

**Revised Ecology Review Draft
Remedial Investigation Report
North Lot Development
Seattle, Washington**

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Prepared for

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LIST OF ABBREVIATIONS AND ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society for Testing and Materials
BGS	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAP	Cleanup Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS NFRAP	Comprehensive Environmental Response, Compensation, and Liability Information System No Further Remedial Action Planned
cm/s	Centimeters per Second
cPAH	Carcinogenic Polycyclic Aromatic Hydrocarbon
CSCSL	Confirmed and Suspected Contaminated Sites List
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
FINDS	Facility Index System / Facility Registry System
FS	Feasibility Study
HCID	Hydrocarbon Identification
INST CONTROL	Institutional Control
LUST	Leaking Underground Storage Tank
MANIFEST	Hazardous Waste Manifest
MCL	Maximum Contaminant Level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MSL	Mean Sea Level
MTCA	Washington State Model Toxics Control Act
NAVD88	North American Vertical Datum of 1988
NFA	No Further Action
ng/kg	Nanogram per Kilogram
NLD	North Lot Development
NPDES	National Pollutant Discharge Elimination System
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
ppm	Parts per Million
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RI	Remedial Investigation
SEPA	Washington State Environmental Policy Act
SWPPP	Stormwater Pollution Prevention Plan
TEF	Toxicity Equivalency Factor
TEQ	Toxicity Equivalency Quotient
TPH	Total Petroleum Hydrocarbons
TPH-D	Diesel-Range Petroleum Hydrocarbons
TPH-G	Gasoline-Range Petroleum Hydrocarbons
TPH-O	Motor Oil-Range Petroleum Hydrocarbons

UCL	Upper Confidence Limit
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
WAC	Washington Administrative Code

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1.0 INTRODUCTION

This document presents the remedial investigation (RI) for the North Lot Property (Property) in Seattle, Washington. North Lot Development (NLD), as prospective purchaser of the Property, has conducted various investigations to document and characterize soil and groundwater conditions at the Property. This RI documents and evaluates the nature and extent of contamination at the Property.

Investigation of the Property began with the Phase I environmental site assessment (ESA) conducted in 2007 (Landau Associates 2007), and continued with the soil and groundwater quality sampling and analysis conducted in 2008 and 2009.

1.1 PROPERTY DESCRIPTION AND BACKGROUND

The Property is known as the “North Lot Development” (King County parcel number 7666204878) and is located in Seattle, Washington’s south end Central Business District adjacent to Qwest Field, as shown on Figure 1. The Property is comprised of 3.85 acres currently owned by King County, and is located southeast of the intersection of South King Street and Occidental Avenue South in Seattle, Washington (Figure 2). The Property consists of a paved parking lot, which is used for commuter parking and parking for events at Qwest Field. Based on a Phase I ESA completed by Landau Associates (dated March 28, 2007), the Property was originally undeveloped tideflats of Elliott Bay. The Property was filled in the late 1890s and early 1900s and was operated as a rail yard from the late 1800s until the late 1960s. Prior to filling, the area was initially developed with streets, buildings, and railroad tracks elevated and supported by pilings. Several sets of railroad tracks were formerly present on the Property. Structures associated with the rail yard included engine maintenance buildings, paint shops, track switching areas, and materials storage areas. In addition, two gasoline stations were formerly located in the northwestern portion of the Property at different times between the late 1930s and approximately 1966. King County purchased the Property in the 1970s to facilitate construction of the Kingdome stadium to the south of the Property, which was later demolished and replaced with the current Qwest Field development. The Property has been used as a parking lot since the 1970s (Landau Associates 2007). The Property is served by various utilities including a stormwater drainage system that consists of a series of four storm drain lines running north to south across the Property. A fifth storm drain line runs approximately northwest to southeast in the eastern half of the Property. The King County main storm drain runs along King Street to the north of the Property and the King County combined sewer main runs along Occidental Avenue to the west of the Property. Relevant historical Property features are illustrated on Figure 3. Existing Property features including the stormwater drainage system and other below-grade utilities on and adjacent to the Property are shown on Figure 4.

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The Property will be developed by NLD as part of an Inter-Modal regional transit hub at King Street Station and will encompass two full city blocks with approximately 1.5 million gross square feet of buildable area. The planned development will include two podiums (east and west blocks) that contain residential/North Lot replacement parking, building lobbies, and retail uses. Above the podium on the east block will be a single office tower, and the west block will include more than 400 units of new housing stock (including 100 affordable units).

