.0044	0.0076	0.0038	0.004	0.0046	0.004	0.007	0.004	0.0066	0.0036
Groundwater Seep Samples																		
Seep-1	Seep-1	7/24/2013	0.0038 U	0.0024 U	0.0028 U	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.0038 U	0.004 U	0.0063	0.004 U	0.007 U	0.011	0.0092	0.0044
Seep-2	Seep-2	7/24/2013	0.0044	0.0024 U	0.0028 U	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.0038 U	0.004 U	0.0047	0.004 U	0.007 U	0.0046	0.0082	0.0036 U
Seep-3	Seep-3	7/24/2013	0.005	0.0024 U	0.0028 U	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.0038 U	0.004 U	0.0046 U	0.004 U	0.007 U	0.0048	0.0066 U	0.0036 U
Seep-4	Seep-4	7/23/2013	0.035	0.0024 U	0.0028 U	0.0088	0.0078 U	0.014	0.0078	0.0076 U	0.011	0.004 U	0.019	0.004 U	0.0078	0.0051	0.011	0.021
Seep-5	Seep-5	7/23/2013	0.0038 U	0.0024 U	0.0028 U	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.0038 U	0.004 U	0.0046 U	0.004 U	0.007 U	0.0056	0.0067	0.0036 U
Notes:																		
Values in bold and highlighted in orange exceed the preliminary groundwater cleanup levels at the groundwater compliance wells;																		
Detected values in bold and highlighted in yellow exceed the preliminary groundwater screening levels;																		
Non-detected values highlighted in blue exceed the preliminary groundwater cleanup levels at the groundwater compliance wells;																		
Groundwater compliance wells are highlighted in green																		
µg/L = micrograms per liter.																		
NA = Not analyzed.																		
ND = Analyte not detected; however, detection limit not available																		
U = The laboratory report noted that the analyte was not detected at or above the reported result																		
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate																		
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range																		
^a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.																		
^b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is high																		

Table 12
Groundwater Sample Analytical Results - PCBs and Petroleum Hydrocarbons
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	PCBs						Petroleum Hydrocarbons							
			Aroclor 1016 (µg/L)	Aroclor 1221 (µg/L)	Aroclor 1232 (µg/L)	Aroclor 1242 (µg/L)	Aroclor 1248 (µg/L)	Aroclor 1254 (µg/L)	Aroclor 1260 (µg/L)	Gasoline Range Organics (µg/L)	Diesel Range Organics (µg/L)	Heavy Oil Range Organics (µg/L)	Total Petroleum Hydrocarbons (µg/L)			
Preliminary Groundwater Cleanup Levels^a (µg/L)			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	800	500	500	500		
Preliminary Groundwater Screening Levels^b (µg/L)			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	800	500	500	500		
2013 Laboratory Practical Quantitation Limits (µg/L)			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	12	6.9	52	52		
Groundwater Seep Samples																
Seep-1	Seep-1	7/24/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	6.9 U	52 U	NA
Seep-2	Seep-2	7/24/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	6.9 U	52 U	NA
Seep-3	Seep-3	7/24/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	6.9 U	52 U	NA
Seep-4	Seep-4	7/23/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	6.9 U	52 U	NA
Seep-5	Seep-5	7/23/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	6.9 U	52 U	NA
Notes:																
Detected values in bold and highlighted in yellow exceed the preliminary groundwater screening levels.																
Non-detected values highlighted in blue exceed the preliminary groundwater cleanup levels at the groundwater compliance wells																
Groundwater compliance wells are highlighted in green.																
µg/L = micrograms per liter.																
NA = Not analyzed																
ND = The laboratory report noted that the analyte not detected; however, detection limit not available.																
U = The laboratory report noted that the analyte was not detected at or above the reported result.																
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.																
^a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.																
^b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher.																

**Table 14
Groundwater Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington**

Location	Sample ID	Sample Date	Bis(2-ethylhexyl) phthalate (µg/L)	Butyl benzyl phthalate (µg/L)	Dibutyl phthalate (µg/L)	Diethyl phthalate (µg/L)	Dimethyl phthalate (µg/L)	Di-N-Octyl Phthalate (µg/L)
Preliminary Groundwater Cleanup Levels^a (µg/L)			1.2	0.41	46.6	484	143	0.3
Preliminary Groundwater Screening Levels^b (µg/L)			1.2	0.41	46.6	484	143	0.3
2013 Laboratory Practical Quantitation Limits (µg/L)			0.17	0.086	0.068	0.06	0.05	0.044
Groundwater Samples								
CMW-1	CMW-1-061708	6/17/2008	10 U	1 U	1 U	1 U	1 U	1 U
CMW-1	CMW1-082311	8/23/2011	1.43 U	0.54 U	1 U	1 U	1 U	1 U
CMW-1	CMW-1-0713	7/11/2013	0.3 E	0.086 U	0.068 U	0.06 U	0.05 U	0.045
CMW-1	CMW-1-100213	10/2/2013	0.41 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-2	CMW-2-061708	6/17/2008	10 U	1 U	1 U	1 U	1 U	1 U
CMW-2	CMW2-082311	8/23/2011	1.43 U	0.54 U	1 U	1 U	1 U	1 U
CMW-2	CMW-2-0713	7/12/2013	0.59 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-2	CMW-2-100113	10/1/2013	0.52 E	0.086 U	0.068 U	0.07	0.05 U	0.044 U
CMW-3	CMW-3-061708	6/17/2008	10 U	1 U	1 U	1 U	1 U	1 U
CMW-3	CMW-3-0713	7/12/2013	1.1 E	0.086 U	0.068 U	0.075 lc	0.05 U	0.044 U
CMW-3	CMW-3-093013	9/30/2013	0.28 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-4	CMW-4-061708	6/17/2008	10 U	1 U	1 U	1 U	1 U	1 U
CMW-4	CMW-4-0713	7/11/2013	0.28 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-4	CMW-4-100313	10/3/2013	0.31 B	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-5	CMW-5-061708	6/17/2008	NA	NA	NA	NA	1 U	1 U
CMW-5	CMW-5-0713	7/12/2013	0.48 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-5	CMW-5-093013	9/30/2013	0.17 U	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-6	CMW-6-061708	6/17/2008	10 U	1 U	1 U	1 U	1 U	1 U
CMW-6	CMW-6-0713	7/12/2013	0.28 E	0.086 UJ	0.068 U	0.06 U	0.05 U	0.044 UJ
CMW-6	CMW-6-100113	10/1/2013	0.42 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-7	CMW-7-061708	6/17/2008	10 U	1 U	1 U	1 U	1 U	1 U
CMW-7	CMW-7-0713	7/12/2013	0.51 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
CMW-7	CMW-7-100213	10/2/2013	0.21 B	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
DMW-2	DMW2-042790	4/27/1990	12 B	1 U	1 U	1 U	1 U	1 U
DMW-2	DMW-2-0713	7/12/2013	17 U	8.6 U	6.8 U	6 U	5 U	4.4 U
DMW-2	DMW-2-093013	9/30/2013	0.17 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
DMW-3	DMW3-042790	4/27/1990	20 B	1 U	1 U	1 U	1 U	1 U
DMW-3	DMW-3-0713	7/12/2013	17 U	8.6 U	6.8 U	6 U	5 U	4.4 U
DMW-3	DMW-3-093013	9/30/2013	17 U	8.6 U	6.8 U	6 U	5 U	4.4 U
DMW-6	DMW6-043090	4/30/1990	19 B	1 U	1 U	1 U	1 U	1 U
DMW-6	DMW-6-0713	7/11/2013	0.26 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 UJ
DMW-6	DMW-6-100213	10/2/2013	0.23 B	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-1S	EMW-1S-0713	7/11/2013	0.58 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-1S	EMW-1S-093013	9/30/2013	0.17 U	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-2S	EMW-2S-0713	7/12/2013	0.42 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-2S	EMW-57S-0713(dupl.)	7/12/2013	0.26 E	0.086 U	0.068 UJ	0.06 U	0.05 U	0.044 UJ
EMW-2S	EMW-2S-100313	10/3/2013	0.18 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-2S	EMW-57S-100313(dupl.)	10/3/2013	0.24 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-3S	EMW-3S-0713	7/11/2013	0.27 E	0.086 U	0.068 U	0.09 lc	0.05 U	0.044 U
EMW-3S	EMW-3S-100113	10/1/2013	0.25 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-4D	EMW-4D-0713	7/11/2013	0.3 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-4D	EMW-4D-100113	10/1/2013	0.36 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-5S	EMW-5S-0713	7/12/2013	0.28 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-5S	EMW-5S-100213	10/2/2013	0.19 B	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-6S	EMW-6S-0713	7/10/2013	0.54 E	0.086 U	0.068 U	0.087 lc	0.05 U	0.044 U
EMW-6S	EMW-6S-100213	10/2/2013	0.19 B	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-7S	EMW-7S-0713	7/11/2013	0.79 E	0.086 U	0.068 U	0.16 lc	0.05 U	0.044 U
EMW-7S	EMW-7S-100213	10/2/2013	0.24 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U

**Table 14
Groundwater Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington**

Location	Sample ID	Sample Date	Bis(2-ethylhexyl) phthalate (µg/L)	Butyl benzyl phthalate (µg/L)	Dibutyl phthalate (µg/L)	Diethyl phthalate (µg/L)	Dimethyl phthalate (µg/L)	Di-N-Octyl Phthalate (µg/L)
Preliminary Groundwater Cleanup Levels^a (µg/L)			1.2	0.41	46.6	484	143	0.3
Preliminary Groundwater Screening Levels^b (µg/L)			1.2	0.41	46.6	484	143	0.3
2013 Laboratory Practical Quantitation Limits (µg/L)			0.17	0.086	0.068	0.06	0.05	0.044
EMW-8S	EMW-8S-0713	7/12/2013	0.35 E	0.086 UJ	0.068 U	0.06 U	0.05 U	0.044 UJ
EMW-8S	EMW-8S-100313	10/3/2013	0.18	0.086 U	0.068 U	0.065	0.05 U	0.044 U
EMW-9S	EMW-9S-0713	7/12/2013	0.3 E	0.086 UJ	0.068 UJ	0.06 UJ	0.05 UJ	0.044 UJ
EMW-9S	EMW-9S-093013	9/30/2013	0.17 E	0.086 U	0.068 U	0.077	0.05 U	0.044 U
EMW-10D	EMW-10D-0713	7/10/2013	0.51 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-10D	EMW-56D-0713(dupl.)	7/10/2013	0.73 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-10D	EMW-10D-100113	10/1/2013	0.3 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-10D	EMW-56D-100113(dupl.)	10/1/2013	0.31 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-11S	EMW-11S-0713	7/11/2013	0.49 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-11S	EMW-11S-093013	9/30/2013	0.2 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-12S	EMW-12S-0713	7/12/2013	0.45 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-12S	EMW-12S-100313	10/3/2013	0.24 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-13S	EMW-13S-0713	7/11/2013	0.35 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-13S	EMW-13S-100113	10/1/2013	0.41 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-14D	EMW-14D-0713	7/11/2013	0.33 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 UJ
EMW-14D	EMW-14D-093013	9/30/2013	0.17 U	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-15D	EMW-15D-0713	7/11/2013	0.33 E	0.086 UJ	0.068 U	0.06 U	0.05 U	0.044 UJ
EMW-15D	EMW-15D-100113	10/1/2013	0.33 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
EMW-16D	EMW-16D-0713	7/11/2013	0.22 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 UJ
EMW-16D	EMW-16D-100213	10/2/2013	0.19 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
FMW-1	FMW-1	4/27/1990	29 B	ND U	ND U	ND U	ND U	ND U
FMW-2	FMW-2	4/27/1990	6.7 B	ND U	ND U	ND U	ND U	ND U
FMW-3	FMW-3	4/27/1990	17 B	ND U	ND U	ND U	ND U	ND U
HC-1	HC1/WELL-111888	11/18/1988	4 B	2 U	4 U	2 U	2 U	2 U
HC-2	HC2/MWHC2-111788	11/17/1988	5 B	2 U	4 U	2 U	2 U	2 U
HC-4	HC4/WELL-111888	11/18/1988	6 B	2 U	4 U	2 U	2 U	2 U
HC-20	HC-20-0713	7/11/2013	0.67 E	0.086 U	0.068 U	0.08 lc	0.05 U	0.044 U
HC-20	HC-20-100113	10/1/2013	0.4 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
MW-1 (1988)	MW-1-1	11/17/1988	47 B	2 U	4 U	2 U	2 U	2 U
SLR-1	SLR1-082511	8/23/2011	1.43 U	0.54 U	1 U	1 U	1 U	1 U
SLR-1	SLR-1-0713	7/11/2013	0.64 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
SLR-1	SLR-1-100313	10/3/2013	0.3 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
SLR-2	SLR2-082511	8/23/2011	1.43 U	0.54 U	1 U	1 U	1 U	1 U
SLR-2	SLR-2-0713	7/11/2013	0.53 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
SLR-2	SLR-2-100213	10/2/2013	0.23 B	0.086 U	0.068 U	0.14	0.05 U	0.044 U
SLR-3	SLR3-082511	8/23/2011	1.43 U	0.54 U	1 U	1 U	1 U	1 U
SLR-3	SLR-3-0713	7/12/2013	1.7 U	0.86 U	0.68 U	0.6 U	0.5 U	0.44 U
SLR-3	SLR-3-100313	10/3/2013	1 E	0.086 U	0.068 U	0.065	0.05 U	0.044 U
SLR-6	SLR6-082511	8/23/2011	1.43 U	0.54 U	1 U	1 U	1 U	1 U
SLR-6	SLR-6-0713	7/12/2013	0.82 E	0.086 U	0.068 U	0.17 lc	0.05 U	0.044 U
SLR-6	SLR-6-100113	10/1/2013	0.36 E	0.086 U	0.068 U	0.13	0.05 U	0.044 U
SLR-7	SLR7-082511	8/23/2011	1.43 U	0.54 U	1 U	1 U	1 U	1 U
SLR-7	SLR-7-0713	7/11/2013	0.31 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
SLR-7	SLR-7-100113	10/1/2013	0.31 B	0.086 UJ	0.068 U	0.06 U	0.05 U	0.044 UJ
Groundwater Seep Samples								
Seep-1	Seep-1	7/24/2013	1.2 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
Seep-2	Seep-2	7/24/2013	0.28 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 UJ
Seep-3	Seep-3	7/24/2013	1.7 U	0.86 U	0.68 U	0.6 U	0.5 U	0.44 U
Seep-4	Seep-4	7/23/2013	0.51 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U
Seep-5	Seep-5	7/23/2013	0.55 E	0.086 U	0.068 U	0.06 U	0.05 U	0.044 U

Table 14
Groundwater Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Bis(2-ethylhexyl) phthalate (µg/L)	Butyl benzyl phthalate (µg/L)	Dibutyl phthalate (µg/L)	Diethyl phthalate (µg/L)	Dimethyl phthalate (µg/L)	Di-N-Octyl Phthalate (µg/L)
Preliminary Groundwater Cleanup Levels^a (µg/L)			1.2	0.41	46.6	484	143	0.3
Preliminary Groundwater Screening Levels^b (µg/L)			1.2	0.41	46.6	484	143	0.3
2013 Laboratory Practical Quantitation Limits (µg/L)			0.17	0.086	0.068	0.06	0.05	0.044

Notes:
 Non-detected values highlighted in blue exceed the preliminary groundwater cleanup levels at the groundwater compliance wells.
 Results that exceed the screening levels due to possible interference from laboratory contamination are highlighted in purple.
 Groundwater compliance wells are highlighted in green.
 µg/L = micrograms per liter.
 NA = Not analyzed
 U = The laboratory report noted that the analyte was not detected at or above the reported result.
 UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
 B = The laboratory report noted that the analyte was detected in the sample and method blank, and the reported result is sample concentration without correction or associated quantitation limit.
 E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
 Ic = The laboratory report noted that the presence of the compound indicated is likely due to laboratory contamination.
^a Preliminary cleanup levels are based on the most stringent ARAR that applies to the site conditions, the background concentration (if available), or the practical quantitation limit (PQL), whichever is higher.
^b Preliminary screening levels are based on the most stringent potential ARARs for the site, the background concentration (if available), or the PQL, whichever is higher.

Table 17
Catch Basin Solids Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			7.30	3.10	540	NV	3.70	35.6	310	40	0.41	140	3.0	6.1	0.52	410
2013 Laboratory Practical Quantitation Limits (mg/kg)			0.11	0.42	0.052	NV	0.2	0.47	0.071	0.05	0.002	0.21	0.91	0.079	0.044	0.97
DP1CB2	DP1CB2-061013	6/11/2013	0.85	9.19	173	0.12	1.5	30.9	77.7 E	84.3	0.27	20.5	0.91 U	0.13	0.046	543
DP1CB3	DP1CB3-061013	6/10/2013	0.68	3.87	122	0.17	0.87	19.1	53.4 E	52.6	0.097	20.8	0.91 U	0.15	0.043 U	285
DP2CB2	DP2CB2-061013	6/11/2013	2.61	8.05	158	0.13	1.68	51.3	187 E	78.7	0.1	41.9	0.91 U	0.34	0.043 U	882
DP2CB5	DP2CB5-060613	6/6/2013	1.87	5.57	71	0.13	0.91	87.5	62.4 E	344	0.06	21.6	0.91 U	0.13	0.084	429
DP3CB1	DP3CB1-060613	6/6/2013	12.7	13.8	156	0.86 U	8.84	161	289 E	81	0.055	130	9.12 U	0.78 U	0.43 U	1,380
DP3CB1	DP10CB1-060613(dupl.)	6/6/2013	7.1	12.9	167	0.86 U	2.04 U	154	295 E	87.2	0.44	119	9.12 U	0.78 U	0.43 U	1,910
DP3CB3	DP3CB3-060613	6/6/2013	2.42	4.22 U	92.7	0.86 U	2.04 U	22.7	53.1 E	42.4	0.091	24.9	9.12 U	0.78 U	0.67	256
DP3CB5	STORM13-121509	12/15/2009	NA	7.6	230	NA	1.5	81	NA	280	0.047	NA	3.1	0.78 U	NA	26.1
DP4CB2	DP4CB2-061013	6/11/2013	2.83	25.1	215	0.86 U	2.04 U	105	149 E	206	0.086	56.6	9.12 U	0.78 U	0.60	2,300
DP4CB3	CB37	2004	NA	20 U	NA	NA	NA	NA	173	250	0.08	NA	NA	NA	NA	1,220
DP4CB3	STORM14-121509	12/15/2009	NA	14	170	NA	1.6	65	NA	310	0.1	NA	2.2 U	1.1 U	NA	627
DP4CB4	DP4CB4-061013	6/10/2013	5.19	14.3	209	0.20	3.89	114	202 E	526	0.086	39.6	0.91 U	0.48	0.40	1,230
DP5CB1	DP5CB1-061013	6/11/2013	4.23	16.5	152	0.86 U	2.04 U	124	447 E	87.7	0.099	132	9.12 U	0.78 U	0.45	983
DP5CB1 and DP3CB1	CB123-071908	7/19/2008	NA	20	NA	NA	NA	NA	175	99	0.07 U	NA	NA	NA	NA	1,950
DP5CB4	DP5CB4-061013	6/11/2013	4.66	18.6	127	0.20	2.22	56.9	119 E	181	0.14	32.7	0.91 U	0.31	0.14	983
DP6CB1	STORM5-121509	12/15/2009	NA	4.4	160	NA	1.4	37	NA	110	0.052	NA	2.9	0.72 U	NA	27.2
DP6CB1	DP6CB1-060613	6/6/2013	3.93	24.4	73.7	0.86 U	2.04 U	45.9	95.9 E	95.6	0.044	31.6	9.12 U	0.78 U	0.43 U	922
DP6CB4	DP6CB4-061013	6/10/2013	4.17	8.61	102	0.16	2.01	87.8	163 E	327	0.1	35.4	0.91 U	0.38	0.23	878

Notes:

Detected values in bold and highlighted in yellow exceed the preliminary catch basin solids screening levels.
 Non-detected values highlighted in blue exceed the preliminary catch basin solids screening levels.
 mg/kg = milligrams per kilogram.
 NA = Not analyzed
 ND = Analyte not detected; however, the detection limit was not available.
 NV = No available value.
 U = The laboratory report noted that the analyte was not detected at or above the reported result.
 E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 18
Catch Basin Solids Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benz[a]anthracene (mg/kg)	Benzo[a]pyrene (mg/kg)	Benzo[b]fluoranthene (mg/kg)	Benzo[ghi]perylene (mg/kg)	Benzo[k]fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo[a,h]anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			0.50	0.56	0.96	0.062	0.062	0.062	0.67	0.062	0.062	0.062	1.7	0.54	0.062	2.1	1.5	2.6
2013 Laboratory Practical Quantitation Limits (mg/kg)			0.000007	0.000046	0.000044	0.00009	0.00011	0.000091	0.00017	0.00018	0.000095	0.00017	0.00014	0.000075	0.00031	0.00011	0.00016	0.00013
DP1CB2	DP1CB2-061013	6/11/2013	0.056 U	0.036 U	0.035 U	0.11	0.088 U	0.18	0.14 U	0.14 U	0.23	0.14 U	0.24	0.06 U	0.25 U	0.088 U	0.13 U	0.22
DP1CB3	DP1CB3-061013	6/10/2013	0.056 U	0.036 U	0.035 U	0.1	0.088 U	0.094	0.14 U	0.14 U	0.098	0.14 U	0.12	0.06 U	0.25 U	0.088 U	0.13 U	0.11
DP2CB2	DP2CB2-061013	6/11/2013	0.056 U	0.036 U	0.035 U	0.25	0.21	0.46	0.24	0.14 U	0.44	0.14 U	0.6	0.06 U	0.25 U	0.088 U	0.29	0.57
DP2CB5	DP2CB5-060613	6/6/2013	0.056 U	0.036 U	0.063	0.28	0.29	0.47	0.29	0.16	0.4	0.14 U	0.74	0.06 U	0.26	0.088 U	0.47	0.69
DP3CB1	DP3CB1-060613	6/6/2013	0.056 U	0.036 U	0.046	0.18	0.12	0.33	0.14 U	0.14 U	0.42	0.14 U	0.65	0.06 U	0.25 U	0.12	0.41	0.66
DP3CB1	DP10CB1-060613(dupl.)	6/6/2013	0.056 U	0.036 U	0.035 U	0.15	0.16	0.36	0.16	0.14 U	0.4	0.14 U	0.5	0.06 U	0.25 U	0.097	0.26	0.52
DP3CB3	DP3CB3-060613	6/6/2013	0.028 U	0.018 U	0.021	0.14	0.11	0.2	0.12	0.072 U	0.18	0.068 U	0.37	0.03 U	0.12 U	0.044 U	0.24	0.35
DP3CB5	STORM13-121509	12/15/2009	0.031 U	0.031 U	0.76	0.13	0.28	0.17	0.16	0.17	0.41	0.031 U	0.42	0.031 U	0.031 U	0.031 U	0.72	0.86
DP4CB2	DP4CB2-061013	6/11/2013	0.056 U	0.036 U	0.047	0.3	0.21	0.44	0.2	0.14 U	0.48	0.14 U	1	0.06 U	0.25 U	0.088 U	0.66	0.79
DP4CB3	CB37	2004	0.17	0.14 U	0.82	0.61	0.2	0.48	0.14 U	0.32	1	0.14 U	3.6	0.35	0.14 U	0.14 U	3	2.6
DP4CB3	STORM14-121509	12/15/2009	0.045 U	0.045 U	1.4	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.25	0.045 U	0.47	0.045 U	0.045 U	0.18	0.61	0.88
DP4CB4	DP4CB4-061013	6/10/2013	0.087	0.036 U	0.33	0.42	0.4	0.71	0.57	0.2	0.79	0.17	1.4	0.06 U	0.44	0.088 U	0.81	1.3
DP5CB1 and DP3CB1	CB123-071908	7/19/2008	NA	0.42 U	2.8	1.6	0.83	1.1	0.29 J	1.4	2.8	0.42 U	11	NA	0.23 J	0.36 J	11	5.6
DP5CB1	DP5CB1-061013	6/11/2013	0.056 U	0.036 U	0.084	0.27	0.14	0.4	0.17	0.14 U	0.56	0.14 U	0.73	0.06 U	0.25 U	0.088 U	0.38	0.79
DP5CB4	DP5CB4-061013	6/11/2013	0.056 U	0.036 U	0.17	0.5	0.31	0.88	0.24	0.28	1.1	0.14 U	0.92	0.06 U	0.25	0.088 U	0.27	1.1
DP6CB1	STORM5-121509	12/15/2009	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.084	0.029 U	0.029 U	0.029 U	0.029 U	0.2
DP6CB1	DP6CB1-060613	6/6/2013	0.056 U	0.036 U	0.34	0.21	0.13	0.33	0.14 U	0.14 U	0.38	0.14 U	0.63	0.06 U	0.25 U	0.088 U	0.54	0.52
DP6CB4	DP6CB4-061013	6/10/2013	0.056 U	0.036 U	0.035 U	0.24	0.2	0.34	0.28	0.14 U	0.38	0.14 U	0.69	0.06 U	0.25 U	0.088 U	0.44	0.73

Notes:
 Detected values in bold and highlighted in yellow exceed the preliminary catch basin solids screening levels.
 Non-detected values highlighted in blue exceed the preliminary catch basin solids screening levels.
 mg/kg = milligrams per kilogram
 NA = Not analyzed.
 U = The laboratory report noted that the analyte was not detected at or above the reported result.
 J = The laboratory report noted that the reported result is an estimate because the internal standard associated with the analyte is out of control limits.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 19
Catch Basin Solids Sample Analytical Results - PCBs and Petroleum Hydrocarbons
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	PCBs								Petroleum Hydrocarbons				
			Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCBs (U=1/2 MRL) (mg/kg)	Total PCBs (U=0) (mg/kg)	Gasoline Range Organics (mg/kg)	Diesel Range Organics (mg/kg)	Heavy Oil Range Organics (mg/kg)	
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			NV	NV	NV	NV	NV	NV	NV	NV	0.23	0.23	NV	NV	NV
2013 Laboratory Practical Quantitation Limits (mg/kg)			NV	NV	NV	NV	NV	NV	NV	NV	0.23	0.23	NV	NV	NV
DP1CB2	DP1CB2-061013	6/11/2013	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.16 U	0 U	2.7	300	2,600
DP1CB3	DP1CB3-061013	6/10/2013	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.16 U	0 U	0.73	88	1,400
DP2CB2	DP2CB2-061013	6/11/2013	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	2.31 U	0 U	1	720	7,900
DP2CB5	DP2CB5-060613	6/6/2013	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.16 U	0 U	1.1	180	1,900
DP3CB1	DP10CB1-060613(dupl.)	6/6/2013	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.16 U	0 U	0.55	240	2,300
DP3CB1	DP3CB1-060613	6/6/2013	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.16 U	0 U	0.57	210	2,200
DP3CB3	DP3CB3-060613	6/6/2013	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.16 U	0 U	0.65	220	2,600
DP3CB5	STORM13-121509	12/15/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.39	81	760
DP4CB2	DP4CB2-061013	6/11/2013	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	2.31 U	0 U	0.83	750	7,800
DP4CB3	CB37	2004	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	180	650
DP4CB3	STORM14-121509	12/15/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.79	130	990
DP4CB4	DP4CB4-061013	6/10/2013	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	2.31 U	0 U	0.87	6,000	21,000
DP5CB1	DP5CB1-061013	6/11/2013	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	2.31 U	0 U	0.82	2,200	19,000
DP5CB4	DP5CB4-061013	6/11/2013	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	2.31 U	0 U	0.77	1,900	15,000
DP5CB1 and DP3CB1	CB123-071908	7/19/2008	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.079 U	NA	NA	NA	810	1,600
DP6CB1	STORM5-121509	12/15/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14 U	82	490
DP6CB1	DP6CB1-060613	6/6/2013	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	1.16 U	0 U	0.43	230	1,600
DP6CB4	DP6CB4-061013	6/10/2013	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	2.31 U	0 U	9.6	3,100	7,500

Notes:
Non-detected values highlighted in blue exceed the preliminary catch basin solids screening levels.
mg/kg = milligrams per kilogram.
NA = Not analyzed.
NV = No available value.
U = Analyte was not detected at or above the reported result.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 20
Catch Basin Solids Sample Analytical Results - Phenols
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)	2,4-Dichlorophenol (mg/kg)	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2-Chlorophenol (mg/kg)	2-Methylphenol (o-Cresol) (mg/kg)	2-Nitrophenol (mg/kg)	3-Methylphenol and 4-Methylphenol coelution (mg/kg)	4,6-Dinitro-2-Methylphenol (mg/kg)	4-Chloro-3-methylphenol (mg/kg)	4-Nitrophenol (mg/kg)	Pentachlorophenol (mg/kg)	Phenol (mg/kg)
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			NV	NV	NV	0.029	NV	NV	0.063	NV	0.67	NV	NV	NV	0.36	0.42
2013 Laboratory Practical Quantitation Limits (mg/kg)			0.0097	0.0081	0.0058	0.0186	0.0139	0.0061	0.0065	0.0083	0.0145	0.0106	0.0045	0.0177	0.0062	0.0054
DP1CB2	DP1CB2-061013	6/11/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP1CB3	DP1CB3-061013	6/10/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP2CB2	DP2CB2-061013	6/11/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP2CB5	DP2CB5-060613	6/6/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP3CB1	DP3CB1-060613	6/6/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP3CB1	DP10CB1-060613(dupl.)	6/6/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP3CB3	DP3CB3-060613	6/6/2013	1.9 U	1.6 U	1.2 U	3.7 U	2.8 U	1.2 U	1.3 U	1.6 U	2.9 U	2.1 U	0.88 U	3.6 U	1.2 U	1.1 U
DP4CB2	DP4CB2-061013	6/11/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP4CB4	DP4CB4-061013	6/10/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP5CB1	DP5CB1-061013	6/11/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP5CB1andDP3CB1	CB123-071908	7/19/2008	NA	NA	NA	4.2 U	NA	NA	0.42 U	NA	NA	NA	NA	NA	2.1 U	0.42 U
DP5CB4	DP5CB4-061013	6/11/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP6CB1	DP6CB1-060613	6/6/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U
DP6CB4	DP6CB4-061013	6/10/2013	3.8 U	3.2 U	2.3 U	7.4 U	5.5 U	2.5 U	2.6 U	3.3 U	5.8 U	4.2 U	1.8 U	7.1 U	2.5 U	2.2 U

Notes:
Non-detected values highlighted in blue exceed the preliminary catch basin solids screening levels.
mg/kg = milligrams per kilogram.
NA = Not analyzed
NV = No value available.
U = The laboratory noted that the analyte was not detected at or above the reported result.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 21
Catch Basin Solids Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Bis(2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Dibutyl phthalate(mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			1.3	0.063	1.4	0.2	0.071	6.2
2013 Laboratory Practical Quantitation Limits (mg/kg)			0.014	0.0058	0.02	0.0041	0.0012	0.0033
DP1CB2	DP1CB2-061013	6/11/2013	9.1	2.3 U	8 U	1.6 U	0.48 U	1.4 UJ
DP1CB3	DP1CB3-061013	6/10/2013	5.4 U	2.3 U	8 U	1.6 U	0.48 U	1.4 U
DP2CB2	DP2CB2-061013	6/11/2013	6.6	2.3 U	8 U	1.6 U	0.48 U	1.4 U
DP2CB5	DP2CB5-060613	6/6/2013	6.2	7.6	8 U	1.6 U	0.48 U	1.4 U
DP3CB1	DP3CB1-060613	6/6/2013	7.7	2.3 U	8 U	4.9	0.48 U	1.4 U
DP3CB1	DP10CB1-060613(dupl.)	6/6/2013	7.7 E	2.3 UJ	8 U	3.1	0.48 U	1.4 UJ
DP3CB3	DP3CB3-060613	6/6/2013	2.7 U	1.2 U	4 U	0.8 U	0.24 U	0.68 U
DP4CB2	DP4CB2-061013	6/11/2013	55	2.3 U	8 U	1.6 U	0.48 U	1.4 U
DP4CB3	CB37	2004	1.6	1.3	0.14 U	0.14 U	0.28	0.14 U
DP4CB4	DP4CB4-061013	6/10/2013	5.4 U	3.2	8 U	1.6 U	0.48 U	2.2
DP5CB1	DP5CB1-061013	6/11/2013	20	2.3 U	8 U	9.7	0.48 U	1.4 U
DP5CB1 and DP3CB1	CB123-071908	7/19/2008	1.7 B	2.4	0.42 U	0.42 U	0.42 U	0.42 U
DP5CB4	DP5CB4-061013	6/11/2013	24	2.3 U	8 U	1.6 U	0.48 U	1.4 U
DP6CB1	DP6CB1-060613	6/6/2013	5.4 U	2.3 U	8 U	1.6 U	0.48 U	1.4 U
DP6CB4	DP6CB4-061013	6/10/2013	40	2.3 U	8 U	1.6 U	0.48 U	2.8

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary catch basin solids screening levels.
Non-detected values highlighted in blue exceed the preliminary catch basin solids screening levels.
Results that exceed the screening levels due to possible interference from laboratory contamination are highlighted in purple.
mg/kg = milligrams per kilogram.
U = The laboratory noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
B = The laboratory report noted that the analyte was detected in the sample and method blank, and the reported result is sample concentration without blank correction or associated quantitation limit.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 22
 Catch Basin Solids Sample Analytical Results - SVOCs
 8th Avenue Terminals, Inc. Site
 Seattle, Washington

Location	Sample ID	Sample Date	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	2,4-Dinitrotoluene (mg/kg)	2,6-Dinitrotoluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	2-Nitroaniline (mg/kg)	4-Bromophenyl phenyl ether (mg/kg)	4-Chloroaniline (mg/kg)	4-Chlorophenyl-Phenylether (mg/kg)	4-Nitroaniline (mg/kg)	Benzoic acid (mg/kg)	Benzyl alcohol (mg/kg)	Bis(2-chloroethoxy)methane (mg/kg)	Bis(2-Chloroethyl) Ether (mg/kg)	Bis(2-chloroisopropyl) ether (mg/kg)	Carbazole (mg/kg)	Dibenzofuran (mg/kg)	Hexachloro-benzene (mg/kg)	Hexachloro-butadiene (mg/kg)	Hexachlorocyclopentadiene (mg/kg)	Hexachloro-ethane (mg/kg)	Isophorone (mg/kg)	m-Nitroaniline (mg/kg)	Nitrobenzene (mg/kg)	N-Nitrosodi-n-propylamine (mg/kg)	N-Nitrosodi-phenylamine (mg/kg)				
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			0.031	0.035	0.17	0.11	NV	NV	NV	0.67	NV	NV	NV	NV	0.65	0.057	NV	NV	NV	NV	0.54	0.022	0.011	NV	NV	NV	NV	NV	0.0011	0.0022	0.0033	0.0017	0.0026	0.0031	0.0048
2013 Laboratory Practical Quantitation Limits (mg/kg)			0.0034	0.004	0.0027	0.0024	0.0016	0.0019	0.0014	0.001	0.0026	0.0016	0.18	0.0016	0.18	0.055	0.00051	0.0014	0.0016	0.0016	0.002	0.001	0.001	0.002	0.0022	0.0033	0.0011	0.017	0.0026	0.0031	0.0048				
DP1CB2	DP1CB2-061013	6/11/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP1CB3	DP1CB3-061013	6/10/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP2CB2	DP2CB2-061013	6/11/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP2CB5	DP2CB5-060613	6/6/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP3CB1	DP3CB1-060613	6/6/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP3CB1	DP10CB1-060613(dupl.)	6/6/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP3CB3	DP3CB3-060613	6/6/2013	0.68 U	0.8 U	0.52 U	0.48 U	0.32 U	0.36 U	0.28 U	0.2 U	0.52 U	0.32 U	36 U	0.32 U	3.6 U	11 U	1 U	0.28 U	0.32 U	0.32 U	0.4 U	0.2 U	0.2 U	0.4 U	0.44 U	0.68 U	0.24 U	3.5 U	0.52 U	0.6 U	0.2 U				
DP4CB2	DP4CB2-061013	6/11/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP4CB4	DP4CB4-061013	6/10/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP5CB1	DP5CB1-061013	6/11/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP5CB1 and DP3CB1	CB123-071908	7/19/2008	NA	NA	NA	NA	NA	NA	NA	0.57	NA	NA	NA	NA	4.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
DP5CB4	DP5CB4-061013	6/11/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP6CB1	DP6CB1-060613	6/6/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			
DP6CB4	DP6CB4-061013	6/10/2013	1.4 U	1.6 U	1 U	0.96 U	0.64 U	0.72 U	0.56 U	0.4 U	1 U	0.64 U	71 U	0.64 U	7.3 U	22 U	2 U	0.56 U	0.64 U	0.64 U	0.8 U	0.4 U	0.4 U	0.8 U	0.88 U	1.4 U	0.48 U	7 U	1 U	1.2 U	1.2 U	0.4 U			

Notes:
 Detected values in bold and highlighted in yellow exceed the preliminary catch basin solids screening level.
 Non-detected values highlighted in blue exceed the preliminary catch basin solids screening level.
 mg/kg = milligrams per kilogram
 NA = Not analyzed
 NV = No value available.
 U = The laboratory report noted that the analyte was not detected at or above the reported result
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 24
Catch Basin Solids Sample Analytical Results - Dioxins/Furans
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Individual Dioxin/Furan Compounds																
			2,3,7,8-TCDD (mg/kg)	1,2,3,7,8-PeCDD (mg/kg)	1,2,3,4,7,8-HxCDD (mg/kg)	1,2,3,6,7,8-HxCDD (mg/kg)	1,2,3,7,8,9-HxCDD (mg/kg)	1,2,3,4,6,7,8-HpCDD (mg/kg)	OCDD (mg/kg)	2,3,7,8-TCDF (mg/kg)	1,2,3,7,8-PeCDF (mg/kg)	2,3,4,7,8-PeCDF (mg/kg)	1,2,3,4,7,8-HxCDF (mg/kg)	1,2,3,6,7,8-HxCDF (mg/kg)	2,3,4,6,7,8-HxCDF (mg/kg)	1,2,3,7,8,9-HxCDF (mg/kg)	1,2,3,4,6,7,8-HpCDF (mg/kg)	1,2,3,4,7,8,9-HpCDF (mg/kg)	OCDF (mg/kg)
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
2013 Laboratory Practical Quantitation Limits (mg/kg)			NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
DP4CB4	DP4CB4-061013	6/10/2013	3.42E-06	1.51E-05	2.48E-05	5.11E-05	4.41E-05	1.20E-03	8.80E-03	8.29E-06	5.78E-06	1.30E-05	1.41E-05	1.45E-05	2.08E-05	1.95E-06 JT	2.12E-04	1.24E-05	4.37E-04
DP6CB1	DP6CB1-060613	6/6/2013	3.45E-05	7.68E-05	7.84E-05	2.06E-04	2.37E-04	5.89E-03 E	2.87E-02 E	2.64E-06	2.50E-06	5.23E-06	6.25E-06	7.41E-06	1.12E-05	8.44E-08 U	9.12E-05	6.78E-06	1.28E-04

Location	Sample ID	Sample Date	Total Dioxin/Furan Compounds								Toxicity Equivalence		
			Total TCDD (mg/kg)	Total PeCDD (mg/kg)	Total HxCDD (mg/kg)	Total HpCDD (mg/kg)	Total TCDF (mg/kg)	Total PeCDF (mg/kg)	Total HxCDF (mg/kg)	Total HpCDF (mg/kg)	2,3,7,8-TCDD TEQ (U = 1/2 MRL) (mg/kg)	2,3,7,8-TCDD TEQ (U = 0) (mg/kg)	
Preliminary Catch Basin Solids Screening Levels^a (mg/kg)			NV	NV	NV	NV	NV	NV	NV	NV	NV	2.20E-06	2.20E-06
2013 Laboratory Practical Quantitation Limits (mg/kg)			NV	NV	NV	NV	NV	NV	NV	NV	NV	1.20E-07	1.20E-07
DP4CB4	DP4CB4-061013	6/10/2013	4.60E-05	1.49E-04	5.50E-04	2.63E-03	1.70E-04	2.19E-04	3.62E-04	5.20E-04	5.77E-05	5.77E-05	
DP6CB1	DP6CB1-060613	6/6/2013	1.15E-04	3.51E-04	2.39E-03	1.07E-02	4.57E-05	8.19E-05	1.98E-04	2.41E-04	2.36E-04	2.36E-04	

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary catch basin solids screening levels
NV = No available value.
mg/kg = milligrams per kilogram.
U = The laboratory report noted that the analyte was not detected at or above the reported result
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range
JT = The laboratory report noted that the analyte was positively identified and the reported result is an estimate below the associated quantitation limit, but above the method detection limit
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher

Table 25
Storm Water Sample Analytical Results - Total Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Lead (µg/L)	Mercury (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Zinc (µg/L)	Total Suspended Solids (mg/L)	Chloride (mg/L)	Total Organic Carbon (mg/L)
Preliminary Storm Water Screening Levels^a (µg/L)			3.87	5	2	4	15.9	50	2.4	2.5	0.012	8.2	5	22	0.47	56	NV	NV	NV
2013 Laboratory Practical Quantitation Limits (µg/L)			0.052	0.15	0.25	0.098	0.094	0.14	0.34	0.144	0.00015	0.36	0.56	0.064	0.074	0.61	NV	NV	NV
OF1	OF-1-062613	6/26/2013	1.04	1.33	38.6	0.098 U	0.15	2.2	15.8	2.43	0.0065	2.31	0.56 U	0.064 U	0.074 UJ	81	24	2.2	11.3
OF2	OF-2-062613	6/26/2013	1.52	2.31	56	0.098 U	0.20	4.16	21.1	4.98	0.01	3.87	0.56 U	0.064 U	0.074 UJ	91.9	23	4.9	19.2
OF3	OF-3-062613	6/26/2013	1.14	3.13	40.8	0.098 U	0.39	3.56	18.7	5.75	0.012	4.69	0.56 U	0.064 U	0.074 UJ	89.9	20	15	22.8
OF4	OF-4-062613	6/26/2013	1.55	2.28	33.3	0.098 U	0.25	3.76	35.4	5.37	0.013	3.3	0.56 U	0.064 U	0.074 UJ	134	10	4.8	10.7
OF5	OF-5-062613	6/26/2013	0.93	1.23	28	0.098 U	0.24	2.12	16.9	3.99	0.006	3.05	0.56 U	0.064 U	0.074 UJ	134	10 U	3.1	10.8
OF6	OF-6-062613	6/26/2013	1.71	2.15	27	0.098 U	0.16	2.39	13.1	3.58	0.0051	2.09	0.56 U	0.064 U	0.074 UJ	183	12	37	7.33

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary storm water screening levels.
µg/L = micrograms per liter.
mg/L = milligrams per liter.
NV = No available value.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher. However, if there is an ARAR for surface water discharge (NPDES), then the NPDES value was selected as the storm water screening level.

Table 26
Storm Water Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benz[a]anthracene (µg/L)	Benzo[a]pyrene (µg/L)	Benzo[b]fluoranthene (µg/L)	Benzo[ghi]perylene (µg/L)	Benzo[k]fluoranthene (µg/L)	Chrysene (µg/L)	Dibenzo[a,h]anthracene (µg/L)	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
Preliminary Storm Water Screening Levels ^a (µg/L)			643	10.8	2,400	0.0042	0.0078	0.0052	0.0044	0.0076	0.0038	0.004	90.2	640	0.007	160	4.8	9.8
2013 Laboratory Practical Quantitation Limits (µg/L)			0.0038	0.0024	0.0027	0.0042	0.0078	0.0052	0.0044	0.0076	0.0038	0.004	0.0047	0.004	0.007	0.004	0.0066	0.0037
OF1	OF-1-062613	6/26/2013	0.0038 U	0.0024 U	0.0029	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.0043	0.004 U	0.015	0.004 U	0.007 U	0.0045	0.0075	0.0077
OF2	OF-2-062613	6/26/2013	0.0038 U	0.0024 U	0.0054	0.0055	0.0078 U	0.0071	0.0044 U	0.0076 U	0.017	0.004 U	0.019	0.004 U	0.007 U	0.004 U	0.0075	0.025
OF3	OF-3-062613	6/26/2013	0.0038 U	0.0024 U	0.0045	0.0048 E	0.0078 UJ	0.0053 E	0.0044 UJ	0.0076 UJ	0.0088 E	0.004 UJ	0.014	0.004 U	0.007 UJ	0.004	0.0083	0.019
OF4	OF-4-062613	6/26/2013	0.0038 U	0.0024 U	0.003	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.0038 U	0.004 U	0.007	0.004 U	0.007 U	0.004 U	0.0066 U	0.0054
OF5	OF-5-062613	6/26/2013	0.0038 U	0.0024 U	0.013	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.012	0.004 U	0.014	0.004 U	0.007 U	0.004 U	0.011	0.02
OF6	OF-6-062613	6/26/2013	0.0038 U	0.0024 U	0.003	0.0042 U	0.0078 U	0.0052 U	0.0044 U	0.0076 U	0.0059	0.004 U	0.0077	0.004 U	0.007 U	0.0045	0.0066 U	0.008
<p>Notes:</p> <p>Detected values in bold and highlighted in yellow exceed the preliminary storm water screening levels.</p> <p>µg/L = micrograms per liter</p> <p>U = The laboratory report noted that the analyte was not detected at or above the reported result.</p> <p>UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.</p> <p>E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.</p> <p>^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher. However, if there is an ARAR for surface water discharge (NPDES), then the NPDES value was selected as the stormwater screening level.</p>																		

Table 27
Storm Water Sample Analytical Results - PCBs and Petroleum Hydrocarbons
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	PCBs							Petroleum Hydrocarbons			
			Aroclor 1016 (µg/L)	Aroclor 1221 (µg/L)	Aroclor 1232 (µg/L)	Aroclor 1242 (µg/L)	Aroclor 1248 (µg/L)	Aroclor 1254 (µg/L)	Aroclor 1260 (µg/L)	Gasoline Range Organics (µg/L)	Diesel Range Organics (µg/L)	Heavy Oil Range Organics (µg/L)	
Preliminary Storm Water Screening Levels^a (µg/L)			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	800	500	500
2013 Laboratory Practical Quantitation Limits (µg/L)			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	12	6.9	52
OF1	OF-1-062613	6/26/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	18	120
OF2	OF-2-062613	6/26/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	420	1,400
OF3	OF-3-062613	6/26/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	63	510
OF4	OF-4-062613	6/26/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	26	130
OF5	OF-5-062613	6/26/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	27	190
OF6	OF-6-062613	6/26/2013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	12 U	43	240

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary storm water screening levels.
µg/L = micrograms per liter.
NA = Not analyzed
U = The laboratory report noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher. However, if there is an ARAR for surface water discharge (NPDES), then the NPDES value was selected as the storm water screening level.

Table 28
Storm Water Sample Analytical Results - Phenols
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	2,3,4,5-Tetrachlorophenol (µg/L)	2,3,4-Trichlorophenol (µg/L)	2,3,5,6-Tetrachlorophenol (µg/L)	2,3,6-Trichlorophenol (µg/L)	2,4,5-Trichlorophenol (µg/L)	2,4,6-Trichlorophenol (µg/L)	2,4-Dichlorophenol (µg/L)	2,4-Dimethylphenol (µg/L)	2,4-Dinitrophenol (µg/L)	2-Chlorophenol (µg/L)	(2-Methylphenol)o-Cresol (µg/L)	2-Nitrophenol (µg/L)	3,4,5-Trichlorophenol (µg/L)	3-Methylphenol and 4-Methylphenol coelution (µg/L)	4,6-Dinitro-2-Methylphenol (µg/L)	4-Chloro-3-methylphenol (µg/L)	4-Methylphenol (p-Cresol) (µg/L)	4-Nitrophenol (µg/L)	Pentachlorophenol (µg/L)	Phenol (µg/L)
Preliminary Storm Water Screening Levels^a (µg/L)			NV	NV	NV	NV	NV	0.56	NV	0.3	NV	NV	7.11	NV	NV	77.2	NV	NV	NV	NV	1.47	78.4
2013 Laboratory Practical Quantitation Limits (µg/L)			NV	NV	NV	NV	0.22	0.28	NV	0.28	2.4	0.016	0.26	0.17	NV	0.4	0.38	0.24	NV	1.3	0.32	0.14
OF1	OF-1-062613	6/26/2013	NA	NA	NA	NA	0.22 U	0.28 U	0.26 U	0.28 UJ	2.4 U	0.16 U	0.26 U	0.17 U	NA	0.4 U	0.38 U	0.24 U	NA	1.3 U	0.32 U	0.14 U
OF2	OF-2-062613	6/26/2013	NA	NA	NA	NA	0.22 U	0.28 U	0.26 U	0.28 UJ	2.4 U	0.16 U	0.26 U	0.17 U	NA	0.4 U	0.38 U	0.24 U	NA	1.3 U	0.32 U	0.14 U
OF3	OF-3-062613	6/26/2013	NA	NA	NA	NA	0.22 U	0.28 U	0.26 U	0.28 UJ	2.4 U	0.16 U	0.26 U	0.17 U	NA	0.4 U	0.38 U	0.24 U	NA	1.3 U	0.32 U	0.14 U
OF4	OF-4-062613	6/26/2013	NA	NA	NA	NA	0.22 U	0.28 U	0.26 U	0.28 UJ	2.4 U	0.16 U	0.26 U	0.17 U	NA	0.4 U	0.38 U	0.24 U	NA	1.3 U	0.32 U	0.14 U
OF5	OF-5-062613	6/26/2013	NA	NA	NA	NA	0.22 U	0.28 U	0.26 U	0.28 UJ	2.4 U	0.16 U	0.26 U	0.17 U	NA	0.4 U	0.38 U	0.24 U	NA	1.3 U	0.32 U	0.14 U
OF6	OF-6-062613	6/26/2013	NA	NA	NA	NA	0.22 U	0.28 U	0.26 U	0.28 UJ	2.4 U	0.16 U	0.26 U	0.17 U	NA	0.4 U	0.38 U	0.24 U	NA	1.3 U	0.32 U	0.14 U

Notes:
µg/L = micrograms per liter.
NA = Not analyzed
NV = No value available.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 29
Storm Water Sample and Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Bis(2-ethylhexyl) phthalate (µg/L)	Butyl benzyl phthalate (µg/L)	Dibutyl phthalate (µg/L)	Diethyl phthalate (µg/L)	Dimethyl phthalate (µg/L)	Di-n-octyl phthalate (µg/L)
Preliminary Storm Water Screening Levels^a (µg/L)			1.2	0.41	46.6	484	143	0.3
2013 Laboratory Practical Quantitation Limits (µg/L)			0.17	0.086	0.068	0.06	0.05	0.044
OF1	OF-1-062613	6/26/2013	1.4 E	0.086 UJ	0.068 U	0.27 E	0.3	0.044 U
OF2	OF-2-062613	6/26/2013	8.3 E	0.086 U	0.068 U	0.25 E	0.28	0.21 E
OF3	OF-3-062613	6/26/2013	3.6 E	0.086 U	0.068 U	0.77 E	0.08	0.14 E
OF4	OF-4-062613	6/26/2013	2.8 E	0.18	0.068 U	0.22 E	0.05 U	0.044 U
OF5	OF-5-062613	6/26/2013	1 E	0.086 U	0.07	0.22 E	0.077	0.044 U
OF6	OF-6-062613	6/26/2013	2.3 E	0.1	0.068 U	0.17 E	0.075	0.11 E

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary storm water screening levels.
µg/L = micrograms per liter.
NA = Not analyzed
U = The laboratory report noted that the analyte was not detected at or above the reported result.
UJ = The laboratory report noted that the analyte was not detected at or above the reported estimate.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

**Table 30
Storm Water Sample Analytical Results - SVOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington**

Location	Sample ID	Sample Date	1,2,4-Trichlorobenzene (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	2,4-Dinitrotoluene (µg/L)	2,6-Dinitrotoluene (µg/L)	2-Chloronaphthalene (µg/L)	2-Methyl-naphthalene (µg/L)	2-Nitroaniline (µg/L)	4-Bromophenyl phenyl ether (µg/L)	4-Chloroaniline (µg/L)	4-Chlorophenyl-Phenylether (µg/L)	4-Nitroaniline (µg/L)	Benzoic acid (µg/L)	Benzyl alcohol (µg/L)	Bis(2-chloroethoxy)methane (µg/L)	Bis(2-Chloroethyl)Ether (µg/L)	Bis(2-chloroisopropyl) ether (µg/L)	Carbazole (µg/L)	Dibenzofuran (µg/L)	Hexachlorobenzene (µg/L)	Hexachlorobutadiene (µg/L)	Hexachlorocyclopentadiene (µg/L)	Hexachloroethane (µg/L)	Isophorone (µg/L)	m-Nitroaniline (µg/L)	Nitrobenzene (µg/L)	N-Nitrosodi-n-propylamine (µg/L)	N-Nitrosodiphenylamine (µg/L)
Preliminary Storm Water Screening Levels^a (µg/L)			1.13	5.19	600	1.7	NV	NV	NV	18.2	NV	NV	NV	NV	NV	2,243	182	NV	NV	NV	NV	1.3	0.05	0.9	NV	NV	NV	NV	NV	NV	1.38
2013 Laboratory Practical Quantitation Limits (µg/L)			0.05	0.024	0.034	0.034	0.056	0.062	0.044	0.034	0.086	0.056	0.056	0.072	0.6	13.66	0.4	0.034	0.06	0.03	0.048	0.034	0.05	0.07	0.094	0.06	0.03	0.46	0.044	0.11	0.05
OF1	OF-1-062613	6/26/2013	0.05 U	0.024 U	0.034 U	0.068 U	0.056 U	0.062 U	0.044 U	0.034 U	0.086 U	0.056 U	0.056 U	0.072 U	0.6 U	7.4 U	0.4 U	0.034 U	0.06 U	0.03 U	0.048 U	0.034 U	0.05 U	0.07 U	0.094 U	0.06 U	0.035 U	0.46 U	0.044 U	0.11 U	0.05 U
OF2	OF-2-062613	6/26/2013	0.05 U	0.024 U	0.034 U	0.068 U	0.056 U	0.062 U	0.044 U	0.034 U	0.086 U	0.056 U	0.056 U	0.072 U	0.6 U	7.4 U	0.4 U	0.034 U	0.06 U	0.03 U	0.048 U	0.034 U	0.05 U	0.07 U	0.094 U	0.06 U	0.035 U	0.46 U	0.044 U	0.11 U	0.05 U
OF3	OF-3-062613	6/26/2013	0.05 U	0.024 U	0.034 U	0.068 U	0.056 U	0.062 U	0.044 U	0.034 U	0.086 U	0.056 U	0.056 U	0.072 U	0.6 U	7.4 U	0.4 U	0.034 U	0.06 U	0.03 U	0.048 U	0.034 U	0.05 U	0.07 U	0.094 U	0.06 U	0.035 U	0.46 U	0.044 U	0.11 U	0.05 U
OF4	OF-4-062613	6/26/2013	0.05 U	0.024 U	0.034 U	0.068 U	0.056 U	0.062 U	0.044 U	0.034 U	0.086 U	0.056 U	0.056 U	0.072 U	0.6 U	7.4 U	0.4 U	0.034 U	0.06 U	0.03 U	0.048 U	0.034 U	0.05 U	0.07 U	0.094 U	0.06 U	0.035 U	0.46 U	0.044 U	0.11 U	0.05 U
OF5	OF-5-062613	6/26/2013	0.05 U	0.024 U	0.034 U	0.068 U	0.056 U	0.062 U	0.044 U	0.034 U	0.086 U	0.056 U	0.056 U	0.072 U	0.6 U	7.4 U	0.4 U	0.034 U	0.06 U	0.03 U	0.048 U	0.034 U	0.05 U	0.07 U	0.094 U	0.06 U	0.032 U	0.46 U	0.044 U	0.11 U	0.05 U
OF6	OF-6-062613	6/26/2013	0.05 U	0.024 U	0.034 U	0.068 U	0.056 U	0.062 U	0.044 U	0.034 U	0.086 U	0.056 U	0.056 U	0.072 U	0.6 U	7.4 U	0.4 U	0.034 U	0.06 U	0.03 U	0.048 U	0.034 U	0.05 U	0.07 U	0.094 U	0.06 U	0.03 U	0.46 U	0.044 U	0.11 U	0.05 U

Notes:
µg/L = micrograms per liter.
NA = Not analyzed
NV = No value available.
U = The laboratory report noted that the analyte was not detected at or above the reported result
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 32
Intertidal Sediment Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Inches)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)
Preliminary Sediment Screening Levels^a (mg/kg)				7.30	3.10	540	NV	3.70	35.6	310	40	0.41	140	3.0	6.1	0.52	410
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.11	0.42	0.052	NV	0.2	0.47	0.071	0.05	0.002	0.21	0.91	0.079	0.044	0.97
IS-1	IS-1	7/23/2013	0 - 3	13.5	28.6	73.8	0.86 U	0.2 U	45.7	88.6	27.4	0.13	49	0.92 U	0.78 U	0.044 U	145
IS-2	IS-2	7/23/2013	0 - 3	3.3	26.2	81.2	0.86 U	2 U	40.3	88.7	74.5	0.1	27.7	0.92 U	0.78 U	0.44 U	388
IS-3	IS-3	7/23/2013	0 - 3	1.06 U	19	86	0.86 U	2 U	33.6	68.5	45.7	0.13	23.8	0.92 U	0.78 U	0.44 U	209
IS-4	IS-4	7/23/2013	0 - 3	5.67	30	96.7	0.86 U	2 U	38.8	110	96.5	0.16	29.8	0.92 U	0.78 U	0.044 U	398
IS-5	IS-5	7/24/2013	0 - 3	1.06 U	17.9	56.7	0.86 U	2.04 U	35.8	128	71.1	0.11	37.6	0.92 U	0.78 U	0.044 U	249

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary sediment screening levels.
Non-detected values highlighted in blue exceed the preliminary sediment screening levels.
mg/kg = milligrams per kilogram.
NV = No available value.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 33
Intertidal Sediment Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Inches)	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Anthracene (mg/kg)	Benzo(a)anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)	Benzo(b)fluoranthene (mg/kg)	Benzo(g,h,i)perylene (mg/kg)	Benzo(k)fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno(1,2,3-cd)pyrene (mg/kg)	Naphthalene (mg/kg)	Phenanthrene (mg/kg)	Pyrene (mg/kg)
Preliminary Sediment Screening Levels^a (mg/kg)				0.5	0.56	0.96	0.062	0.062	0.062	0.67	0.062	0.062	0.062	1.7	0.54	0.062	2.1	1.5	2.6
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.00014	0.00009	0.00009	0.0002	0.0002	0.0002	0.0003	0.0004	0.0002	0.0003	0.0003	0.0002	0.0006	0.0002	0.0003	0.0003
IS-1	IS-1	7/23/2013	0 - 3	0.007 U	0.0046 U	0.036	0.24	0.17	0.28	0.089	0.13	0.33	0.027	0.54	0.0078	0.11	0.011 U	0.11	0.51
IS-2	IS-2	7/23/2013	0 - 3	0.007 U	0.0093	0.043	0.13	0.099	0.27	0.068	0.074	0.2	0.017 U	0.32	0.012	0.078	0.011 U	0.13	0.31
IS-3	IS-3	7/23/2013	0 - 3	0.0082	0.013	0.038	0.13	0.093	0.24	0.074	0.079	0.28	0.017 U	0.42	0.0096	0.079	0.011 U	0.11	0.34
IS-4	IS-4	7/23/2013	0 - 3	0.01	0.018	0.056	0.16	0.16	0.33	0.17	0.11	0.33	0.034	0.52	0.011	0.17	0.011 U	0.24	0.49
IS-5	IS-5	7/24/2013	0 - 3	0.007 U	0.018	0.038	0.13	0.18	0.38	0.19	0.11	0.27	0.037	0.25	0.0075 U	0.19	0.011 U	0.082	0.23

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary sediment screening levels.
mg/kg = milligrams per kilogram
U = The laboratory report noted that the analyte was not detected at or above the reported result.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 34
Intertidal Sediment Sample Analytical Results - PCBs and Petroleum Hydrocarbons
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Inches)	PCBs								Petroleum Hydrocarbons			
				Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Total PCBs (U=1/2 MRL) (mg/kg)	Total PCBs (U=0) (mg/kg)	Diesel Range Organics (mg/kg)	Heavy Oil Range Organics (mg/kg)	
Preliminary Sediment Screening Levels^a (mg/kg)				NV	NV	NV	NV	NV	NV	NV	NV	0.23	0.23	NV	NV
2013 Laboratory Practical Quantitation Limits (mg/kg)				NV	NV	NV	NV	NV	NV	NV	NV	0.23	0.23	NV	NV
IS-1	IS-1	7/23/2013	0 - 3	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.16	0.19	0.43	0.35	38	230	
IS-2	IS-2	7/23/2013	0 - 3	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.09	0.13	0.30	0.22	740	6,100	
IS-3	IS-3	7/23/2013	0 - 3	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.18	0.2	0.46	0.38	100	640	
IS-4	IS-4	7/23/2013	0 - 3	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.34 E	0.56 E	0.98	0.9 E	63	470	
IS-5	IS-5	7/24/2013	0 - 3	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.25	0.24	0.57	0.49	49	320	

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary sediment screening levels.
mg/kg = milligrams per kilogram.
NV = No available value.
MRL = Method reporting limit.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 35
Intertidal Sediment Sample Analytical Results - Phenols
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Inches)	2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)	2,4-Dichlorophenol (mg/kg)	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2-Chlorophenol (mg/kg)	2-Nitrophenol (mg/kg)	3-Methylphenol and 4-Methylphenol coelution (mg/kg)	4,6-Dinitro-2-Methylphenol (mg/kg)	4-Chloro-3-methylphenol (mg/kg)	4-Nitrophenol (mg/kg)	2-Methylphenol(o-Cresol) (mg/kg)	Pentachlorophenol (mg/kg)	Phenol (mg/kg)
Preliminary Sediment Screening Levels^a (mg/kg)				NV	NV	NV	0.029	NV	NV	NV	0.67	NV	NV	NV	0.063	0.36	0.42
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.0097	0.0081	0.0058	0.0186	0.0139	0.0061	0.0083	0.0145	0.0106	0.0045	0.0177	0.0065	0.0062	0.0054
IS-1	IS-1	7/23/2013	0 - 3	0.01 U	0.008 U	0.006 U	0.019 U	0.014 U	0.006 U	0.008 U	0.014 U	0.011 U	0.004 U	0.018 U	0.006 U	0.024 E	0.27 U
IS-2	IS-2	7/23/2013	0 - 3	0.01 U	0.008 U	0.006 U	0.019 U	0.014 U	0.006 U	0.008 U	0.014 U	0.011 U	0.004 U	0.018 U	0.006 U	0.031 E	0.057
IS-3	IS-3	7/23/2013	0 - 3	0.01 U	0.008 U	0.006 U	0.019 U	0.014 U	0.006 U	0.008 U	0.014 U	0.011 U	0.004 U	0.018 U	0.006 U	0.033 E	0.27 U
IS-4	IS-4	7/23/2013	0 - 3	0.48 U	0.4 U	0.29 U	0.93 U	0.69 U	0.31 U	0.41 U	0.72 U	0.53 U	0.22 U	0.89 U	0.32 U	0.31 U	0.27 U
IS-5	IS-5	7/24/2013	0 - 3	0.01 U	0.008 U	0.006 U	0.019 U	0.014 U	0.006 U	0.008 U	0.014 U	0.011 U	0.004 U	0.018 U	0.006 U	0.018 E	0.005 U

Notes:
Non-detected values highlighted in blue exceed the preliminary sediment screening levels.
mg/kg = milligrams per kilogram.
NV = No value available.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 36
Intertidal Sediment Sample Analytical Results - Phthalates
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Inches)	Bis(2-ethylhexyl) phthalate (mg/kg)	Butyl benzyl phthalate (mg/kg)	Dibutyl phthalate (mg/kg)	Diethyl phthalate (mg/kg)	Dimethyl phthalate (mg/kg)	Di-n-octyl phthalate (mg/kg)
Preliminary Sediment Screening Levels^a (mg/kg)				1.3	0.063	1.4	0.2	0.071	6.2
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.014	0.0058	0.02	0.0041	0.0012	0.0033
IS-1	IS-1	7/23/2013	0 - 3	1.4 E	0.024	0.02 U	0.012	0.06 U	0.0032 U
IS-2	IS-2	7/23/2013	0 - 3	0.55	0.082	0.069	0.055	0.017	0.0032 U
IS-3	IS-3	7/23/2013	0 - 3	0.86 E	0.04	0.037	0.076	0.06 U	0.0032 U
IS-4	IS-4	7/23/2013	0 - 3	0.67 U	0.29 U	1 U	0.2 U	0.06 U	0.16 U
IS-5	IS-5	7/24/2013	0 - 3	0.4	0.044	0.02 U	0.016	0.0076	0.0032 U

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary sediment screening levels.
Non-detected values highlighted in blue exceed the preliminary sediment screening levels.
mg/kg = milligrams per kilogram.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
E = The laboratory report noted that the reported result is an estimate because it exceeds calibration range.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 37
Intertidal Sediment Sample Analytical Results - SVOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Inches)	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	2,4-Dinitrotoluene (mg/kg)	2,6-Dinitrotoluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	2-Nitroaniline (mg/kg)	4-Bromophenyl phenyl ether (mg/kg)	4-Chloroaniline (mg/kg)	4-Chlorophenyl-Phenylether (mg/kg)	4-Nitroaniline (mg/kg)	Benzoic acid (mg/kg)	Benzyl alcohol (mg/kg)	Bis(2-chloroethoxy)methane (mg/kg)	Bis(2-Chloroethyl)Ether (mg/kg)	Bis(2-chloroisopropyl) ether (mg/kg)	Carbazole (mg/kg)	Dibenzofuran (mg/kg)	Hexachlorobenzene (mg/kg)	Hexachlorobutadiene (mg/kg)	Hexachlorocyclopentadiene (mg/kg)	Hexachloroethane (mg/kg)	Isophorone (mg/kg)	m-Nitroaniline (mg/kg)	Nitrobenzene (mg/kg)	N-Nitrosodi-n-propylamine (mg/kg)	N-Nitrosodiphenylamine (mg/kg)
Preliminary Sediment Screening Levels ^a (mg/kg)				0.031	0.035	0.17	0.11	NV	NV	NV	0.67	NV	NV	NV	NV	NV	0.65	0.057	NV	NV	NV	0.54	0.022	0.011	NV	NV	NV	NV	NV	NV	NV	NV
2013 Laboratory Practical Quantitation Limits (mg/kg)				0.0034	0.004	0.0027	0.0024	0.0016	0.0019	0.0014	0.001	0.0026	0.0016	0.18	0.0016	0.0182	0.055	0.00051	0.0014	0.0016	0.0016	0.002	0.001	0.001	0.002	0.0022	0.0033	0.0011	0.0173	0.0026	0.0031	0.0048
IS-1	IS-1	7/23/2013	0 - 3	0.0034 U	0.004 U	0.0026 U	0.0024 U	0.0016 U	0.0019 U	0.0014 U	0.0058	0.0026 U	0.0016 U	0.18 U	0.0016 U	0.018 U	0.054 U	0.25 U	0.0014 U	0.0016 U	0.0016 U	0.1 U	0.0067	0.001 U	0.002 U	0.0022 U	0.0032 U	0.0011 U	0.017 U	0.0026 U	0.003 U	0.001 U
IS-2	IS-2	7/23/2013	0 - 3	0.0034 U	0.004 U	0.0026 U	0.0024 U	0.0016 U	0.0019 U	0.0014 U	0.011	0.0026 U	0.0016 U	0.18 U	0.0016 U	0.018 U	0.054 U	0.028	0.0014 U	0.0016 U	0.0016 U	0.087	0.018	0.001 U	0.002 U	0.0022 U	0.0032 U	0.0011 U	0.017 U	0.0026 U	0.003 U	0.001 U
IS-3	IS-3	7/23/2013	0 - 3	0.0034 U	0.004 U	0.0026 U	0.0024 U	0.0016 U	0.0019 U	0.0014 U	0.0044	0.0026 U	0.0016 U	0.18 U	0.0016 U	0.018 U	0.063	0.25 U	0.0014 U	0.0016 U	0.0016 U	0.1 U	0.0064	0.001 U	0.002 U	0.0022 U	0.0032 U	0.0011 U	0.017 U	0.0026 U	0.003 U	0.001 U
IS-4	IS-4	7/23/2013	0 - 3	0.17 U	0.2 U	0.13 U	0.12 U	0.079 U	0.094 U	0.072 U	0.051 U	0.13 U	0.082 U	8.9 U	0.079 U	0.91 U	2.7 U	0.25 U	0.072 U	0.079 U	0.079 U	0.1 U	0.051 U	0.051 U	0.1 U	0.11 U	0.16 U	0.056 U	0.87 U	0.13 U	0.15 U	0.051 U
IS-5	IS-5	7/24/2013	0 - 3	0.0034 U	0.004 U	0.0026 U	0.0024 U	0.0016 U	0.0019 U	0.0014 U	0.005	0.0026 U	0.0016 U	0.18 U	0.0016 U	0.018 U	0.056	0.012	0.0014 U	0.0016 U	0.0016 U	0.024	0.0063	0.001 U	0.002 U	0.0022 U	0.0032 U	0.0011 U	0.017 U	0.0026 U	0.003 U	0.0015

Notes:
Non-detected values highlighted in blue exceed the preliminary sediment screening levels
mg/kg = milligrams per kilogram
U = The laboratory report noted that the analyte was not detected at or above the reported result
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 38
Intertidal Sediment Sample Analytical Results - Dioxins/Furans
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Sample Date	Sample Depth (Inches)	Individual Dioxin/Furan Compounds																
				2,3,7,8-TCDD (mg/kg)	1,2,3,7,8-PeCDD (mg/kg)	1,2,3,4,7,8-HxCDD (mg/kg)	1,2,3,6,7,8-HxCDD (mg/kg)	1,2,3,7,8,9-HxCDD (mg/kg)	1,2,3,4,6,7,8-HpCDD (mg/kg)	OCDD (mg/kg)	2,3,7,8-TCDF (mg/kg)	1,2,3,7,8-PeCDF (mg/kg)	2,3,4,7,8-PeCDF (mg/kg)	1,2,3,4,7,8-HxCDF (mg/kg)	1,2,3,6,7,8-HxCDF (mg/kg)	2,3,4,6,7,8-HxCDF (mg/kg)	1,2,3,7,8,9-HxCDF (mg/kg)	1,2,3,4,6,7,8-HpCDF (mg/kg)	1,2,3,4,7,8,9-HpCDF (mg/kg)	OCDF (mg/kg)
Preliminary Sediment Screening Levels^a (mg/kg)				NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
2013 Laboratory Practical Quantitation Limits (mg/kg)				NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
IS-1	IS-1	7/23/2013	0 - 3	5.03E-07 EMPC	1.93E-06 JT	3.62E-06	1.09E-05	7.83E-06	3.33E-04	3.35E-03	2.31E-06	2.08E-06 JT	4.13E-06	6.12E-06	2.99E-06	3.69E-06	2.00E-07 U	4.70E-05	4.11E-06	1.48E-04
IS-2	IS-2	7/23/2013	0 - 3	8.54E-07	3.22E-06	6.38E-06	2.41E-05	1.29E-05	8.03E-04	7.37E-03	2.31E-06	2.18E-06 JT	5.57E-06	8.56E-06	4.94E-06	7.03E-06	2.14E-07 U	1.30E-04	1.80E-05	8.04E-04
IS-3	IS-3	7/23/2013	0 - 3	5.02E-07 EMPC	2.17E-06 JT	3.75E-06	1.37E-05	7.39E-06	3.99E-04	3.39E-03	2.03E-06	1.64E-06 JT	4.14E-06	6.53E-06	3.47E-06	4.56E-06	1.66E-07 U	6.36E-05	5.09E-06	2.40E-04
IS-4	IS-4	7/23/2013	0 - 3	9.17E-07	3.62E-06 EMPC	8.08E-06	2.53E-05	1.31E-06	8.23E-04	8.11E-03	4.93E-06	4.75E-06	8.04E-06	1.02E-05	6.00E-06	7.48E-06	2.24E-07 U	1.04E-04	8.13E-06	3.35E-04
IS-5	IS-5	7/24/2013	0 - 3	1.12E-06	3.19E-06	6.26E-06	1.72E-05	1.09E-05	4.89E-04	3.82E-03	5.09E-06	2.93E-06	7.45E-06	1.11E-05	5.98E-06	6.57E-06	2.04E-07 U	7.70E-05	6.56E-06	2.48E-04

Location	Sample ID	Sample Date	Sample Depth (Inches)	Total Dioxin/Furan Compounds								Toxicity Equivalence		
				Total TCDD (mg/kg)	Total PeCDD (mg/kg)	Total HxCDD (mg/kg)	Total HpCDD (mg/kg)	Total TCDF (mg/kg)	Total PeCDF (mg/kg)	Total HxCDF (mg/kg)	Total HpCDF (mg/kg)	2,3,7,8-TCDD TEQ (U = 1/2 MRL) (mg/kg)	2,3,7,8-TCDD TEQ (U = 0) (mg/kg)	
Preliminary Sediment Screening Levels^a (mg/kg)				NV	NV	NV	NV	NV	NV	NV	NV	NV	2.20E-06	2.20E-06
2013 Laboratory Practical Quantitation Limits (mg/kg)				NV	NV	NV	NV	NV	NV	NV	NV	NV	1.20E-07	1.20E-07
IS-1	IS-1	7/23/2013	0 - 3	5.71E-06	1.70E-05	1.19E-05	1.13E-03	3.80E-05	4.26E-04	7.98E-04	1.50E-04	1.19E-05	1.19E-05	
IS-2	IS-2	7/23/2013	0 - 3	9.07E-06	2.14E-05	2.18E-04	2.38E-03	3.84E-05	6.07E-05	1.70E-04	5.24E-04	2.43E-05	2.43E-05	
IS-3	IS-3	7/23/2013	0 - 3	6.87E-06	1.75E-05	1.21E-04	1.06E-03	3.49E-05	4.39E-05	1.01E-04	2.24E-04	1.34E-05	1.34E-05	
IS-4	IS-4	7/23/2013	0 - 3	1.49E-05	2.56E-05	2.56E-04	2.82E-03	7.33E-05	8.94E-05	1.68E-04	3.49E-04	2.30E-05	2.29E-05	
IS-5	IS-5	7/24/2013	0 - 3	1.10E-05	2.40E-05	1.61E-04	1.26E-03	6.63E-05	7.54E-05	1.33E-04	2.38E-04	1.99E-05	1.99E-05	

Notes:
Detected values in bold and highlighted in yellow exceed the preliminary catch basin solids screening levels.
mg/kg = milligrams per kilogram.
NV = No available value.
U = The laboratory report noted that the analyte was not detected at or above the reported result.
JT = The laboratory report noted that the analyte was positively identified and the reported result is an estimate below the associated quantitation limit, but above the method detection limit.
EMPC = The laboratory report noted that the signal/noise ratio was not sufficient for peak identification or there was a co-eluting interference.
^a Preliminary screening levels are based on the most stringent potential ARARs for the site, or the practical quantitation limit (PQL), whichever is higher.

Table 39
2013 Groundwater Monitoring Data
8th Avenue Terminals, Inc. Site
Seattle, Washington

Well Number	Top of Casing Elevation ^a (feet)	Date Measured	Depth to Groundwater ^b (feet)	Groundwater Elevation (feet)	Depth to Surface Water ^b (feet)	Surface Water Elevation (feet)
Slip 4 Stilling Well						
Stilling Well	17.10	7/10/2013			19.57 ^c	-2.47
		9/23/2013			8.27 ^d	8.83
		10/2/2013			16.42 ^c	0.68
Shallow Groundwater Monitoring Wells						
CMW-1	16.10	7/10/2013	10.60 ^c	5.50		
		9/23/2013	9.44 ^d	6.66		
		10/2/2013	9.83 ^c	6.27		
CMW-2	16.30	7/10/2013	12.17 ^c	4.13		
		9/23/2013	7.60 ^d	8.70		
		10/2/2013	11.65 ^c	4.65		
CMW-3	16.46	7/10/2013	14.51 ^c	1.95		
		9/23/2013	9.96 ^d	6.50		
		10/2/2013	12.99 ^c	3.47		
CMW-4	16.01	7/10/2013	14.10 ^c	1.91		
		9/23/2013	NM	--		
		10/2/2013	NM	--		
CMW-5	16.60	7/10/2013	14.97 ^c	1.63		
		9/23/2013	10.38 ^d	6.22		
		10/2/2013	13.32 ^c	3.28		
CMW-6	16.42	7/10/2013	15.13 ^c	1.29		
		9/23/2013	9.94 ^d	6.48		
		10/2/2013	13.43 ^c	2.99		
CMW-7	16.44	7/10/2013	15.24 ^c	1.20		
		9/23/2013	9.37 ^d	7.07		
		10/2/2013	13.58 ^c	2.86		
DMW-2	16.46	7/10/2013	12.74 ^c	3.72		
		9/23/2013	11.01 ^d	5.45		
		10/2/2013	11.86 ^c	4.60		
DMW-3	16.47	7/10/2013	12.85 ^c	3.62		
		9/23/2013	10.81 ^d	5.66		
		10/2/2013	12.06 ^c	4.41		
DMW-6	16.39	7/10/2013	13.43 ^c	2.96		
		9/23/2013	10.56 ^d	5.83		
		10/2/2013	12.33 ^c	4.06		
HC-4	16.45	7/10/2013	13.98 ^c	2.47		
		9/23/2013	10.00 ^d	6.45		
		10/2/2013	12.73 ^c	3.72		
HC-19	16.57	7/10/2013	NM	--		
		9/23/2013	NM	--		
		10/2/2013	NM	--		
HC-20	16.66	7/10/2013	12.78 ^c	3.88		
		9/23/2013	11.33 ^d	5.33		
		10/2/2013	11.96 ^c	4.70		
SLR-1	12.05	7/10/2013	7.12 ^c	4.93		
		9/23/2013	6.14 ^d	5.91		
		10/2/2013	NM	--		

Table 39
2013 Groundwater Monitoring Data
8th Avenue Terminals, Inc. Site
Seattle, Washington

Well Number	Top of Casing Elevation ^a (feet)	Date Measured	Depth to Groundwater ^b (feet)	Groundwater Elevation (feet)	Depth to Surface Water ^b (feet)	Surface Water Elevation (feet)
Shallow Groundwater Monitoring Wells (Cont.)						
SLR-2	11.25	7/10/2013	6.31 ^c	4.94		
		9/23/2013	5.00 ^d	6.25		
		10/2/2013	4.02 ^c	7.23		
SLR-3	11.86	7/10/2013	7.71 ^c	4.15		
		9/23/2013	5.47 ^d	6.39		
		10/2/2013	6.77 ^c	5.09		
SLR-6	12.37	7/10/2013	8.87 ^c	3.50		
		9/23/2013	6.44 ^d	5.93		
		10/2/2013	7.80 ^c	4.57		
SLR-7	14.15	7/10/2013	9.48 ^c	4.67		
		9/23/2013	8.60 ^d	5.55		
		10/2/2013	8.60 ^c	5.55		
EMW-1S	16.13	7/10/2013	10.25 ^c	5.88		
		9/23/2013	10.18 ^d	5.95		
		10/2/2013	9.94 ^c	6.19		
EMW-2S	12.66	7/10/2013	8.88 ^c	3.78		
		9/23/2013	6.52 ^d	6.14		
		10/2/2013	7.86 ^c	4.80		
EMW-3S	16.43	7/10/2013	14.14 ^c	2.29		
		9/23/2013	9.72 ^d	6.71		
		10/2/2013	12.51 ^c	3.92		
EMW-5S	16.64	7/10/2013	13.18 ^c	3.46		
		9/23/2013	10.51 ^d	6.13		
		10/2/2013	12.09 ^c	4.55		
EMW-6S	16.17	7/10/2013	11.71 ^c	4.46		
		9/23/2013	10.51 ^d	5.66		
		10/2/2013	10.81 ^c	5.36		
EMW-7S	16.71	7/10/2013	12.58 ^c	4.13		
		9/23/2013	11.04 ^d	5.67		
		10/2/2013	11.77 ^c	4.94		
EMW-8S	16.55	7/10/2013	12.98 ^c	3.57		
		9/23/2013	10.57 ^d	5.98		
		10/2/2013	11.95 ^c	4.60		
EMW-9S	16.63	7/10/2013	13.60 ^c	3.03		
		9/23/2013	10.37 ^d	6.26		
		10/2/2013	12.41 ^c	4.22		
EMW-11S	16.61	7/10/2013	12.93 ^c	3.68		
		9/23/2013	10.97 ^d	5.64		
		10/2/2013	12.06 ^c	4.55		
EMW-12S	16.81	7/10/2013	14.95 ^c	1.86		
		9/23/2013	10.14 ^d	6.67		
		10/2/2013	13.45 ^c	3.36		
EMW-13S	16.39	7/10/2013	13.49 ^c	2.90		
		9/23/2013	8.99 ^d	7.40		
		10/2/2013	12.03 ^c	4.36		

Table 39
2013 Groundwater Monitoring Data
8th Avenue Terminals, Inc. Site
Seattle, Washington

Well Number	Top of Casing Elevation ^a (feet)	Date Measured	Depth to Groundwater ^b (feet)	Groundwater Elevation (feet)	Depth to Surface Water ^b (feet)	Surface Water Elevation (feet)
Deep Groundwater Monitoring Wells						
EMW-4D	16.80	7/10/2013	15.71 ^c	1.09		
		9/23/2013	9.52 ^d	7.28		
		10/2/2013	13.81 ^c	2.99		
EMW-10D	16.82	7/10/2013	13.09 ^c	3.73		
		9/23/2013	11.00 ^d	5.82		
		10/2/2013	12.29 ^c	4.53		
EMW-14D	16.42	7/10/2013	15.14 ^c	1.28		
		9/23/2013	9.80 ^d	6.62		
		10/2/2013	13.51 ^c	2.91		
EMW-15D	16.07	7/10/2013	14.86 ^c	1.21		
		9/23/2013	NM	--		
		10/2/2013	13.02 ^c	3.05		
EMW-16D	16.52	7/10/2013	15.86 ^c	0.66		
		9/23/2013	9.14 ^d	7.38		
		10/2/2013	13.97 ^c	2.55		
Notes:						
^a = Top of casing elevations were surveyed relative to the NAVD 88 datum by Signature Surveying & Mapping. ^b = Measurements in feet below the top of the well casing. ^c = Measured during low tide conditions in the Lower Duwamish Waterway. ^d = Measured during high tide conditions in the Lower Duwamish Waterway. NM = Not measured because well was not accessible.						