1.2 REGULATORY FRAMEWORK

Property cleanup, including this RI and the Feasibility Study (FS), which will be submitted as a separate document, is being accomplished under the Washington State Model Toxics Control Act (MTCA). The Property is currently owned by King County. NLD, as the prospective purchaser of the Property, has been in communication with Ecology since April 2008 regarding a suitable regulatory mechanism to facilitate the RI/FS and Cleanup Action Plan (CAP) review and concurrence by Ecology. NLD submitted a proposal for a Prospective Purchaser Agreement/Consent Decree to Ecology in May 2008. Proposal approval has been delayed due to limited Ecology and Attorney General staff resources. Ecology subsequently proposed temporary use of Voluntary Cleanup Program (VCP) staff for completion of the RI/FS work because VCP staff could be assigned immediately.

The NLD team submitted an initial VCP application and met with Mr. Bob Warren and Mr. Russ Olsen of Ecology in September 2008. During the meeting, the VCP process was discussed in the context of the NLD team's development schedule and obligations to the current owner (King County). NLD subsequently submitted a revised VCP application with a specific request for Ecology to review the Remedial Investigation Work Plan, which included proposed additional investigation of soil and groundwater at the Property to identify the source(s), nature, and extent of the contamination and potential exposure pathways, and to collect sufficient data to establish cleanup standards and select a cleanup action. The cover letter with the revised application requested a letter from Ecology stating that the proposed remedial action (i.e., pre-cleanup investigation activities) is likely to be sufficient to meet the specific substantive requirements of MTCA, chapter 70.105D RCW and its implementing regulations, chapter 173-340 WAC, for characterizing and addressing the release(s) at the Property. Ecology subsequently provided comments regarding the RI Work Plan via e-mail (Adams 2008). The Ecology comments were addressed in the Ecology Review Draft Report: *Remedial Investigation/Feasibility Study, North Lot Development, Seattle, Washington* dated February 24, 2009, which was submitted to Ecology for review.

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Ecology provided an Opinion Letter dated April 21, 2009 that included its comments regarding the draft RI/FS report. The NLD team met with Ecology on May 28, 2009 to discuss the comments in the Opinion Letter, and a plan to move forward and complete the RI/FS for the Property. Specific responses to the Ecology comments were provided in a letter dated June 12, 2009 (Landau Associates 2009a), which also included a summary of the topics discussed during the May 28 meeting and actions agreed to by NLD.

The NLD team also submitted a Work Plan (initial version dated June 18, 2009 and revised version dated July 7, 2009) detailing the Supplemental Investigation activities that were planned in response to the April 21, 2009 Opinion Letter and agreed to with Ecology. The NLD team, at Ecology's request, also submitted a letter (dated July 7, 2009; Landau Associates 2009b) clarifying how the proposed Supplemental Investigation activities outlined in the Work Plan will address Ecology comments. The July 7, 2009 letter included responses to additional comments received from Ecology via e-mail on June 30, 2009 regarding the Work Plan and responses to Ecology comments regarding the RI portion of the draft RI/FS report. The Work Plan was subsequently revised (and dated July 7, 2009) to be consistent with the July 7, 2009 clarification letter (Landau Associates 2009c). This RI report includes revisions to the draft RI report to address Ecology comments and incorporate the data from the Supplemental Investigation conducted in July and August 2009. The FS portion of the draft RI/FS report has been removed for revision and submittal as a separate document.

The use of VCP staff has allowed the RI/FS work to progress; however, the technical opinion letters available under the VCP will not provide sufficient liability protection for the viability of the proposed development for the Property. Therefore, NLD has requested that Ecology continue to consider the existing Prospective Purchaser Agreement/Consent Decree Proposal, and that Ecology formal program and Attorney General office staff be made available to oversee the cleanup action after the work with the VCP staff has been completed.

In anticipation of transfer of the project to the Ecology formal program, the documents for the remedial action (this RI report, the FS report, and the planned CAP) are being prepared in a format, and with sufficient detail, to meet the requirements of MTCA under both the VCP and formal programs. The documents will support transfer of the project from the VCP to the formal program during the first quarter of 2010.

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1.3 PURPOSE

The purpose of the RI is to collect, develop, and evaluate sufficient information regarding the Property to enable the evaluation of suitable remedial action alternatives in the FS, and selection of a cleanup action. Specifically, the RI:

- Characterizes the nature and extent of contamination for affected media (i.e., soil and groundwater)
- Identifies cleanup standards for affected media.

This document presents the information collected and the evaluations performed to achieve this purpose.

1.4 REPORT ORGANIZATION

Section 2.0 of this report presents a summary of investigative activities conducted on-Property and off-Property for the RI. Section 3.0 presents the results of the RI, including characterization of the nature and extent of contamination using all data collected to date. Section 4.0 presents the summary and conclusions for the RI. Section 5.0 describes the uses of this report, and Section 6.0 provides references.

2.0 PROPERTY INVESTIGATIONS

This section provides a description of the investigative activities that were conducted to characterize conditions at the Property and to develop the data for this RI report. The Property investigations are presented in this section by the type of investigation or the media of concern (e.g., soil or groundwater) to provide the reader with a thorough understanding of the activities that were performed as part of the RI.

The findings of the Phase I ESA are provided in Section 2.2 to establish the context for the soil and groundwater investigations conducted at the Property during the Phase II investigation, the RI field investigation, and the Supplemental Investigation. Findings of the Phase II investigation, RI field investigation, and Supplemental Investigation that are related to the physical conditions at the Property are also included in this section. The analytical results for the samples collected during the Phase II investigation, RI soil and groundwater investigation, and Supplemental Investigation are presented in Section 3.0 and combined to present the physical conditions of the Property and the nature and extent of contamination to soil and groundwater for this RI report.

2.1 CHRONOLOGY OF PROPERTY INVESTIGATIONS

Four investigations were conducted at the Property to develop the data used in this RI report. A Phase I ESA was conducted in 2007 (Landau Associates 2007), and a focused Phase II soil and groundwater investigation was conducted in February 2008. The Phase II investigation included a geophysical survey, the drilling and sampling of soil borings at 22 locations on the Property, and the collection of groundwater samples from 12 of the boring locations.

The RI field investigation was conducted in October and November 2008 to further characterize soil and groundwater conditions at the Property in areas where soil or groundwater contamination was detected during the Phase II investigations, and to assess the potential for migration of the contamination detected on the Property. The RI field investigation included drilling and sampling of soil borings at 26 locations, the collection of groundwater samples from 4 of the boring locations, and the installation and sampling of 11 groundwater monitoring wells.

The Supplemental Investigation was conducted in July and August 2009 to further characterize the areal and vertical distribution and concentrations of hazardous substances in soil and groundwater. The Supplemental Investigation included drilling and sampling of soil borings at an additional 21 locations including 2 off-Property locations, the installation of 8 additional monitoring wells including wells at 2 off-Property locations, and sampling and analysis of groundwater from all 19 groundwater monitoring wells.

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The investigations have included the drilling of more than 70 soil borings, the installation of 19 monitoring wells, and the collection and laboratory analysis of 90 soil samples and 48 groundwater samples from locations on and off the Property over a 3-year period. A summary of the sampling activities and the associated sample analyses are presented in Table 1. The sampling locations are shown on Figure 5. The following sections summarize the activities conducted during these investigations.

2.2 PHASE I ENVIRONMENTAL SITE ASSESSMENT

The Phase I ESA (Landau Associates 2007) consisted of a review of historical information regarding the Property and surrounding area; contacts with representatives of local, state, and federal government agencies regarding the Property and properties of potential concern within a 1-mile radius; a Property reconnaissance; data evaluation; and reporting. The Phase I ESA was conducted in accordance with the guidelines of the American Society for Testing and Materials (ASTM) as identified in its Standard Practice for Environmental Property Assessment Process, E 1527-05 (as currently applied in the state of Washington).

The goal of the assessment process outlined in ASTM E 1527-05 is to identify *recognized environmental conditions*, which are defined as the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the Property or into the ground, groundwater, or surface water of the Property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of the appropriate governmental agencies. The Phase I ESA identified various areas of potential environmental concern and *recognized environmental conditions* for the Property related to historical site operations and operations on sites in the surrounding area.

Included below is relevant historical, regulatory, and physical information regarding the Property and surrounding area developed during the Phase I ESA and during preparation of this RI report. Copies of selected historical Sanborn maps and aerial photographs are provided in Appendices A and B, respectively.

- According to historical Sanborn maps, the Property was operated as a rail yard from 1888 to 1969. Railroad tracks were originally located along the northern Property boundary (current location of South King Street) and ran diagonally from the northwestern portion to the southeastern portion of the Property. Structures associated with the rail yard included a roundhouse; turntables; coal boxes; a blacksmith shop; an office; a machine shop/storage area; a car repair, maintenance, and painting facility; and locomotive houses. The 1888 map

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shows the western portion of the Property as a rail yard and the portion of the Property located east of 2nd Avenue South (shown as South 3rd Street on this map) is shown as Elliott Bay, which at that time was likely tidal flats (see Appendix A). On the 1904 map, several of the structures are labeled “fire ruins,” indicating a fire occurred on the Property between 1888 and 1904. Prior to 1916, the configuration of the rail yard changed significantly. The railroad tracks, the roundhouse, and other structures were removed and replaced. South King Street is shown to the north of the Property. Railroad tracks ran north to south from South King Street and long, narrow sheds were located along the tracks. Both the railroad tracks and the freight sheds extended onto the adjacent property to the south (see Appendices A and B). In the 1950 map, a structure is shown in the northwestern portion of the Property, which is interpreted to have been a gasoline station based on records reviewed at the Puget Sound Regional Archives (see Appendix A). This building is not shown on the 1969 map (see Appendices A and B).