Table 40
Final Groundwater Field Parameter Measurements Prior to Sampling
8th Avenue Terminals, Inc.
Seattle, Washington

Location	Sample ID	Sample Date	Sample Time	Temperature (degrees C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity	Color
CMW-1	CMW-1-0713	7/11/2013	13:19	16.32	19.72	2.91	6.21	81.0	clear	none
CMW-1	CMW-1-092513	9/25/2013	11:15	16.73	19.10	1.76	6.41	7.1	clear	none
CMW-1	CMW-1-100213	10/2/2013	10:59	16.62	31.79	1.13	6.33	37.3	clear	none
CMW-2	CMW-2-0713	7/12/2013	12:47	16.69	12.24	6.19	7.57	68.8	clear	none
CMW-2	CMW-2-092413	9/24/2013	10:30	18.00	14.97	6.72	7.40	-15.4	clear	none
CMW-2	CMW-2-100113	10/1/2013	10:56	16.19	7.784	4.09	7.48	25.9	clear	none
CMW-3	CMW-3-0713	7/12/2013	13:53	15.25	7.654	2.16	7.33	20.7	clear	none
CMW-3	CMW-3-092413	9/24/2013	9:51	17.39	17.74	0.57	7.04	-4.0	clear	none
CMW-3	CMW-3-093013	9/30/2013*	--	--	--	--	--	--	--	--
CMW-4	CMW-4-0713	7/11/2013	13:03	15.18	9.497	3.32	7.42	112.0	clear	none
CMW-4	CMW-4-092513	9/25/2013	10:55	18.25	19.02	2.93	7.07	-10.6	clear	none
CMW-4	CMW-4-100313	10/3/2013	9:50	18.14	21.04	2.23	7.09	-6.7	clear	none
CMW-5	CMW-5-0713	7/12/2013	13:42	16.4	0.557	0.32	6.32	-38.3	clear	none
CMW-5	CMW-5-092413	9/24/2013	9:00	17.83	0.491	0.26	6.36	-138.8	clear	none
CMW-5	CMW-5-093013	9/30/2013	9:48	17.69	0.545	0.34	6.52	-148.7	clear	none
CMW-6	CMW-6-0713	7/12/2013	15:33	15.82	18.08	4.30	6.94	90.0	clear	none
CMW-6	CMW-6-092513	9/25/2013	9:53	17.87	42.21	3.62	8.11	-4.4	clear	none
CMW-6	CMW-6-100113	10/1/2013	9:39	17.49	17.76	3.43	8.00	49.7	clear	none
CMW-7	CMW-7-0713	7/12/2013	15:09	13.51	1.700	5.44	6.53	96.7	clear	none
CMW-7	CMW-7-092613	9/26/2013	11:12	14.78	4.642	1.76	6.26	72.7	clear	none
CMW-7	CMW-7-100213	10/2/2013	10:38	14.31	2.775	3.09	8.22	23.8	clear	none
DMW-2	DMW-2-0713	7/12/2013	9:29	14.7	0.90	2.89	6.68	75	low	none
DMW-2	DMW-2-092313	9/23/2013	13:53	16.24	0.353	0.20	6.34	-91.8	clear	none
DMW-2	DMW-2-093013	9/30/2013	11:40	15.74	0.375	0.21	6.41	-94.5	clear	none
DMW-3	DMW-3-0713	7/12/2013	10:45	14.1	0.991	3.12	6.71	12	low	none
DMW-3	DMW-3-092313	9/23/2013	12:14	15.51	0.323	0.22	7.55	-97.5	clear	none
DMW-3	DMW-3-093013	9/30/2013	14:23	14.91	0.344	0.37	8.44	-88.7	clear	none
DMW-6	DMW-6-0713	7/11/2013	17:17	15.5	0.473	3.59	6.24	-58	clear	brown
DMW-6	DMW-6-092313	9/23/2013	14:36	16.55	0.312	0.17	8.03	-144.1	clear	none
DMW-6	DMW-6-100213	10/2/2013	12:29	15.87	0.319	0.26	9.66	-136.6	clear	none
EMW-1S	EMW-1S-0713	7/11/2013	9:37	13.72	0.569	0.24	6.27	-38.6	clear	none
EMW-1S	EMW-1S-092313	9/23/2013	13:25	15.01	0.405	0.43	6.44	-88.3	clear	none
EMW-1S	EMW-1S-093013	9/30/2013	12:03	13.77	0.586	0.23	6.55	-48.6	clear	none

Table 40
Final Groundwater Field Parameter Measurements Prior to Sampling
8th Avenue Terminals, Inc.
Seattle, Washington

Location	Sample ID	Sample Date	Sample Time	Temperature (degrees C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity	Color
EMW-2S	EMW-2S-0713	7/12/2013	12:32	13.1	0.328	3.33	6.74	38	low	none
EMW-2S	EMW-2S-092313	9/23/2013	10:06	13.43	0.259	0.43	6.09	-12.6	clear	none
EMW-2S	EMW-2S-100313	10/3/2013	11:48	13.62	0.350	0.51	6.55	-102.5	clear	none
EMW-3S	EMW-3S-0713	7/11/2013	11:52	16.17	9.606	0.67	6.02	-82.8	clear	none
EMW-3S	EMW-3S-092513	9/25/2013	9:53	16.40	14.51	0.44	5.78	35.0	clear	none
EMW-3S	EMW-3S-100113	10/1/2013	9:14	15.97	17.30	0.76	5.94	-78.3	clear	none
EMW-4D	EMW-4D-0713	7/11/2013	14:33	15.54	9.610	0.43	6.68	-130.3	clear	none
EMW-4D	EMW-4D-092513	9/25/2013	10:37	14.51	6.645	0.17	6.81	-53.3	clear	none
EMW-4D	EMW-4D-100113	10/1/2013	8:41	13.51	13.60	0.28	6.60	-34.5	clear	none
EMW-5S	EMW-5S-0713	7/12/2013	11:15	14.67	0.514	0.16	6.11	25.9	clear	none
EMW-5S	EMW-5S-092413	9/24/2013	13:35	15.20	0.505	0.18	6.31	-82.0	clear	none
EMW-5S	EMW-5S-100213	10/2/2013	14:39	14.92	0.528	0.30	7.94	-65.3	clear	none
EMW-6S	EMW-6S-0713	7/10/2013	14:56	15.67	0.323	0.41	6.22	-29.1	clear	none
EMW-6S	EMW-6S-092313	9/23/2013	10:23	15.21	0.327	0.32	6.13	-117.3	clear	none
EMW-6S	EMW-6S-100213	10/2/2013	13:02	16.88	0.265	0.39	6.51	5.2	clear	none
EMW-7S	EMW-7S-0713	7/11/2013	8:28	14.34	0.422	0.44	6.23	-65.7	clear	none
EMW-7S	EMW-7S-092313	9/23/2013	11:35	15.32	0.375	0.24	6.34	-136.6	clear	none
EMW-7S	EMW-7S-100213	10/2/2013	15:00	14.86	0.392	0.21	6.51	-140.9	clear	none
EMW-8S	EMW-8S-0713	7/12/2013	9:14	17.69	0.496	0.32	6.30	3.9	clear	none
EMW-8S	EMW-8S-092413	9/24/2013	12:21	17.44	0.435	0.22	6.26	-65.8	clear	none
EMW-8S	EMW-8S-100313	10/3/2013	7:54	15.90	0.417	0.34	6.23	-82.3	clear	none
EMW-9S	EMW-9S-0713	7/12/2013	10:19	15.08	0.359	0.62	6.26	-80.5	clear	none
EMW-9S	EMW-9S-092313	9/23/2013	15:11	16.52	0.342	0.20	6.25	-97.0	clear	none
EMW-9S	EMW-9S-093013	9/30/2013	13:33	15.32	0.377	0.26	6.42	-99.1	clear	none
EMW-10D	EMW-10D-0713	7/10/2013	15:32	14.97	8.065	0.20	6.51	-76.2	clear	none
EMW-10D	EMW-10D-092513	9/25/2013	13:01	14.45	7.941	0.30	6.56	-143.2	clear	none
EMW-10D	EMW-10D-100113	10/1/2013	11:58	14.14	8.102	0.34	9.12	-107.2	clear	none
EMW-11S	EMW-11S-0713	7/11/2013	16:22	14.91	0.433	1.74	6.16	8.2	clear	none
EMW-11S	EMW-11S-092313	9/23/2013	13:32	15.15	0.359	0.36	6.91	-14.8	clear	none
EMW-11S	EMW-11S-093013	9/30/2013	11:52	14.49	0.406	0.78	7.56	7.4	clear	none
EMW-12S	EMW-12S-0713	7/12/2013	14:41	12.8	0.372	6.69	6.83	174	low	none
EMW-12S	EMW-12S-092413	9/24/2013	8:59	13.62	0.578	0.72	6.83	50.1	clear	none
EMW-12S	EMW-12S-100313	10/3/2013	10:15	13.72	0.399	1.89	6.26	-14.9	clear	none

Table 40
Final Groundwater Field Parameter Measurements Prior to Sampling
8th Avenue Terminals, Inc.
Seattle, Washington

Location	Sample ID	Sample Date	Sample Time	Temperature (degrees C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity	Color
EMW-13S	EMW-13S-0713	7/11/2013	13:39	15.5	17.9	4.75	7.39	-89	low	none
EMW-13S	EMW-13S-092513	9/25/2013	11:18	16.33	29.94	6.80	8.04	-1.1	clear	none
EMW-13S	EMW-13S-100113	10/1/2013	7:56	15.57	17.48	1.41	9.23	13.2	clear	none
EMW-14D	EMW-14D-0713	7/11/2013	14:47	14.2	7.31	3.57	6.57	-91	low	none
EMW-14D	EMW-14D-092513	9/25/2013	10:37	15.64	25.86	0.26	8.96	-126.5	clear	none
EMW-14D	EMW-14D-093013	9/30/2013	10:05	15.78	15.00	0.37	9.08	-102.5	clear	none
EMW-15D	EMW-15D-0713	7/11/2013	15:03	14.56	10.16	0.05	6.56	-20.2	clear	none
EMW-15D	EMW-15D-092513	9/25/2013	10:12	15.15	12.50	0.67	6.61	-140.9	clear	none
EMW-15D	EMW-15D-100113	10/1/2013	7:49	14.83	6.302	0.30	6.51	-138.9	clear	none
EMW-16D	EMW-16D-0713	7/11/2013	12:28	14.2	36.3	3.09	6.47	15	low	none
EMW-16D	EMW-16D-092413	9/24/2013	9:54	14.76	62.54	0.27	8.15	-68.2	clear	none
EMW-16D	EMW-16D-100213	10/2/2013	11:02	13.19	33.37	0.21	6.46	-127.3	clear	none
HC-4	HC-4-092413	9/24/2013	11:51	14.71	0.357	0.46	6.47	53.4	clear	none
HC-20	HC-20-0713	7/11/2013	9:52	14.80	0.272	0.53	5.86	-3.7	clear	none
HC-20	HC-20-092313	9/23/2013	12:42	15.72	0.265	0.28	5.97	-42.4	clear	none
HC-20	HC-20-100113	10/1/2013	13:11	15.26	0.296	0.30	6.12	-70.1	clear	none
SLR-1	SLR-1-0713	7/11/2013	8:21	13.65	0.488	0.21	6.38	-54.0	clear	brown
SLR-1	SLR-1-092313	9/23/2013	12:06	15.86	0.311	0.38	6.68	-86.1	clear	none
SLR-1	SLR-1-100313	10/3/2013	8:47	15.63	0.553	0.11	6.64	-121.2	clear	none
SLR-2	SLR-2-0713	7/11/2013	10:21	12.6	0.313	6.77	6.50.	258	clear	brown
SLR-2	SLR-2-092313	9/23/2013	12:46	15.15	0.213	4.38	6.44	85.7	clear	none
SLR-2	SLR-2-100213	10/2/2013	13:29	14.52	0.283	4.31	6.89	58.1	clear	none
SLR-3	SLR-3-0713	7/12/2013	9:19	15.86	1.355	0.21	6.47	-78.5	low	brown/yellow
SLR-3	SLR-3-092313	9/23/2013	15.:15	19.04	1.085	0.21	6.78	-146.3	clear	light yellow
SLR-3	SLR-3-100313	10/3/2013	11:50	17.40	1.865	0.21	6.70	-129.5	clear	yellow
SLR-6	SLR-6-0713	7/12/2013	11:31	15.44	0.409	5.00	6.21	118.3	clear	none
SLR-6	SLR-6-092313	9/23/2013	10:27	15.37	0.339	1.91	6.78	17.6	clear	none
SLR-6	SLR-6-100113	10/1/2013	11:20	15.64	0.100	5.76	6.64	22.1	clear	none
SLR-7	SLR-7-0713	7/11/2013	11:36	15.20	0.430	0.52	6.30	39.8	clear	none
SLR-7	SLR-7-092313	9/23/2013	14:23	16.70	0.327	0.29	6.55	-55.7	clear	none
SLR-7	SLR-7-100113	10/1/2013	14:20	16.57	0.543	0.44	6.20	28.8	clear	none

Table 40
Final Groundwater Field Parameter Measurements Prior to Sampling
8th Avenue Terminals, Inc.
Seattle, Washington

Location	Sample ID	Sample Date	Sample Time	Temperature (degrees C)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity	Color
Notes: DO = Dissolved Oxygen ORP = Oxidation Reduction Potential mS/cm = milliSiemens per centimeter g/L = grams per Liter mg/L = milligrams per Liter mV = milliVolts * = Field form for sample CMW3-093013 cannot be located.										

**Table 41
Storm Water Drainage System Elevation Data
8th Avenue Terminals, Inc. Site
Seattle, Washington**

Catch Basin ID	Basin Rim Elevation	Pipe Invert Elevation	Bottom of Basin Elevation	Outfall ID	Pipe Invert Elevation
Catch basins and Conveyance vaults				Outfalls	
DP1CB1	16.63	NM*	NM*	OF-1	9.4
DP1CB2	16.65	14.8	11.3	OF-2	10.1
DP1CB3	16.72	14.5	11.1	OF-3	9.5
DP1CB4	16.63	14.6	11.1	OF-4	10.6
DP1CB5	16.77	15.6	11.9	OF-5	11.6
DP1CB6	16.73	14.5	11.0	OF-6	8.4
DP2CB1	16.32	14.1	10.6		
DP2CB2	16.49	14.5	10.8		
DP2CB3	16.56	14.3	10.8		
DP2CB4	16.49	14.2	11.0		
DP2CB5	16.69	14.1	10.9		
DP2CB6	16.68	14.6	11.0		
DP3CB1	16.37	14.5	10.8		
DP3CB2	16.55	14.3	10.9		
DP3CB3	16.62	14.5	11.1		
DP3CB4	16.57	14.2	11.3		
DP3CB5	16.62	14.1	11.1		
DP3CB6	16.75	15.1	11.6		
DP4CB1	16.24	14.6	11.0		
DP4CB2	16.67	15.3	12.6		
DP4CB3	16.6	14.7	11.1		
DP4CB4	16.7	14.6	11.1		
DP5CB1	16.4	14.1	10.9		
DP5CB2	16.61	14.7	11.2		
DP5CB3	16.66	14.7	11.2		
DP5CB4	16.55	14.4	11.0		
DP5CB5	16.73	14.4	10.9		
DP6CB1	16.59	13.8	10.5		
DP6CB2	16.57	13.7	10.7		
DP6CB3	16.63	14.8	11.8		
DP6CB4	16.6	15.3	11.7		
DP6CB5	16.69	15.3	11.9		
FNCB1	12.23	10.6	7.6		
FNCB2	12.27	10.5	7.8		
FNCB3	11.56	10.2, 9.9 ^a	6.8		
FSCB1	13.52	NM*	NM*		
FSCB2	12.57	NM*	NM*		
FSCB3	12.13	10.2	7.2		
CV1	12.7	10.2, 10.0, 10.0 ^b	6.8		
CV2	16.51	8.6, 8.6, 8.6 ^c	6.6		

Notes:

Elevations were surveyed relative to the NAVD 88 datum by Signature Survey & Mapping, PLLC.

* = Invert and bottom elevations were not measured. Catch basin DP1CB1 is permanently welded shut, and FSCB1 and FSCB2 could not be opened.

^a Elevations of the western influent pipe and the southern effluent pipe, respectively.

^b Elevations of the northern influent pipe, western influent pipe, and the southern effluent pipe, respectively.

^c Elevations of the northern influent pipe, western influent pipe, and the eastern effluent pipe, respectively.

Table 42
Coordinates of RI and Previous Investigation Locations
8th Avenue Terminals, Inc. Property
Seattle, Washington

Investigation Location ID	Northing	Easting	Investigation Location ID	Northing	Easting
CMW-1	199375.3618	1273356.8049	MW-1 (1988)	199604.6382	1273298.7478
CMW-2	199223.6701	1273303.6699	MW-1 (1994)	199610.4896	1273308.9693
CMW-2A	199228.4024	1273309.846	MW-2	199699.3133	1273225.1452
CMW-3	199072.0790	1273239.4112	MW-3	199630.5162	1273035.5520
CMW-4	198940.1406	1273167.5139	DB-1	199215.5038	1272653.8927
CMW-5	198829.5041	1273003.1701	DB-4	198757.1234	1272713.6296
CMW-6	198692.0313	1272872.7221	DB-5	199017.3508	1272956.6525
CMW-7	198703.2439	1272711.7835	DB-7	198848.3472	1273014.6844
DMW-2	199181.9172	1272715.2264	DB-8	199154.2511	1272796.3875
DMW-3	199085.9259	1272715.0913	DB-9	199248.8188	1272832.4397
DMW-6	198920.3950	1272851.4416	DB-10	199300.0834	1273078.1774
EB-5	199694.9450	1273220.9882	DB-11	199186.4558	1272727.9096
EB-14	199463.9928	1273127.1773	DB-12	199142.1743	1272731.1824
EB-16	199587.6998	1272982.7938	DB-13	198957.6895	1272909.7479
EB-17	199475.4279	1272983.6948	DB-14	199226.8258	1272726.9022
EB-24	199223.0032	1272991.1790	FB-4	199615.6912	1273006.6177
EB-28	199135.5352	1273184.1194	FB-5	199444.4896	1273194.3447
EB-32	198961.0941	1272718.2513	FSS1	199755.0328	1273048.8818
EB-38	199157.2908	1272918.3684	FSS2	199657.6325	1273091.1539
EB-40	198891.7964	1272681.9420	FSS3	199585.6040	1273146.9196
EB-41	198889.3824	1272799.0702	HA-1	199675.4897	1272978.4693
EB-45	199020.6846	1273154.8105	HA-2	199732.4896	1273035.4693
EB-46	198876.3573	1272946.8732	HA-3	199746.5403	1272934.0344
EB-47	198838.8335	1272866.8638	HA-4	199742.9896	1273109.4693
EB-50	198792.7239	1272951.1046	HA-5	199673.4896	1273087.4693
EB-51	198725.0646	1272836.5561	HA-6	199695.9896	1273164.9693
EMW-1S	199762.8701	1272940.1916	HA-7	199642.8122	1272941.0596
EMW-2S	199571.3088	1273329.7893	HA-8	199546.4517	1273005.4177
EMW-3S	199487.4178	1273364.8268	HA-9	199528.4896	1273095.4693
EMW-4D	199352.3349	1273365.9636	HA-10	199606.9896	1273184.9693
EMW-5S	199380.0316	1273148.3825	HA-11	199559.9896	1273234.4693
EMW-6S	199487.4967	1272871.4948	HA-12	199679.5301	1273256.2815
EMW-7S	199379.0938	1272655.2927	HA-13	199498.8336	1273226.2701
EMW-8S	199223.4916	1272897.2638	HC-1	199264.8174	1272675.5438
EMW-9S	199146.8372	1273044.6266	HC-1A	199269.7421	1272676.1527
EMW-10D	199094.3842	1272714.0850	HC-2	199614.5669	1273200.5824
EMW-11S	199007.9258	1272657.7068	HC-4	198785.5464	1272720.2993
EMW-12S	198751.8245	1272670.7591	HC-5	199265.5722	1272650.3681
EMW-13S	198667.9171	1272788.9076	HC-6	199290.5573	1272675.2881
EMW-14D	198695.8120	1272872.6787	HC-7	199341.1288	1272674.7846
EMW-15D	198939.7331	1273164.7700	HC-8	199301.2018	1272711.8107
EMW-16D	198688.3011	1272699.8067	HC-9	199266.1229	1272711.2534
SCV-12	199300.1288	1273322.9974	HC-10	199266.1229	1272751.3687
TRENCH1-1-8	199382.7952	1273311.9315	HC-11	199229.8450	1272712.3004
TRENCH1-2-9	199454.7860	1273300.5409	HC-12	199239.8506	1272675.0455
TRENCH2-1-8	199679.6917	1273277.5654	HC-13	199188.9719	1272675.2924
TRENCH4-1-3.0	199542.9066	1273170.6531	HC-14	199200.5454	1272674.7888
FMW1	199571.9111	1273238.6654	HC-15	199190.5732	1272728.5324
FMW2	199476.8534	1272789.6787	HC-16	199155.7607	1272714.8182
FMW3	199719.8602	1273033.8039	HC-17	199164.0635	1272675.0406
HC-20	199231.2802	1272652.0974	HC-18	199278.4037	1272674.5368
HC-101	199027.7537	1272655.9205	HC-19	199037.2051	1272865.8375

Table 42
Coordinates of RI and Previous Investigation Locations
8th Avenue Terminals, Inc. Property
Seattle, Washington

Investigation Location ID	Northing	Easting	Investigation Location ID	Northing	Easting
HC-102	199051.1952	1272802.4981	SB-9	199637.7796	1273267.8838
HC-103	198978.8497	1272722.5560	SB-10	199681.3300	1273226.6980
HC-104	198983.6401	1272838.8127	SB-11	199640.9833	1273176.9694
HC-105	198804.9378	1272650.2390	SEEP1	198661.7529	1272754.9544
HC-106	198857.1355	1272786.0324	SEEP2	198663.6590	1272825.9279
HC-107	198933.5733	1272940.9390	SEEP3	198907.5384	1273157.5539
HC-108	198929.2889	1272705.7945	SEEP4	198759.6771	1273049.1922
HC-110	198846.3298	1272717.0543	SEEP5	199162.5425	1273295.3441
IS-1	198652.1992	1272725.2545	SLR-1	199652.1885	1273064.4997
IS-2	198654.8326	1272813.7689	SLR-2	199673.9026	1273280.2515
IS-3	198683.4074	1272928.3097	SLR-3	199530.5292	1273163.0131
IS-4	198795.3761	1273045.0022	SLR-4	199429.0456	1273299.6568
IS-5	198930.8190	1273198.9489	SLR-5	199659.8880	1273189.7383
SB-1	199426.9920	1272919.1673	SLR-6	199543.6652	1273285.4376
SB-2	199378.3260	1272951.3174	SLR-7	199538.6107	1272997.4166
SB-3	199426.8290	1272983.4009	SS-1	199698.6553	1273105.3785
SB-4	199482.6463	1272951.3002	SS-2	199544.4545	1273303.9913
SB-5	199540.2508	1272915.6395	SS-3	199474.1412	1273210.2168
SB-6	199554.8627	1272997.5459	SS-4	199568.5451	1273042.0631
SB-7	199329.4896	1273055.4693	SS-5	199664.5373	1273019.6239
SB-8	199601.9833	1273223.9693	STILLING WELL	198912.3983	1273224.3431
			TP100810	199551.0253	1273343.9612
Notes: Locations are based on Washington State Plane Coordinate System, North Zone, 83/91.					

Table 43
Coordinates of Storm Water Drainage System Components
8th Avenue Terminals, Inc. Property
Seattle, Washington

Investigation Location ID	Northing	Easting	Investigation Location ID	Northing	Easting
DP1CB1	198715.1603	1272694.1630	DP5CB2	199007.4865	1273181.2738
DP1CB2	198822.0351	1272695.5953	DP5CB3	199108.2620	1273183.1766
DP1CB3	198919.4520	1272697.9890	DP5CB4	199207.0588	1273285.4733
DP1CB4	199022.2943	1272699.2523	DP5CB5	199208.2289	1273185.0374
DP1CB5	199122.2962	1272701.7773	DP6CB1	199309.4950	1273187.2982
DP1CB6	199220.1568	1272703.8554	DP6CB2	199313.1970	1273064.7268
DP2CB1	198711.6366	1272814.9982	DP6CB3	199315.4163	1272946.0117
DP2CB2	198816.5358	1272816.1793	DP6CB4	199318.0189	1272825.1643
DP2CB3	198917.2074	1272817.9506	DP6CB5	199319.2116	1272705.7805
DP2CB4	199014.7329	1272819.4018	FNCB1	199667.8799	1273077.0326
DP2CB5	199114.0193	1272821.3312	FNCB2	199672.6846	1273172.2095
DP2CB6	199217.1079	1272822.6990	FNCB3	199671.6288	1273279.6269
DP3CB1	198729.4725	1272934.5311	FSCB1	199536.9963	1272932.7295
DP3CB2	198810.7477	1272935.6483	FSCB2	199540.7251	1273118.3692
DP3CB3	198913.3805	1272937.7589	FSCB3	199541.5729	1273161.3799
DP3CB4	199013.1417	1272939.8069	CV1	199550.8762	1273287.6445
DP3CB5	199112.1194	1272941.0743	CV2	199301.9202	1273320.2663
DP3CB6	199214.0558	1272944.3061	OF-1	198668.8564	1272702.2627
DP4CB1	198912.7051	1273057.4666	OF-2	198660.9136	1272807.1402
DP4CB2	199014.3139	1273060.0239	OF-3	198691.4904	1272924.6789
DP4CB3	199109.5897	1273062.0068	OF-4	198835.0682	1273082.7685
DP4CB4	199210.1290	1273063.5599	OF-5	198930.6634	1273185.1771
DP5CB1	198954.8904	1273180.0293	OF-6	199300.8555	1273358.6648
Notes: Locations are based on Washington State Plane Coordinate System, North Zone, 83/91.					

Table 44
Groundwater Sample Analytical Results - Salinity
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Total Dissolved Solids (mg/L)	Chloride (mg/L)	Salinity (ppt)
CMW-1	CMW-1-061708	NA	NA	6.7 ^a
CMW-1	CMW-1-0713	11,100	5,810	10.5 ^b
CMW-1	CMW-1-092513	15,700	11,100	20.1 ^b
CMW-1	CMW-1-100213	15,400	9,130	16.5 ^b
CMW-2	CMW-2-061708	NA	NA	10.5 ^a
CMW-2	CMW-2-0713	7,250	4,110	7.4 ^b
CMW-2	CMW-2-092413	9,000	5,170	9.3 ^b
CMW-2	CMW-2-100113	3,220	1,630	2.9 ^b
CMW-3	CMW-3-0713	4,700	2,510	4.5 ^b
CMW-3	CMW-3-092413	10,700	8,010	14.5 ^b
CMW-3	CMW-3-093013	8,100	5,930	10.7 ^b
CMW-4	CMW-4-061708	NA	NA	6.1 ^a
CMW-4	CMW-4-0713	5,750	3,020	5.5 ^b
CMW-4	CMW-4-092513	11,400	6,680	12.1 ^b
CMW-4	CMW-4-100313	12,500	7,280	13.2 ^b
CMW-5	CMW-5-061708	NA	NA	0.4 ^a
CMW-5	CMW-5-0713	374	28.4	0.1 ^b
CMW-5	CMW-5-092413	304	20.8	0.04 ^b
CMW-5	CMW-5-093013	312	22.6	0.04 ^b
CMW-6	CMW-6-061708	NA	NA	11.3 ^a
CMW-6	CMW-6-0713	11,400	6,280	11.3 ^b
CMW-6	CMW-6-092513	23,600	7,180	13.0 ^b
CMW-6	CMW-6-100113	9,640	5,650	10.2 ^b
CMW-7	CMW-7-061708	NA	NA	0.9 ^a
CMW-7	CMW-7-0713	996	424	0.8 ^b
CMW-7	CMW-7-092613	2,380	1,260	2.3 ^b
CMW-7	CMW-7-100213	1,690	830	1.5 ^b
DMW-2	DMW-2-0713	311	9.1	0.02 ^b
DMW-2	DMW-2-092313	268	9.1	0.02 ^b
DMW-2	DMW-2-093013	229	8.9	0.02 ^b
DMW-3	DMW-3-0713	239	25.2	0.05 ^b
DMW-3	DMW-3-092313	200	11.4	0.02 ^b
DMW-3	DMW-3-093013	208	11.8	0.02 ^b
DMW-6	DMW-6-0713	228	13.2	0.02 ^b
DMW-6	DMW-6-092313	230	11.3	0.02 ^b
DMW-6	DMW-6-100213	197	9.1	0.02 ^b
EMW-1S	EMW-1S-0713	339	5.3	0.01 ^b
EMW-1S	EMW-1S-092313	328	5.7	0.01 ^b
EMW-1S	EMW-1S-093013	257	14	0.03 ^b
EMW-2S	EMW-2S-0713	210	5.8	0.01 ^b
EMW-2S	EMW-57S-0713(dupl.)	185	5.9	0.01 ^b
EMW-2S	EMW-2S-092313	234	10	0.02 ^b
EMW-2S	EMW-2S-100313	230	7.4	0.01 ^b
EMW-2S	EMW-57S-100313(dupl.)	226	7.8	0.01 ^b

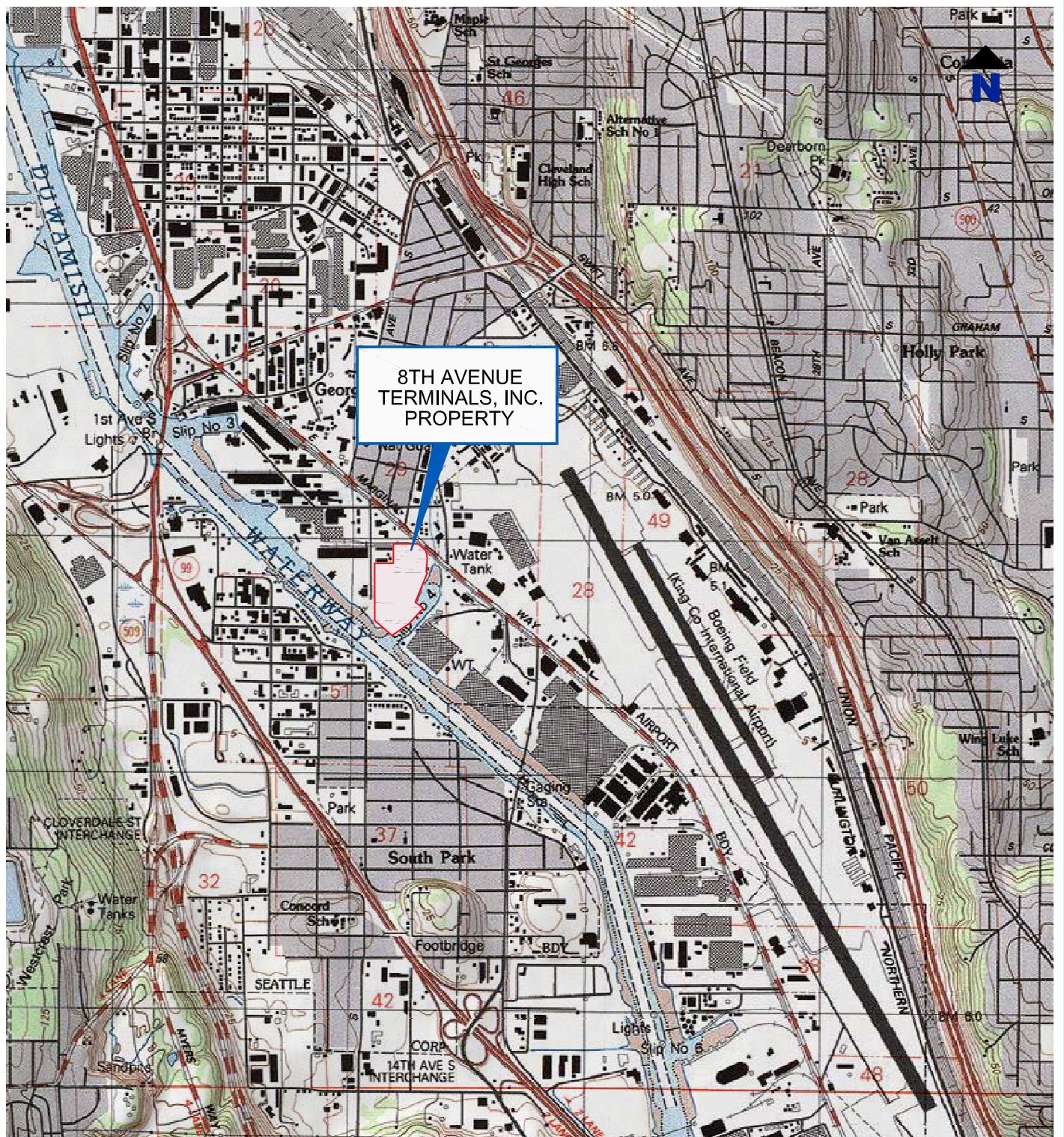
Table 44
Groundwater Sample Analytical Results - Salinity
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Total Dissolved Solids (mg/L)	Chloride (mg/L)	Salinity (ppt)
EMW-3S	EMW-3S-0713	5,540	3,200	5.8 ^b
EMW-3S	EMW-3S-092513	11,700	7,210	13.0 ^b
EMW-3S	EMW-3S-100113	9,580	5,080	9.2 ^b
EMW-4D	EMW-4D-0713	5,500	3,230	5.8 ^b
EMW-4D	EMW-4D-092513	4,890	2,690	4.9 ^b
EMW-4D	EMW-4D-100113	6,300	3,760	6.8 ^b
EMW-5S	EMW-5S-0713	400	14.1	0.03 ^b
EMW-5S	EMW-5S-092413	347	13.1	0.02 ^b
EMW-5S	EMW-89S-092413(dupl.)	354	12.8	0.02 ^b
EMW-5S	EMW-5S-100213	339	13.2	0.02 ^b
EMW-6S	EMW-6S-0713	207	5.3	0.01 ^b
EMW-6S	EMW-6S-092313	225	6.8	0.01 ^b
EMW-6S	EMW-6S-100213	163	3.4	0.01 ^b
EMW-7S	EMW-7S-0713	254	6.7	0.01 ^b
EMW-7S	EMW-7S-092313	240	6.3	0.01 ^b
EMW-7S	EMW-7S-100213	219	5.9	0.01 ^b
EMW-8S	EMW-8S-0713	326	26.1	0.05 ^b
EMW-8S	EMW-8S-092413	292	8.8	0.02 ^b
EMW-8S	EMW-8S-100313	278	1	0.00 ^b
EMW-9S	EMW-9S-0713	250	10	0.02 ^b
EMW-9S	EMW-9S-092313	244	9.6	0.02 ^b
EMW-9S	EMW-9S-093013	212	9.9	0.02 ^b
EMW-10D	EMW-10D-0713	4,940	2,660	4.8 ^b
EMW-10D	EMW-56D-0713(dupl.)	10,800	2,680	4.8 ^b
EMW-10D	EMW-10D-092513	4,760	2,360	4.3 ^b
EMW-10D	EMW-56D-092513(dupl.)	4,900	2,820	5.1 ^b
EMW-10D	EMW-10D-100113	4,450	2,370	4.3 ^b
EMW-10D	EMW-56D-100113(dupl.)	4,100	2,370	4.3 ^b
EMW-11S	EMW-11S-0713	268	5.4	0.01 ^b
EMW-11S	EMW-11S-092313	250	6.5	0.01 ^b
EMW-11S	EMW-11S-093013	278	8.6	0.02 ^b
EMW-12S	EMW-12S-0713	217	12.5	0.02 ^b
EMW-12S	EMW-12S-092413	208	12	0.02 ^b
EMW-12S	EMW-12S-100313	224	13	0.02 ^b
EMW-13S	EMW-13S-0713	7,980	4,040	7.3 ^b
EMW-13S	EMW-13S-092513	9,800	5,570	10.1 ^b
EMW-13S	EMW-13S-100113	10,700	6,100	11.0 ^b
EMW-14D	EMW-14D-0713	3,590	1,950	3.5 ^b
EMW-14D	EMW-14D-092513	8,340	4,720	8.5 ^b
EMW-14D	EMW-14D-093013	8,680	6,240	11.3 ^b
EMW-15D	EMW-15D-0713	6,090	3,340	6.0 ^b
EMW-15D	EMW-15D-092513	7,320	3,980	7.2 ^b
EMW-15D	EMW-15D-100113	7,560	4,220	7.6 ^b
EMW-16D	EMW-16D-0713	18,200	10,500	19.0 ^b
EMW-16D	EMW-16D-092413	20,800	12,600	22.8 ^b
EMW-16D	EMW-16D-100213	19,300	11,700	21.1 ^b

Table 44
Groundwater Sample Analytical Results - Salinity
8th Avenue Terminals, Inc. Site
Seattle, Washington

Location	Sample ID	Total Dissolved Solids (mg/L)	Chloride (mg/L)	Salinity (ppt)
HC-4	HC-4-092413	322	17.3	0.03 ^b
HC-20	HC-20-0713	196	4.8	0.01 ^b
HC-20	HC-20-092313	200	4.8	0.01 ^b
HC-20	HC-20-100113	198	5.7	0.01 ^b
SLR-1	SLR-1-0713	342	14.4	0.03 ^b
SLR-1	SLR-1-092313	259	11.7	0.02 ^b
SLR-1	SLR-1-100313	316	13.2	0.02 ^b
SLR-2	SLR-2-0713	168	1.1	0.00 ^b
SLR-2	SLR-2-092313	218	2.4	0.00 ^b
SLR-2	SLR-2-100213	180	3.4	0.01 ^b
SLR-3	SLR-3-0713	1,280	40.4	0.1 ^b
SLR-3	SLR-3-092313	1,250	42.2	0.1 ^b
SLR-3	SLR-3-100313	1,320	39	0.1 ^b
SLR-6	SLR-6-0713	266	9	0.02 ^b
SLR-6	SLR-6-092313	224	11.5	0.02 ^b
SLR-6	SLR-6-100113	46	5.5	0.01 ^b
SLR-7	SLR-7-0713	262	7.1	0.01 ^b
SLR-7	SLR-7-092313	268	6.7	0.01 ^b
SLR-7	SLR-7-100113	244	6.1	0.01 ^b

Notes:
Detected salinity values in bold and highlighted in blue exceed the brackish water threshold (0.5 ppt).
mg/L = milligrams per liter.
ppt = parts per thousand.
NA = Not analyzed
U = The laboratory report noted that the analyte was not detected at or above the reported result.
^a Field measurement
^b Salinity (ppt) = 0.00181 x chloride concentration (mg/L)



— [Red Outline] — SITE BOUNDARY

SCALE: 1" = 2000'
 WHEN PLOTTED AT 8.5 x 11 PAGE SIZE

8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing **8TH AVENUE TERMINALS, INC. PROPERTY**
LOCATION MAP

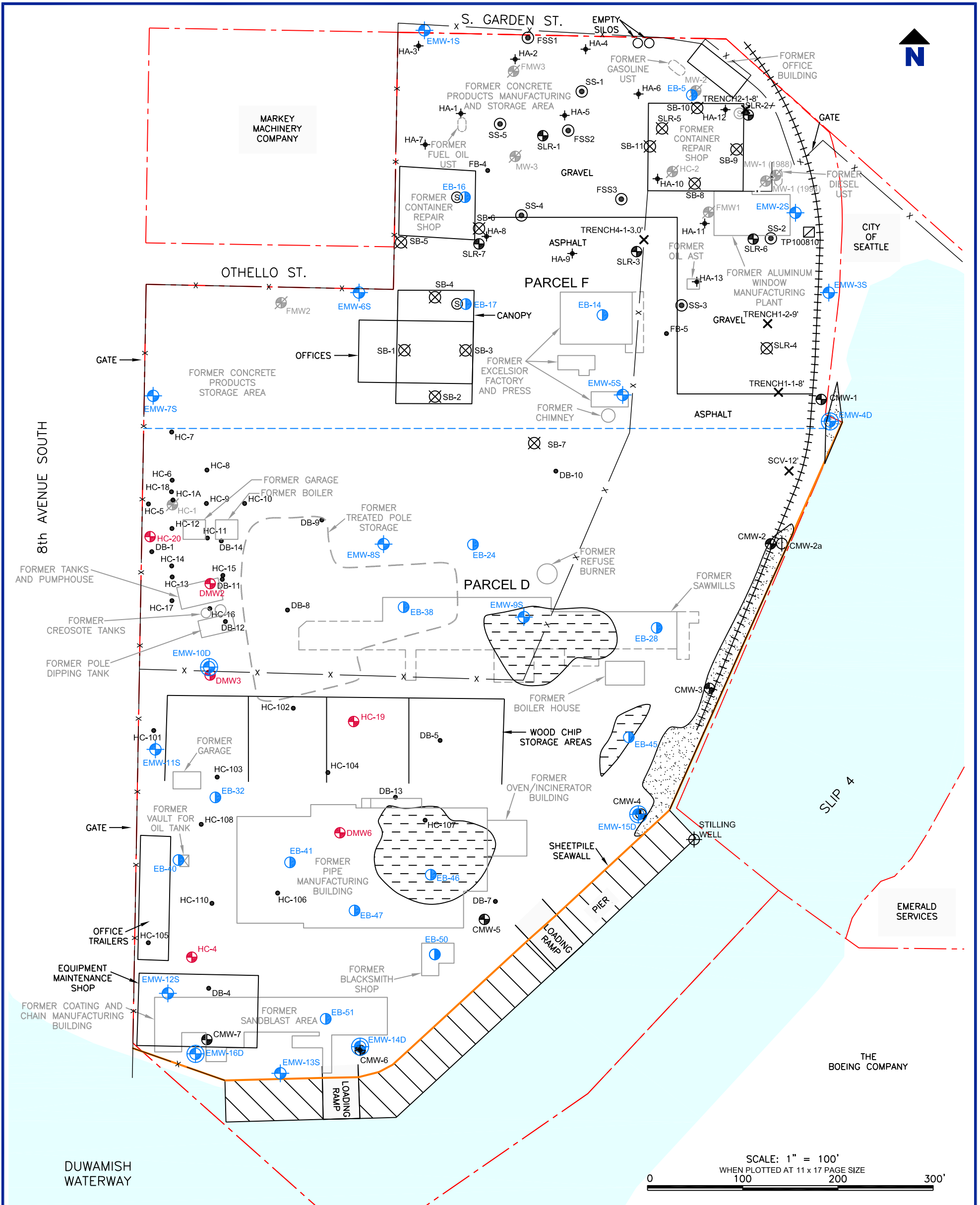
SLR  22118 20th AVE SE
 BLDG. G, SUITE 202
 BOTHELL, WA 98021

T: 425-402-8800
 F: 425-402-8488

Date January 2, 2014
 File Name 02-01

Scale AS SHOWN
 Project No. 001.0205.00030

Fig. No. **1**



NOTES
 DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA.
 SURVEY PLAN, DRAWING 06133-CC052908.DWG

- LEGEND**
- PARCEL D/PARCEL F BOUNDARY
 - PROPERTY BOUNDARIES
 - +++++ RAIL LINE
 - x-x- FENCE
 - SHEETPILE SEAWALL
 - APPROX. LOCATION OF DREDGE FILL AREA
 - APPROX. LOCATION OF SAND AND DREDGE FILL AREA
 - 2013 SOIL BORING LOCATION
 - ⊕ 2013 SHALLOW GROUNDWATER MONITORING WELL
 - ⊕ 2013 DEEP GROUNDWATER MONITORING WELL
 - ⊗ 2012 TRENCH SAMPLE LOCATION
 - ⊕ 2008 GROUNDWATER MONITORING WELL
 - ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
 - ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL
 - 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
 - ⊙ 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
 - + 1994 SOIL BORING (APPROXIMATE LOCATION)
 - ⊕ 2008 SOIL BORING (APPROXIMATE LOCATION)
 - ⊗ 2009 SOIL BORING (APPROXIMATE LOCATION)
 - ⊠ 2010 TEST PIT (APPROXIMATE LOCATION)
 - ⊙ INACTIVE WASH WATER SUMP
 - ⊙ FORMER WASH WATER SUMP

8TH AVENUE TERMINALS, INC. SITE
 7400 8TH AVENUE SOUTH
 SEATTLE, WASHINGTON

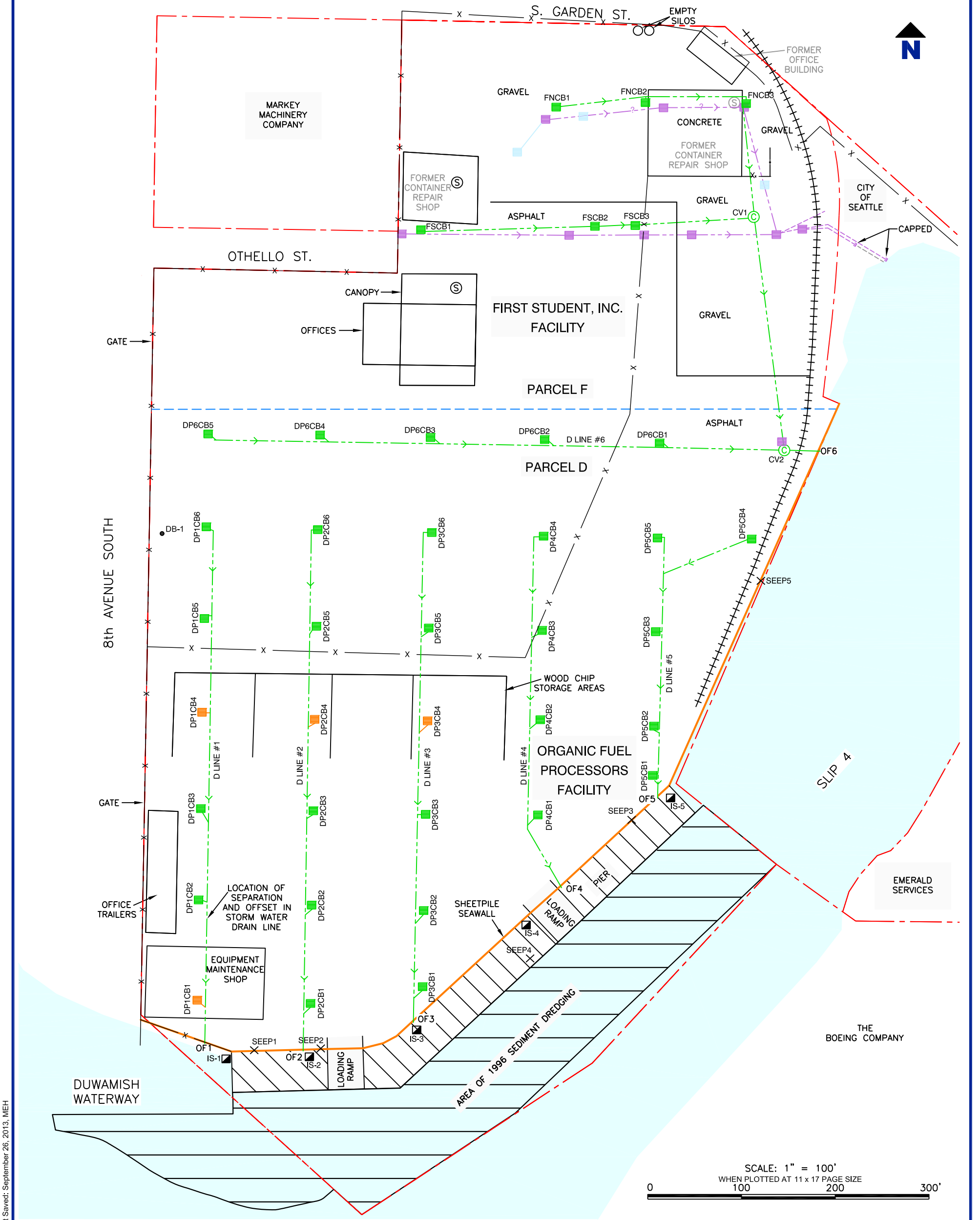
Drawing
SOIL BORING AND GROUNDWATER MONITORING WELL LOCATIONS

Date	September 26, 2013	Scale	AS SHOWN	Fig. No.	2
File Name	02-02	Project No.	101.00205.00030		

22118 20th AVE SE
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NOTES

1) CATCH BASINS AND CONVEYANCE LINES THAT ARE SHADED BLUE ARE REMOVED COMPONENTS OF THE PREVIOUS DRAINAGE SYSTEM THAT ARE SHOWN ON A LAYRITE CONCRETE PRODUCTS DRAWING TITLED "PLANT LAYOUT", DATED JUNE 1946, OR ON AN UNNAMED PRELIMINARY DRAWING DATED APPROXIMATELY 1990 THAT WAS IN CROWLEY MARITIME CORPORATION'S FILES.

2) CATCH BASINS AND CONVEYANCE LINES THAT ARE SHADED PURPLE ARE ABANDONED OR REMOVED COMPONENTS OF THE PREVIOUS DRAINAGE SYSTEM.

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	EXISTING STORM WATER CONVEYANCE LINE
	SEEP LOCATION
	INTERTIDAL SEDIMENT SAMPLE LOCATION
	EXISTING STORM WATER CATCH BASIN LOCATION AND DESIGNATION
	CURRENTLY CLOSED STORM WATER CATCH BASIN LOCATION AND DESIGNATION
	INACTIVE WASH WATER SUMP
	FORMER WASH WATER SUMP
	CONVEYANCE VAULT
	OUTFALL LOCATION AND DESIGNATION

8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing **CURRENT STORM WATER DRAINAGE SYSTEM**

Date September 26, 2013	Scale AS SHOWN	Fig. No. 3
File Name 01-03	Project No. 101.00205.00030	

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S. GARDEN ST.



MARKEY MACHINERY COMPANY

FORMER GASOLINE UST

PEERLESS CONCRETE PRODUCTS (1922 TO 1944)

FORMER DIESEL UST

OTHELLO ST.

OTHELLO ST. (VACATED)

PARCEL F

WASHINGTON EXCELSIOR MANUFACTURING & WAREHOUSE (1922 TO 1959)

VACANT (UNTIL 1946)

FACTORY AND PRESS

COTTONWOOD SHED

OFFICE & RESIDENCE

WOOD STORAGE YARD

CHIMNEY

COTTONWOOD SHED

RAW WOOD STORAGE YARD

8th AVENUE SOUTH

FONTANELLE ST. (VACATED)

PARCEL D

SAWMILLS (1917 TO 1941)

APPROXIMATE LOCATION OF 1936 SHORELINE

STORAGE SHED

WOOD BINS

REFUSE BURNER

FUEL BIN

APPROXIMATE LOCATION OF GEORGETOWN STEAM PLANT INTAKE AND DISCHARGE PIPELINE

TRAVELLING CRANE

BOILER HOUSE

SLIP 4

WEBSTER ST. (VACATED)

COMPRESSOR ROOM

PIPE MANUFACTURING BUILDING (1918 TO 1974)

OFFICE

GARAGE

RAW MATERIAL STORAGE AREA

PIPE ROLLING & MILLING AREA

PIPE SEAM WELDING AREA

PIPE ROLLWAY

FINISHED PIPE STORAGE YARD

PIPE DIPPING SHOP (1918 TO 1974)

PIPE DIPPING KETTLE

PIPE DRYING AND STORAGE SKIDS

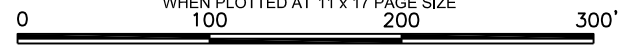
FURNACE

BLACKSMITH SHOP (1918 TO 1940s)

PIPE DIPPING KETTLE (1918 TO 1974)

DUWAMISH WATERWAY

SCALE: 1" = 100'
WHEN PLOTTED AT 11 x 17 PAGE SIZE



NOTES
1. DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
2. LOCATIONS OF HISTORIC OPERATIONS FROM HART CROWSER (1991), AND AERIAL PHOTOGRAPHS.

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAILROAD LINE
	2008 OR 2011 GROUNDWATER MONITORING WELL
	1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	1989 OR 1990 SOIL BORING (APPROX. LOCATION)
	1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
	1994 SOIL BORING (APPROXIMATE LOCATION)
	2008 SOIL BORING (APPROXIMATE LOCATION)
	2009 OR 2011 SOIL BORING (APPROXIMATE LOCATION)
	2010 TEST PIT (APPROXIMATE LOCATION)

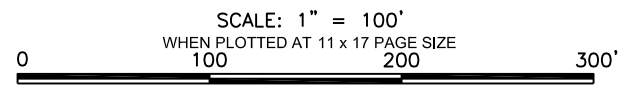
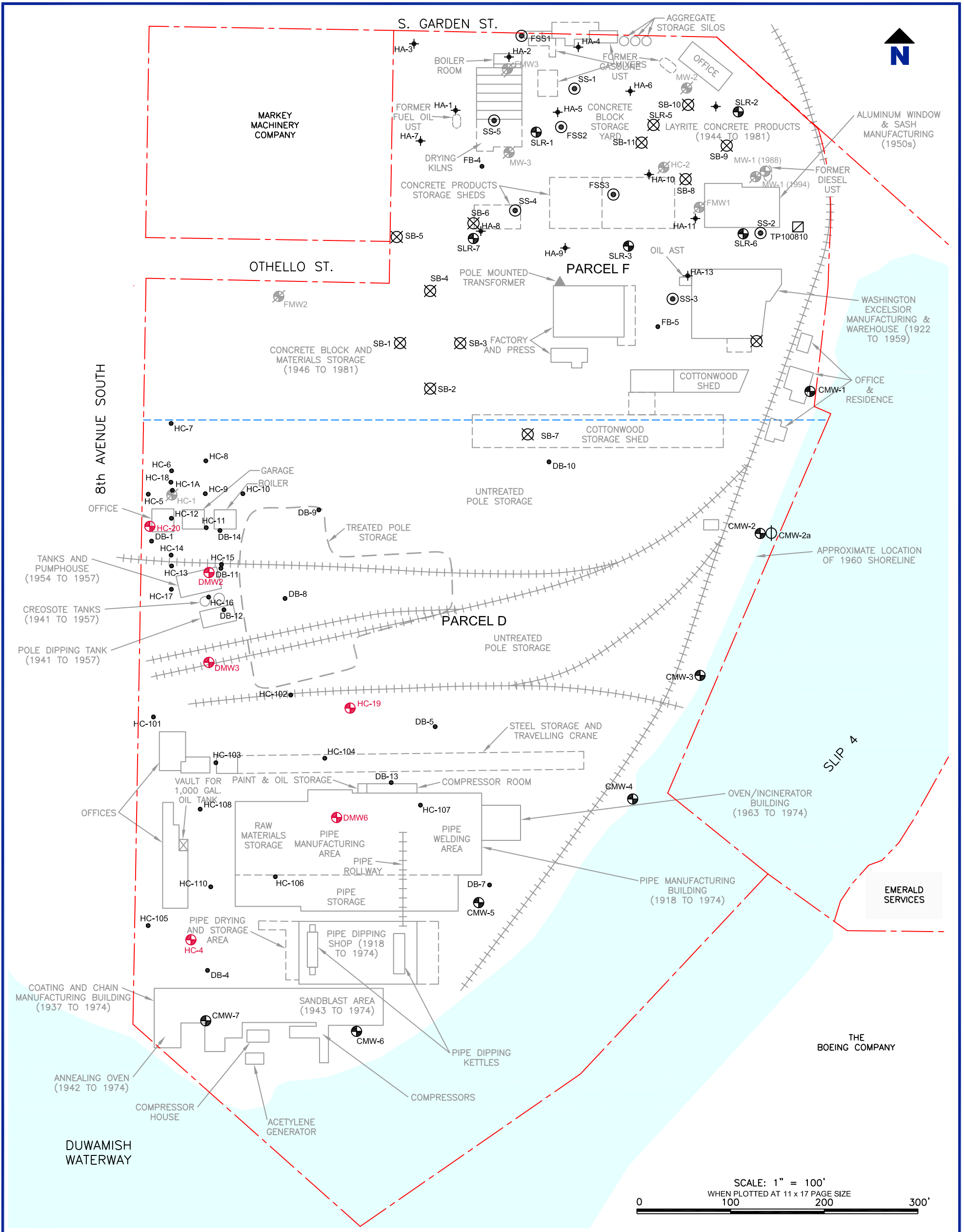
8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing HISTORIC PROPERTY OPERATIONS - 1918 TO 1949

Date	January 2, 2014	Scale	AS SHOWN	Fig. No.	4
File Name	03-04	Project No.	101.00205.00030		

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NOTES
 1. DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 2. LOCATIONS OF HISTORIC OPERATIONS FROM HART CROWSER (1991), SEACOR (1994), AND AERIAL PHOTOGRAPHS.

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAILROAD LINE
	2008 or 2011 GROUNDWATER MONITORING WELL
	1989 or 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	1989 OR 1990 SOIL BORING (APPROX. LOCATION)
	1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
	1994 SOIL BORING (APPROXIMATE LOCATION)
	2008 SOIL BORING (APPROXIMATE LOCATION)
	2009 or 2011 SOIL BORING (APPROXIMATE LOCATION)
	2010 TEST PIT (APPROXIMATE LOCATION)

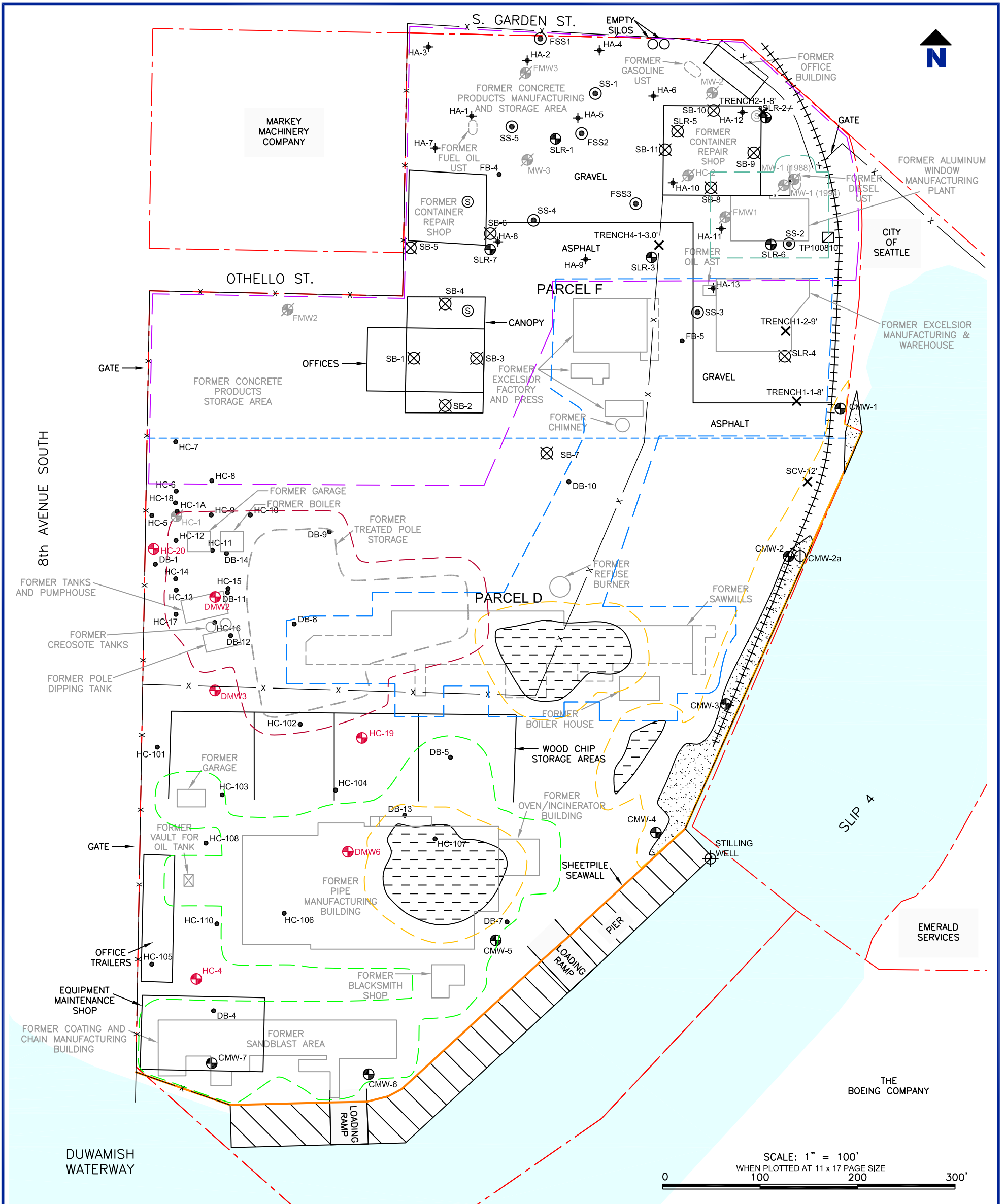
8TH AVENUE TERMINALS, INC. SITE
 7400 8TH AVENUE SOUTH
 SEATTLE, WASHINGTON

Drawing **HISTORIC PROPERTY OPERATIONS - 1950 TO 1974**

Date	January 2, 2014	Scale	AS SHOWN	Fig. No.	5
File Name	01-05	Project No.	101.00205.00030		

22118 20th AVE SE
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NOTES
 DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA.
 SURVEY PLAN, DRAWING 06133-CC052908.DWG

- LEGEND**
- PARCEL D/PARCEL F BOUNDARY
 - - - PROPERTY BOUNDARIES
 - + + + + + RAIL LINE
 - x - x - FENCE
 - SHEETPILE SEAWALL
 - ▨ APPROX. LOCATION OF DREDGE FILL AREA
 - ▩ APPROX. LOCATION OF SAND AND DREDGE FILL AREA
 - POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER WOOD TREATING OPERATIONS
 - POTENTIAL SOURCE AREA ASSOCIATED WITH DREDGE FILL

- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER SAWMILL AND EXCELSIOR FACTORY AND PRESS OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER ALUMINUM WINDOW MANUFACTURING PLANT
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER PIPE AND CHAIN MANUFACTURING OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER CONCRETE PRODUCTS MANUFACTURING AND STORAGE OPERATIONS
- ✕ 2012 TRENCH SAMPLE LOCATION
- ⊕ 2008 GROUNDWATER MONITORING WELL
- ⊙ 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- ⊙ 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)

- ⊕ 1994 SOIL BORING (APPROXIMATE LOCATION)
- ⊙ 2008 SOIL BORING (APPROXIMATE LOCATION)
- ⊗ 2009 SOIL BORING (APPROXIMATE LOCATION)
- ⊠ 2010 TEST PIT (APPROXIMATE LOCATION)
- ⊙ INACTIVE WASH WATER SUMP
- ⊙ FORMER WASH WATER SUMP

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LOCATIONS OF POTENTIAL CONTAMINANT SOURCE AREAS

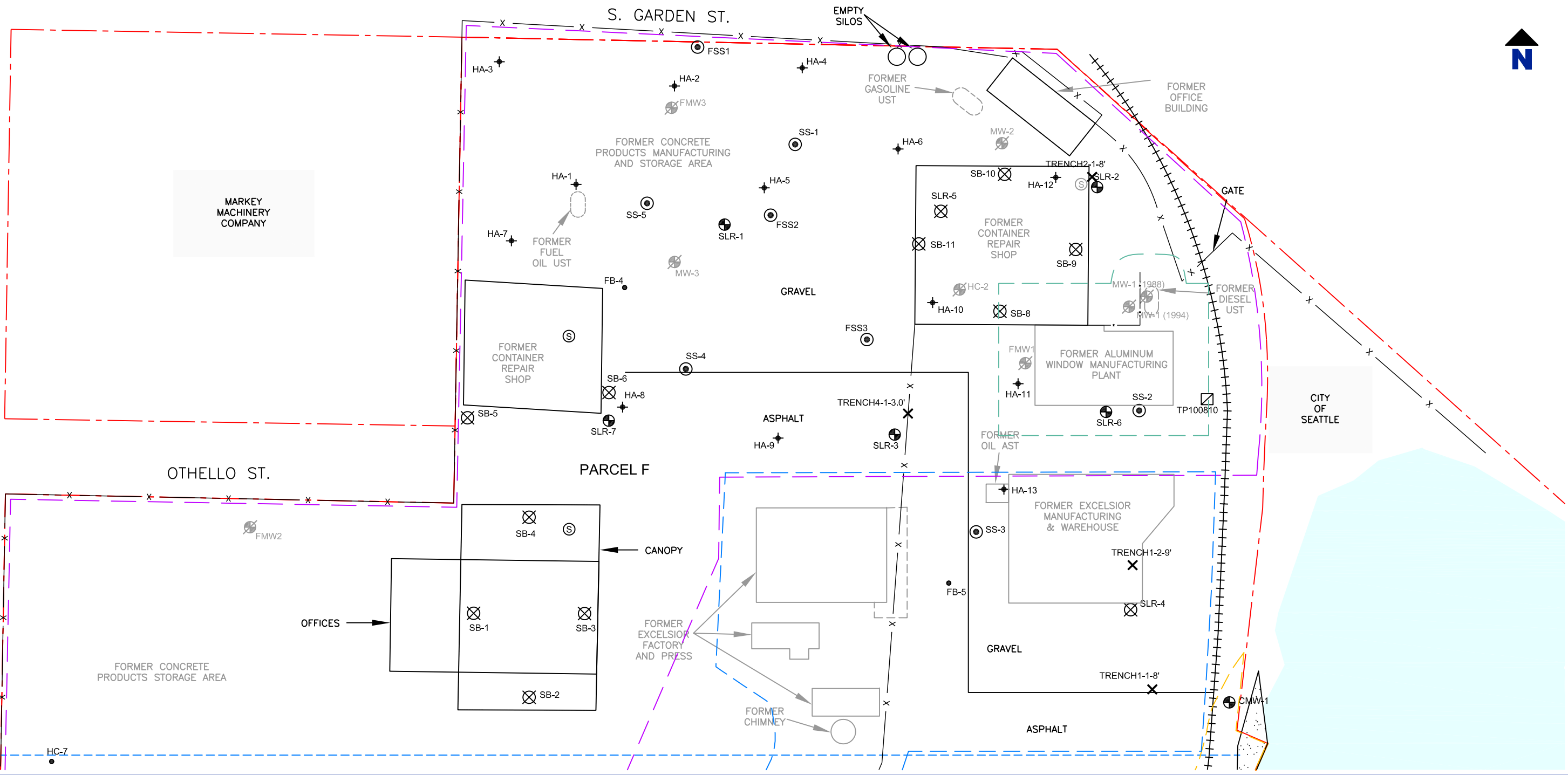
Date	January 9, 2014	Scale	AS SHOWN	Fig. No.	6
File Name	02-06	Project No.	101.00205.00030		

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NOTES

- 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
- 2) POTENTIAL IMPACTED SOIL AREAS ONLY PERTAIN TO THE VADOSE ZONE ON THE 8TH AVENUE TERMINALS, INC. PROPERTY.

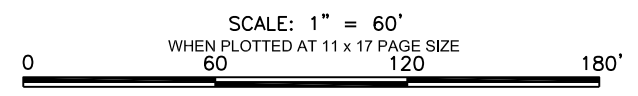
LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAIL LINE
- FENCE
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- 2012 TRENCH SAMPLE LOCATION
- INACTIVE WASH WATER SUMP
- FORMER WASH WATER SUMP
- 2008 OR 2011 GROUNDWATER MONITORING WELL
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
- 1994 SOIL BORING (APPROXIMATE LOCATION)
- 2009 OR 2011 SOIL BORING (APPROXIMATE LOCATION)
- 2010 TEST PIT (APPROXIMATE LOCATION)
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER CONCRETE PRODUCTS MANUFACTURING AND STORAGE OPERATIONS.
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER ALUMINUM WINDOW MANUFACTURING PLANT
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER SAWMILL AND EXCELSIOR FACTORY AND PRESS OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH DREDGE FILL

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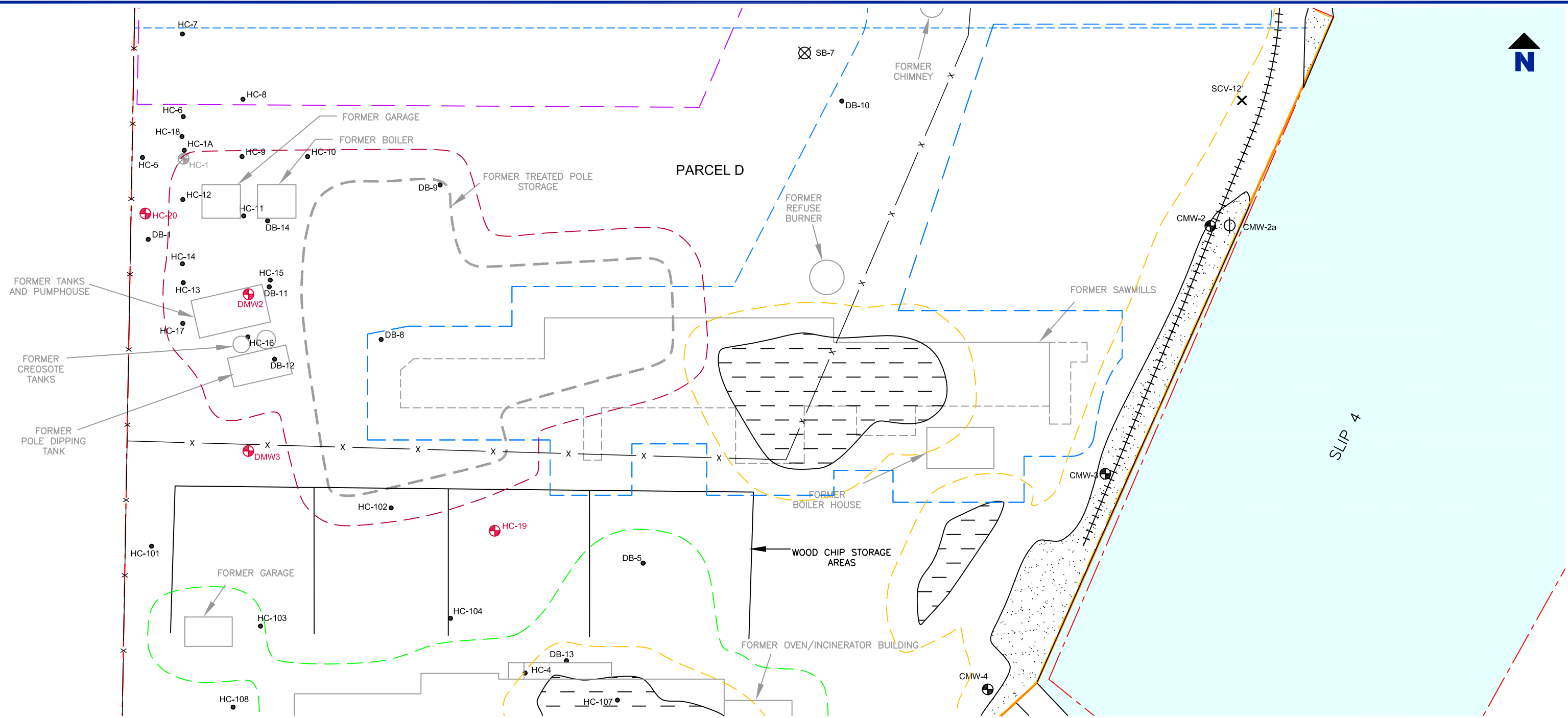
Drawing **LOCATIONS OF POTENTIAL CONTAMINANT SOURCE AREAS - PARCEL F**

Date	January 9, 2014	Scale	AS SHOWN	Fig. No.	7
File Name	02-07	Project No.	101.00205.00030		



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NOTES

- 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
- 2) POTENTIAL IMPACTED SOIL AREAS ONLY PERTAIN TO THE VADOSE ZONE ON THE 8TH AVENUE TERMINAL, INC. PROPERTY.

LEGEND

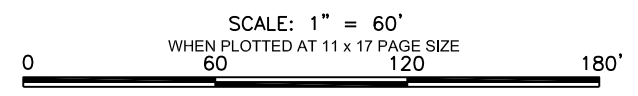
- PROPERTY BOUNDARIES
- PARCEL D/PARCEL F BOUNDARY
- RAIL LINE
- FENCE
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- 2008 GROUNDWATER MONITORING WELL
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- 2008 SOIL BORING (APPROXIMATE LOCATION)
- 2009 SOIL BORING (APPROXIMATE LOCATION)
- 2012 TRENCH SAMPLE LOCATION

- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER WOOD TREATING OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH DREDGE FILL
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER SAWMILL AND EXCELSIOR FACTORY AND PRESS OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER PIPE AND CHAIN MANUFACTURING OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER CONCRETE PRODUCTS MANUFACTURING AND STORAGE OPERATIONS

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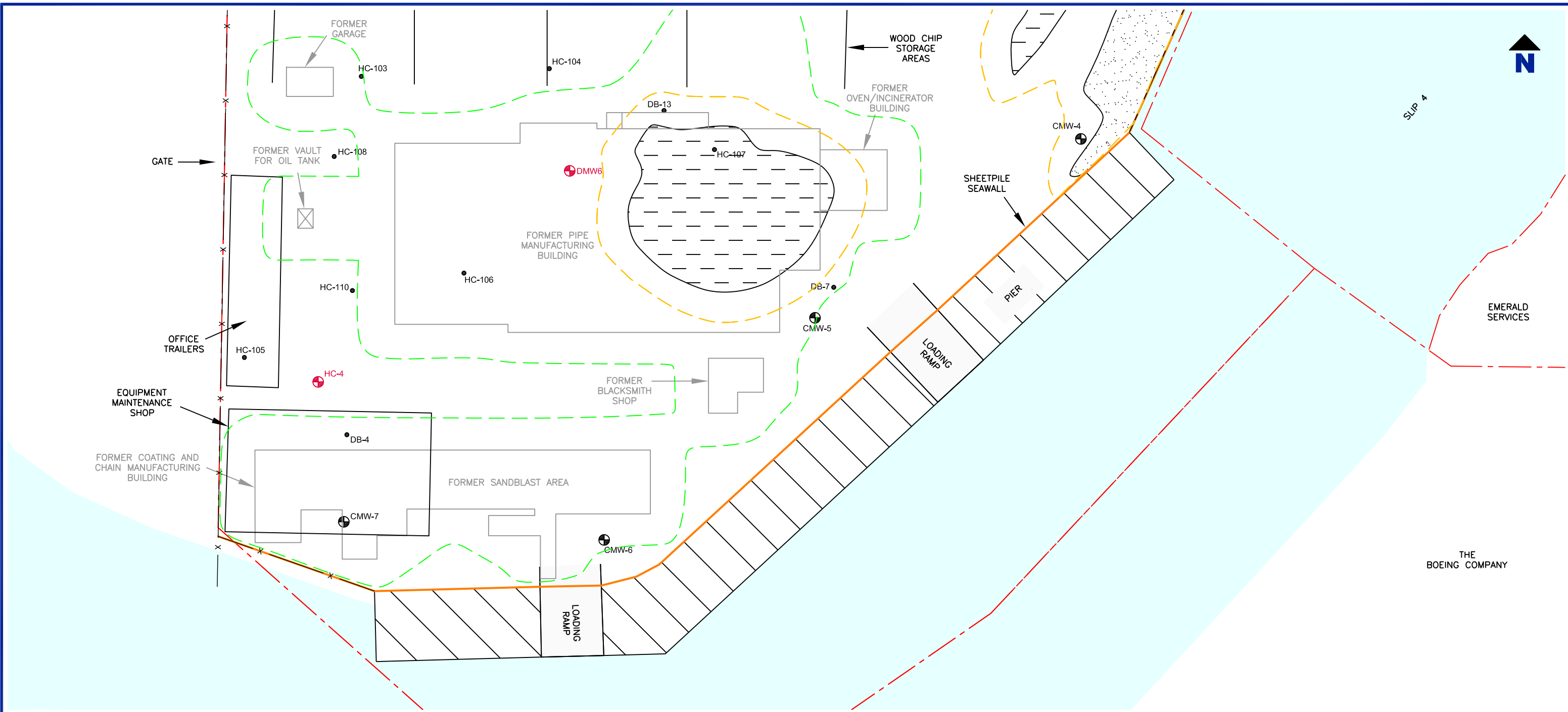
Drawing **LOCATIONS OF POTENTIAL CONTAMINANT SOURCE AREAS - NORTHERN PART OF PARCEL D**

Date	January 9, 2014	Scale	AS SHOWN	Fig. No.	8
File Name	03-08	Project No.	101.0205.00030		



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NOTES

- 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
- 2) POTENTIAL IMPACTED SOIL AREAS ONLY PERTAIN TO THE VADOSE ZONE ON THE 8TH AVENUE TERMINALS, INC. PROPERTY.

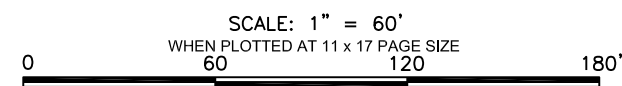
LEGEND

- PROPERTY BOUNDARIES
- +++++ RAIL LINE
- x-x- FENCE
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ⊕ 2008 GROUNDWATER MONITORING WELL
- ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- POTENTIAL SOURCE AREA ASSOCIATED WITH DREDGE FILL
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER PIPE AND CHAIN MANUFACTURING OPERATIONS

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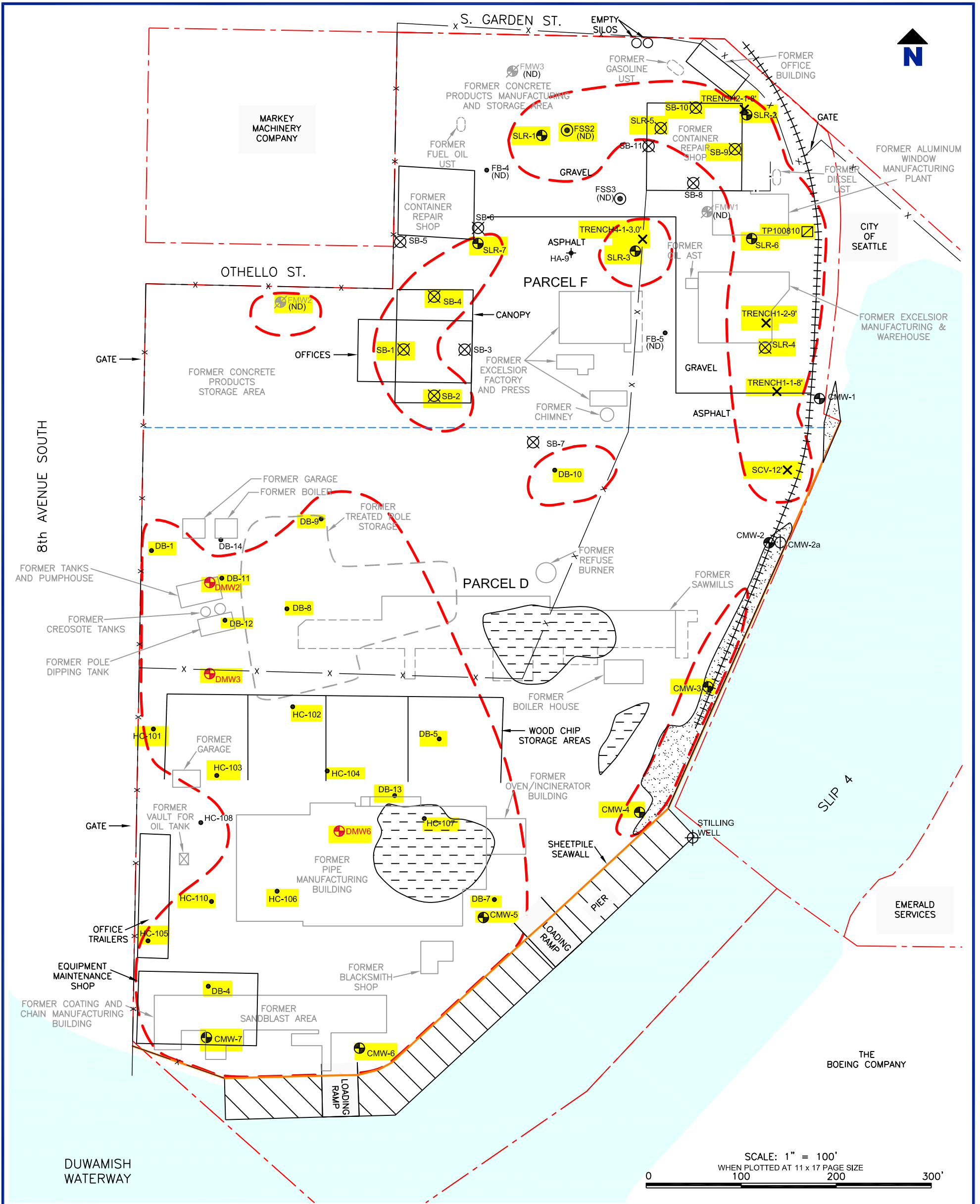
Drawing **LOCATIONS OF POTENTIAL CONTAMINANT SOURCE AREAS - SOUTHERN PART OF PARCEL D**

Date	January 9, 2014	Scale	AS SHOWN	Fig. No.	9
File Name	02-09	Project No.	101.00205.00030		



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NOTES
 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 2) HIGHLIGHTED SAMPLE LOCATIONS CONTAINED PAH CONCENTRATIONS GREATER THAN PRELIMINARY SOIL SCREENING LEVELS.
 3) ND=THE METHOD REPORTING LIMIT OF AT LEAST ONE PAH COMPOUND IN THIS SAMPLE IS NOT KNOWN.

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- +++++ RAIL LINE
- x-x- FENCE
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ESTIMATED AREA OF PAH CONCENTRATIONS GREATER THAN PRELIMINARY SOIL SCREENING LEVELS
- x 2012 TRENCH SAMPLE LOCATION

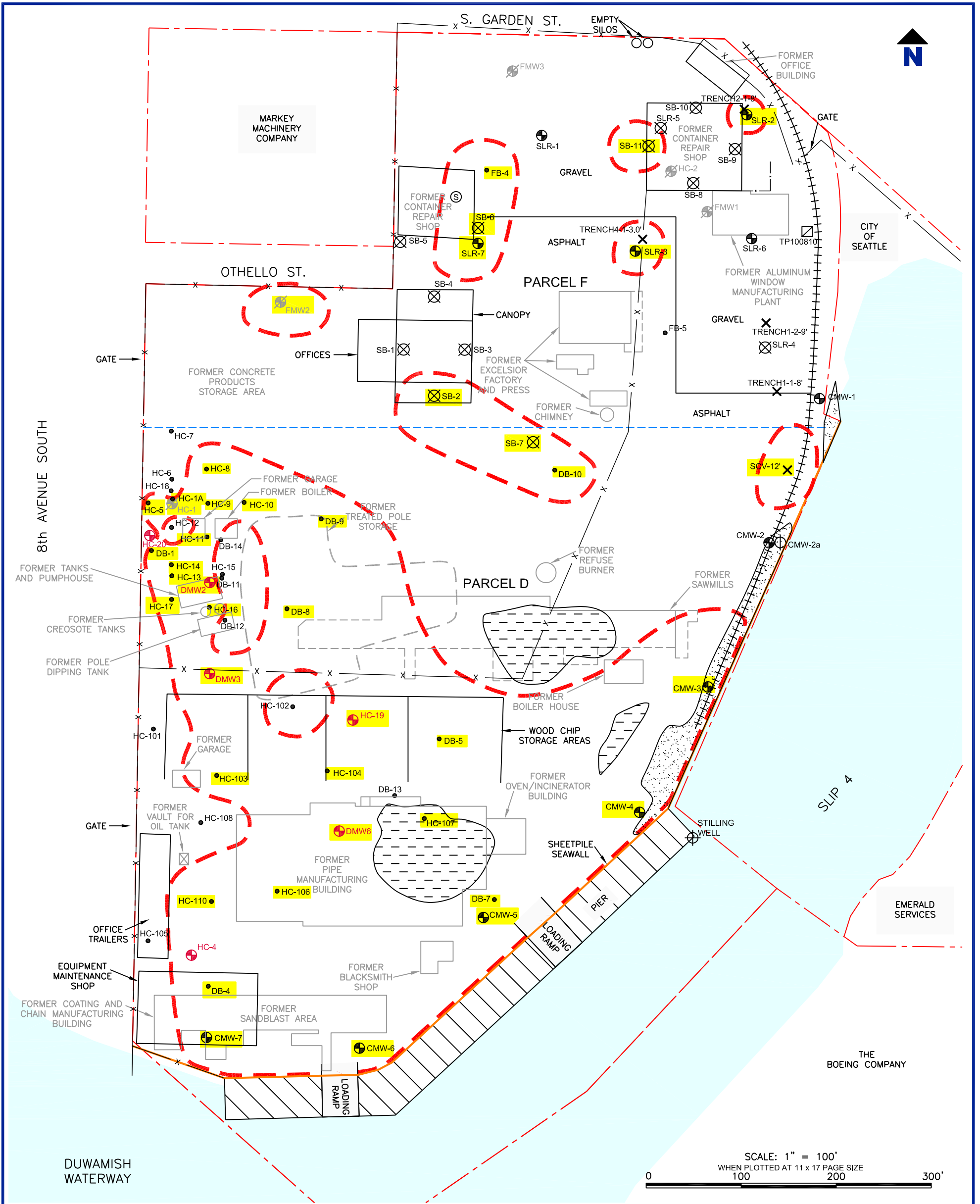
- ⊕ 2008 OR 2011 GROUNDWATER MONITORING WELL
- ⊖ 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- ⊙ 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
- ⊕ 1994 SOIL BORING (APPROXIMATE LOCATION)
- ⊕ 2008 SOIL BORING (APPROXIMATE LOCATION)
- ⊗ 2009 OR 2011 SOIL BORING (APPROXIMATE LOCATION)
- ⊠ 2010 TEST PIT (APPROXIMATE LOCATION)

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Drawing **ESTIMATED AREAS OF PAH CONCENTRATIONS IN SOIL GREATER THAN PRELIMINARY SCREENING LEVELS**

Date	January 10, 2014	Scale	AS SHOWN	Fig. No.	10
File Name	02-10	Project No.	101.00205.00030		

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NOTES
 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 2) HIGHLIGHTED SAMPLE LOCATIONS CONTAINED PAH CONCENTRATIONS GREATER THAN PRELIMINARY SOIL SCREENING LEVELS.

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	ESTIMATED AREA OF ARSENIC CONCENTRATIONS GREATER THAN PRELIMINARY SOIL SCREENING LEVEL

- 2012 TRENCH SAMPLE LOCATION
- 2008 GROUNDWATER MONITORING WELL
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
- 1994 SOIL BORING (APPROXIMATE LOCATION)
- 2008 SOIL BORING (APPROXIMATE LOCATION)
- 2009 SOIL BORING (APPROXIMATE LOCATION)
- 2010 TEST PIT (APPROXIMATE LOCATION)

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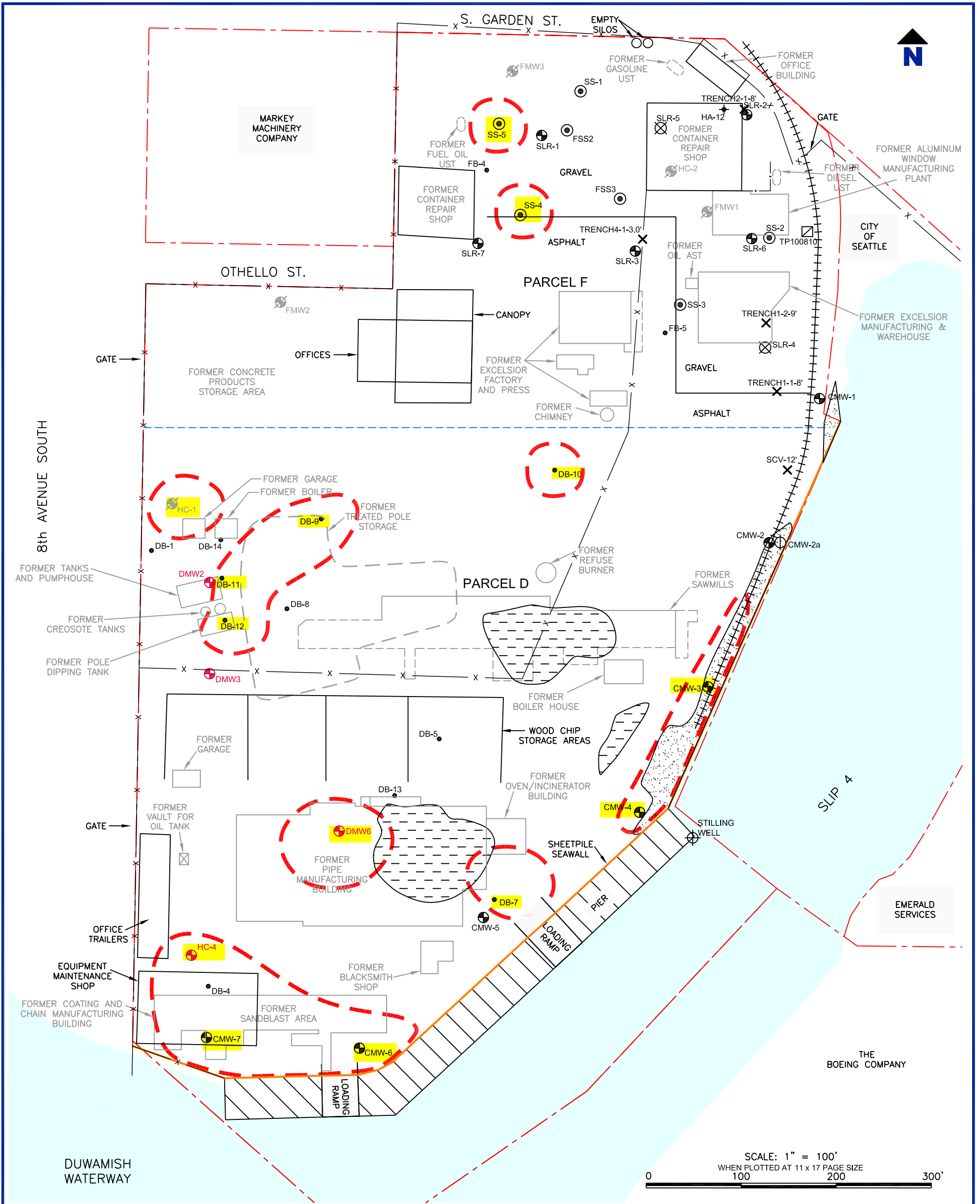
Drawing **ESTIMATED AREAS OF ARSENIC CONCENTRATIONS IN SOIL GREATER THAN PRELIMINARY SCREENING LEVELS**

Date	January 10, 2014	Scale	AS SHOWN	Fig. No.	11
File Name	02-11	Project No.	101.00205.00030		



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NOTES
 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 2) HIGHLIGHTED SAMPLE LOCATIONS CONTAINED PCB CONCENTRATIONS GREATER THAN PRELIMINARY SOIL SCREENING LEVELS.
 3) ND=THE METHOD REPORTING LIMIT OF AT LEAST ONE PCB COMPOUND IN THE SAMPLE IS NOT KNOWN.
 4) PCBs WERE NOT DETECTED IN ANY OF THE PREVIOUS GROUNDWATER SAMPLES FROM THE PROPERTY.