- The historical data review indicates that the western portion of the Property was filled and developed by 1888, before the eastern portion (i.e., east of the current location of 2nd Avenue and the Center Drive Lane on the Property), which appears to have been filled and developed by about 1904 and after the Great Seattle Fire of 1889.
- During operation of the Property as a rail yard, the railroad tracks were primarily located in the eastern portion of the Property and the associated structures were located in the western portion. Several of the structures were known to have been heated using oil. Typical contamination associated with rail yards includes degreasing solvents, polychlorinated biphenyl (PCB)-containing lubricating oils, heavy metals, paint, petroleum hydrocarbons, and creosote (from treated railroad tracks). The long history of the Property as a rail yard is considered a *recognized environmental condition*.
- Two gasoline stations were formerly located in the northwestern portion of the Property. The gasoline stations operated during different time periods in the same area of the Property. Given that the stations had two distinct configurations and a different number of gasoline pumps, it is possible that two sets of tanks were associated with the gasoline stations. There are no records available regarding the specific footprints of the stations or of removal or closure of the tanks associated with the gasoline stations. The former operation of gasoline stations on the Property is considered a *recognized environmental condition*.
- The Union Station property (Union Station) is located approximately 300 feet (ft) east of the Property and is listed on the CSCSL, FINDS, INST CONTROL, MANIFEST, CERCLIS NFRAP, and RCRA databases. Soil and groundwater impacts have been identified at Union Station. Union Station Associates entered into a Consent Decree with Ecology in 1997 that specified the remedial actions required for the Union Station property. The remedial actions, including soil excavation, paving, and the placement of an institutional control limiting the use of groundwater to industrial uses, have been completed. Ecology issued a Certification of Completion in January 2005 and Union Station is currently undergoing groundwater monitoring every 5 years. Gasoline-range and diesel-range petroleum hydrocarbons and related constituents, and arsenic have been detected in groundwater samples collected from the Union Station monitoring wells. The source of these constituents has not been identified, but is likely to be east of Union Station.

Based on the results of the last two groundwater monitoring events at Union Station in 2004 and 2009, petroleum hydrocarbons and related constituents, and arsenic were detected in the monitoring wells at Union Station approximately 300 ft hydraulically upgradient from the eastern boundary of the Property. Groundwater beneath the Property has likely been

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impacted by petroleum hydrocarbons and related constituents, and/or arsenic. The potential presence of petroleum hydrocarbons and related constituents, and arsenic in the groundwater beneath the Property due to the contamination detected at this upgradient property is considered a *recognized environmental condition* for the Property.

Background-based screening levels were developed for Union Station based on concentrations of constituents of concern in groundwater sampled from offsite background wells. Background concentrations evaluated at Union Station may be considered reasonable background concentrations for the North Lot Property due to the proximity and upgradient location of Union Station.

- The King Street Center site is located adjacent to the north of the Property, across King Street. This site is listed on the ICR database for an interim cleanup report, which was submitted to Ecology in 1998, regarding petroleum detected in the groundwater. This site is also listed on the underground storage tank (UST) and leaking underground storage tank (LUST) databases. A release was reported from one of two USTs, which were removed in 1998. The release was reported cleaned up; however, a 2003 notice to the property owner from Ecology indicated that the level of contamination at this site may pose a risk to human health and the environment. Ecology requested additional investigation; however, investigations for the Phase I ESA and this RI found that no further information was available from King County regarding soil or groundwater investigation and cleanup at this site. Given that this site is located adjacent to the Property (across King Street), there is potential for impact to the groundwater beneath the Property as a result of this release; therefore, this release is considered a *recognized environmental condition* for the Property.
- The former Kingdome site is located adjacent to the south of the Property. A 1997 Phase I ESA conducted for the former Kingdome site (including the Property) by Shannon & Wilson identified potential impacts to the site soil and groundwater as a result of historical site practices, the nearby Union Station site (which was formerly operated as a coal gasification plant), and a former steam plant in the current location of the Weller Street Bridge Touchdown, which is located adjacent to the east of the Property. A 10,000-gallon fuel oil UST was removed from the southern side of the steam plant in 1996. Petroleum-contaminated soil encountered during the tank removal was removed and transported off site for disposal.

Based on the findings of the 1997 Phase I ESA, additional environmental investigations were completed on the properties to the south of the Property, including the current Public Stadium Authority (PSA) parking lot, Qwest Field, and the Exhibition Center to the south of Qwest Field. Investigations were focused in this area in preparation for the development of Qwest Field and the Exhibition Center. Following the initial subsurface investigation, 13 impacted areas were identified on the former Kingdome site that were generally associated with USTs discovered prior to and during construction activities.

The additional investigations identified soil and groundwater that had been impacted by total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs), vinyl chloride (groundwater only), and metals. Groundwater was generally encountered from 7 to 10 ft below ground surface (BGS), and the direction of groundwater flow was stated to be to the southwest. No soil or groundwater investigations were conducted on the Property. Soil encountered during the investigations consisted of loose to medium dense, silty sand and gravel with intermixed materials (including coal, boulders, saw mill debris, brick, ash, building debris, railroad ties, rails, and concrete) to depths ranging from 4 to 18 ft BGS.

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Following remedial activities that generally consisted of removal of USTs and the surrounding impacted soils, the available information indicates that Ecology issued a No Further Action (NFA) determination for 12 of the 13 impacted areas. The NFA stated that elevated concentrations of PAHs and metals remain in place due to historical industrial use. The remaining area is located along Occidental Avenue to the southwest of the Property. Shannon & Wilson completed additional investigation in this area; however, information regarding the current status of this impacted area was not identified during the RI.

The records review conducted for the Phase I ESA for the Property did not identify any detailed information regarding remedial actions associated with the adjacent properties, or area groundwater flow information, other than the data for the Union Station site discussed above.

2.3 SOIL INVESTIGATIONS

The investigations for the Property included evaluation of soil quality during the Phase II investigation, the RI field investigations, and the Supplemental Investigation, and are discussed in this section chronologically by investigation. The soil sampling locations are shown on Figure 5. The soil sample descriptions, depths, and analytical parameters are provided in Table 1 and the conditions encountered during drilling are summarized in Table 2. Boring logs are provided in Appendix C.

2.3.1 PHASE II INVESTIGATION

The Phase II soil investigation was completed to evaluate the conditions of potential concern and *recognized environmental conditions* identified in the Phase I ESA. The Phase II investigation included sampling and chemical analysis of soil from areas of the Property likely to show significant impacts due to previous Property operations, including the locations of the former gasoline stations in the northwestern portion, the locations of the previous structures associated with the former rail yard in the western portion of the Property, and the former railroad track locations in the eastern portion. Samples were also collected near the Property boundaries to evaluate the potential for impact to the Property from neighboring properties.

Soil sampling was conducted from February 27 to February 29, 2008 at 22 locations (B-1 through B-22). Direct-push sampling technology was used to collect soil samples at discrete depths from each boring location. Twenty-two soil samples were collected from the borings for laboratory analysis.

The maximum depths of the borings ranged from about 7 to 24 ft BGS. The maximum depth was selected to target the base of the fill material, which is known from the Phase I ESA to have been placed in the area, and the interface of the fill with the native former tideflat surface. The actual depths were often determined by refusal during drilling due to subsurface obstructions. As shown in Table 2, the native former tideflat surface was encountered in five of the Phase II borings. As discussed below, the

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upper surface of the native former tideflat surface became a focus of the subsurface investigations after creosote-like material was encountered locally at the contact of the fill with the native material in the northeastern portion of the Property.

In addition to the soil and groundwater investigation, a geophysical survey was completed at the Property as part of the Phase II ESA. The results of the geophysical survey are presented in Section 2.3.1.2.

2.3.1.1 Sampling and Analysis

One soil sample was submitted for laboratory analysis from each of borings B-1 and B-3 through B-20. Two soil samples were submitted for laboratory analysis from each of borings B-2 and B-21. No soil samples were submitted for laboratory analysis from boring B-22 because this boring (along with B-21) was added to visually assess whether the creosote-like material encountered at nearby location B-2 was also present farther to the west. The soil analytical parameters were selected based on the historical Property use in the area where the boring was located. Soil samples were selected for laboratory analysis based on visual observations and field-screening information [i.e., photoionization detector (PID) measurements] collected during drilling.

Borings B-15 through B-20 were advanced in the area of the former gasoline stations in the northwestern portion of the Property. As shown in Table 1, soil samples were collected for selected laboratory analysis from borings B-15 through B-20 from depths ranging from about 5 to 8 ft BGS, based on field-screening evidence of potential contamination (i.e., elevated PID measurements and odor). As shown in Table 2, the highest PID measurements from the Phase II investigation were recorded at a depth of about 5 ft BGS from the borings in the northwestern portion of the Property.