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	ESTIMATED AREA OF PCB CONCENTRATIONS GREATER THAN PRELIMINARY SOIL SCREENING LEVELS
	2012 TRENCH SAMPLE LOCATION
	2010 TEST PIT (APPROXIMATE LOCATION)
	2008 OR 2011 GROUNDWATER MONITORING WELL
	1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	1989 OR 1990 SOIL BORING (APPROX. LOCATION)
	1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
	1994 SOIL BORING (APPROXIMATE LOCATION)
	2008 SOIL BORING (APPROXIMATE LOCATION)
	2009 OR 2011 SOIL BORING (APPROXIMATE LOCATION)

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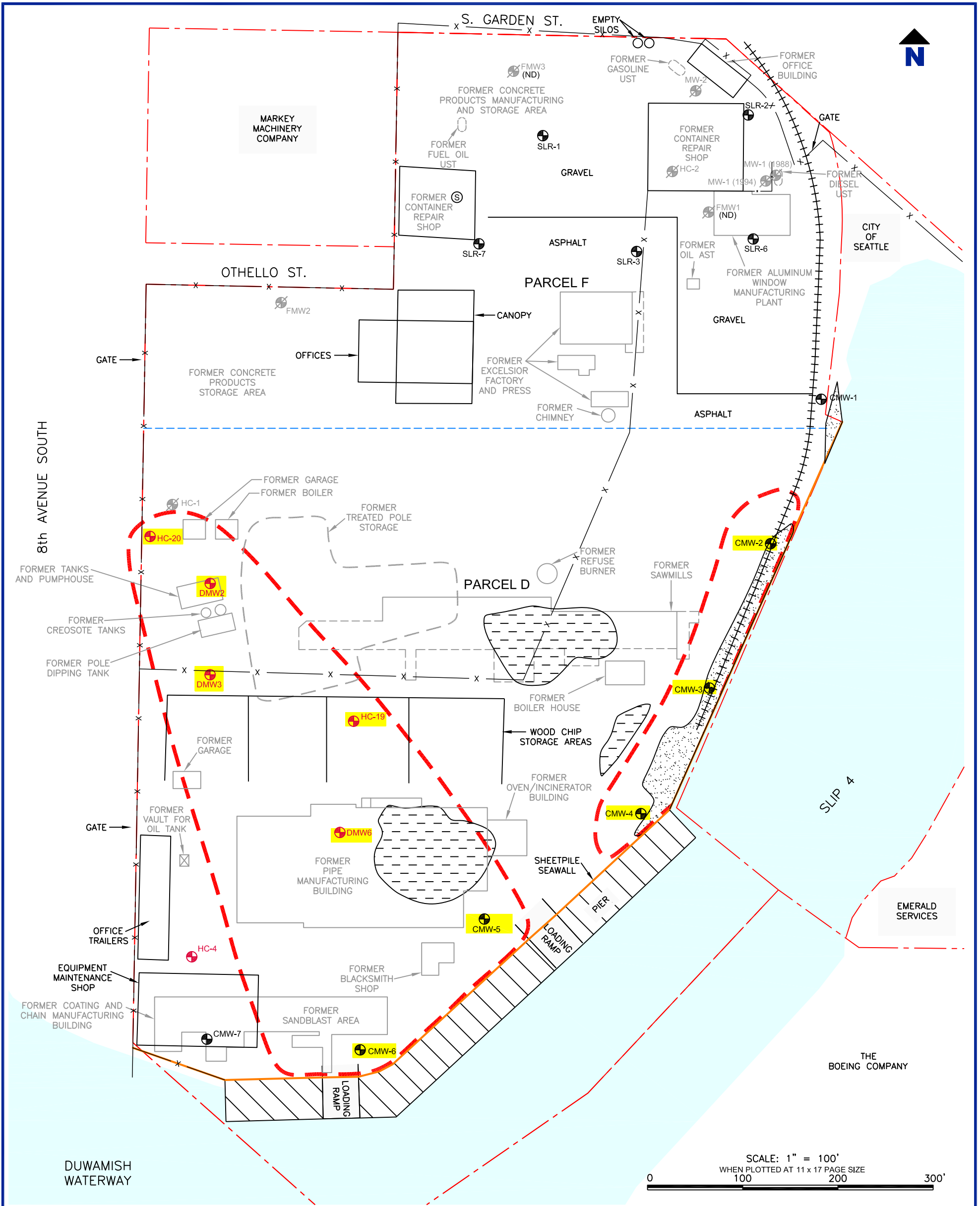
Drawing **ESTIMATED AREAS OF PCB CONCENTRATIONS IN SOIL GREATER THAN PRELIMINARY SCREENING LEVELS**

Date	January 10, 2014	Scale	AS SHOWN	Fig. No.	12
File Name	02-12	Project No.	101.00205.00030		

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NOTES

- 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
- 2) AT LEAST ONE GROUNDWATER SAMPLE FROM THE HIGHLIGHTED SAMPLE LOCATIONS CONTAINED PAH CONCENTRATIONS GREATER THAN THE PRELIMINARY SCREENING LEVELS.
- 3) ND=THE METHOD REPORTING LIMITS FOR ALL THE SAMPLES FROM THIS LOCATIONS ARE NOT KNOWN.

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- +++++ RAIL LINE
- x - x - FENCE
- [Hatched Box] APPROX. LOCATION OF DREDGE FILL AREA
- [Dotted Box] APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- [Red Dashed Circle] ESTIMATED AREA OF PAH CONCENTRATIONS GREATER THAN PRELIMINARY GROUNDWATER SCREENING LEVELS
- ⊕ 2008 OR 2011 GROUNDWATER MONITORING WELL
- ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL

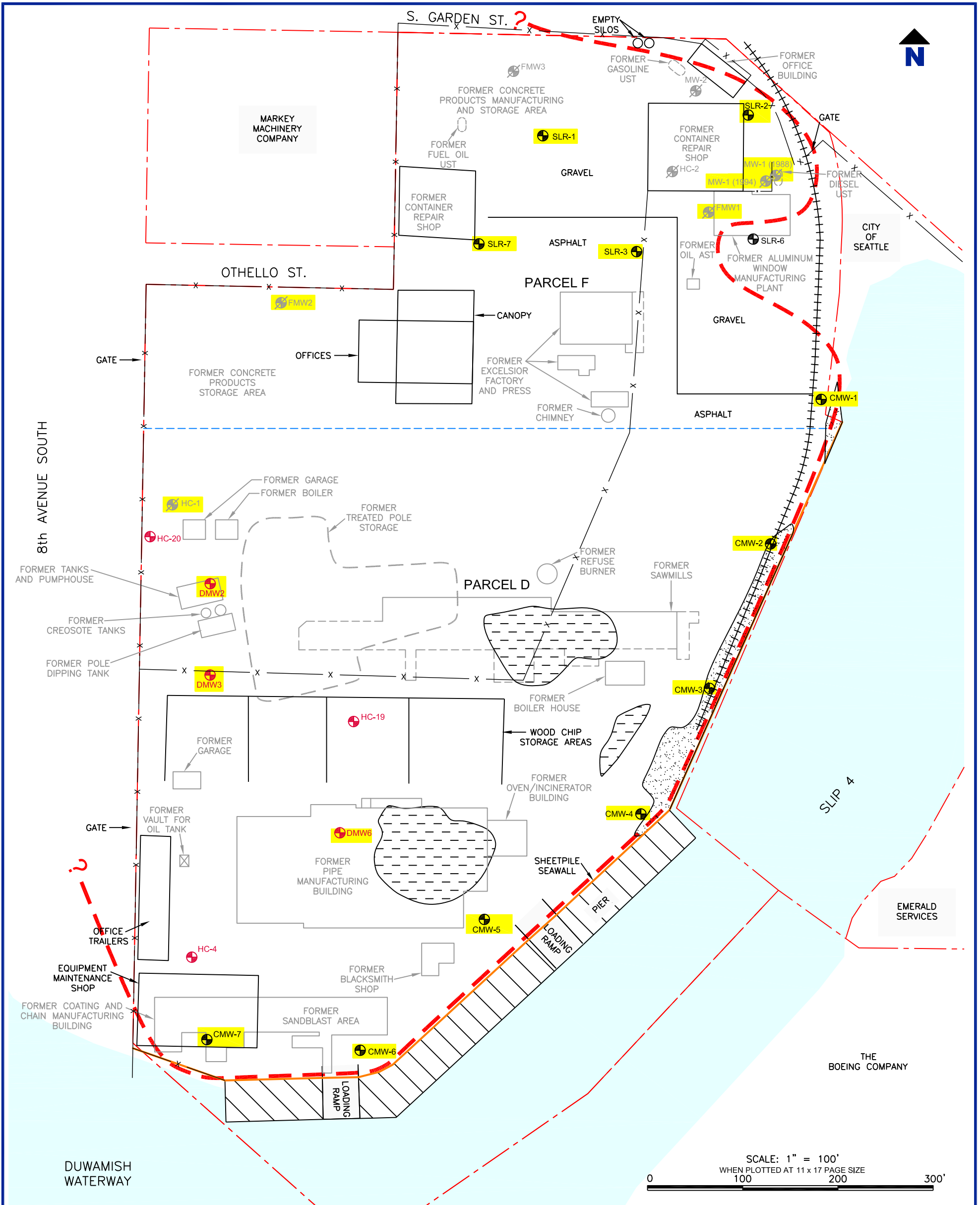
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Drawing **ESTIMATED AREAS OF PAH CONCENTRATIONS IN GROUNDWATER GREATER THAN PRELIMINARY SCREENING LEVELS**

Date	January 20, 2014	Scale	AS SHOWN	Fig. No.	13
File Name	02-13	Project No.	101.00205.00030		

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NOTES

- 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
- 2) AT LEAST ONE GROUNDWATER SAMPLE FROM THE HIGHLIGHTED SAMPLE LOCATIONS CONTAINED ARSENIC CONCENTRATIONS THAT EXCEEDED THE PRELIMINARY SCREENING LEVELS.
- 3) * = GROUNDWATER SAMPLES DID NOT CONTAIN DETECTABLE ARSENIC; HOWEVER, THE METHOD REPORTING LIMIT EXCEEDED THE PRELIMINARY SCREENING LEVEL.

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- ++++ RAIL LINE
- x - x - FENCE
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ESTIMATED AREA OF PAH CONCENTRATIONS GREATER THAN PRELIMINARY GROUNDWATER SCREENING LEVEL
- ⊕ 2008 OR 2011 GROUNDWATER MONITORING WELL
- ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL

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Drawing **ESTIMATED AREAS OF ARSENIC CONCENTRATIONS IN GROUNDWATER GREATER THAN PRELIMINARY SCREENING LEVEL**

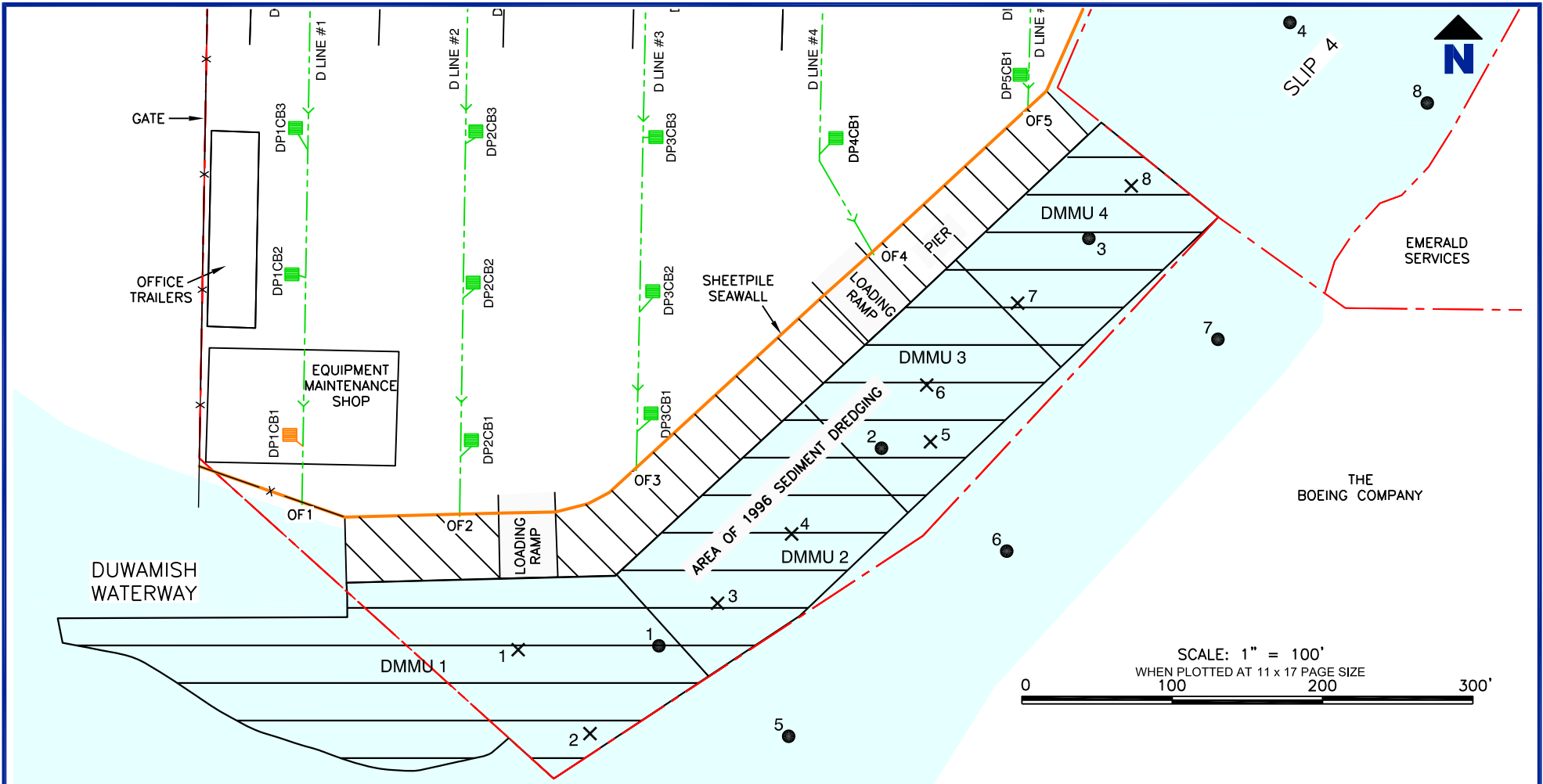
Date	January 21, 2014	Scale	AS SHOWN	Fig. No.	14
File Name	02-14	Project No.	101.00205.00030		

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N:\Bothe\11 PROJECTS\Crowley - 205000030 First Phase of RIV\Figures\02-15.dwg, MEH.



NOTES

- 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133--CC052908.DWG.
- 2) LOCATIONS OF STRUCTURES ARE APPROXIMATE.

LEGEND

- - - - - PROPERTY BOUNDARIES
- x x x x x FENCE
- - - - - EXISTING STORM WATER CONVEYANCE
- 1994 SURFACE SEDIMENT SAMPLE LOCATION
- ✕ 1995 SEDIMENT CORE LOCATION
- DP2CB1 ■ EXISTING STORM WATER CATCH BASIN LOCATION AND DESIGNATION
- OF5 OUTFALL LOCATION AND DESIGNATION

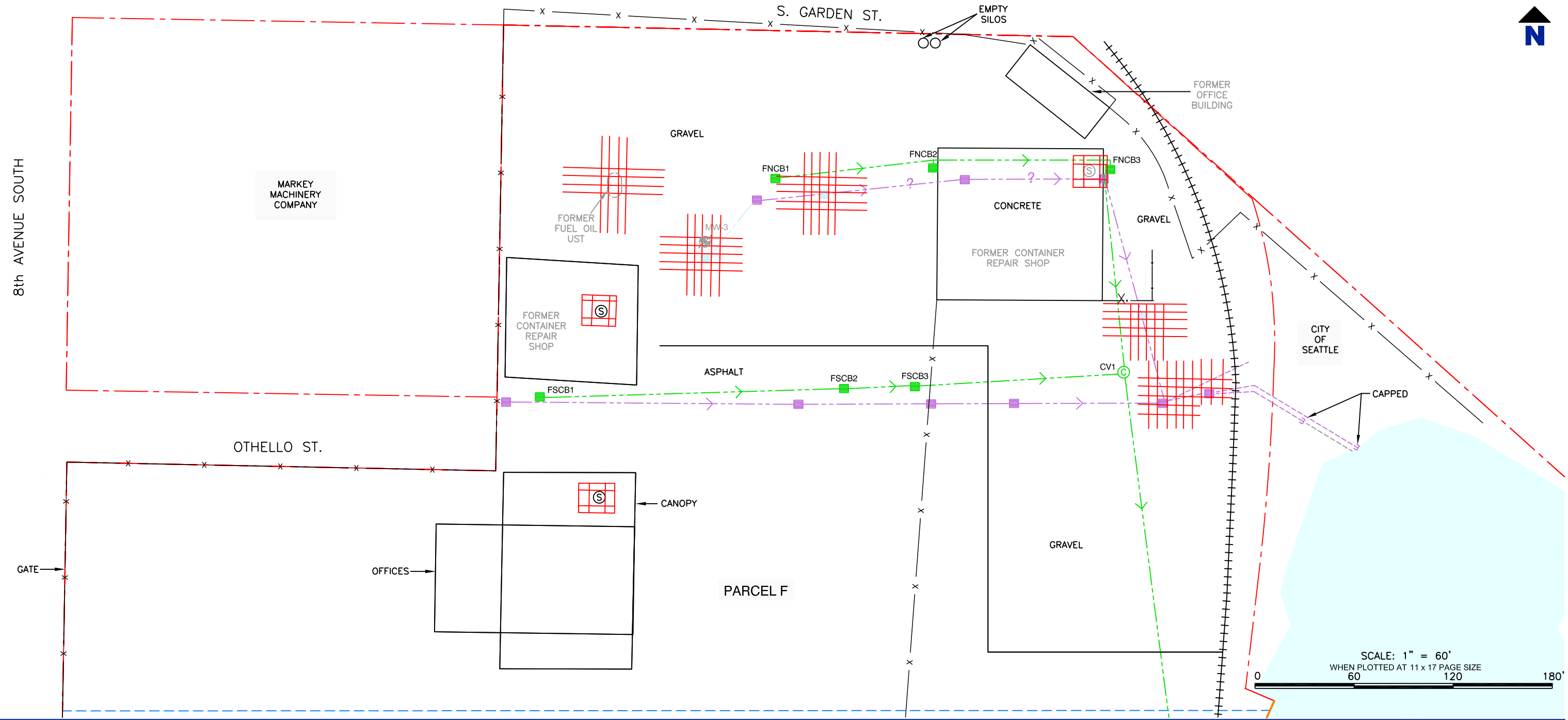
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Drawing **LOCATIONS OF 1994 AND 1995 SEDIMENT SAMPLES**

Date	January 21, 2014	Scale	AS SHOWN	Fig. No.	15
File Name	02-15	Project No.	101.00205.00030		

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NOTES

- 1) CATCH BASINS AND CONVEYANCE LINES THAT ARE SHADED BLUE ARE REMOVED COMPONENTS OF THE PREVIOUS DRAINAGE SYSTEM THAT ARE SHOWN ON A LAYRITE CONCRETE PRODUCTS DRAWING TITLED "PLANT LAYOUT", DATED JUNE 1946, OR ON AN UNNAMED PRELIMINARY DRAWING DATED APPROXIMATELY 1990 THAT WAS IN CROWLEY MARITIME CORPORATION'S FILES.
- 2) CATCH BASINS AND CONVEYANCE LINES THAT ARE SHADED PURPLE ARE ABANDONED OR REMOVED COMPONENTS OF THE PREVIOUS DRAINAGE SYSTEM.

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAIL LINE
- FENCE
- EXISTING STORM WATER CONVEYANCE LINE
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- GEOPHYSICAL SURVEY TRANSECT LOCATION
- EXISTING STORM WATER CATCH BASIN LOCATION AND DESIGNATION
- CURRENTLY CLOSED STORM WATER CATCH BASIN LOCATION AND DESIGNATION
- SUMP
- ABANDONED SUMP
- CONVEYANCE VAULT

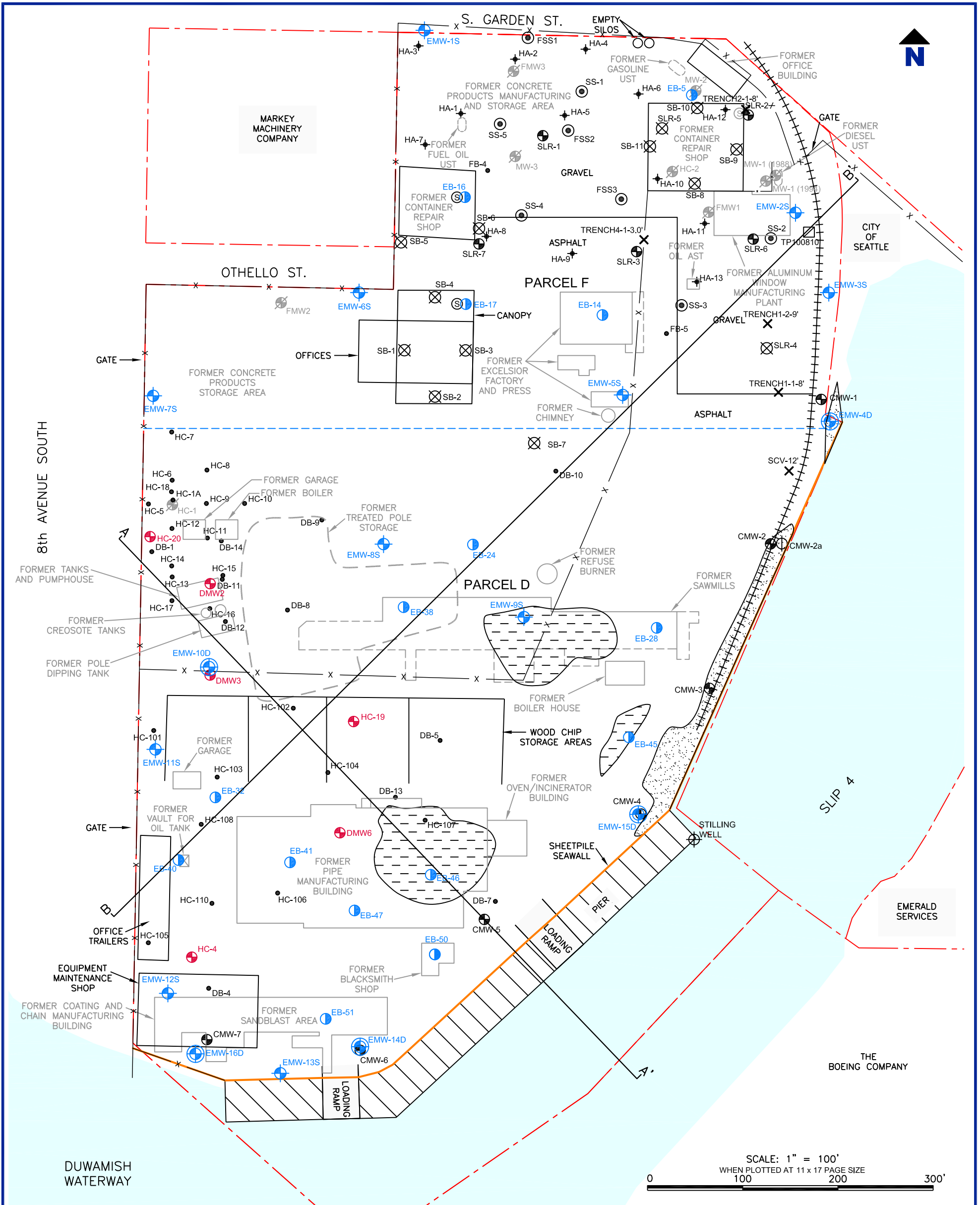
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Drawing **APPROXIMATE LOCATIONS OF
GEOPHYSICAL SURVEY TRANSECTS**

Date	October 29, 2013	Scale	AS SHOWN	Fig. No.	16
File Name	01-16	Project No.	101.00205.00030		

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NOTES
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- LEGEND**
- PARCEL D/PARCEL F BOUNDARY
 - PROPERTY BOUNDARIES
 - ++++ RAIL LINE
 - x - x - FENCE
 - SHEETPILE SEAWALL
 - APPROX. LOCATION OF DREDGE FILL AREA
 - APPROX. LOCATION OF SAND AND DREDGE FILL AREA
 - 2013 SOIL BORING LOCATION
 - ⊕ 2013 SHALLOW GROUNDWATER MONITORING WELL
 - ⊕ 2013 DEEP GROUNDWATER MONITORING WELL
 - ⊗ 2012 TRENCH SAMPLE LOCATION
 - ⊕ 2008 GROUNDWATER MONITORING WELL
 - ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
 - ⊕ 1989 OR 1990 GROUNDWATER MONITORING WELL
 - 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
 - ⊕ 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
 - ⊕ 1994 SOIL BORING (APPROXIMATE LOCATION)
 - ⊕ 2008 SOIL BORING (APPROXIMATE LOCATION)
 - ⊗ 2009 SOIL BORING (APPROXIMATE LOCATION)
 - ⊕ 2010 TEST PIT (APPROXIMATE LOCATION)
 - ⊕ INACTIVE WASH WATER SUMP
 - ⊕ FORMER WASH WATER SUMP

A ——— A' LINE OF CROSS SECTION

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Drawing
LOCATIONS OF GEOLOGIC CROSS SECTIONS

Date	January 22, 2014	Scale	AS SHOWN	Fig. No.	17
File Name	02-17	Project No.	101.00205.00030		

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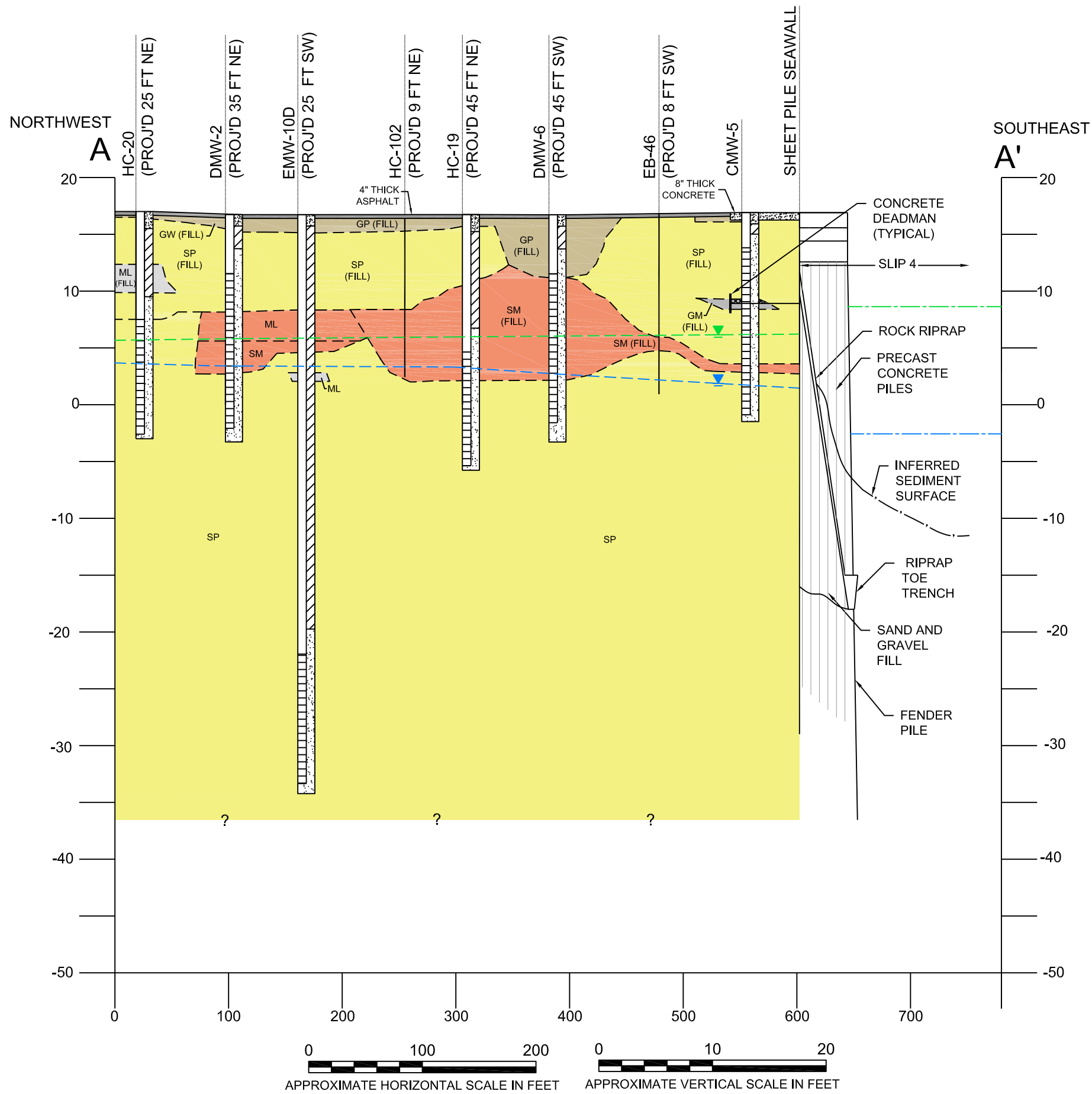
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NOTES
 DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG AND SUN AND ASSOCIATES, SEATTLE, WA. SHEET PILE DETAIL AND TYPICAL ELEVATION.

VERTICAL ELEVATION RELATIVE TO NAVD 88 DATUM.
 THE LOCATION OF THE CROSS SECTION IS SHOWN ON FIGURE 17.

LEGEND

GP, GW	CLEAN, SLIGHTLY SILTY TO SANDY GRAVEL
SP, SW	CLEAN, SLIGHTLY SILTY TO GRAVELY SAND
ML	SILT
SM, ML	SILTY SAND TO SANDY SILT
GM	SILTY GRAVEL
(Pattern)	ASPHALT
(Pattern)	CONCRETE
(Dashed line)	INTERPRETED CONTACT POSITION (DASHED WHERE INFERRED)
(Blue dashed line with triangle)	LOW - LOW TIDE GW ELEVATION (7/10/2013) (DASHED WHERE INFERRED)
(Green dashed line with triangle)	HIGH - HIGH TIDE GW ELEVATION (9/23/2013) (DASHED WHERE INFERRED)
(Blue dashed line)	LOW - LOW TIDE SURFACE WATER ELEVATION (7/10/2013)
(Green dashed line)	HIGH - HIGH TIDE SURFACE WATER ELEVATION (9/23/2013)



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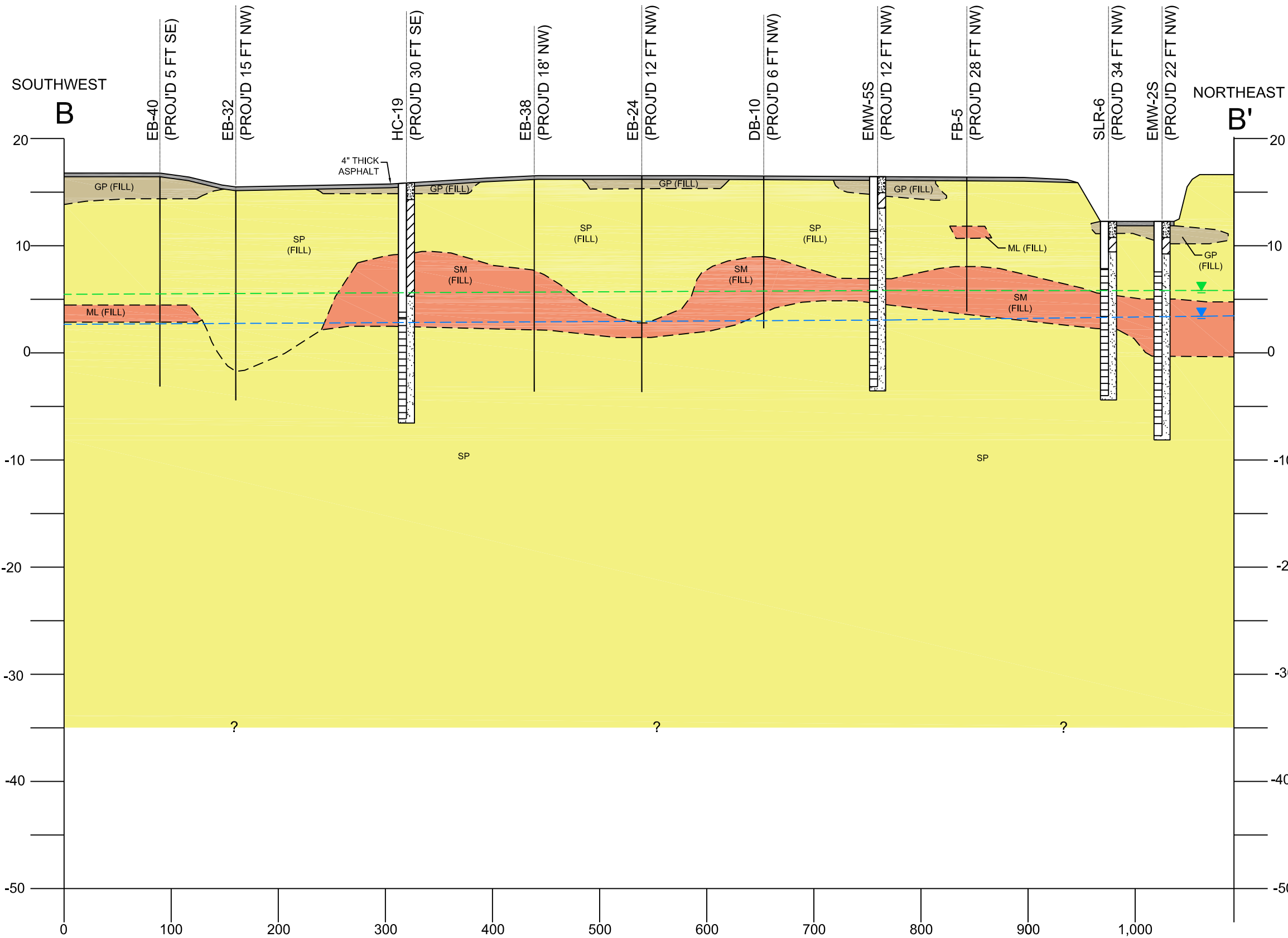
GEOLOGIC CROSS SECTION A-A'

Date JANUARY 23, 2013	Scale AS SHOWN	Fig. No. 18
File Name 01-18	Project No. 101.00205.00030	

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NOTES
 VERTICAL ELEVATION RELATIVE TO NAVD 88 DATUM.
 THE LOCATION OF THE CROSS SECTION IS SHOWN ON FIGURE 17.

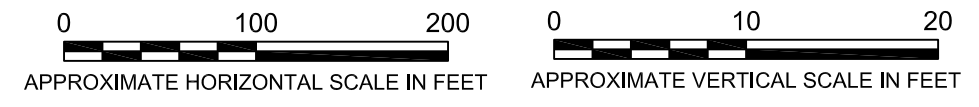
LEGEND

	WELL CONSTRUCTION		CONCRETE
	BENTONITE SEAL		SCREEN SAND PACK
	CLEAN, SLIGHTLY SILTY TO SANDY GRAVEL		CLEAN, SLIGHTLY SILTY TO GRAVELY SAND
	SILTY SAND TO SANDY SILT		SILTY GRAVEL
	ASPHALT		CONCRETE
	INTERPRETED CONTACT POSITION		LOW - LOW TIDE GW ELEVATION (7/10/2013) (DASHED WHERE INFERRED)
	HIGH - HIGH TIDE GW ELEVATION (9/23/2013) (DASHED WHERE INFERRED)		

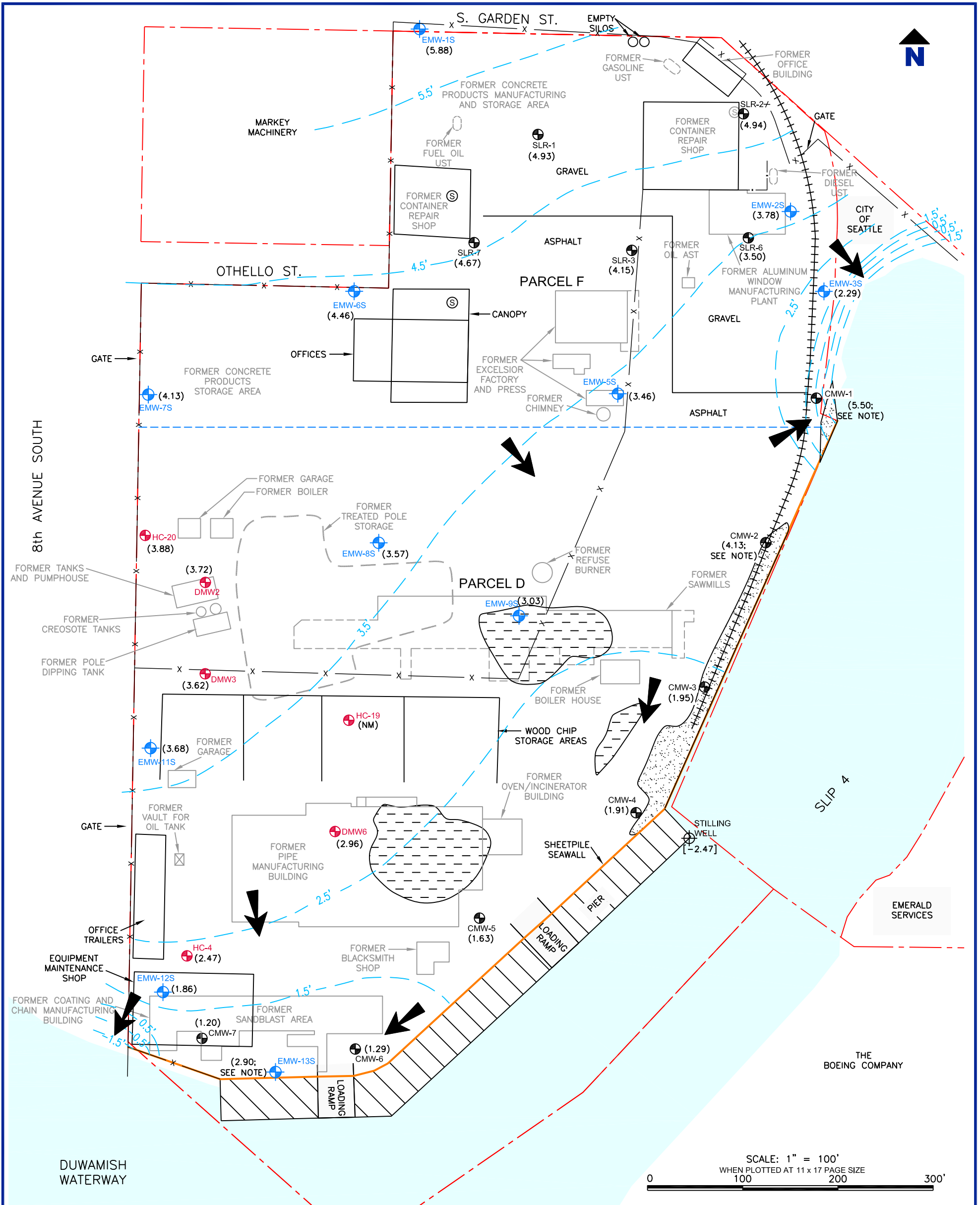
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Drawing
GEOLOGIC CROSS SECTION B-B'

Date	JANUARY 29, 2013	Scale	AS SHOWN	Fig. No.	19
File Name	01-19	Project No.	101.00205.00030		



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NOTES

- 1) SLR ASSUMED THAT THE WESTERMOST SEGMENT OF THE SHEETPILE SEAWALL IS CONSTRUCTED SIMILAR TO THE REST OF THE WALL.
- 2) DUE TO ANOMALOUS DEPTH TO GROUNDWATER MEASUREMENTS, THE GROUNDWATER ELEVATIONS AT WELLS EMW-13S, CMW-1, AND CMW-2 WERE NOT USED FOR CONTOURING.
- 3) NM = NOT MEASURED.

LEGEND

- PROPERTY BOUNDARIES
- ++++ RAIL LINE
- x - FENCE
- SHEETPILE SEAWALL
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ⊕ 2013 SHALLOW GROUNDWATER MONITORING WELL
- ⊙ 2008 GROUNDWATER MONITORING WELL
- ⊕ 1980 OR 1990 GROUNDWATER MONITORING WELL
- PARCEL D/PARCEL F BOUNDARY
- (2.96) SHALLOW GROUNDWATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON JULY 10, 2013
- [-2.47] SLIP 4 SURFACE WATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON JULY 10, 2013
- 2.5' --- INFERRED SHALLOW GROUNDWATER ELEVATION CONTOUR LINE (IN FEET)
- ← GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
- ⊙ WASH WATER SUMP
- ⊕ FORMER WASH WATER SUMP

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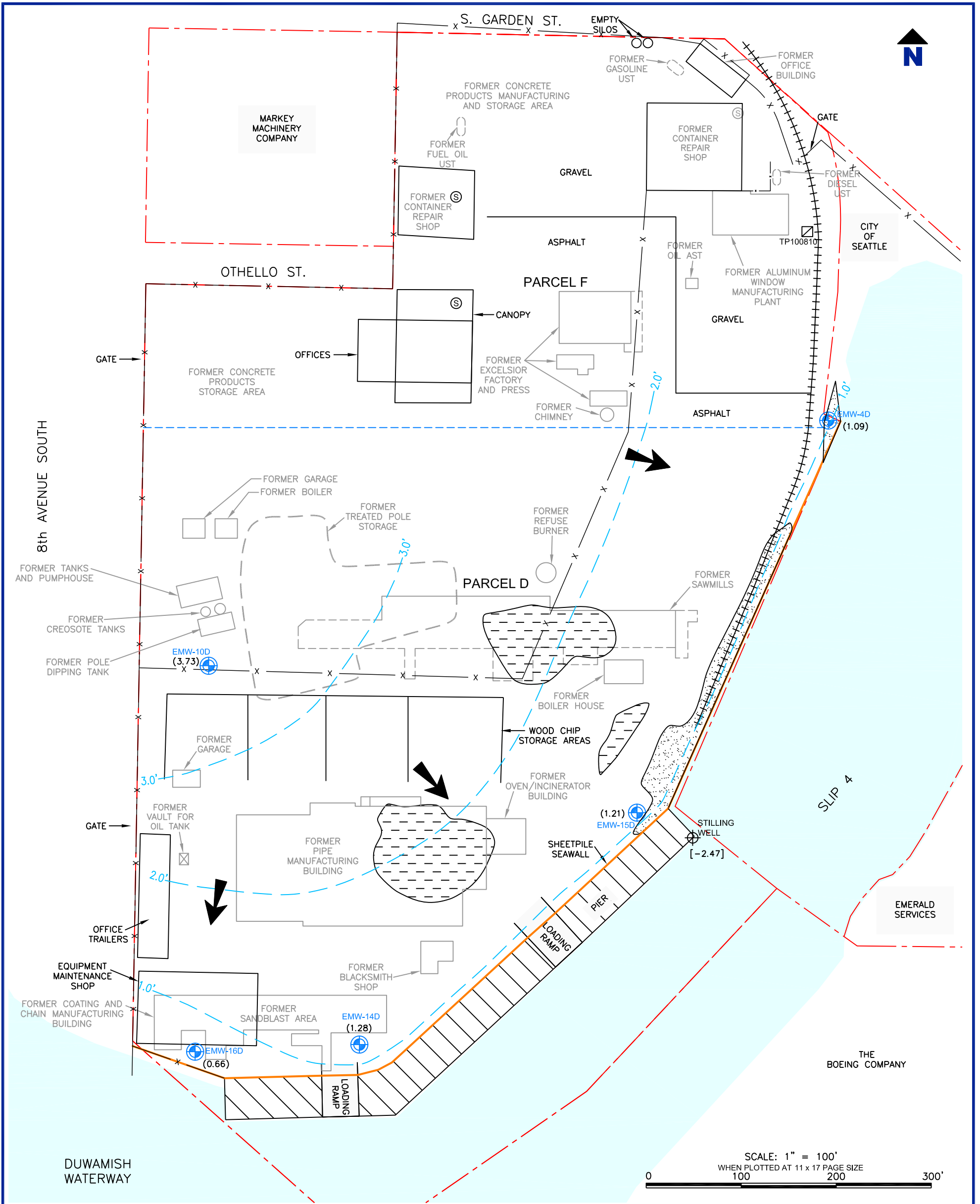
Drawing **SHALLOW GROUNDWATER ELEVATION CONTOUR MAP - SEASONAL LOW-LOW TIDE CONDITIONS ON JULY 10, 2013**

Date	January 21, 2014	Scale	AS SHOWN	Fig. No.	20
File Name	01-20	Project No.	101.00205.00030		

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NOTES

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAIL LINE
- FENCE
- SHEETPILE SEAWALL
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ⊕ 2013 DEEP GROUNDWATER MONITORING WELL
- Ⓢ WASH WATER SUMP
- Ⓢ FORMER WASH WATER SUMP

- (1.28) DEEPER GROUNDWATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON JULY 10, 2013
- [-2.47] SLIP 4 SURFACE WATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON JULY 10, 2013
- INFERRED DEEPER GROUNDWATER ELEVATION CONTOUR LINE (IN FEET)
- ← GENERAL DEEPER GROUNDWATER FLOW DIRECTION

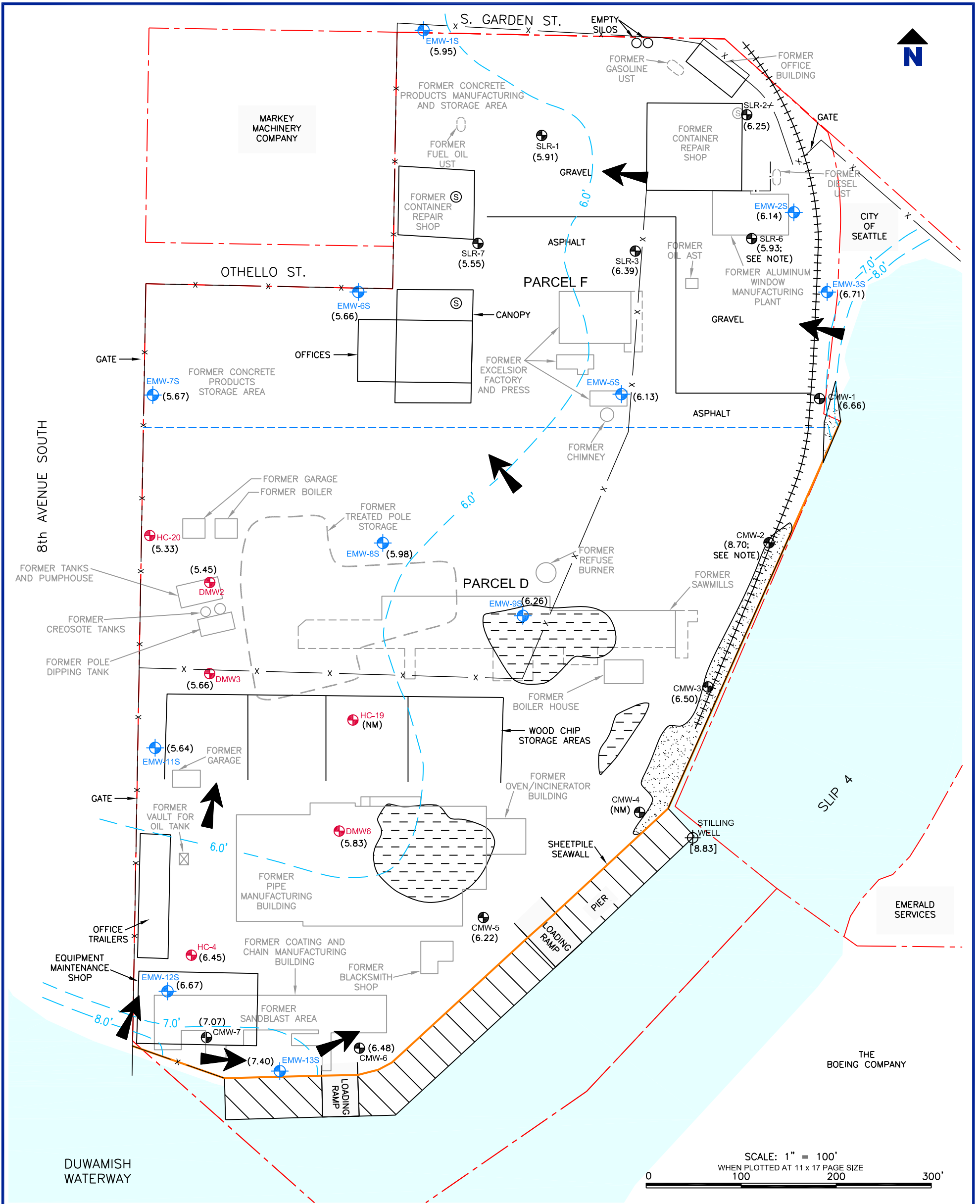
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Drawing **DEEPER GROUNDWATER ELEVATION
CONTOUR MAP - SEASONAL LOW-LOW TIDE
CONDITIONS ON JULY 10, 2013**

Date	January 23, 2014	Scale	AS SHOWN	Fig. No.	21
File Name	01-21	Project No.	101.00205.00030		

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NOTES

- 1) SLR ASSUMED THAT THE WESTERNMOST SEGMENT OF THE SHEETPILE SEAWALL IS CONSTRUCTED SIMILAR TO THE REST OF THE WALL.
- 2) DUE TO ANOMALOUS DEPTH TO GROUNDWATER MEASUREMENTS, THE GROUNDWATER ELEVATIONS AT WELLS CMW-2 AND SLR-6 WERE NOT USED FOR CONTOURING.
- 3) NM = NOT MEASURED.

LEGEND

- PROPERTY BOUNDARIES
- PARCEL D/PARCEL F BOUNDARY
- +++++ RAIL LINE
- x - x - FENCE
- SHEETPILE SEAWALL
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ⊕ 2013 SHALLOW GROUNDWATER MONITORING WELL
- ⊙ 2008 GROUNDWATER MONITORING WELL
- ⊕ 1980 OR 1990 GROUNDWATER MONITORING WELL
- ← GENERAL SHALLOW GROUNDWATER FLOW DIRECTION
- ⊙ WASH WATER SUMP
- ⊙ FORMER WASH WATER SUMP

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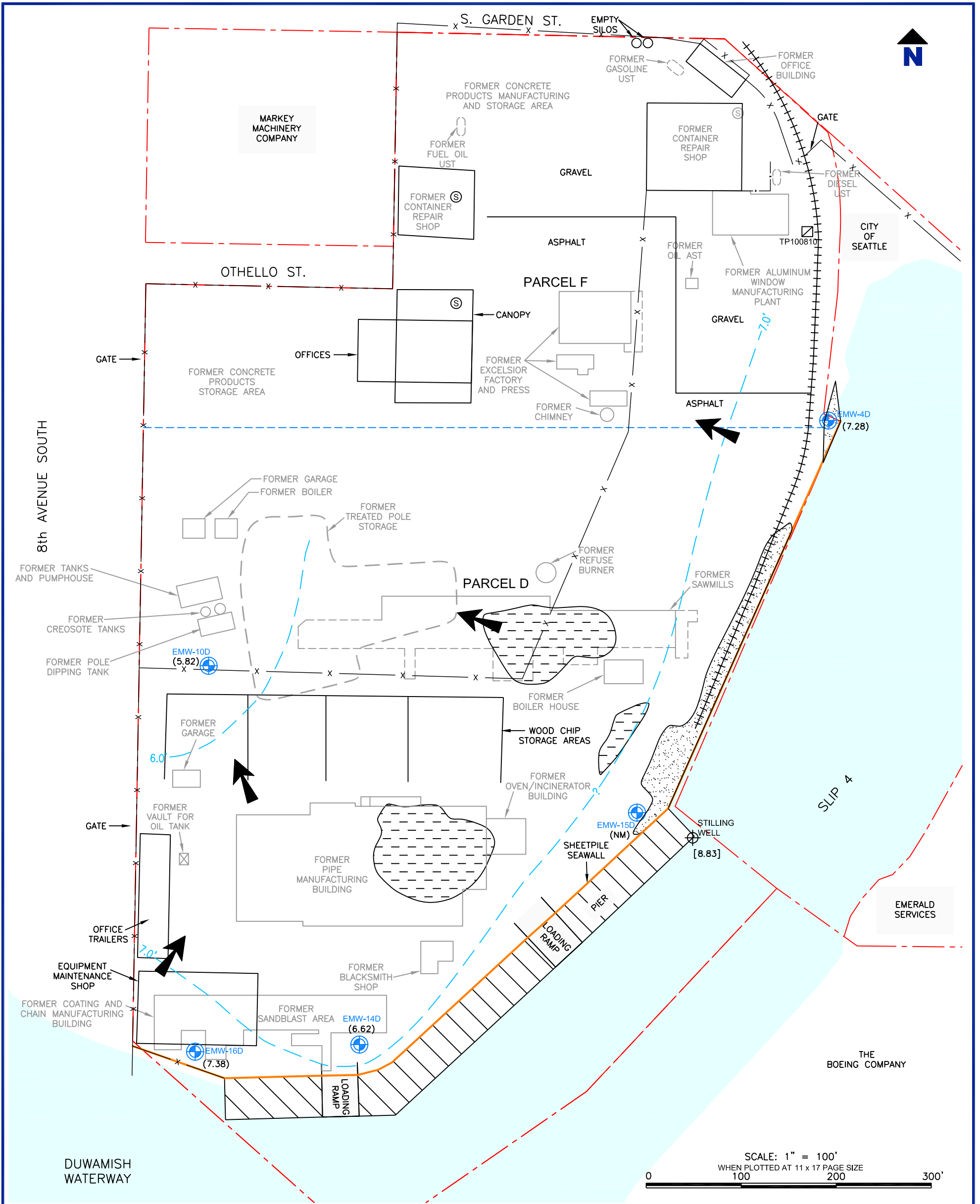
Drawing **SHALLOW GROUNDWATER ELEVATION CONTOUR MAP - SEASONAL HIGH-HIGH TIDE CONDITIONS ON SEPTEMBER 23, 2013**

Date	January 23, 2014	Scale	AS SHOWN	Fig. No.	22
File Name	01-22	Project No.	101.00205.00030		

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NOTES
 1) NM = NOT MEASURED.

- LEGEND**
- PARCEL D/PARCEL F BOUNDARY
 - PROPERTY BOUNDARIES
 - +++++ RAIL LINE
 - x-x- FENCE
 - SHEETPILE SEAWALL
 - APPROX. LOCATION OF DREDGE FILL AREA
 - APPROX. LOCATION OF SAND AND DREDGE FILL AREA
 - ⊕ 2013 DEEP GROUNDWATER MONITORING WELL
 - ⊙ WASH WATER SUMP
 - ⊙ FORMER WASH WATER SUMP

- (7.28) DEEPER GROUNDWATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON SEPTEMBER 23, 2013
- [8.83] SLIP 4 SURFACE WATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON SEPTEMBER 23, 2013
- INFERRED DEEPER GROUNDWATER ELEVATION CONTOUR LINE (IN FEET)
- ← GENERAL DEEPER GROUNDWATER FLOW DIRECTION

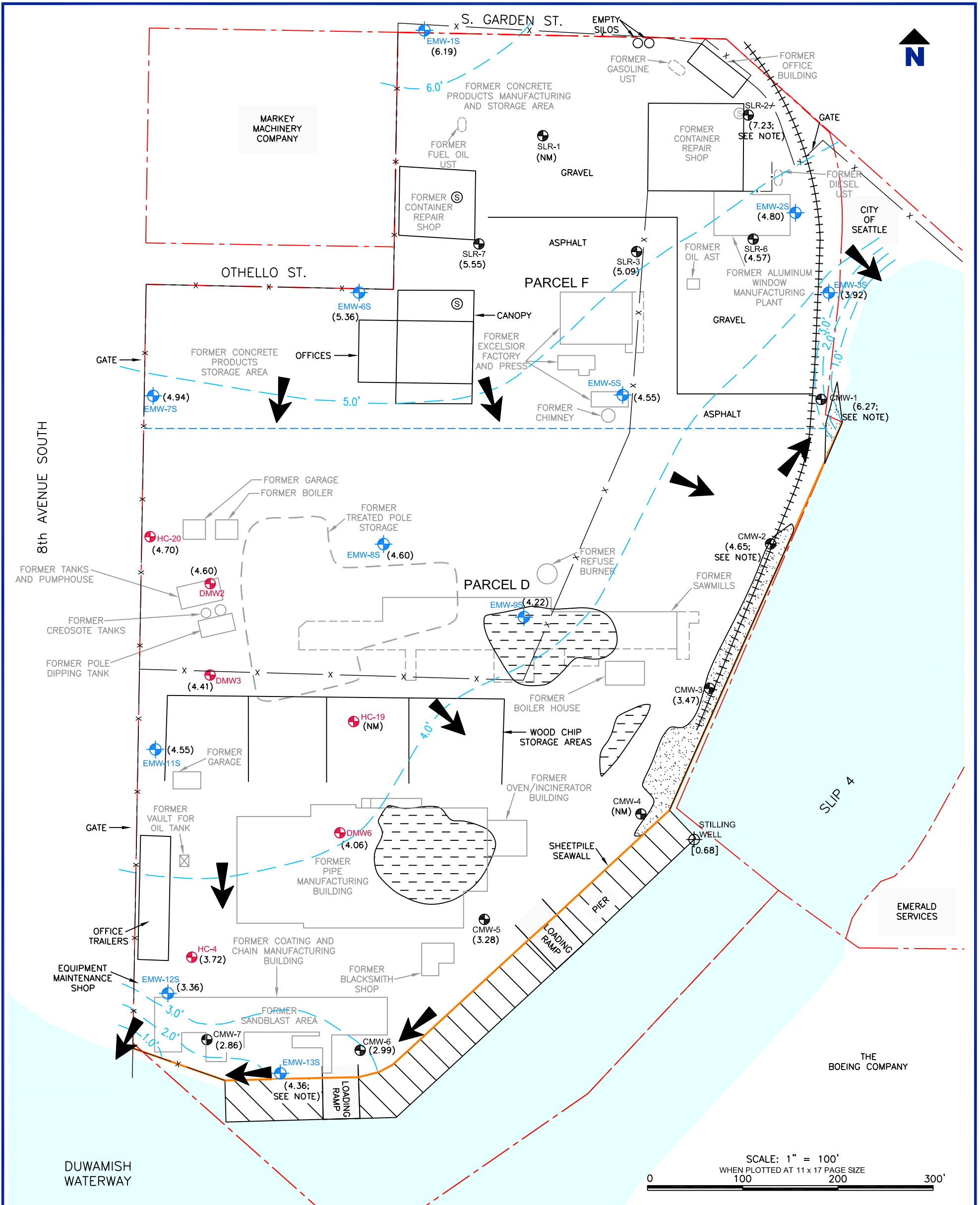
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Drawing **DEEPER GROUNDWATER ELEVATION CONTOUR MAP - SEASONAL HIGH-HIGH TIDE CONDITIONS ON SEPTEMBER 23, 2013**

Date	January 23, 2014	Scale	AS SHOWN	Fig. No.	23
File Name	01-23	Project No.	101.00205.00030		

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NOTES

- 1) SLR ASSUMED THAT THE WESTERMOST SEGMENT OF THE SHEETPILE SEAWALL IS CONSTRUCTED SIMILAR TO THE REST OF THE WALL.
- 2) DUE TO ANOMALOUS DEPTH TO GROUNDWATER MEASUREMENTS, THE GROUNDWATER ELEVATIONS AT WELLS EMW-13S, CMW-1, CMW-2, AND SLR-2 WERE NOT USED FOR CONTOURING.
- 3) NM = NOT MEASURED.

LEGEND

- | | |
|---|---|
| <ul style="list-style-type: none"> --- PROPERTY BOUNDARIES + RAIL LINE FENCE SHEETPILE SEAWALL APPROX. LOCATION OF DREDGE FILL AREA APPROX. LOCATION OF SAND AND DREDGE FILL AREA + 2013 SHALLOW GROUNDWATER MONITORING WELL + 2008 GROUNDWATER MONITORING WELL + 1980 OR 1990 GROUNDWATER MONITORING WELL | <ul style="list-style-type: none"> --- PARCEL D/PARCEL F BOUNDARY + (3.47) SHALLOW GROUNDWATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON OCTOBER 2, 2013 + [0.68] SLIP 4 SURFACE WATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON OCTOBER 2, 2013 --- 4.0' INFERRED SHALLOW GROUNDWATER ELEVATION CONTOUR LINE (IN FEET) ← GENERAL SHALLOW GROUNDWATER FLOW DIRECTION S WASH WATER SUMP S FORMER WASH WATER SUMP |
|---|---|

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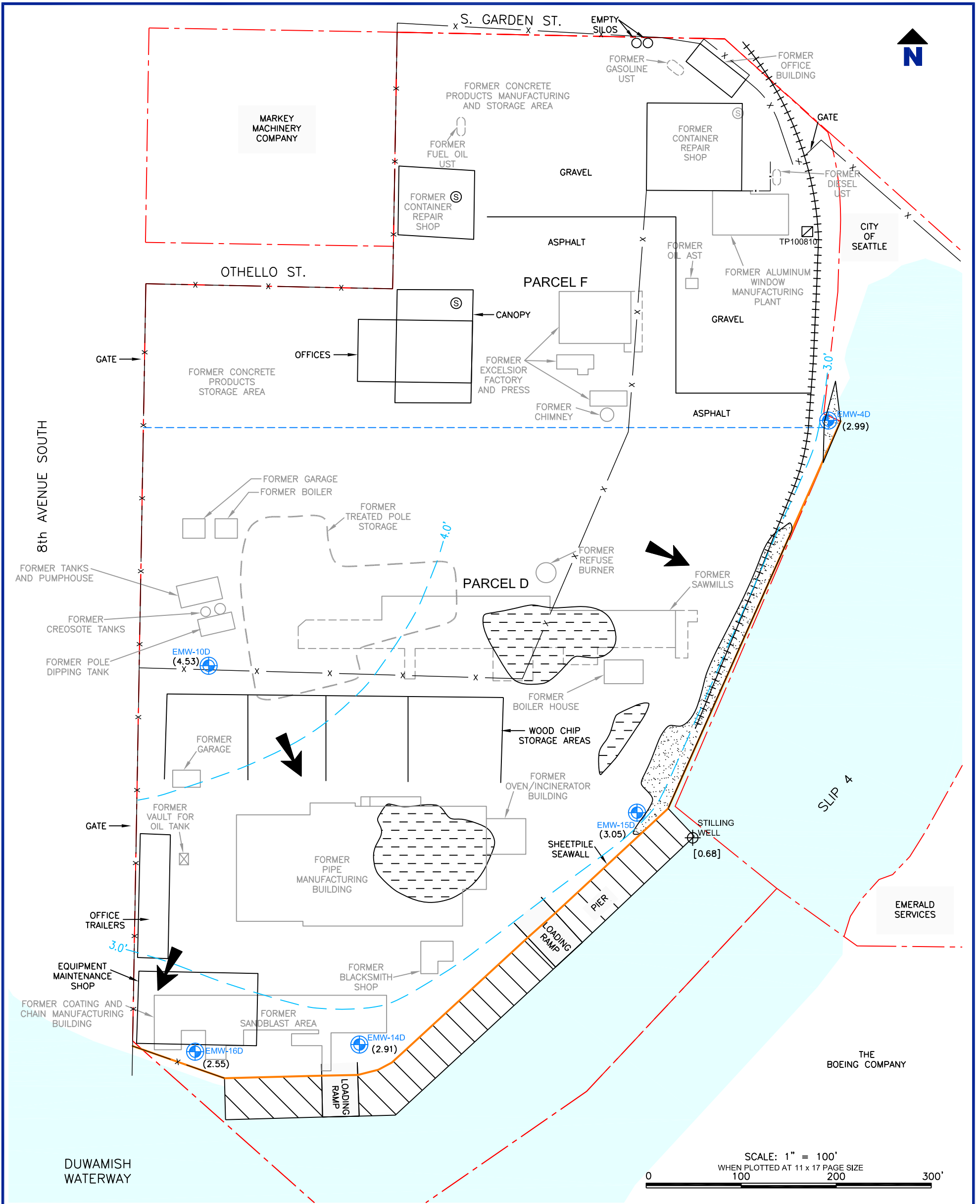
Drawing **SHALLOW GROUNDWATER ELEVATION CONTOUR MAP - SEASONAL LOW TIDE CONDITIONS ON OCTOBER 2, 2013**

Date	January 23, 2014	Scale	AS SHOWN	Fig. No.	24
File Name	02-24	Project No.	101.00205.00030		

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NOTES

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAIL LINE
- FENCE
- SHEETPILE SEAWALL
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ⊕ 2013 DEEP GROUNDWATER MONITORING WELL
- Ⓢ WASH WATER SUMP
- Ⓢ FORMER WASH WATER SUMP

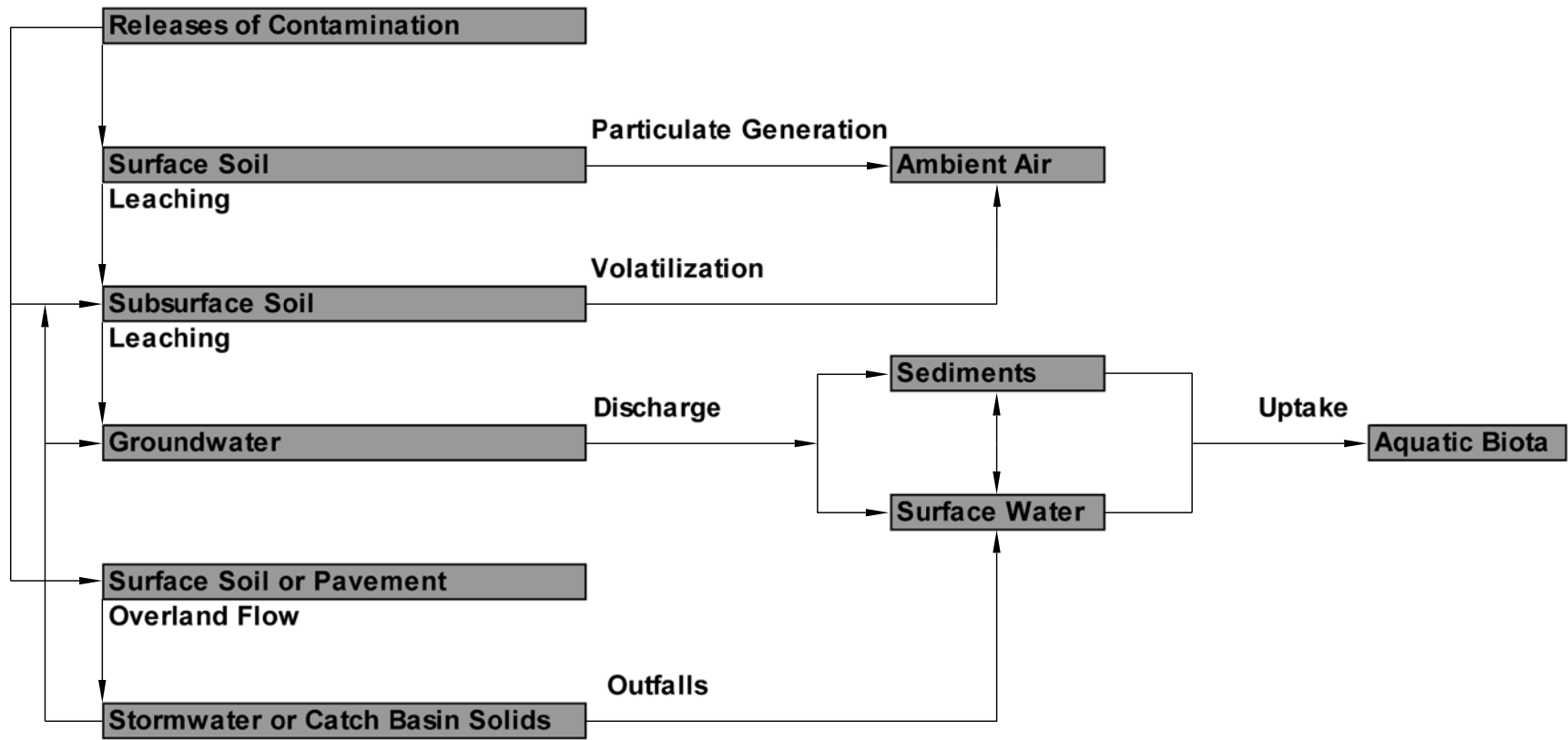
- (4.53) DEEPER GROUNDWATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON OCTOBER 2, 2013
- [0.68] SLIP 4 SURFACE WATER ELEVATION (IN FEET) ABOVE NAVD 88 DATUM ON OCTOBER 2, 2013
- 4.0' --- INFERRED DEEPER GROUNDWATER ELEVATION CONTOUR LINE (IN FEET)
- ← GENERAL DEEPER GROUNDWATER FLOW DIRECTION

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Drawing **DEEPER GROUNDWATER ELEVATION
CONTOUR MAP - SEASONAL LOW TIDE
CONDITIONS ON OCTOBER 2, 2013**

Date	January 23, 2014	Scale	AS SHOWN	Fig. No.	25
File Name	01-25	Project No.	101.00205.00030		

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Drawing
CONTAMINANT TRANSPORT MECHANISMS



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Date January 23, 2014
 File Name 01-26

Scale AS SHOWN
 Project No. 001.0205.00030

Fig. No. 26

Media	Exposure Pathways	Human Receptors								Ecological Receptors
		Current On Site Industrial Workers	Current School Bus Drivers	Current Property Visitors	Future On Site Industrial Workers	Future School Bus Drivers	Future Property Visitors	Future Construction Workers	Current/Future Fishermen	Current/Future Aquatic Biota
Surface Soil	Ingestion	X	X	X	X	X	X	X	X	
	Dermal Contact	X	X	X	X	X	X	X	X	
Subsurface Soil	Ingestion				X	X	X	X	X	
	Dermal Contact				X	X	X	X	X	
Ambient Air	Inhalation of Particulates	X	X	X	X	X	X	X	X	
Indoor Air	Inhalation of Volatiles				X					
Groundwater	Ingestion								X	
	Dermal Contact								X	
Surface Water	Ingestion									X
	Dermal Contact								X	X
	Respiration									X
	Uptake									X
Sediments	Ingestion									X
	Dermal Contact								X	X
	Uptake									X
Aquatic Biota	Consumption								X	X

NOTES:

X = Pathway is considered potentially complete based on existing information.

A blank cell indicates a pathway that is considered incomplete based on existing information.

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Drawing RECEPTORS AND POTENTIAL EXPOSURE PATHWAYS



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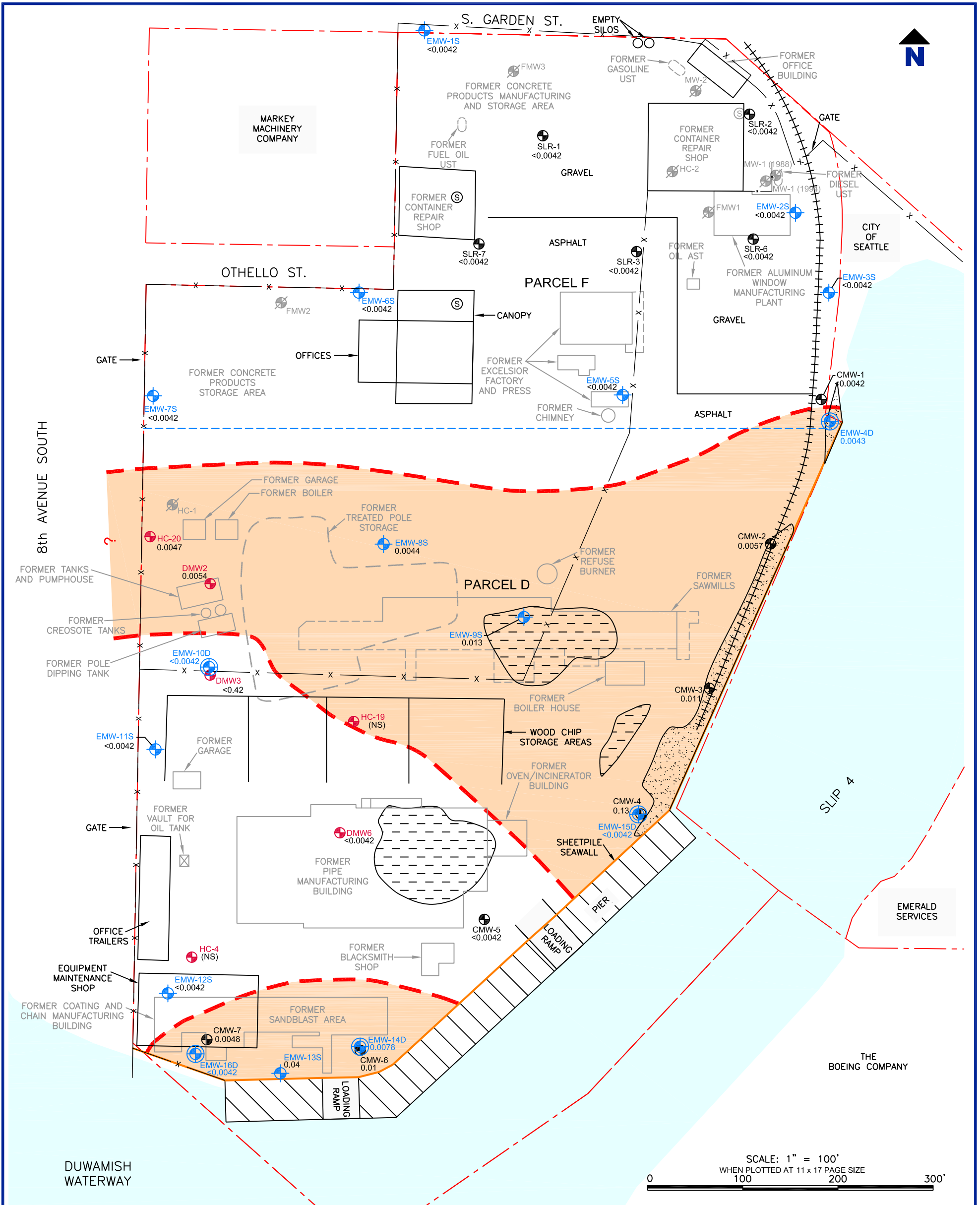
Date January 23, 2014

Scale AS SHOWN

Fig. No.

File Name 01-27

Project No. 101.00205.00030



NOTES
 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 2) THIS FIGURE SHOWS THE HIGHEST CONCENTRATION AT EACH WELL DURING THE THREE 2013 GROUNDWATER SAMPLING EVENTS.
 3) DATA PRESENTED IN MICROGRAMS PER LITER ($\mu\text{g/L}$).

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	ESTIMATED AREA OF BENZO(A)ANTHRACENE CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVEL OF 0.0042 $\mu\text{g/L}$
	2013 SHALLOW GROUNDWATER MONITORING WELL
	2013 DEEP GROUNDWATER MONITORING WELL
	2008 GROUNDWATER MONITORING WELL
	1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	INACTIVE WASH WATER SUMP
	FORMER WASH WATER SUMP
0.01	BENZO(A)ANTHRACENE CONCENTRATION IN SHALLOW GROUNDWATER
0.0078	BENZO(A)ANTHRACENE CONCENTRATION IN DEEPER GROUNDWATER
(NS)	NOT SAMPLED FOR PAHs IN 2013

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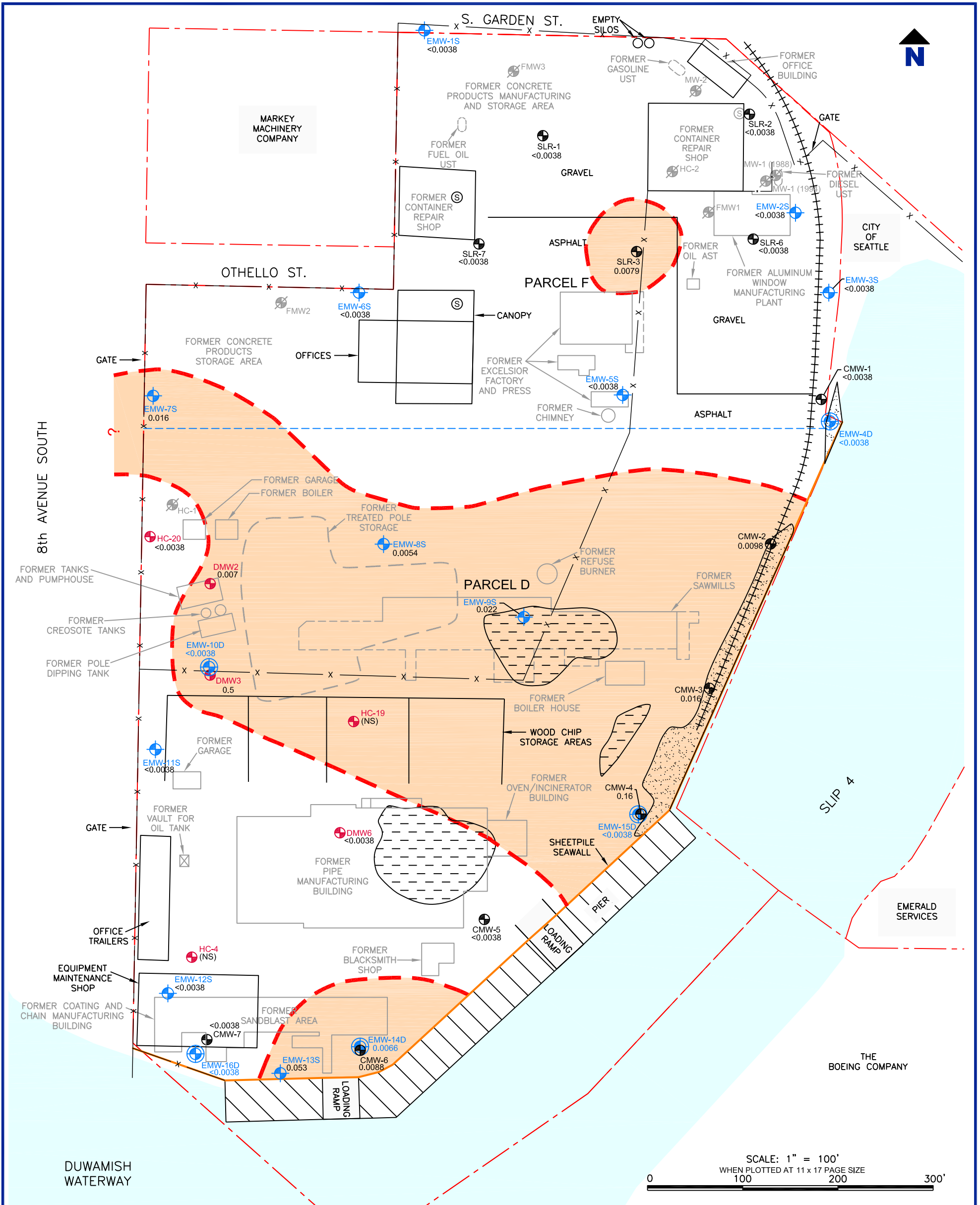
Drawing
2013 GROUNDWATER SAMPLE ANALYTICAL RESULTS - BENZO(A)ANTHRACENE

Date	January 27, 2014	Scale	AS SHOWN	Fig. No.	28
File Name	01-28	Project No.	101.00205.00030		

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NOTES

- 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
- 2) THIS FIGURE SHOWS THE HIGHEST CONCENTRATION AT EACH WELL DURING THE THREE 2013 GROUNDWATER SAMPLING EVENTS.
- 3) DATA PRESENTED IN MICROGRAMS PER LITER ($\mu\text{g/L}$).

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- ++++ RAIL LINE
- x - x - FENCE
- SHEETPILE SEAWALL
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- ESTIMATED AREA OF CHRYSENE CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVEL OF 0.0038 $\mu\text{g/L}$
- + 2013 SHALLOW GROUNDWATER MONITORING WELL
- + 2013 DEEP GROUNDWATER MONITORING WELL
- + 2008 GROUNDWATER MONITORING WELL
- + 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- + 1989 OR 1990 GROUNDWATER MONITORING WELL
- S INACTIVE WASH WATER SUMP
- S FORMER WASH WATER SUMP
- 0.16 CHRYSENE CONCENTRATION IN SHALLOW GROUNDWATER
- 0.0066 CHRYSENE CONCENTRATION IN DEEPER GROUNDWATER
- (NS) NOT SAMPLED FOR PAHs IN 2103

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Drawing
2013 GROUNDWATER SAMPLE ANALYTICAL RESULTS - CHRYSENE

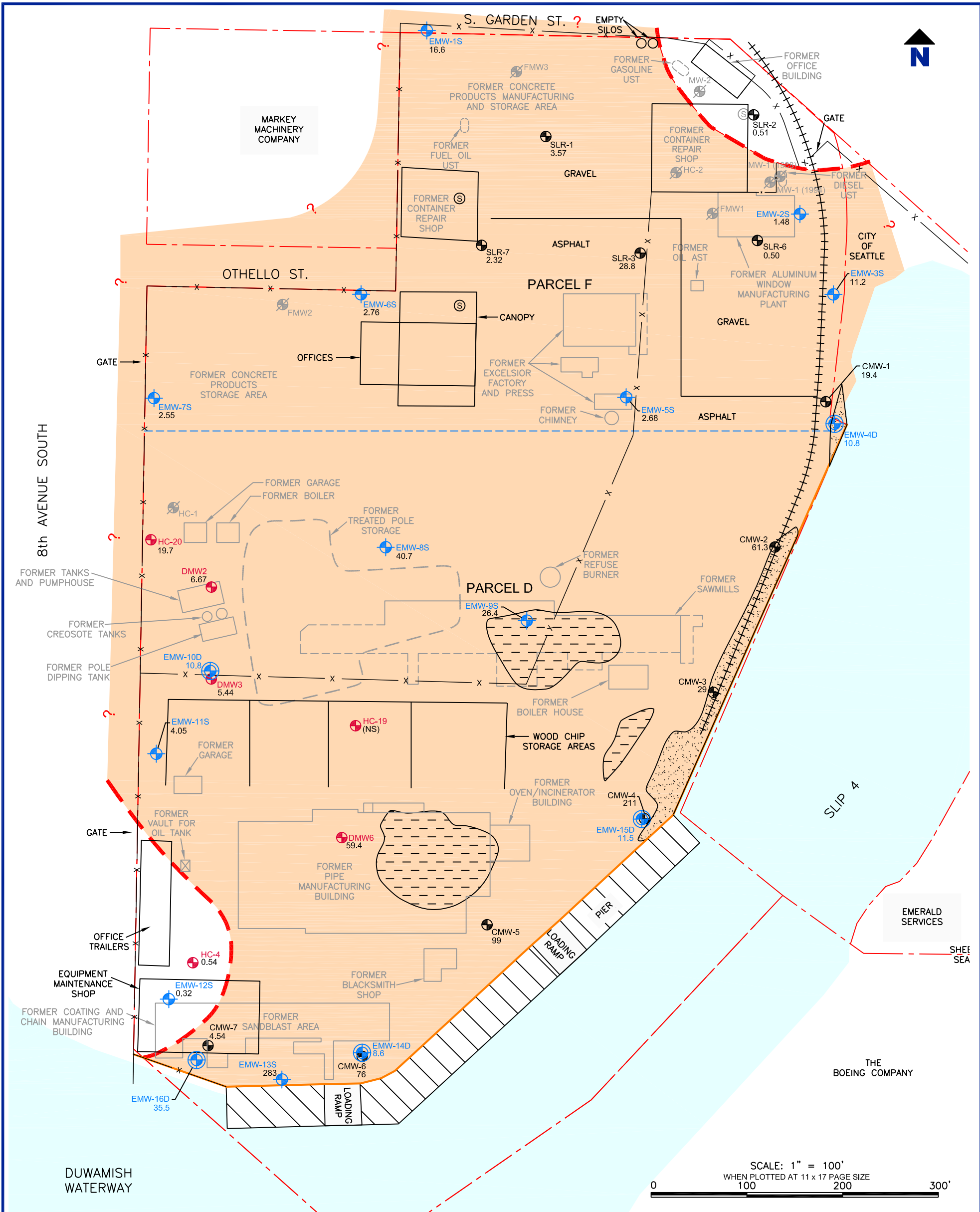
Date	January 29, 2014	Scale	AS SHOWN	Fig. No.	29
File Name	01-29	Project No.	101.00205.00030		

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NOTES
 1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 2) THIS FIGURE SHOWS THE HIGHEST DISSOLVED CONCENTRATION AT EACH WELL DURING THE THREE 2013 GROUNDWATER SAMPLING EVENTS.
 3) DATA PRESENTED IN MICROGRAMS PER LITER (µg/L).