Soil borings B-1, B-2, B-4, B-5, B-7, B-21, and B-22 were advanced in the northeastern portion of the Property. The creosote-like material, which was first encountered at a depth of about 18 ft BGS in boring B-2, was the only evidence of contamination encountered during drilling. As shown in Table 2, no elevated PID measurements were recorded during drilling of the soil borings in the northeastern portion of the Property. Therefore, the soil samples selected from these borings for laboratory analysis were collected from depths ranging from about 6 to 20 ft BGS, with most being from greater than 15 ft BGS, and analyzed for TPH, metals, and PAHs, based on the former rail yard operations in this portion of the Property. In addition, the soil sample collected from B-2 was analyzed for polychlorinated biphenyls (PCBs). One of the soil samples collected from B-21 (B-21-19-20) was analyzed only for metals. The other sample collected from B-21 (B-21-20-23) was analyzed as a product sample due to the presence of

creosote-like material. The sample of creosote-like material was analyzed for TPH, metals, PCBs, and PAHs.

Soil borings B-3 and B-8 through B-14 were advanced in the central and southern areas of the Property and soil boring B-6 was advanced slightly south of the Property boundary to evaluate potential impact from the former rail yard operations and to evaluate subsurface conditions at the Property boundaries. Soil samples selected from these borings for laboratory analysis were collected from depths ranging from about 5 to 7.5 ft BGS and analyzed for TPH, metals, and PAHs.

2.3.1.2 Geophysical Survey

A geophysical survey was conducted at the Property as part of the Phase II investigation. The purpose of the survey was to determine if USTs were present in the area of the former gasoline stations in the northwestern portion of the Property and to identify subsurface conditions that could impact the proposed Property development. The Property was investigated using electromagnetic and ground-penetrating radar methods. A copy of the geophysical survey report is provided in Appendix D. Significant findings of the geophysical survey are as follows:

- The geophysical survey identified a “low anomalous zone” in the northwestern portion of the Property, in the area of borings B-17 and B-18 (see Figure 5), suggesting that scattered buried metal is likely present in this area. No evidence of USTs was identified in this area based on the geophysical survey.
- The geophysical survey results indicate an anomaly suggesting the presence of a large (approximately 45 ft x 20 ft) object about 1 ft below grade in the southeastern portion of the Property. According to the geophysical report, this anomaly is likely a buried concrete slab associated with a former structure.
- Scattered anomalies were identified in the western portion of the Property that may be indicative of former building foundations or other remnants of the former structures.
- The geophysical survey did not identify any significant subsurface anomalies in the northeastern portion of the Property.

In summary, the geophysical survey results indicate that scattered buried metal objects are present at the Property; however, no evidence of the presence of USTs was identified. Anomalous zones likely associated with foundations of former structures were also identified.

2.3.2 REMEDIAL INVESTIGATION FIELD INVESTIGATION

The RI field investigation was conducted to fill data gaps remaining from the Phase II investigation. Information from the Phase II investigation indicated that localized contamination was present in the northwestern portion of the Property, in the area of the former retail gasoline stations, and in the northeastern portion of the Property where the creosote-like material was encountered at the depth

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of the former tideflat surface. The RI field investigation focused on further characterization of soil and groundwater conditions and the nature and extent of contamination in these areas, and on documentation of groundwater occurrence, quality, and flow at the Property. Additional soil borings were also advanced in the western half of the Property to characterize the vertical profile of PAH contamination identified in this area during the Phase II investigation. Boring depths were extended at selected locations to further evaluate the depth of the interface between the fill material and the underlying native silt of the former tideflat surface, and the extent of the creosote-like material.

During the RI field investigation, 26 additional direct-push borings were completed at the Property between October 7 and October 10, 2008 (B-23 through B-47; including B-31A and B-31B). The maximum depths of the borings ranged from about 12 to 32 ft BGS. As shown in Table 2, the native former tideflat surface was encountered in 14 of the RI field investigation direct-push borings. Forty soil samples were collected from 26 direct-push borings and submitted for laboratory analysis, including a sample of creosote-like material collected from boring B-41 that was submitted for forensic analysis/product identification. As discussed below, samples were not collected for laboratory analysis from eight borings (B-25, B-29, B-34, B-35, B-37, B-42, B-43, and B-46). Field-screening data from these borings were used in evaluating the nature and extent of contamination identified in the areas of these borings.

Eleven monitoring wells were installed between November 10 and November 14, 2008. Borings for the 11 monitoring wells (MW-1 through MW-9, including MW-7S and -7D, and MW-9S and -9D) were completed using hollow-stem auger drilling techniques. As discussed below, selected borings at the monitoring well locations were extended well below the planned maximum depth of the well(s) to collect additional stratigraphic information.

2.3.2.1 Sampling and Analysis

Soil borings B-23 through B-29, B-45, and B-46 were advanced in the northwestern portion of the Property to further evaluate contamination likely associated with the former gasoline stations. Soil samples from these borings were collected for laboratory analysis from depths ranging from 2.2 to 19 ft BGS based on elevated PID measurements, and analyzed for gasoline-range total petroleum hydrocarbons (TPH-G), benzene, toluene, ethylbenzene, and xylenes (BTEX), and PAHs. Samples collected from B-24 and B-27 were also analyzed for PCBs. No samples were collected for laboratory analysis from boring B-29 due to poor recovery and refusal at multiple attempts during direct-push exploration; however, a monitoring well was installed at this location (MW-2) that allowed for groundwater sample collection. Samples were not collected for laboratory analysis from boring B-25 because of similarities in soil types

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and conditions to other borings nearby, and there were no observations or field-screening data to indicate the potential presence of contamination. The analytical parameters were selected based on the constituents detected in soil or groundwater samples during the Phase II investigations. Soil samples were selected for laboratory analysis based on visual observations and field-screening information (i.e., the samples with the highest PID measurements) collected during drilling, or from specific zones in order to evaluate the vertical extent of contamination.

Soil borings B-34 through B-44 and B-47 were advanced in the northeastern portion of the Property to further evaluate the creosote-like material identified in this area during the Phase II investigation. These borings were drilled to maximum depths ranging from 24 to 32 ft BGS. The occurrence of the creosote-like material was evaluated by visual observation and field screening during drilling, and soil samples were collected periodically for selected laboratory analysis from depths ranging from 16.5 to 26.0 ft BGS from some of the borings (Table 1).

Soil borings B-30 through B-33 were advanced in the west-central and southern portions of the Property to further evaluate these areas and fill in data gaps. Soil samples from these borings were collected from depths ranging from 0.2 to 18.5 ft BGS and analyzed for TPH, metals, and PAHs to further characterize the fill material. Samples collected from B-30 and B-33 were also analyzed for PCBs.

2.3.3 SUPPLEMENTAL INVESTIGATION

The Supplemental Investigation was conducted to further characterize the areal and vertical distribution and concentrations of hazardous substances in soil and groundwater, address Ecology comments regarding the draft RI/FS report, and complete the RI for the Property. Twenty-one additional soil borings (B-50 through 68 including B-50A and B-63A) were drilled on July 27 and 28 and August 6, 2009 at locations on or adjacent to the Property including:

- In the northwestern portion of the Property to further characterize soil and groundwater in the former gasoline station area, including two off-Property borings
- In the western portion of the Property to further evaluate PAHs in soil greater than 15 ft BGS and to evaluate metals and semivolatile organic compounds (SVOCs) including PAHs in shallow soils about 1 to 2 ft BGS
- In the eastern portion of the Property to evaluate metals and SVOCs including PAHs in shallow soils about 1 to 2 ft BGS.

The maximum depths of the borings ranged from about 6 to 25 ft BGS. As shown in Table 2, the native former tidelflat surface was encountered in 9 of the 21 Supplemental Investigation direct-push borings. Twenty-six soil samples were collected and submitted for laboratory analysis. The analytical parameters were selected based on the constituents detected in soil or groundwater samples during the Phase II and RI field investigations and as outlined in the Work Plan (Landau Associates 2009c). Soil

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samples were selected for laboratory analysis as outlined in the Work Plan. At least one sample was collected for laboratory analysis from each boring, except the locations where two borings were advanced (i.e., B-50 and B-63), then samples were only analyzed from one boring at each location (i.e., samples were collected from B-50A and B-63).

Eight additional monitoring wells were installed on August 3 and August 4, 2009 including two wells (MW-16D and -17D) located off-Property to the northeast. Borings for the eight monitoring wells (MW-10 through MW-17D, including MW-15D) were completed using hollow-stem auger drilling techniques.

2.3.3.1 Sampling and Analysis

Soil borings B-50 through B-56 were advanced in the northwestern portion of the Property to further evaluate contamination likely associated with the former gasoline stations. Soil samples from these borings were collected for laboratory analysis from depths ranging from 5 to 16 ft BGS and analyzed for TPH-G and BTEX to evaluate the lateral and vertical extent of contamination. No samples were collected for laboratory analysis from boring B-50 due to poor recovery, but a sample was collected from B-50A at the same location.