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	ESTIMATED AREA OF DISSOLVED ARSENIC CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVEL OF 0.87 µg/L
	2013 SHALLOW GROUNDWATER MONITORING WELL
	2013 DEEP GROUNDWATER MONITORING WELL
	2008 GROUNDWATER MONITORING WELL
	1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	INACTIVE WASH WATER SUMP
	FORMER WASH WATER SUMP
11.5	ARSENIC CONCENTRATION IN SHALLOW GROUNDWATER
211	ARSENIC CONCENTRATION IN DEEPER GROUNDWATER
(NS)	NOT SAMPLED FOR ARSENIC IN 2013

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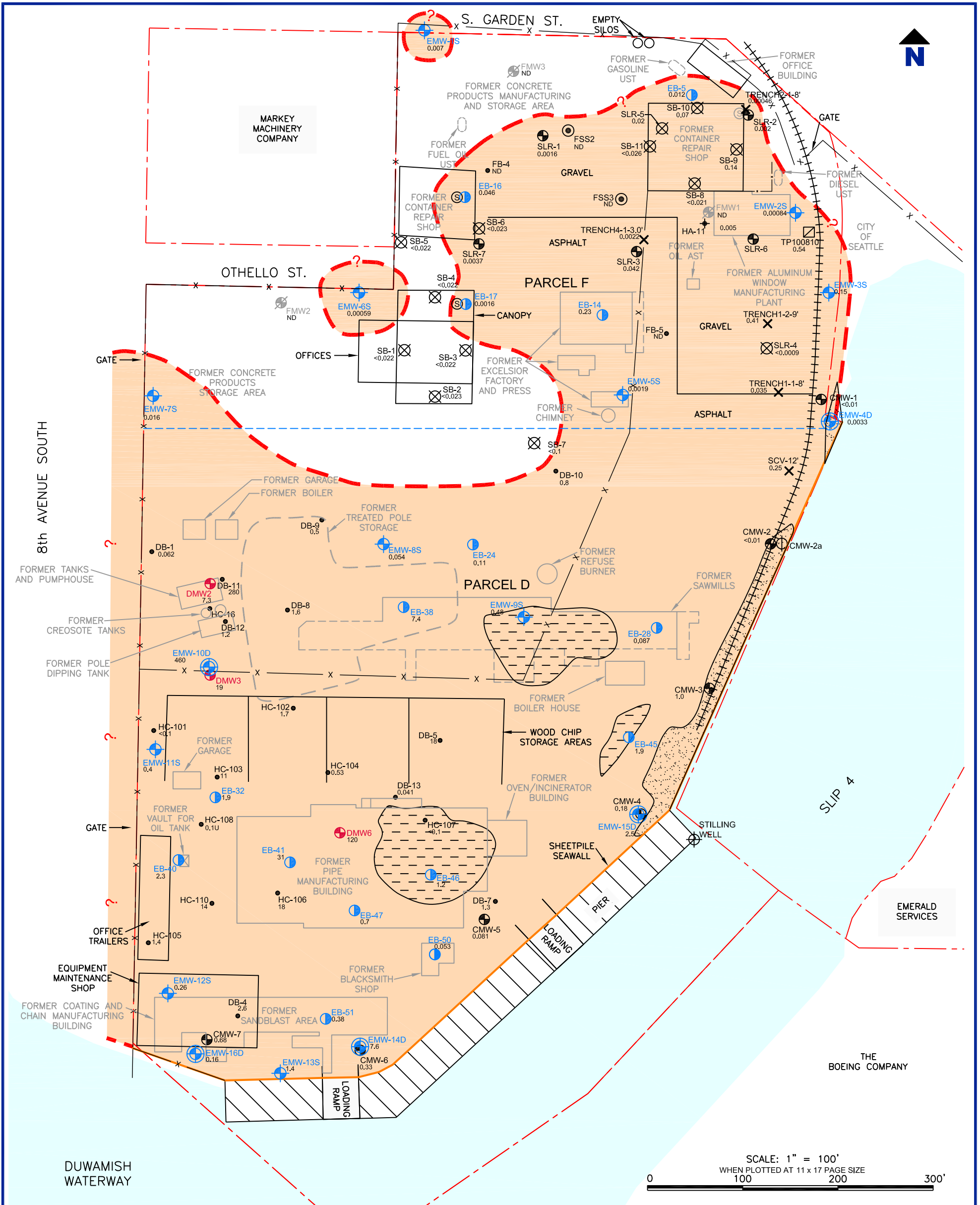
Drawing
2013 GROUNDWATER SAMPLE ANALYTICAL RESULTS - DISSOLVED ARSENIC

Date January 29, 2014	Scale AS SHOWN	Fig. No. 30
File Name 01-30	Project No. 101.00205.00030	

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LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	2013 SOIL BORING LOCATION
	2013 SHALLOW GROUNDWATER MONITORING WELL
	2013 DEEP GROUNDWATER MONITORING WELL
	ESTIMATED EXTENT OF BENZO(A)ANTHRACENE CONCENTRATIONS THAT EXCEED THE PRELIMINARY CLEANUP LEVEL OF 0.00040 MG/KG

	2012 TRENCH SAMPLE LOCATION
	2008 GROUNDWATER MONITORING WELL
	1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	1989 OR 1990 SOIL BORING (APPROX. LOCATION)
	1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
	1994 SOIL BORING (APPROXIMATE LOCATION)
	2008 SOIL BORING (APPROXIMATE LOCATION)
	2009 SOIL BORING (APPROXIMATE LOCATION)
	2010 TEST PIT (APPROXIMATE LOCATION)
	INACTIVE WASH WATER SUMP
	FORMER WASH WATER SUMP
1.4	BENZO(A)ANTHRACENE CONCENTRATIONS IN THE SOIL

NOTES
 DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 ALL DATA PRESENTED IN MILLIGRAMS PER KILOGRAM (mg/Kg)
 FIGURE ONLY PRESENTS HIGHEST SOIL CONCENTRATION AT EACH LOCATION

8TH AVENUE TERMINALS, INC. SITE
 7400 8TH AVENUE SOUTH
 SEATTLE, WASHINGTON

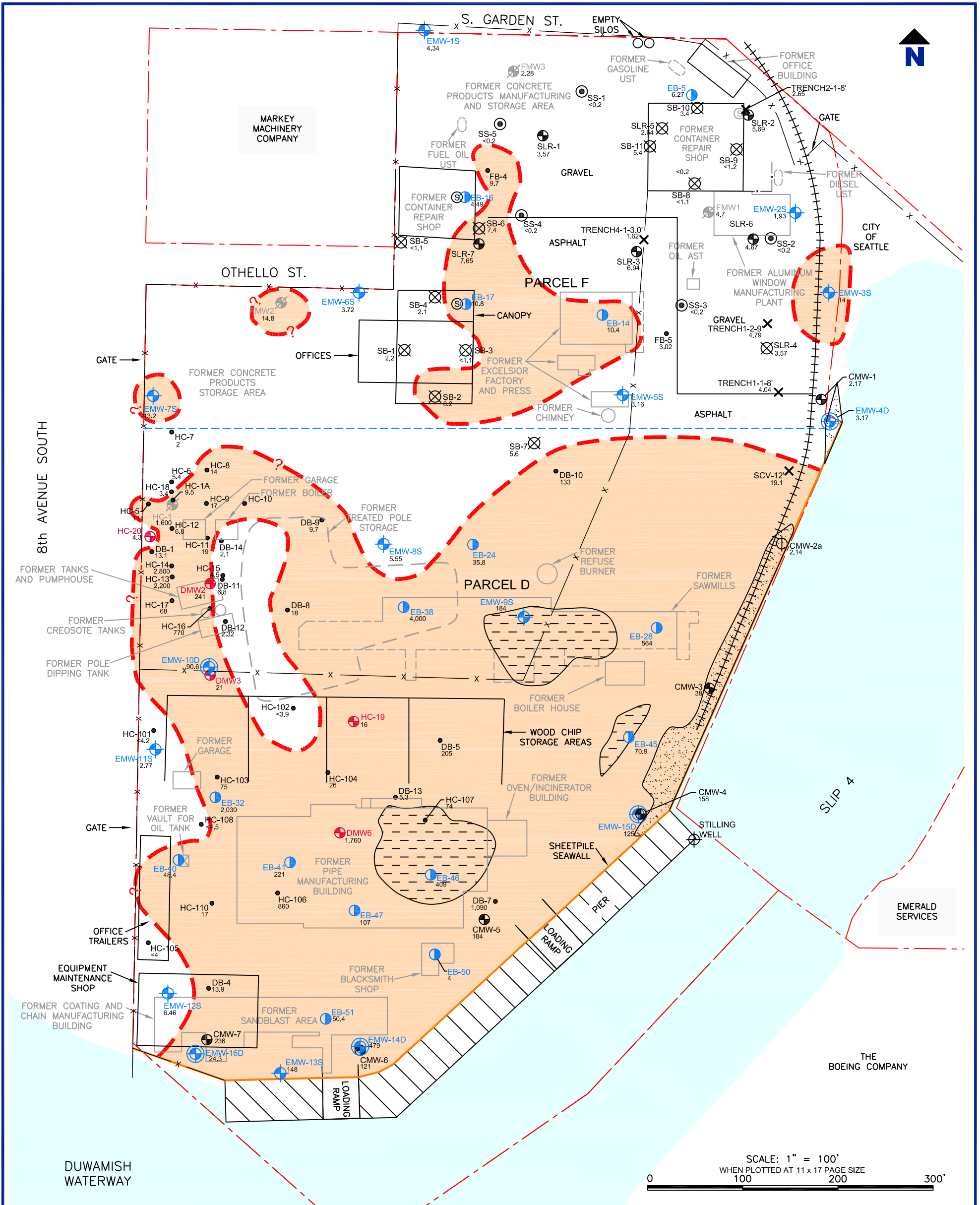
Drawing
ESTIMATED AREA OF BENZO(A)ANTHRACENE-IMPACTED SOIL

Date	January 30, 2014	Scale	AS SHOWN	Fig. No.	31
File Name	01-31	Project No.	101.00205.00030		

22118 20th AVE SE
 BLDG. G, SUITE 202
 BOTHELL, WA 98021
 T: 425-402-8800
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SLR

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LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	2013 SOIL BORING LOCATION
	2013 SHALLOW GROUNDWATER MONITORING WELL
	2013 DEEP GROUNDWATER MONITORING WELL
	ESTIMATED EXTENT OF ARSENIC CONCENTRATIONS THAT EXCEED THE PRELIMINARY CLEANUP LEVEL OF 7.0 MG/KG

	2012 TRENCH SAMPLE LOCATION
	2008 GROUNDWATER MONITORING WELL
	1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	1989 OR 1990 SOIL BORING (APPROX. LOCATION)
	1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
	1994 SOIL BORING (APPROXIMATE LOCATION)
	2008 SOIL BORING (APPROXIMATE LOCATION)
	2009 SOIL BORING (APPROXIMATE LOCATION)
	2010 TEST PIT (APPROXIMATE LOCATION)
	INACTIVE WASH WATER SUMP
	FORMER WASH WATER SUMP
148	ARSENIC CONCENTRATIONS IN THE SOIL

NOTES
 DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
 ALL DATA PRESENTED IN MILLIGRAMS PER KILOGRAM (mg/Kg)
 FIGURE ONLY PRESENTS HIGHEST SOIL CONCENTRATION AT EACH LOCATION

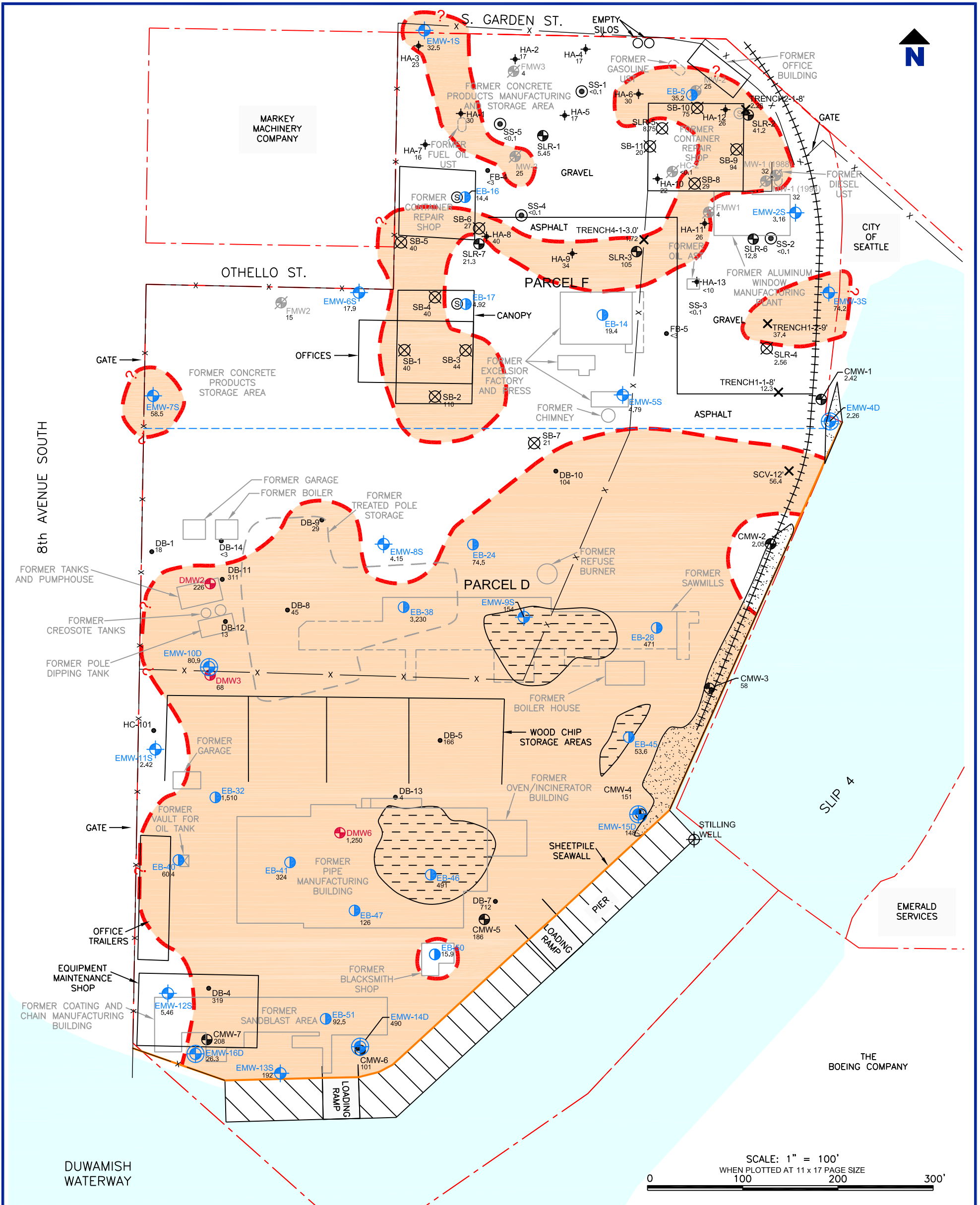
8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing
ESTIMATED AREAS OF ARSENIC-IMPACTED SOIL

Date January 30, 2014	Scale AS SHOWN	Fig. No. 32
File Name 01-32	Project No. 101.00205.00030	

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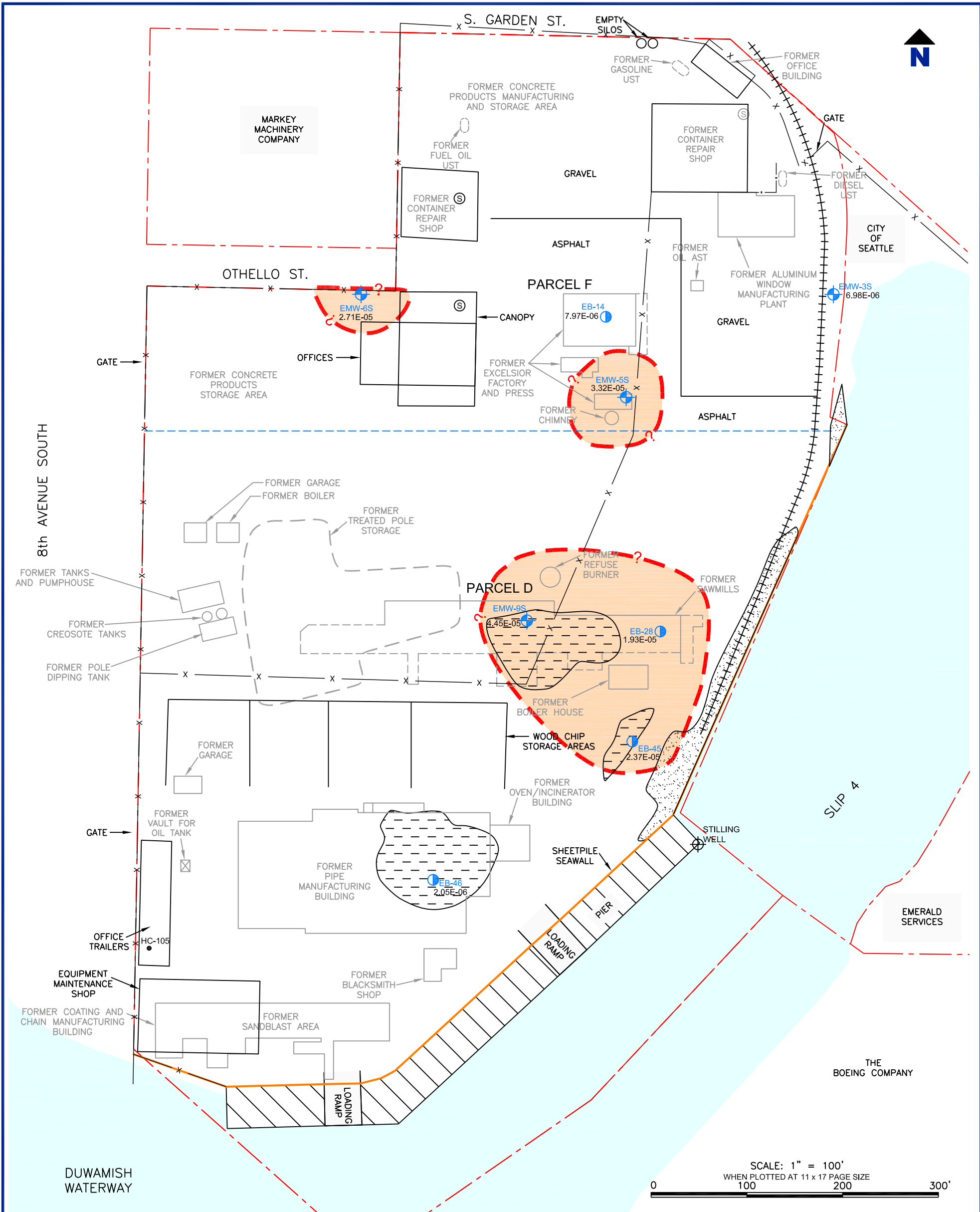


LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	2013 SOIL BORING LOCATION
	2013 SHALLOW GROUNDWATER MONITORING WELL
	2013 DEEP GROUNDWATER MONITORING WELL
	ESTIMATED AREA OF LEAD CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVEL OF 25 MG/KG
490	LEAD CONCENTRATIONS IN THE SOIL

	2012 TRENCH SAMPLE LOCATION
	2008 GROUNDWATER MONITORING WELL
	1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
	1989 OR 1990 GROUNDWATER MONITORING WELL
	1989 OR 1990 SOIL BORING (APPROX. LOCATION)
	1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
	1994 SOIL BORING (APPROXIMATE LOCATION)
	2008 SOIL BORING (APPROXIMATE LOCATION)
	2009 SOIL BORING (APPROXIMATE LOCATION)
	2010 TEST PIT (APPROXIMATE LOCATION)
	INACTIVE WASH WATER SUMP
	FORMER WASH WATER SUMP
<3	NO LEAD DETECTED IN THE SOIL SAMPLE

NOTES					
DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG					
ALL DATA PRESENTED IN MILLIGRAMS PER KILOGRAM (mg/Kg)					
FIGURE ONLY PRESENTS HIGHEST SOIL CONCENTRATION AT EACH LOCATION					
8TH AVENUE TERMINALS, INC. SITE					
7400 8TH AVENUE SOUTH					
SEATTLE, WASHINGTON					
Drawing					
ESTIMATED AREAS OF LEAD-IMPACTED SOIL					
Date	January 30, 2014	Scale	AS SHOWN	Fig. No.	33
File Name	01-33	Project No.	101.00205.00030		
			22118 20th AVE SE BLDG. G, SUITE 202 BOTHELL, WA 98021 T: 425-402-8800 F: 425-402-8488		

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NOTES
 DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA.
 SURVEY PLAN, DRAWING 06133-CC052908.DWG
 ALL DATA PRESENTED IN MILLIGRAMS PER KILOGRAM (MG/KG)
 FIGURE ONLY PRESENTS HIGHEST SOIL CONCENTRATION IN EACH BORING

LEGEND	
	PARCEL D/PARCEL F BOUNDARY
	PROPERTY BOUNDARIES
	RAIL LINE
	FENCE
	SHEETPILE SEAWALL
	APPROX. LOCATION OF DREDGE FILL AREA
	APPROX. LOCATION OF SAND AND DREDGE FILL AREA
	ESTIMATED AREA OF 2,3,7,8-TCDD TEQ CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVEL OF 1.10E-05 MG/KG
	INACTIVE WASH WATER SUMP
	FORMER WASH WATER SUMP
	2013 SOIL BORING LOCATION
	2013 SHALLOW GROUNDWATER MONITORING WELL
	2.05E-06 2.3,7,8-TCDD TEQ CONCENTRATIONS IN THE SOIL

8TH AVENUE TERMINALS, INC. SITE
 7400 8TH AVENUE SOUTH
 SEATTLE, WASHINGTON

Drawing
ESTIMATED AREAS OF DIOXIN-IMPACTED SOIL

Date	January 30, 2014	Scale	AS SHOWN	Fig. No.	34
File Name	01-34	Project No.	101.00205.00030		

22118 20th AVE SE
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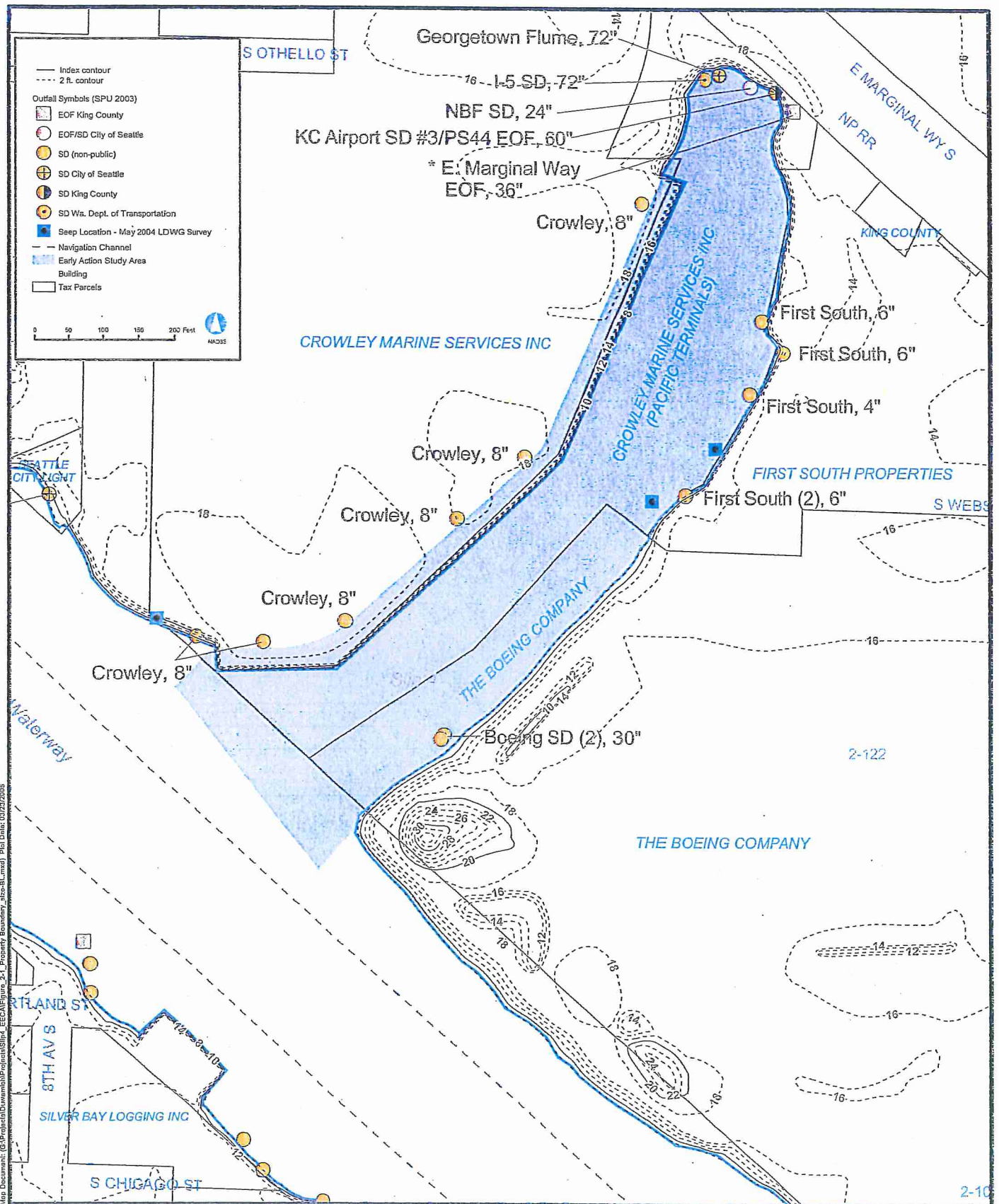


Figure 4. Slip 4 Outfalls
Adapted from: Integral 2006

* East Marginal Way EOF not observed during SPU (2003) survey; location based on King County coordinates.

Map Feature Sources: King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, and others.

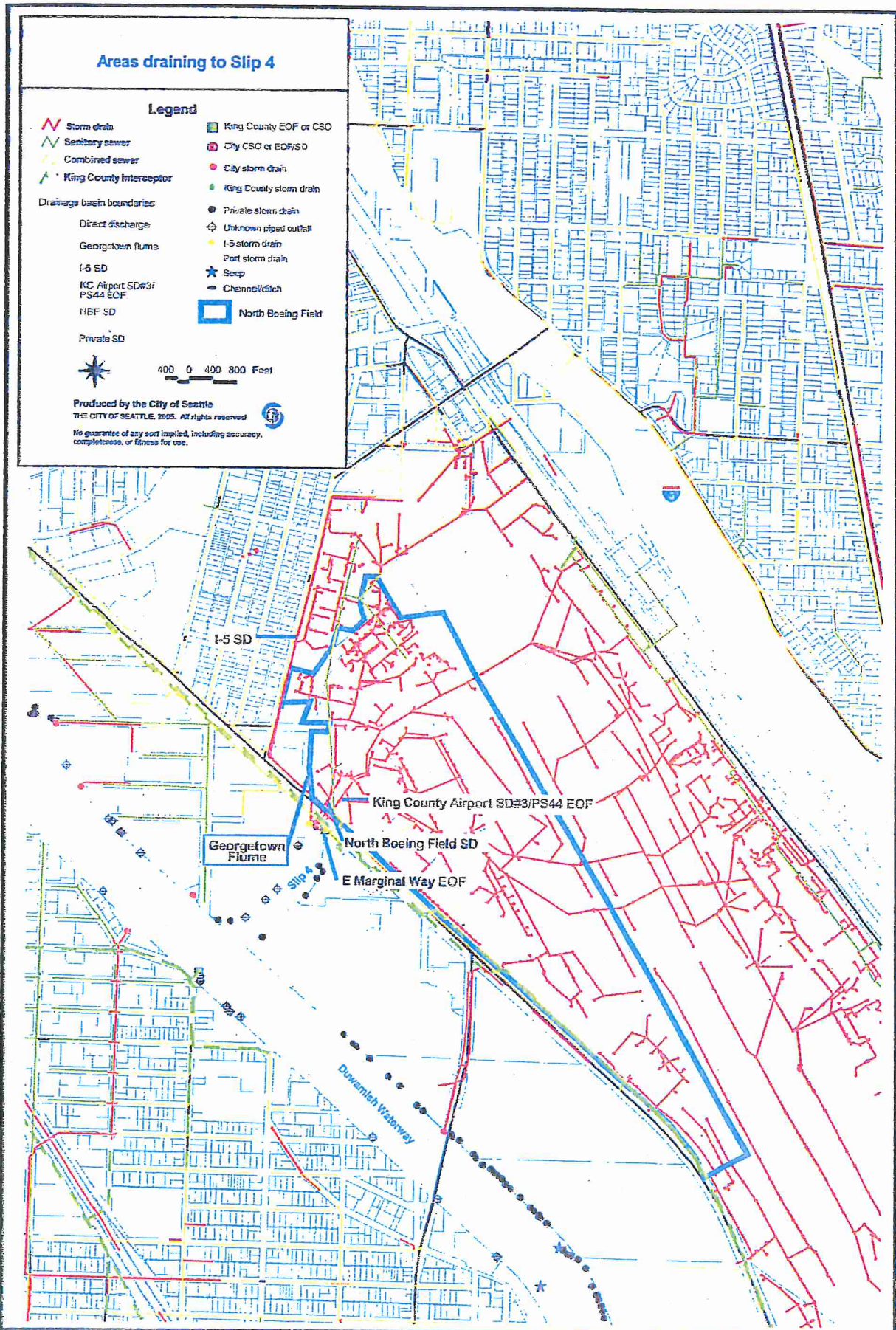


Figure 5. Slip 4 Drainage Basin
 Adapted from: City of Seattle 2006

Table B-1
Potential Soil ARARs Included in Preliminary Screening Level Selection
8th Avenue Terminals, Inc. Site
Seattle, Washington

ARAR ID	Media-MTCA Standard	Pathways - ARARs ^a
A	PQL	Laboratory practical quantitation limit
B	Soil Method A	Method A, Unrestricted, Land Use-HH, WAC 173-340-740(2)(b)(iii) CLARC Database/ Table 740-1
C		Method A, Unrestricted, Land Use-Ecol, WAC 173-340-740(2)(b)(ii); Table 749-2 (Simplified TEE)
D		Method A, Industrial, Land Use-HH, WAC 173-340-745(3)(b)(i) CLARC Database/ Table 745-1
E		Method A, Industrial, Land Use-Ecol, WAC 173-340-745(3)(b)(iii) Table 749-2 (Simplified TEE)
F		Soil Method B
G	Direct Contact, Method B-HH, Non-carcinogen, WAC 173-340-740(3)(b)(iii)(B)(I) CLARC Database, EQ. 740-1	
H	Direct Contact, Method B-HH, Petroleum Mixture, WAC 173-340-740(3)(b)(iii)(B)(III), EQ. 740-3, (4-Phase Model)	
I	Site Specific Wildlife Exposure, Model, WAC 173-340-7493(3), Table 749-4 & 5	
J	Soil Terrestrial Method B-Ecol, WAC 173-340-740(3)(b)(ii); WAC 173-340-7493, Table 749-3, PLANTS, (Site-Specific TEE)	
K	Soil Terrestrial Method B-Ecol, WAC 173-340-740(3)(b)(ii); WAC 173-340-7493, Table 749-3, Soil Biota, (Site-Specific TEE)	
L	Soil Terrestrial Method B-Ecol, WAC 173-340-740(3)(b)(ii); WAC 173-340-7493, Table 749-3 Wildlife (Site-Specific TEE)	
M	Soil Method C	
N		Direct Contact, Method C-HH, Non-carcinogen, WAC 173-340-745(5)(b)(iii)(B)(I), Ingestion Only, CLARC Database, EQ. 745-1
O		Direct Contact, Method C-HH, Carcinogen, WAC 173-340-745(5)(c)(iii)(B) Ingestion + Dermal EQ. 745-5
P		Direct Contact, Method C-HH, Non-carcinogen, WAC 173-340-745(5)(c)(iii)(A) Ingestion + Dermal EQ. 745-4
Q		Direct Contact, Method C-HH, Petroleum Mixture, WAC 173-340-745(5)(b)(iii)(B)(III), EQ. 740-3, (4-Phase Model)
R	Soil Pathway Evaluation	Soil to Method B-HH Groundwater Protection - NC, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 CLARC Database Vadose Soil
S		Soil to Method B-HH Groundwater Protection -NC, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 CLARC Database Saturated Soil
T		Soil to Method B-HH Groundwater Protection - Carc, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 CLARC Database Vadose Soil
U		Soil to Method B-HH Groundwater Protection - Carc, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 CLARC Database Saturated Soil
V		Soil to Method C-HH Groundwater Protection - NC, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 Vadose Soil
W		Soil to Method C-HH Groundwater Protection - NC, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 Saturated Soil
X		Soil to Method C-HH Groundwater Protection - Carc, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 Vadose Soil

Table B-1
Potential Soil ARARs Included in Preliminary Screening Level Selection
8th Avenue Terminals, Inc. Site
Seattle, Washington

ARAR ID	Media-MTCA Standard	Pathways - ARARs ^a
Y	Soil Pathway Evaluation	Soil to Method C-HH Groundwater Protection - Carc, WAC 173-340-740(3)(b)(iii)(A), EQ. 747-1/ 747-2 Saturated Soil
Z		Soil to Sediment Protection, Ecology CSL, WAC 173-340-740(1)(d), EQ. 747-1/ 747-2 Vadose Soil
AA		Soil to Sediment Protection Ecology SQS, WAC 173-340-740(1)(d), EQ. 747-1/ 747-2 Vadose Soil
AB		Soil to Sediment Protection Ecology CSL, WAC 173-340-740(1)(d), EQ. 747-1/ 747-2 Saturated Soil
AC		Soil to Sediment Protection Ecology SQS, WAC 173-340-740(1)(d), EQ. 747-1/ 747-2 Saturated Soil
AD		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Fresh - Acute Vadose Soil
AE		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Fresh - Acute Saturated Soil
AF		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Fresh - Chronic Vadose Soil
AG		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Fresh - Chronic Saturated Soil
AH		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Marine - Acute Vadose Soil
AI		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Marine - Acute Saturated Soil
AJ		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Marine - Chronic Vadose Soil
AK		Soil to Surface Water Protection Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA, WAC 173-340-730(2)(b)(i)(A), Marine - Chronic Saturated Soil
AL		Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Saltwater, Acute, EQ. 747-1/ 747-2 Vadose Soil
AM		Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Saltwater, Acute, EQ. 747-1/ 747-2 Saturated Soil
AN		Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Saltwater Chronic, EQ. 747-1/ 747-2 Vadose Soil
AO		Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Saltwater Chronic, EQ. 747-1/ 747-2 Saturated Soil
AP		Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Freshwater Acute, EQ. 747-1/ 747-2 Vadose Soil
AQ		Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Freshwater Acute, EQ. 747-1/ 747-2 Saturated Soil
AR		Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Freshwater Chronic, EQ. 747-1/ 747-2 Vadose Soil
AS	Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC Freshwater Chronic, EQ. 747-1/ 747-2 Saturated Soil	
AT	Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC HH-Consumption Organisms, EQ. 747-1/ 747-2 Vadose Soil	
AU	Soil to Surface Water Protection, WAC 173-340-740(1)(d), NRWQC HH-Consumption Organisms, EQ. 747-1/ 747-2 Saturated Soil	

Table B-1
Potential Soil ARARs Included in Preliminary Screening Level Selection
8th Avenue Terminals, Inc. Site
Seattle, Washington

ARAR ID	Media-MTCA Standard	Pathways - ARARs ^a	
AV	Soil Pathway Evaluation	Soil to Surface Water Protection Aquatic Life Fresh/Acute, NTR - 40 CFR 131.36, Vadose Soil	
AW		Soil to Surface Water Protection Aquatic Life Fresh/Acute, NTR - 40 CFR 131.36, Saturated Soil	
AX		Soil to Surface Water Protection Aquatic Life Fresh/Chronic, NTR - 40 CFR 131.36, Vadose Soil	
AY		Soil to Surface Water Protection Aquatic Life Fresh/Chronic, NTR - 40 CFR 131.36, Saturated Soil	
AZ		Soil to Surface Water Protection Aquatic Life Marine/Acute, NTR - 40 CFR 131.36, Vadose Soil	
BA		Soil to Surface Water Protection Aquatic Life Marine/Acute, NTR - 40 CFR 131.36, Saturated Soil	
BB		Soil to Surface Water Protection, Aquatic Life Marine/Chronic, NTR - 40 CFR 131.36, Vadose Soil	
BC		Soil to Surface Water Protection, Aquatic Life Marine/Chronic, NTR - 40 CFR 131.36, Saturated Soil	
BD		Soil to Surface Water Protection HH - Fresh Water Organism Consumption Only, NTR - 40 CFR 131.36 (WAC 173-201A-040[5]), HH - 10-6 Carc Risk Vadose Soil	
BE		Soil to Surface Water Protection HH - Fresh Water Organism Consumption Only, NTR - 40 CFR 131.36 (WAC 173-201A-040[5]), HH - 10-6 Carc Risk Saturated Soil	
BF		Soil Protective of Vapor, Direct Contact, WAC 173-340-740(3)(b)(iii)C	
BG		Soil Protective of Vapor, Indoor/Ambient Exposure, WAC 173-340-740(3)(c)(iv)(B)	
BH		Soil Potential ARARs	CERCLA, EPA Regional Screening Level (RSL; May, 2010) Residential
BI			CERCLA, EPA Regional Screening Level (RSL; May, 2010) Industrial
BJ	CERCLA - National Oil & Hazardous Substances Pollution Contingency Plan (NCP) - 40 CFR 300, Preliminary Remediation/Cleanup Goals (PRG's) (2007)		
BK	Soil Protection of Surface Water HH – Organoleptic Effects CWA §304 NRWQC Vadose Soil		
BL	Soil Protection of Surface Water HH – Organoleptic Effects CWA §304 NRWQC Saturated Soil		
BM	CA EPA OEHHA, HH-Direct Exposure, Residential Screening Levels		
BN	CA EPA OEHHA, HH-Direct Exposure, Industrial Screening Levels		
BO	Soil - Toxics Substances Control Act, (TSCA), 40 CFR 761.61		
BP	CERCLA, EPA Regional Screening Level (RSL; May, 2010), Potable Groundwater Protection (Risk Based) Saturated Soil		
BQ	EPA, LDW Plant 2 TMCL's, Groundwater Protection (Risk Based)		
BR	Natural Background Levels, Ch. 173-340 WAC		

Notes:

^a Values based on protection of surface water for human consumption were excluded.

Table B-2
Potential Surface Water and Groundwater ARARs Included in Preliminary Screening Level Selection
8th Avenue Terminals, Inc. Site
Seattle, Washington

ARAR ID	Media-MTCA Standard	Pathways - ARARs ^a	
A	PQL	Laboratory practical quantitation limit	
B	Surface Water Method A	Surface Water, Method A - HH ARAR's, WAC 173-340-730(2)(b)(i)	
C		Surface Water, Method A - WAC 173-340-730(2)(b)(i)(A)	
D		Surface Water, Method A - HH/ Aquatic Organisms: CWA §304, WAC 173-340-730(2)(b)(i)(B)	
E		Surface Water, Method A - HH NTR - 40 CFR 131, WAC 173-340-730(2)(b)(i)©	
F		Surface Water, Method A - HH No Table Values, WAC 173-340-730(2)(b)(iii) (Applicable SW background or PQL values)	
G		Surface Water Method B	Surface Water, Method B - HH ARAR's, WAC 173-340-730(3)(b)(i)
H	Surface Water, Method B - WA WQS:Ch. 173-2101 A, WAC 173-340-730(3)(b)(i)(A)		
I	Surface Water, Method B - HH/ Aquatic Organisms: CWA §304, WAC 173-340-730(3)(b)(i)(B)		
J	Surface Water, Method B - HH NTR - 40 CFR 131, WAC 173-340-730(3)(b)(i)(C)		
K	Surface Water, Method B, Environmental Effects, WAC 173-340-730(3)(b)(ii)		
L	Surface Water, Method B-HH, Non-carcinogen, Fish Consumption WAC 173-340-730(3)(b)(iii)(A), EQ. 730-1 CLARC Database		
M	Surface Water, Method B-HH, Non-carcinogen, Fish Consumption WAC 173-340-730(3)(c), EQ. 730-1 MOD - Tribal Adult		
N	Surface Water, Method B-HH, Non-carcinogen, Fish Consumption WAC 173-340-730(3)(c), EQ. 730-1 MOD - Tribal Child		
O	Surface Water, Method B-HH, Carcinogen, Fish Consumption WAC 173-340-730(3)(b)(iii)(B), EQ. 730-2, CLARC Database		
P	Surface Water, Method B-HH, Carcinogen, Fish Consumption WAC 173-340-730(3)(b)(iii)(B), EQ. 730-2, MOD - Tribal Adult		
Q	Surface Water, Method B-HH, Carcinogen, Fish Consumption WAC 173-340-730(3)(b)(iii)(B), EQ. 730-2, MOD - Tribal Child		
R	Surface Water, Method B-HH Petroleum Mixture, WAC 173-340-730(3)(b)(iii)(C)		
S	Surface Water Method C		Surface Water, Method C - HH ARAR's, WAC 173-340-730(4)(b)(i)
T			Surface Water, Method C, Environmental Effects, WAC 173-340-730(4)(b)(ii)
U	Surface Water Method C	Surface Water, Method C, Non-carcinogen, Fish Consumption, WAC 173-340-730(4)(b)(iii)(A) EQ. 730-1 CLARC Database	
V		Surface Water, Method C, Carcinogen, Fish Consumption WAC 173-340-730(4)(b)(iii)(B) EQ. 730-2 CLARC Database	
W		Surface Water, Method C, Petroleum Mixture, WAC 173-340-730(4)(b)(iii)(C)	
X	Groundwater Method A	Ground Water, Method A-HH, Potable (Table 720-1), WAC 173-340-720(3)(b)(i)	
Y		Ground Water Method A - HH Potable ARAR's, WAC 173-340-720(3)(b)(ii)	
Z		Groundwater State Quality Criteria, WAC 173-340-720(3)(b)(ii); WAC 173-200-040(3) Table 9.1	
AA		Ground Water Method A-HH-Potable Safe Drinking Water Act, 40 CFR 141: WAC 173-290-310; WAC 173-340-720(3)(b)(ii)(A) MCL	
AB		Ground Water Safe Drinking Water Act, 40 CFR 141: WAC 173-290-310; WAC 173-340-720(3)(b)(ii)(B) MCLG (Non-Zero Goals)	
AC		Ground Water State Board Health, Ch. 246-290 WAC: WAC 173-340-720(3)(b)(ii)(C), MCL	
AD		Ground Water, State Board Health, Ch. 246-290 WAC: WAC 173-340-720(3)(b)(ii)(C), MCG	
AE		Ground Water Method A - Potable, No Table Values WAC 173-340-720(3)(b)(iii)	
AF		Ground Water, Method A-HH, Potable/Protect Surface Water, WAC 173-340-720(3)(b)(iv)	
AG		Groundwater Method B	Ground Water Method B - HH Potable ARAR's, WAC 173-340-720(4)(b)(i), Safe Drinking Water Standards - MCLs
AH			Ground Water Method B - HH Potable ARAR's, WAC 173-340-720(4)(b)(i), Safe Drinking Water Standards MCGs
AI	Ground Water Method B - HH Potable ARAR's, WAC 173-340-720(4)(b)(i), State Department of Health Standards - MCLs		
AJ	Ground Water Method B - HH Potable ARAR's, WAC 173-340-720(4)(b)(i), State Department of Health Stanadrds - MCGs		
AK	Ground Water, Method B-HH, Non-carcinogenic/Potable, WAC 173-340-720(4)(b)(iii)(A) CLARC Database		
AL	Ground Water, Method B-HH, Carcinogen/Potable, WAC 173-340-720(4)(b)(iii)(B) CLARC Database		
AM	Ground Water, Method B-HH, Potable, Petroleum Mixture, WAC 173-340-720(4)(b)(iii)(C), EQ. 720-3 (4-Phase Model)		
AN	Ground Water Method C - HH Potable ARAR's, WAC 173-340-720(5)(b)(i)		

Table B-2
Potential Surface Water and Groundwater ARARs Included in Preliminary Screening Level Selection
8th Avenue Terminals, Inc. Site
Seattle, Washington

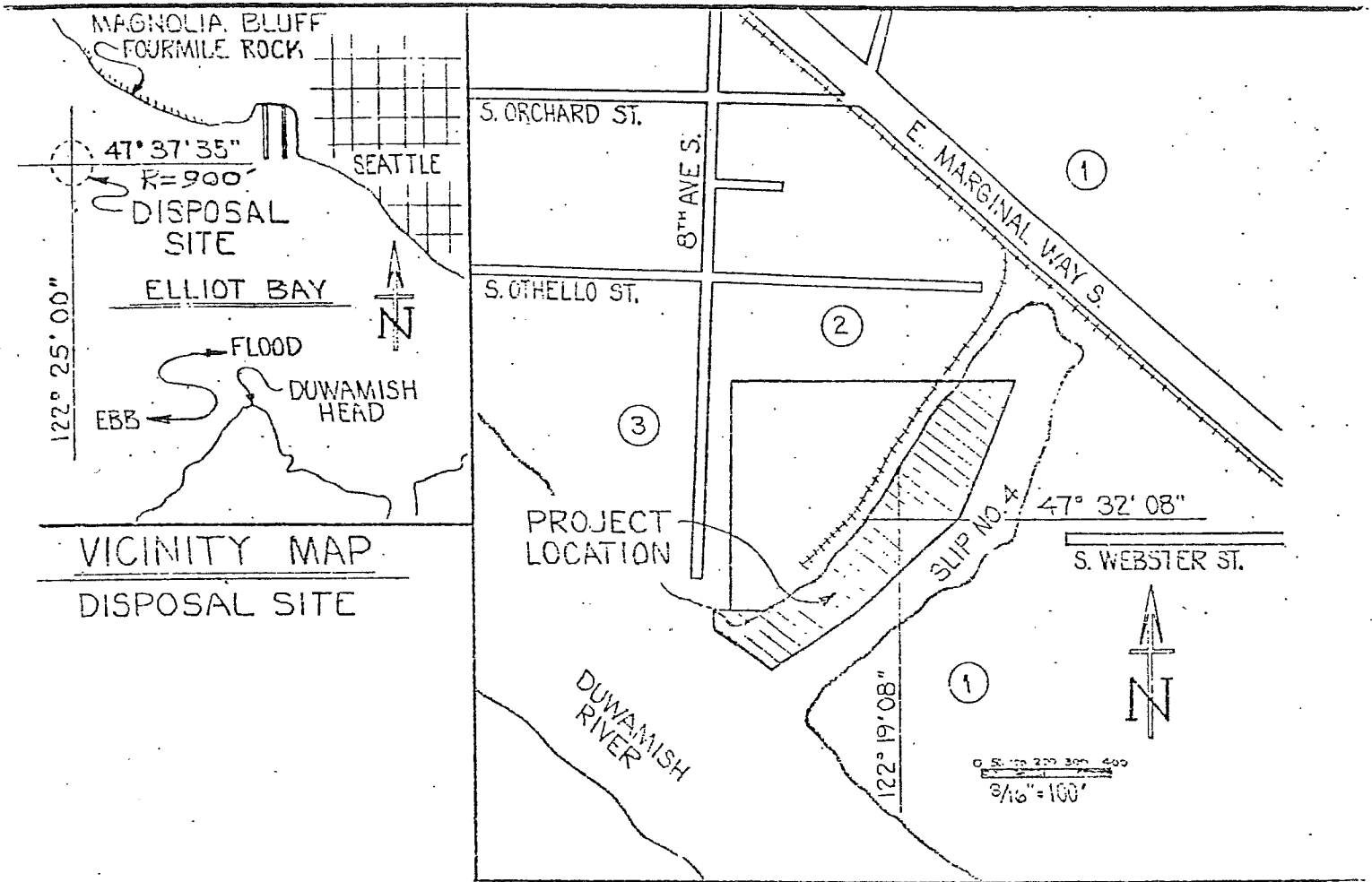
ARAR ID	Media-MTCA Standard	Pathways - ARARs ^a
AO	Groundwater Method C	Ground Water, Method C-HH, Protect Surface Water Highest Beneficial Use, WAC 173-340-720(5)(b)(ii)
AP		Ground Water, Method C-HH, Non-carcinogenic/Potable, WAC 173-340-720(5)(b)(iii)(A) CLARC Database
AQ		Ground Water, Method C-HH, Carcinogen/ Potable WAC 173-340-720(5)(b)(iii)(B) CLARC Database
AR		Ground Water, Method C-HH, Potable, Petroleum Mixture, WAC 173-340-720(5)(b)(iii)(C), EQ. 720-3 (4-Phase Model)
AS	Surface Water Method A,B,C Required ARARs	Surface Water Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA WAC 173-340-730(2)(b)(i)(A) Fresh - Acute
AT		Surface Water Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA WAC 173-340-730(2)(b)(i)(A), Fresh - Chronic
AU		Surface Water Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA WAC 173-340-730(2)(b)(i)(A), Marine - Acute
AV		Surface Water Aquatic Life, SWQS:RCW 90-48; Ch. 173-201A-240 per MTCA WAC 173-340-730(2)(b)(i)(A), Marine - Chronic
AW		Surface Water HH – Consumption; Organism Only (Marine), CWA §304 NRWQC
AX		Surface Water HH – Organoleptic Effects, CWA §304 NRWQC
AY		Surface Water Aquatic Life Fresh/Acute, CWA §304, NRWQC
AZ		Surface Water Aquatic Life Fresh/Chronic, CWA §304, NRWQC
BA		Surface Water Aquatic Life Marine/Acute, CWA §304, NRWQC
BB		Surface Water Aquatic Life Marine/Chronic, CWA §304, NRWQC
BC		Surface Water Aquatic Life Fresh/Acute, NTR - 40 CFR 131.36
BD		Surface Water Aquatic Life Fresh/Chronic, NTR - 40 CFR 131.36
BE		Surface Water Aquatic Life Marine/Acute, NTR - 40 CFR 131.36
BF		Surface Water Aquatic Life Marine/Chronic, NTR - 40 CFR 131.36
BG		Surface Water HH - Fresh Water Organism Consumption Only, NTR - 40 CFR 131.36 (WAC 173-201A-040[5]), HH - 10-6 Carc Risk
BH		Surface Water HH - Marine Water Organism Consumption Only NTR - 40 CFR 131.36 (WAC 173-201A-040[5]), HH - 10-6 Carc Risk
BI		Surface Water Discharge (NPDES), 40 CFR 122,125/ RCW 90-48; WAC 173-216,-220, -122
BJ		Waste Water - Toxics Substances Control Act (TSCA), 40 CFR 761.61
BK		Shoreline Management Act RCW 90-58; WAC 173-16; King County/City Seattle Shoreline Master Plans (KCC Title 25;SMC 23.60)
BL	Groundwater to Sediment Protection Ecology CSL WAC 173-340-730(1)(d)	
BM	Groundwater to Sediment Protection Ecology SQS WAC 173-340-730(1)(d)	
BN	Surface Water HH - Adult, Non-Carcinogen, Tribal Fish Consumption w/o Salmon, EPA RCRA (using EQ 730-1)	
BO	Surface Water HH - Child, Non-Carcinogen, Tribal Fish Consumption w/o Salmon, EPA RCRA (using EQ 730-1)	
BP	Surface Water HH - Adult, Carcinogen, Tribal Fish Consumption w/o Salmon EPA RCRA (using EQ 730-2)	
BQ	Surface Water HH - Child, Carcinogen, Tribal Fish Consumption w/o Salmon EPA RCRA (using EQ 730-2)	
BV	Natural Background Levels, Ch. 173-340 WAC	

Notes:

^a Values based on protection of surface water for human consumption were excluded.

Table B-3
Potential Sediment ARARs Included in Preliminary Screening Level Selection
8th Avenue Terminals, Inc. Site
Seattle, Washington

ARAR ID	Media-MTCA Standard	Pathways - ARARs
A	PQL	Laboratory practical quantitation limit
C	SEDIMENT Required ARAR (Marine Waters)	SMS SQS WAC 173-340-760
E		SMS CSL WAC 173-340-760
AD	Puget Sound Dredge Disposal Analysis (PSDDA) (Marine Waters)	Sediment Evaluation Framework (SEF) Screening Level (SL1) Marine (2005)
AE		Sediment Evaluation Framework (SEF) Screening Level (SL2) Marine (2005)
AH		PSDDA /DMMP Screening Level Marine (2011)
AI		PSDDA /DMMP Bioaccum-ulation Trigger (BT) Marine (2003)
AJ		PSDDA /DMMP Maximum Level (ML) Marine (1998)
AK	SEDIMENT POTENTIAL ARAR's	CERCLA/MTCA HH Risk Based Threshold Concentrations 40 CFR 160 LDW
AL		CERCLA/MTCA HH Risk Based Threshold Concentrations 40 CFR 160 LDW (Netfishing)
AM		CERCLA/MTCA HH Risk Based Threshold Concentrations 40 CFR 160 LDW (Beach Play & Clam Fishing)
BA		Natural Background Levels, Ch. 173-340 WAC



VICINITY MAP

PROJECT LOCATION

NO FEDERAL PIERHEAD LINES ESTABLISHED

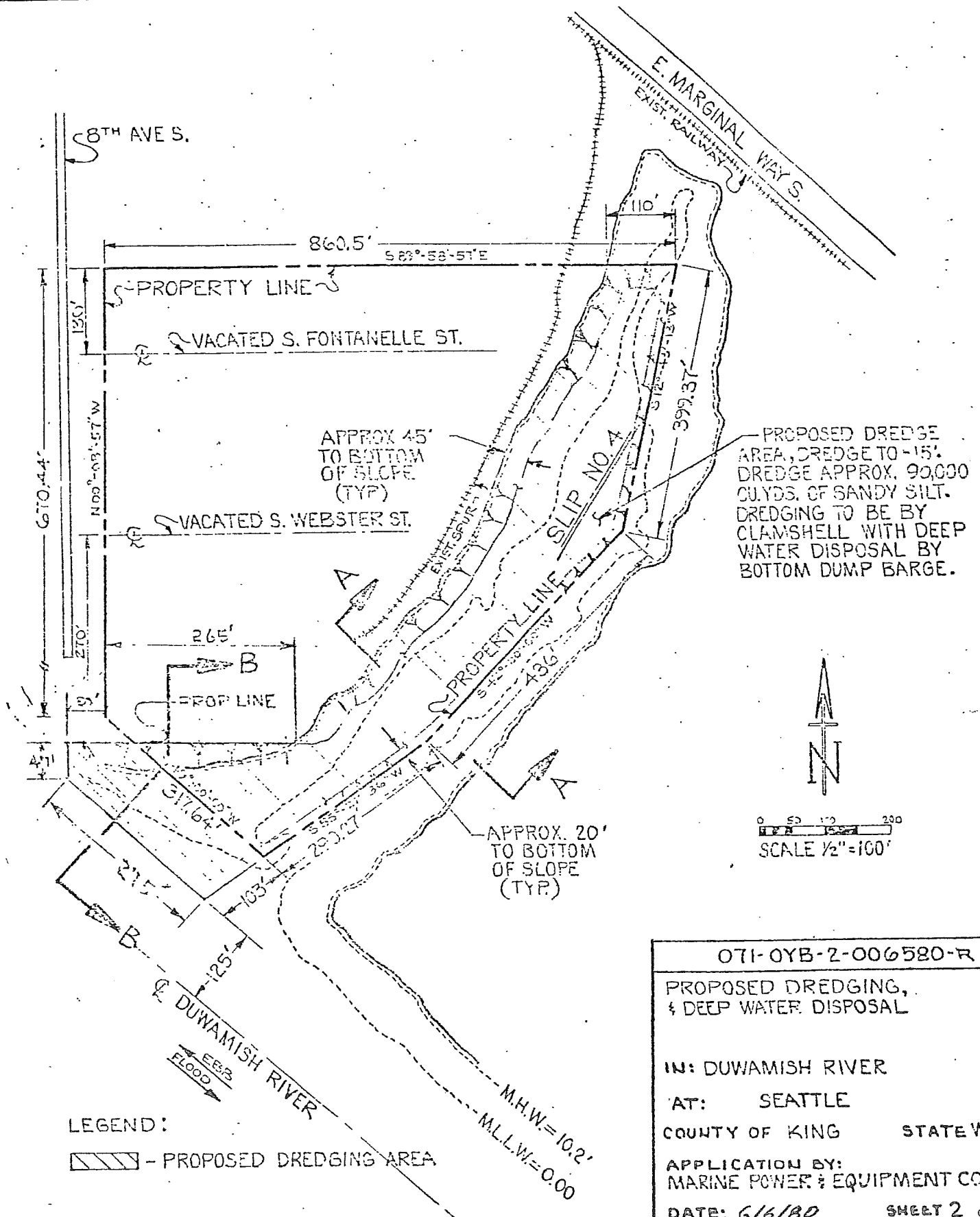
PURPOSE: TO ESTABLISH A SAFE DEPTH FOR COMMERCIAL MARINE TRAFFIC.

DATUM: M.L.L.W. = 0.00 N.O.S.

ADJACENT PROPERTY OWNERS:

- ① BOEING AIRCRAFT CO., 7755 E. MARGINAL WAYS. SEATTLE, WA. 98108
- ② LAYRITE CONCRETE PRODUCTS CO., 7265 E. MARGINAL WAY S. SEATTLE, WA. 98108
- ③ PUGET SOUND TRUCK LINES, 3720 AIRPORT WAY S. SEATTLE, WA. 98108

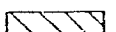
071-0YB-2-006580-R	
PROPOSED DREDGING & DEEP WATER DISPOSAL	
IN DUWAMISH RIVER AT SEATTLE	
COUNTY OF KING	STATE WA.
APPLICATION BY MARINE POWER & EQUIP CO., INC.	
SHEET 1 OF 4 DATE 6/6/80	
REV 1 8/29/80, REV 2 10/08/80	



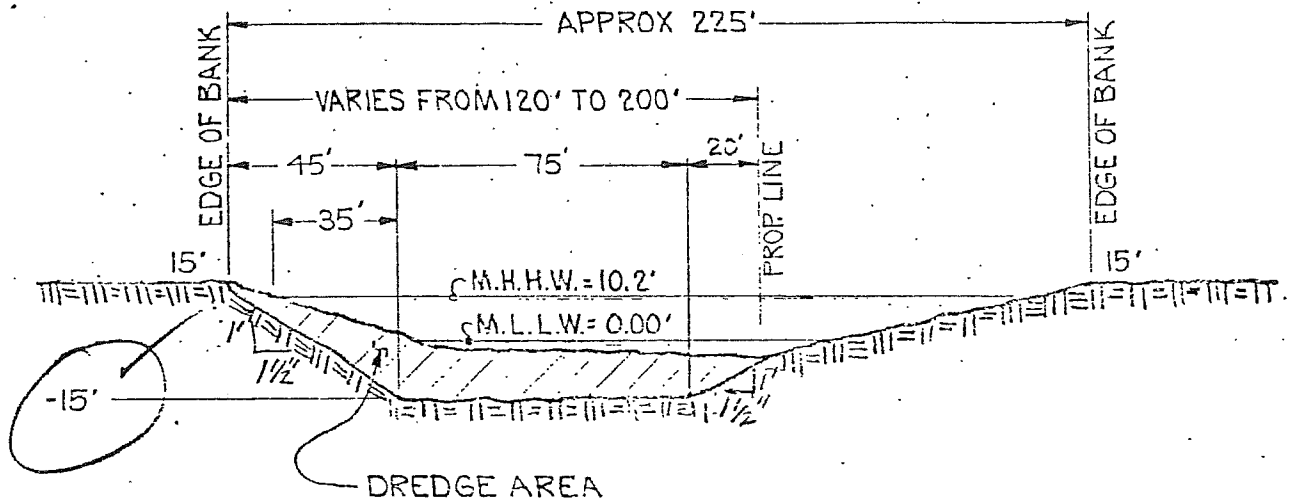
PROPOSED DREDGE AREA, DREDGE TO -15'. DREDGE APPROX. 90,000 CU.YDS. OF SANDY SILT. DREDGING TO BE BY CLAMSHELL WITH DEEP WATER DISPOSAL BY BOTTOM DUMP BARGE.



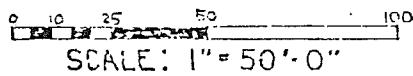
0 50 100 200
SCALE 1/2"=100'

LEGEND:
 - PROPOSED DREDGING AREA

OTI-OYB-2-006580-R
 PROPOSED DREDGING,
 & DEEP WATER DISPOSAL
 IN: DUWAMISH RIVER
 AT: SEATTLE
 COUNTY OF KING STATE WA.
 APPLICATION BY:
 MARINE POWER & EQUIPMENT CO.
 DATE: 6/6/80 SHEET 2 of 4
 REV 1. 8/28/80, 3000030/ES



SECTION A-A



071-0YB-2-006580-R

PROPOSED DREDGING &
DEEP WATER DISPOSAL

IN: DUWAMISH RIVER

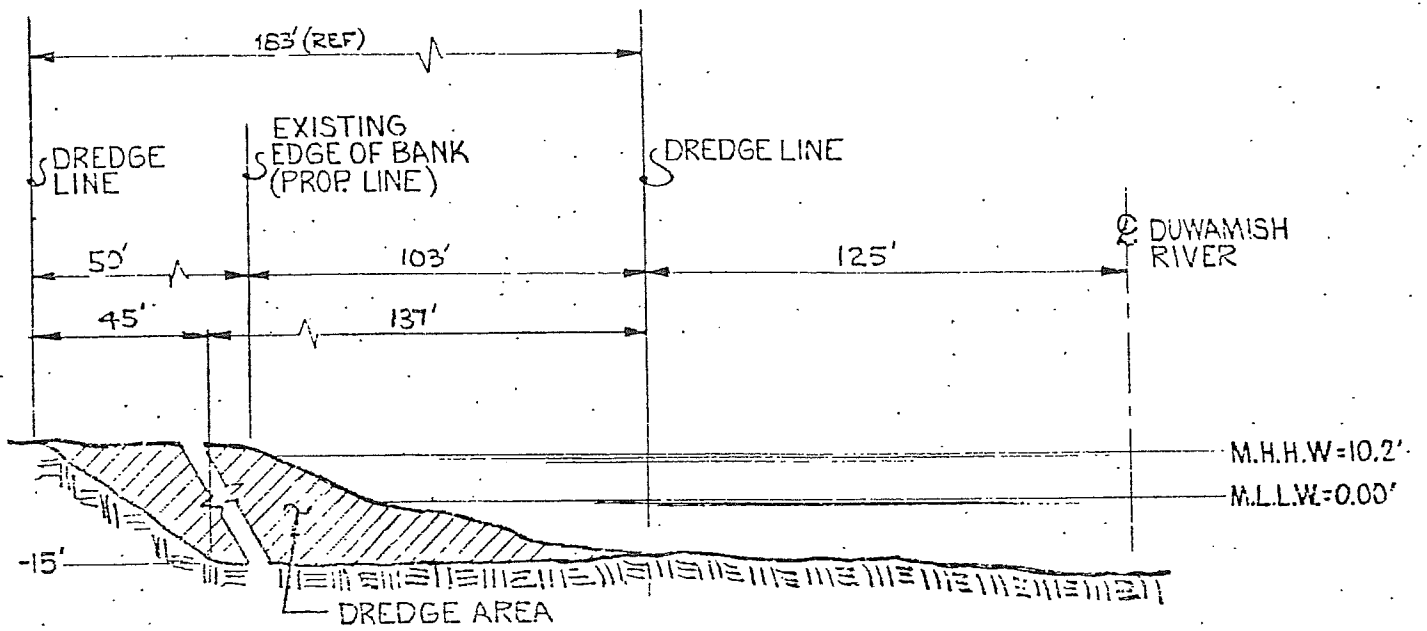
AT: SEATTLE

COUNTY OF KING STATE WA.

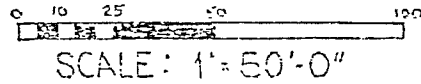
APPLICATION BY:
MARINE POWER & EQUIP. CO. INC.

DATE: 5/6/80 SHEET 3 OF 4

REV 1 8/28/80, 200 REC 80, 5/87



SECTION B-B



071-0YB-2-006580-R	
PROPOSED DREDGING & DEEP WATER DISPOSAL	
IN DUWAMISH RIVER AT SEATTLE	
COUNTY OF KING	STATE WA
APPLICATION BY MARINE POWER & EQUIP CO. INC.	
SHEET 4 OF 4 DATE 6/6/80	
REV 1 8/25/80, 20 DEC 80	



NPSOP-RF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX C-3755
SEATTLE, WASHINGTON 98124

27 JAN 1981

Marine Power & Equipment Co., Inc.
10000 1st Ave. N.E.
Seattle, Washington 98125

Reference: [illegible]

Inclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application.

You are cautioned that any change in the location or plans of the work will require submittal of a revised plan to this office for approval prior to accomplishment.

Your attention is drawn to conditions "o" and "n" of the permit which specify the expiration dates for both commencement and completion of the work and that you notify this office of the dates the work is started and completed.

Sincerely yours,

Gerald A Keller

GERALD A. KELLER
Chief, Regulatory Functions Branch

1 Incl
As stated
CF:
Compliance File

NPS FL
AUG 80 199

Application No. 071 OYB 2 006 J

Name of Applicant Marine Power & Equipment Company

Effective Date 27 JAN 1981

Expiration Date (If applicable) See General Condition e

DEPARTMENT OF THE ARMY
PERMIT

Referring to written request dated 1 May 1980 for a permit to:

() Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403);

() Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500);

() Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052; P.L. 92-532);

Marine Power & Equipment Company
1441 N. Northlake Way
Seattle, Washington

is hereby authorized by the Secretary of the Army:
to

dredge approximately 85,000 cubic yards of sandy silt by clamshell; dredge material to be deposited at deep water site in Elliott Bay (Provide adequate water depth for safe vessel movement)

in Duwamish River

at Seattle, Washington

in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (on drawings: give file number or other definite identification marks.)
071-OYB-2-006580, 4 sheets

subject to the following conditions:

I. General Conditions:

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit; and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions j or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

INCL 12

b. That all activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Federal Water Pollution Control Act of 1972 (P.L. 92-500; 86 Stat. 816), the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532, 86 Stat. 1052), or pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction or operation, of any pollutant (including dredged or fill material), into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementat on plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

d. That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

e. That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

f. That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

g. That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

h. That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.

i. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.

j. That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for this action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to abate imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

k. That this permit may be either modified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30-day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and the conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit; or (2) within the aforesaid 30-day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

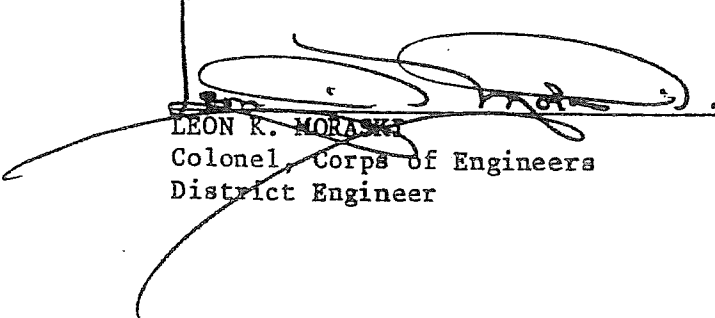
m. That any modification, suspension, or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

ENVIRONMENTAL ASSESSMENT
For Work Authorized in Accordance with Section
10 of the River and Harbor Act of March 3, 1899
and Section 404 of the Clean Water Act
Described in Permit Application No. 071-OYB-2-006580
of Marine Power and Equipment Company

1. The work was coordinated with appropriate state and Federal agencies in accordance with procedures specified in 33 CFR, Parts 320-329.
2. The work is to dredge approximately 85,000 cubic yards of sandy silt by clamshell in the Duwamish River at Seattle, Washington. (Deposit dredged material at deep water site in Elliott Bay.)
3. This application has been reviewed in light of comments received from the public and agency coordination. Evaluation by this office considered relevant factors including esthetics, fish and wildlife values, flood damage prevention, land and shoreline management classifications, conservation, navigation, recreation, water supply, water quality, archeological and historic values, economics, ecological and general environmental considerations, endangered species or their critical habitat, energy needs, safety, food production, and general public welfare. This review has not identified any potentially significant adverse effects for action under the terms of the permit application.
4. The work has been considered with respect to Indian Treaty fishing rights, per the decision reached in United States v. Washington, (384 F. Supp. 312, affirmed 520 F. 2d 676, cert. denied 423 U.S. 1086), as modified in Supreme Court's decision of 2 July 1979. I have determined that the work will not significantly interfere with the Indian fishery, including Indian access to usual and accustomed fishing grounds and opportunity to fish in these areas. I have further determined that the work will not significantly interfere with salmonids, their habitat or promote adverse impacts on fishing success in these areas.
5. I have determined that performance of this work, in accordance with the conditions of the permit, will not significantly affect the quality of the human environment. Further, I have determined that the issuance of this particular permit is a Federal action not having a significant impact on the environment and thus have concluded that the preparation of a formal EIS is not required.

21 Jan 81
Date


LEON R. MORASKI
Colonel, Corps of Engineers
District Engineer

FINDINGS OF FACT

Reference: Marine Power and Equipment Company - 071-OYB-2-006580

Concerning issuance of Department of the Army Permit under Section 10 of the River and Harbor Act of March 3, 1899 (30 Stat. 1151; 33 U.S.C. 403) and Section 404 of the Clean Water Act to dredge approximately 85,000 cubic yards of sandy silt by clamshell in the Duwamish River at Seattle, Washington. (Deposit dredged material at deep water site in Elliott Bay.)

1. I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application, as well as the stated views of other interested Federal and non-Federal agencies and the concerned public, relative to the work in navigable waters of the United States.

2. All factors relevant to this work were considered in accordance with our regulations. These factors include, but are not limited to, conservation, economics, esthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use, navigation, recreation, water supply, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

3. The following points are considered pertinent in evaluation of comments received in coordinating the public notice dated 23 June 1980 and drawing revision notice dated 23 September 1980. The revision consisted of modifying the boundary configuration of the proposed dredged area to satisfy a concern expressed by the City of Seattle. On 29 October 1980 the applicant further revised the proposed dredged area boundary configuration to insure dredging operations noninterference with an existing submarine telephone cable.

a. Federal Agencies. The National Oceanic and Atmospheric Administration, the Environmental Protection Agency (EPA) and the Department of the Interior have no objection to the work. EPA, in 10 November 1980 letter, conditioned its nonopposing position advising that the material to be dredged has high concentrations of sulfides. The conditions are:

(1) Loads of dredged material to be dumped at Four Mile Rock Disposal Site will be limited to a volume of 1,000 cubic yards.

(2) In the event of adverse impacts on fisheries resources, due to the nature of the material being dredged, dredging operations will cease and modifications in the dredging procedures to alleviate the problem will be coordinated with EPA.

The applicant, in 3 November 1980 letter to EPA, advised that the conditions outlined in the 10 November 1980 letter will be complied with. The EPA 3 November 1980 letter will be mailed to the permittee as a condition letter.

Marine Power and Equipment Company

b. State and Local Agencies. The State of Washington and the City of Seattle, the local governing body, have no objections to the work. The State of Washington, in 22 December 1980 letter, conditioned its nonopposing position with the following requirements:

- (1) A water quality modification be obtained from the Department of Ecology prior to commencement of work.
- (2) Time Limitation: Construction may be started immediately, and shall be completed by December 31, 1981. A time extension will be considered upon reapplication. However, no dredging shall be accomplished from April 1 to June 15 of any year.
- (3) A floating clamshell may be used for dredging. Each pass of the clamshell bucket shall be complete, and there is to be no stockpiling in the water.
- (4) Dredging operations shall be conducted at all times in such a manner as to cause little or no disturbance or siltation to the adjacent waters.
- (5) Dredged materials shall be deposited at an approved, designated Department of Natural Resources deep water disposal site.
- (6) The dredged banks shall be sloped no steeper than 1.5 feet horizontal to each 1.0 foot vertical.
- (7) If, at any time, there should be fish in distress, a fish kill, or water quality problems as a result of this project, the dredging operation shall be stopped immediately. The summer and fall may be critical times of low dissolved oxygen.
- (8) The following is the limitation of dissolved oxygen:

Allowable dredging	- 5.1mg/l D.O. or over
Cease dredging	- 5.0mg/l D.O. or under
- (9) The applicant will be informed if dissolved oxygen does below 5mg/l.
- (10) No petroleum products or other deleterious materials shall be allowed to enter state waters as a result of this project.
- (11) Any debris resulting from this project shall be removed from the water and disposed of or placed in such a manner to prevent its being washed back into the water by high water or wave action.

Marine Power and Equipment Company

(12) Water quality is not to be degraded to the detriment of fish life as a result of this project. Compliance with the quality limits set forth in the Washington State Water Quality Regulations shall be maintained throughout the life of the project.

(13) These provisions shall be closely followed by the contract(s) and the equipment operator(s) and shall be on the job site at all times.

The State of Washington 22 December 1980 letter will be mailed to the permittee with the permit as a condition letter.

Comments of the state and local governmental agencies are predicated upon the applicant's compliance with the State Shoreline Management Act and applicable local laws, regulations and codes governing this work.

c. Treaty Indians. The Muckleshoot Indian Tribe, in 8 July 1980 letter, recommended that dredging be conducted between 15 June and 15 March of the calendar year and advised that tribal members will be fishing for salmonids at the worksite between July and January of the calendar year. The applicant, in 5 December 1980 letter to the Muckleshoot Indian Tribe, advised that the dredging is planned to be performed between 15 June and 15 March of the calendar year with the estimated performance period being during the month of January 1981. The applicant further advised the Muckleshoot Indian Tribe that the necessary precautions will be taken to insure noninterference with the Tribe's commercial fishing activities. The work has been considered with respect to the decision reached in United States v. Washington, (384 F. Supp. 312, affirmed 520 F. 2d 676, cert. denied 423 U.S. 1086), as modified in Supreme Court's decision of 2 July 1979, and it was found that the project will not adversely affect any treaty rights.

d. Individual or Organized Groups. No individual or organized groups have opposed the work. This work is considered to be in the general public interest.

e. Other Considerations: The work will have no significant adverse effect on items recorded in paragraph 2 above. Particular attention was given to the location and general design to prevent possible obstructions to navigation with respect to both the public use and the neighboring proprietors' access to the Duwamish River.

The work will provide an adequate water depth for safe vessel movement.


f. The work was evaluated in accordance with the objectives of the Environmental Protection Agency's Section 404(b) guidelines, contained in the Clean Water Act (40 CFR 230). The technical evaluation considered the following parameters: physical and chemical-biological interactive effects, water quality impacts, selection of disposal sites, and conditioning of discharges

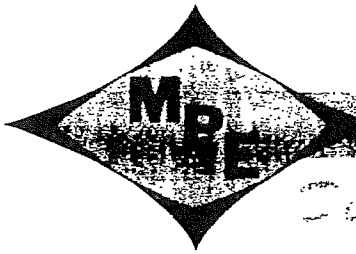
Marine Power and Equipment Company

of dredged or fill material. As a result of this evaluation, I have concluded that the discharge will not have significant adverse impacts on the aquatic environment.

4. I find that issuance of this Department of the Army Permit is predicated upon a thorough analysis of the various factors identified herein. The work is deemed to comply with state and local laws, regulations and codes. There are no identified major adverse environmental effects. The work is consonant with National policy, statutes, and administrative directives. The total public interest would best be served by the issuance of a Department of the Army permit.

21 Jan 81
Date


LEON K. MORASKI
Colonel, Corps of Engineers
District Engineer



Marine Power & Equipment Co., Inc.

Land Marine Electric

1441 North Northlake Way
Seattle, Washington 98103

MEIrose 2-1441

December 11, 1980

U.S. Army
Corps of Engineers
Seattle District
P.O. Box C-3755
Seattle, Washington 98124

Attn: Regulatory Functions Branch
Joe Thomer

Re: Permit Application 071-OYB-2-006580

Dear Sir:

The original revision of the subject permit application was in response to concern expressed by Elsie Hulsizer of the City of Seattle, Department of Construction and Land Use. The original plan left a small tip of land sticking out into Slip 4 and she was concerned about erosion of that area.


I agreed to expand the dredging area to cut off that particular tip of land.

After the revision was made I realized that the newly added dredge area was in close proximity to an under water telephone cable which crosses the Duwamish River. To preclude any interference with the subject cable I elected to further revise the dredge area and provided you with the required drawings.

If you have any further questions, please call.

Very truly yours,

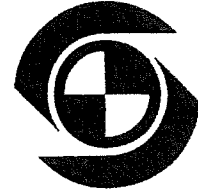
MARINE POWER & EQUIPMENT CO., INC.

VB: 23

Bruce H. Klein

RHK:sw

Seattle
Engineering Department

Arthur E. Maronek
Acting Director of Engineering
Charles Royer, Mayor



RE: 071-OYB-2-006580-R
MARINE POWER & EQUIPMENT CO.
23 SEPTEMBER 1980

NOVEMBER 20, 1980

Department of the Army
Seattle District
Corps of Engineers
P. O. Box C-3755
Seattle, Washington 98124

Gentlemen:

The City of Seattle has reviewed the subject Public Notice. Based upon comments which have been received from various City departments, we offer the following statement(s):

- 1. We have no objection to the proposal as described in the subject Public Notice.
- 2. The proposal is exempt from the permit requirements of the Shoreline Management Act under the Seattle Shoreline Master Program.
- 3. The proposal is consistent with the Seattle Shoreline Master Program and Substantial Development Permit No. SMA 80-45 was approved on NOVEMBER 4, 1980.
- 4. Applicant has applied for a Shorelines Substantial Development Permit. We reserve comments on the proposal until our review of the Shorelines Permit has been completed.
- 5. Applicant is hereby advised that a Shorelines Substantial Development Permit is required under the Shoreline Management Act of 1971. Application forms are available from the Seattle Department of Construction and Land Use, 503 Municipal Building, Seattle, Washington, 98104. We request that the Department of the Army permit for this proposal be withheld until a Substantial Development Permit is obtained.
- 6. Other:

Very truly yours,

ARTHUR E. MARONEK
Acting Director of Engineering

BY *Richard Anderson*
R. J. ANDERSON, P. E., Manager
Court & Right of Way Division

MC
MC:ft

cc: Dept. of Construction
and Land Use
State Dept. of Ecology

316A

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101



REPLY TO
ATTN OF: MS 521

NOV 10 1980

District Engineer
Seattle District, C/E
ATTN: Chief, Reg. Func. Branch
P. O. Box C-3755
Seattle, Washington 98124

RE: 071-OYB-2-006580-R, Marine Power and Equipment Company, Inc.,
6/23/80

Dear Sir:

We have completed our review of the above referenced permit application.

Chemical analyses indicate that the material to be dredged has relatively high concentrations of sulfides. However, our agency will have no objection to the issuance of this permit provided the proposed operations are subject to the following conditions:

- 1) Loads of dredged material to be dumped at 4 Mile Rock disposal site will be limited to a volume of 1,000 cubic yards,
- 2) In the event of adverse impacts on fisheries resources, due to the nature of the material being dredged, dredging operations will cease and modifications in the dredging procedures to alleviate the problem will be coordinated with our office.

These conditions are needed to maintain water quality and to protect the aquatic resources.

These conditions have been discussed with and agreed to by the applicant. If there are any questions concerning our review of this application please contact James Wood, of my staff, at (206) 442-1352 or FTS 399-1352.

Sincerely,

Ronald A. Lee, Chief
Dredge and Fill Permits Section

13 08: 21

cc: USFWS - Olympia
NMFS
WDNR - Attn. Rene Herrera
WDG - Attn. Bob Zeigler
WDE
Applicant

311 C

APPLICATION FOR A DEPARTMENT OF THE ARMY PERMIT
For use of this form, see EP 1145-2-1

The Department of the Army permit program is authorized by Section 10 of the River and Harbor Act of 1899, Section 404 of P. L. 92-500 and Section 103 of P. L. 92-532. These laws require permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Information provided in ENG Form 4345 will be used in evaluating the application for a permit. Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary; however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and checklist) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

<p>1. Application number (To be assigned by Corps)</p> <p style="font-size: 1.2em; font-weight: bold;">071-043-2-006580</p>	<p>2. Date</p> <p style="text-align: center; font-weight: bold;">1 MAY 1980</p> <p style="font-size: 0.8em;">Day Mo. Yr.</p>	<p>3. For Corps use only.</p>								
<p>4. Name and address of applicant.</p> <p style="font-weight: bold;">Marine Power & Equipment Co., Inc.</p> <p>1441 N. Northlake Way Seattle, Washington 98103</p> <p>Telephone no. during business hours</p> <p>A/C 206) <u>632-1441</u></p> <p>A/C 206) <u>632-1447</u></p>	<p>5. Name, address and title of authorized agent.</p> <p style="font-weight: bold;">Bruce H. Klein</p> <p>Personnel Director 1441 N. Northlake Way Seattle, Washington 98103</p> <p>Telephone no. during business hours</p> <p>A/C 206) <u>632-1441</u></p> <p>A/C 206) <u>632-1447</u></p>									
<p>6. Describe in detail the proposed activity, its purpose and intended use (private, public, commercial or other) including description of the type of structures, if any to be erected on fills, or pile or float-supported platforms, the type, composition and quantity of materials to be discharged or dumped and means of conveyance, and the source of discharge or fill material. If additional space is needed, use Block 14.</p> <p>Dredge 85,000 cu. yards of sandy silt by clamshell and deposit at "Four Mile Rock" deep water disposal site by bottom dump barge. The purpose is to provide a safe depth for commercial marine use in Slip 4.</p>										
<p>7. Names, addresses and telephone numbers of adjoining property owners, lessees, etc., whose property also adjoins the waterway.</p> <p>1. Boeing Co. 7755 E. Marginal Way South Seattle, Washington 98108 (773-7790)</p> <p>2. Layrite Concrete Products Co. 7265 E. Marginal Way S. Seattle, Wa 98108 (762-8681)</p> <p>3. Puget Sound Truck Lines 3720 Airport Way South Seattle, Wa 98134 (623-1600)</p>										
<p>8. Location where proposed activity exists or will occur.</p> <table style="width:100%; border: none;"> <tr> <td style="width:60%;"> <p>Address:</p> <p><u>8th Ave. South and South Fontanelle St.</u></p> <p>Street, road or other descriptive location</p> <p><u>Seattle</u></p> <p>In or near city or town</p> <p><u>King</u> <u>Wash.</u> <u>98108</u></p> <p>County State Zip Code</p> </td> <td style="width:40%; border: none;"> <p>Tax Assessors Description: (If known)</p> <table style="width:100%; border: none;"> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Map No.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Subdiv. No.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Lot No.</td> </tr> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Sec.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Twp.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Rge.</td> </tr> </table> </td> </tr> </table>			<p>Address:</p> <p><u>8th Ave. South and South Fontanelle St.</u></p> <p>Street, road or other descriptive location</p> <p><u>Seattle</u></p> <p>In or near city or town</p> <p><u>King</u> <u>Wash.</u> <u>98108</u></p> <p>County State Zip Code</p>	<p>Tax Assessors Description: (If known)</p> <table style="width:100%; border: none;"> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Map No.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Subdiv. No.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Lot No.</td> </tr> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Sec.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Twp.</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Rge.</td> </tr> </table>	Map No.	Subdiv. No.	Lot No.	Sec.	Twp.	Rge.
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Map No.	Subdiv. No.	Lot No.								
Sec.	Twp.	Rge.								
<p>9. Name of waterway at location of the activity.</p> <p style="font-size: 1.2em; font-weight: bold;">Duwamish River</p>										

Date activity is proposed to commence. As soon as permit is issued

Date activity is expected to be completed Within 5 weeks after start of project

Is any portion of the activity for which authorization is sought now complete? YES NO

If answer is "Yes" give reasons in the remark section. Month and year the activity was completed _____
Indicate the existing work on the drawings.

List all approvals or certifications required by other federal, interstate, state or local agencies for any structures, construction, discharges, deposits or other activities described in this application.

<u>Issuing Agency</u>	<u>Type Approval</u>	<u>Identification No.</u>	<u>Date of Application</u>	<u>Date of Approval</u>
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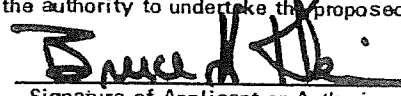
City of Seattle Shoreline Permit

Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein?

Yes No (If "Yes" explain in remarks)

Remarks or additional information.

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.



Signature of Applicant or Authorized Agent
Bruce H. Klein

The application must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 5) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

18 U. S. C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both. Do not send a permit processing fee with this application. The appropriate fee will be assessed when a permit is issued.

INSPECTION RECORD

FOR

PERMITTED WORK IN NAVIGABLE WATERS
NORTH PACIFIC DIVISION, CORPS OF ENGINEERS

District Seattle

12:30 PM

Permit No. 071-OYB-2-006-540

Date of Inspection 10 April 51

Permittee MARINE PUMP & EQUIPMENT CO. INC.

Inspector LARSON, FENSKE

Waterway PIDGEMUSH RIVER

Type of Work Dredge

STATUS

Work Completed Yes No Not Sure

Estimated Percent Complete 100 % Unknown

Work In Progress Yes No

COMPLIANCE

Completed Entire Scope of Permitted Work Yes Apparently No

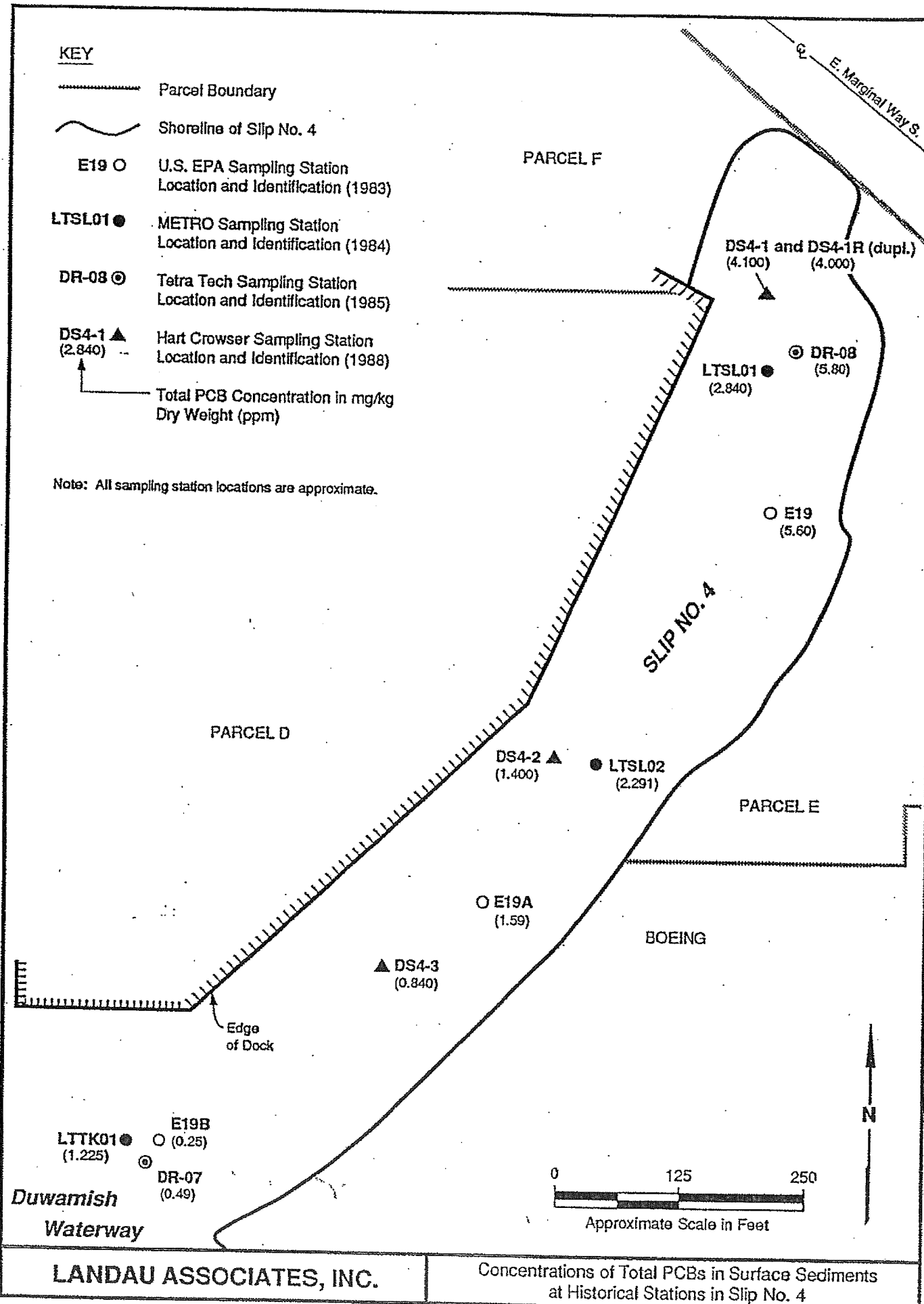
Standard Conditions: Yes Apparently No Doubtful

Special Conditions: Yes Apparently No Doubtful

Permit Dwg: Yes Apparently No

Comments: WATER DEPTH ^{WSL} 20 ± W GAGE READING + 5.8
= -15.2 ← ELEV OF BOTTOM

610
609*



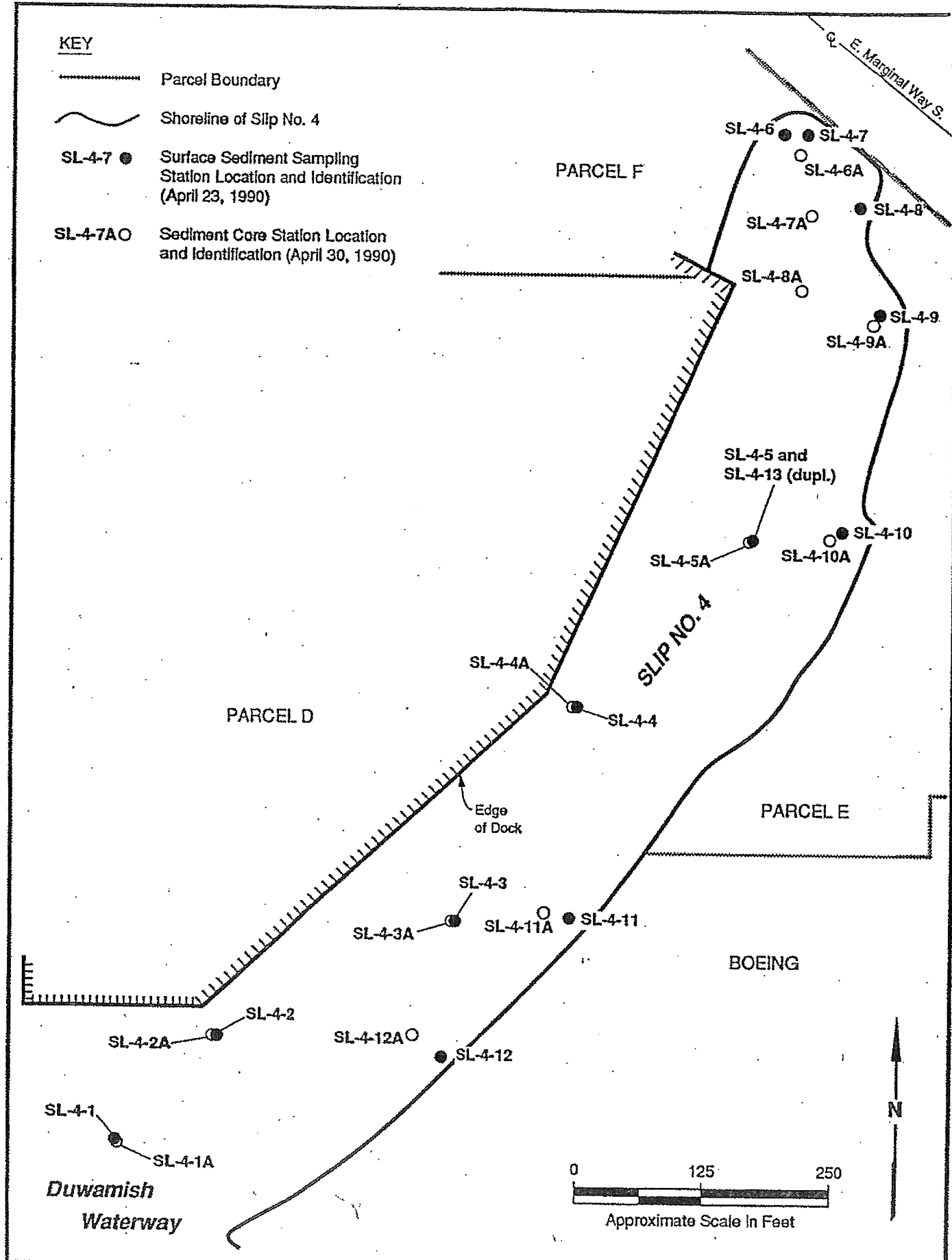
25-52.10 Boeing/Fisk Interstate/Environmental Site Assessment/Final Report 6/8/90

LANDAU ASSOCIATES, INC.

Concentrations of Total PCBs in Surface Sediments at Historical Stations in Slip No. 4

KEY

- Parcel Boundary
- ~~~~~ Shoreline of Slip No. 4
- SL-4-7 Surface Sediment Sampling Station Location and Identification (April 23, 1990)
- SL-4-7AO Sediment Core Station Location and Identification (April 30, 1990)

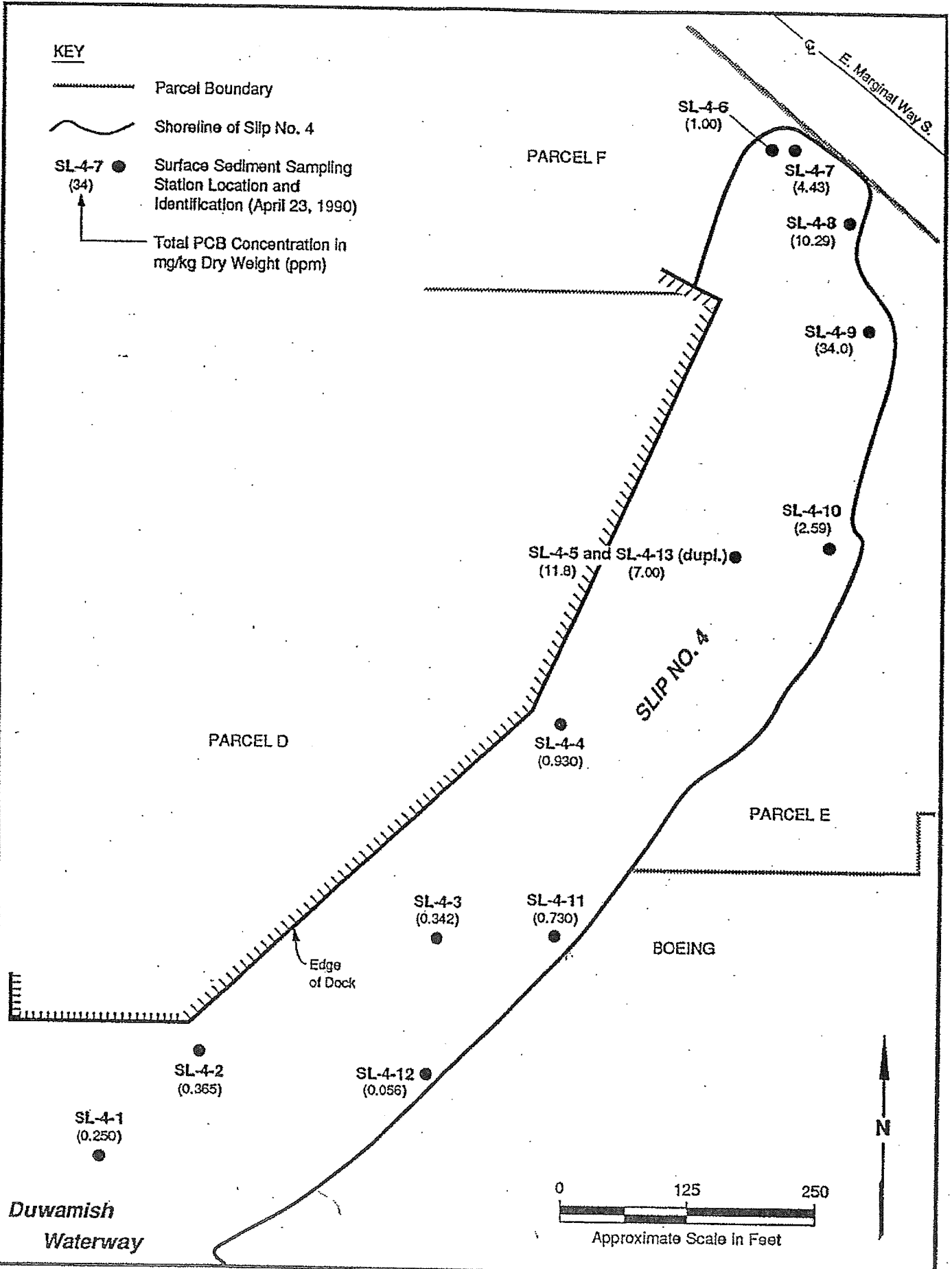


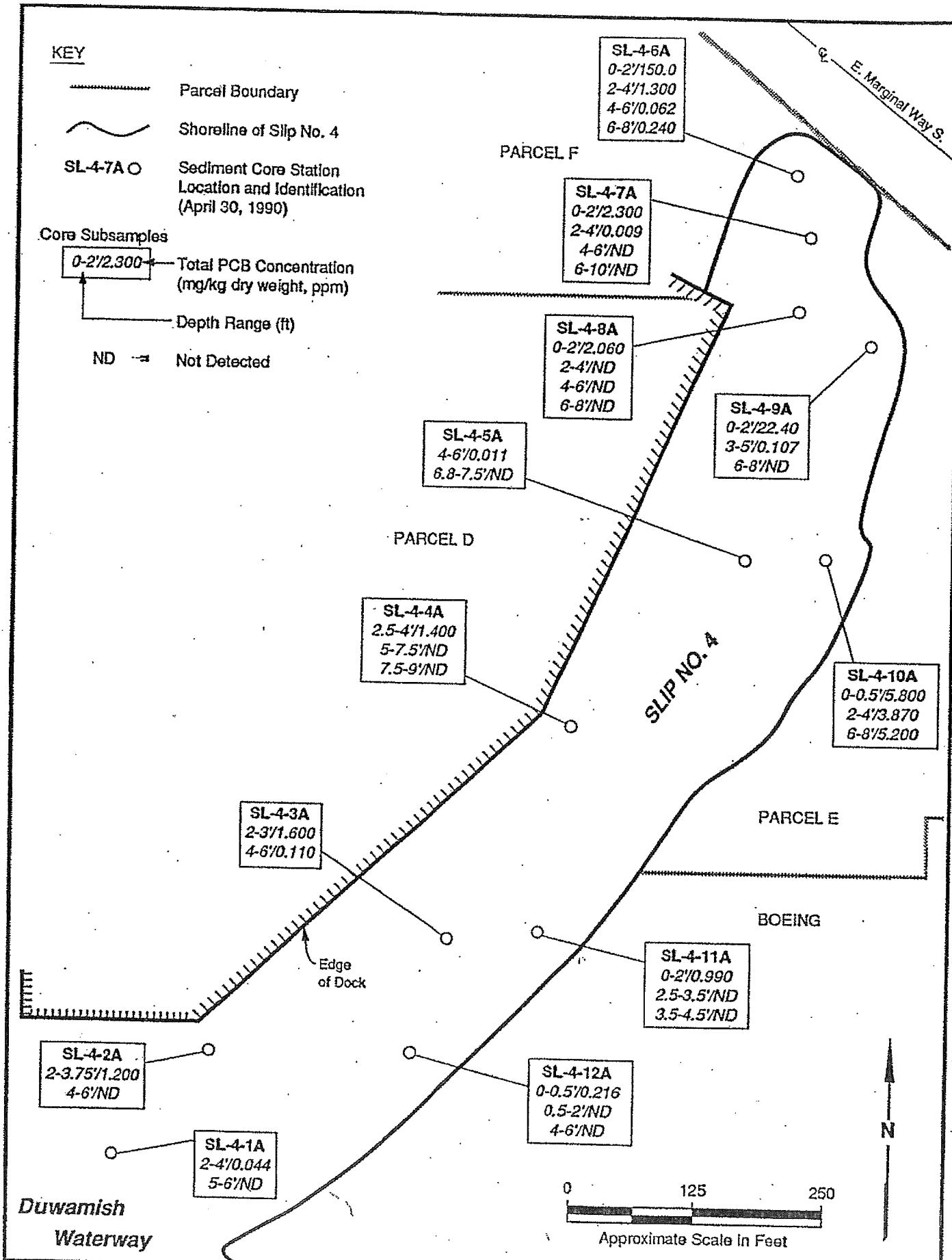
25-52.10 Boeing/First Interim/Environmental Site Assessment/Final Report 6/8/90

LANDAU ASSOCIATES, INC.

Map Showing Slip No. 4 Shoreline and Locations of Surface Sediment and Sediment Core Stations

Figure 9-1





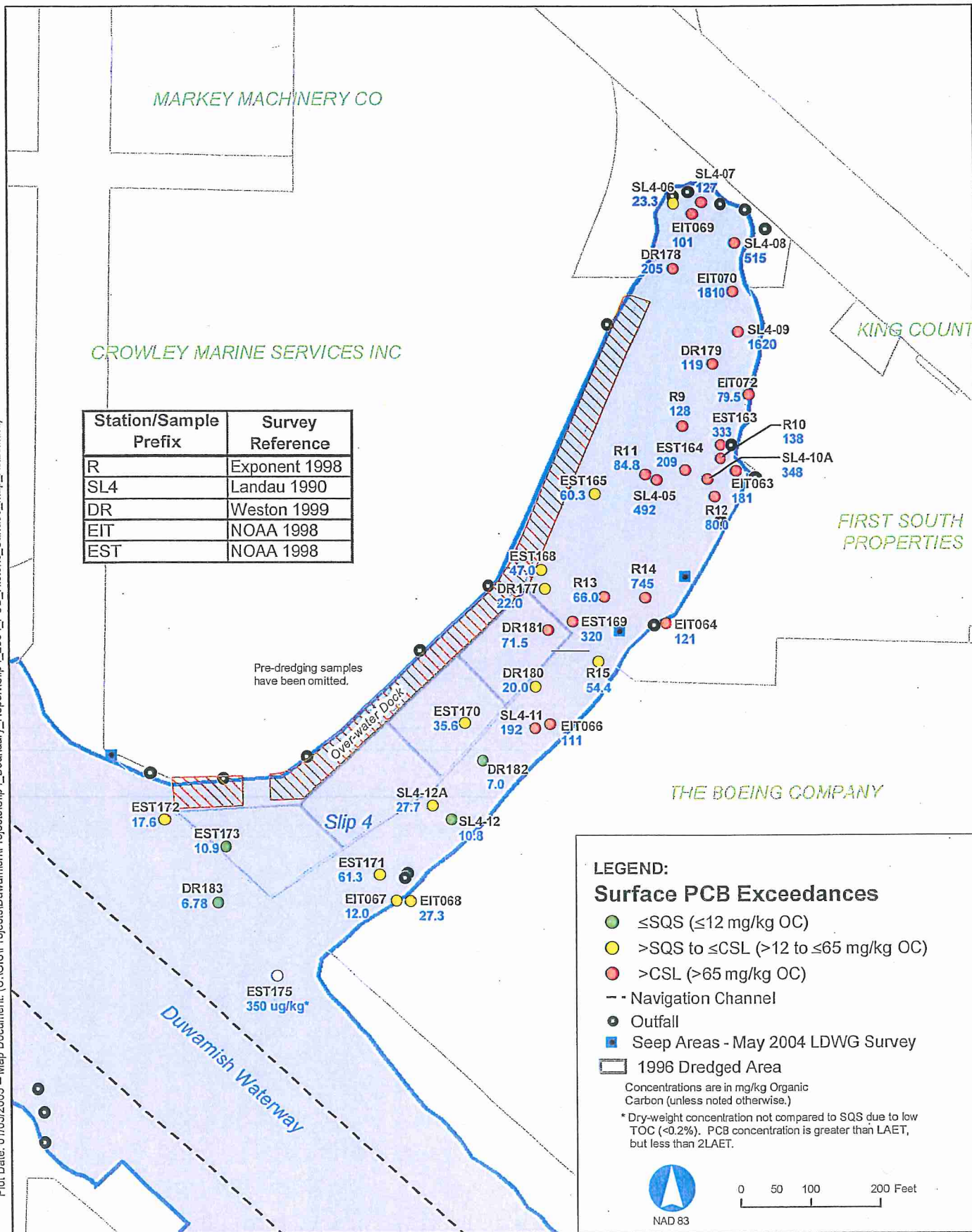
25-52.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/9/90

LANDAU ASSOCIATES, INC.

Sediment Core Stations and Concentrations of Total PCBs in Core Subsamples in Slip No. 4

Figure 9-4

Plot Date: 01/03/2005 - Map Document: (C:\GIS\Projects\Duwamish\Project\Slip4_Boundary_Report\Slip4_2004_PCB_Historic_Surface_Map_Asize.mxd)



Station/Sample Prefix	Survey Reference
R	Exponent 1998
SL4	Landau 1990
DR	Weston 1999
EIT	NOAA 1998
EST	NOAA 1998

LEGEND:

Surface PCB Exceedances

- ≤SQS (≤12 mg/kg OC)
- >SQS to ≤CSL (>12 to ≤65 mg/kg OC)
- >CSL (>65 mg/kg OC)
- - Navigation Channel
- Outfall
- Seep Areas - May 2004 LDWG Survey
- ▭ 1996 Dredged Area

Concentrations are in mg/kg Organic Carbon (unless noted otherwise.)
 * Dry-weight concentration not compared to SQS due to low TOC (<0.2%). PCB concentration is greater than LAET, but less than 2LAET.

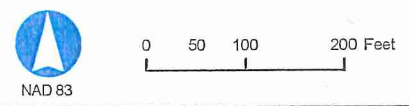
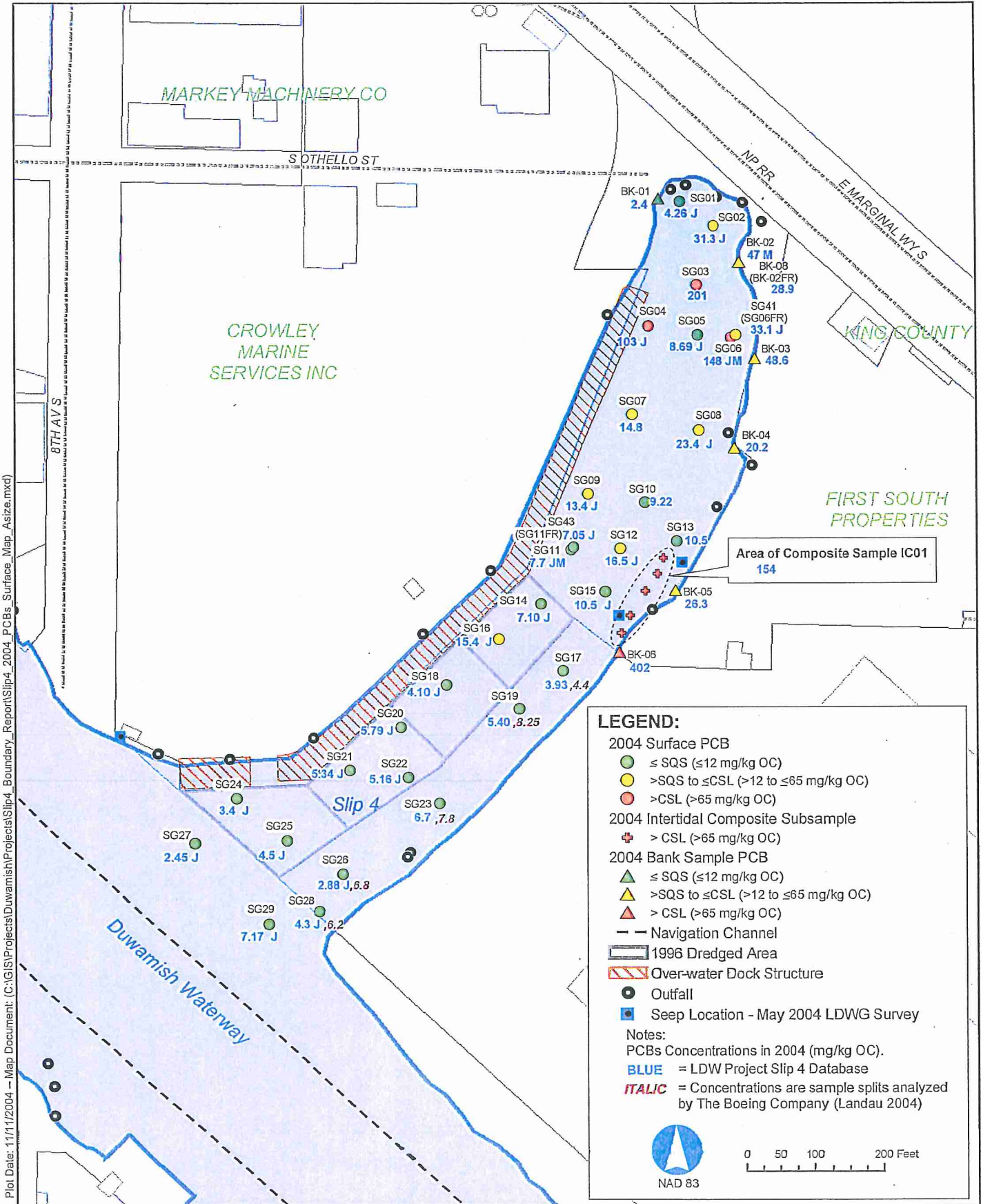


Figure 2.
 PCB Concentrations in Surface
 Sediments Collected in 1990-1998.



Plot Date: 11/11/2004 - Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_Boundary_Report\Slip4_2004_PCBs_Surface_Map_Asize.mxd)

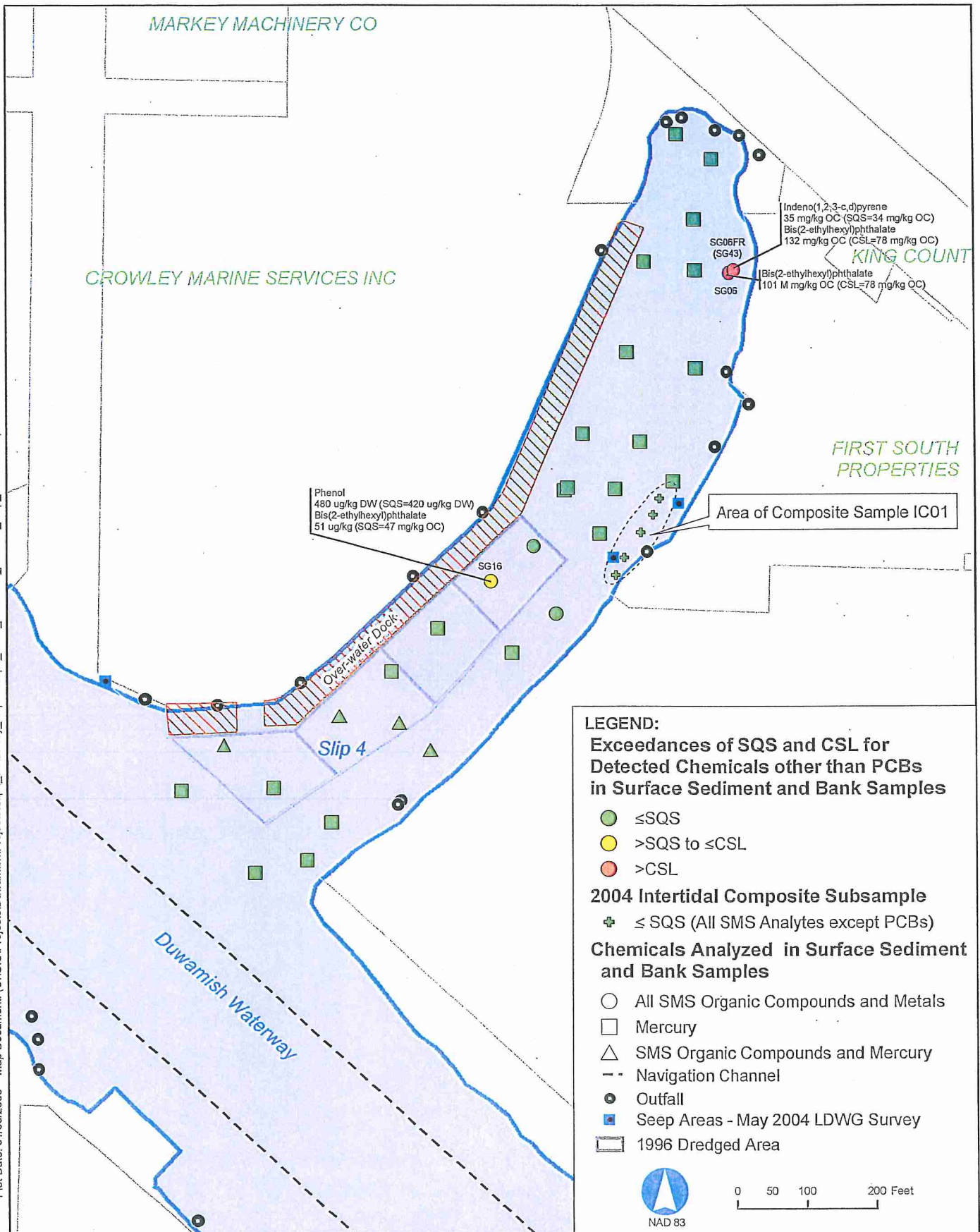


Map Feature Sources:
 King County GIS, Seattle Public Utilities,
 USACE, Ecology, Winward Environmental,
 David Evans, Inc., and others.
 Station locations: Lower Duwamish Project
 Database and 2004 Slip 4 FSP Navigation
 Table.

Qualifiers:
 J=Estimated
 M=Mean of field duplicate (i.e., split)
 FR=Field replicate

Figure 3.
 PCB Concentrations in Surface Sediment
 and Bank Samples Collected in 2004

Plot Date: 01/03/2005 - Map Document: (C:\GIS\Projects\Duwamish\Slip4_Boundary_Report\Slip4_2004_Non-PCB_Surface_Map_Asize2.mxd)

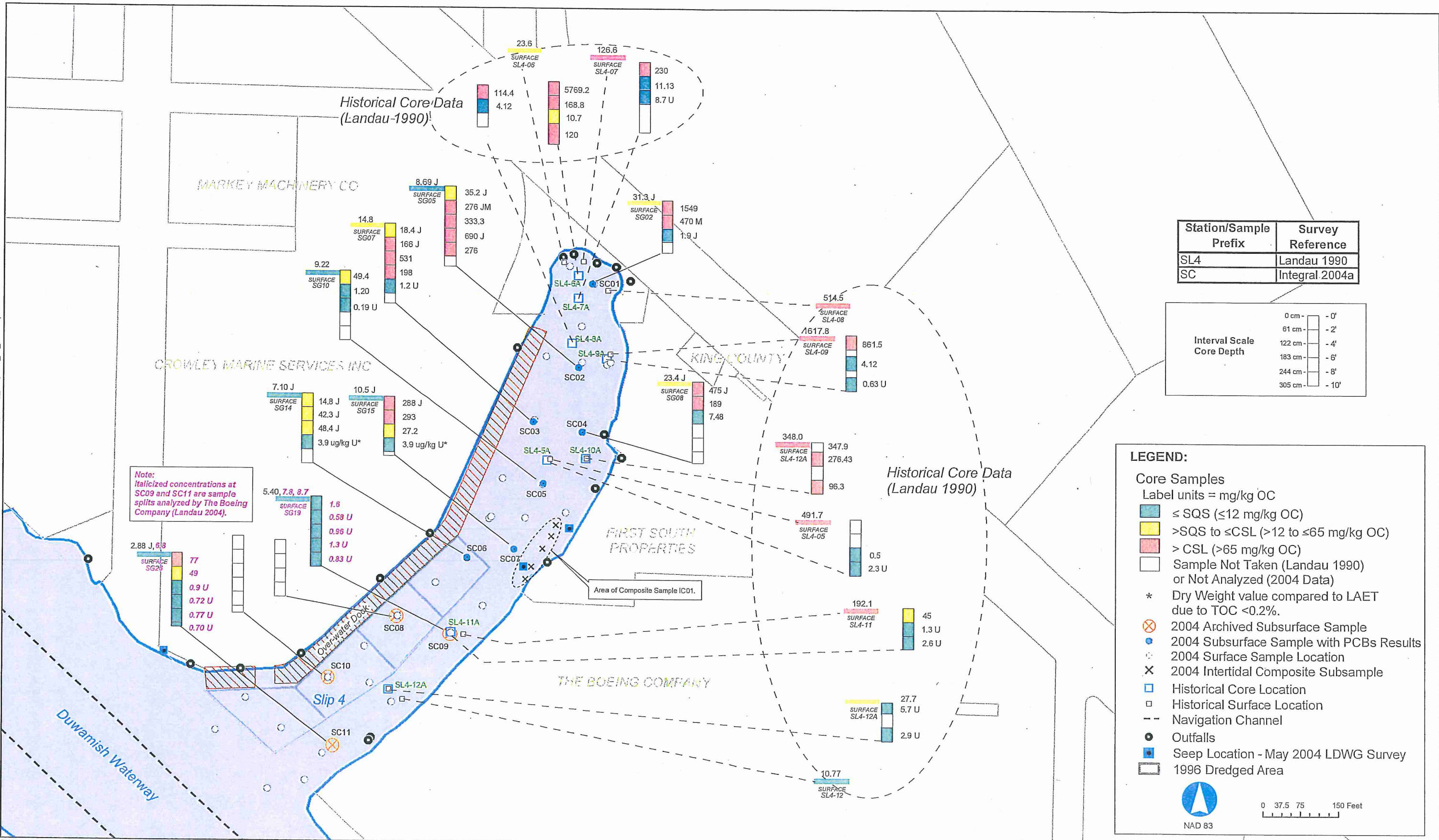


Map Feature Sources:
 King County GIS, Seattle Public Utilities,
 USACE, Ecology, Winward Environmental,
 David Evans, Inc., and others.
 Sediment Chemistry:
 Lower Duwamish Project Database and 2004
 Slip 4 Survey PCB analysis results.

M=Mean of Field Duplicate
 (i.e., split)
 FR=Field Replicate

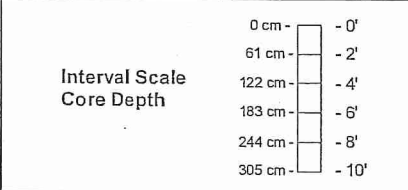
Figure 4.
 Exceedances of SQS and CSL for
 Detected Chemicals other than PCBs in
 Surface Sediment and Bank Samples
 Collected in 2004

Plot Date: 12/29/2004 - Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_Boundary_Report\Slip4_2004_PCB_Coring_Graphics_v3_rtr.mxd)



Note: Italicized concentrations at SC09 and SC11 are sample splits analyzed by The Boeing Company (Landau 2004).

Station/Sample Prefix	Survey Reference
SL4	Landau 1990
SC	Integral 2004a



LEGEND:

Core Samples
Label units = mg/kg OC

- ≤ SQS (≤12 mg/kg OC)
- >SQS to ≤CSL (>12 to ≤65 mg/kg OC)
- > CSL (>65 mg/kg OC)
- Sample Not Taken (Landau 1990) or Not Analyzed (2004 Data)
- * Dry Weight value compared to LAET due to TOC <0.2%.
- 2004 Archived Subsurface Sample
- 2004 Subsurface Sample with PCBs Results
- 2004 Surface Sample Location
- 2004 Intertidal Composite Subsample
- Historical Core Location
- Historical Surface Location
- - - Navigation Channel
- Outfalls
- Seep Location - May 2004 LDWG Survey
- ▭ 1996 Dredged Area

NAD 83

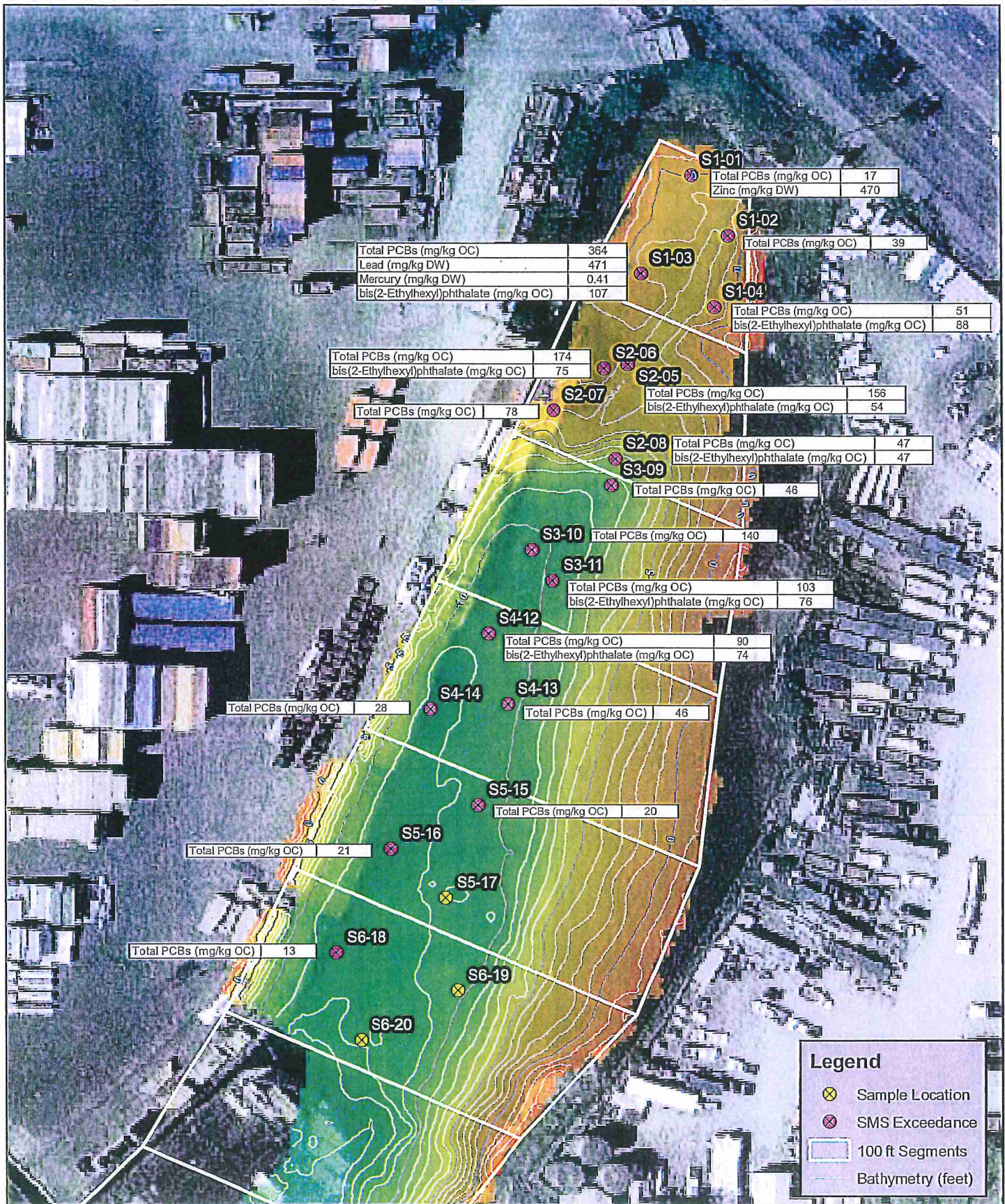
0 37.5 75 150 Feet

integral
corporate inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology,
Windward Environmental, David Evans, Inc., and others.
Sediment Chemistry:
Lower Duwamish Project Database and 2004 Slip 4 Survey
PCB analysis results, The Boeing Company.

U=Undetected
J=Estimated
M=Mean of field duplicates (i.e., split)

Figure 5.
Historical and 2004 PCB
Concentrations in Subsurface Sediments in Slip 4.

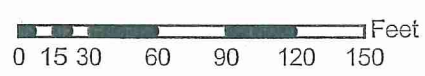


Legend

- Sample Location
- SMS Exceedance
- 100 ft Segments
- Bathymetry (feet)



Figure 3. Slip 4 Surface Sediment SMS Exceedances



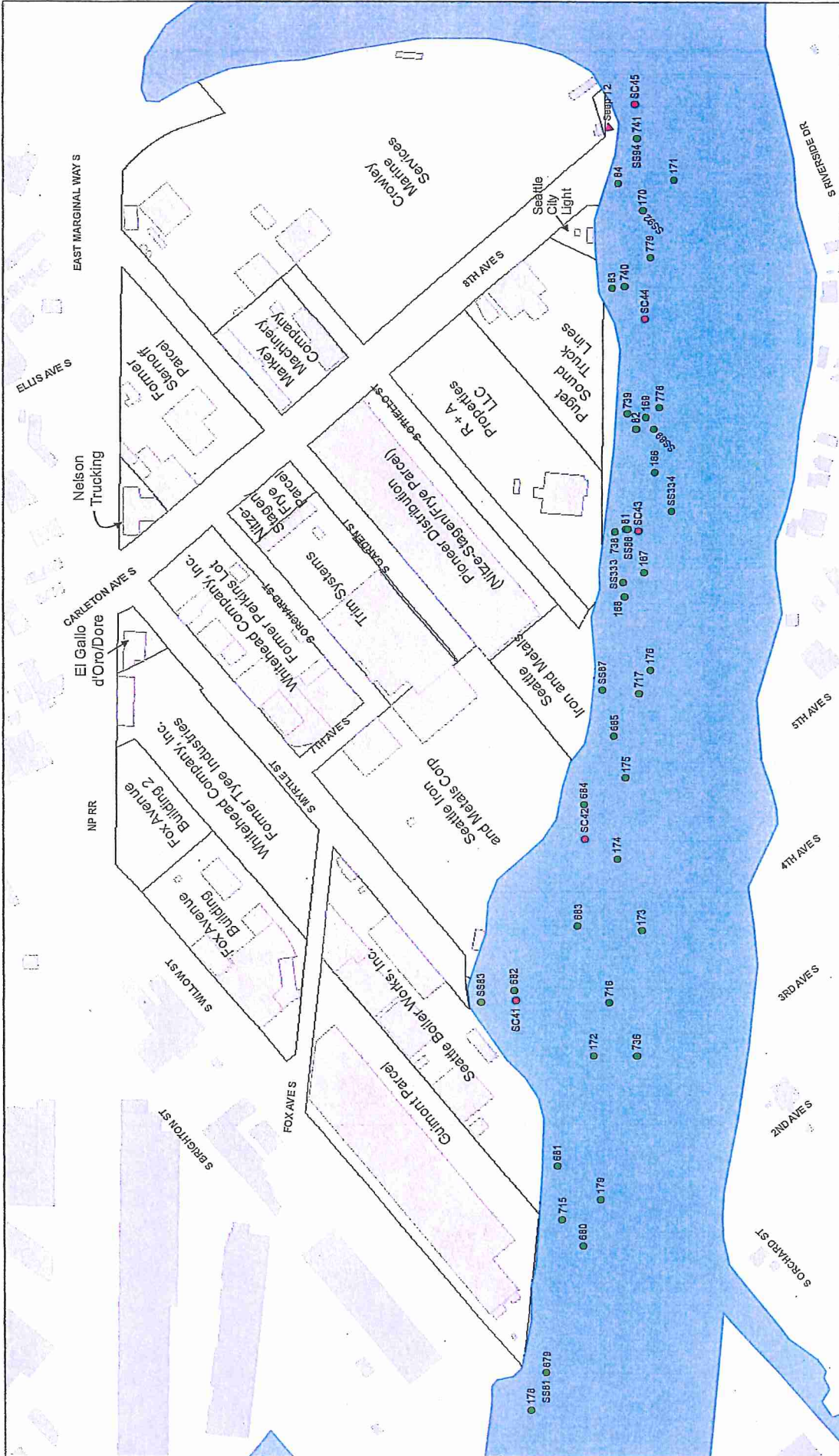
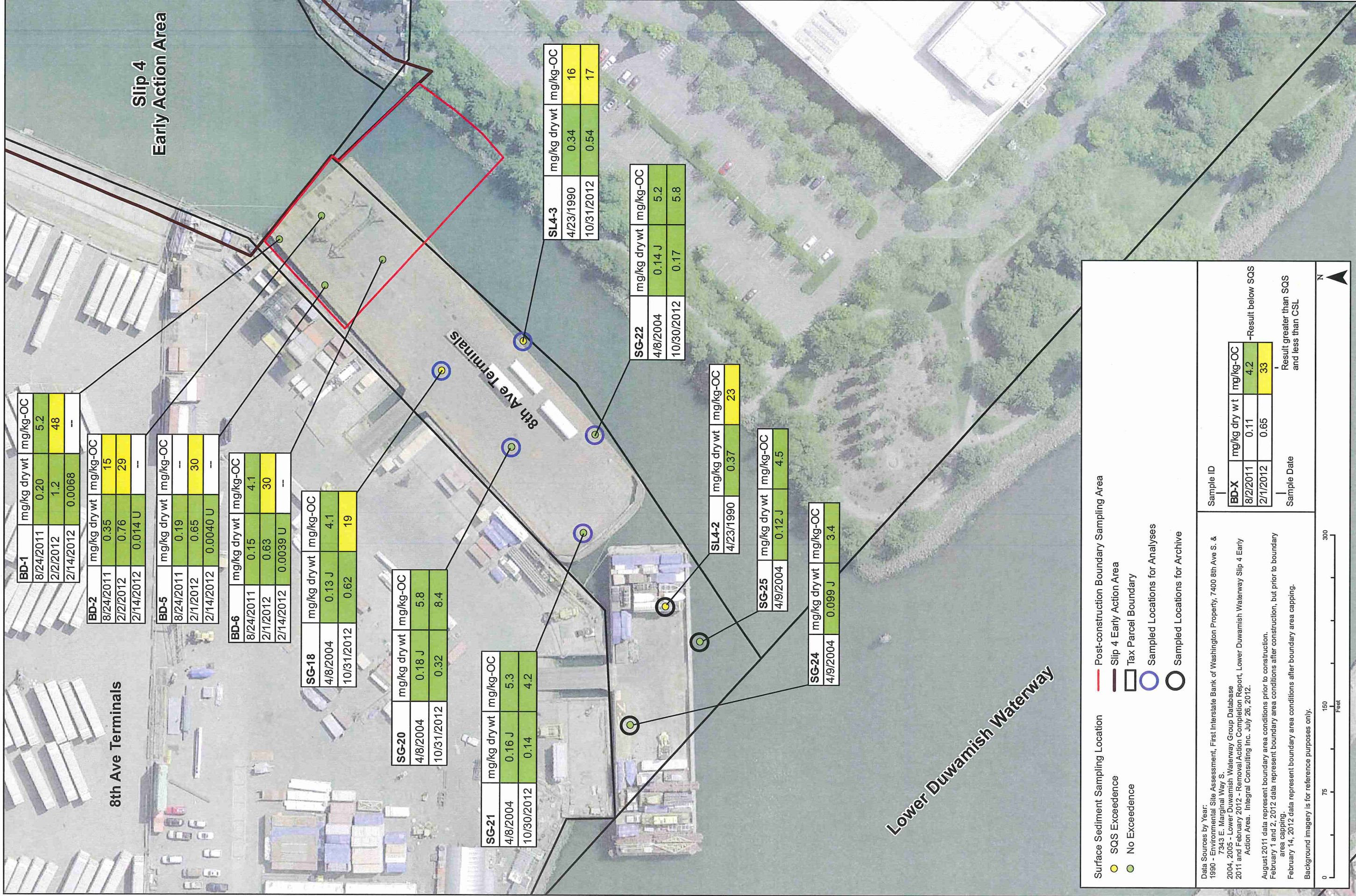


Figure 3. RM 2.3-2.8 East - Sediment and Seep Sampling Locations





Data Sources by Year:
 1990 - Environmental Site Assessment, First Interstate Bank of Washington Property, 7400 8th Ave S. & 7343 E. Marginal Way S.
 2004, 2005 - Lower Duwamish Waterway Group Database
 2011 and February 2012 - Removal Action Completion Report, Lower Duwamish Waterway Slip 4 Early Action Area. Integral Consulting Inc. July 26, 2012.
 August 2011 data represent boundary area conditions prior to construction.
 February 1 and 2, 2012 data represent boundary area conditions after construction, but prior to boundary area capping.
 February 14, 2012 data represent boundary area conditions after boundary area capping.
 Background imagery is for reference purposes only.

Sample ID	mg/kg dry wt	mg/kg-OC
BD-X	8/2/2011	0.11
	2/1/2012	0.65
	4.2	33

Result greater than SQS and less than CSL

Figure 2. 2012 and Historical PCB Concentrations in Surface Sediments (0 - 10 cm) at 8th Avenue Terminals



22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/18/13 **COMPLETED** 6/18/13 **GROUND ELEVATION** 11.97' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 7.0 ft
LOGGED BY G. Lish/A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-5-1.0*			1.8	SAND AND GRAVEL (FILL) , light brown, fine to coarse sand, fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining. @ 1.0 feet: Becomes dark brown; little fines.	0.0
		GP	EB-5-2.5	90			SAND (FILL) , brown, fine-grained, few fines, moist, no hydrocarbon-like odors or staining.	
5			EB-5-5.0*		SP			0.0
		GP	EB-5-7.5	90		7.5	▼ @ 6.5 feet: Becomes gray. @ 7.0 feet: Becomes wet.	0.0
			EB-5-10.0*				SILTY SAND (FILL) , gray, fine-grained, some fines, wet, no hydrocarbon-like odors or staining.	0.0
10			EB-5-12.5	100	SM			0.0
		GP						0.0
15						15.2		0.0
		GP		100	SP		SAND , gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0
20						20.0		0.0

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Duplicate sample EB-93-10.0' collected over the same interval as sample EB-5-10.0'.
 ▼ Water level at time of drilling.



22118 20th Ave. SE, Suite G-202
 Bothell, Washington 98021
 Telephone: 425.402.8800
 Fax: 425.402.8488

BORING NUMBER EB-14

PAGE 1 OF 1

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13 **GROUND ELEVATION** 15.59' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 11.2 ft
LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-14-1.0*			0.7	ASPHALT.	0.0
					SP		SAND (FILL) , brown, fine-grained, few fine gravel, moist, no hydrocarbon-like odors or staining. From 1.3 to 1.5 feet: Red brick. @ 1.8 feet: Cobble fragments in sampler.	0.0
		GP	EB-14-2.5	95		2.0	GRAVELLY SAND (FILL) , dark gray, fine-grained, little to some gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
					SP		@ 4.0 feet: Weak hydrocarbon-like odor. @ 4.5 feet: Becomes brown.	0.6
5			EB-14-5.0*					0.0
					SP	6.8		0.0
		GP	EB-14-7.5	95		7.2	SAND (FILL) , gray, fine- to medium-grained, moist, no hydrocarbon-like odors or staining. SILTY SAND (FILL) , brown, fine-grained, little to some fines, few wood fragments, moist, no hydrocarbon-like odors or staining.	0.0
10			EB-14-10.0*					0.0
					SM		▼ @ 11.2 feet: Becomes wet. From 12.0 to 12.2 feet: Wood fragments.	0.0
		GP	EB-14-12.5	90				0.0
15								0.0
					SP	17.0	SAND , brownish-gray, fine-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0
		GP						0.0
20						20.0		0.0

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▼ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14



22118 20th Ave. SE, Suite G-202
 Bothell, Washington 98021
 Telephone: 425.402.8800
 Fax: 425.402.8488

BORING NUMBER EB-16

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/19/13 **COMPLETED** 6/19/13 **GROUND ELEVATION** 14.64' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR Holocene **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 9.5 ft
LOGGED BY C. Lee **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
							CONCRETE.	
						1.0		
						1.5	ASPHALT.	
		GP	EB-16-2.5*	100	GP		SANDY GRAVEL (FILL) , brown, fine, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
						3.0		
							SAND (FILL) , brown, fine- to medium-grained, damp, no hydrocarbon-like odors or staining.	0.0
5								
		GP	EB-16-5.0*	100	SP			0.0
						6.5		
			EB-16-7.5		ML		SANDY SILT (FILL) , brown, some fine-grained sand, moist, no hydrocarbon-like odors or staining.	0.0
10								
		GP	EB-16-10.0*	--		9.5 ▼	SAND , brownish-gray, fine-grained, few fines, wet, no hydrocarbon-like odors or staining.	0.0
		GP	EB-16-12.5	100				0.0
15								
		GP	EB-16-15.0	100	SP			0.0
		GP		100			@ 18.5 feet: Becomes fine- to medium-grained, no fines.	0.0
20								
			EB-16-20.0		SP	19.5	SAND , dark brown, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0

REMARKS
 PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 ▼ Water level at time of drilling.

(Continued Next Page)

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14



22118 20th Ave. SE, Suite G-202
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BORING NUMBER EB-16

CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
		GP		100			SAND , dark brown, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. (continued)	0.0
25		GP	EB-16-25.0	100				0.0
		GP		100				0.0
30		GP	EB-16-30.0	100				0.0
		GP		100	SP			0.0
35		GP	EB-16-35.0	100				0.0
		GP		100				0.0
40		GP	EB-16-40.0	100		0.0		
		GP		100		0.0		
			EB-16-44.0			44.0		0.0

Boring completed at 44.0 feet due to refusal.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

∇ Water level at time of drilling.



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BORING NUMBER EB-17

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13 **GROUND ELEVATION** 15.35' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 11.0 ft
LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-17-1.0*	90	SP	0.4	ASPHALT.	0.0
					SP	1.0	GRAVELLY SAND (FILL), brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-17-2.5		ML	2.0	SAND (FILL), tan, fine-grained, few to little fine to coarse gravel, few fines, few brick fragments, moist, no hydrocarbon-like odors or staining.	0.0
					ML	3.0	SANDY SILT (FILL), brown, some fine-grained sand, little fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
							SAND (FILL), brown to dark brown, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
5							From 4.5 feet to 5.75 feet: No recovery.	
			EB-17-5.75*		SP			0.0
		GP	EB-17-7.5			7.6	SILTY SAND (FILL), gray, fine-grained, some fines, moist to wet, no hydrocarbon-like odors or staining.	0.0
10								0.0
			EB-17-10.0*		SM			0.0
		GP					▼ @ 11.0 feet: Becomes wet.	0.0
						12.5	SAND, gray, fine-grained, few to little fines, wet, no hydrocarbon-like odors or staining.	0.0
15								0.0
		GP		100	SP		@ 15.2 feet: Trace fines.	0.0
20						20.0		

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▼ Water level at time of drilling.



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BORING NUMBER EB-24

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13 **GROUND ELEVATION** 16.84' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-24-1.0*		GP	0.5	ASPHALT.	
						1.0	SANDY GRAVEL (FILL), brown, fine to coarse, trace fines, dry to moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-24-2.5	95			SAND (FILL), brown, fine- to medium-grained, few fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
					SP			0.0
5			EB-24-5.0*				@ 4.8 feet: Moderate hydrocarbon-like odors. @ 5.2 feet: No hydrocarbon-like odors or staining.	0.0
		GP	EB-24-7.5	100		7.0	SAND (FILL), gray, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
					SP			0.0
10			EB-24-10.0*			9.0	SAND (FILL), gray, fine-grained, few fines, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-24-12.5				▼ @ 12.0 feet: Becomes wet.	0.0
					SM	13.5	SILTY SAND (FILL), gray, fine-grained, little to some fines, wet, no hydrocarbon-like odors or staining.	0.0
15						14.8	SAND, gray, fine- to medium-grained, trace fines, trace wood fragments, wet, no hydrocarbon-like odors or staining.	0.0
		GP			SP			0.0
20						20.0		0.0

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▼ Water level at time of drilling.



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BORING NUMBER EB-28

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/10/13 **COMPLETED** 6/10/13 **GROUND ELEVATION** 16.93' **HOLE SIZE** 2.125-inch diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 12.0 ft

LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-28-1.0*		GP		0.3 ASPHALT.	0.0
							1.5 SANDY GRAVEL (FILL), brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
			EB-28-2.5	100	SP		2.0 SAND (FILL), brown, fine- to medium-grained, damp, no hydrocarbon-like odors or staining.	0.0
							SAND (FILL), dark brown to black, very fine- to fine-grained, some fine gravel, damp, weak hydrocarbon-like odor.	2.9
								3.5
5			EB-28-5.0*		SP			0.2
								1.8
			EB-28-7.5*	90	GP			0.0
							8.0 From 7.5 to 7.7 feet: Red brick.	0.0
					CL		9.0 SILTY CLAY (FILL), black, few pieces of charred wood, trace ash, moist, no hydrocarbon-like odors or staining.	0.0
							From 8.5 feet to 9.0 feet: Wood debris.	0.0
10			EB-28-10.0*		SP		10.0 SAND (FILL), brown, very fine- to fine-grained, damp, no hydrocarbon-like odors or staining.	0.0
							@ 9.8 feet: Becomes fine- to medium-grained.	0.0
			EB-28-12.5	100	SM		SILTY SAND (FILL), brown, very fine- to fine-grained, some fines, damp, no hydrocarbon-like odors or staining.	0.0
							▼ @ 12.0 feet: Becomes wet.	0.0
								0.0
15			EB-28-15.0		SP		14.5 SAND, gray, fine- to medium-grained, wet, weak hydrogen sulfide-like odor.	0.0
								0.0
								0.0
								0.0
								0.0
20			EB-28-20.0					0.0
								0.0

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▼ Water level at time of drilling.



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BORING NUMBER EB-32

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/14/13 **COMPLETED** 6/14/13 **GROUND ELEVATION** 16.88' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 11.0 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
					SP	0.3	ASPHALT.	0.0
			EB-32-1.0*			0.8	GRAVELLY SAND (FILL), brown, fine-grained, fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-32-2.5	100	SP		SAND (FILL), brown, fine- to medium-grained, trace to few fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
								0.0
								0.0
5			EB-32-5.0*		SP	4.5	SAND (FILL), gray, fine- to medium-grained, trace fine gravel, moist, weak hydrocarbon-like odor. @ 5.0 feet: Black staining.	0.5
		GP		100		6.2	@ 6.0 feet: Cobble fragments in sampler.	16.4
			EB-32-7.5		SP	7.2	SAND (FILL), brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0
							SAND (FILL), brownish-gray, fine-grained, few to little fines, moist, mottled, no hydrocarbon-like odors or staining.	0.0
							@ 9.0 feet: Becomes brown. @ 9.5 feet: Becomes fine- to medium-grained.	0.0
							▼ @ 11.0 feet: Becomes wet.	0.0
			EB-32-12.5*		SP			0.0
		GP		50			@ 14.0 feet to 17.5 feet: No recovery.	0.0
15								
		GP			SP	17.5	SAND, gray, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	
20			EB-32-20.0			20.0		

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▼ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14



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BORING NUMBER EB-40

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/10/13 **COMPLETED** 6/10/13 **GROUND ELEVATION** 17.03' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
0.3					GP		ASPHALT.	0.0
1.0			EB-40-1.0*		GP		GRAVEL (FILL), gray, dry, no hydrocarbon-like odors or staining.	0.0
2.5		GP	EB-40-2.5	95	GP		SANDY GRAVEL (FILL), brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
4.8					SP		SAND (FILL), brown, fine- to medium-grained, trace fine gravel, damp, no hydrocarbon-like odors or staining. @ 3.0 feet: Becomes black.	0.0
5.0					SP		@ 4.5 feet: Becomes dark brown.	0.0
6.0			EB-40-5.0*		SP		ASPHALT.	0.0
6.0					SP		SAND (FILL), brown, fine- to medium-grained, damp, no hydrocarbon-like odors or staining.	0.0
7.5		GP	EB-40-7.5	95	SP		SAND (FILL), brown, fine-grained, trace to few fines, damp, no odors or staining.	0.0
11.0			EB-40-10.0*		SP		SAND (FILL), black, fine-grained, damp, no odors or staining.	0.0
12.5			EB-40-12.5	100	ML		SANDY SILT (FILL), brown, some fine-grained sand, wet, no odors or staining.	0.0
14.0					SP		SAND, gray, fine- to medium-grained, wet, no odors or staining.	0.0
20.0		GP		100	SP			0.0

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▼ Water level at time of drilling.



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BORING NUMBER EB-41

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/14/13 **COMPLETED** 6/14/13 **GROUND ELEVATION** 16.88' **HOLE SIZE** 2.125-inch diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 11.8 ft

LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____

NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
						0.4	ASPHALT.	0.0
			EB-41-1.0*		SP		SAND (FILL) , brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-41-2.5	95	SP	2.0	SAND (FILL) , brown to dark brown, fine-grained, few cobbles, moist, no hydrocarbon-like odors or staining.	0.2
					SP	3.0	SAND (FILL) , brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0
					SP	3.8	SAND (FILL) , brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0
5			EB-41-5.0*		SP		SAND (FILL) , dark brown, fine-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining. @ 4.8 feet: Weak hydrocarbon-like odors. @ 5.2 feet: Becomes brown, few fine gravel, no hydrocarbon-like odors or staining.	0.0
		GP	EB-41-7.5	100	SP	7.0	@ 6.8 feet: Cobble fragments in sampler. SAND (FILL) , grayish-brown to brown, fine-grained, trace to few fines, moist, no hydrocarbon-like odors or staining.	0.5
					SP	9.0	SAND (FILL) , brown, fine-grained, trace fines, moist, no hydrocarbon-like odors or staining. @ 10.0 feet: Becomes fine- to medium-grained.	0.0
10			EB-41-10.0*	100	SP		▼ @ 11.8 feet: Becomes wet.	0.0
		GP	EB-41-12.5	90	SP	14.2		0.0
15			EB-41-15.0*		SM		SILTY SAND (FILL) , brownish-gray, fine-grained, some fines, trace fine gravel, wet, no hydrocarbon-like odors or staining.	0.0
					SP	15.2	SAND , dark brown, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0
					SW	16.5	SAND , gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining.	0.0
20			EB-41-20.0	90	SW	20.0		0.0

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Duplicate sample EB-91-10.0' was collected over the same interval as sample EB-41-10.0'.
 ▼ Water level at time of drilling.



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BORING NUMBER EB-45

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/10/13 **COMPLETED** 6/10/13 **GROUND ELEVATION** 16.67' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 12.5 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-45-1.0*		GP		0.3 ASPHALT.	0.0
			EB-45-2.5	90	SP		1.5 SANDY GRAVEL (FILL), brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
			EB-45-5.0*		SP		SAND (FILL), brown, fine-grained, trace fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
			EB-45-7.5*	80	SP		@ 4.0 feet: Becomes fine- to medium-grained.	0.0
			EB-45-10.0*		SP		SAND (FILL), black, fine-grained, few fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
			EB-45-12.5*	100	SP		6.0 SAND (FILL), brown, very fine- to fine-grained, trace to few fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
					SM		From 7.8 to 7.9 feet: Brick fragments. @ 8.0 feet: Charred wood fragments.	0.0
					SP		@ 11.0 feet: Few fines.	0.0
					SP		▼ @ 12.0 feet: Becomes fine- to medium-grained. @ 12.5 feet: Becomes wet.	0.0
					SM		14.0 SILTY SAND (FILL), gray, very fine- to fine-grained, little to some fines, wet, no hydrocarbon-like odors or staining.	0.0
					SP		15.0 SAND, gray, fine- to medium-grained, trace to few fine gravel, wet, no hydrocarbon-like odors or staining.	0.0
20								0.0

Boring completed at 20.0 feet.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▼ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14



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BORING NUMBER EB-46

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/14/13 **COMPLETED** 6/14/13 **GROUND ELEVATION** 16.89' **HOLE SIZE** 2.125-inch diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 11.0 ft

LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____

NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
0.4						[Solid black]	ASPHALT.	0.3
1.5		GP	EB-46-1.0*	100	SP	[Dotted pattern]	SAND (FILL) , brown, fine- to medium-grained, trace to few fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
12.5		GP	EB-46-2.5*	100		[Dotted pattern]	SAND (FILL) , dark gray to black, fine-grained, trace fines, trace brick fragments, moist, weak hydrocarbon-like odor.	12.5
8.1						[Dotted pattern]		8.1
5		GP		0	SP	[Dotted pattern]	From 4.0 to 8.0 feet: No recovery.	
10		GP	EB-46-8.0*	80	SP	[Dotted pattern]	SAND (FILL) , brown, fine-grained, trace fines, moist, mottled, no hydrocarbon-like odors or staining.	0.0
10.0			EB-46-10.0*			[Dotted pattern]		0.0
10.8					SM	[Dotted pattern]	▼ SILTY SAND (FILL) , gray, fine-grained, moist, no hydrocarbon-like odors or staining. @ 11.0 feet: Becomes wet.	0.0
12.0		GP	EB-46-12.5	100	SP	[Dotted pattern]	SAND , gray, fine- to medium-grained, trace to few fines, wet, no hydrocarbon-like odors or staining.	0.0
15						[Dotted pattern]		0.0
16.0						[Dotted pattern]		0.0
Boring completed at 16.0 feet.								

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 ▼ Water level at time of drilling.



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BORING NUMBER EB-47

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/10/13 **COMPLETED** 6/10/13 **GROUND ELEVATION** 16.90' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **▼ AT TIME OF DRILLING** 11.8 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-47-1.0*		SP	0.4	ASPHALT.	0.0
		GP	EB-47-2.5	90	SP	2.5	GRAVELLY SAND (FILL), brown, some fine to coarse gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
					SP	3.5	SAND (FILL), brown, fine- to medium-grained, trace fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
					SM		SILTY SAND (FILL), dark gray, very fine- to fine-grained, some fines, damp, weak hydrocarbon-like odors.	0.0
5			EB-47-5.0*		SM			0.2
		GP	EB-47-7.5	100	SP	6.5	SAND (FILL), brown, fine-grained, damp, no hydrocarbon-like odors or staining.	0.2
					SP	7.5	SAND (FILL), brown, very fine- to fine-grained, damp, no hydrocarbon-like odors or staining.	0.0
					SM	9.5	SILTY SAND (FILL), brownish-gray, very fine- to fine-grained, some fines, damp, no hydrocarbon-like odors or staining.	0.0
10		GP	EB-47-10.0*	100	SM		@ 11.0 feet: Becomes brown, very-fine grained.	0.0
			EB-47-12.5		SP	13.0	▼ @ 11.8 feet: Becomes wet.	0.0
					SP	13.5	SAND, dark brown, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0
					SP	14.5	SAND, grayish-brown, very fine-grained, wet, no hydrocarbon-like odors or staining.	0.0
15		GP	EB-47-15.0		SP		SAND, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0
20			EB-47-20.0			20.0	Boring completed at 20.0 feet.	0.0

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Duplicate sample EB-81-2.5' collected at interval of sample EB-47-2.5'.
 ▼ Water level at time of drilling.



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BORING NUMBER EB-50

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/14/13 **COMPLETED** 6/14/13 **GROUND ELEVATION** 16.83' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **AT TIME OF DRILLING** N/A
LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
						0.4	ASPHALT.	0.0
			EB-50-1.0*		SP	1.0	GRAVELLY SAND (FILL) , brown, fine-grained, some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-50-2.5'	100	SP		SAND (FILL) , brown, fine- to medium-grained, few fine gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
								0.0
5			EB-50-5.0*			4.5	GRAVELLY SAND (FILL) , brown, fine-grained, little to some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0
		GP			SP		@ 5.8 feet: Becomes gray, trace fines. @ 6.0 feet: Becomes black, weak hydrocarbon-like odor. @ 6.5 feet: No hydrocarbon-like odors or staining. @ 7.2 feet: Wood fragments.	0.4
			EB-50-7.5*					0.0
								0.0
		GP		90		9.0	CONCRETE DEBRIS.	0.5
								0.0
10						10.0		

Boring completed at 10.0 feet due to refusal.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

∇ Water level at time of drilling.



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BORING NUMBER EB-51

PAGE 1 OF 1

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13 **GROUND ELEVATION** 16.71' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push **AT TIME OF DRILLING** N/A
LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
			EB-51-1.0*		SP	0.3	ASPHALT.	0.1
		GP	EB-51-2.5	95		2.0	GRAVELLY SAND (FILL) , brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
							SAND (FILL) , brown, fine-grained, trace fines, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
5			EB-51-5.0*		SP		From 4.5 to 4.7 feet: Becomes black, weak hydrocarbon-like odors.	0.0
								3.3
								5.6
		GP	EB-51-7.5*		CL-ML	7.0	@ 6.5 feet: Brick fragments. SILTY CLAY (FILL) , gray to black, few fine-grained sand in layers, moist, strong hydrocarbon-like odors.	4.0
								31.6
								547.7
10			EB-51-10.0*		SP	9.0	SAND (FILL) , grayish-brown to black, fine-grained, trace fines, trace fine gravel, moist, moderate hydrocarbon-like odors.	18.2
						10.0	Boring completed at 10.0 feet due to refusal.	37.0

REMARKS

PID = Photoionization detector.
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 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

∇ Water level at time of drilling.



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WELL NUMBER EMW-1S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/12/13 **COMPLETED** 6/12/13 **GROUND ELEVATION** 16.65' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 13.5 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.5		GP			GP		GRAVEL.		
0.5		GP	EMW-1S-2.5*	50	SP		GRAVELLY SAND (FILL) , brown, fine-grained, some fine gravel, moist, no hydrocarbon-like odors or staining. @ 3.0 feet: Cobble fragments in sampler.	0.0	
4.0		GP			SP		From 3.8 to 4.0 feet: Brick fragments. GRAVELLY SAND , brown, fine- to medium-grained, little to some fine gravel, moist, no hydrocarbon-like odors or staining. @ 5.0 feet: Becomes fine-grained.	0.0	
5.0		GP	EMW-1S-5.0*		SP		SAND , dark brown, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0	
7.0		GP	EMW-1S-7.5	60	SP		SILTY SAND , gray, very fine- to fine-grained, moist, no hydrocarbon-like odors or staining.	0.2	
8.8		GP			SM		From 10.0 feet to 13.0 feet: No recovery.	0.0	
10.0		GP	EMW-1S-10.0*		SM			0.0	
15.0		GP	EMW-1S-15.0				From 15.0 feet to 19.0 feet: No recovery.	0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20					SM		SILTY SAND , gray, very fine- to fine-grained, moist, no hydrocarbon-like odors or staining. <i>(continued)</i>		

Boring completed at 20.0 feet.

2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▽ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-2S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13 **GROUND ELEVATION** 12.92' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.5							CONCRETE.		Concrete
2.0		GP	EMW-2S-2.5*	90	GP		SANDY GRAVEL (FILL) , fine to coarse, some fine-grained sand, moist, no hydrocarbon-like odors or staining.		Hydrated bentonite chips
5		GP	EMW-2S-5.0*		SP		SAND (FILL) , brown, fine-grained, trace fines, moist, no hydrocarbon-like odors or staining.		2"-diameter Sch. 40 PVC blank riser
7.0		GP	EMW-2S-7.0	80	SM		@ 6.5 feet: Becomes wet. SILTY SAND (FILL) , brown, fine-grained, some fines, few wood fragments, moist, no hydrocarbon-like odors or staining. From 8.0 to 9.8 feet: No recovery.		10x20 silica sand pack
10		GP	EMW-2S-10.0*				@ 10.8 feet: Becomes brownish-gray.		
12.8		GP	EMW-2S-12.5	95	SP		SAND , brownish-gray to gray, fine-grained, few to little fines, wet, no hydrocarbon-like odors or staining.		
15									

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP			SP		SAND , brownish-gray to gray, fine-grained, few to little fines, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	<p>2"-diameter Sch. 40 PVC 0.010"-slotted screen</p> <p>2"-diameter Sch. 40 PVC end cap</p>
					SP		SAND , gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0	
Boring completed at 20.0 feet.									

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 4.8 to 19.6 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.86 to 19.8 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▽ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-3S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/11/13 **COMPLETED** 6/11/13 **GROUND ELEVATION** 16.92' **HOLE SIZE** 8-inch diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 13.8 ft

LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
		GP	EMW-3S-1.0*		SP		GRAVELLY SAND (FILL) , brown, fine-grained, some fine to coarse gravel, trace fines, dry to moist, no hydrocarbon-like odors or staining.	0.0	<p>Concrete</p> <p>Hydrated bentonite chips</p> <p>2"-diameter Sch. 40 PVC blank riser</p> <p>10x20 silica sand pack</p> <p>2"-diameter Sch. 40 PVC 0.010"-slotted screen</p>
		GP	EMW-3S-2.5	100	SP		SAND (FILL) , brown, fine-grained, trace fine gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	
5		GP	EMW-3S-5.0*		SP		GRAVELLY SAND (FILL) , brown, very fine-grained, some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0	
		GP	EMW-3S-7.5	80	SP		SAND (FILL) , brown, very fine-grained, few fines, trace charred wood fragments, moist, no hydrocarbon-like odors or staining.	0.0	
10		GP	EMW-3S-10.0*		SP		From 11.0 to 11.5 feet: Wood fragments.	0.0	
		GP	EMW-3S-12.5	50	SP		From 12.5 feet to 15.0 feet: No recovery.	0.0	
15			EMW-3S-15.0*		SM		▼ SILTY SAND (FILL) , gray, fine-grained, some fines, wet, hydrogen sulfide-like odor.	0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

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CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP	EMW-3S-20.0	100	SM		SILTY SAND (FILL) , gray, fine-grained, some fines, wet, hydrogen sulfide-like odor. <i>(continued)</i>	0.0 0.0 0.0 0.0 0.0 0.0	
Boring completed at 20.0 feet.									

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

- PID = Photoionization detector.
- * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
- GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
- Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
- ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-4D

CLIENT Crowley Marine Services	PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030	PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13	COMPLETED 6/17/13
DRILLING CONTRACTOR Holocene	GROUND ELEVATION 17.01'
DRILLING METHOD Direct Push/Hollow-Stem Auger	HOLE SIZE 8-inch diameter
LOGGED BY C. Lee/A. Meugniot	CHECKED BY
NOTES	
GROUND WATER LEVELS:	
▼ AT TIME OF DRILLING 15.0 ft	
AFTER DRILLING	

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							CONCRETE.		
		GP	EMW-4D-2.5*	100	GP	1.5 2.5	SANDY GRAVEL (FILL) , brown, fine to coarse, little fine- to coarse-grained sand, very moist, no hydrocarbon-like odors or staining.	0.0	Concrete
		GP	EMW-4D-5.0*	50	SP		SAND (FILL) , light brown, fine-grained, moist, no hydrocarbon-like odors or staining.	0.0	
5		GP	EMW-4D-7.5*			7.5	GRAVEL (FILL) , gray, fine, few fine- to coarse-grained sand, moist, no hydrocarbon-like odors or staining. From 8.0 to 12.0 feet: Rock fragments and gravel blocked sampler.	0.0	
10		GP	EMW-4D-12.5	0	GP			0.0	
		GP	EMW-4D-15.0	100	SP	14.0	SAND (FILL) , dark brown to dark gray, fine-grained, moist to wet, trace wood fragments, weak hydrocarbon-like odors.	0.0	Hydrated bentonite chips
15					ML	15.5	▼	3.2	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.

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CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
					ML		SANDY SILT , dark gray, wet, trace wood fragments, weak hydrocarbon-like odors. <i>(continued)</i>	0.0	
		GP		100				0.0	
20			EMW-4D-20.0		SW		SAND , dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining	0.0	
		GP		100				0.0	
25			EMW-4D-25.0					0.0	
		GP		100				0.0	
26.5								0.0	
			EMW-4D-30.0		SP		SAND , dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0	
		GP		100				0.0	
30								0.0	
								0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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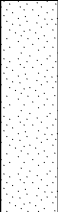
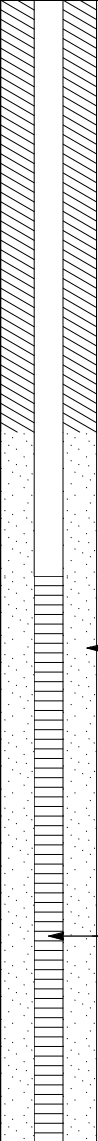
WELL NUMBER EMW-4D

CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
35		GP	EMW-4D-35.0	100			<p>SAND, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i></p> <p>@ 35.0 feet: Refusal with direct push drilling method; remaining depth logged from hollow-stem auger cuttings at time of well installation.</p>	0.0 0.0 0.0	 <p>10x20 silica sand pack</p> <p>2"-diameter Sch. 40 PVC 0.010"-slotted screen</p>
40					SP				
45									

REMARKS

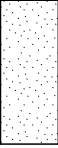
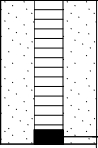
PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50					SP		SAND , dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>		

Boring completed at 50.0 feet.

2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

- 0.3 to 40.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 40.0 to 49.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 49.8 to 50.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 2.0 feet: Concrete.
- 2.0 to 38.0 feet: Hydrated bentonite chips.
- 38.0 to 50.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-5S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13 **GROUND ELEVATION** 17.00' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.2 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.3						0.3	ASPHALT.	0.3	Concrete
2.0		GP	EMW-5S-1.0*	60	GP	2.0	SANDY GRAVEL (FILL) , brown, fine to coarse, some fine-grained sand, trace to few fines, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
2.8		GP	EMW-5S-2.5	60	SP	2.8	GRAVELLY SAND (FILL) , brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	
3.0							SAND (FILL) , brown, fine- to medium-grained, trace fines, moist, no hydrocarbon-like odors or staining. From 3.0 feet to 6.5 feet: No recovery.	0.0	2"-diameter Sch. 40 PVC blank riser
6.5		GP	EMW-5S-6.5	70	SP	6.5	From 6.5 feet to 6.8 feet: Brick and charred wood fragments and ash.	0.0	
7.2		GP	EMW-5S-7.5*	70	SP	7.2	@ 6.8 feet: Cobble fragments in sampler.	0.0	
8.0							SAND (FILL) , brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining. @ 8.0 feet: Becomes fine-grained; becomes brownish-gray.	0.0	10x20 silica sand pack
9.5							SILTY SAND (FILL) , brownish-gray, fine-grained, some fines, moist, no hydrocarbon-like odors or staining.	0.0	
12.0		GP	EMW-5S-10.0*	100	SM	12.0	SAND , gray, fine- to medium-grained, moist to wet, mottled, no hydrocarbon-like odors or staining. @ 12.2 feet: Becomes wet.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
12.2							▼ SAND , gray, fine- to medium-grained, moist to wet, mottled, no hydrocarbon-like odors or staining. @ 12.2 feet: Becomes wet.	0.0	
14.5							@ 14.5 feet: Few fines.	0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLRMW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		100	SP		SAND , gray, fine- to medium-grained, moist to wet, mottled, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0 0.0 0.0 0.0 0.0 0.0 0.0	
Boring completed at 20.0 feet.									

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

- PID = Photoionization detector.
- * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
- GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
- Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
- Perched groundwater level at time of drilling.



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WELL NUMBER EMW-6S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/12/13 **COMPLETED** 6/12/13 **GROUND ELEVATION** 16.70' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 11.5 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.4						0.4	ASPHALT.	0.4	
0.3							GRAVELLY SAND (FILL) , brown, fine-grained, some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.3	Concrete
2.8		GP	EMW-6S-1.0*	95	SP		@ 2.8 feet: Cobble fragments in sampler.		Hydrated bentonite chips
3.2							From 3.2 to 3.5 feet: Brick fragments.		
4.5						4.5	SAND (FILL) , dark brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0	2"-diameter Sch. 40 PVC blank riser
4.8							@ 4.8 feet: Charred wood fragments.	0.0	
5.0		GP	EMW-6S-5.0*	90	SP			0.0	
7.5		GP	EMW-6S-7.5					0.0	
9.0						9.0	SILTY SAND , gray, fine-grained, some fines, moist to wet, thin laminations of fine- to medium-grained sand, no hydrocarbon-like odors or staining.	0.0	10x20 silica sand pack
11.5							▼ @ 11.5 feet: Becomes wet.	0.0	
12.5		GP	EMW-6S-10.0*		SM		@ 12.5 feet: Wood fragments.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
12.5								0.0	
15.0								0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		100	SM		SILTY SAND , gray, fine-grained, some fines, moist to wet, thin laminations of fine- to medium-grained sand, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	
					SP		SAND , gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0	
							Boring completed at 20.0 feet.	0.0	2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

- PID = Photoionization detector.
- * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
- GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
- Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
- ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-7S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13 **GROUND ELEVATION** 17.12' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.5 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
						0.3	ASPHALT.		
			EMW-7S-1.0*				GRAVELLY SAND (FILL) , fine-grained, some fine to coarse gravel, moist, weak hydrocarbon-like odors.	0.7	Concrete
		GP		95	SP		@ 2.2 feet to 3.0 feet: Cobbles.	2.7	Hydrated bentonite chips
						3.5	SAND , brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0	2"-diameter Sch. 40 PVC blank riser
5			EMW-7S-5.0*					0.0	
		GP	EMW-7S-7.5	100	SP			0.0	
10			EMW-7S-10.0*				SAND , gray, fine- to medium-grained, trace to few fines, moist, no hydrocarbon-like odors or staining.	0.0	
		GP	EMW-7S-12.5		SM		▼ SILTY SAND , brownish-gray, fine-grained, some fines, moist to wet, no hydrocarbon-like odors or staining. @ 12.5 feet: Becomes wet.	0.0	10x20 silica sand pack
15								0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP			SM	17.5	SILTY SAND , brownish-gray, fine-grained, some fines, moist to wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	<p>2"-diameter Sch. 40 PVC end cap</p>
					SP	20.0	SAND , dark gray, fine- to medium-grained, trace fine gravel, wet, no hydrocarbon-like odors or staining.	0.0	
Boring completed at 20.0 feet.									

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

- PID = Photoionization detector.
- * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
- GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
- Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
- ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-8S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/12/13 **COMPLETED** 6/12/13 **GROUND ELEVATION** 16.97' **HOLE SIZE** 8-inch diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.0 ft

LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.3							ASPHALT.	0.0	
1.5			EMW-8S-1.0*		SP		GRAVELLY SAND (FILL) , brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	Concrete
4.5		GP	EMW-8S-2.5	90	SP		SAND (FILL) , brown, fine- to medium-grained, few fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
5.0					SP		SAND , dark gray to black, very fine-grained, moist, weak hydrocarbon-like odor.	0.0	2"-diameter Sch. 40 PVC blank riser
9.0		GP	EMW-8S-5.0*		SP		SAND , dark gray, fine- to medium-grained, trace fines, moist, weak hydrocarbon-like odor.	0.0	
14.2		GP	EMW-8S-7.5	100	SP		SAND , dark gray, fine- to medium-grained, trace fines, moist, weak hydrocarbon-like odor.	0.0	10x20 silica sand pack
14.2					SM		SILTY SAND , gray, fine-grained, some fines, moist, no hydrocarbon-like odors or staining.	0.0	
15.0		GP	EMW-8S-10.0*		SM		▼ @ 12.0 feet: Becomes wet.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
15.0					SP		SAND , dark gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-8S

CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		-	SP		SAND , dark gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining. (<i>continued</i>)	0.0 0.0 0.0 0.0 0.0 0.0	

Boring completed at 20.0 feet.

2"-diameter
Sch. 40 PVC
end cap

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

- PID = Photoionization detector.
- * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
- GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
- Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
- Perched groundwater level at time of drilling.



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WELL NUMBER EMW-9S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13 **GROUND ELEVATION** 16.94' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**
DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.5						0.5	ASPHALT.		
2.0						2.0	GRAVELLY SAND (FILL) , brown, fine-grained, fine to coarse gravel, moist, no odors or staining.	0.1	Concrete
5.0		GP	EMW-9S-1.0*		SP			1.2	Hydrated bentonite chips
7.2		GP	EMW-9S-2.5		SP		SAND (FILL) , brown, fine- to medium-grained, few fine gravel, trace fines, moist, no hydrocarbon-like odors or staining. @ 2.5 feet: Becomes black, weak hydrocarbon-like odor, trace brick fragments. @ 3.0 feet: No hydrocarbon-like odors or staining. @ 4.0 feet: Becomes brown. @ 4.8 feet: Becomes gray.	0.0	2"-diameter Sch. 40 PVC blank riser
11.0		GP	EMW-9S-5.0*		SM		SILTY SAND (FILL) , black, very fine-grained, little fines, moist, weak hydrocarbon-like odor. @ 5.1 feet: Becomes brown; no hydrocarbon-like odors or staining. @ 6.0 feet: Becomes black; weak hydrocarbon-like odor. @ 6.5 feet: Cobble fragments in sampler.	1.6	
12.5		GP	EMW-9S-7.5	100	SP		SAND , brown, fine- to medium-grained, trace to few fines, moist, no hydrocarbon-like odors or staining. @ 8.8 feet: Becomes fine-grained, mottled. @ 9.0 feet: Becomes brownish-gray.	6.7	
15.0		GP	EMW-9S-10.0*		SM		SILTY SAND , brownish-gray, fine-grained, little to some fines, moist, no hydrocarbon-like odors or staining. ▼ @ 12.0 feet: Becomes wet.	0.7	
								0.2	10x20 silica sand pack
								0.3	
								0.0	
								0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
								0.0	
								0.0	
								0.0	
								0.0	
								0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		100	SM	17.0	SILTY SAND , brownish-gray, fine-grained, little to some fines, moist, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	<p>2"-diameter Sch. 40 PVC end cap</p>
					SP	20.0	SAND , gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0	
Boring completed at 20.0 feet.									

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-10D

PAGE 1 OF 4

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/19/13 **COMPLETED** 6/19/13 **GROUND ELEVATION** 17.06' **HOLE SIZE** 8-inch diameter

DRILLING CONTRACTOR Holocene **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.0 ft

LOGGED BY C. Lee **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
			EMW-10D-1.0*		GP	0.5	ASPHALT.		
		GP	EMW-10D-2.5	90		2.0	GRAVEL (FILL), gray, fine to coarse, few fine-grained sand, damp, no hydrocarbon-like odors or staining.		Concrete
5		GP	EMW-10-5.0*	100	SP		@ 4.5 feet: Becomes dark brown; moderate creosote-like odor.	1.2	
			EMW-10D-7.5				@ 6.5 feet: Creosote-like odor becomes weaker.	4.4	
10		GP	EMW-10D-10.0*	100	ML	8.5	SANDY SILT, grayish brown, little fine-grained sand, moist, weak to no creosote-like odors.	2.5	
					SM	11.0	SILTY SAND, brown, fine-grained, little fines, moist to wet, no hydrocarbon-like odors.	4.6	
			EMW-10D-12.5		SP	12.0 ▼	SAND, brown, fine-grained, few fines, wet, weak creosote-like odor.	2.5	
		GP		100		14.0	@ 13.5 feet: Becomes grayish-brown.	1.6	
			EMW-10D-15.0*		ML	15.0	SANDY SILT, gray, some very fine-grained sand, wet, weak creosote-like odor.	2.1	Hydrated bentonite chips
15					SP		SAND, dark gray, fine- to medium-grained, wet, weak creosote-like odor.	1.9	
								1.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14

(Continued Next Page)



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WELL NUMBER EMW-10D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		100			SAND , dark gray, fine- to medium-grained, wet, weak creosote-like odor. <i>(continued)</i>	3.0	
							From 19.0 feet to 21.0 feet: Sheen on soil; moderate creosote-like odor.	4.2	
							@ 23.0 feet: Sheen on soil; moderate creosote-like odor.	1.9	
								4.1	
			EMW-10D-20.0					5.0	
		GP		100				4.0	
								1.9	
					SP			2.4	
25			EMW-10D-25.0				From 24.0 to 50.0 feet: Strong creosote-like odor; brown staining (product) on sample liners and equipment; oily coating on soil.	4.0	
		GP		100				6.8	← 2"-diameter Sch. 40 PVC blank riser
								3.9	
								6.1	
								6.5	
30			EMW-10D-30.0					3.8	
		GP		100				4.1	
								4.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▽ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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 Fax: 425.402.8488

WELL NUMBER EMW-10D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
35		GP	EMW-10D-35.0*	100		[Dotted pattern]	SAND , dark gray, fine- to medium-grained, wet, weak creosote-like odor. (continued)	3.1	[Well diagram showing casing, screen, and sand pack]
		GP		100				2.6	
		GP		100				4.9	
		GP		100				12.6	
40		GP	EMW-10D-40.0		SP		From 40.0 to 42.0 feet: Sample tube was stuck in sampler; driller shook soil out of sampler.	6.8	
		GP		--				11.3	
		GP						4.1	
		GP						5.9	
		GP						3.6	← 10x20 silica sand pack
		GP						1.9	
		GP						2.4	← 2"-diameter Sch. 40 PVC 0.010"-slotted screen
		GP						3.6	
		GP						3.9	
		GP						4.1	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▽ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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WELL NUMBER EMW-10D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50		GP	EMW-10D-50.0	100	SP		SAND , dark gray, fine- to medium-grained, wet, weak creosote-like odor. <i>(continued)</i>	2.9	

Boring completed at 50.0 feet.

2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

- 0.3 to 40.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 40.0 to 49.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 49.8 to 50.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 2.0 feet: Concrete.
- 2.0 to 38.0 feet: Hydrated bentonite chips.
- 38.0 to 50.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-11S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/12/13 **COMPLETED** 6/12/13 **GROUND ELEVATION** 17.07' **HOLE SIZE** 8-inch diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.2 ft

LOGGED BY A. Meugniot **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.4						ASPHALT.		0.1	Concrete
2.0	EMW-11S-1.0*	GP	EMW-11S-1.0*	90	SP	GRAVELLY SAND (FILL), brown, fine to coarse, some fine-grained sand, trace fines, moist, no hydrocarbon-like odors or staining.		0.0	Hydrated bentonite chips
4.2	EMW-11S-2.5	GP	EMW-11S-2.5	90	SP	SAND (FILL), brown, fine- to medium-grained, trace fine gravel, trace fines, moist, no hydrocarbon-like odors or staining.		0.0	2"-diameter Sch. 40 PVC blank riser
5.5	EMW-11S-5.0*	GP	EMW-11S-5.0*	100	SP	GRAVELLY SAND (FILL), brown, very fine-grained, little to some gravel, few fines, moist, no hydrocarbon-like odors or staining.		0.1	
7.5	EMW-11S-7.5	GP	EMW-11S-7.5	100	SP	SAND, brown, fine- to medium-grained, trace fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining. @ 6.5 feet: Becomes dark brown, fine- to medium-grained, no gravel, no fines. @ 8.0 feet: Becomes brown, fine-grained, little fines.		0.0	10x20 silica sand pack
10.0	EMW-11S-10.0*	GP	EMW-11S-10.0*	100	SP	@ 9.5 feet: Becomes dark brown, fine- to medium-grained, no fines. @ 10.8 feet: Becomes fine-grained, few fine gravel.		0.0	
12.0	EMW-11S-12.5	GP	EMW-11S-12.5	100	SM	▼ SILTY SAND, gray, fine-grained, some fines, moist to wet, mottled, no hydrocarbon-like odors or staining. @ 12.2 feet: Becomes wet.		0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
14.2					SP	SAND, brownish-gray, fine- to medium-grained, wet, mottled, no hydrocarbon-like odors or staining.		0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		90	SP		SAND , brownish-gray, fine- to medium-grained, wet, mottled, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0 0.0 0.0 0.0 0.0 0.0	
Boring completed at 20.0 feet.									

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▽ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-12S

CLIENT Crowley Marine Services	PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030	PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/11/13	COMPLETED 6/11/13
DRILLING CONTRACTOR ESN-NW	GROUND ELEVATION 17.12'
DRILLING METHOD Direct Push/Hollow-Stem Auger	HOLE SIZE 8-inch diameter
LOGGED BY A. Meugniot	CHECKED BY
NOTES	
GROUND WATER LEVELS:	
▼ AT TIME OF DRILLING 12.2 ft	
AFTER DRILLING	

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.5						0.5	ASPHALT.	0.0	<p>Concrete</p> <p>Hydrated bentonite chips</p> <p>2"-diameter Sch. 40 PVC blank riser</p> <p>10x20 silica sand pack</p> <p>2"-diameter Sch. 40 PVC 0.010"-slotted screen</p>
1.0*	EMW-12S-1.0*	GP				1.5	SANDY GRAVEL (FILL) , brown, fine to coarse, some fine-grained sand, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	
2.5	EMW-12S-2.5	GP		100	SP	3.5	SAND (FILL) , brown, fine-grained, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	
4.0						4.0	SILTY SAND (FILL) , dark gray, fine-grained, some fines, few fine gravel, few brick fragments, moist, weak hydrocarbon-like odors.	0.7	
4.5						4.5			
5.0*	EMW-12S-5.0*	SM				6.5	SANDY GRAVEL (FILL) , gray, fine to coarse, some fine-grained sand, moist, no hydrocarbon-like odors or staining.	13.2	
7.5	EMW-12S-7.5	GP		100	SP	8.0	SAND , brown, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0	
8.0						8.0	SAND , brown, very fine-grained, little fines, moist, no odors or staining.	0.0	
10.0*	EMW-12S-10.0*	SP				13.0			
12.5	EMW-12S-12.5	GP		100			▼ @ 12.2 feet: Becomes wet.	0.0	
15.0*	EMW-12S-15.0*	SP					SAND , dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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WELL NUMBER EMW-12S

PAGE 2 OF 2

CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP	EMW-12S-20.0	100	SP		SAND , dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0 0.0 0.0 0.0 0.0 0.0	
Boring completed at 20.0 feet.									

2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▽ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-13S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/11/13 **COMPLETED** 6/11/13 **GROUND ELEVATION** 16.79' **HOLE SIZE** 8-inch diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 12.5 ft

LOGGED BY A. Meugniot **CHECKED BY** _____ **AFTER DRILLING** _____

NOTES _____

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.5						ASPHALT			Concrete
1.0	EMW-13S-1.0*	GP			GP	SANDY GRAVEL (FILL), brown, fine to coarse, some fine-grained sand, moist, no hydrocarbon-like odors or staining.			Hydrated bentonite chips
2.5	EMW-13S-2.5	GP		100	SP	SAND (FILL), brown, fine-grained, few fine gravel and cobbles, moist, no hydrocarbon-like odors or staining.			2"-diameter Sch. 40 PVC blank riser
5.0	EMW-13S-5.0*	GP			SP	@ 6.0 feet: Becomes fine- to medium-grained.			
7.5	EMW-13S-7.5*	GP		100	SM	SILTY SAND (FILL), gray to dark gray, very fine- to fine-grained, few fine gravel, few brick fragments, moist, weak hydrocarbon-like odor.			10x20 silica sand pack
8.8					GP	GRAVEL (FILL), brown, fine to coarse, few fine-grained sand, moist, no hydrocarbon-like odors or staining.			
9.0					GP	BRICK DEBRIS, moist, no hydrocarbon-like odors or staining.			
12.0	EMW-13S-12.5*	GP		80	SP	SAND (FILL), brown, fine-grained, some fine gravel, few red brick fragments, moist, no hydrocarbon-like odors or staining. @ 12.5 feet: Becomes fine- to medium-grained, wet.			2"-diameter Sch. 40 PVC 0.010"-slotted screen
13.5					SP	SAND, gray, fine-grained, some fines, few fine gravel, wet, no hydrocarbon-like odors or staining.			
16.0					SP				

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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WELL NUMBER EMW-13S

PAGE 2 OF 2

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		90	SP		GRAVELLY SAND , gray, fine-grained, fine to coarse gravel, wet, no hydrocarbon-like odors or staining.	0.0	
					SM		SILTY SAND , gray, fine-grained, wet, no hydrocarbon-like odors or staining.	0.0	
Boring completed at 20.0 feet.									

WELL COMPLETION DETAILS:

- 0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
- 5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.0 feet: Concrete.
- 1.0 to 3.0 feet: Hydrated bentonite chips.
- 3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
 ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-14D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/17/13 **COMPLETED** 6/17/13 **GROUND ELEVATION** 16.74' **HOLE SIZE** 8-inch-diameter

DRILLING CONTRACTOR Holocene **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 8.0 ft

LOGGED BY C. Lee **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.5						ASPHALT.			
2.0		GP	EMW-14D-1.0*	100	GP	GRAVEL (FILL), gray, fine to coarse, few fines, dry, no hydrocarbon-like odors or staining.		0.0	Concrete
5.0		SP	EMW-14D-2.5		SP	SAND (FILL), brown, fine-grained, few fine gravel, damp, no hydrocarbon-like odors or staining.		0.0	
5.0		GP	EMW-14D-5.0*	60	GP	GRAVELLY SAND (FILL), brown, fine-grained, some fine gravel, damp, no hydrocarbon-like odors or staining.		0.0	
7.5		SP	EMW-14D-7.5		SP	▼ @ 8.0 feet: Becomes wet.		0.0	
10.0		GP	EMW-14D-10.0*	75	SM	SILTY SAND (FILL), brownish-gray, fine-grained, some fines, wet, no hydrocarbon-like odors or staining.		0.0	
11.0		GP	EMW-14D-12.5		GP	GRAVEL (FILL), gray, coarse, wet, no hydrocarbon-like odors or staining.		0.0	
13.5		SP	EMW-14D-15.0*	80	SP	GRAVELLY SAND, dark brown to reddish-brown, fine-grained, little fine gravel, wet, no hydrocarbon-like odors or staining.		0.0	Hydrated bentonite chips
15.0		SP			SP	SAND, reddish-brown, fine-grained, wet, no hydrocarbon-like odors or staining.		0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-14D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP	EMW-14D-20.0	100	SP	16.5	SAND , gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining.	0.0	<p>2"-diameter Sch. 40 PVC blank riser</p>
		GP		100				0.0	
25		GP	EMW-14D-25.0	100	SW			0.0	
30		GP	EMW-14D-30.0	100				0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-14D

CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
35		GP	EMW-14D-35.0	100			SAND , gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	
		GP		100				0.0	
40		GP	EMW-14D-40.0	100	SW			0.0	
		GP		100				0.0	
45		GP	EMW-14D-45.0	-				0.0	
		GP						0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-14D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50		GP	EMW-14D-50.0	100	SW		SAND , gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	

Boring completed at 50.0 feet.

2"-diameter Sch. 40 PVC end cap
 Native material (heave).

WELL COMPLETION DETAILS:

- 0.3 to 39.5 feet: 2"-diameter Sch. 40 PVC blank riser.
- 39.5 to 49.5 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 49.5 to 49.7 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.5 feet: Concrete.
- 1.5 to 37.5 feet: Hydrated bentonite chips.
- 37.5 to 49.7 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-15D

PAGE 1 OF 4

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/18/13 **COMPLETED** 6/18/13 **GROUND ELEVATION** 16.43' **HOLE SIZE** 8-inch diameter

DRILLING CONTRACTOR Holocene **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 7.5 ft

LOGGED BY C. Lee **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0										
			EMW-15D-1.0*				0.5	ASPHALT.		
		GP	EMW-15D-2.5	90			2.0	SANDY GRAVEL (FILL) , brown, fine to coarse, trace fines, damp, no hydrocarbon-like odors or staining.	0.0	Concrete
		GP	EMW-15D-5.0*	50			6.5	SAND (FILL) , brown, fine-grained, few fine gravel, damp, no hydrocarbon-like odors or staining.	0.0	
5		GP	EMW-15D-10.0*	90			9.0	SANDY SILT , brown, some fine-grained sand, moist to wet, no odors or staining.	0.0	
								▼ @ 7.5 feet: No recovery.		
		GP	EMW-15D-12.5	100			11.0	SAND (FILL) , black, fine-grained, few fine-gravel, wet, no hydrocarbon-like odors or staining.	0.0	
		GP	EMW-15D-15.0*				12.0	GRAVEL (FILL) , gray, coarse, wet, no hydrocarbon-like odors or staining.	0.0	
		GP					15.5	SAND (FILL) , brown, fine-grained, few fine gravel, wet, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14

(Continued Next Page)



22118 20th Ave. SE, Suite G-202
 Bothell, Washington 98021
 Telephone: 425.402.8800
 Fax: 425.402.8488

WELL NUMBER EMW-15D

PAGE 2 OF 4

CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
17.0		GP		100		GP		GRAVEL (FILL) , gray, coarse, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	
18.0							SAND , black, fine-grained, wet, no hydrocarbon-like odors or staining. @ 18.0 feet: Brick fragments in sampler.	0.0		
20.0		SS	EMW-15D-20.0	100	50/5"			@ 20.0 feet: Refusal with Geoprobe.	0.0	
22.5						SP		@ 22.5 feet: Becomes dark gray; becomes fine- to medium-grained (auger cuttings).	0.0	
25.0		SS	EMW-15D-25.0	100	47				0.0	← 2"-diameter Sch. 40 PVC blank riser
30.0								@ 30.0 feet: Unable to drive split-spoon sampler due to heave in augers.		

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▽ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14

(Continued Next Page)



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WELL NUMBER EMW-15D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
35								SAND , black, fine-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>		
								@ 35.0 feet: Unable to drive split-spoon sampler due to heave in augers.		
40						SP		@ 40.0 feet: Unable to drive split-spoon sampler due to heave in augers.		
								@ 45.0 feet: Unable to drive split-spoon sampler due to heave in augers.		<p>10x20 silica sand pack</p> <p>2"-diameter Sch. 40 PVC 0.010"-slotted screen</p>

REMARKS


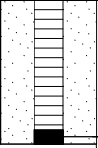
PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▽ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50						SP		SAND , black, fine-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>		

@ 50.0 feet: Unable to drive split-spoon sampler due to heave in augers.
 Boring completed at 50.0 feet.

2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

- 0.3 to 39.5 feet: 2"-diameter Sch. 40 PVC blank riser.
- 39.5 to 49.5 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 49.5 to 49.7 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.5 feet: Concrete.
- 1.5 to 37.5 feet: Hydrated bentonite chips.
- 37.5 to 49.7 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
 ▼ Perched groundwater level at time of drilling.



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WELL NUMBER EMW-16D

PAGE 1 OF 4

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 6/18/13 **COMPLETED** 6/18/13 **GROUND ELEVATION** 16.99' **HOLE SIZE** 8-inch diameter

DRILLING CONTRACTOR Holocene **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger **▼ AT TIME OF DRILLING** 9.0 ft

LOGGED BY C. Lee **CHECKED BY** **AFTER DRILLING**

NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0									
0.5						ASPHALT.			
2.0		GP	EMW-16D-1.0*	80	GP	SANDY GRAVEL (FILL), brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0	Concrete	
4.0						CONCRETE DEBRIS.	0.0		
6.0		GP	EMW-16D-5.0*	100	SP	SAND (FILL), brown, fine-grained, damp, no hydrocarbon-like odors or staining.	0.0		
7.0		GP	EMW-16D-7.5	100	GP	GRAVEL (FILL), coarse, few fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0		
9.0						SAND (FILL), brown, fine-grained, trace fine gravel, damp, no hydrocarbon-like odors or staining.	0.0		
10.5		GP	EMW-16D-10.0*	100	SP	▼ @ 9.0 feet: Becomes wet.	0.0		
13.5					SM	SILTY SAND (FILL), brown, very fine-grained, some fines, wet, no hydrocarbon-like odors or staining.	0.0		
15.0		GP	EMW-16D-12.5		SP	SAND (FILL), brown, fine-grained, wet, no hydrocarbon-like odors or staining.	100	Hydrated bentonite chips	
15.0					SW	SAND, dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining.	0.0		

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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WELL NUMBER EMW-16D

CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		100			SAND , dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	<p>2"-diameter Sch. 40 PVC blank riser</p>
		GP	EMW-16D-20.0	100				0.0	
25		GP	EMW-16D-25.0	100	SW			0.0	
		GP	EMW-16D-30.0	100				0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14



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WELL NUMBER EMW-16D

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CLIENT Crowley Marine Services

PROJECT NAME 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030

PROJECT LOCATION 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
35		GP	EMW-16D-35.0	100			SAND , dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i>	0.0	
		GP		100				0.0	
40		GP	EMW-16D-40.0		SW			0.0	
		GP		100				0.0	
45		GP	EMW-16D-45.0					0.0	
		GP		100				0.0	

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 ▼ Perched groundwater level at time of drilling.


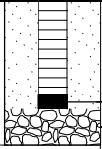
SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14

(Continued Next Page)



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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50					SW		SAND , dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. <i>(continued)</i> Geoprobe boring completed at 48.0 feet.		


Boring completed at 50.0 feet.

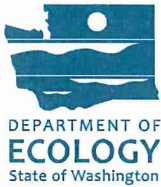
2"-diameter Sch. 40 PVC end cap
 Native material (heave)

WELL COMPLETION DETAILS:

- 0.3 to 39.5 feet: 2"-diameter Sch. 40 PVC blank riser.
- 39.5 to 49.3 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
- 49.3 to 49.5 feet: 2"-diameter Sch. 40 PVC end cap.
- 0.0 to 1.5 feet: Concrete.
- 1.5 to 37.5 feet: Hydrated bentonite chips.
- 37.5 to 49.5 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
 * = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
 GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
 Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
 Perched groundwater level at time of drilling.



Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

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

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

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

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

Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are documenting an evaluation.

Facility/Site Name: 8th Avenue Terminals, Inc. Site

Facility/Site Address: 7400 8th Avenue South, Seattle, Washington

Facility/Site No: 1940187

VCP Project No.:

Step 2: IDENTIFY EVALUATOR

Please identify below the person who conducted the evaluation and their contact information.

Name: Mike Staton

Title: Principal Geologist

Organization: SLR International Corporation

Mailing address: 22118 20th Avenue Southeast, Suite G-202

City: Bothell

State: WA

Zip code: 98021

Phone: 425-402-8800

Fax: 425-402-8488

E-mail: mstaton@slrconsulting.com

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

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

- Yes *If you answered "YES," then answer **Question 2**.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3B** of this form.*

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

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

- All soil contamination is, or will be,* at least 15 feet below the surface.
- All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

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

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

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

- There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

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

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

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

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

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

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 2** below.*
- No or Unknown *If you answered "NO" or "UNKNOWN," then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

- Yes *If you answered "YES," then answer **Question 3** below.*
- No *If you answered "NO," then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

- Yes *If you answered "YES," then answer **Question 4** below.*
- No *If you answered "NO," then answer **Question 5** below.*

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

- Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*
- Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

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

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

- Area of soil contamination at the Site is not more than 350 square feet.
- Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

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

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

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

- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.
- No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

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

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

- Yes *If you answered "YES," then answer **Question 2** below.*
- No *If you answered "NO," then identify the reason here and then skip to **Question 5** below:*
- No issues were identified during the problem formulation step.
 - While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

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

- Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

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

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

4. What was the result of those evaluations?

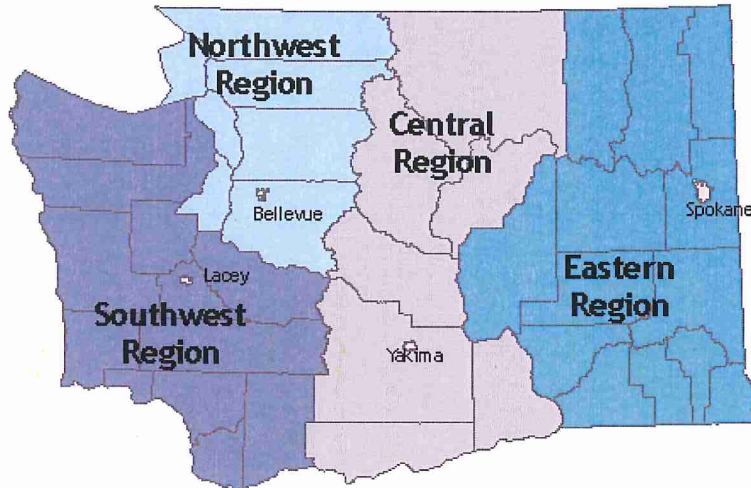
- Confirmed there was no problem.
- Confirmed there was a problem and established site-specific cleanup levels.

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

- Yes *If so, please identify the Ecology staff who approved those steps:*
- No

Step 4: SUBMITTAL

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



Northwest Region: Attn: VCP Coordinator 3190 160 th Ave. SE Bellevue, WA 98008-5452	Central Region: Attn: VCP Coordinator 15 W. Yakima Ave., Suite 200 Yakima, WA 98902
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	Eastern Region: Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295

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

FINAL DATA GAPS REPORT CONTINUED

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
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www.friedmanandbruya.com

August 2, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

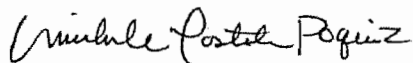
Dear Mr. Staton:

Included are the results from the testing of material submitted on July 12, 2013 from the Crowley RIFS 101.00205.00030, F&BI 307176 project. There are 43 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michele Costales Poquiz
Chemist

Enclosures
SLR0802R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 12, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. Crowley RIFS 101.00205.00030, F&BI 307176 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
307176-01	CMW-6-0713
307176-02	TB-071213B
307176-03	EMW-57S-0713

Total Petroleum Hydrocarbons as Gasoline by Method NWTPH-Gx

All quality control requirements were acceptable.

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Compounds by EPA Method 8260C

The calibration result for bromomethane fell outside of acceptance criteria. The values reported are estimates.

The presence of acetone in the sample TB-071213B is likely due to laboratory contamination. The results have been flagged accordingly.

The trip blank sample was received with incorrect preservation for vinyl chloride. The result should be considered an estimate.

The percent recovery for the matrix spike (MS), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) exceeded acceptance criteria for bromomethane and chloroethane. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D

The calibration result for the surrogate 2,4,6-tribromophenol fell outside of acceptance criteria. The values reported are estimates.

The internal standard associated with several analytes exceeded acceptance criteria. The results have been flagged accordingly.

The sample EMW-57S-0713 was diluted due to matrix interferences. The reporting limits have been raised accordingly.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

A low level of bis(2-ethylhexyl) phthalate was identified in the method blank. The presence of this compound in the samples CMW-6-0713 and EMW-57S-0713 is likely due to laboratory contamination. The results have been flagged accordingly.

The percent recovery for the LCS and LCSD, and the relative percent difference (RPD) for the LCS/LCSD, fell outside of control limits for several compounds. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM

The internal standard associated with several analytes exceeded acceptance criteria for the sample CMW-6-0713. The results have been flagged accordingly.

The sample CMW-6-0713 was diluted due to matrix interferences. The reporting limits have been raised accordingly.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A

All quality control requirements were acceptable.

Total Metals by EPA Method 200.8

The reporting limit for cadmium has been raised due to interferences.

The internal standard associated with several analytes exceeded acceptance criteria for the sample CMW-6-0713. The results have been flagged accordingly.

The sample CMW-6-0713 was diluted due to matrix interferences. The reporting limits have been raised accordingly.

Total Mercury by EPA Method 1631E

All quality control requirements were acceptable.

Total Suspended Solids By Method 2540D

All quality control requirements were acceptable.

Total Dissolved Solids by Method 2540C

The report generated by Analytical Resources, Inc. is enclosed.

Chloride by Method SM4500

The report generated by Analytical Resources, Inc. is enclosed.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

Date Extracted: 07/15/13

Date Analyzed: 07/15/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
CMW-6-0713 307176-01	<12	87
EMW-57S-0713 307176-03	36	90
Method Blank 03-1352 MB	<12	95

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

Date Extracted: 07/15/13

Date Analyzed: 07/18/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
CMW-6-0713 307176-01	<6.9	<52	110
EMW-57S-0713 307176-03	<6.9	<52	99
Method Blank 03-1389 MB	<6.9	<52	132

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-01
Date Analyzed:	07/16/13	Data File:	071610.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TB-071213B	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-02
Date Analyzed:	07/16/13	Data File:	071609.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 pr	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	3.0 lc	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-57S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-03
Date Analyzed:	07/16/13	Data File:	071611.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	0.62	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	0.92	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	0.26	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1316 mb
Date Analyzed:	07/16/13	Data File:	071607.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-01
Date Analyzed:	07/20/13	Data File:	071930.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	48	32	162
Phenol-d6	31	10	170
Nitrobenzene-d5	98	50	150
2-Fluorobiphenyl	98	43	158
2,4,6-Tribromophenol	112 ca	43	146
Terphenyl-d14	105	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086 J
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.28 J fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-57S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-03
Date Analyzed:	07/20/13	Data File:	071931.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	89	50	150
2-Fluorobiphenyl	93	43	158
2,4,6-Tribromophenol	107 ca	43	146
Terphenyl-d14	110 J	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05 J
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6 J
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38 J
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056 J
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05 J
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32 J
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048 J
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068 J
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.26 fb J
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-57S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-03 1/20
Date Analyzed:	07/23/13	Data File:	072305.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	50 ds	32	162
Phenol-d6	32 ds	10	170
Nitrobenzene-d5	85 ds	50	150
2-Fluorobiphenyl	90 ds	43	158
2,4,6-Tribromophenol	75 ds	43	146
Terphenyl-d14	99 ds	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<28	2,4,6-Trichlorophenol	<5.6
Bis(2-chloroethyl) ether	<1.2	2,4,5-Trichlorophenol	<4.4
2-Chlorophenol	<3.2	2-Chloronaphthalene	<0.88
1,3-Dichlorobenzene	<0.68	2-Nitroaniline	<1.7
1,4-Dichlorobenzene	<1.4	Dimethyl phthalate	<1
1,2-Dichlorobenzene	<0.48	2,6-Dinitrotoluene	<1.2
Benzyl alcohol	<8	3-Nitroaniline	<9.2
Bis(2-chloroisopropyl) ether	<0.6	2,4-Dinitrophenol	<48
2-Methylphenol	<5.2	Dibenzofuran	<0.68
Hexachloroethane	<1.2	2,4-Dinitrotoluene	<1.1
N-Nitroso-di-n-propylamine	<2.2	4-Nitrophenol	<26
3-Methylphenol + 4-Methylphenol	<8	Diethyl phthalate	<1.2
Nitrobenzene	<0.88	4-Chlorophenyl phenyl ether	<1.4
Isophorone	<0.6	N-Nitrosodiphenylamine	<1
2-Nitrophenol	<3.3	4-Nitroaniline	<12
2,4-Dimethylphenol	<5.6 jl	4,6-Dinitro-2-methylphenol	<7.6
Benzoic acid	<150	4-Bromophenyl phenyl ether	<1.1
Bis(2-chloroethoxy)methane	<0.68	Hexachlorobenzene	<1
2,4-Dichlorophenol	<5.2	Pentachlorophenol	<6.4
1,2,4-Trichlorobenzene	<1	Carbazole	<0.96
Hexachlorobutadiene	<1.4	Di-n-butyl phthalate	<1.4
4-Chloroaniline	<1.1 jl	Benzyl butyl phthalate	<1.7
4-Chloro-3-methylphenol	<4.8	Bis(2-ethylhexyl) phthalate	<3.3
2-Methylnaphthalene	<0.68	Di-n-octyl phthalate	<0.88
Hexachlorocyclopentadiene	<1.9		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1395 mb
Date Analyzed:	07/18/13	Data File:	071807.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	49	32	162
Phenol-d6	35	10	170
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	95	43	158
2,4,6-Tribromophenol	107 ca	43	146
Terphenyl-d14	113	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.33 lc
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-01
Date Analyzed:	07/19/13	Data File:	071835.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	101	50	150
Benzo(a)anthracene-d12	108 J	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0092
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.0082
Anthracene	0.0056
Fluoranthene	0.013
Pyrene	0.014 J
Benz(a)anthracene	0.010 J
Chrysene	0.0088 J
Benzo(a)pyrene	<0.0078 J
Benzo(b)fluoranthene	0.013 J
Benzo(k)fluoranthene	<0.0076 J
Indeno(1,2,3-cd)pyrene	<0.007 J
Dibenz(a,h)anthracene	<0.004 J
Benzo(g,h,i)perylene	0.0066 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-01 1/10
Date Analyzed:	07/22/13	Data File:	072204.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	175 ds	50	150
Benzo(a)anthracene-d12	90 ds	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.04
Acenaphthylene	<0.024
Acenaphthene	<0.038
Fluorene	<0.04
Phenanthrene	<0.066
Anthracene	<0.028
Fluoranthene	<0.046
Pyrene	<0.036
Benz(a)anthracene	<0.042
Chrysene	<0.038
Benzo(a)pyrene	<0.078
Benzo(b)fluoranthene	<0.052
Benzo(k)fluoranthene	<0.076
Indeno(1,2,3-cd)pyrene	<0.07
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-57S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307176-03
Date Analyzed:	07/19/13	Data File:	071836.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	94	50	150
Benzo(a)anthracene-d12	100	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	0.0036
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	03-1394 mb
Date Analyzed:	07/18/13	Data File:	071806.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	50	150
Benzo(a)anthracene-d12	91	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-01
Date Analyzed:	07/24/13	Data File:	46.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	105	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-57S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-03
Date Analyzed:	07/24/13	Data File:	48.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	84	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	03-1391 mb
Date Analyzed:	07/24/13	Data File:	072424.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-01
Date Analyzed:	07/19/13	Data File:	307176-01.037
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	54 vo	60	125
Indium	54 vo	60	125
Holmium	53 vo	60	125

Analyte:	Concentration ug/L (ppb)
Silver	0.138 J
Cadmium	0.254 J, j
Thallium	<0.074 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-01 x10
Date Analyzed:	07/19/13	Data File:	307176-01 x10.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	73	60	125
Indium	74	60	125
Holmium	80	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	3.34
Nickel	7.61
Copper	44.6
Zinc	40.2
Arsenic	79.3
Selenium	97.9
Silver	<0.640
Cadmium	<2.5
Antimony	22.1
Barium	105
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-57S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-03
Date Analyzed:	07/19/13	Data File:	307176-03.030
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	95	60	125
Indium	88	60	125
Holmium	93	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.884
Nickel	1.34
Copper	<0.34
Zinc	1.42
Arsenic	1.68
Selenium	1.61
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.111
Barium	8.03
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	I3-419 mb
Date Analyzed:	07/19/13	Data File:	I3-419 mb.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	90	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.138
Nickel	<0.46
Copper	<0.34
Zinc	<0.61
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	<0.26
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-01
Date Analyzed:	07/17/13	Data File:	307176-01.073
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	50 vo	60	125
Indium	50 vo	60	125
Holmium	54 vo	60	125

Analyte:	Concentration ug/L (ppb)
Silver	0.165 J
Cadmium	0.27 J
Thallium	<0.074 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-01 x10
Date Analyzed:	07/17/13	Data File:	307176-01 x10.084
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	68	60	125
Indium	68	60	125
Holmium	77	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	4.07
Nickel	7.01
Copper	42.1
Zinc	36.5
Arsenic	76.0
Selenium	77.0
Silver	<0.640
Cadmium	<2.5
Antimony	24.2
Barium	110
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-57S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307176-03
Date Analyzed:	07/17/13	Data File:	307176-03.077
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	87	60	125
Indium	82	60	125
Holmium	90	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.788
Nickel	1.50
Copper	<0.34
Zinc	13.3
Arsenic	1.43
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.064
Barium	6.94
Thallium	0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	I3-420 mb
Date Analyzed:	07/17/13	Data File:	I3-420 mb.086
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	83	60	125
Indium	84	60	125
Holmium	90	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.139
Nickel	<0.46
Copper	<0.34
Zinc	<0.61
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	<0.26
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

Date Extracted: 07/15/13

Date Analyzed: 07/16/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Total Mercury</u>
CMW-6-0713 307176-01	0.0034
EMW-57S-0713 307176-03	<0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

Date Extracted: 07/15/13

Date Analyzed: 07/16/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Dissolved Mercury</u>
CMW-6-0713 307176-01	0.0031
EMW-57S-0713 307176-03	<0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

Date Extracted: NA

Date Analyzed: 07/19/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
CMW-6-0713 307176-01	<10
EMW-57S-0713 307176-03	<10
Method Blank	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 307179-05 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<12	<12	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	94	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	87	93	58-134	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307176

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 307176-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	50	<0.16	107	55-144
Chloromethane	ug/L (ppb)	50	<0.22	96	67-131
Vinyl chloride	ug/L (ppb)	50	<0.13	100	61-139
Bromomethane	ug/L (ppb)	50	<0.2	983 vo	66-129
Chloroethane	ug/L (ppb)	50	<0.18	161 vo	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<0.17	122	71-128
Acetone	ug/L (ppb)	250	<2.6	103	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<0.19	103	71-123
Methylene chloride	ug/L (ppb)	50	<3	100	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<0.13	97	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	99	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<0.18	98	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<0.3	99	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	102	73-119
Chloroform	ug/L (ppb)	50	<0.24	94	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<0.94	105	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<0.11	97	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	103	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<0.26	99	67-121
Carbon tetrachloride	ug/L (ppb)	50	<0.24	112	72-123
Benzene	ug/L (ppb)	50	<0.13	95	79-109
Trichloroethene	ug/L (ppb)	50	<0.17	96	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<0.32	102	80-111
Bromodichloromethane	ug/L (ppb)	50	<0.38	114	78-117
Dibromomethane	ug/L (ppb)	50	<0.28	103	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<1.3	119	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<0.2	111	76-120
Toluene	ug/L (ppb)	50	<0.13	95	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<0.34	99	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.28	104	81-111
2-Hexanone	ug/L (ppb)	250	<1	115	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	99	81-111
Tetrachloroethene	ug/L (ppb)	50	<0.28	89	72-113
Dibromochloromethane	ug/L (ppb)	50	<0.24	110	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<0.24	106	83-114
Chlorobenzene	ug/L (ppb)	50	<0.1	92	75-115
Ethylbenzene	ug/L (ppb)	50	<0.16	95	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.32	110	78-122
m,p-Xylene	ug/L (ppb)	100	<0.5	95	63-128
o-Xylene	ug/L (ppb)	50	<0.22	96	64-129
Styrene	ug/L (ppb)	50	<0.22	100	70-122
Isopropylbenzene	ug/L (ppb)	50	<0.15	95	76-118
Bromoform	ug/L (ppb)	50	<0.22	114	49-138
n-Propylbenzene	ug/L (ppb)	50	<0.14	96	74-117
Bromobenzene	ug/L (ppb)	50	<0.18	95	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<0.18	98	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.24	107	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.28	102	72-119
2-Chlorotoluene	ug/L (ppb)	50	<0.13	94	77-114
4-Chlorotoluene	ug/L (ppb)	50	<0.16	96	81-109
tert-Butylbenzene	ug/L (ppb)	50	<0.15	96	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<0.11	96	74-118
sec-Butylbenzene	ug/L (ppb)	50	<0.12	94	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<0.15	93	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<0.15	91	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.094	90	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.13	91	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.44	112	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<0.34	83	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<0.46	79	67-120
Naphthalene	ug/L (ppb)	50	<0.28	101	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.38	97	79-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	100	105	54-149	5
Chloromethane	ug/L (ppb)	50	91	95	67-133	4
Vinyl chloride	ug/L (ppb)	50	94	98	73-132	4
Bromomethane	ug/L (ppb)	50	917 vo	956 vo	69-123	4
Chloroethane	ug/L (ppb)	50	158 vo	163 vo	68-126	3
Trichlorofluoromethane	ug/L (ppb)	50	118	123	70-132	4
Acetone	ug/L (ppb)	250	91	93	44-145	2
1,1-Dichloroethene	ug/L (ppb)	50	97	104	75-119	7
Methylene chloride	ug/L (ppb)	50	94	98	63-132	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	92	99	70-122	7
trans-1,2-Dichloroethene	ug/L (ppb)	50	91	96	76-118	5
1,1-Dichloroethane	ug/L (ppb)	50	92	98	80-116	6
2,2-Dichloropropane	ug/L (ppb)	50	106	111	62-141	5
cis-1,2-Dichloroethene	ug/L (ppb)	50	93	99	81-111	6
Chloroform	ug/L (ppb)	50	86	92	81-109	7
2-Butanone (MEK)	ug/L (ppb)	250	92	98	53-140	6
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	90	95	79-109	5
1,1,1-Trichloroethane	ug/L (ppb)	50	99	105	80-116	6
1,1-Dichloropropene	ug/L (ppb)	50	93	99	78-112	6
Carbon tetrachloride	ug/L (ppb)	50	109	116	72-128	6
Benzene	ug/L (ppb)	50	88	94	81-108	7
Trichloroethene	ug/L (ppb)	50	90	95	77-108	5
1,2-Dichloropropane	ug/L (ppb)	50	94	102	82-109	8
Bromodichloromethane	ug/L (ppb)	50	106	114	76-120	7
Dibromomethane	ug/L (ppb)	50	97	102	80-110	5
4-Methyl-2-pentanone	ug/L (ppb)	250	104	111	59-142	7
cis-1,3-Dichloropropene	ug/L (ppb)	50	106	114	76-128	7
Toluene	ug/L (ppb)	50	88	94	83-108	7
trans-1,3-Dichloropropene	ug/L (ppb)	50	97	105	76-128	8
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	95	104	82-110	9
2-Hexanone	ug/L (ppb)	250	97	107	53-145	10
1,3-Dichloropropane	ug/L (ppb)	50	92	99	83-110	7
Tetrachloroethene	ug/L (ppb)	50	83	90	78-109	8
Dibromochloromethane	ug/L (ppb)	50	106	113	63-140	6
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	100	107	85-113	7
Chlorobenzene	ug/L (ppb)	50	85	92	84-108	8
Ethylbenzene	ug/L (ppb)	50	88	95	84-110	8
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	105	112	76-125	6
m,p-Xylene	ug/L (ppb)	100	88	95	84-112	8
o-Xylene	ug/L (ppb)	50	90	95	82-113	5
Styrene	ug/L (ppb)	50	92	100	84-116	8
Isopropylbenzene	ug/L (ppb)	50	89	96	81-122	8
Bromoform	ug/L (ppb)	50	110	118	40-161	7
n-Propylbenzene	ug/L (ppb)	50	90	96	81-115	6
Bromobenzene	ug/L (ppb)	50	88	94	80-113	7
1,3,5-Trimethylbenzene	ug/L (ppb)	50	93	98	83-117	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	98	105	79-118	7
1,2,3-Trichloropropane	ug/L (ppb)	50	92	99	74-116	7
2-Chlorotoluene	ug/L (ppb)	50	87	92	79-112	6
4-Chlorotoluene	ug/L (ppb)	50	90	97	81-113	7
tert-Butylbenzene	ug/L (ppb)	50	90	95	81-119	5
1,2,4-Trimethylbenzene	ug/L (ppb)	50	90	96	83-116	6
sec-Butylbenzene	ug/L (ppb)	50	89	94	83-116	5
p-Isopropyltoluene	ug/L (ppb)	50	89	94	82-119	5
1,3-Dichlorobenzene	ug/L (ppb)	50	85	92	83-111	8
1,4-Dichlorobenzene	ug/L (ppb)	50	85	90	82-109	6
1,2-Dichlorobenzene	ug/L (ppb)	50	85	89	83-111	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	103	110	62-133	7
1,2,4-Trichlorobenzene	ug/L (ppb)	50	80	84	77-117	5
Hexachlorobutadiene	ug/L (ppb)	50	75	78	74-118	4
Naphthalene	ug/L (ppb)	50	91	96	75-131	5
1,2,3-Trichlorobenzene	ug/L (ppb)	50	92	96	82-115	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Project: Crowley RIFS 101.00205.00030, F&BI 307176

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	10	39	34	18-52	14
Bis(2-chloroethyl) ether	ug/L (ppb)	10	89	79	52-113	12
2-Chlorophenol	ug/L (ppb)	10	89	78	50-110	13
1,3-Dichlorobenzene	ug/L (ppb)	10	91	76	45-109	18
1,4-Dichlorobenzene	ug/L (ppb)	10	94	77	44-118	20
1,2-Dichlorobenzene	ug/L (ppb)	10	93	76	46-116	20
Benzyl alcohol	ug/L (ppb)	10	89	73	42-100	20
Bis(2-chloroisopropyl) ether	ug/L (ppb)	10	90	77	51-124	16
2-Methylphenol	ug/L (ppb)	10	73	70	38-100	4
Hexachloroethane	ug/L (ppb)	10	94	77	42-117	20
N-Nitroso-di-n-propylamine	ug/L (ppb)	10	91	78	48-124	15
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	10	72	64	48-87	12
Nitrobenzene	ug/L (ppb)	10	95	84	50-118	12
Isophorone	ug/L (ppb)	10	99	86	55-116	14
2-Nitrophenol	ug/L (ppb)	10	115	104	42-127	10
2,4-Dimethylphenol	ug/L (ppb)	10	41 vo	85	45-100	70 vo
Benzoic acid	ug/L (ppb)	65	57 vo	49 vo	10-46	15
Bis(2-chloroethoxy)methane	ug/L (ppb)	10	96	86	55-115	11
2,4-Dichlorophenol	ug/L (ppb)	10	103	92	55-113	11
1,2,4-Trichlorobenzene	ug/L (ppb)	10	95	83	50-109	13
Hexachlorobutadiene	ug/L (ppb)	10	95	83	50-109	13
4-Chloroaniline	ug/L (ppb)	20	91	14 vo	30-109	147 vo
4-Chloro-3-methylphenol	ug/L (ppb)	10	104	88	54-114	17
2-Methylnaphthalene	ug/L (ppb)	10	100	85	53-113	16
Hexachlorocyclopentadiene	ug/L (ppb)	10	83	64	26-94	26 vo
2,4,6-Trichlorophenol	ug/L (ppb)	10	105	96	46-114	9
2,4,5-Trichlorophenol	ug/L (ppb)	10	107	98	57-122	9
2-Chloronaphthalene	ug/L (ppb)	10	98	89	52-112	10
2-Nitroaniline	ug/L (ppb)	10	113	100	47-128	12
Dimethyl phthalate	ug/L (ppb)	10	110	99	55-116	11
2,6-Dinitrotoluene	ug/L (ppb)	10	117	107	49-126	9
3-Nitroaniline	ug/L (ppb)	20	114	68	21-125	51 vo
2,4-Dinitrophenol	ug/L (ppb)	10	160 vo	144 vo	29-130	11
Dibenzofuran	ug/L (ppb)	10	101	92	53-113	9
2,4-Dinitrotoluene	ug/L (ppb)	10	111	99	48-129	11
4-Nitrophenol	ug/L (ppb)	10	50	41	12-59	20
Diethyl phthalate	ug/L (ppb)	10	106	95	55-116	11
4-Chlorophenyl phenyl ether	ug/L (ppb)	10	103	93	52-115	10
N-Nitrosodiphenylamine	ug/L (ppb)	10	101	87	51-112	15
4-Nitroaniline	ug/L (ppb)	20	108	79	42-115	31 vo
4,6-Dinitro-2-methylphenol	ug/L (ppb)	10	130 vo	120	40-128	8
4-Bromophenyl phenyl ether	ug/L (ppb)	10	105	98	53-114	7
Hexachlorobenzene	ug/L (ppb)	10	103	95	54-115	8
Pentachlorophenol	ug/L (ppb)	10	108	104	49-114	4
Carbazole	ug/L (ppb)	10	101	91	54-115	10
Di-n-butyl phthalate	ug/L (ppb)	10	110	102	54-115	8
Benzyl butyl phthalate	ug/L (ppb)	10	119	108	53-122	10
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	112	95	54-122	16
Di-n-octyl phthalate	ug/L (ppb)	10	108	103	50-131	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	83	87	67-116	5
Acenaphthylene	ug/L (ppb)	1	96	101	65-119	5
Acenaphthene	ug/L (ppb)	1	94	100	66-118	6
Fluorene	ug/L (ppb)	1	98	103	64-125	5
Phenanthrene	ug/L (ppb)	1	92	96	67-120	4
Anthracene	ug/L (ppb)	1	94	97	65-122	3
Fluoranthene	ug/L (ppb)	1	98	93	65-127	5
Pyrene	ug/L (ppb)	1	96	103	62-130	7
Benz(a)anthracene	ug/L (ppb)	1	91	93	60-118	2
Chrysene	ug/L (ppb)	1	95	100	66-125	5
Benzo(b)fluoranthene	ug/L (ppb)	1	86	90	55-135	5
Benzo(k)fluoranthene	ug/L (ppb)	1	84	87	62-125	4
Benzo(a)pyrene	ug/L (ppb)	1	81	83	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	76	79	36-142	4
Dibenz(a,h)anthracene	ug/L (ppb)	1	71	73	37-133	3
Benzo(g,h,i)perylene	ug/L (ppb)	1	77	77	34-135	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED
BIPHENYLS AS
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.63	97	114	70-130	16
Aroclor 1260	ug/L (ppb)	0.63	102	108	70-130	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 307179-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.098	102	118	67-145	15
Chromium	ug/L (ppb)	20	2.19	93	110	64-132	17
Nickel	ug/L (ppb)	20	4.59	88 b	107 b	61-128	19 b
Copper	ug/L (ppb)	20	1.60	89	106	63-124	17
Zinc	ug/L (ppb)	50	7.69	88	106	55-141	19
Arsenic	ug/L (ppb)	10	3.38	92 b	117 b	60-150	24 b
Selenium	ug/L (ppb)	5	<0.56	98	114	43-178	15
Silver	ug/L (ppb)	5	<0.064	89	106	71-115	17
Cadmium	ug/L (ppb)	5	<0.25	90	107	83-116	17
Antimony	ug/L (ppb)	20	0.152	68	82	62-125	19
Barium	ug/L (ppb)	50	18.1	89 b	112 b	79-126	23 b
Thallium	ug/L (ppb)	5	0.107	90	104	73-119	14
Lead	ug/L (ppb)	10	0.380	89	103	79-121	15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	106	73-135
Chromium	ug/L (ppb)	20	101	80-119
Nickel	ug/L (ppb)	20	96	79-122
Copper	ug/L (ppb)	20	98	81-119
Zinc	ug/L (ppb)	50	93	76-124
Arsenic	ug/L (ppb)	10	90	80-111
Selenium	ug/L (ppb)	5	97	81-119
Silver	ug/L (ppb)	5	98	80-116
Cadmium	ug/L (ppb)	5	96	83-113
Antimony	ug/L (ppb)	20	89	79-108
Barium	ug/L (ppb)	50	96	83-117
Thallium	ug/L (ppb)	5	97	78-116
Lead	ug/L (ppb)	10	99	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 307179-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.098	104	116	67-145	11
Chromium	ug/L (ppb)	20	0.271	97	108	64-132	11
Nickel	ug/L (ppb)	20	2.04	91	103	61-128	12
Copper	ug/L (ppb)	20	<0.34	90	99	63-124	10
Zinc	ug/L (ppb)	50	2.91	90	101	55-141	12
Arsenic	ug/L (ppb)	10	3.25	99 b	111 b	60-150	11 b
Selenium	ug/L (ppb)	5	<0.56	99	110	43-178	11
Silver	ug/L (ppb)	5	<0.064	94	103	71-115	9
Cadmium	ug/L (ppb)	5	<0.25	95	103	83-116	8
Antimony	ug/L (ppb)	20	0.471	89	101	62-125	13
Barium	ug/L (ppb)	50	12.8	95 b	107 b	79-126	12 b
Thallium	ug/L (ppb)	5	<0.074	94	104	73-119	10
Lead	ug/L (ppb)	10	<0.144	93	105	79-121	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	99	73-135
Chromium	ug/L (ppb)	20	98	80-119
Nickel	ug/L (ppb)	20	99	79-122
Copper	ug/L (ppb)	20	99	81-119
Zinc	ug/L (ppb)	50	94	76-124
Arsenic	ug/L (ppb)	10	91	80-111
Selenium	ug/L (ppb)	5	95	81-119
Silver	ug/L (ppb)	5	98	80-116
Cadmium	ug/L (ppb)	5	95	83-113
Antimony	ug/L (ppb)	20	89	79-108
Barium	ug/L (ppb)	50	97	83-117
Thallium	ug/L (ppb)	5	94	78-116
Lead	ug/L (ppb)	10	94	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307152-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	<0.0015	100	98	63-132	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	98	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
DISSOLVED MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307152-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	0.00093	96	95	63-132	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	100	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Project: Crowley RIFS 101.00205.00030, F&BI 307176

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Laboratory Code: 307152-09 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
TSS	mg/L	28	32	13	0-20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L	50	104	61-131

Data Qualifiers & Definitions

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



Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 29, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 307176
ARI Job No.: WX55

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted two water samples on July 15, 2013, under ARI job WX55. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for chloride and TDS, as requested on the COC.

There were no anomalies associated with the analyses of these samples.

An electronic copy of this report and all associated raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,

ANALYTICAL RESOURCES, INC.

A handwritten signature in black ink, appearing to read "Cheronne Oreiro", written over a faint circular stamp or watermark.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile WX55

Enclosures

WX55

SAMPLE CHAIN OF CUSTODY

Send Report To Michele Costales Poquiz
 Company Friedman & Bruya, Inc.
 Address 3012 16th Ave. W.
 City, State, ZIP Seattle, WA 98119
 Phone # (206) 285-8282 Fax # (206) 283-5044
 Email Address mpoquiz@friedmanandbruya.com

SUBCONTRACTOR Analytical Resources, Inc. (ARI)	
PROJECT NAME/NO. <u>307176</u>	PO # <u>C-466</u>
REMARKS Please e-mail results ELECTRONIC DATA REQUESTED (EIM)	

Page # 1 of 1

TURNAROUND TIME
 Standard Turnaround
 RUSH
 Rush charges authorized by: _____

SAMPLE DISPOSAL
 Dispose after 30 days
 Return samples
 Will call with instructions
 Samples Received at _____ °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes			
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Hexavalent Cr by 7196A	Total Organic Carbon by 9060M	TDS by 2540C	Chloride by SM4500				
CMW-6-0713		7/12/13	1533	water	2									X					
EMW-57S-0713		↓	4:30 PM 1232	↓	↓									X					

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044	SIGNATURE Relinquished by: <u>Michele Costales Poquiz</u> Received by: <u>A. Volgardsen</u> Relinquished by: Received by:	PRINT NAME Michele Costales Poquiz A. Volgardsen	COMPANY F&B ARI	DATE 7/15/13 7/15/13	TIME 12:15 PM 1500
---	---	--	-----------------------	----------------------------	--------------------------



Cooler Receipt Form

ARI Client Friedman & Bruya
COC No(s) _____ (NA)
Assigned ARI Job No WX55

Project Name 307176
Delivered by Fed-Ex UPS Courier Hand Delivered Other Non ARI
Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)
Were custody papers included with the cooler? YES NO
Were custody papers properly filled out (ink, signed, etc.) YES NO
Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) 8.0
If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by AV Date 7/15/13 Time 1500

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
Was sufficient ice used (if appropriate)? NA YES (NO)
Were all bottles sealed in individual plastic bags? YES (NO)
Did all bottles arrive in good condition (unbroken)? YES NO
Were all bottle labels complete and legible? YES NO
Did the number of containers listed on COC match with the number of containers received? YES NO
Did all bottle labels and tags agree with custody papers? YES NO
Were all bottles used correct for the requested analyses? YES NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) .. (NA) YES NO
Were all VOC vials free of air bubbles? (NA) YES NO
Was sufficient amount of sample sent in each bottle? YES NO
Date VOC Trip Blank was made at ARI. (NA)
Was Sample Split by ARI : (NA) YES Date/Time _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 7/15/13 Time 1652

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"



Cooler Temp Compliance Form

Cooler#: 1 Temperature(°C): 8.0

Sample ID	Bottle Count	Bottle Type
All samples associated with this job were received at a temp greater than 6°C.		

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

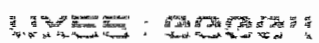
Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Completed by JM Date: 7/15/13 Time: 1500



Sample ID Cross Reference Report



ARI Job No: WX55
Client: Friedman and Bruya, Inc
Project Event: 307176
Project Name: N/A

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. CMW-6-0713	WX55A	13-14887	Water	07/12/13 15:33	07/15/13 15:00
2. EMW-57S-0713	WX55B	13-14888	Water	07/12/13 12:32	07/15/13 15:00

SAMPLE RESULTS-CONVENTIONALS
WX55-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: *W*
Reported: 07/29/13

Project: NA
Event: 307176
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: CMW-6-0713
ARI ID: 13-14887 WX55A

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	200	11,400
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	1,000	6,280

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX55-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: *W*
Reported: 07/29/13

Project: NA
Event: 307176
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: EMW-57S-0713
ARI ID: 13-14888 WX55B

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	185
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	1.0	5.9

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
WX55-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: *W*
Reported: 07/29/13

Project: NA
Event: 307176
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Total Dissolved Solids	SM2540C	07/16/13	mg/L	< 5.0 U	
Chloride	SM4500-CLE	07/16/13	mg/L	< 1.0 U	FB
FB	Filtration Blank				

LAB CONTROL RESULTS-CONVENTIONALS
WX55-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: *aj*
Reported: 07/29/13

Project: NA
Event: 307176
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Dissolved Solids SM2540C	ICVL	07/16/13	mg/L	487	500	97.4%

STANDARD REFERENCE RESULTS-CONVENTIONALS
WX55-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: *Q*
Reported: 07/29/13

Project: NA
Event: 307176
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Chloride ERA #411010	SM4500-CLE	07/16/13	mg/L	5.2	5.0	104.0%

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 13, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

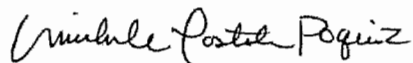
Dear Mr. Staton:

Included are the results from the testing of material submitted on July 11, 2013 from the 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148 project. There are 78 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michele Costales Poquiz
Chemist

Enclosures
SLR0813R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 11, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
307148-01	SLR-1-0713
307148-02	SLR-2-0713
307148-03	HC-20-0713
307148-04	EMW-1S-0713
307148-05	EMW-6S-0713
307148-06	EMW-7S-0713
307148-07	EMW-10D-0713
307148-08	EMW-56D-0713
307148-09	TB-071013

Total Petroleum Hydrocarbons as Gasoline by Method NWTPH-Gx

All quality control requirements were acceptable.

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Compounds by EPA Method 8260C

The calibration result for bromomethane fell outside of acceptance criteria. The values reported are estimates.

The trip blank sample TB-071013 was received with incorrect preservation for the 8260 analysis of vinyl chloride. The result should be considered an estimate.

The presence of acetone in the trip blank sample TB-071013 is likely due to laboratory contamination. The results have been flagged accordingly.

The percent recovery for the matrix spike (MS), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) failed high for bromomethane and chloroethane. The compounds were not identified in the samples, therefore the results are valid.

Semivolatile Organic Compounds by EPA Method 8270D

The reporting limit for phenol was raised due to contamination in the method blank.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

The presence of bis(2-ethylhexyl) phthalate in the samples and method blank is likely due to laboratory contamination. The results have been flagged accordingly.

The presence of diethyl phthalate in the samples HC-20-0713, EMW-6S-0713, and EMW-7S-0713 is likely due to laboratory contamination. The results have been flagged accordingly.

The calibration result for 4-nitrophenol fell outside of acceptance criteria for the samples HC-20-0713, EMW-1S-0713, EMW-6S-0713, EMW-7S-0713, EMW-10D-0713, and EMW-56D-0713. The values reported are estimates.

The percent recovery for the LCS and LCSD fell outside of control limits for 2,4-dimethylphenol. In addition, the relative percent difference (RPD) for the LCS/LCSD fell outside of control limits for 2,4-dinitrophenol. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM

The estimated concentration calculated for acenaphthene was above the valid instrument calibration range for the samples EMW-10D-0713 and EMW-56D-0713. The samples were diluted and reanalyzed. The results from the original analyses and the re-analyses are provided.

The internal standard associated with several analytes exceeded acceptance criteria for the dilution of the sample EMW-56D-0713. The results have been flagged accordingly.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A

The reporting limits for the sample SLR-1-0713 are raised due to sample matrix effects.

Total Metals by EPA Method 200.8

All quality control requirements were acceptable.

Dissolved Metals by EPA Method 200.8

All quality control requirements were acceptable.

Total Mercury by EPA Method 1631E

All quality control requirements were acceptable.

Dissolved Mercury by EPA Method 1631E

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

Total Dissolved Solids by Method 2540C

The samples were sent to Analytical Resources, Inc. (ARI) for total dissolved solids analysis. The report generated by ARI is enclosed.

Chloride by Method SM4500

The samples were sent to ARI for chloride analysis. The report generated by ARI is enclosed.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

Date Extracted: 07/12/13

Date Analyzed: 07/12/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 51-134)
SLR-1-0713 307148-01	<12	97
SLR-2-0713 307148-02	<12	96
HC-20-0713 307148-03	<12	96
EMW-1S-0713 307148-04	<12	100
EMW-6S-0713 307148-05	<12	96
EMW-7S-0713 307148-06	<12	96
EMW-10D-0713 307148-07	<12	97
EMW-56D-0713 307148-08	<12	99
Method Blank 03-1348 MB	<12	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

Date Extracted: 07/12/13

Date Analyzed: 07/26/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
SLR-1-0713 307148-01	<6.9	<52	90
SLR-2-0713 307148-02	<6.9	<52	101
HC-20-0713 307148-03	<6.9	<52	95
EMW-1S-0713 307148-04	<6.9	<52	102
EMW-6S-0713 307148-05	10 x	<52	101
EMW-7S-0713 307148-06	<6.9	<52	103
EMW-10D-0713 307148-07	<6.9	<52	93
EMW-56D-0713 307148-08	<6.9	<52	94
Method Blank 03-1381 MB	<6.9	<52	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SLR-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-01
Date Analyzed:	07/12/13	Data File:	071228.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SLR-2-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-02
Date Analyzed:	07/12/13	Data File:	071229.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HC-20-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-03
Date Analyzed:	07/12/13	Data File:	071230.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-1S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-04
Date Analyzed:	07/12/13	Data File:	071231.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-6S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-05
Date Analyzed:	07/12/13	Data File:	071232.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	0.18
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-7S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-06
Date Analyzed:	07/12/13	Data File:	071233.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-10D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-07
Date Analyzed:	07/12/13	Data File:	071234.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	0.20
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-56D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-08
Date Analyzed:	07/12/13	Data File:	071235.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	0.20
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TB-071013	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-09
Date Analyzed:	07/13/13	Data File:	071236.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 pr	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	5.5 lc	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	03-1312 mb
Date Analyzed:	07/12/13	Data File:	071227.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	SLR-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-01
Date Analyzed:	07/17/13	Data File:	071707.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40	32	162
Phenol-d6	25	10	170
Nitrobenzene-d5	69	50	150
2-Fluorobiphenyl	70	43	158
2,4,6-Tribromophenol	85	43	146
Terphenyl-d14	69	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.64 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	SLR-2-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-02
Date Analyzed:	07/17/13	Data File:	071708.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41	32	162
Phenol-d6	27	10	170
Nitrobenzene-d5	92	50	150
2-Fluorobiphenyl	95	43	158
2,4,6-Tribromophenol	81	43	146
Terphenyl-d14	100	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.53 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	HC-20-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-03
Date Analyzed:	07/17/13	Data File:	071714.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	45	32	162
Phenol-d6	25	10	170
Nitrobenzene-d5	85	50	150
2-Fluorobiphenyl	93	43	158
2,4,6-Tribromophenol	102	43	146
Terphenyl-d14	100	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.080 lc
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.67 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-1S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-04
Date Analyzed:	07/17/13	Data File:	071715.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47	32	162
Phenol-d6	27	10	170
Nitrobenzene-d5	86	50	150
2-Fluorobiphenyl	92	43	158
2,4,6-Tribromophenol	108	43	146
Terphenyl-d14	98	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.58 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-6S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-05
Date Analyzed:	07/17/13	Data File:	071716.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	45	32	162
Phenol-d6	26	10	170
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	99	43	158
2,4,6-Tribromophenol	115	43	146
Terphenyl-d14	119	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.087 lc
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.54 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-7S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-06
Date Analyzed:	07/17/13	Data File:	071717.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	53	32	162
Phenol-d6	33	10	170
Nitrobenzene-d5	91	50	150
2-Fluorobiphenyl	95	43	158
2,4,6-Tribromophenol	118	43	146
Terphenyl-d14	101	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.16 lc
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.79 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-10D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-07
Date Analyzed:	07/17/13	Data File:	071718.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	55	32	162
Phenol-d6	34	10	170
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	96	43	158
2,4,6-Tribromophenol	117	43	146
Terphenyl-d14	101	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	0.13	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 j1	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.51 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-56D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-08
Date Analyzed:	07/17/13	Data File:	071719.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	78	50	150
2-Fluorobiphenyl	90	43	158
2,4,6-Tribromophenol	105	43	146
Terphenyl-d14	99	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	0.10	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.73 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1379 mb
Date Analyzed:	07/18/13	Data File:	071807A.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	35	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	87	50	150
2-Fluorobiphenyl	91	43	158
2,4,6-Tribromophenol	59 ca	43	146
Terphenyl-d14	96	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.30 lc
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SLR-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-01
Date Analyzed:	07/18/13	Data File:	071807.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	50	150
Benzo(a)anthracene-d12	85	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0082
Acenaphthylene	<0.0024
Acenaphthene	0.0093
Fluorene	0.0065
Phenanthrene	0.015
Anthracene	0.0030
Fluoranthene	0.0056
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SLR-2-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-02
Date Analyzed:	07/17/13	Data File:	071706B.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	72	50	150
Benzo(a)anthracene-d12	82	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0046
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	HC-20-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-03
Date Analyzed:	07/17/13	Data File:	071707.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	67	50	150
Benzo(a)anthracene-d12	73	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.013
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	0.0079
Pyrene	0.0082
Benz(a)anthracene	0.0047
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-1S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-04
Date Analyzed:	07/17/13	Data File:	071708.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	50	150
Benzo(a)anthracene-d12	95	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0083
Acenaphthylene	<0.0024
Acenaphthene	0.0065
Fluorene	<0.004
Phenanthrene	0.012
Anthracene	0.0079
Fluoranthene	0.0053
Pyrene	0.0043
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-6S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-05
Date Analyzed:	07/17/13	Data File:	071709.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77	50	150
Benzo(a)anthracene-d12	83	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.013
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-7S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-06
Date Analyzed:	07/17/13	Data File:	071710.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	50	150
Benzo(a)anthracene-d12	86	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.014
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.0068
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-10D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-07
Date Analyzed:	07/17/13	Data File:	071712.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	50	150
Benzo(a)anthracene-d12	95	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0077
Acenaphthylene	<0.0024
Acenaphthene	1.5 ve
Fluorene	0.0044
Phenanthrene	0.014
Anthracene	<0.0028
Fluoranthene	0.0085
Pyrene	0.0092
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-10D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-07 1/10
Date Analyzed:	07/18/13	Data File:	071812.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	213 ds	50	150
Benzo(a)anthracene-d12	112 ds	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.04
Acenaphthylene	<0.024
Acenaphthene	1.8
Fluorene	<0.04
Phenanthrene	<0.066
Anthracene	<0.028
Fluoranthene	<0.046
Pyrene	<0.036
Benz(a)anthracene	<0.042
Chrysene	<0.038
Benzo(a)pyrene	<0.078
Benzo(b)fluoranthene	<0.052
Benzo(k)fluoranthene	<0.076
Indeno(1,2,3-cd)pyrene	<0.07
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-56D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-08
Date Analyzed:	07/17/13	Data File:	071711.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	50	150
Benzo(a)anthracene-d12	88	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0068
Acenaphthylene	<0.0024
Acenaphthene	1.3 ve
Fluorene	<0.004
Phenanthrene	0.012
Anthracene	<0.0028
Fluoranthene	0.0075
Pyrene	0.0083
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-56D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307148-08 1/10
Date Analyzed:	07/18/13	Data File:	071813.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	230 ds J	50	150
Benzo(a)anthracene-d12	82 ds J	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.04
Acenaphthylene	<0.024
Acenaphthene	1.7
Fluorene	<0.04
Phenanthrene	<0.066 J
Anthracene	<0.028 J
Fluoranthene	<0.046 J
Pyrene	<0.036 J
Benz(a)anthracene	<0.042 J
Chrysene	<0.038 J
Benzo(a)pyrene	<0.078
Benzo(b)fluoranthene	<0.052
Benzo(k)fluoranthene	<0.076
Indeno(1,2,3-cd)pyrene	<0.07
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1378 mb2
Date Analyzed:	07/16/13	Data File:	071608.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	50	150
Benzo(a)anthracene-d12	95	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	SLR-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-01 1/2.5
Date Analyzed:	07/30/13	Data File:	32.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.1
Aroclor 1232	<0.1
Aroclor 1016	<0.1
Aroclor 1242	<0.1
Aroclor 1248	<0.1
Aroclor 1254	<0.1
Aroclor 1260	<0.1

Note: The reporting limits are raised due to sample matrix effects.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	SLR-2-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-02 1/0.25
Date Analyzed:	07/30/13	Data File:	34.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	96	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	HC-20-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-03 1/0.25
Date Analyzed:	07/30/13	Data File:	36.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	74	Limit:	Limit:
		50	150

Compounds:	Concentration
	ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-1S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-04 1/0.25
Date Analyzed:	07/30/13	Data File:	38.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	93	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

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ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-6S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-05 1/0.25
Date Analyzed:	07/30/13	Data File:	40.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	74	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-7S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-06 1/0.25
Date Analyzed:	07/30/13	Data File:	42.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-10D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-07 1/0.25
Date Analyzed:	07/30/13	Data File:	44.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	97	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-56D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-08 1/0.25
Date Analyzed:	07/30/13	Data File:	48.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	76	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	03-1380 mb 1/0.25
Date Analyzed:	07/30/13	Data File:	30.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SLR-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-01
Date Analyzed:	07/17/13	Data File:	307148-01.026
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	87	60	125
Indium	82	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	1.68
Nickel	1.39
Copper	<0.34
Zinc	<0.61
Arsenic	1.73
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.106
Barium	23.8
Thallium	<0.074
Lead	0.166

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SLR-2-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-02
Date Analyzed:	07/17/13	Data File:	307148-02.027
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	74	60	125
Indium	78	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.288
Nickel	1.64
Copper	1.37
Zinc	1.87
Arsenic	0.492
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	1.28
Barium	6.51
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	HC-20-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-03
Date Analyzed:	07/17/13	Data File:	307148-03.028
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	85	60	125
Indium	81	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.982
Nickel	2.00
Copper	<0.34
Zinc	9.81
Arsenic	9.36
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.671
Barium	21.0
Thallium	<0.074
Lead	0.349

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-1S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-04
Date Analyzed:	07/17/13	Data File:	307148-04.030
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	92	60	125
Indium	80	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	1.18
Nickel	2.10
Copper	<0.34
Zinc	8.20
Arsenic	11.7
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.268
Barium	32.7
Thallium	<0.074
Lead	0.567

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-6S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-05
Date Analyzed:	07/17/13	Data File:	307148-05.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	81	60	125
Indium	85	60	125
Holmium	93	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.714
Nickel	3.28
Copper	1.37
Zinc	2.20
Arsenic	2.45
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.176
Barium	14.3
Thallium	<0.074
Lead	0.256

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-7S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-06
Date Analyzed:	07/17/13	Data File:	307148-06.032
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	78	60	125
Indium	79	60	125
Holmium	88	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.986
Nickel	1.50
Copper	0.676
Zinc	1.69
Arsenic	1.72
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	16.3
Thallium	<0.074
Lead	0.160

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-07
Date Analyzed:	07/17/13	Data File:	307148-07.033
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	75	60	125
Holmium	79	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.782
Nickel	1.70
Copper	13.3
Zinc	0.981
Arsenic	8.07
Selenium	31.3
Silver	<0.064
Cadmium	0.318
Antimony	<0.052 j
Barium	94.7
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-56D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-08
Date Analyzed:	07/17/13	Data File:	307148-08.034
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	75	60	125
Holmium	79	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.831
Nickel	1.79
Copper	15.2
Zinc	0.672
Arsenic	8.07
Selenium	31.1
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	92.3
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	I3-415 mb
Date Analyzed:	07/17/13	Data File:	I3-415 mb.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	77	60	125
Indium	82	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.138
Nickel	<0.46
Copper	<0.34
Zinc	<0.61
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	<0.26
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	SLR-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-01
Date Analyzed:	07/17/13	Data File:	307148-01.048
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125
Indium	85	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	1.63
Nickel	1.50
Copper	<0.34
Zinc	0.610
Arsenic	1.92
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.110
Barium	24.2
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	SLR-2-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-02
Date Analyzed:	07/17/13	Data File:	307148-02.049
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	75	60	125
Indium	75	60	125
Holmium	80	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.477
Nickel	2.32
Copper	1.91
Zinc	2.30
Arsenic	0.509
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	1.48
Barium	6.54
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	HC-20-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-03
Date Analyzed:	07/17/13	Data File:	307148-03.050
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	93	60	125
Indium	81	60	125
Holmium	85	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.827
Nickel	2.91
Copper	<0.34
Zinc	14.6
Arsenic	11.0
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.487
Barium	22.0
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-1S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-04
Date Analyzed:	07/17/13	Data File:	307148-04.052
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	109	60	125
Indium	85	60	125
Holmium	88	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.922
Nickel	2.29
Copper	<0.34
Zinc	8.16
Arsenic	12.5
Selenium	0.573
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.256
Barium	31.0
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-6S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-05
Date Analyzed:	07/17/13	Data File:	307148-05.053
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	87	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.433
Nickel	4.20
Copper	<0.34
Zinc	2.17
Arsenic	2.76
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.203
Barium	13.6
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-7S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-06
Date Analyzed:	07/17/13	Data File:	307148-06.054
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125
Indium	90	60	125
Holmium	97	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.712
Nickel	2.05
Copper	<0.34
Zinc	1.18
Arsenic	1.77
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	14.1
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-10D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-07
Date Analyzed:	07/17/13	Data File:	307148-07.055
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	72	60	125
Holmium	77	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.748
Nickel	1.87
Copper	12.4
Zinc	<0.61
Arsenic	8.91
Selenium	34.4
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	94.4
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-56D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307148-08
Date Analyzed:	07/17/13	Data File:	307148-08.056
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	80	60	125
Indium	61	60	125
Holmium	65	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	1.00
Nickel	2.19
Copper	15.7
Zinc	0.872
Arsenic	10.8
Selenium	41.4
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.066
Barium	113
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	I3-413 mb
Date Analyzed:	07/17/13	Data File:	I3-413 mb.047
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	89	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.138
Nickel	<0.46
Copper	<0.34
Zinc	<0.61
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	<0.26
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

Date Extracted: 07/12/13

Date Analyzed: 07/15/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Total Mercury</u>
SLR-1-0713 307148-01	0.0012
SLR-2-0713 307148-02	0.0012
HC-20-0713 307148-03	0.0011
EMW-1S-0713 307148-04	0.0014
EMW-6S-0713 307148-05	0.0012
EMW-7S-0713 307148-06	0.00093
EMW-10D-0713 307148-07	0.00033
EMW-56D-0713 307148-08	0.00019
Method Blank	<0.00015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

Date Extracted: 07/12/13

Date Analyzed: 07/15/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Dissolved Mercury</u>
SLR-1-0713 307148-01	0.00066
SLR-2-0713 307148-02	0.00084
HC-20-0713 307148-03	0.00042
EMW-1S-0713 307148-04	0.00052
EMW-6S-0713 307148-05	0.00048
EMW-7S-0713 307148-06	0.00043
EMW-10D-0713 307148-07	0.00060
EMW-56D-0713 307148-08	0.00034
Method Blank	<0.00015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

Date Extracted: NA

Date Analyzed: 07/17/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
SLR-1-0713 307148-01	<10
SLR-2-0713 307148-02	<10
HC-20-0713 307148-03	11.2
EMW-1S-0713 307148-04	36.4
EMW-6S-0713 307148-05	<10
EMW-7S-0713 307148-06	20.5
EMW-10D-0713 307148-07	60.4
EMW-56D-0713 307148-08	60.0
Method Blank	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 307129-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<12	<12	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	92	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	500	75	87	58-134	15

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 307148-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<0.16	93	55-144
Chloromethane	ug/L (ppb)	50	<0.22	88	67-131
Vinyl chloride	ug/L (ppb)	50	<0.13	93	61-139
Bromomethane	ug/L (ppb)	50	<0.2	858 vo	66-129
Chloroethane	ug/L (ppb)	50	<0.18	159 vo	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<0.17	123	71-128
Acetone	ug/L (ppb)	250	<2.6	106	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<0.19	102	71-123
Methylene chloride	ug/L (ppb)	50	<3	104	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<0.13	101	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	97	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<0.18	98	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<0.3	117	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	99	73-119
Chloroform	ug/L (ppb)	50	<0.24	92	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<0.94	105	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<0.11	96	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	105	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<0.26	98	67-121
Carbon tetrachloride	ug/L (ppb)	50	<0.24	110	72-123
Benzene	ug/L (ppb)	50	<0.13	93	79-109
Trichloroethene	ug/L (ppb)	50	<0.17	96	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<0.32	100	80-111
Bromodichloromethane	ug/L (ppb)	50	<0.38	109	78-117
Dibromomethane	ug/L (ppb)	50	<0.28	103	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<1.3	116	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<0.2	109	76-120
Toluene	ug/L (ppb)	50	<0.13	93	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<0.34	100	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.28	103	81-111
2-Hexanone	ug/L (ppb)	250	<1	114	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	98	81-111
Tetrachloroethene	ug/L (ppb)	50	<0.28	90	72-113
Dibromochloromethane	ug/L (ppb)	50	<0.24	106	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<0.24	106	83-114
Chlorobenzene	ug/L (ppb)	50	<0.1	92	75-115
Ethylbenzene	ug/L (ppb)	50	<0.16	95	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.32	108	78-122
m,p-Xylene	ug/L (ppb)	100	<0.5	95	63-128
o-Xylene	ug/L (ppb)	50	<0.22	96	64-129
Styrene	ug/L (ppb)	50	<0.22	99	70-122
Isopropylbenzene	ug/L (ppb)	50	<0.15	97	76-118
Bromoform	ug/L (ppb)	50	<0.22	108	49-138
n-Propylbenzene	ug/L (ppb)	50	<0.14	96	74-117
Bromobenzene	ug/L (ppb)	50	<0.18	94	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<0.18	98	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.24	105	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.28	101	72-119
2-Chlorotoluene	ug/L (ppb)	50	<0.13	93	77-114
4-Chlorotoluene	ug/L (ppb)	50	<0.16	96	81-109
tert-Butylbenzene	ug/L (ppb)	50	<0.15	96	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<0.11	96	74-118
sec-Butylbenzene	ug/L (ppb)	50	<0.12	95	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<0.15	95	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	0.20	91	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.094	90	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.13	90	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.44	112	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<0.34	84	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<0.46	79	67-120
Naphthalene	ug/L (ppb)	50	<0.28	100	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.38	96	79-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	94	94	54-149	0
Chloromethane	ug/L (ppb)	50	91	91	67-133	0
Vinyl chloride	ug/L (ppb)	50	95	95	73-132	0
Bromomethane	ug/L (ppb)	50	890 vo	899 vo	69-123	1
Chloroethane	ug/L (ppb)	50	161 vo	160 vo	68-126	1
Trichlorofluoromethane	ug/L (ppb)	50	122	123	70-132	1
Acetone	ug/L (ppb)	250	105	103	44-145	2
1,1-Dichloroethene	ug/L (ppb)	50	102	103	75-119	1
Methylene chloride	ug/L (ppb)	50	101	102	63-132	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	103	102	70-122	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	98	76-118	1
1,1-Dichloroethane	ug/L (ppb)	50	100	100	80-116	0
2,2-Dichloropropane	ug/L (ppb)	50	126	122	62-141	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	101	81-111	0
Chloroform	ug/L (ppb)	50	93	93	81-109	0
2-Butanone (MEK)	ug/L (ppb)	250	101	102	53-140	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	97	97	79-109	0
1,1,1-Trichloroethane	ug/L (ppb)	50	106	106	80-116	0
1,1-Dichloropropene	ug/L (ppb)	50	99	100	78-112	1
Carbon tetrachloride	ug/L (ppb)	50	112	112	72-128	0
Benzene	ug/L (ppb)	50	95	95	81-108	0
Trichloroethene	ug/L (ppb)	50	97	96	77-108	1
1,2-Dichloropropane	ug/L (ppb)	50	102	103	82-109	1
Bromodichloromethane	ug/L (ppb)	50	109	112	76-120	3
Dibromomethane	ug/L (ppb)	50	102	103	80-110	1
4-Methyl-2-pentanone	ug/L (ppb)	250	113	113	59-142	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	113	115	76-128	2
Toluene	ug/L (ppb)	50	95	96	83-108	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	106	107	76-128	1
1,1,2-Trichloroethane	ug/L (ppb)	50	103	104	82-110	1
2-Hexanone	ug/L (ppb)	250	107	109	53-145	2
1,3-Dichloropropane	ug/L (ppb)	50	99	101	83-110	2
Tetrachloroethene	ug/L (ppb)	50	92	92	78-109	0
Dibromochloromethane	ug/L (ppb)	50	107	109	63-140	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	107	109	85-113	2
Chlorobenzene	ug/L (ppb)	50	93	94	84-108	1
Ethylbenzene	ug/L (ppb)	50	97	98	84-110	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	111	113	76-125	2
m,p-Xylene	ug/L (ppb)	100	97	98	84-112	1
o-Xylene	ug/L (ppb)	50	99	99	82-113	0
Styrene	ug/L (ppb)	50	101	102	84-116	1
Isopropylbenzene	ug/L (ppb)	50	100	100	81-122	0
Bromoform	ug/L (ppb)	50	108	113	40-161	5
n-Propylbenzene	ug/L (ppb)	50	101	102	81-115	1
Bromobenzene	ug/L (ppb)	50	97	98	80-113	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	103	103	83-117	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	106	107	79-118	1
1,2,3-Trichloropropane	ug/L (ppb)	50	102	102	74-116	0
2-Chlorotoluene	ug/L (ppb)	50	97	98	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	99	100	81-113	1
tert-Butylbenzene	ug/L (ppb)	50	101	101	81-119	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	101	83-116	1
sec-Butylbenzene	ug/L (ppb)	50	101	101	83-116	0
p-Isopropyltoluene	ug/L (ppb)	50	100	99	82-119	1
1,3-Dichlorobenzene	ug/L (ppb)	50	94	95	83-111	1
1,4-Dichlorobenzene	ug/L (ppb)	50	93	94	82-109	1
1,2-Dichlorobenzene	ug/L (ppb)	50	94	94	83-111	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	111	111	62-133	0
1,2,4-Trichlorobenzene	ug/L (ppb)	50	90	90	77-117	0
Hexachlorobutadiene	ug/L (ppb)	50	85	83	74-118	2
Naphthalene	ug/L (ppb)	50	103	102	75-131	1
1,2,3-Trichlorobenzene	ug/L (ppb)	50	103	101	82-115	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	10	35	39	18-52	11
Bis(2-chloroethyl) ether	ug/L (ppb)	10	80	87	52-113	8
2-Chlorophenol	ug/L (ppb)	10	76	86	50-110	12
1,3-Dichlorobenzene	ug/L (ppb)	10	75	82	45-109	9
1,4-Dichlorobenzene	ug/L (ppb)	10	75	83	44-118	10
1,2-Dichlorobenzene	ug/L (ppb)	10	75	84	46-116	11
Benzyl alcohol	ug/L (ppb)	10	74	84	42-100	13
Bis(2-chloroisopropyl) ether	ug/L (ppb)	10	76	87	51-124	13
2-Methylphenol	ug/L (ppb)	10	62	69	38-100	11
Hexachloroethane	ug/L (ppb)	10	75	83	42-117	10
N-Nitroso-di-n-propylamine	ug/L (ppb)	10	80	88	48-124	10
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	10	62	70	48-87	12
Nitrobenzene	ug/L (ppb)	10	82	89	50-118	8
Isophorone	ug/L (ppb)	10	86	95	55-116	10
2-Nitrophenol	ug/L (ppb)	10	92	105	42-127	13
2,4-Dimethylphenol	ug/L (ppb)	10	29 vo	28 vo	45-100	4
Benzoic acid	ug/L (ppb)	65	41	40	10-46	1
Bis(2-chloroethoxy)methane	ug/L (ppb)	10	82	90	55-115	9
2,4-Dichlorophenol	ug/L (ppb)	10	85	94	55-113	10
1,2,4-Trichlorobenzene	ug/L (ppb)	10	76	83	50-109	9
Hexachlorobutadiene	ug/L (ppb)	10	76	84	50-109	10
4-Chloroaniline	ug/L (ppb)	20	76	80	30-109	5
4-Chloro-3-methylphenol	ug/L (ppb)	10	86	96	54-114	11
2-Methylnaphthalene	ug/L (ppb)	10	79	88	53-113	11
Hexachlorocyclopentadiene	ug/L (ppb)	10	47	40	26-94	16
2,4,6-Trichlorophenol	ug/L (ppb)	10	89	96	46-114	8
2,4,5-Trichlorophenol	ug/L (ppb)	10	92	99	57-122	7
2-Chloronaphthalene	ug/L (ppb)	10	83	90	52-112	8
2-Nitroaniline	ug/L (ppb)	10	97	108	47-128	11
Dimethyl phthalate	ug/L (ppb)	10	91	100	55-116	9
2,6-Dinitrotoluene	ug/L (ppb)	10	97	108	49-126	11
3-Nitroaniline	ug/L (ppb)	20	102	104	21-125	2
2,4-Dinitrophenol	ug/L (ppb)	10	91	113	29-130	22 vo
Dibenzofuran	ug/L (ppb)	10	84	93	53-113	10
2,4-Dinitrotoluene	ug/L (ppb)	10	90	100	48-129	11
4-Nitrophenol	ug/L (ppb)	10	46	48	12-59	4
Diethyl phthalate	ug/L (ppb)	10	87	97	55-116	11
4-Chlorophenyl phenyl ether	ug/L (ppb)	10	85	94	52-115	10
N-Nitrosodiphenylamine	ug/L (ppb)	10	84	92	51-112	9
4-Nitroaniline	ug/L (ppb)	20	99	104	42-115	5
4,6-Dinitro-2-methylphenol	ug/L (ppb)	10	95	108	40-128	13
4-Bromophenyl phenyl ether	ug/L (ppb)	10	86	95	53-114	10
Hexachlorobenzene	ug/L (ppb)	10	86	95	54-115	10
Pentachlorophenol	ug/L (ppb)	10	85	95	49-114	11
Carbazole	ug/L (ppb)	10	89	94	54-115	5
Di-n-butyl phthalate	ug/L (ppb)	10	95	103	54-115	8
Benzyl butyl phthalate	ug/L (ppb)	10	98	110	53-122	12
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	112	101	54-122	10
Di-n-octyl phthalate	ug/L (ppb)	10	86	96	50-131	11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	78	75	67-116	4
Acenaphthylene	ug/L (ppb)	1	94	91	65-119	3
Acenaphthene	ug/L (ppb)	1	90	88	66-118	2
Fluorene	ug/L (ppb)	1	96	95	64-125	1
Phenanthrene	ug/L (ppb)	1	91	93	67-120	2
Anthracene	ug/L (ppb)	1	94	95	65-122	1
Fluoranthene	ug/L (ppb)	1	96	101	65-127	5
Pyrene	ug/L (ppb)	1	97	99	62-130	2
Benz(a)anthracene	ug/L (ppb)	1	92	94	60-118	2
Chrysene	ug/L (ppb)	1	95	97	66-125	2
Benzo(b)fluoranthene	ug/L (ppb)	1	85	90	55-135	6
Benzo(k)fluoranthene	ug/L (ppb)	1	81	81	62-125	0
Benzo(a)pyrene	ug/L (ppb)	1	83	85	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	85	87	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	1	82	84	37-133	2
Benzo(g,h,i)perylene	ug/L (ppb)	1	84	85	34-135	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED
BIPHENYLS AS
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.625	99	96	70-130	3
Aroclor 1260	ug/L (ppb)	0.625	92	104	70-130	10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 307129-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.098	112	120	67-145	6
Chromium	ug/L (ppb)	20	0.840	105	111	64-132	6
Nickel	ug/L (ppb)	20	5.82	99 b	103 b	61-128	4 b
Copper	ug/L (ppb)	20	14.4	99 b	103 b	63-124	4 b
Zinc	ug/L (ppb)	50	159	97 b	113 b	55-141	15 b
Arsenic	ug/L (ppb)	10	0.954	102	102	60-150	0
Selenium	ug/L (ppb)	5	0.785	103	104	43-178	1
Silver	ug/L (ppb)	5	<0.064	99	99	71-115	0
Cadmium	ug/L (ppb)	5	<0.25	102	104	83-116	2
Antimony	ug/L (ppb)	20	0.677	99	102	62-125	3
Barium	ug/L (ppb)	50	41.4	110 b	110 b	79-126	0 b
Thallium	ug/L (ppb)	5	<0.074	104	107	73-119	3
Lead	ug/L (ppb)	10	18.5	107 b	116 b	79-121	8 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	106	73-135
Chromium	ug/L (ppb)	20	104	80-119
Nickel	ug/L (ppb)	20	105	79-122
Copper	ug/L (ppb)	20	106	81-119
Zinc	ug/L (ppb)	50	99	76-124
Arsenic	ug/L (ppb)	10	99	80-111
Selenium	ug/L (ppb)	5	103	81-119
Silver	ug/L (ppb)	5	105	80-116
Cadmium	ug/L (ppb)	5	103	83-113
Antimony	ug/L (ppb)	20	96	79-108
Barium	ug/L (ppb)	50	107	83-117
Thallium	ug/L (ppb)	5	103	78-116
Lead	ug/L (ppb)	10	105	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 307106-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.098	106	104	67-145	2
Chromium	ug/L (ppb)	20	0.319	95	92	64-132	3
Nickel	ug/L (ppb)	20	1.33	89	89	61-128	0
Copper	ug/L (ppb)	20	<0.34	88	87	63-124	1
Zinc	ug/L (ppb)	50	1.91	89	88	55-141	1
Arsenic	ug/L (ppb)	10	29.5	126 b	106 b	60-150	17 b
Selenium	ug/L (ppb)	5	0.650	109	106	43-178	3
Silver	ug/L (ppb)	5	<0.064	102	99	71-115	3
Cadmium	ug/L (ppb)	5	<0.25	105	101	83-116	4
Antimony	ug/L (ppb)	20	0.067	104	100	62-125	4
Barium	ug/L (ppb)	50	19.6	108 b	103 b	79-126	5 b
Thallium	ug/L (ppb)	5	<0.074	101	97	73-119	4
Lead	ug/L (ppb)	10	<0.144	101	96	79-121	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	108	73-135
Chromium	ug/L (ppb)	20	100	80-119
Nickel	ug/L (ppb)	20	101	79-122
Copper	ug/L (ppb)	20	98	81-119
Zinc	ug/L (ppb)	50	97	76-124
Arsenic	ug/L (ppb)	10	92	80-111
Selenium	ug/L (ppb)	5	99	81-119
Silver	ug/L (ppb)	5	99	80-116
Cadmium	ug/L (ppb)	5	96	83-113
Antimony	ug/L (ppb)	20	89	79-108
Barium	ug/L (ppb)	50	98	83-117
Thallium	ug/L (ppb)	5	92	78-116
Lead	ug/L (ppb)	10	95	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307148-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	0.0012	84	86	63-132	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	94	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
DISSOLVED MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307148-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	0.00066	84	83	63-132	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	97	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Avenue Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307148

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Laboratory Code: 307166-09 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
TSS	mg/L	<10	<10	nm	0-20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L	50	86	61-131

Data Qualifiers & Definitions

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



Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 25, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 307148
ARI Job No.: WX33

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted eight water samples on July 12, 2013, under ARI job WX33. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for chloride and TDS, as requested on the COC.

There were no anomalies associated with the analyses of these samples.

An electronic copy of this report and all associated raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,

ANALYTICAL RESOURCES, INC.


Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile WX33

Enclosures

SAMPLE CHAIN OF CUSTODY

Send Report To Michele Costales Poquiz
 Company Friedman & Bruya, Inc.
 Address 3012 16th Ave. W.
 City, State, ZIP Seattle, WA 98119
 Phone # (206) 285-8282 Fax # (206) 283-5044
 Email Address mpoquiz@friedmanandbruya.com

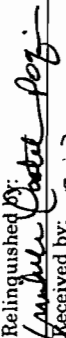
SUBCONTRACTOR Analytical Resources, Inc. (ARI)	
PROJECT NAME/NO. 307148	PO # C-460
REMARKS Please e-mail results ELECTRONIC DATA REQUESTED (EIM)	

Page # 1 of 1

TURNAROUND TIME
 Standard Turnaround
 RUSH
 Rush charges authorized by: _____

SAMPLE DISPOSAL
 Dispose after 30 days
 Return samples
 Will call with instructions
 Samples Received at 14 °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes		
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HPS	Hexavalent Cr by 7196A	Total Organic Carbon by 9060M	TDS by 2540C	Chloride by SM4500			
SLR-1-0713		07/11/13	0821	water	2								X	X				
SLR-2-0713			1021										X	X				
HC-20-0713			0952										X	X				
EMW-1S-0713			0937										X	X				
EMW-6S-0713		07/10/13	1456										X	X				
EMW-7S-0713		07/11/13	0828										X	X				
EMW-10D-0713		07/10/13	1532										X	X				
EMW-56D-0713			1540										X	X				
IS-071013		07/10/13																

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044	SIGNATURE  Relinquished by: <u>Michele Costales Poquiz</u> Received by: _____ Relinquished by: _____ Received by: _____	PRINT NAME Michele Costales Poquiz Tanya In (for extra)	COMPANY F&B ARI	DATE 7/11/13 7-10-13	TIME 4:53 PM 11225
---	---	---	-----------------------	----------------------------	--------------------------



ARI Client F3B
 COC No(s) _____
 Assigned ARI Job No: WX33 (NA)

Project Name: _____
 Delivered by: Fed-Ex UPS (Courier) Hand Delivered Other Postal Exp
 Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc) YES NO
 Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 1.9
 If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by: TS Date: 7-12-13 Time: 1025
 Complete custody forms and attach all shipping documents

Log-In Phase:



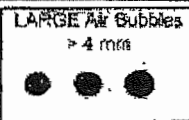
Was a temperature blank included in the cooler? YES NO
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? NA YES NO
 Were all bottles sealed in individual plastic bags? YES NO
 Did all bottles arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? YES NO
 Did the number of containers listed on COC match with the number of containers received? YES NO
 Did all bottle labels and tags agree with custody papers? YES NO
 Were all bottles used correct for the requested analyses? YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO
 Date VOC Trip Blank was made at ARI... NA
 Was Sample Split by ARI: NA YES Date/Time _____ Equipment: _____ Split by: _____

Samples Logged by: JIN Date: 7/12/13 Time: 1052
 ** Notify Project Manager of discrepancies or concerns **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

Sample ID Cross Reference Report



ARI Job No: WX33
Client: Friedman and Bruya, Inc
Project Event: 307148
Project Name: N/A

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. SLR-1-0713	WX33A	13-14639	Water	07/11/13 08:21	07/12/13 10:25
2. SLR-2-0713	WX33B	13-14640	Water	07/11/13 10:21	07/12/13 10:25
3. HC-20-0713	WX33C	13-14641	Water	07/11/13 09:52	07/12/13 10:25
4. EMW-1S-0713	WX33D	13-14642	Water	07/11/13 09:37	07/12/13 10:25
5. EMW-6S-0713	WX33E	13-14643	Water	07/10/13 14:56	07/12/13 10:25
6. EMW-7S-0713	WX33F	13-14644	Water	07/11/13 08:28	07/12/13 10:25
7. EMW-10D-0713	WX33G	13-14645	Water	07/10/13 15:32	07/12/13 10:25
8. EMW-56D-0713	WX33H	13-14646	Water	07/10/13 15:40	07/12/13 10:25

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized
Reported: 07/24/13

A handwritten signature in black ink, appearing to be 'JF' or similar, written over the 'Data Release Authorized' text.

Project: NA
Event: 307148
Date Sampled: 07/11/13
Date Received: 07/12/13


Client ID: SLR-1-0713
ARI ID: 13-14639 WX33A

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	10.0	342
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	2.0	14.4

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/24/13

Project: NA
Event: 307148
Date Sampled: 07/11/13
Date Received: 07/12/13

Client ID: SLR-2-0713
ARI ID: 13-14640 WX33B

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	5.0	168
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	1.0	1.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized
Reported: 07/24/13

Project: NA
Event: 307148
Date Sampled: 07/11/13
Date Received: 07/12/13

Client ID: HC-20-0713
ARI ID: 13-14641 WX33C

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	5.0	196
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	1.0	4.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized
Reported: 07/24/13

A handwritten signature in black ink, appearing to be 'M. Friedman', written over the 'Data Release Authorized' text.

Project: NA
Event: 307148
Date Sampled: 07/11/13
Date Received: 07/12/13

Client ID: EMW-1S-0713
ARI ID: 13-14642 WX33D

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	10.0	339
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	1.0	5.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/24/13

Project: NA
Event: 307148
Date Sampled: 07/10/13
Date Received: 07/12/13

Client ID: EMW-6S-0713
ARI ID: 13-14643 WX33E

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	10.0	207
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	1.0	5.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/24/13

A handwritten signature in black ink, appearing to be 'WJ' or similar, written over the 'Data Release Authorized' text.

Project: NA
Event: 307148
Date Sampled: 07/11/13
Date Received: 07/12/13

Client ID: EMW-7S-0713
ARI ID: 13-14644 WX33F

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	5.0	254
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	1.0	6.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/24/13

A handwritten signature in black ink, appearing to be 'J. [unclear]', written over the 'Data Release Authorized' text.

Project: NA
Event: 307148
Date Sampled: 07/10/13
Date Received: 07/12/13


Client ID: EMW-10D-0713
ARI ID: 13-14645 WX33G

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	100	4,940
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	2,660

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/24/13

Project: NA
Event: 307148
Date Sampled: 07/10/13
Date Received: 07/12/13

Client ID: EMW-56D-0713
ARI ID: 13-14646 WX33H

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/12/13 071213#1	SM2540C	mg/L	100	10,800
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	2,680

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized
Reported: 07/24/13


A handwritten signature in black ink, appearing to be 'JK' or similar, written over the 'Data Release Authorized' text.

Project: NA
Event: 307148
Date Sampled: 07/11/13
Date Received: 07/12/13

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WX33A Client ID: SLR-1-0713							
Chloride	SM4500-CLE	07/15/13	mg/L	14.4	39.7	25.0	101.2%

REPLICATE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc




Matrix: Water
Data Release Authorized: 
Reported: 07/24/13

Project: NA
Event: 307148
Date Sampled: 07/11/13
Date Received: 07/12/13

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WX33A Client ID: SLR-1-0713						
Total Dissolved Solids	SM2540C	07/12/13	mg/L	342	339	0.9%
Chloride	SM4500-CLE	07/15/13	mg/L	14.4	14.4	0.0%

LAB CONTROL RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc




Matrix: Water
Data Release Authorized: 
Reported: 07/24/13

Project: NA
Event: 307148
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Dissolved Solids SM2540C	ICVL	07/12/13	mg/L	518	500	103.6%

METHOD BLANK RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/24/13


Project: NA
Event: 307148
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Total Dissolved Solids	SM2540C	07/12/13	mg/L	< 5.0 U	
Chloride	SM4500-CLE	07/15/13	mg/L	< 1.0 U	FB

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
WX33-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/24/13

Project: NA
Event: 307148
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Chloride ERA #411010	SM4500-CLE	07/15/13	mg/L	5.0	5.0	100.0%

207148

SAMPLE CHAIN OF CUSTODY K7-AE 07-11-13

15/BI4/EO4

Send Report To MIKE STATION

Company SLR INTERNATIONAL CORPORATION

Address 22118 20TH AVE SE, C-202

City, State, ZIP BOTHELL, WA 98021

Phone # (425) 422-8800 Fax # (425) 422-8488

SAMPLERS (signature)

PROJECT NAME/NO.

8TH AVENUE TERMINUS, INC
CROWLEY RT- FS
101.00205.00030

REMARKS NWTPH-Dx FOR DRO & HO AFTER
SILICA GEL CLEANUP

PO#
101.00205.00030

Page # of

TURNAROUND TIME

Standard (2 Weeks)

RUSH

Rush charges authorized by

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED																
SLR-1-0713	01A-R	7/11/13	0821	Water	1.8	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Total Metals (Prior to Pollutant + GAL) by 2008	Total Mercury by 1631E	Dissolved Metals (Prior to Pollutant + GAL) by 2008	Classed Metals by 1631E	PCBS by 80824	PAHs by 80700-SM	TSS by 2540D	TDS by 2540C	Chloride by SM500		
SLR-2-0713	02		1021																			
HC-20-0713	03		0952																			
EMW-1S-0713	04		0937																			
EMW-6S-0713	05	7/10/13	1456																			
EMW-7S-0713	06	7/11/13	0828																			
EMW-10D-0713	07	7/10/13	1532																			
EMW-56D-0713	08		1540	↓																		
TB-071013	09A-B	7/10/13	1631	Water	2																	

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	CHRIS LEE	SLR	7/11/13	12:35
Received by:	VINTA	FBI	7/11/13	12:25
Relinquished by:				
Received by:		Samples received at		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 13, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

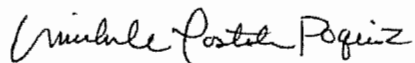
Dear Mr. Staton:

Included are the results from the testing of material submitted on July 11, 2013 from the 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152 project. There are 93 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michele Costales Poquiz
Chemist

Enclosures
SLR0813R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 11, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. 8th Ave Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307152 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
307152-01	CMW-1-0713
307152-02	CMW-4-0713
307152-03	SLR-7-0713
307152-04	EMW-3S-0713
307152-05	EMW-4D-0713
307152-06	EMW-13S-0713
307152-07	EMW-14D-0713
307152-08	EMW-15D-0713
307152-09	EMW-16D-0713
307152-10	TB-071113

Total Petroleum Hydrocarbons as Gasoline by Method NWTPH-Gx

All quality control requirements were acceptable.

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Compounds by EPA Method 8260C

The calibration result for bromomethane fell outside of acceptance criteria. The values reported are estimates.

The sample TB-071113 was received with incorrect preservation for the 8260 analysis of vinyl chloride. The result should be considered an estimate.

The presence of acetone in the sample TB-071113 is likely due to laboratory contamination. The results have been flagged accordingly.

The percent recovery for the matrix spike (MS), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) failed high for several compounds. The compounds were not identified in the samples, therefore the results are valid.

Semivolatile Organic Compounds by EPA Method 8270D

The surrogate 2,4,6-tribromophenol fell outside of acceptance criteria. The values reported are estimates.

The reporting limit for phenol was raised due to contamination in the method blank.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

The presence of bis(2-ethylhexyl) phthalate in the samples and method blank is likely due to laboratory contamination. The results have been flagged accordingly.

The internal standard associated with several analytes exceeded acceptance criteria for the samples EMW-14D-0713, EMW-15D-0713, and EMW-16D-0713. The results have been flagged accordingly.

The percent recovery for the LCS and LCSD exceeded acceptance criteria for several compounds. In addition, the relative percent difference (RPD) for the LCS/LCSD exceeded acceptance criteria for several compounds. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM

The internal standard associated with several analytes exceeded acceptance criteria for the sample EMW-13S-0713. The sample was diluted and reanalyzed. The results of the original analysis and the reanalysis are included.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A

All quality control requirements were acceptable.

Total Metals by EPA Method 200.8

The reporting limit for cadmium was raised due to interference.

The internal standard associated with several analytes exceeded acceptance criteria for the samples CMW-1-0713, CMW-4-0713, EMW-13S-0713, EMW-15D-0713, and EMW-16D-0713. The samples were diluted and reanalyzed. The results of the original analyses and the reanalyses are included.

Dissolved Metals by EPA Method 200.8

The reporting limit for cadmium was raised due to interference.

The internal standard associated with several analytes exceeded acceptance criteria for the samples EMW-14D-0713, EMW-15D-0713, and EMW-16D-0713. The samples were diluted and reanalyzed. The results of the original analyses and the reanalyses are included.

Total Mercury by EPA Method 1631E

The detection limit has been raised due to trace level laboratory contamination.

Dissolved Mercury by EPA Method 1631E

The detection limit has been raised due to trace level laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

Total Suspended Solids by Method 2540D

All quality control requirements were acceptable.

Total Dissolved Solids by Method 2540C

The samples were sent to Analytical Resources, Inc. (ARI) for total dissolved solids analysis. The report generated by ARI is enclosed.

Chloride by Method SM4500

The samples were sent to ARI for chloride analysis. The report generated by ARI is enclosed.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

Date Extracted: 07/12/13

Date Analyzed: 07/12/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
CMW-1-0713 307152-01	<12	96
CMW-4-0713 307152-02	<12	94
SLR-7-0713 307152-03	<12	97
EMW-3S-0713 307152-04	<12	95
EMW-4D-0713 307152-05	<12	98
EMW-13S-0713 307152-06	<12	97
EMW-14D-0713 307152-07	<12	95
EMW-15D-0713 307152-08	<12	100
EMW-16D-0713 307152-09	<12	96
Method Blank 03-1350 MB	<12	96

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

Date Extracted: 07/12/13

Date Analyzed: 07/26/13 and 07/27/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
CMW-1-0713 307152-01	<6.9	<52	91
CMW-4-0713 307152-02	<6.9	<52	92
SLR-7-0713 307152-03	<6.9	<52	96
EMW-3S-0713 307152-04	<6.9	<52	99
EMW-4D-0713 307152-05	<6.9	<52	104
EMW-13S-0713 307152-06	23 x	<52	96
EMW-14D-0713 307152-07	<6.9	<52	100
EMW-15D-0713 307152-08	<6.9	<52	95
EMW-16D-0713 307152-09	<6.9	<52	95
Method Blank 03-1381 MB	<6.9	<52	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-01
Date Analyzed:	07/15/13	Data File:	071509.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	0.28	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-02
Date Analyzed:	07/15/13	Data File:	071510.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SLR-7-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-03
Date Analyzed:	07/15/13	Data File:	071511.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-3S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-04
Date Analyzed:	07/15/13	Data File:	071512.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-4D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-05
Date Analyzed:	07/15/13	Data File:	071513.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	44 lc	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-06
Date Analyzed:	07/15/13	Data File:	071514.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-14D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-07
Date Analyzed:	07/15/13	Data File:	071515.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-08
Date Analyzed:	07/15/13	Data File:	071516.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	0.25	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-09
Date Analyzed:	07/15/13	Data File:	071517.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TB-071113	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-10
Date Analyzed:	07/15/13	Data File:	071518.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 pr	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	4.7 lc	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	03-1315 mb
Date Analyzed:	07/15/13	Data File:	071507.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-01
Date Analyzed:	07/19/13	Data File:	071904.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	58	32	162
Phenol-d6	37	10	170
Nitrobenzene-d5	95	50	150
2-Fluorobiphenyl	98	43	158
2,4,6-Tribromophenol	116 ca	43	146
Terphenyl-d14	104	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.30 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	0.045
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-02
Date Analyzed:	07/19/13	Data File:	071905.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	36	32	162
Phenol-d6	26	10	170
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	99	43	158
2,4,6-Tribromophenol	110 ca	43	146
Terphenyl-d14	105	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.28 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	SLR-7-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-03
Date Analyzed:	07/19/13	Data File:	071906.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	44	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	95	50	150
2-Fluorobiphenyl	96	43	158
2,4,6-Tribromophenol	122 ca	43	146
Terphenyl-d14	100	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.31 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-3S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-04
Date Analyzed:	07/19/13	Data File:	071907.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	94	43	158
2,4,6-Tribromophenol	91 ca	43	146
Terphenyl-d14	103	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.090 lc
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.27 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-4D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-05
Date Analyzed:	07/19/13	Data File:	071925.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	50	32	162
Phenol-d6	32	10	170
Nitrobenzene-d5	96	50	150
2-Fluorobiphenyl	93	43	158
2,4,6-Tribromophenol	119 ca	43	146
Terphenyl-d14	107	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	0.10	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.30 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-06
Date Analyzed:	07/19/13	Data File:	071927.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47	32	162
Phenol-d6	31	10	170
Nitrobenzene-d5	98	50	150
2-Fluorobiphenyl	98	43	158
2,4,6-Tribromophenol	117 ca	43	146
Terphenyl-d14	107	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	0.070	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	0.19
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	0.20
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.35 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-14D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-07
Date Analyzed:	07/19/13	Data File:	071928.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	48	32	162
Phenol-d6	30	10	170
Nitrobenzene-d5	96	50	150
2-Fluorobiphenyl	99	43	158
2,4,6-Tribromophenol	122 ca	43	146
Terphenyl-d14	124	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	0.042	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	0.060
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.33 fb
2-Methylnaphthalene	0.060	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-08
Date Analyzed:	07/20/13	Data File:	071929.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	51	32	162
Phenol-d6	31	10	170
Nitrobenzene-d5	99	50	150
2-Fluorobiphenyl	98	43	158
2,4,6-Tribromophenol	123 ca	43	146
Terphenyl-d14	114 J	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 J	Benzyl butyl phthalate	<0.086 J
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.33 fb J
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-09
Date Analyzed:	07/19/13	Data File:	071912.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	87	50	150
2-Fluorobiphenyl	93	43	158
2,4,6-Tribromophenol	91 ca	43	146
Terphenyl-d14	102	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	0.052	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.22 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1395 mb
Date Analyzed:	07/18/13	Data File:	071807.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	49	32	162
Phenol-d6	35	10	170
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	95	43	158
2,4,6-Tribromophenol	107 ca	43	146
Terphenyl-d14	113	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.33 lc
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-01
Date Analyzed:	07/18/13	Data File:	071820.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	50	150
Benzo(a)anthracene-d12	96	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-02
Date Analyzed:	07/19/13	Data File:	071831.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	99	50	150
Benzo(a)anthracene-d12	108	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0080
Acenaphthylene	<0.0024
Acenaphthene	0.010
Fluorene	0.0065
Phenanthrene	0.061
Anthracene	0.023
Fluoranthene	0.20
Pyrene	0.21
Benzo(a)anthracene	0.13
Chrysene	0.16
Benzo(a)pyrene	0.14
Benzo(b)fluoranthene	0.21
Benzo(k)fluoranthene	0.063
Indeno(1,2,3-cd)pyrene	0.085
Dibenz(a,h)anthracene	0.026
Benzo(g,h,i)perylene	0.083

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SLR-7-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-03
Date Analyzed:	07/18/13	Data File:	071821.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	50	150
Benzo(a)anthracene-d12	99	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0042
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-3S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-04
Date Analyzed:	07/19/13	Data File:	071916.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	50	150
Benzo(a)anthracene-d12	109	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.021
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.0069
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-4D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-05
Date Analyzed:	07/19/13	Data File:	071833.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	50	150
Benzo(a)anthracene-d12	104	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	0.0060
Pyrene	0.0049
Benz(a)anthracene	0.0043
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-06
Date Analyzed:	07/18/13	Data File:	071822.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	50	150
Benzo(a)anthracene-d12	100 J	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.037
Acenaphthylene	0.010
Acenaphthene	0.64
Fluorene	0.19
Phenanthrene	0.058
Anthracene	0.072
Fluoranthene	0.25
Pyrene	0.15 J
Benz(a)anthracene	0.040 J
Chrysene	0.053 J
Benzo(a)pyrene	0.038
Benzo(b)fluoranthene	0.053
Benzo(k)fluoranthene	0.020
Indeno(1,2,3-cd)pyrene	0.026
Dibenz(a,h)anthracene	0.0077
Benzo(g,h,i)perylene	0.028

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-06 1/10
Date Analyzed:	07/20/13	Data File:	071937.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	156 ds	50	150
Benzo(a)anthracene-d12	94 ds	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.040
Acenaphthylene	<0.024
Acenaphthene	0.66
Fluorene	0.17
Phenanthrene	<0.066
Anthracene	0.071
Fluoranthene	0.26
Pyrene	0.14
Benz(a)anthracene	0.056
Chrysene	0.053
Benzo(a)pyrene	<0.078
Benzo(b)fluoranthene	<0.052
Benzo(k)fluoranthene	<0.076
Indeno(1,2,3-cd)pyrene	<0.07
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-14D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-07
Date Analyzed:	07/18/13	Data File:	071823.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	95	50	150
Benzo(a)anthracene-d12	111	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.11
Acenaphthylene	<0.0024
Acenaphthene	0.092
Fluorene	0.068
Phenanthrene	0.21
Anthracene	0.036
Fluoranthene	0.082
Pyrene	0.056
Benz(a)anthracene	0.0078
Chrysene	0.0066
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-08
Date Analyzed:	07/19/13	Data File:	071834.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	100	50	150
Benzo(a)anthracene-d12	116	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0050
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	0.0041
Phenanthrene	0.0093
Anthracene	0.0039
Fluoranthene	0.0093
Pyrene	0.0092
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307152-09
Date Analyzed:	07/19/13	Data File:	071915.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	50	150
Benzo(a)anthracene-d12	98	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0041
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	03-1394 mb
Date Analyzed:	07/18/13	Data File:	071806.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	50	150
Benzo(a)anthracene-d12	91	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-01 1/0.25
Date Analyzed:	07/31/13	Data File:	50.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-02 1/0.25
Date Analyzed:	07/31/13	Data File:	52.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	93	Limit:	Limit:
		50	150

Compounds:	Concentration
	ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	0.033
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	SLR-7-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-03 1/0.25
Date Analyzed:	07/31/13	Data File:	54.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-3S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-04 1/0.25
Date Analyzed:	07/31/13	Data File:	56.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-4D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-05 1/0.25
Date Analyzed:	07/31/13	Data File:	58.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	93	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-06 1/0.25
Date Analyzed:	07/31/13	Data File:	60.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	82	Limit:	Limit:
		50	150

Compounds:	Concentration
	ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	0.14
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-14D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-07 1/0.25
Date Analyzed:	07/31/13	Data File:	62.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	71	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-08 1/0.25
Date Analyzed:	07/31/13	Data File:	64.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	73	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	307152-09 1/0.25
Date Analyzed:	07/31/13	Data File:	66.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/12/13	Lab ID:	03-1380 mb 1/0.25
Date Analyzed:	07/30/13	Data File:	30.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-01
Date Analyzed:	07/19/13	Data File:	307152-01.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	47 vo	60	125
Indium	48 vo	60	125
Holmium	48 vo	60	125

Analyte:	Concentration ug/L (ppb)
Silver	0.202 J
Cadmium	<0.25 J, j
Thallium	<0.074 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-01 x10
Date Analyzed:	07/19/13	Data File:	307152-01 x10.038
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	74	60	125
Indium	75	60	125
Holmium	80	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.25
Nickel	8.24
Copper	33.5
Zinc	47.0
Arsenic	26.5
Selenium	100
Silver	<0.640
Cadmium	<2.5 j
Antimony	0.720
Barium	65.1
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-02
Date Analyzed:	07/19/13	Data File:	307152-02.032
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	56 vo	60	125
Indium	57 vo	60	125
Holmium	60 vo	60	125

Analyte:	Concentration ug/L (ppb)
Silver	<0.064 J
Cadmium	0.318 J
Thallium	<0.074 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-02 x10
Date Analyzed:	07/19/13	Data File:	307152-02 x10.039
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	74	60	125
Indium	73	60	125
Holmium	79	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	3.36
Nickel	5.44
Copper	22.7
Zinc	10.7
Arsenic	229
Selenium	49.1
Silver	<0.640
Cadmium	<2.5 j
Antimony	26.2
Barium	105
Thallium	<0.740
Lead	2.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SLR-7-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-03
Date Analyzed:	07/19/13	Data File:	307152-03.026
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	100	60	125
Indium	97	60	125
Holmium	96	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.350
Nickel	3.69
Copper	<0.34
Zinc	0.956
Arsenic	1.79
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.156
Barium	11.4
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-3S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-04
Date Analyzed:	07/19/13	Data File:	307152-04.027
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	60	60	125
Indium	62	60	125
Holmium	62	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.900
Nickel	7.12
Copper	20.6
Zinc	43.0
Arsenic	15.0
Selenium	51.2
Silver	<0.064
Cadmium	0.267 j
Antimony	0.716
Barium	117
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-4D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-05
Date Analyzed:	07/19/13	Data File:	307152-05.028
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	72	60	125
Indium	64	60	125
Holmium	66	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.950
Nickel	3.41
Copper	15.9
Zinc	1.03
Arsenic	14.9
Selenium	51.1
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.189
Barium	128
Thallium	<0.074
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-06
Date Analyzed:	07/19/13	Data File:	307152-06.029
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	58 vo	60	125
Indium	59 vo	60	125
Holmium	60 vo	60	125

Analyte:	Concentration ug/L (ppb)
Silver	<0.064 J
Cadmium	<0.25 J, j
Thallium	<0.074 J

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-06 x10
Date Analyzed:	07/19/13	Data File:	307152-06 x10.040
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	62	60	125
Indium	62	60	125
Holmium	67	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	4.25
Nickel	7.33
Copper	35.3
Zinc	18.6
Arsenic	271
Selenium	84.6
Silver	<0.640
Cadmium	<2.5 j
Antimony	31.4
Barium	160
Thallium	<0.740
Lead	2.88

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-14D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-07
Date Analyzed:	07/19/13	Data File:	307152-07.034
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	75	60	125
Indium	64	60	125
Holmium	67	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.983
Nickel	1.89
Copper	9.77
Zinc	2.78
Arsenic	11.0
Selenium	34.0
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.212
Barium	55.2
Thallium	<0.074
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-08
Date Analyzed:	07/19/13	Data File:	307152-08.035
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	72	60	125
Indium	59 vo	60	125
Holmium	61	60	125

Analyte:	Concentration ug/L (ppb)
Silver	<0.064 J
Cadmium	<0.25 J, j
Thallium	<0.074
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-08 x10
Date Analyzed:	07/19/13	Data File:	307152-08 x10.041
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	73	60	125
Indium	69	60	125
Holmium	76	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.34
Nickel	4.63
Copper	19.2
Zinc	<6.00
Arsenic	18.1
Selenium	62.0
Silver	<0.640
Cadmium	<2.5 j
Antimony	<0.520 j
Barium	63.2
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-09
Date Analyzed:	07/19/13	Data File:	307152-09.036
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	66	60	125
Indium	45 vo	60	125
Holmium	43 vo	60	125

Analyte:	Concentration ug/L (ppb)
Zinc	3.31
Silver	<0.064 J
Cadmium	<0.25 J, j
Thallium	<0.074 J
Lead	<0.144 J

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-09 x10
Date Analyzed:	07/19/13	Data File:	307152-09 x10.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	69	60	125
Indium	65	60	125
Holmium	70	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.33
Nickel	10.5
Copper	51.6
Zinc	<6.00
Arsenic	47.6
Selenium	176
Silver	<0.640
Cadmium	<2.5 j
Antimony	<0.520 j
Barium	203
Thallium	<0.740
Lead	<1.44

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	I3-419 mb
Date Analyzed:	07/19/13	Data File:	I3-419 mb.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	90	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.138
Nickel	<0.46
Copper	<0.34
Zinc	<0.6
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	<0.26
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-01
Date Analyzed:	07/17/13	Data File:	307152-01.063
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	54 vo	60	125
Indium	55 vo	60	125
Holmium	58 vo	60	125

Analyte:	Concentration ug/L (ppb)
Silver	0.235 J
Cadmium	0.255 J, j
Thallium	<0.074 J
Lead	<0.144 J

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ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-1-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-01 x10
Date Analyzed:	07/17/13	Data File:	307152-01 x10.078
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	75	60	125
Indium	75	60	125
Holmium	84	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	1.89
Nickel	9.14
Copper	28.6
Zinc	47.8
Arsenic	19.4
Selenium	76.3
Silver	<0.640
Cadmium	<2.5 j
Antimony	0.730
Barium	65.1
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-02
Date Analyzed:	07/17/13	Data File:	307152-02.064
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	61	60	125
Indium	59 vo	60	125
Holmium	65	60	125

Analyte:	Concentration ug/L (ppb)
Nickel	3.58
Zinc	4.06
Silver	<0.064 J
Cadmium	0.289 J
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-4-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-02 x10
Date Analyzed:	07/17/13	Data File:	307152-02 x10.079
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	75	60	125
Indium	75	60	125
Holmium	86	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.59
Nickel	<4.60
Copper	15.2
Zinc	<6.00
Arsenic	211
Selenium	38.4
Silver	<0.640
Cadmium	<2.5 j
Antimony	25.3
Barium	101
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	SLR-7-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-03
Date Analyzed:	07/17/13	Data File:	307152-03.076
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	78	60	125
Indium	76	60	125
Holmium	83	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.512
Nickel	3.80
Copper	0.407
Zinc	0.899
Arsenic	1.68
Selenium	0.621
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.184
Barium	12.3
Thallium	0.089
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-3S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-04
Date Analyzed:	07/17/13	Data File:	307152-04.066
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	63	60	125
Indium	62	60	125
Holmium	69	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	1.08
Nickel	8.52
Copper	19.4
Zinc	37.0
Arsenic	11.2
Selenium	37.3
Silver	<0.064
Cadmium	<0.25 j
Antimony	0.751
Barium	109
Thallium	<0.074
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-4D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-05
Date Analyzed:	07/17/13	Data File:	307152-05.067
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	75	60	125
Indium	65	60	125
Holmium	71	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	1.23
Nickel	4.16
Copper	15.2
Zinc	2.01
Arsenic	10.8
Selenium	36.1
Silver	<0.064
Cadmium	1.12
Antimony	0.221
Barium	112
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-13S-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-06
Date Analyzed:	07/17/13	Data File:	307152-06.068
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	62	60	125
Indium	61	60	125
Holmium	66	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	0.774
Nickel	3.83
Copper	26.0
Zinc	3.56
Arsenic	159
Selenium	48.0
Silver	<0.064
Cadmium	<0.25 j
Antimony	20.1
Barium	123
Thallium	<0.074
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-14D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-07
Date Analyzed:	07/17/13	Data File:	307152-07.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	69	60	125
Indium	60 vo	60	125
Holmium	68	60	125

Analyte:	Concentration ug/L (ppb)
Nickel	1.61
Zinc	1.71
Silver	<0.064 J
Cadmium	<0.25 J, j
Thallium	<0.074
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-14D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-07 x10
Date Analyzed:	07/17/13	Data File:	307152-07 x10.080
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	77	60	125
Indium	78	60	125
Holmium	87	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	1.93
Nickel	<4.60
Copper	7.51
Zinc	<6.00
Arsenic	8.60
Selenium	25.5
Silver	<0.640
Cadmium	<2.5 j
Antimony	<0.520 j
Barium	51.6
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-08
Date Analyzed:	07/17/13	Data File:	307152-08.070
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	69	60	125
Indium	57 vo	60	125
Holmium	63	60	125

Analyte:	Concentration ug/L (ppb)
Nickel	2.58
Zinc	1.51
Silver	<0.064 J
Cadmium	<0.25 J, j
Thallium	<0.074
Lead	<0.144

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ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-15D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-08 x10
Date Analyzed:	07/17/13	Data File:	307152-08 x10.081
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	76	60	125
Indium	76	60	125
Holmium	84	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	1.54
Nickel	<4.60
Copper	13.6
Zinc	<6.00
Arsenic	11.5
Selenium	44.3
Silver	<0.640
Cadmium	<2.5 j
Antimony	<0.520 j
Barium	56.2
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-09
Date Analyzed:	07/17/13	Data File:	307152-09.071
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	58 vo	60	125
Indium	41 vo	60	125
Holmium	45 vo	60	125

Analyte:	Concentration ug/L (ppb)
Zinc	2.92 J
Silver	<0.064 J
Cadmium	<0.25 J, j
Thallium	<0.074 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-16D-0713	Client:	SLR International Corp.
Date Received:	07/11/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307152-09 x10
Date Analyzed:	07/17/13	Data File:	307152-09 x10.082
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	68	60	125
Indium	66	60	125
Holmium	75	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.45
Nickel	8.90
Copper	49.0
Zinc	<6.00
Arsenic	35.4
Selenium	138
Silver	<0.640
Cadmium	<2.5 j
Antimony	<0.520 j
Barium	207
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	I3-420 mb
Date Analyzed:	07/17/13	Data File:	I3-420 mb.086
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	83	60	125
Indium	84	60	125
Holmium	90	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.139
Nickel	<0.46
Copper	<0.34
Zinc	<0.61
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.25 j
Antimony	<0.052 j
Barium	<0.26
Thallium	<0.074
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

Date Extracted: 07/15/13

Date Analyzed: 07/16/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL MERCURY**

USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Total Mercury</u>
CMW-1-0713 307152-01	<0.0015
CMW-4-0713 307152-02	0.0059
SLR-7-0713 307152-03	<0.0015
EMW-3S-0713 307152-04	<0.0015
EMW-4D-0713 307152-05	<0.0015
EMW-13S-0713 307152-06	0.0029
EMW-14D-0713 307152-07	<0.0015
EMW-15D-0713 307152-08	<0.0015
EMW-16D-0713 307152-09	<0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

Date Extracted: 07/15/13

Date Analyzed: 07/16/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED MERCURY
USING EPA METHOD 1631E**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Dissolved Mercury</u>
CMW-1-0713 307152-01	<0.0015
CMW-4-0713 307152-02	0.0018
SLR-7-0713 307152-03	<0.0015
EMW-3S-0713 307152-04	<0.0015
EMW-4D-0713 307152-05	<0.0015
EMW-13S-0713 307152-06	<0.0015
EMW-14D-0713 307152-07	<0.0015
EMW-15D-0713 307152-08	<0.0015
EMW-16D-0713 307152-09	<0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

Date Extracted: NA

Date Analyzed: 07/18/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
CMW-1-0713 307152-01	<10
CMW-4-0713 307152-02	13
SLR-7-0713 307152-03	<10
EMW-3S-0713 307152-04	11
EMW-4D-0713 307152-05	38
EMW-13S-0713 307152-06	<10
EMW-14D-0713 307152-07	20
EMW-15D-0713 307152-08	16
EMW-16D-0713 307152-09	28
Method Blank	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 307152-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<12	<12	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	500	75	87	58-134	15

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 307166-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	
				Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<0.16	110	55-144
Chloromethane	ug/L (ppb)	50	<0.22	98	67-131
Vinyl chloride	ug/L (ppb)	50	<0.13	102	61-139
Bromomethane	ug/L (ppb)	50	<0.2	883 vo	66-129
Chloroethane	ug/L (ppb)	50	<0.18	166 vo	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<0.17	129 vo	71-128
Acetone	ug/L (ppb)	250	<2.6	98	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<0.19	103	71-123
Methylene chloride	ug/L (ppb)	50	<3	101	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<0.13	99	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	98	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<0.18	98	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<0.3	110	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	100	73-119
Chloroform	ug/L (ppb)	50	<0.24	93	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<0.94	101	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<0.11	96	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	104	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<0.26	100	67-121
Carbon tetrachloride	ug/L (ppb)	50	<0.24	112	72-123
Benzene	ug/L (ppb)	50	<0.13	95	79-109
Trichloroethene	ug/L (ppb)	50	<0.17	97	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<0.32	101	80-111
Bromodichloromethane	ug/L (ppb)	50	<0.38	113	78-117
Dibromomethane	ug/L (ppb)	50	<0.28	104	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<1.3	113	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<0.2	112	76-120
Toluene	ug/L (ppb)	50	<0.13	95	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<0.34	102	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.28	104	81-111
2-Hexanone	ug/L (ppb)	250	<1	111	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	100	81-111
Tetrachloroethene	ug/L (ppb)	50	<0.28	92	72-113
Dibromochloromethane	ug/L (ppb)	50	<0.24	113	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<0.24	107	83-114
Chlorobenzene	ug/L (ppb)	50	<0.1	93	75-115
Ethylbenzene	ug/L (ppb)	50	<0.16	96	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.32	110	78-122
m,p-Xylene	ug/L (ppb)	100	<0.5	97	63-128
o-Xylene	ug/L (ppb)	50	<0.22	97	64-129
Styrene	ug/L (ppb)	50	<0.22	101	70-122
Isopropylbenzene	ug/L (ppb)	50	<0.15	97	76-118
Bromoform	ug/L (ppb)	50	<0.22	115	49-138
n-Propylbenzene	ug/L (ppb)	50	<0.14	98	74-117
Bromobenzene	ug/L (ppb)	50	<0.18	97	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<0.18	100	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.24	104	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.28	101	72-119
2-Chlorotoluene	ug/L (ppb)	50	<0.13	94	77-114
4-Chlorotoluene	ug/L (ppb)	50	<0.16	97	81-109
tert-Butylbenzene	ug/L (ppb)	50	<0.15	97	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<0.11	98	74-118
sec-Butylbenzene	ug/L (ppb)	50	<0.12	96	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<0.15	96	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<0.15	93	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.094	91	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.13	91	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.44	109	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<0.34	85	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<0.46	80	67-120
Naphthalene	ug/L (ppb)	50	<0.28	97	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.38	97	79-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	110	108	54-149	2
Chloromethane	ug/L (ppb)	50	100	97	67-133	3
Vinyl chloride	ug/L (ppb)	50	103	100	73-132	3
Bromomethane	ug/L (ppb)	50	1040 vo	998 vo	69-123	4
Chloroethane	ug/L (ppb)	50	168 vo	166 vo	68-126	1
Trichlorofluoromethane	ug/L (ppb)	50	129	126	70-132	2
Acetone	ug/L (ppb)	250	100	98	44-145	2
1,1-Dichloroethene	ug/L (ppb)	50	105	104	75-119	1
Methylene chloride	ug/L (ppb)	50	103	102	63-132	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	103	102	70-122	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	99	76-118	0
1,1-Dichloroethane	ug/L (ppb)	50	100	99	80-116	1
2,2-Dichloropropane	ug/L (ppb)	50	118	118	62-141	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	101	81-111	0
Chloroform	ug/L (ppb)	50	94	93	81-109	1
2-Butanone (MEK)	ug/L (ppb)	250	102	99	53-140	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	98	96	79-109	2
1,1,1-Trichloroethane	ug/L (ppb)	50	108	107	80-116	1
1,1-Dichloropropene	ug/L (ppb)	50	101	99	78-112	2
Carbon tetrachloride	ug/L (ppb)	50	120	118	72-128	2
Benzene	ug/L (ppb)	50	96	95	81-108	1
Trichloroethene	ug/L (ppb)	50	96	96	77-108	0
1,2-Dichloropropane	ug/L (ppb)	50	104	103	82-109	1
Bromodichloromethane	ug/L (ppb)	50	118	116	76-120	2
Dibromomethane	ug/L (ppb)	50	104	103	80-110	1
4-Methyl-2-pentanone	ug/L (ppb)	250	114	114	59-142	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	118	118	76-128	0
Toluene	ug/L (ppb)	50	95	95	83-108	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	110	109	76-128	1
1,1,2-Trichloroethane	ug/L (ppb)	50	104	104	82-110	0
2-Hexanone	ug/L (ppb)	250	110	109	53-145	1
1,3-Dichloropropane	ug/L (ppb)	50	100	100	83-110	0
Tetrachloroethene	ug/L (ppb)	50	92	90	78-109	2
Dibromochloromethane	ug/L (ppb)	50	117	115	63-140	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	109	109	85-113	0
Chlorobenzene	ug/L (ppb)	50	93	92	84-108	1
Ethylbenzene	ug/L (ppb)	50	97	96	84-110	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	115	114	76-125	1
m,p-Xylene	ug/L (ppb)	100	97	96	84-112	1
o-Xylene	ug/L (ppb)	50	97	97	82-113	0
Styrene	ug/L (ppb)	50	100	100	84-116	0
Isopropylbenzene	ug/L (ppb)	50	97	97	81-122	0
Bromoform	ug/L (ppb)	50	124	122	40-161	2
n-Propylbenzene	ug/L (ppb)	50	98	99	81-115	1
Bromobenzene	ug/L (ppb)	50	95	97	80-113	2
1,3,5-Trimethylbenzene	ug/L (ppb)	50	99	100	83-117	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	105	106	79-118	1
1,2,3-Trichloropropane	ug/L (ppb)	50	100	101	74-116	1
2-Chlorotoluene	ug/L (ppb)	50	94	95	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	97	98	81-113	1
tert-Butylbenzene	ug/L (ppb)	50	97	98	81-119	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	97	98	83-116	1
sec-Butylbenzene	ug/L (ppb)	50	97	97	83-116	0
p-Isopropyltoluene	ug/L (ppb)	50	96	97	82-119	1
1,3-Dichlorobenzene	ug/L (ppb)	50	92	93	83-111	1
1,4-Dichlorobenzene	ug/L (ppb)	50	91	92	82-109	1
1,2-Dichlorobenzene	ug/L (ppb)	50	91	91	83-111	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	115	117	62-133	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	86	87	77-117	1
Hexachlorobutadiene	ug/L (ppb)	50	79	81	74-118	2
Naphthalene	ug/L (ppb)	50	98	100	75-131	2
1,2,3-Trichlorobenzene	ug/L (ppb)	50	97	100	82-115	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	10	39	34	18-52	14
Bis(2-chloroethyl) ether	ug/L (ppb)	10	89	79	52-113	12
2-Chlorophenol	ug/L (ppb)	10	89	78	50-110	13
1,3-Dichlorobenzene	ug/L (ppb)	10	91	76	45-109	18
1,4-Dichlorobenzene	ug/L (ppb)	10	94	77	44-118	20
1,2-Dichlorobenzene	ug/L (ppb)	10	93	76	46-116	20
Benzyl alcohol	ug/L (ppb)	10	89	73	42-100	20
Bis(2-chloroisopropyl) ether	ug/L (ppb)	10	90	77	51-124	16
2-Methylphenol	ug/L (ppb)	10	73	70	38-100	4
Hexachloroethane	ug/L (ppb)	10	94	77	42-117	20
N-Nitroso-di-n-propylamine	ug/L (ppb)	10	91	78	48-124	15
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	10	72	64	48-87	12
Nitrobenzene	ug/L (ppb)	10	95	84	50-118	12
Isophorone	ug/L (ppb)	10	99	86	55-116	14
2-Nitrophenol	ug/L (ppb)	10	115	104	42-127	10
2,4-Dimethylphenol	ug/L (ppb)	10	41 vo	85	45-100	70 vo
Benzoic acid	ug/L (ppb)	65	57 vo	49 vo	10-46	15
Bis(2-chloroethoxy)methane	ug/L (ppb)	10	96	86	55-115	11
2,4-Dichlorophenol	ug/L (ppb)	10	103	92	55-113	11
1,2,4-Trichlorobenzene	ug/L (ppb)	10	95	83	50-109	13
Hexachlorobutadiene	ug/L (ppb)	10	95	83	50-109	13
4-Chloroaniline	ug/L (ppb)	20	91	14 vo	30-109	147 vo
4-Chloro-3-methylphenol	ug/L (ppb)	10	104	88	54-114	17
2-Methylnaphthalene	ug/L (ppb)	10	100	85	53-113	16
Hexachlorocyclopentadiene	ug/L (ppb)	10	83	64	26-94	26 vo
2,4,6-Trichlorophenol	ug/L (ppb)	10	105	96	46-114	9
2,4,5-Trichlorophenol	ug/L (ppb)	10	107	98	57-122	9
2-Chloronaphthalene	ug/L (ppb)	10	98	89	52-112	10
2-Nitroaniline	ug/L (ppb)	10	113	100	47-128	12
Dimethyl phthalate	ug/L (ppb)	10	110	99	55-116	11
2,6-Dinitrotoluene	ug/L (ppb)	10	117	107	49-126	9
3-Nitroaniline	ug/L (ppb)	20	114	68	21-125	51 vo
2,4-Dinitrophenol	ug/L (ppb)	10	160 vo	144 vo	29-130	11
Dibenzofuran	ug/L (ppb)	10	101	92	53-113	9
2,4-Dinitrotoluene	ug/L (ppb)	10	111	99	48-129	11
4-Nitrophenol	ug/L (ppb)	10	50	41	12-59	20
Diethyl phthalate	ug/L (ppb)	10	106	95	55-116	11
4-Chlorophenyl phenyl ether	ug/L (ppb)	10	103	93	52-115	10
N-Nitrosodiphenylamine	ug/L (ppb)	10	101	87	51-112	15
4-Nitroaniline	ug/L (ppb)	20	108	79	42-115	31 vo
4,6-Dinitro-2-methylphenol	ug/L (ppb)	10	130 vo	120	40-128	8
4-Bromophenyl phenyl ether	ug/L (ppb)	10	105	98	53-114	7
Hexachlorobenzene	ug/L (ppb)	10	103	95	54-115	8
Pentachlorophenol	ug/L (ppb)	10	108	104	49-114	4
Carbazole	ug/L (ppb)	10	101	91	54-115	10
Di-n-butyl phthalate	ug/L (ppb)	10	110	102	54-115	8
Benzyl butyl phthalate	ug/L (ppb)	10	119	108	53-122	10
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	112	95	54-122	16
Di-n-octyl phthalate	ug/L (ppb)	10	108	103	50-131	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	83	87	67-116	5
Acenaphthylene	ug/L (ppb)	1	96	101	65-119	5
Acenaphthene	ug/L (ppb)	1	94	100	66-118	6
Fluorene	ug/L (ppb)	1	98	103	64-125	5
Phenanthrene	ug/L (ppb)	1	92	96	67-120	4
Anthracene	ug/L (ppb)	1	94	97	65-122	3
Fluoranthene	ug/L (ppb)	1	98	93	65-127	5
Pyrene	ug/L (ppb)	1	96	103	62-130	7
Benz(a)anthracene	ug/L (ppb)	1	91	93	60-118	2
Chrysene	ug/L (ppb)	1	95	100	66-125	5
Benzo(b)fluoranthene	ug/L (ppb)	1	86	90	55-135	5
Benzo(k)fluoranthene	ug/L (ppb)	1	84	87	62-125	4
Benzo(a)pyrene	ug/L (ppb)	1	81	83	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	76	79	36-142	4
Dibenz(a,h)anthracene	ug/L (ppb)	1	71	73	37-133	3
Benzo(g,h,i)perylene	ug/L (ppb)	1	77	77	34-135	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED
BIPHENYLS AS
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.625	99	96	70-130	3
Aroclor 1260	ug/L (ppb)	0.625	92	104	70-130	10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 307179-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.098	102	118	67-145	15
Chromium	ug/L (ppb)	20	2.19	93	110	64-132	17
Nickel	ug/L (ppb)	20	4.59	88 b	107 b	61-128	19 b
Copper	ug/L (ppb)	20	1.60	89	106	63-124	17
Zinc	ug/L (ppb)	50	7.69	88	106	55-141	19
Arsenic	ug/L (ppb)	10	3.38	92 b	117 b	60-150	24 b
Selenium	ug/L (ppb)	5	<0.56	98	114	43-178	15
Silver	ug/L (ppb)	5	<0.064	89	106	71-115	17
Cadmium	ug/L (ppb)	5	<0.25 j	90	107	83-116	17
Antimony	ug/L (ppb)	20	0.152	68	82	62-125	19
Barium	ug/L (ppb)	50	18.1	89 b	112 b	79-126	23 b
Thallium	ug/L (ppb)	5	0.107	90	104	73-119	14
Lead	ug/L (ppb)	10	0.380	89	103	79-121	15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	106	73-135
Chromium	ug/L (ppb)	20	101	80-119
Nickel	ug/L (ppb)	20	96	79-122
Copper	ug/L (ppb)	20	98	81-119
Zinc	ug/L (ppb)	50	93	76-124
Arsenic	ug/L (ppb)	10	90	80-111
Selenium	ug/L (ppb)	5	97	81-119
Silver	ug/L (ppb)	5	98	80-116
Cadmium	ug/L (ppb)	5	96	83-113
Antimony	ug/L (ppb)	20	89	79-108
Barium	ug/L (ppb)	50	96	83-117
Thallium	ug/L (ppb)	5	97	78-116
Lead	ug/L (ppb)	10	99	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 307179-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.098	104	116	67-145	11
Chromium	ug/L (ppb)	20	0.271	97	108	64-132	11
Nickel	ug/L (ppb)	20	2.04	91	103	61-128	12
Copper	ug/L (ppb)	20	<0.34	90	99	63-124	10
Zinc	ug/L (ppb)	50	2.91	90	101	55-141	12
Arsenic	ug/L (ppb)	10	3.25	99 b	111 b	60-150	11 b
Selenium	ug/L (ppb)	5	<0.56	99	110	43-178	11
Silver	ug/L (ppb)	5	<0.064	94	103	71-115	9
Cadmium	ug/L (ppb)	5	<0.25 j	95	103	83-116	8
Antimony	ug/L (ppb)	20	0.471	89	101	62-125	13
Barium	ug/L (ppb)	50	12.8	95 b	107 b	79-126	12 b
Thallium	ug/L (ppb)	5	<0.074	94	104	73-119	10
Lead	ug/L (ppb)	10	<0.144	93	105	79-121	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	99	73-135
Chromium	ug/L (ppb)	20	98	80-119
Nickel	ug/L (ppb)	20	99	79-122
Copper	ug/L (ppb)	20	99	81-119
Zinc	ug/L (ppb)	50	94	76-124
Arsenic	ug/L (ppb)	10	91	80-111
Selenium	ug/L (ppb)	5	95	81-119
Silver	ug/L (ppb)	5	98	80-116
Cadmium	ug/L (ppb)	5	95	83-113
Antimony	ug/L (ppb)	20	89	79-108
Barium	ug/L (ppb)	50	97	83-117
Thallium	ug/L (ppb)	5	94	78-116
Lead	ug/L (ppb)	10	94	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307152-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	<0.0015	100	98	63-132	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	98	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
DISSOLVED MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307152-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	<0.0015	96	95	63-132	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	100	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/11/13

Project: 8th Ave Terminals, Inc. Crowley RI-FS 101.00205.00030, F&BI 307152

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Laboratory Code: 307152-09 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
TSS	mg/L	28	32	13	0-20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L	50	104	61-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 29, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 307152
ARI Job No.: WX44

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted nine water samples on July 15, 2013, under ARI job WX44. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for chloride and TDS, as requested on the COC.

There were no anomalies associated with the analyses of these samples.

An electronic copy of this report and all associated raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile WX44

Enclosures

WAST

SUBCONTRACT SAMPLE CHAIN OF CUSTODY


Page # 1 of 1

Send Report To Michael Erdahl Michele Paquiz
 Company Friedman and Bruya, Inc.
 Address 3012 16th Ave W
 City, State, ZIP Seattle, WA 98119
 Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTOR ARI (Tokwid)
 PROJECT NAME/NO. 307152 PO # C-451
 REMARKS Please provide EIM
Please Email Results
m.paquiz@friedmanandbruya.com

TURNAROUND TIME
 Standard (2 Weeks)
 RUSH
 Rush charges authorized by: _____
 SAMPLE DISPOSAL
 Dispose after 30 days
 Return samples
 Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkalinity	TDS by 2540C	Chloride by 804500	Notes
CMW-1-0713		7/11/13	1319	water	2							X	X	
CMW-4-0713			1303									X	X	
SLR-7-0713			1136									X	X	
EMW-3S-0713			1152									X	X	
EMW-4D-0713			1433									X	X	
EMW-12S-0713			1339									X	X	
EMW-14D-0713			1447									X	X	
EMW-15D-0713			1503									X	X	
EMW-16D-0713			1228									X	X	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Michael Erdahl	Friedman & Bruya	7/12/13	11:40
Relinquished by: _____	Received by: <u>Rich Thibert</u>	AR1	7/12/13	1720
Relinquished by: _____	Received by: _____			
Relinquished by: _____	Received by: _____			

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

48211 : 000001



Cooler Receipt Form

ARI Client Friedman & Braga
 COC No(s) _____ (NA)
 Assigned ARI Job No. WX44

Project Name: 307152
 Delivered by Fed-Ex UPS Courier Hand Delivered Other _____
 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc.) YES NO
 Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) ... 5.6
 If cooler temperature is out of compliance fill out form 00070F
 Cooler Accepted by: [Signature] Date: 7/12/13 Time: 1720 Temp Gun ID#: 90377952

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO
 What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? YES NO
 Were all bottles sealed in individual plastic bags? YES NO
 Did all bottles arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? YES NO
 Did the number of containers listed on COC match with the number of containers received? YES NO
 Did all bottle labels and tags agree with custody papers? YES NO
 Were all bottles used correct for the requested analyses? YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO
 Date VOC Trip Blank was made at ARI: NA
 Was Sample Split by ARI: NA YES Date/Time _____ Equipment _____ Split by: _____

Samples Logged by: AV Date: 7/15/13 Time: 1145

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

Sample ID Cross Reference Report



ARI Job No: WX44
Client: Friedman and Bruya, Inc
Project Event: 307152
Project Name: N/A

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. CMW-1-0713	WX44A	13-14813	Water	07/11/13 13:19	07/15/13 17:20
2. CMW-4-0713	WX44B	13-14814	Water	07/11/13 13:03	07/15/13 17:20
3. SLR-7-0713	WX44C	13-14815	Water	07/11/13 11:36	07/15/13 17:20
4. EMW-3S-0713	WX44D	13-14816	Water	07/11/13 11:52	07/15/13 17:20
5. EMW-4D-0713	WX44E	13-14817	Water	07/11/13 14:33	07/15/13 17:20
6. EMW-13S-0713	WX44F	13-14818	Water	07/11/13 13:39	07/15/13 17:20
7. EMW-14D-0713	WX44G	13-14819	Water	07/11/13 14:47	07/15/13 17:20
8. EMW-15D-0713	WX44H	13-14820	Water	07/11/13 15:03	07/15/13 17:20
9. EMW-16D-0713	WX44I	13-14821	Water	07/11/13 12:28	07/15/13 17:20

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'J. Friedman', written over the 'Data Release Authorized' text.

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13


Client ID: CMW-1-0713
ARI ID: 13-14813 WX44A

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	200	11,100
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	1,000	5,810

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

Client ID: CMW-4-0713
ARI ID: 13-14814 WX44B

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	100	5,750
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	3,020

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be a stylized name, possibly 'J. Friedman'.

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

Client ID: SLR-7-0713
ARI ID: 13-14815 WX44C

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	262
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	1.0	7.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'WJ' or similar, written over the 'Data Release Authorized' text.

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13


Client ID: EMW-3S-0713
ARI ID: 13-14816 WX44D

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	100	5,540
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	3,200

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

Client ID: EMW-4D-0713
ARI ID: 13-14817 WX44E

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	100	5,500
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	3,230

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'JH', is written over the 'Data Release Authorized' text.

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

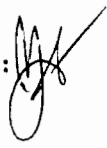
Client ID: EMW-13S-0713
ARI ID: 13-14818 WX44F

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	200	7,980
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	4,040

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

Client ID: EMW-14D-0713
ARI ID: 13-14819 WX44G

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	100	3,590
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	1,950

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'J. Friedman', written over the 'Data Release Authorized' text.

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

Client ID: EMW-15D-0713
ARI ID: 13-14820 WX44H

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	100	6,090
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	500	3,340

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'J. Friedman', written over the 'Data Release Authorized' text.

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

Client ID: EMW-16D-0713
ARI ID: 13-14821 WX44I

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	200	18,200
Chloride	07/15/13 071513#1	SM4500-CLE	mg/L	2,000	10,500

RL Analytical reporting limit
U Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'J. A.', with a line extending from the top of the signature towards the 'Data Release Authorized' text.

Project: NA
Event: 307152
Date Sampled: 07/11/13
Date Received: 07/15/13

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WX44A Client ID: CMW-1-0713						
Total Dissolved Solids	SM2540C	07/16/13	mg/L	11,100	10,800	2.7%

LAB CONTROL RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13


A handwritten signature in black ink, appearing to be 'J. Friedman', written over the 'Data Release Authorized:' text.

Project: NA
Event: 307152
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Dissolved Solids SM2540C	ICVL	07/16/13	mg/L	503	500	100.6%

METHOD BLANK RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

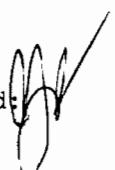
Project: NA
Event: 307152
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Total Dissolved Solids	SM2540C	07/16/13	mg/L	< 5.0 U	
Chloride	SM4500-CLE	07/15/13	mg/L	< 1.0 U	FB

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
WX44-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307152
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Chloride ERA #411010	SM4500-CLE	07/15/13	mg/L	5.0	5.0	100.0%

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
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August 13, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

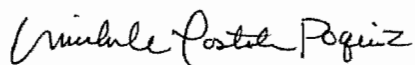
Dear Mr. Staton:

Included are the results from the testing of material submitted on July 12, 2013 from the Crowley RIFS 101.00205.00030, F&BI 307177 project. There are 63 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michele Costales Poquiz
Chemist

Enclosures
SLR0813R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 12, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. Crowley RIFS 101.00205.00030, F&BI 307177 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
307177-01	EMW-2S-0713
307177-02	CMW-2-0713
307177-03	CMW-3-0713
307177-04	CMW-5-0713
307177-05	EMW-12S-0713
307177-06	CMW-7-0713

Total Petroleum Hydrocarbons as Gasoline by Method NWTPH-Gx

All quality control requirements were acceptable.

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Compounds by EPA Method 8260C

The calibration result for bromomethane fell outside of acceptance criteria. The values reported are estimates.

The presence of methylene chloride in the samples EMW-12S-0713 is likely due to laboratory contamination. The results have been flagged accordingly.

The percent recovery for the matrix spike (MS), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) failed high for bromomethane and chloroethane. The compounds were not identified in the samples, therefore the results are valid.

Semivolatile Organic Compounds by EPA Method 8270D

The presence of bis(2-ethylhexyl) phthalate in the samples and method blank is likely due to laboratory contamination. The results have been flagged accordingly.

The presence of diethyl phthalate in the CMW-3-0713, CMW-5-0713, and EMW-12S-0713 is likely due to laboratory contamination. The results have been flagged accordingly.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

The calibration result for 4-nitrophenol fell outside of acceptance criteria. The values reported are estimates.

The percent recovery for the LCS and LCSD fell outside of control limits for 2,4-dimethylphenol. In addition, the relative percent difference (RPD) for the LCS/LCSD fell outside of control limits for 2,4-dinitrophenol. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM

All quality control requirements were acceptable.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A

All quality control requirements were acceptable.

Total Metals by EPA Method 200.8

All quality control requirements were acceptable.

Dissolved Metals by EPA Method 200.8

The internal standard associated with several analytes exceeded acceptance criteria for the sample CMW-3-0713. The sample was diluted and reanalyzed. The results for the full strength and the dilution analyses are included.

Total Mercury by EPA Method 1631E

The detection limit has been raised due to trace level laboratory contamination.

Dissolved Mercury by EPA Method 1631E

The detection limit has been raised due to trace level laboratory contamination.

Total Dissolved Solids by Method 2540C

The samples were sent to Analytical Resources, Inc. (ARI) for total dissolved solids analysis. The report generated by ARI is enclosed.

Chloride by Method SM4500

The samples were sent to ARI for chloride analysis. The report generated by ARI is enclosed.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

Date Extracted: 07/16/13

Date Analyzed: 07/16/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
EMW-2S-0713 307177-01	43	89
CMW-2-0713 307177-02	<12	90
CMW-3-0713 307177-03	<12	90
CMW-5-0713 307177-04	<12	87
EMW-12S-0713 307177-05	<12	87
CMW-7-0713 307177-06	<12	90
Method Blank 03-1397 MB	<12	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

Date Extracted: 07/15/13

Date Analyzed: 07/18/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
EMW-2S-0713 307177-01	<6.9	<52	110
CMW-2-0713 307177-02	<6.9	<52	95
CMW-3-0713 307177-03	<6.9	<52	108
CMW-5-0713 307177-04	<6.9	<52	103
EMW-12S-0713 307177-05	<6.9	<52	96
CMW-7-0713 307177-06	<6.9	<52	116
Method Blank 03-1389 MB	<6.9	<52	132

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-2S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-01
Date Analyzed:	07/16/13	Data File:	071612.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	0.67	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	0.91	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	0.26	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	CMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-02
Date Analyzed:	07/16/13	Data File:	071613.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	CMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-03
Date Analyzed:	07/16/13	Data File:	071614.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	CMW-5-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-04
Date Analyzed:	07/16/13	Data File:	071615.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	0.24	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: EMW-12S-0713	Client: SLR International Corp.
Date Received: 07/12/13	Project: Crowley RIFS 101.00205.00030
Date Extracted: 07/16/13	Lab ID: 307177-05
Date Analyzed: 07/16/13	Data File: 071616.D
Matrix: Water	Instrument: GCMS9
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	4.0 lc	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	CMW-7-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-06
Date Analyzed:	07/16/13	Data File:	071617.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1316 mb
Date Analyzed:	07/16/13	Data File:	071607.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-2S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-01
Date Analyzed:	07/17/13	Data File:	071720.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	45	32	162
Phenol-d6	27	10	170
Nitrobenzene-d5	93	50	150
2-Fluorobiphenyl	93	43	158
2,4,6-Tribromophenol	103	43	146
Terphenyl-d14	97	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.42 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	CMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-02
Date Analyzed:	07/17/13	Data File:	071721.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41	32	162
Phenol-d6	25	10	170
Nitrobenzene-d5	80	50	150
2-Fluorobiphenyl	88	43	158
2,4,6-Tribromophenol	70	43	146
Terphenyl-d14	96	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.59 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	CMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-03
Date Analyzed:	07/17/13	Data File:	071722.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	45	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	80	50	150
2-Fluorobiphenyl	88	43	158
2,4,6-Tribromophenol	106	43	146
Terphenyl-d14	102	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.075 lc
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	1.1 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	CMW-5-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-04
Date Analyzed:	07/17/13	Data File:	071723.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	51	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	86	50	150
2-Fluorobiphenyl	92	43	158
2,4,6-Tribromophenol	92	43	146
Terphenyl-d14	99	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	0.36	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 j1	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.48 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-12S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-05
Date Analyzed:	07/17/13	Data File:	071724.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38	32	162
Phenol-d6	22	10	170
Nitrobenzene-d5	75	50	150
2-Fluorobiphenyl	78	43	158
2,4,6-Tribromophenol	103	43	146
Terphenyl-d14	97	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	0.21	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.45 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	CMW-7-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-06
Date Analyzed:	07/17/13	Data File:	071725.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	44	32	162
Phenol-d6	25	10	170
Nitrobenzene-d5	85	50	150
2-Fluorobiphenyl	85	43	158
2,4,6-Tribromophenol	109	43	146
Terphenyl-d14	104	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 ca
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.51 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1379 mb
Date Analyzed:	07/18/13	Data File:	071807A.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	35	32	162
Phenol-d6	29	10	170
Nitrobenzene-d5	87	50	150
2-Fluorobiphenyl	91	43	158
2,4,6-Tribromophenol	59 ca	43	146
Terphenyl-d14	96	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.30 lc
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-2S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-01
Date Analyzed:	07/17/13	Data File:	071714.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	50	150
Benzo(a)anthracene-d12	86	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.011
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	0.0030
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	CMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-02
Date Analyzed:	07/17/13	Data File:	071715.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	50	150
Benzo(a)anthracene-d12	87	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	0.0058
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	CMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-03
Date Analyzed:	07/17/13	Data File:	071716.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	50	150
Benzo(a)anthracene-d12	90	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0047
Acenaphthylene	<0.0024
Acenaphthene	0.0085
Fluorene	0.0044
Phenanthrene	0.026
Anthracene	0.0085
Fluoranthene	0.038
Pyrene	0.032
Benz(a)anthracene	0.011
Chrysene	0.016
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	0.014
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	0.0074
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	0.0089

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: CMW-5-0713
Date Received: 07/12/13
Date Extracted: 07/16/13
Date Analyzed: 07/17/13
Matrix: Water
Units: ug/L (ppb)

Client: SLR International Corp.
Project: Crowley RIFS 101.00205.00030
Lab ID: 307177-04
Data File: 071722.D
Instrument: GCMS6
Operator: ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	50	150
Benzo(a)anthracene-d12	96	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0082
Acenaphthylene	<0.0024
Acenaphthene	0.029
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	0.0098
Fluoranthene	0.0056
Pyrene	0.0098
Benzo(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-12S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-05
Date Analyzed:	07/17/13	Data File:	071723.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	50	150
Benzo(a)anthracene-d12	97	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.013
Anthracene	0.0032
Fluoranthene	0.017
Pyrene	0.017
Benz(a)anthracene	0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	CMW-7-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	307177-06
Date Analyzed:	07/17/13	Data File:	071724.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	50	150
Benzo(a)anthracene-d12	98	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0041
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.010
Anthracene	0.0035
Fluoranthene	0.0078
Pyrene	0.0085
Benz(a)anthracene	0.0048
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1378 mb2
Date Analyzed:	07/16/13	Data File:	071608.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	50	150
Benzo(a)anthracene-d12	95	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-2S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307177-01 1/0.25
Date Analyzed:	07/24/13	Data File:	50.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	96	Limit:	Limit:
		50	150

Compounds:	Concentration
	ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	CMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307177-02 1/0.25
Date Analyzed:	07/24/13	Data File:	52.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	CMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307177-03 1/0.25
Date Analyzed:	07/24/13	Data File:	54.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	95	Limit:	Limit:
		50	150

Compounds:	Concentration
	ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	CMW-5-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307177-04 1/0.25
Date Analyzed:	07/24/13	Data File:	56.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	73	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-12S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307177-05 1/0.25
Date Analyzed:	07/25/13	Data File:	58.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	88	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	CMW-7-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307177-06 1/0.25
Date Analyzed:	07/25/13	Data File:	60.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	84	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	03-1391 mb 1/0.25
Date Analyzed:	07/24/13	Data File:	072424.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-2S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-01
Date Analyzed:	07/31/13	Data File:	307177-01.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	105	60	125
Indium	95	60	125
Holmium	93	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.667
Nickel	0.959
Copper	0.904
Zinc	1.11
Arsenic	1.47
Selenium	<0.560
Silver	<0.0640
Cadmium	0.562
Antimony	0.401
Barium	8.25
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-02
Date Analyzed:	07/31/13	Data File:	307177-02.046
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	77	60	125
Indium	71	60	125
Holmium	68	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.45
Nickel	3.15
Copper	18.7
Zinc	3.20
Arsenic	68.6
Selenium	49.5
Silver	<0.0640
Cadmium	<0.250
Antimony	5.42
Barium	122
Thallium	<0.0740
Lead	0.177

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-03
Date Analyzed:	07/31/13	Data File:	307177-03.047
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	78	60	125
Indium	72	60	125
Holmium	73	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.993
Nickel	2.21
Copper	12.7
Zinc	3.43
Arsenic	23.6
Selenium	34.1
Silver	<0.0640
Cadmium	<0.250
Antimony	2.43
Barium	58.9
Thallium	<0.0740
Lead	0.317

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-5-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-04
Date Analyzed:	07/31/13	Data File:	307177-04.048
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	120	60	125
Indium	94	60	125
Holmium	93	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.47
Nickel	1.63
Copper	0.873
Zinc	1.29
Arsenic	68.7
Selenium	2.41
Silver	<0.0640
Cadmium	<0.250
Antimony	0.257
Barium	25.6
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-12S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-05
Date Analyzed:	07/31/13	Data File:	307177-05.049
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	101	60	125
Indium	96	60	125
Holmium	96	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.206
Nickel	3.09
Copper	1.32
Zinc	2.05
Arsenic	0.323
Selenium	0.742
Silver	<0.0640
Cadmium	<0.250
Antimony	0.510
Barium	8.84
Thallium	<0.0740
Lead	0.432

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-7-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-06
Date Analyzed:	07/31/13	Data File:	307177-06.050
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	87	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.497
Nickel	1.98
Copper	3.85
Zinc	0.939
Arsenic	2.31
Selenium	6.33
Silver	<0.0640
Cadmium	<0.250
Antimony	0.315
Barium	13.9
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	I3-449 mb
Date Analyzed:	07/31/13	Data File:	I3-449 mb.080
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	84	60	125
Holmium	83	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	<0.138
Nickel	<0.460
Copper	<0.340
Zinc	<0.610
Arsenic	<0.150
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	<0.0520 j
Barium	<0.260
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-2S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-01
Date Analyzed:	07/29/13	Data File:	307177-01.041
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	84	60	125
Holmium	86	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.559
Nickel	1.08
Copper	0.692
Zinc	<0.610
Arsenic	1.47
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.0680
Barium	7.19
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-02
Date Analyzed:	07/29/13	Data File:	307177-02.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	65	60	125
Indium	65	60	125
Holmium	63	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.56
Nickel	6.33
Copper	21.5
Zinc	4.25
Arsenic	48.2
Selenium	55.1
Silver	<0.0640
Cadmium	<0.250
Antimony	4.40
Barium	116
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-03
Date Analyzed:	07/29/13	Data File:	307177-03.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	60	60	125
Indium	58 vo	60	125
Holmium	57 vo	60	125

Analyte:	Concentration ug/L (ppb)
Silver	<0.0640 J
Cadmium	<0.250 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-03 x10
Date Analyzed:	07/29/13	Data File:	307177-03 x10.053
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	84	60	125
Indium	85	60	125
Holmium	87	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	<1.38
Nickel	<4.60
Copper	13.0
Zinc	<6.00
Arsenic	24.1
Selenium	34.1
Silver	<0.640
Cadmium	<2.50
Antimony	2.70
Barium	58.7
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-5-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-04
Date Analyzed:	07/29/13	Data File:	307177-04.044
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	75	60	125
Holmium	76	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.65
Nickel	2.21
Copper	0.873
Zinc	<0.610
Arsenic	99.0
Selenium	3.27
Silver	<0.0640
Cadmium	<0.250
Antimony	0.240
Barium	31.3
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-12S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab.ID:	307177-05
Date Analyzed:	07/29/13	Data File:	307177-05.045
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	89	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.220
Nickel	3.30
Copper	1.54
Zinc	0.910
Arsenic	0.315
Selenium	0.780
Silver	<0.0640
Cadmium	<0.250
Antimony	0.512
Barium	8.77
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-7-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307177-06
Date Analyzed:	07/29/13	Data File:	307177-06.046
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	81	60	125
Indium	79	60	125
Holmium	83	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.509
Nickel	4.21
Copper	5.12
Zinc	3.21
Arsenic	2.16
Selenium	6.94
Silver	<0.0640
Cadmium	<0.250
Antimony	0.305
Barium	13.5
Thallium	<0.0740
Lead	0.293

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	I3-450 mb
Date Analyzed:	07/29/13	Data File:	I3-450 mb.051
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	88	60	125
Indium	90	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	<0.138
Nickel	<0.460
Copper	<0.340
Zinc	<0.610
Arsenic	<0.150
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	<0.0520
Barium	<0.260
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

Date Extracted: 07/15/13

Date Analyzed: 07/16/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL MERCURY**

USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Total Mercury</u>
EMW-2S-0713 307177-01	<0.0015
CMW-2-0713 307177-02	0.0018
CMW-3-0713 307177-03	0.0026
CMW-5-0713 307177-04	0.0019
EMW-12S-0713 307177-05	<0.0015
CMW-7-0713 307177-06	0.0016
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

Date Extracted: 07/15/13

Date Analyzed: 07/16/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Dissolved Mercury</u>
EMW-2S-0713 307177-01	<0.0015
CMW-2-0713 307177-02	<0.0015
CMW-3-0713 307177-03	0.0017
CMW-5-0713 307177-04	<0.0015
EMW-12S-0713 307177-05	<0.0015
CMW-7-0713 307177-06	<0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

Date Extracted: NA

Date Analyzed: 07/18/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
EMW-2S-0713 307177-01	<10
CMW-2-0713 307177-02	<10
CMW-3-0713 307177-03	<10
CMW-5-0713 307177-04	42.4
EMW-12S-0713 307177-05	<10
CMW-7-0713 307177-06	<10
Method Blank	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 307177-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<12	<12	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	93	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	87	93	58-134	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 307176-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<0.16	107	55-144
Chloromethane	ug/L (ppb)	50	<0.22	96	67-131
Vinyl chloride	ug/L (ppb)	50	<0.13	100	61-139
Bromomethane	ug/L (ppb)	50	<0.2	983 vo	66-129
Chloroethane	ug/L (ppb)	50	<0.18	161 vo	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<0.17	122	71-128
Acetone	ug/L (ppb)	250	<2.6	103	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<0.19	103	71-123
Methylene chloride	ug/L (ppb)	50	<3	100	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<0.13	97	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	99	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<0.18	98	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<0.3	99	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	102	73-119
Chloroform	ug/L (ppb)	50	<0.24	94	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<0.94	105	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<0.11	97	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	103	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<0.26	99	67-121
Carbon tetrachloride	ug/L (ppb)	50	<0.24	112	72-123
Benzene	ug/L (ppb)	50	<0.13	95	79-109
Trichloroethene	ug/L (ppb)	50	<0.17	96	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<0.32	102	80-111
Bromodichloromethane	ug/L (ppb)	50	<0.38	114	78-117
Dibromomethane	ug/L (ppb)	50	<0.28	103	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<1.3	119	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<0.2	111	76-120
Toluene	ug/L (ppb)	50	<0.13	95	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<0.34	99	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.28	104	81-111
2-Hexanone	ug/L (ppb)	250	<1	115	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	99	81-111
Tetrachloroethene	ug/L (ppb)	50	<0.28	89	72-113
Dibromochloromethane	ug/L (ppb)	50	<0.24	110	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<0.24	106	83-114
Chlorobenzene	ug/L (ppb)	50	<0.1	92	75-115
Ethylbenzene	ug/L (ppb)	50	<0.16	95	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.32	110	78-122
m,p-Xylene	ug/L (ppb)	100	<0.5	95	63-128
o-Xylene	ug/L (ppb)	50	<0.22	96	64-129
Styrene	ug/L (ppb)	50	<0.22	100	70-122
Isopropylbenzene	ug/L (ppb)	50	<0.15	95	76-118
Bromoform	ug/L (ppb)	50	<0.22	114	49-138
n-Propylbenzene	ug/L (ppb)	50	<0.14	96	74-117
Bromobenzene	ug/L (ppb)	50	<0.18	95	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<0.18	98	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.24	107	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.28	102	72-119
2-Chlorotoluene	ug/L (ppb)	50	<0.13	94	77-114
4-Chlorotoluene	ug/L (ppb)	50	<0.16	96	81-109
tert-Butylbenzene	ug/L (ppb)	50	<0.15	96	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<0.11	96	74-118
sec-Butylbenzene	ug/L (ppb)	50	<0.12	94	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<0.15	93	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<0.15	91	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.094	90	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.13	91	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.44	112	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<0.34	83	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<0.46	79	67-120
Naphthalene	ug/L (ppb)	50	<0.28	101	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.38	97	79-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	100	105	54-149	5
Chloromethane	ug/L (ppb)	50	91	95	67-133	4
Vinyl chloride	ug/L (ppb)	50	94	98	73-132	4
Bromomethane	ug/L (ppb)	50	917 vo	956 vo	69-123	4
Chloroethane	ug/L (ppb)	50	158 vo	163 vo	68-126	3
Trichlorofluoromethane	ug/L (ppb)	50	118	123	70-132	4
Acetone	ug/L (ppb)	250	91	93	44-145	2
1,1-Dichloroethene	ug/L (ppb)	50	97	104	75-119	7
Methylene chloride	ug/L (ppb)	50	94	98	63-132	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	92	99	70-122	7
trans-1,2-Dichloroethene	ug/L (ppb)	50	91	96	76-118	5
1,1-Dichloroethane	ug/L (ppb)	50	92	98	80-116	6
2,2-Dichloropropane	ug/L (ppb)	50	106	111	62-141	5
cis-1,2-Dichloroethene	ug/L (ppb)	50	93	99	81-111	6
Chloroform	ug/L (ppb)	50	86	92	81-109	7
2-Butanone (MEK)	ug/L (ppb)	250	92	98	53-140	6
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	90	95	79-109	5
1,1,1-Trichloroethane	ug/L (ppb)	50	99	105	80-116	6
1,1-Dichloropropene	ug/L (ppb)	50	93	99	78-112	6
Carbon tetrachloride	ug/L (ppb)	50	109	116	72-128	6
Benzene	ug/L (ppb)	50	88	94	81-108	7
Trichloroethene	ug/L (ppb)	50	90	95	77-108	5
1,2-Dichloropropane	ug/L (ppb)	50	94	102	82-109	8
Bromodichloromethane	ug/L (ppb)	50	106	114	76-120	7
Dibromomethane	ug/L (ppb)	50	97	102	80-110	5
4-Methyl-2-pentanone	ug/L (ppb)	250	104	111	59-142	7
cis-1,3-Dichloropropene	ug/L (ppb)	50	106	114	76-128	7
Toluene	ug/L (ppb)	50	88	94	83-108	7
trans-1,3-Dichloropropene	ug/L (ppb)	50	97	105	76-128	8
1,1,2-Trichloroethane	ug/L (ppb)	50	95	104	82-110	9
2-Hexanone	ug/L (ppb)	250	97	107	53-145	10
1,3-Dichloropropane	ug/L (ppb)	50	92	99	83-110	7
Tetrachloroethene	ug/L (ppb)	50	83	90	78-109	8
Dibromochloromethane	ug/L (ppb)	50	106	113	63-140	6
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	100	107	85-113	7
Chlorobenzene	ug/L (ppb)	50	85	92	84-108	8
Ethylbenzene	ug/L (ppb)	50	88	95	84-110	8
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	105	112	76-125	6
m,p-Xylene	ug/L (ppb)	100	88	95	84-112	8
o-Xylene	ug/L (ppb)	50	90	95	82-113	5
Styrene	ug/L (ppb)	50	92	100	84-116	8
Isopropylbenzene	ug/L (ppb)	50	89	96	81-122	8
Bromoform	ug/L (ppb)	50	110	118	40-161	7
n-Propylbenzene	ug/L (ppb)	50	90	96	81-115	6
Bromobenzene	ug/L (ppb)	50	88	94	80-113	7
1,3,5-Trimethylbenzene	ug/L (ppb)	50	93	98	83-117	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	98	105	79-118	7
1,2,3-Trichloropropane	ug/L (ppb)	50	92	99	74-116	7
2-Chlorotoluene	ug/L (ppb)	50	87	92	79-112	6
4-Chlorotoluene	ug/L (ppb)	50	90	97	81-113	7
tert-Butylbenzene	ug/L (ppb)	50	90	95	81-119	5
1,2,4-Trimethylbenzene	ug/L (ppb)	50	90	96	83-116	6
sec-Butylbenzene	ug/L (ppb)	50	89	94	83-116	5
p-Isopropyltoluene	ug/L (ppb)	50	89	94	82-119	5
1,3-Dichlorobenzene	ug/L (ppb)	50	85	92	83-111	8
1,4-Dichlorobenzene	ug/L (ppb)	50	85	90	82-109	6
1,2-Dichlorobenzene	ug/L (ppb)	50	85	89	83-111	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	103	110	62-133	7
1,2,4-Trichlorobenzene	ug/L (ppb)	50	80	84	77-117	5
Hexachlorobutadiene	ug/L (ppb)	50	75	78	74-118	4
Naphthalene	ug/L (ppb)	50	91	96	75-131	5
1,2,3-Trichlorobenzene	ug/L (ppb)	50	92	96	82-115	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	10	35	39	18-52	11
Bis(2-chloroethyl) ether	ug/L (ppb)	10	80	87	52-113	8
2-Chlorophenol	ug/L (ppb)	10	76	86	50-110	12
1,3-Dichlorobenzene	ug/L (ppb)	10	75	82	45-109	9
1,4-Dichlorobenzene	ug/L (ppb)	10	75	83	44-118	10
1,2-Dichlorobenzene	ug/L (ppb)	10	75	84	46-116	11
Benzyl alcohol	ug/L (ppb)	10	74	84	42-100	13
Bis(2-chloroisopropyl) ether	ug/L (ppb)	10	76	87	51-124	13
2-Methylphenol	ug/L (ppb)	10	62	69	38-100	11
Hexachloroethane	ug/L (ppb)	10	75	83	42-117	10
N-Nitroso-di-n-propylamine	ug/L (ppb)	10	80	88	48-124	10
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	10	62	70	48-87	12
Nitrobenzene	ug/L (ppb)	10	82	89	50-118	8
Isophorone	ug/L (ppb)	10	86	95	55-116	10
2-Nitrophenol	ug/L (ppb)	10	92	105	42-127	13
2,4-Dimethylphenol	ug/L (ppb)	10	29 vo	28 vo	45-100	4
Benzoic acid	ug/L (ppb)	65	41	40	10-46	1
Bis(2-chloroethoxy)methane	ug/L (ppb)	10	82	90	55-115	9
2,4-Dichlorophenol	ug/L (ppb)	10	85	94	55-113	10
1,2,4-Trichlorobenzene	ug/L (ppb)	10	76	83	50-109	9
Hexachlorobutadiene	ug/L (ppb)	10	76	84	50-109	10
4-Chloroaniline	ug/L (ppb)	20	76	80	30-109	5
4-Chloro-3-methylphenol	ug/L (ppb)	10	86	96	54-114	11
2-Methylnaphthalene	ug/L (ppb)	10	79	88	53-113	11
Hexachlorocyclopentadiene	ug/L (ppb)	10	47	40	26-94	16
2,4,6-Trichlorophenol	ug/L (ppb)	10	89	96	46-114	8
2,4,5-Trichlorophenol	ug/L (ppb)	10	92	99	57-122	7
2-Chloronaphthalene	ug/L (ppb)	10	83	90	52-112	8
2-Nitroaniline	ug/L (ppb)	10	97	108	47-128	11
Dimethyl phthalate	ug/L (ppb)	10	91	100	55-116	9
2,6-Dinitrotoluene	ug/L (ppb)	10	97	108	49-126	11
3-Nitroaniline	ug/L (ppb)	20	102	104	21-125	2
2,4-Dinitrophenol	ug/L (ppb)	10	91	113	29-130	22 vo
Dibenzofuran	ug/L (ppb)	10	84	93	53-113	10
2,4-Dinitrotoluene	ug/L (ppb)	10	90	100	48-129	11
4-Nitrophenol	ug/L (ppb)	10	46	48	12-59	4
Diethyl phthalate	ug/L (ppb)	10	87	97	55-116	11
4-Chlorophenyl phenyl ether	ug/L (ppb)	10	85	94	52-115	10
N-Nitrosodiphenylamine	ug/L (ppb)	10	84	92	51-112	9
4-Nitroaniline	ug/L (ppb)	20	99	104	42-115	5
4,6-Dinitro-2-methylphenol	ug/L (ppb)	10	95	108	40-128	13
4-Bromophenyl phenyl ether	ug/L (ppb)	10	86	95	53-114	10
Hexachlorobenzene	ug/L (ppb)	10	86	95	54-115	10
Pentachlorophenol	ug/L (ppb)	10	85	95	49-114	11
Carbazole	ug/L (ppb)	10	89	94	54-115	5
Di-n-butyl phthalate	ug/L (ppb)	10	95	103	54-115	8
Benzyl butyl phthalate	ug/L (ppb)	10	98	110	53-122	12
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	112	101	54-122	10
Di-n-octyl phthalate	ug/L (ppb)	10	86	96	50-131	11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	78	75	67-116	4
Acenaphthylene	ug/L (ppb)	1	94	91	65-119	3
Acenaphthene	ug/L (ppb)	1	90	88	66-118	2
Fluorene	ug/L (ppb)	1	96	95	64-125	1
Phenanthrene	ug/L (ppb)	1	91	93	67-120	2
Anthracene	ug/L (ppb)	1	94	95	65-122	1
Fluoranthene	ug/L (ppb)	1	96	101	65-127	5
Pyrene	ug/L (ppb)	1	97	99	62-130	2
Benz(a)anthracene	ug/L (ppb)	1	92	94	60-118	2
Chrysene	ug/L (ppb)	1	95	97	66-125	2
Benzo(b)fluoranthene	ug/L (ppb)	1	85	90	55-135	6
Benzo(k)fluoranthene	ug/L (ppb)	1	81	81	62-125	0
Benzo(a)pyrene	ug/L (ppb)	1	83	85	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	85	87	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	1	82	84	37-133	2
Benzo(g,h,i)perylene	ug/L (ppb)	1	84	85	34-135	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED
BIPHENYLS AS
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.63	97	114	70-130	16
Aroclor 1260	ug/L (ppb)	0.63	102	108	70-130	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 307177-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.0980	113	113	67-145	0
Chromium	ug/L (ppb)	20	0.667	90	91	64-132	1
Nickel	ug/L (ppb)	20	0.959	83	84	61-128	1
Copper	ug/L (ppb)	20	0.904	83	84	63-124	1
Zinc	ug/L (ppb)	50	1.11	83	84	55-141	1
Arsenic	ug/L (ppb)	10	1.47	100	104	60-150	4
Selenium	ug/L (ppb)	5	<0.560	100	104	43-178	4
Silver	ug/L (ppb)	5	<0.0640	93	97	71-115	4
Cadmium	ug/L (ppb)	5	0.562	99	102	83-116	3
Antimony	ug/L (ppb)	20	0.401	88	92	62-125	4
Barium	ug/L (ppb)	50	8.25	99	103	79-126	4
Thallium	ug/L (ppb)	5	<0.0740	92	93	73-119	1
Lead	ug/L (ppb)	10	<0.144	93	95	79-121	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	104	73-135
Chromium	ug/L (ppb)	20	86	80-119
Nickel	ug/L (ppb)	20	83	79-122
Copper	ug/L (ppb)	20	85	81-119
Zinc	ug/L (ppb)	50	81	76-124
Arsenic	ug/L (ppb)	10	85	80-111
Selenium	ug/L (ppb)	5	90	81-119
Silver	ug/L (ppb)	5	92	80-116
Cadmium	ug/L (ppb)	5	92	83-113
Antimony	ug/L (ppb)	20	88	79-108
Barium	ug/L (ppb)	50	92	83-117
Thallium	ug/L (ppb)	5	85	78-116
Lead	ug/L (ppb)	10	87	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 307166-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.0980	106	106	67-145	0
Chromium	ug/L (ppb)	20	0.296	86	88	64-132	2
Nickel	ug/L (ppb)	20	1.65	87	86	61-128	1
Copper	ug/L (ppb)	20	2.53	86	86	63-124	0
Zinc	ug/L (ppb)	50	0.776	87	88	55-141	1
Arsenic	ug/L (ppb)	10	0.232	88	87	60-150	1
Selenium	ug/L (ppb)	5	<0.560	90	88	43-178	2
Silver	ug/L (ppb)	5	<0.0640	83	82	71-115	1
Cadmium	ug/L (ppb)	5	<0.250	87	87	83-116	0
Antimony	ug/L (ppb)	20	0.476	84	85	62-125	1
Barium	ug/L (ppb)	50	20.6	88 b	87 b	79-126	1 b
Thallium	ug/L (ppb)	5	<0.0740	83	85	73-119	2
Lead	ug/L (ppb)	10	<0.144	85	84	79-121	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	98	73-135
Chromium	ug/L (ppb)	20	84	80-119
Nickel	ug/L (ppb)	20	88	79-122
Copper	ug/L (ppb)	20	89	81-119
Zinc	ug/L (ppb)	50	89	76-124
Arsenic	ug/L (ppb)	10	80	80-111
Selenium	ug/L (ppb)	5	88	81-119
Silver	ug/L (ppb)	5	88	80-116
Cadmium	ug/L (ppb)	5	87	83-113
Antimony	ug/L (ppb)	20	83	79-108
Barium	ug/L (ppb)	50	88	83-117
Thallium	ug/L (ppb)	5	83	78-116
Lead	ug/L (ppb)	10	85	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307152-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	<0.0015	100	98	63-132	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	98	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
DISSOLVED MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307152-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	<0.0015	96	95	63-132	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	100	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/13

Date Received: 07/12/13

Project: Crowley RIFS 101.00205.00030, F&BI 307177

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Laboratory Code: 307152-09 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
TSS	mg/L	28	32	13	0-20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L	50	104	61-131

Data Qualifiers & Definitions

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



Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 29, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 307177
ARI Job No.: WX54

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted six water samples on July 15, 2013, under ARI job WX54. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for chloride and TDS, as requested on the COC.

There were no anomalies associated with the analyses of these samples.

An electronic copy of this report and all associated raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile WX54

Enclosures

WXSCH

SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To Michele Costales Poquiz
 Company Friedman & Bruya, Inc.
 Address 3012 16th Ave. W.
 City, State, ZIP Seattle, WA 98119
 Phone # (206) 285-8282 Fax # (206) 283-5044
 Email Address mipoquiz@friedmanandbruya.com

SUBCONTRACTOR Analytical Resources, Inc. (ARI)	
PROJECT NAME/NO. <u>307177</u>	PO # <u>C-466</u>
REMARKS Please e-mail results ELECTRONIC DATA REQUESTED (EIM)	

TURNAROUND TIME
<input checked="" type="checkbox"/> Standard Turnaround
<input type="checkbox"/> RUSH
Rush charges authorized by: _____
SAMPLE DISPOSAL
<input type="checkbox"/> Dispose after 30 days
<input type="checkbox"/> Return samples
<input type="checkbox"/> Will call with instructions
Samples Received at _____ °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes	
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Hexavalent Cr by 7196A	Total Organic Carbon by 9060M	TDS by 2540C	Chloride by SM4500		
EMW-2S-0713		7/12/13	1232	water	2								X	X			
CMW-2-0713			1247										X	X			
CMW-3-0713			1353										X	X			
CMW-5-0713			1342										X	X			
EMW-12S-0713			1441										X	X			
CMW-7-0713			1509										X	X			

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044	SIGNATURE <i>Michele Costales Poquiz</i>	PRINT NAME Michele Costales Poquiz	COMPANY F&B	DATE 7/15/13	TIME 12:12 PM
Relinquished by: _____	Received by: <i>Jennifer Milligan</i>	Jennifer Milligan	ARI	7/15/13	1:50
Relinquished by: _____	Received by: _____				



Cooler Receipt Form

ARI Client Friedman + Bruya

Project Name 304177

COC No(s) _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other

Assigned ARI Job No WX54

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? YES (NO)

Were custody papers properly filled out (ink, signed, etc.) YES (NO)

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 8.0

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID# 90877752

Cooler Accepted by: JM Date: 7/15/13 Time: 1500

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES (NO)

Were all bottles sealed in individual plastic bags? YES (NO)

Did all bottles arrive in good condition (unbroken)? YES (NO)

Were all bottle labels complete and legible? YES (NO)

Did the number of containers listed on COC match with the number of containers received? YES (NO)

Did all bottle labels and tags agree with custody papers? YES (NO)

Were all bottles used correct for the requested analyses? YES (NO)

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs). (NA) YES (NO)

Were all VOC vials free of air bubbles? (NA) YES (NO)

Was sufficient amount of sample sent in each bottle? YES (NO)

Date VOC Trip Blank was made at ARI: _____ (NA)

Was Sample Split by ARI: (NA) YES Date/Time _____ Equipment _____ Split by: _____

Samples Logged by: AN Date: 7/15/13 Time: 1652

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By _____ Date: _____

			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"



Cooler Temperature Compliance Form

Cooler#: 1 Temperature(°C): 8.0

Sample ID	Bottle Count	Bottle Type
All samples associated		
with this job were received		
at a temp greater than		
6°C.		

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Completed by JM Date: 7/15/13 Time: 1500

SAMPLE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/25/13

A handwritten signature in black ink, appearing to be a stylized 'M' or 'W' with a checkmark-like flourish extending from the top right.

Project: NA
Event: 307177
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: EMW-2S-0713
ARI ID: 13-14881 WX54A

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	210
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	1.0	5.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/25/13

A handwritten signature in black ink, appearing to be 'M. Friedman', written over the 'Data Release Authorized' text.

Project: NA
Event: 307177
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: CMW-2-0713
ARI ID: 13-14882 WX54B

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	100	7,250
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	500	4,110

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized
Reported: 07/25/13

A handwritten signature in black ink, appearing to be 'M. J.', written over the 'Data Release Authorized' text.

Project: NA
Event: 307177
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: CMW-3-0713
ARI ID: 13-14883 WX54C

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	100	4,700
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	500	2,510

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/25/13

A handwritten signature in black ink, appearing to be 'J. Friedman', written over the 'Data Release Authorized' text.

Project: NA
Event: 307177
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: CMW-5-0713
ARI ID: 13-14884 WX54D

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	10.0	374
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	28.4

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/25/13

A handwritten signature in black ink, appearing to be a stylized name, located to the right of the matrix and authorization information.

Project: NA
Event: 307177
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: EMW-12S-0713
ARI ID: 13-14885 WX54E

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	217
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	12.5

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/25/13

Project: NA
Event: 307177
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: CMW-7-0713
ARI ID: 13-14886 WX54F

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	13.3	996
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	100	424

RL Analytical reporting limit
U Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/25/13


A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

Project: NA
Event: 307177
Date Sampled: 07/12/13
Date Received: 07/15/13

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WX54A Client ID: EMW-2S-0713						
Total Dissolved Solids	SM2540C	07/16/13	mg/L	210	176	17.6%

LAB CONTROL RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/25/13

Project: NA
Event: 307177
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Dissolved Solids SM2540C	ICVL	07/16/13	mg/L	487	500	97.4%

METHOD BLANK RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/25/13

A handwritten signature in black ink, appearing to be 'M. Friedman', written over the 'Data Release Authorized' text.

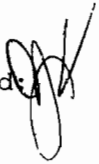
Project: NA
Event: 307177
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Total Dissolved Solids	SM2540C	07/16/13	mg/L	< 5.0 U	
Chloride	SM4500-CLE	07/16/13	mg/L	< 1.0 U	FB

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
WX54-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/25/13

Project: NA
Event: 307177
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Chloride ERA #411010	SM4500-CLE	07/16/13	mg/L	5.2	5.0	104.0%

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

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Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 15, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on July 12, 2013 from the 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166 project. There are 91 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michele Costales Poquiz
Chemist

Enclosures
SLR0815R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 12, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
307166-01	SLR-3-0713
307166-02	SLR-6-0713
307166-03	DMW-2-0713
307166-04	DMW-3-0713
307166-05	DMW-6-0713
307166-06	EMW-5S-0713
307166-07	EMW-8S-0713
307166-08	EMW-9S-0713
307166-09	EMW-11S-0713
307166-10	TB-071313A

Total Petroleum Hydrocarbons as Gasoline by Method NWTPH-Gx

The presence of gasoline in the sample DMW-6-0713 may be due to carryover from previous sample injections. The sample has been flagged accordingly.

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Compounds by EPA Method 8260C

The calibration result for bromomethane fell outside of acceptance criteria. The values reported are estimates.

The sample TB-071313A was received with incorrect preservation for vinyl chloride. The result should be considered an estimate.

The percent recovery for the matrix spike (MS), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) failed high for several compounds. The compounds were not identified in the samples, therefore the results are valid.

Semivolatile Organic Compounds by EPA Method 8270D

The samples SLR-3-0713, DMW-2-0713, and DMW-3-0713 were diluted due to matrix interferences. The reporting limits have been raised accordingly.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

The presence of diethyl phthalate in the sample SLR-6-0713 is likely due to laboratory contamination. The results have been flagged accordingly.

The presence of bis(2-ethylhexyl) phthalate in the samples SLR-6-0713, DMW-6-0713, EMW-5S-0713, EMW-8S-0713, EMW-9S-0713, EMW-11S-0713, and the method blank is likely due to laboratory contamination. The results have been flagged accordingly.

The internal standard associated with several analytes exceeded acceptance criteria for the samples EMW-8S-0713 and EMW-9S-0713. The sample EMW-9S-0713 was diluted and reanalyzed. The results for the original analysis and the reanalysis are included.

The percent recovery for the LCS and LCSD exceeded acceptance criteria for several compounds. In addition, the relative percent difference (RPD) for the LCS/LCSD exceeded acceptance criteria for several compounds. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM

The samples SLR-3-0713, DMW-2-0713, DMW-3-0713, and DMW-6-0713 were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A

All quality control requirements were acceptable.

Total Metals by EPA Method 200.8

The reporting limit for cadmium was raised due to interference.

The internal standard associated with several analytes exceeded acceptance criteria for the samples SLR-3-0713 and DMW-6-0713. These analytes were not reported. The samples were diluted and reanalyzed. The results for the dilution analyses are included.

Dissolved Metals by EPA Method 200.8

The reporting limit for cadmium was raised due to interference.

The internal standard associated with several analytes exceeded acceptance criteria for the samples SLR-3-0713 and DMW-6-0713. These analytes were not reported. The samples were diluted and reanalyzed. The results for the dilution analyses are included.

Total Mercury by EPA Method 1631E

The detection limit has been raised due to trace level laboratory contamination.

Dissolved Mercury by EPA Method 1631E

The detection limit has been raised due to trace level laboratory contamination.

Total Suspended Solids by Method 2540C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

All quality control requirements were acceptable.

Total Dissolved Solids by Method 2540C

The samples were sent to Analytical Resources, Inc. (ARI) for total dissolved solids analysis. The report generated by ARI is enclosed.

Chloride by Method SM4500

The samples were sent to ARI for chloride analysis. The report generated by ARI is enclosed.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

Date Extracted: 07/15/13

Date Analyzed: 07/15/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
SLR-3-0713 307166-01	<12	93
SLR-6-0713 307166-02	<12	86
DMW-2-0713 307166-03	81	89
DMW-3-0713 307166-04	510	93
DMW-6-0713 307166-05	15 c	90
EMW-5S-0713 307166-06	<12	87
EMW-8S-0713 307166-07	<12	90
EMW-9S-0713 307166-08	<12	86
EMW-11S-0713 307166-09	<12	87
Method Blank 03-1352 MB	<12	95

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

Date Extracted: 07/15/13

Date Analyzed: 07/18/13 and 07/24/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
SLR-3-0713 307166-01	8.7 x	<52	86
SLR-6-0713 307166-02	<6.9	<52	108
DMW-2-0713 307166-03	200 x	<52	102
DMW-3-0713 307166-04	3,100 x	<52	ip
DMW-6-0713 307166-05	7.3 x	<52	97
EMW-5S-0713 307166-06	<6.9	<52	112
EMW-8S-0713 307166-07	<6.9	<52	108
EMW-9S-0713 307166-08	<6.9	<52	111
EMW-11S-0713 307166-09	<6.9	<52	112
Method Blank 03-1389 MB	<6.9	<52	132

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-01
Date Analyzed:	07/15/13	Data File:	071519.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SLR-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-02
Date Analyzed:	07/15/13	Data File:	071520.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	1.0
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-03
Date Analyzed:	07/15/13	Data File:	071521.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	0.32
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	0.24
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	0.56
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	33
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-04
Date Analyzed:	07/15/13	Data File:	071522.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	0.47
Acetone	3.7 lc	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	0.42
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	0.72	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	0.34
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	1.6
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	0.21
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	0.14	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	550 ve
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: DMW-3-0713	Client: SLR International Corp.
Date Received: 07/12/13	Project: Crowley RI-FS 101.00205.00030
Date Extracted: 07/15/13	Lab ID: 307166-04 1/10
Date Analyzed: 07/16/13	Data File: 071629.D
Matrix: Water	Instrument: GCMS9
Units: ug/L (ppb)	Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1.6	1,3-Dichloropropane	<2
Chloromethane	<2.2	Tetrachloroethene	<2.8
Vinyl chloride	<1.3	Dibromochloromethane	<2.4
Bromomethane	<2.0 ca	1,2-Dibromoethane (EDB)	<2.4
Chloroethane	<1.8	Chlorobenzene	<1
Trichlorofluoromethane	<1.7	Ethylbenzene	<1.6
Acetone	<26	1,1,1,2-Tetrachloroethane	<3.2
1,1-Dichloroethene	<1.9	m,p-Xylene	<5
Methylene chloride	<30	o-Xylene	<2.2
Methyl t-butyl ether (MTBE)	<1.3	Styrene	<2.2
trans-1,2-Dichloroethene	<2.4	Isopropylbenzene	<1.5
1,1-Dichloroethane	<1.8	Bromoform	<2.2
2,2-Dichloropropane	<3	n-Propylbenzene	<1.4
cis-1,2-Dichloroethene	<2.4	Bromobenzene	<1.8
Chloroform	<2.4	1,3,5-Trimethylbenzene	<1.8
2-Butanone (MEK)	<9.4 j	1,1,2,2-Tetrachloroethane	<2.4
1,2-Dichloroethane (EDC)	<1.1	1,2,3-Trichloropropane	<2.8
1,1,1-Trichloroethane	<2	2-Chlorotoluene	<1.3
1,1-Dichloropropene	<2.6	4-Chlorotoluene	<1.6
Carbon tetrachloride	<2.4	tert-Butylbenzene	<1.5
Benzene	<1.3	1,2,4-Trimethylbenzene	1.6
Trichloroethene	<1.7	sec-Butylbenzene	<1.2
1,2-Dichloropropane	<3.2	p-Isopropyltoluene	<1.5
Bromodichloromethane	<3.8	1,3-Dichlorobenzene	<1.5
Dibromomethane	<2.8	1,4-Dichlorobenzene	<0.94 j
4-Methyl-2-pentanone	<13	1,2-Dichlorobenzene	<1.3
cis-1,3-Dichloropropene	<2	1,2-Dibromo-3-chloropropane	<4.4
Toluene	<1.3	1,2,4-Trichlorobenzene	<3.4
trans-1,3-Dichloropropene	<3.4	Hexachlorobutadiene	<4.6
1,1,2-Trichloroethane	<2.8	Naphthalene	580
2-Hexanone	<10	1,2,3-Trichlorobenzene	<3.8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-05
Date Analyzed:	07/16/13	Data File:	071618.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-5S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-06
Date Analyzed:	07/16/13	Data File:	071619.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	0.29	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-8S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-07
Date Analyzed:	07/16/13	Data File:	071620.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-9S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-08
Date Analyzed:	07/15/13	Data File:	071526.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	0.31	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	EMW-11S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-09
Date Analyzed:	07/15/13	Data File:	071527.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TB-071313A	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-10
Date Analyzed:	07/15/13	Data File:	071508.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 pr	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	5.3 lc	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	03-1315 mb
Date Analyzed:	07/15/13	Data File:	071507.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2 ca	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94 j	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-01 1/10
Date Analyzed:	07/19/13	Data File:	071913.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	50 ds	32	162
Phenol-d6	31 ds	10	170
Nitrobenzene-d5	76 ds	50	150
2-Fluorobiphenyl	72 ds	43	158
2,4,6-Tribromophenol	87 ds	43	146
Terphenyl-d14	63 ds	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<14	2,4,6-Trichlorophenol	<2.8
Bis(2-chloroethyl) ether	<0.6	2,4,5-Trichlorophenol	<2.2
2-Chlorophenol	<1.6	2-Chloronaphthalene	<0.44
1,3-Dichlorobenzene	<0.34	2-Nitroaniline	<0.86
1,4-Dichlorobenzene	<0.34	Dimethyl phthalate	<0.5
1,2-Dichlorobenzene	<0.24	2,6-Dinitrotoluene	<0.62
Benzyl alcohol	<4	3-Nitroaniline	<4.6
Bis(2-chloroisopropyl) ether	<0.3	2,4-Dinitrophenol	<24
2-Methylphenol	<2.6	Dibenzofuran	<0.34
Hexachloroethane	<0.6	2,4-Dinitrotoluene	<0.56
N-Nitroso-di-n-propylamine	<1.1	4-Nitrophenol	<13
3-Methylphenol + 4-Methylphenol	<4.2	Diethyl phthalate	<0.6
Nitrobenzene	<0.44	4-Chlorophenyl phenyl ether	<0.72
Isophorone	<0.3	N-Nitrosodiphenylamine	<0.5
2-Nitrophenol	<1.7	4-Nitroaniline	<5.6
2,4-Dimethylphenol	<2.8	4,6-Dinitro-2-methylphenol	<3.8
Benzoic acid	<140	4-Bromophenyl phenyl ether	<0.56
Bis(2-chloroethoxy)methane	<0.34	Hexachlorobenzene	<0.5
2,4-Dichlorophenol	<2.6	Pentachlorophenol	<3.2
1,2,4-Trichlorobenzene	<0.5	Carbazole	<0.48
Hexachlorobutadiene	<0.7	Di-n-butyl phthalate	<0.68
4-Chloroaniline	<0.56 jl	Benzyl butyl phthalate	<0.86
4-Chloro-3-methylphenol	<2.4	Bis(2-ethylhexyl) phthalate	<1.7
2-Methylnaphthalene	<0.34	Di-n-octyl phthalate	<0.44
Hexachlorocyclopentadiene	<0.94		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	SLR-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-02
Date Analyzed:	07/19/13	Data File:	071917.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	53	32	162
Phenol-d6	33	10	170
Nitrobenzene-d5	99	50	150
2-Fluorobiphenyl	101	43	158
2,4,6-Tribromophenol	118	43	146
Terphenyl-d14	103	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.034	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.42	Diethyl phthalate	0.17 lc
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.82 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID: DMW-2-0713
 Date Received: 07/12/13
 Date Extracted: 07/17/13
 Date Analyzed: 07/23/13
 Matrix: Water
 Units: ug/L (ppb)

Client: SLR International Corp.
 Project: Crowley RI-FS 101.00205.00030
 Lab ID: 307166-03 1/100
 Data File: 072304.D
 Instrument: GCMS8
 Operator: ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	55 ds	32	162
Phenol-d6	40 ds	10	170
Nitrobenzene-d5	99 ds	50	150
2-Fluorobiphenyl	102 ds	43	158
2,4,6-Tribromophenol	87 ds	43	146
Terphenyl-d14	94 ds	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<140	2,4,6-Trichlorophenol	<28
Bis(2-chloroethyl) ether	<6	2,4,5-Trichlorophenol	<22
2-Chlorophenol	<16	2-Chloronaphthalene	<4.4
1,3-Dichlorobenzene	<3.4	2-Nitroaniline	<8.6
1,4-Dichlorobenzene	<3.4	Dimethyl phthalate	<5
1,2-Dichlorobenzene	<2.4	2,6-Dinitrotoluene	<6.2
Benzyl alcohol	<40	3-Nitroaniline	<46
Bis(2-chloroisopropyl) ether	<3	2,4-Dinitrophenol	<240
2-Methylphenol	<26	Dibenzofuran	4.2
Hexachloroethane	<6	2,4-Dinitrotoluene	<5.6
N-Nitroso-di-n-propylamine	<11	4-Nitrophenol	<130
3-Methylphenol + 4-Methylphenol	<42	Diethyl phthalate	<6
Nitrobenzene	<4.4	4-Chlorophenyl phenyl ether	<7.2
Isophorone	<3	N-Nitrosodiphenylamine	<5
2-Nitrophenol	<17	4-Nitroaniline	<56
2,4-Dimethylphenol	<28	4,6-Dinitro-2-methylphenol	<38
Benzoic acid	<1,400	4-Bromophenyl phenyl ether	<5.6
Bis(2-chloroethoxy)methane	<3.4	Hexachlorobenzene	<5
2,4-Dichlorophenol	<26	Pentachlorophenol	<32
1,2,4-Trichlorobenzene	<5	Carbazole	6.0
Hexachlorobutadiene	<7	Di-n-butyl phthalate	<6.8
4-Chloroaniline	<5.6 jl	Benzyl butyl phthalate	<8.6
4-Chloro-3-methylphenol	<24	Bis(2-ethylhexyl) phthalate	<17
2-Methylnaphthalene	36	Di-n-octyl phthalate	<4.4
Hexachlorocyclopentadiene	<9.4		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-04 1/100
Date Analyzed:	07/19/13	Data File:	071919.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40 ds	32	162
Phenol-d6	27 ds	10	170
Nitrobenzene-d5	80 ds	50	150
2-Fluorobiphenyl	90 ds	43	158
2,4,6-Tribromophenol	0 ds	43	146
Terphenyl-d14	80 ds	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<140	2,4,6-Trichlorophenol	<28
Bis(2-chloroethyl) ether	<6	2,4,5-Trichlorophenol	<22
2-Chlorophenol	<16	2-Chloronaphthalene	<4.4
1,3-Dichlorobenzene	<3.4	2-Nitroaniline	<8.6
1,4-Dichlorobenzene	<3.4	Dimethyl phthalate	<5
1,2-Dichlorobenzene	<2.4	2,6-Dinitrotoluene	<6.2
Benzyl alcohol	<40	3-Nitroaniline	<46
Bis(2-chloroisopropyl) ether	<3	2,4-Dinitrophenol	<240
2-Methylphenol	<26	Dibenzofuran	94
Hexachloroethane	<6	2,4-Dinitrotoluene	<5.6
N-Nitroso-di-n-propylamine	<11	4-Nitrophenol	<130
3-Methylphenol + 4-Methylphenol	<42	Diethyl phthalate	<6
Nitrobenzene	<4.4	4-Chlorophenyl phenyl ether	<7.2
Isophorone	<3	N-Nitrosodiphenylamine	<5
2-Nitrophenol	<17	4-Nitroaniline	<56
2,4-Dimethylphenol	<28	4,6-Dinitro-2-methylphenol	<38
Benzoic acid	<1,400	4-Bromophenyl phenyl ether	<5.6
Bis(2-chloroethoxy)methane	<3.4	Hexachlorobenzene	<5
2,4-Dichlorophenol	<26	Pentachlorophenol	<32
1,2,4-Trichlorobenzene	<5	Carbazole	58
Hexachlorobutadiene	<7	Di-n-butyl phthalate	<6.8
4-Chloroaniline	<5.6 jl	Benzyl butyl phthalate	<8.6
4-Chloro-3-methylphenol	<24	Bis(2-ethylhexyl) phthalate	<17
2-Methylnaphthalene	170	Di-n-octyl phthalate	<4.4
Hexachlorocyclopentadiene	<9.4		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-05
Date Analyzed:	07/19/13	Data File:	071920.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	42	32	162
Phenol-d6	28	10	170
Nitrobenzene-d5	92	50	150
2-Fluorobiphenyl	94	43	158
2,4,6-Tribromophenol	115	43	146
Terphenyl-d14	106	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.034	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.42	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.26 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-5S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-06
Date Analyzed:	07/19/13	Data File:	071921.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	49	32	162
Phenol-d6	32	10	170
Nitrobenzene-d5	96	50	150
2-Fluorobiphenyl	97	43	158
2,4,6-Tribromophenol	124	43	146
Terphenyl-d14	103	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.034	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.42	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.28 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-8S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-07
Date Analyzed:	07/19/13	Data File:	071922.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	43	32	162
Phenol-d6	28	10	170
Nitrobenzene-d5	97	50	150
2-Fluorobiphenyl	97	43	158
2,4,6-Tribromophenol	125	43	146
Terphenyl-d14	118 J	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.034	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.42	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086 J
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.35 J fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-9S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-08
Date Analyzed:	07/19/13	Data File:	071923.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	44	32	162
Phenol-d6	28	10	170
Nitrobenzene-d5	96	50	150
2-Fluorobiphenyl	99 J	43	158
2,4,6-Tribromophenol	112 J	43	146
Terphenyl-d14	109 J	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28 J
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22 J
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044 J
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086 J
1,4-Dichlorobenzene	<0.034	Dimethyl phthalate	<0.05 J
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062 J
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46 J
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4 J
2-Methylphenol	<0.26	Dibenzofuran	0.042 J
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056 J
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3 J
3-Methylphenol + 4-Methylphenol	<0.42	Diethyl phthalate	<0.06 J
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072 J
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05 J
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56 J
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38 J
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056 J
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05 J
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32 J
1,2,4-Trichlorobenzene	<0.05	Carbazole	0.27 J
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068 J
4-Chloroaniline	<0.056 J	Benzyl butyl phthalate	<0.086 J
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.30 fb J
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044 J
Hexachlorocyclopentadiene	<0.094 J		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-9S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-08 1/10
Date Analyzed:	07/22/13	Data File:	072217.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	91 ds	32	162
Phenol-d6	56 ds	10	170
Nitrobenzene-d5	183 ds	50	150
2-Fluorobiphenyl	194 ds	43	158
2,4,6-Tribromophenol	187 ds	43	146
Terphenyl-d14	199 ds	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<14	2,4,6-Trichlorophenol	<2.8
Bis(2-chloroethyl) ether	<0.6	2,4,5-Trichlorophenol	<2.2
2-Chlorophenol	<1.6	2-Chloronaphthalene	<0.44
1,3-Dichlorobenzene	<0.34	2-Nitroaniline	<0.86
1,4-Dichlorobenzene	<0.34	Dimethyl phthalate	<0.5
1,2-Dichlorobenzene	<0.24	2,6-Dinitrotoluene	<0.62
Benzyl alcohol	<4	3-Nitroaniline	<4.6
Bis(2-chloroisopropyl) ether	<0.3	2,4-Dinitrophenol	<24
2-Methylphenol	<2.6	Dibenzofuran	<0.34
Hexachloroethane	<0.6	2,4-Dinitrotoluene	<0.56
N-Nitroso-di-n-propylamine	<1.1	4-Nitrophenol	<13
3-Methylphenol + 4-Methylphenol	<4.2	Diethyl phthalate	<0.6
Nitrobenzene	<0.44	4-Chlorophenyl phenyl ether	<0.72
Isophorone	<0.3	N-Nitrosodiphenylamine	<0.5
2-Nitrophenol	<1.7	4-Nitroaniline	<5.6
2,4-Dimethylphenol	<2.8	4,6-Dinitro-2-methylphenol	<3.8
Benzoic acid	<140	4-Bromophenyl phenyl ether	<0.56
Bis(2-chloroethoxy)methane	<0.34	Hexachlorobenzene	<0.5
2,4-Dichlorophenol	<2.6	Pentachlorophenol	<3.2
1,2,4-Trichlorobenzene	<0.5	Carbazole	0.55
Hexachlorobutadiene	<0.7	Di-n-butyl phthalate	<0.68
4-Chloroaniline	<0.56 j1	Benzyl butyl phthalate	<0.86
4-Chloro-3-methylphenol	<2.4	Bis(2-ethylhexyl) phthalate	<1.7
2-Methylnaphthalene	<0.34	Di-n-octyl phthalate	<0.44
Hexachlorocyclopentadiene	<0.94		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	EMW-11S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-09
Date Analyzed:	07/19/13	Data File:	071924.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	49	32	162
Phenol-d6	31	10	170
Nitrobenzene-d5	99	50	150
2-Fluorobiphenyl	98	43	158
2,4,6-Tribromophenol	121	43	146
Terphenyl-d14	114	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.034	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.42	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	0.087
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.49 fb
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1395 mb
Date Analyzed:	07/18/13	Data File:	071807.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	49	32	162
Phenol-d6	35	10	170
Nitrobenzene-d5	94	50	150
2-Fluorobiphenyl	95	43	158
2,4,6-Tribromophenol	107 ca	43	146
Terphenyl-d14	113	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1.4	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.034	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.42	Diethyl phthalate	<0.06
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.56
2,4-Dimethylphenol	<0.28	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<14	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056 jl	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.33 lc
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-01 1/10
Date Analyzed:	07/19/13	Data File:	071837.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	118 ds	50	150
Benzo(a)anthracene-d12	72 ds	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.04
Acenaphthylene	<0.024
Acenaphthene	<0.038
Fluorene	<0.04
Phenanthrene	<0.066
Anthracene	<0.028
Fluoranthene	<0.046
Pyrene	<0.036
Benz(a)anthracene	<0.042
Chrysene	<0.038
Benzo(a)pyrene	<0.078
Benzo(b)fluoranthene	<0.052
Benzo(k)fluoranthene	<0.076
Indeno(1,2,3-cd)pyrene	<0.07
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	SLR-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-02
Date Analyzed:	07/18/13	Data File:	071825.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	50	150
Benzo(a)anthracene-d12	101	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.024
Acenaphthylene	<0.0024
Acenaphthene	0.0095
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID: DMW-2-0713	Client: SLR International Corp.
Date Received: 07/12/13	Project: Crowley RI-FS 101.00205.00030
Date Extracted: 07/17/13	Lab ID: 307166-03 1/100
Date Analyzed: 07/19/13	Data File: 071838.D
Matrix: Water	Instrument: GCMS6
Units: ug/L (ppb)	Operator: ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	649 ds	50	150
Benzo(a)anthracene-d12	67 ds	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	26
Acenaphthylene	0.36
Acenaphthene	33
Fluorene	8.9
Phenanthrene	6.1
Anthracene	0.80
Fluoranthene	<0.46
Pyrene	<0.36
Benz(a)anthracene	<0.42
Chrysene	<0.38
Benzo(a)pyrene	<0.78
Benzo(b)fluoranthene	<0.52
Benzo(k)fluoranthene	<0.76
Indeno(1,2,3-cd)pyrene	<0.7
Dibenz(a,h)anthracene	<0.4
Benzo(g,h,i)perylene	<0.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-04 1/100
Date Analyzed:	07/19/13	Data File:	071918.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower	Upper
Anthracene-d10	211 ds	Limit:	Limit:
Benzo(a)anthracene-d12	143 ds	50	150
		50	129

Compounds:	Concentration
	ug/L (ppb)
Naphthalene	460 ve
Acenaphthylene	4.3
Acenaphthene	280 ve
Fluorene	130 ve
Phenanthrene	150 ve
Anthracene	12
Fluoranthene	9.9
Pyrene	7.4
Benz(a)anthracene	<0.42
Chrysene	<0.38
Benzo(a)pyrene	<0.78
Benzo(b)fluoranthene	<0.52
Benzo(k)fluoranthene	<0.76
Indeno(1,2,3-cd)pyrene	<0.7
Dibenz(a,h)anthracene	<0.4
Benzo(g,h,i)perylene	<0.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-04 1/1000
Date Analyzed:	07/20/13	Data File:	071935.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
Anthracene-d10	2290 ds	50	150
Benzo(a)anthracene-d12	280 ds	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	450
Acenaphthylene	3.4
Acenaphthene	250
Fluorene	110
Phenanthrene	140
Anthracene	9.9
Fluoranthene	7.8
Pyrene	5.9
Benz(a)anthracene	<4.2
Chrysene	<3.8
Benzo(a)pyrene	<7.8
Benzo(b)fluoranthene	<5.2
Benzo(k)fluoranthene	<7.6
Indeno(1,2,3-cd)pyrene	<7
Dibenz(a,h)anthracene	<4
Benzo(g,h,i)perylene	<4.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-05
Date Analyzed:	07/18/13	Data File:	071826.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	50	150
Benzo(a)anthracene-d12	107	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	3.0 ve
Fluorene	0.010
Phenanthrene	0.038
Anthracene	0.012
Fluoranthene	0.017
Pyrene	0.012
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-05 1/10
Date Analyzed:	07/20/13	Data File:	071936.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	173 ds	50	150
Benzo(a)anthracene-d12	86 ds	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.04
Acenaphthylene	<0.024
Acenaphthene	2.9
Fluorene	<0.04
Phenanthrene	<0.066
Anthracene	<0.028
Fluoranthene	<0.046
Pyrene	<0.036
Benz(a)anthracene	<0.042
Chrysene	<0.038
Benzo(a)pyrene	<0.078
Benzo(b)fluoranthene	<0.052
Benzo(k)fluoranthene	<0.076
Indeno(1,2,3-cd)pyrene	<0.07
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-5S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-06
Date Analyzed:	07/18/13	Data File:	071829.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97	50	150
Benzo(a)anthracene-d12	106	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0054
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-8S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-07
Date Analyzed:	07/19/13	Data File:	071830.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	50	150
Benzo(a)anthracene-d12	103	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.033
Acenaphthylene	0.0026
Acenaphthene	0.059
Fluorene	0.040
Phenanthrene	0.080
Anthracene	0.047
Fluoranthene	0.053
Pyrene	0.061
Benz(a)anthracene	0.0044
Chrysene	0.0054
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-9S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-08
Date Analyzed:	07/18/13	Data File:	071827.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	50	150
Benzo(a)anthracene-d12	107	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.064
Acenaphthylene	<0.0024
Acenaphthene	0.099
Fluorene	0.10
Phenanthrene	0.083
Anthracene	0.37
Fluoranthene	0.12
Pyrene	0.049
Benz(a)anthracene	0.0096
Chrysene	0.020
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-11S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	307166-09
Date Analyzed:	07/18/13	Data File:	071828.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	50	150
Benzo(a)anthracene-d12	105	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.056
Acenaphthylene	<0.0024
Acenaphthene	0.13
Fluorene	0.040
Phenanthrene	0.063
Anthracene	0.014
Fluoranthene	0.021
Pyrene	0.018
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/17/13	Lab ID:	03-1394 mb
Date Analyzed:	07/18/13	Data File:	071806.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	50	150
Benzo(a)anthracene-d12	91	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-01 1/0.25
Date Analyzed:	07/24/13	Data File:	072426.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	27 vo	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	SLR-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-02 1/0.25
Date Analyzed:	07/24/13	Data File:	072428.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	93	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-03 1/0.25
Date Analyzed:	07/24/13	Data File:	30.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	81	Limit:	Limit:
		50	150

Compounds:	Concentration
	ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	0.021
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	0.029

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-04 1/0.25
Date Analyzed:	07/24/13	Data File:	32.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	95	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-05 1/0.25
Date Analyzed:	07/24/13	Data File:	34.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	97	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID: EMW-5S-0713
Date Received: 07/12/13
Date Extracted: 07/15/13
Date Analyzed: 07/24/13
Matrix: Water
Units: ug/L (ppb)

Client: SLR International Corp.
Project: Crowley RI-FS 101.00205.00030
Lab ID: 307166-06 1/0.25
Data File: 36.D\ECD1A.CH
Instrument: GC7
Operator: mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	104	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-8S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-07 1/0.25
Date Analyzed:	07/24/13	Data File:	38.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	94	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-9S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-08 1/0.25
Date Analyzed:	07/24/13	Data File:	42.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	85	Limit:	Limit:
		50	150

Compounds:	Concentration
	ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-11S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	307166-09 1/0.25
Date Analyzed:	07/24/13	Data File:	44.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	89	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/15/13	Lab ID:	03-1391 mb 1/0.25
Date Analyzed:	07/24/13	Data File:	072424.D\ECED1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower	Upper
TCMX	80	Limit:	Limit:
		50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-01
Date Analyzed:	07/29/13	Data File:	307166-01.075
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	78	60	125
Holmium	82	60	125

Analyte:	Concentration ug/L (ppb)
Silver	0.489
Cadmium	0.657
Thallium	<0.0740
Lead	0.832

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-01 x10
Date Analyzed:	07/29/13	Data File:	307166-01 x10.077
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	91	60	125
Indium	85	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	32.0
Nickel	5.29
Copper	4.01
Zinc	<6.00
Arsenic	24.7
Selenium	6.78
Silver	<0.640
Cadmium	2.96
Antimony	0.840
Barium	97.7
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	SLR-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-02
Date Analyzed:	08/01/13	Data File:	307166-02.041
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	93	60	125
Holmium	97	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.272
Nickel	1.47
Copper	2.28
Zinc	2.08
Arsenic	0.235
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.178
Barium	20.8
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	DMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-03
Date Analyzed:	08/01/13	Data File:	307166-03.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	98	60	125
Indium	87	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	5.81
Nickel	1.87
Copper	1.21
Zinc	5.70
Arsenic	5.43
Selenium	0.568
Silver	<0.0640
Cadmium	<0.250
Antimony	0.0890
Barium	14.8
Thallium	<0.0740
Lead	0.615

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	DMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-04
Date Analyzed:	08/01/13	Data File:	307166-04.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	113	60	125
Indium	90	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.06
Nickel	0.711
Copper	0.456
Zinc	0.607
Arsenic	4.78
Selenium	0.693
Silver	<0.0640
Cadmium	<0.250
Antimony	0.0630
Barium	12.9
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-05
Date Analyzed:	08/01/13	Data File:	307166-05.044
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125
Holmium	97	60	125

Analyte:	Concentration ug/L (ppb)
Selenium	0.660
Silver	<0.0640
Cadmium	<0.250
Thallium	<0.0740
Lead	0.203

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-05 x10
Date Analyzed:	08/08/13	Data File:	307166-05 x10.057
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	91	60	125
Indium	89	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	<1.38
Nickel	<4.60
Copper	<3.40
Zinc	<6.00
Arsenic	54.2
Selenium	<5.60
Silver	<0.640
Cadmium	<2.50
Antimony	<0.520
Barium	15.7
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-5S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-06
Date Analyzed:	08/01/13	Data File:	307166-06.045
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	102	60	125
Indium	88	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.69
Nickel	2.85
Copper	1.76
Zinc	3.51
Arsenic	3.12
Selenium	0.945
Silver	<0.0640
Cadmium	<0.250
Antimony	0.0820
Barium	20.4
Thallium	<0.0740
Lead	0.374

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-8S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-07
Date Analyzed:	08/01/13	Data File:	307166-07.046
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	87	60	125
Holmium	93	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.243
Nickel	1.61
Copper	0.470
Zinc	1.34
Arsenic	8.59
Selenium	<0.560
Silver	<0.0640
Cadmium	0.336
Antimony	2.78
Barium	34.1
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-9S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-08
Date Analyzed:	08/01/13	Data File:	307166-08.049
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	106	60	125
Indium	89	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.06
Nickel	0.886
Copper	0.426
Zinc	3.03
Arsenic	16.3
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.476
Barium	59.3
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-11S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-09
Date Analyzed:	08/01/13	Data File:	307166-09.050
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	93	60	125
Indium	90	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.450
Nickel	3.04
Copper	1.73
Zinc	9.00
Arsenic	1.34
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.431
Barium	152
Thallium	<0.0740
Lead	0.145

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	I3-449 mb
Date Analyzed:	08/01/13	Data File:	I3-449 mb.040
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	92	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	<0.138
Nickel	<0.460
Copper	<0.340
Zinc	<0.600
Arsenic	<0.150
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	<0.0520 j
Barium	<0.260
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	I3-449 mb
Date Analyzed:	08/08/13	Data File:	I3-449 mb.054
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	82	60	125
Indium	84	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	<0.138
Nickel	<0.460
Copper	<0.340
Zinc	<0.600
Arsenic	<0.150
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	<0.0520 j
Barium	<0.260
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-01
Date Analyzed:	07/29/13	Data File:	307166-01.076
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	127 vo	60	125
Indium	77	60	125
Holmium	83	60	125

Analyte:	Concentration ug/L (ppb)
Silver	0.491
Cadmium	0.681
Thallium	<0.0740
Lead	0.472

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	SLR-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-01 x10
Date Analyzed:	07/29/13	Data File:	307166-01 x10.078
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	92	60	125
Indium	85	60	125
Holmium	88	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	32.6
Nickel	5.38
Copper	7.86
Zinc	6.81
Arsenic	24.3
Selenium	6.94
Silver	<0.640
Cadmium	<2.50
Antimony	0.780
Barium	96.6
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	SLR-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-02
Date Analyzed:	07/29/13	Data File:	307166-02.030
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	100	60	125
Holmium	100	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.296
Nickel	1.65
Copper	2.53
Zinc	0.776
Arsenic	0.232
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.476
Barium	20.6
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW-2-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-03
Date Analyzed:	07/29/13	Data File:	307166-03.033
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	101	60	125
Indium	92	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.73
Nickel	1.24
Copper	0.612
Zinc	3.07
Arsenic	5.03
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.428
Barium	14.5
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW-3-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-04
Date Analyzed:	07/29/13	Data File:	307166-04.034
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	117	60	125
Indium	98	60	125
Holmium	99	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.912
Nickel	0.693
Copper	0.524
Zinc	<0.600
Arsenic	4.73
Selenium	0.642
Silver	<0.0640
Cadmium	<0.250
Antimony	0.132
Barium	12.0
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-05
Date Analyzed:	07/29/13	Data File:	307166-05.035
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	133 vo	60	125
Indium	99	60	125
Holmium	100	60	125

Analyte:	Concentration ug/L (ppb)
Selenium	0.731
Silver	<0.0640
Cadmium	<0.250
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW-6-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-05 x10
Date Analyzed:	07/29/13	Data File:	307166-05 x10.052
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	94	60	125
Indium	91	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	<1.38
Nickel	<4.60
Copper	<3.40
Zinc	<6.00
Arsenic	56.4
Selenium	<5.60
Silver	<0.640
Cadmium	<2.50
Antimony	<0.520
Barium	15.9
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-5S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-06
Date Analyzed:	07/29/13	Data File:	307166-06.036
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	101	60	125
Indium	91	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.705
Nickel	2.19
Copper	0.584
Zinc	1.47
Arsenic	2.68
Selenium	0.790
Silver	<0.0640
Cadmium	<0.250
Antimony	0.0770
Barium	15.7
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-8S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-07
Date Analyzed:	07/29/13	Data File:	307166-07.038
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	89	60	125
Holmium	91	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.263
Nickel	2.44
Copper	1.09
Zinc	2.26
Arsenic	7.10
Selenium	<0.560
Silver	<0.0640
Cadmium	0.339
Antimony	3.20
Barium	34.6
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-9S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-08
Date Analyzed:	07/29/13	Data File:	307166-08.039
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	107	60	125
Indium	96	60	125
Holmium	97	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.08
Nickel	2.46
Copper	1.65
Zinc	4.39
Arsenic	16.1
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.433
Barium	56.3
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-11S-0713	Client:	SLR International Corp.
Date Received:	07/12/13	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	307166-09
Date Analyzed:	07/29/13	Data File:	307166-09.040
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	94	60	125
Indium	93	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.453
Nickel	5.38
Copper	2.32
Zinc	9.99
Arsenic	1.32
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	0.445
Barium	151
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI-FS 101.00205.00030
Date Extracted:	07/24/13	Lab ID:	I3-450 mb
Date Analyzed:	07/29/13	Data File:	I3-450 mb.051
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	88	60	125
Indium	90	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	<0.138
Nickel	<0.460
Copper	<0.340
Zinc	<0.600
Arsenic	<0.150
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.250
Antimony	<0.0520
Barium	<0.260
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

Date Extracted: 07/17/13

Date Analyzed: 07/18/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL MERCURY**

USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Total Mercury</u>
SLR-3-0713 307166-01	0.0043
SLR-6-0713 307166-02	<0.0015
DMW-2-0713 307166-03	<0.0015
DMW-3-0713 307166-04	<0.0015
DMW-6-0713 307166-05	<0.0015
EMW-5S-0713 307166-06	0.0029
EMW-8S-0713 307166-07	<0.0015
EMW-9S-0713 307166-08	<0.0015
EMW-11S-0713 307166-09	0.0019
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

Date Extracted: 07/17/13

Date Analyzed: 07/18/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Dissolved Mercury</u>
SLR-3-0713 307166-01	0.0038
SLR-6-0713 307166-02	<0.0015
DMW-2-0713 307166-03	<0.0015
DMW-3-0713 307166-04	<0.0015
DMW-6-0713 307166-05	<0.0015
EMW-5S-0713 307166-06	<0.0015
EMW-8S-0713 307166-07	<0.0015
EMW-9S-0713 307166-08	<0.0015
EMW-11S-0713 307166-09	0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

Date Extracted: NA

Date Analyzed: 07/17/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
SLR-3-0713 307166-01	<10
SLR-6-0713 307166-02	<10
DMW-2-0713 307166-03	<10
DMW-3-0713 307166-04	26
DMW-6-0713 307166-05	<10
EMW-5S-0713 307166-06	43
EMW-8S-0713 307166-07	<10
EMW-9S-0713 307166-08	<10
EMW-11S-0713 307166-09	<10
Method Blank	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 307179-05 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<12	<12	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	94	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	87	93	58-134	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 307166-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<0.16	110	55-144
Chloromethane	ug/L (ppb)	50	<0.22	98	67-131
Vinyl chloride	ug/L (ppb)	50	<0.13	102	61-139
Bromomethane	ug/L (ppb)	50	<0.2	883 vo	66-129
Chloroethane	ug/L (ppb)	50	<0.18	166 vo	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<0.17	129 vo	71-128
Acetone	ug/L (ppb)	250	<2.6	98	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<0.19	103	71-123
Methylene chloride	ug/L (ppb)	50	<3	101	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<0.13	99	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	98	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<0.18	98	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<0.3	110	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	100	73-119
Chloroform	ug/L (ppb)	50	<0.24	93	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<0.94	101	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<0.11	96	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	104	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<0.26	100	67-121
Carbon tetrachloride	ug/L (ppb)	50	<0.24	112	72-123
Benzene	ug/L (ppb)	50	<0.13	95	79-109
Trichloroethene	ug/L (ppb)	50	<0.17	97	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<0.32	101	80-111
Bromodichloromethane	ug/L (ppb)	50	<0.38	113	78-117
Dibromomethane	ug/L (ppb)	50	<0.28	104	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<1.3	113	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<0.2	112	76-120
Toluene	ug/L (ppb)	50	<0.13	95	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<0.34	102	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.28	104	81-111
2-Hexanone	ug/L (ppb)	250	<1	111	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	100	81-111
Tetrachloroethene	ug/L (ppb)	50	<0.28	92	72-113
Dibromochloromethane	ug/L (ppb)	50	<0.24	113	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<0.24	107	83-114
Chlorobenzene	ug/L (ppb)	50	<0.1	93	75-115
Ethylbenzene	ug/L (ppb)	50	<0.16	96	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.32	110	78-122
m,p-Xylene	ug/L (ppb)	100	<0.5	97	63-128
o-Xylene	ug/L (ppb)	50	<0.22	97	64-129
Styrene	ug/L (ppb)	50	<0.22	101	70-122
Isopropylbenzene	ug/L (ppb)	50	<0.15	97	76-118
Bromoform	ug/L (ppb)	50	<0.22	115	49-138
n-Propylbenzene	ug/L (ppb)	50	<0.14	98	74-117
Bromobenzene	ug/L (ppb)	50	<0.18	97	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<0.18	100	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.24	104	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.28	101	72-119
2-Chlorotoluene	ug/L (ppb)	50	<0.13	94	77-114
4-Chlorotoluene	ug/L (ppb)	50	<0.16	97	81-109
tert-Butylbenzene	ug/L (ppb)	50	<0.15	97	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<0.11	98	74-118
sec-Butylbenzene	ug/L (ppb)	50	<0.12	96	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<0.15	96	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<0.15	93	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.094	91	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.13	91	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.44	109	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<0.34	85	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<0.46	80	67-120
Naphthalene	ug/L (ppb)	50	<0.28	97	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.38	97	79-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	110	108	54-149	2
Chloromethane	ug/L (ppb)	50	100	97	67-133	3
Vinyl chloride	ug/L (ppb)	50	103	100	73-132	3
Bromomethane	ug/L (ppb)	50	1040 vo	998 vo	69-123	4
Chloroethane	ug/L (ppb)	50	168 vo	166 vo	68-126	1
Trichlorofluoromethane	ug/L (ppb)	50	129	126	70-132	2
Acetone	ug/L (ppb)	250	100	98	44-145	2
1,1-Dichloroethene	ug/L (ppb)	50	105	104	75-119	1
Methylene chloride	ug/L (ppb)	50	103	102	63-132	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	103	102	70-122	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	99	76-118	0
1,1-Dichloroethane	ug/L (ppb)	50	100	99	80-116	1
2,2-Dichloropropane	ug/L (ppb)	50	118	118	62-141	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	101	81-111	0
Chloroform	ug/L (ppb)	50	94	93	81-109	1
2-Butanone (MEK)	ug/L (ppb)	250	102	99	53-140	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	98	96	79-109	2
1,1,1-Trichloroethane	ug/L (ppb)	50	108	107	80-116	1
1,1-Dichloropropene	ug/L (ppb)	50	101	99	78-112	2
Carbon tetrachloride	ug/L (ppb)	50	120	118	72-128	2
Benzene	ug/L (ppb)	50	96	95	81-108	1
Trichloroethene	ug/L (ppb)	50	96	96	77-108	0
1,2-Dichloropropane	ug/L (ppb)	50	104	103	82-109	1
Bromodichloromethane	ug/L (ppb)	50	118	116	76-120	2
Dibromomethane	ug/L (ppb)	50	104	103	80-110	1
4-Methyl-2-pentanone	ug/L (ppb)	250	114	114	59-142	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	118	118	76-128	0
Toluene	ug/L (ppb)	50	95	95	83-108	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	110	109	76-128	1
1,1,2-Trichloroethane	ug/L (ppb)	50	104	104	82-110	0
2-Hexanone	ug/L (ppb)	250	110	109	53-145	1
1,3-Dichloropropane	ug/L (ppb)	50	100	100	83-110	0
Tetrachloroethene	ug/L (ppb)	50	92	90	78-109	2
Dibromochloromethane	ug/L (ppb)	50	117	115	63-140	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	109	109	85-113	0
Chlorobenzene	ug/L (ppb)	50	93	92	84-108	1
Ethylbenzene	ug/L (ppb)	50	97	96	84-110	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	115	114	76-125	1
m,p-Xylene	ug/L (ppb)	100	97	96	84-112	1
o-Xylene	ug/L (ppb)	50	97	97	82-113	0
Styrene	ug/L (ppb)	50	100	100	84-116	0
Isopropylbenzene	ug/L (ppb)	50	97	97	81-122	0
Bromoform	ug/L (ppb)	50	124	122	40-161	2
n-Propylbenzene	ug/L (ppb)	50	98	99	81-115	1
Bromobenzene	ug/L (ppb)	50	95	97	80-113	2
1,3,5-Trimethylbenzene	ug/L (ppb)	50	99	100	83-117	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	105	106	79-118	1
1,2,3-Trichloropropane	ug/L (ppb)	50	100	101	74-116	1
2-Chlorotoluene	ug/L (ppb)	50	94	95	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	97	98	81-113	1
tert-Butylbenzene	ug/L (ppb)	50	97	98	81-119	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	97	98	83-116	1
sec-Butylbenzene	ug/L (ppb)	50	97	97	83-116	0
p-Isopropyltoluene	ug/L (ppb)	50	96	97	82-119	1
1,3-Dichlorobenzene	ug/L (ppb)	50	92	93	83-111	1
1,4-Dichlorobenzene	ug/L (ppb)	50	91	92	82-109	1
1,2-Dichlorobenzene	ug/L (ppb)	50	91	91	83-111	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	115	117	62-133	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	86	87	77-117	1
Hexachlorobutadiene	ug/L (ppb)	50	79	81	74-118	2
Naphthalene	ug/L (ppb)	50	98	100	75-131	2
1,2,3-Trichlorobenzene	ug/L (ppb)	50	97	100	82-115	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	10	39	34	18-52	14
Bis(2-chloroethyl) ether	ug/L (ppb)	10	89	79	52-113	12
2-Chlorophenol	ug/L (ppb)	10	89	78	50-110	13
1,3-Dichlorobenzene	ug/L (ppb)	10	91	76	45-109	18
1,4-Dichlorobenzene	ug/L (ppb)	10	94	77	44-118	20
1,2-Dichlorobenzene	ug/L (ppb)	10	93	76	46-116	20
Benzyl alcohol	ug/L (ppb)	10	89	73	42-100	20
Bis(2-chloroisopropyl) ether	ug/L (ppb)	10	90	77	51-124	16
2-Methylphenol	ug/L (ppb)	10	73	70	38-100	4
Hexachloroethane	ug/L (ppb)	10	94	77	42-117	20
N-Nitroso-di-n-propylamine	ug/L (ppb)	10	91	78	48-124	15
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	10	72	64	48-87	12
Nitrobenzene	ug/L (ppb)	10	95	84	50-118	12
Isophorone	ug/L (ppb)	10	99	86	55-116	14
2-Nitrophenol	ug/L (ppb)	10	115	104	42-127	10
2,4-Dimethylphenol	ug/L (ppb)	10	41 vo	85	45-100	70 vo
Benzoic acid	ug/L (ppb)	65	57 vo	49 vo	10-46	15
Bis(2-chloroethoxy)methane	ug/L (ppb)	10	96	86	55-115	11
2,4-Dichlorophenol	ug/L (ppb)	10	103	92	55-113	11
1,2,4-Trichlorobenzene	ug/L (ppb)	10	95	83	50-109	13
Hexachlorobutadiene	ug/L (ppb)	10	95	83	50-109	13
4-Chloroaniline	ug/L (ppb)	20	91	14 vo	30-109	147 vo
4-Chloro-3-methylphenol	ug/L (ppb)	10	104	88	54-114	17
2-Methylnaphthalene	ug/L (ppb)	10	100	85	53-113	16
Hexachlorocyclopentadiene	ug/L (ppb)	10	83	64	26-94	26 vo
2,4,6-Trichlorophenol	ug/L (ppb)	10	105	96	46-114	9
2,4,5-Trichlorophenol	ug/L (ppb)	10	107	98	57-122	9
2-Chloronaphthalene	ug/L (ppb)	10	98	89	52-112	10
2-Nitroaniline	ug/L (ppb)	10	113	100	47-128	12
Dimethyl phthalate	ug/L (ppb)	10	110	99	55-116	11
2,6-Dinitrotoluene	ug/L (ppb)	10	117	107	49-126	9
3-Nitroaniline	ug/L (ppb)	20	114	68	21-125	51 vo
2,4-Dinitrophenol	ug/L (ppb)	10	160 vo	144 vo	29-130	11
Dibenzofuran	ug/L (ppb)	10	101	92	53-113	9
2,4-Dinitrotoluene	ug/L (ppb)	10	111	99	48-129	11
4-Nitrophenol	ug/L (ppb)	10	50	41	12-59	20
Diethyl phthalate	ug/L (ppb)	10	106	95	55-116	11
4-Chlorophenyl phenyl ether	ug/L (ppb)	10	103	93	52-115	10
N-Nitrosodiphenylamine	ug/L (ppb)	10	101	87	51-112	15
4-Nitroaniline	ug/L (ppb)	20	108	79	42-115	31 vo
4,6-Dinitro-2-methylphenol	ug/L (ppb)	10	130 vo	120	40-128	8
4-Bromophenyl phenyl ether	ug/L (ppb)	10	105	98	53-114	7
Hexachlorobenzene	ug/L (ppb)	10	103	95	54-115	8
Pentachlorophenol	ug/L (ppb)	10	108	104	49-114	4
Carbazole	ug/L (ppb)	10	101	91	54-115	10
Di-n-butyl phthalate	ug/L (ppb)	10	110	102	54-115	8
Benzyl butyl phthalate	ug/L (ppb)	10	119	108	53-122	10
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	112	95	54-122	16
Di-n-octyl phthalate	ug/L (ppb)	10	108	103	50-131	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	83	87	67-116	5
Acenaphthylene	ug/L (ppb)	1	96	101	65-119	5
Acenaphthene	ug/L (ppb)	1	94	100	66-118	6
Fluorene	ug/L (ppb)	1	98	103	64-125	5
Phenanthrene	ug/L (ppb)	1	92	96	67-120	4
Anthracene	ug/L (ppb)	1	94	97	65-122	3
Fluoranthene	ug/L (ppb)	1	98	93	65-127	5
Pyrene	ug/L (ppb)	1	96	103	62-130	7
Benz(a)anthracene	ug/L (ppb)	1	91	93	60-118	2
Chrysene	ug/L (ppb)	1	95	100	66-125	5
Benzo(b)fluoranthene	ug/L (ppb)	1	86	90	55-135	5
Benzo(k)fluoranthene	ug/L (ppb)	1	84	87	62-125	4
Benzo(a)pyrene	ug/L (ppb)	1	81	83	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	76	79	36-142	4
Dibenz(a,h)anthracene	ug/L (ppb)	1	71	73	37-133	3
Benzo(g,h,i)perylene	ug/L (ppb)	1	77	77	34-135	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED
BIPHENYLS AS
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.63	97	114	70-130	16
Aroclor 1260	ug/L (ppb)	0.63	102	108	70-130	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 307177-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.0980	113	113	67-145	0
Chromium	ug/L (ppb)	20	0.667	90	91	64-132	1
Nickel	ug/L (ppb)	20	0.959	83	84	61-128	1
Copper	ug/L (ppb)	20	0.904	83	84	63-124	1
Zinc	ug/L (ppb)	50	1.11	83	84	55-141	1
Arsenic	ug/L (ppb)	10	1.47	100	104	60-150	4
Selenium	ug/L (ppb)	5	<0.560	100	104	43-178	4
Silver	ug/L (ppb)	5	<0.0640	93	97	71-115	4
Cadmium	ug/L (ppb)	5	0.562	99	102	83-116	3
Antimony	ug/L (ppb)	20	0.401	88	92	62-125	4
Barium	ug/L (ppb)	50	8.25	99	103	79-126	4
Thallium	ug/L (ppb)	5	<0.0740	92	93	73-119	1
Lead	ug/L (ppb)	10	<0.144	93	95	79-121	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	104	73-135
Chromium	ug/L (ppb)	20	86	80-119
Nickel	ug/L (ppb)	20	83	79-122
Copper	ug/L (ppb)	20	85	81-119
Zinc	ug/L (ppb)	50	81	76-124
Arsenic	ug/L (ppb)	10	85	80-111
Selenium	ug/L (ppb)	5	90	81-119
Silver	ug/L (ppb)	5	92	80-116
Cadmium	ug/L (ppb)	5	92	83-113
Antimony	ug/L (ppb)	20	88	79-108
Barium	ug/L (ppb)	50	92	83-117
Thallium	ug/L (ppb)	5	85	78-116
Lead	ug/L (ppb)	10	87	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 307166-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.0980	106	106	67-145	0
Chromium	ug/L (ppb)	20	0.296	86	88	64-132	2
Nickel	ug/L (ppb)	20	1.65	87	86	61-128	1
Copper	ug/L (ppb)	20	2.53	86	86	63-124	0
Zinc	ug/L (ppb)	50	0.776	87	88	55-141	1
Arsenic	ug/L (ppb)	10	0.232	88	87	60-150	1
Selenium	ug/L (ppb)	5	<0.560	90	88	43-178	2
Silver	ug/L (ppb)	5	<0.0640	83	82	71-115	1
Cadmium	ug/L (ppb)	5	<0.250	87	87	83-116	0
Antimony	ug/L (ppb)	20	0.476	84	85	62-125	1
Barium	ug/L (ppb)	50	20.6	88 b	87 b	79-126	1 b
Thallium	ug/L (ppb)	5	<0.0740	83	85	73-119	2
Lead	ug/L (ppb)	10	<0.144	85	84	79-121	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	98	73-135
Chromium	ug/L (ppb)	20	84	80-119
Nickel	ug/L (ppb)	20	88	79-122
Copper	ug/L (ppb)	20	89	81-119
Zinc	ug/L (ppb)	50	89	76-124
Arsenic	ug/L (ppb)	10	80	80-111
Selenium	ug/L (ppb)	5	88	81-119
Silver	ug/L (ppb)	5	88	80-116
Cadmium	ug/L (ppb)	5	87	83-113
Antimony	ug/L (ppb)	20	83	79-108
Barium	ug/L (ppb)	50	88	83-117
Thallium	ug/L (ppb)	5	83	78-116
Lead	ug/L (ppb)	10	85	83-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
TOTAL MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307166-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	0.00084	97	99	63-132	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	100	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES FOR
DISSOLVED MERCURY
USING EPA METHOD 1631E**

Laboratory Code: 307166-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.010	0.00082	100	98	63-132	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.010	99	78-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/15/13

Date Received: 07/12/13

Project: 8th Avenue Terminals, Inc., Crowley RI-FS 101.00205.00030, F&BI 307166

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES FOR
TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Laboratory Code: 307166-09 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
TSS	mg/L	<10	<10	nm	0-20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L	50	86	61-131

Data Qualifiers & Definitions

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



Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 29, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 307166
ARI Job No.: WX45

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted nine water samples on July 15, 2013, under ARI job WX45. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for chloride and TDS, as requested on the COC.

There were no anomalies associated with the analyses of these samples.

An electronic copy of this report and all associated raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile WX45

Enclosures

WX45



SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl Michele Poquiz
 Company Friedman and Bruya, Inc.
 Address 3012 16th Ave W
 City, State, ZIP Seattle, WA 98119
 Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER ALZ (Tokuda)
 PROJECT NAME/NO. 307166 PO # C-460
 REMARKS Need EIM
 Please Email Results

TURNAROUND TIME
 Standard (2 Weeks)
 RUSH
 Rush charges authorized by: _____
 SAMPLE DISPOSAL
 Dispose after 30 days
 Return samples
 Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkalinity	TDS by 2540c	Chloride by SM4500	Notes
SLR-3-0713		7/12/13		water	2							X	X	
SLR-6-0713			1131									X	X	
DMW-2-0713			0929									X	X	
DMW-3-0713			1045									X	X	
DMW-6-0713		7/11/13	1717									X	X	
EMW-5S-0713		7/12/13										X	X	
EMW-8S-0713			0914									X	X	
EMW-9S-0713			1019									X	X	
EMW-11S-0713		7/11/13	1622									X	X	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Michael Erdahl	Friedman & Bruya	7/12/13	1400
	Rich Wilson	ARI	7/16/13	1720
Relinquished by:				
Received by:				

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



Cooler Receipt Form

ARI Client Friedman + Bruya
 COC No(s) _____ (NA)
 Assigned ARI Job No WX45

Project Name: 30711d6
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other _____
 Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc.) YES NO
 Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) ... _____
 If cooler temperature is out of compliance fill out form 00070F _____
 Cooler Accepted by: _____ Date: 7/12/13 Time: 1720 Temp Gun ID#: 90877952

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? ... YES NO
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? ... NA YES NO
 Were all bottles sealed in individual plastic bags? ... YES NO
 Did all bottles arrive in good condition (unbroken)? ... YES NO
 Were all bottle labels complete and legible? ... YES NO
 Did the number of containers listed on COC match with the number of containers received? ... YES NO
 Did all bottle labels and tags agree with custody papers? ... YES NO
 Were all bottles used correct for the requested analyses? ... YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) . NA YES NO
 Were all VOC vials free of air bubbles? ... NA YES NO
 Was sufficient amount of sample sent in each bottle? ... YES NO
 Date VOC Trip Blank was made at ARI... NA
 Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 7/15/13 Time: 1147

** Notify Project Manager of discrepancies or concerns **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

			Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"



Sample ID Cross Reference Report




ARI Job No: WX45
Client: Friedman and Bruya, Inc
Project Event: 307166
Project Name: N/A

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. SLR-3-0713	WX45A	13-14822	Water	07/12/13	07/15/13 17:20
2. SLR-6-0713	WX45B	13-14823	Water	07/12/13 11:31	07/15/13 17:20
3. DMW-2-0713	WX45C	13-14824	Water	07/12/13 09:29	07/15/13 17:20
4. DMW-3-0713	WX45D	13-14825	Water	07/12/13 10:45	07/15/13 17:20
5. DMW-6-0713	WX45E	13-14826	Water	07/11/13 17:17	07/15/13 17:20
6. EMW-5S-0713	WX45F	13-14827	Water	07/12/13	07/15/13 17:20
7. EMW-8S-0713	WX45G	13-14828	Water	07/12/13 09:14	07/15/13 17:20
8. EMW-9S-0713	WX45H	13-14829	Water	07/12/13 10:19	07/15/13 17:20
9. EMW-11S-0713	WX45I	13-14830	Water	07/11/13 16:22	07/15/13 17:20

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: 07/12/13
Date Received: 07/15/13


Client ID: SLR-3-0713
ARI ID: 13-14822 WX45A

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	13.3	1,280
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	10.0	40.4

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: SLR-6-0713
ARI ID: 13-14823 WX45B

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	266
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	9.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'J. Friedman', written over the 'Data Release Authorized' text.

Project: NA
Event: 307166
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: DMW-2-0713
ARI ID: 13-14824 WX45C

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	311
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	9.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'M. J. ...', written over the 'Data Release Authorized' text.

Project: NA
Event: 307166
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: DMW-3-0713
ARI ID: 13-14825 WX45D

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	239
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	25.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'J. J. ...', written over the 'Data Release Authorized' text.

Project: NA
Event: 307166
Date Sampled: 07/11/13
Date Received: 07/15/13

Client ID: DMW-6-0713
ARI ID: 13-14826 WX45E

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	228
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	13.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: 07/12/13
Date Received: 07/15/13


Client ID: EMW-5S-0713
ARI ID: 13-14827 WX45F

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	10.0	400
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	14.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: EMW-8S-0713
ARI ID: 13-14828 WX45G

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	10.0	326
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	26.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'C. J. ...', written over the 'Data Release Authorized' text.

Project: NA
Event: 307166
Date Sampled: 07/12/13
Date Received: 07/15/13

Client ID: EMW-9S-0713
ARI ID: 13-14829 WX45H

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	250
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	5.0	10.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized:
Reported: 07/26/13

A handwritten signature in black ink, appearing to be 'M. J. ...', written over the 'Data Release Authorized' text.

Project: NA
Event: 307166
Date Sampled: 07/11/13
Date Received: 07/15/13


Client ID: EMW-11S-0713
ARI ID: 13-14830 WX45I

Analyte	Date Batch	Method	Units	RL	Sample
Total Dissolved Solids	07/16/13 071613#1	SM2540C	mg/L	5.0	268
Chloride	07/16/13 071613#1	SM4500-CLE	mg/L	1.0	5.4

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: 07/11/13
Date Received: 07/15/13

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WX45I		Client ID: EMW-11S-0713					
Chloride	SM4500-CLE	07/16/13	mg/L	5.4	30.8	25.0	101.6%

REPLICATE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc




Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: 07/11/13
Date Received: 07/15/13

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WX45I Client ID: EMW-11S-0713						
Chloride	SM4500-CLE	07/16/13	mg/L	5.4	5.5	1.8%

LAB CONTROL RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc




Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Dissolved Solids SM2540C	ICVL	07/16/13	mg/L	503	500	100.6%

METHOD BLANK RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

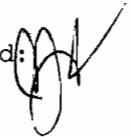
Project: NA
Event: 307166
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Total Dissolved Solids	SM2540C	07/16/13	mg/L	< 5.0 U	
Chloride	SM4500-CLE	07/16/13	mg/L	< 1.0 U	FB

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
WX45-Friedman and Bruya, Inc



Matrix: Water
Data Release Authorized: 
Reported: 07/26/13

Project: NA
Event: 307166
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Chloride ERA #411010	SM4500-CLE	07/16/13	mg/L	5.2	5.0	104.0%

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 30, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on September 25, 2013 from the 8th Ave Terminals, Inc. Site, Crowley 101.00205.00030, F&BI 309446 project. There are 51 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michele Costales Poquiz
Chemist

Enclosures
SLR1030R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 25, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. 8th Ave Terminals, Inc. Site, Crowley 101.00205.00030, F&BI 309446 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
309446-01	EMW-3S-092513
309446-02	EMW-4D-092513
309446-03	CMW-1-092513
309446-04	EMW-15D-092513
309446-05	CMW-4-092513
309446-06	CMW-6-092513
309446-07	EMW-14D-092513
309446-08	EMW-13S-092513
309446-09	EMW-56D-092513
309446-10	EMW-10D-092513

Total Metals by EPA Method 200.8

The reporting limits for zinc and antimony were raised due to potential low level laboratory contamination.

Compounds in the sample matrix interfered with the quantitation of arsenic and selenium. The results have been flagged accordingly.

The internal standard associated with several analytes exceeded acceptance criteria. The samples were diluted and reanalyzed. The results for the full strength and the dilution analyses are included.

Dissolved Metals by EPA Method 200.8

Arsenic, selenium and copper were not reported. Please see the report issued by Applied Speciation and Consulting (ASC) for results for these analytes.

The internal standard associated with several analytes exceeded acceptance criteria for the samples EMW-3S-092513, EMW-4D-092513, CMW-1-092513, EMW-15D-092513, CMW-4-092513, CMW-6-092513, EMW-14D-092513, and EMW-13S-092513. The samples were diluted and reanalyzed. The results for the full strength and the dilution analyses are included.

Total Mercury by EPA Method 1631E

The reporting limit was raised due to potential low level laboratory contamination.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

Dissolved Mercury by EPA Method 1631E

The reporting limit was raised due to potential low level laboratory contamination.

Total Suspended Solids by Method 2540D

All quality control requirements were acceptable.

Total Dissolved Solids by Method 2540C

The samples were sent to Analytical Resources, Inc. (ARI) for analysis. The report generated by ARI will be forwarded to your office upon receipt.

Chloride by Method SM4500

The samples were sent to ARI for analysis. The report generated by ARI is enclosed.

Dissolved Metals by ICP-DRC-MS

The samples were sent to Applied Speciation and Consulting (ASC) for analysis. The report generated by ASC is enclosed.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-3S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-01
Date Analyzed:	09/30/13	Data File:	309446-01.061
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	55 vo	60	125
Indium	49 vo	60	125
Holmium	53 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	0.608 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-3S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-01 x10
Date Analyzed:	09/30/13	Data File:	309446-01 x10.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	87	60	125
Indium	86	60	125
Holmium	85	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	3.55
Nickel	8.12
Copper	4.95
Zinc	86.7
Arsenic	26.8 ip
Selenium	70.8 ip
Silver	1.06
Cadmium	<0.940
Antimony	<12.5
Barium	200
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-4D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-02
Date Analyzed:	09/30/13	Data File:	309446-02.062
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	66	60	125
Indium	59 vo	60	125
Holmium	65	60	125

Analyte:	Concentration ug/L (ppb)
Copper	<0.340
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-4D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-02 x10
Date Analyzed:	09/30/13	Data File:	309446-02 x10.026
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	90	60	125
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	1.65
Nickel	<4.60
Copper	<3.40
Zinc	<25.0
Arsenic	9.08 ip
Selenium	32.6 ip
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	112
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-1-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-03
Date Analyzed:	09/30/13	Data File:	309446-03.063
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	43 vo	60	125
Indium	39 vo	60	125
Holmium	46 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	0.384 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-1-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-03 x10
Date Analyzed:	09/30/13	Data File:	309446-03 x10.027
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	82	60	125
Indium	84	60	125
Holmium	84	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.18
Nickel	7.51
Copper	4.01
Zinc	62.5
Arsenic	25.1 ip
Selenium	89.4 ip
Silver	0.950
Cadmium	<0.940
Antimony	<12.5
Barium	86.5
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-15D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-04
Date Analyzed:	09/30/13	Data File:	309446-04.064
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	59 vo	60	125
Indium	54 vo	60	125
Holmium	59 vo	60	125

Analyte:	Concentration ug/L (ppb)
Copper	0.933 J
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-15D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-04 x10
Date Analyzed:	09/30/13	Data File:	309446-04 x10.028
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	88	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.03
Nickel	<4.60
Copper	<3.40
Zinc	<25.0
Arsenic	11.7 ip
Selenium	45.7 ip
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	74.7
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-4-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-05
Date Analyzed:	09/30/13	Data File:	309446-05.065
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	50 vo	60	125
Indium	47 vo	60	125
Holmium	53 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Thallium	<0.0740 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-4-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-05 x10
Date Analyzed:	09/30/13	Data File:	309446-05 x10.030
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	85	60	125
Indium	84	60	125
Holmium	84	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	9.44
Nickel	14.0
Copper	29.0
Zinc	133
Arsenic	244 ip
Selenium	66.5 ip
Silver	<0.640
Cadmium	<0.940
Antimony	34.4
Barium	390
Thallium	<0.740
Lead	28.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-6-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-06
Date Analyzed:	09/30/13	Data File:	309446-06.066
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	44 vo	60	125
Indium	44 vo	60	125
Holmium	50 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	CMW-6-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-06 x10
Date Analyzed:	09/30/13	Data File:	309446-06 x10.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	84	60	125
Indium	84	60	125
Holmium	84	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	4.44
Nickel	6.40
Copper	17.7
Zinc	38.9
Arsenic	75.3 ip
Selenium	68.1 ip
Silver	<0.640
Cadmium	<0.940
Antimony	23.9
Barium	121
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-14D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-07
Date Analyzed:	09/30/13	Data File:	309446-07.067
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	59 vo	60	125
Indium	50 vo	60	125
Holmium	57 vo	60	125

Analyte:	Concentration ug/L (ppb)
Copper	1.16 J
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-14D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-07 x10
Date Analyzed:	09/30/13	Data File:	309446-07 x10.032
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	89	60	125
Indium	87	60	125
Holmium	88	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	1.46
Nickel	<4.60
Copper	<3.40
Zinc	<25.0
Arsenic	14.6 ip
Selenium	51.1 ip
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	216
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-13S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-08
Date Analyzed:	09/30/13	Data File:	309446-08.070
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	51 vo	60	125
Indium	50 vo	60	125
Holmium	54 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	7.94 J
Thallium	<0.0740 J
Lead	0.750 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-13S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-08 x10
Date Analyzed:	09/30/13	Data File:	309446-08 x10.033
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	87	60	125
Indium	85	60	125
Holmium	86	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.73
Nickel	<4.60
Copper	7.97
Zinc	<25.0
Arsenic	40.4 ip
Selenium	55.0 ip
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	27.4
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-56D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-09
Date Analyzed:	09/30/13	Data File:	309446-09.071
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	73	60	125
Indium	58 vo	60	125
Holmium	64	60	125

Analyte:	Concentration ug/L (ppb)
Copper	<0.340
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-56D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-09 x10
Date Analyzed:	09/30/13	Data File:	309446-09 x10.034
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	93	60	125
Indium	87	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	<1.38
Nickel	<4.60
Copper	<3.40
Zinc	<25.0
Arsenic	8.72 ip
Selenium	32.0 ip
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	102
Thallium	<0.740
Lead	<1.44

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-10
Date Analyzed:	09/30/13	Data File:	309446-10.072
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	69	60	125
Indium	54 vo	60	125
Holmium	58 vo	60	125

Analyte:	Concentration ug/L (ppb)
Copper	<0.340
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	309446-10 x10
Date Analyzed:	09/30/13	Data File:	309446-10 x10.035
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	93	60	125
Indium	88	60	125
Holmium	90	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	<1.38
Nickel	<4.60
Copper	<3.40
Zinc	<25.0
Arsenic	8.13 ip
Selenium	31.4 ip
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	104
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Crowley 101.00205.00030
Date Extracted:	09/27/13	Lab ID:	I3-618 mb
Date Analyzed:	09/30/13	Data File:	I3-618 mb.011
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	98	60	125
Indium	101	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	<0.138
Nickel	<0.460
Copper	<0.340
Zinc	<2.50
Arsenic	<0.150
Selenium	<0.560
Silver	<0.0640
Cadmium	<0.0940
Antimony	<1.25
Barium	<0.260
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-3S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-01
Date Analyzed:	10/02/13	Data File:	309446-01.076
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	48 vo	60	125
Indium	45 vo	60	125
Holmium	48 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-3S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-01 x10
Date Analyzed:	10/02/13	Data File:	309446-01 x10.030
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	73	60	125
Indium	73	60	125
Holmium	77	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.23
Nickel	9.42
Zinc	88.0
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	214
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-4D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-02
Date Analyzed:	10/02/13	Data File:	309446-02.069
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	73	60	125
Indium	59 vo	60	125
Holmium	62	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-4D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-02 x10
Date Analyzed:	10/02/13	Data File:	309446-02 x10.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	79	60	125
Indium	76	60	125
Holmium	81	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	1.92
Nickel	<4.60
Zinc	<25.0
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	117
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-1-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-03
Date Analyzed:	10/02/13	Data File:	309446-03.079
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	42 vo	60	125
Indium	39 vo	60	125
Holmium	43 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-1-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-03 x10
Date Analyzed:	10/02/13	Data File:	309446-03 x10.032
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	70	60	125
Indium	71	60	125
Holmium	76	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.49
Nickel	9.22
Zinc	57.4
Silver	0.930
Cadmium	<0.940
Antimony	<12.5
Barium	90.3
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-15D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-04
Date Analyzed:	10/02/13	Data File:	309446-04.073
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	65	60	125
Indium	54 vo	60	125
Holmium	56 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-15D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-04 x10
Date Analyzed:	10/02/13	Data File:	309446-04 x10.033
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	79	60	125
Indium	77	60	125
Holmium	83	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.01
Nickel	<4.60
Zinc	<25.0
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	74.7
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-4-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-05
Date Analyzed:	10/02/13	Data File:	309446-05.077
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	50 vo	60	125
Indium	46 vo	60	125
Holmium	49 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-4-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-05 x10
Date Analyzed:	10/02/13	Data File:	309446-05 x10.034
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	75	60	125
Indium	75	60	125
Holmium	81	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.85
Nickel	9.46
Zinc	<25.0
Silver	<0.640
Cadmium	<0.940
Antimony	23.7
Barium	350
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-6-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-06
Date Analyzed:	10/02/13	Data File:	309446-06.078
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	46 vo	60	125
Indium	43 vo	60	125
Holmium	47 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	CMW-6-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-06 x10
Date Analyzed:	10/02/13	Data File:	309446-06 x10.041
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	73	60	125
Indium	71	60	125
Holmium	73	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	4.08
Nickel	7.63
Zinc	40.9
Silver	<0.640
Cadmium	<0.940
Antimony	32.6
Barium	133
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-14D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-07
Date Analyzed:	10/02/13	Data File:	309446-07.074
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	64	60	125
Indium	49 vo	60	125
Holmium	52 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	<1.25 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-14D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-07 x10
Date Analyzed:	10/02/13	Data File:	309446-07 x10.036
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	78	60	125
Indium	76	60	125
Holmium	80	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.92
Nickel	5.55
Zinc	<25.0
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	216
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-13S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-08
Date Analyzed:	10/02/13	Data File:	309446-08.075
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	51 vo	60	125
Indium	47 vo	60	125
Holmium	51 vo	60	125

Analyte:	Concentration ug/L (ppb)
Cadmium	<0.0940 J
Antimony	6.80 J
Thallium	<0.0740 J
Lead	<0.144 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-13S-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-08 x10
Date Analyzed:	10/02/13	Data File:	309446-08 x10.037
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	78	60	125
Indium	77	60	125
Holmium	82	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.980
Chromium	2.21
Nickel	<4.60
Zinc	<25.0
Silver	<0.640
Cadmium	<0.940
Antimony	<12.5
Barium	27.4
Thallium	<0.740
Lead	<1.44

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-56D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-09
Date Analyzed:	10/02/13	Data File:	309446-09.070
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	82	60	125
Indium	62	60	125
Holmium	64	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	0.998
Nickel	3.15
Zinc	<2.50
Silver	<0.0640
Cadmium	<0.0940
Antimony	<1.25
Barium	103
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	EMW-10D-092513	Client:	SLR International Corp.
Date Received:	09/25/13	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	309446-10
Date Analyzed:	10/02/13	Data File:	309446-10.071
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	82	60	125
Indium	62	60	125
Holmium	63	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	1.05
Nickel	1.95
Zinc	<2.50
Silver	<0.0640
Cadmium	<0.0940
Antimony	<1.25
Barium	103
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Crowley 101.00205.00030
Date Extracted:	09/30/13	Lab ID:	I3-622 mb
Date Analyzed:	10/02/13	Data File:	I3-622 mb.044
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	83	60	125
Indium	83	60	125
Holmium	85	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.0980
Chromium	<0.138
Nickel	<0.460
Zinc	<2.50
Silver	<0.0640
Cadmium	<0.0940
Antimony	<1.25
Barium	<0.260
Thallium	<0.0740
Lead	<0.144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/13

Date Received: 09/25/13

Project: 8th Ave Terminals, Inc. Site, Crowley 101.00205.00030, F&BI 309446

Date Extracted: 09/30/13

Date Analyzed: 10/01/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Dissolved Mercury</u>
EMW-3S-092513 309446-01	<0.0015
EMW-4D-092513 309446-02	<0.0015
CMW-1-092513 309446-03	<0.0015
EMW-15D-092513 309446-04	<0.0015
CMW-4-092513 309446-05	<0.0015
CMW-6-092513 309446-06	<0.0015
EMW-14D-092513 309446-07	<0.0015
EMW-13S-092513 309446-08	<0.0015
EMW-56D-092513 309446-09	<0.0015
EMW-10D-092513 309446-10	<0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/13

Date Received: 09/25/13

Project: 8th Ave Terminals, Inc. Site, Crowley 101.00205.00030, F&BI 309446

Date Extracted: 09/30/13

Date Analyzed: 10/03/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL MERCURY
USING EPA METHOD 1631E**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Total Mercury</u>
EMW-3S-092513 309446-01	0.0072
EMW-4D-092513 309446-02	<0.0015
CMW-1-092513 309446-03	0.0031
EMW-15D-092513 309446-04	<0.0015
CMW-4-092513 309446-05	0.037
CMW-6-092513 309446-06	0.0031
EMW-14D-092513 309446-07	<0.0015
EMW-13S-092513 309446-08	<0.0015
EMW-56D-092513 309446-09	<0.0015
EMW-10D-092513 309446-10	<0.0015
Method Blank	<0.0015

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/13

Date Received: 09/25/13

Project: 8th Ave Terminals, Inc. Site, Crowley 101.00205.00030, F&BI 309446

Date Extracted: NA

Date Analyzed: 9/30/13

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

<u>Sample ID</u> Laboratory ID	Total Suspended <u>Solids</u>
EMW-3S-092513 309446-01	<9.7
EMW-4D-092513 309446-02	29
CMW-1-092513 309446-03	22
EMW-15D-092513 309446-04	20
CMW-4-092513 309446-05	130
CMW-6-092513 309446-06	<9.7
EMW-14D-092513 309446-07	30
EMW-13S-092513 309446-08	<9.7
EMW-56D-092513 309446-09	49
EMW-10D-092513 309446-10	41
Method Blank	<9.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/13

Date Received: 09/25/13

Project: 8th Ave Terminals, Inc. Site, Crowley 101.00205.00030, F&BI 309446

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 309420-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.0980	103	101	67-145	2
Chromium	ug/L (ppb)	20	0.601	101	103	64-132	2
Nickel	ug/L (ppb)	20	3.34	97	95	61-128	2
Copper	ug/L (ppb)	20	0.91	99	95	63-124	4
Zinc	ug/L (ppb)	50	<2.5	98	95	55-141	3
Arsenic	ug/L (ppb)	10	0.321	104	103	60-150	1
Selenium	ug/L (ppb)	5	<0.560	105	106	43-178	1
Silver	ug/L (ppb)	5	<0.0640	96	99	71-115	3
Cadmium	ug/L (ppb)	5	<0.0940	102	100	83-116	2
Antimony	ug/L (ppb)	20	<1.25	101	101	62-125	0
Barium	ug/L (ppb)	50	10.3	103 b	100 b	79-126	3 b
Thallium	ug/L (ppb)	5	<0.0740	98	96	73-119	2
Lead	ug/L (ppb)	10	<0.144	96	95	79-121	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	104	73-135
Chromium	ug/L (ppb)	20	106	80-119
Nickel	ug/L (ppb)	20	105	79-122
Copper	ug/L (ppb)	20	113	81-119
Zinc	ug/L (ppb)	50	102	76-124
Arsenic	ug/L (ppb)	10	99	80-111
Selenium	ug/L (ppb)	5	103	81-119
Silver	ug/L (ppb)	5	106	80-116
Cadmium	ug/L (ppb)	5	103	83-113
Antimony	ug/L (ppb)	20	102	79-108
Barium	ug/L (ppb)	50	105	83-117
Thallium	ug/L (ppb)	5	102	78-116
Lead	ug/L (ppb)	10	99	83-115