Soil borings B-57 through B-63A were advanced in the western portion of the Property to further evaluate PAHs in soil greater than 15 ft BGS (B-57 through B-60) and to evaluate metals and SVOCs including PAHs in shallow soils about 1 to 2 ft BGS (B-57 through 63A). These borings were drilled to maximum depths ranging from 9 to 25 ft BGS. No sample was collected for laboratory analysis from boring B-63A, which was drilled to identify geologic data to 10 ft BGS after B-63 encountered refusal at 9 ft BGS. The shallow soil sample representative of the location for borings B-63 and B-63A was collected from B-63.

Soil borings B-64 through B-68 were advanced in the eastern portion of the Property to evaluate metals and SVOCs including PAHs in shallow soils about 1 to 2 ft BGS.

One surface soil sample from each of B-62 and B-65 was also submitted for dioxin/furan analysis per the Work Plan.

Soil samples were also collected for laboratory analysis from the borings for MW-11 (TPH-G and BTEX), MW-15D (PAHs), and MW-17D [HCID, diesel-range total petroleum hydrocarbons (TPH-Dx), metals, PAHs, and SVOCs] to supplement the direct-push boring data.

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2.3.4 PHYSICAL SOIL CHARACTERISTICS AND FIELD OBSERVATIONS

The drilling for the Phase II investigation, RI field investigation, and Supplemental Investigation for evaluation of subsurface conditions consisted of 68 direct-push borings, and 19 hollow-stem auger borings. The physical soil characteristics of the material encountered during drilling were evaluated using data from borings completed for environmental and geotechnical purposes. Borings that were completed for geotechnical evaluation purposes were included to allow for a more thorough understanding of the subsurface conditions below about 32 ft BGS, which was the approximate maximum extent of borings completed by Landau Associates for environmental purposes.

Five Landau Associates boring locations (B-38, B-34, B-44, B-33, and B-31b) were selected as locations for drilling of deeper borings by Terra Associates for use in their geotechnical evaluation for the Property. Terra Associates designated the deeper borings B-1, B-2, B-3, B-4, and B-5, respectively, and the conditions encountered during drilling were observed and logged by both Landau Associates and Terra Associates personnel. In the text of this report, discussion of Terra Associates borings will be indicated by including the Terra Associates name in parenthesis following the respective boring ID, otherwise the referenced boring was advanced by Landau Associates. Geologic logs developed for the borings by Landau Associates (B-1 through B-68 and MW-1 through MW-17D) and Terra Associates (B-1 through B-5) are provided in Appendix C.

Boring depths for soil characterization ranged from 7 ft BGS (B-11, B-14) to 32 ft BGS (B-40) for the direct-push borings and from 45.5 ft BGS (B-5, Terra Associates) to 80.5 ft BGS (B-3, Terra Associates) for the hollow-stem auger borings.

Soil conditions encountered during drilling consisted of various types of fill material to a maximum depth of 30.5 ft BGS (B-4 Terra Associates). The fill material was variable in consistency and included very loose to medium dense, fine to coarse sand, silty sand, silt, gravels, wood chips, sawdust, and solid wood. In places, coal, ash, concrete and brick fragments, metal debris, and glass fragments were observed in the fill.

Beneath the fill, the upper contact with a marine sediment layer (former native tideflat) was observed at 31 boring locations (see Table 2) at depths ranging from 18 ft BGS (B-7) to 30.75 ft BGS (B-4, Terra Associates). The marine sediment layer generally consisted of a medium stiff to very soft silt with varying percentages of sand, and usually contained shell fragments. Locally the unit consisted of silty fine to medium sand with shell fragments, fine to medium sand with silt, gravel and shell fragments, or silty gravel with sand and shell fragments.

Underlying the marine sediment layer was a thick layer of silty sand, with interbedded gravel, silt, clay, or peat in places, interpreted to be alluvial deposits. This layer was observed in boring B-40, and in

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borings B-1 through B-5 by Terra Associates. The upper contact with the alluvial deposits ranged from 25.0 ft BGS (B-40) to 45.5 ft BGS (B-2; Terra Associates).

Underlying the alluvial deposits was material interpreted to be a glacial unit with very similar characteristics to the alluvial deposits and consisting of generally fine to medium silty sand with gravel above a fine to coarse sand with gravel with intermixed layers of silt or clay. The transition between the alluvial deposits and glacial deposits corresponded with an increased material density from medium dense to dense increasing to dense to very dense. The occurrence of the glacial deposits was interpreted from B-1 through B-5 (Terra Associates) where they were encountered from a depth of 44 ft BGS (B-1, Terra Associates) to a maximum depth of 80.5 ft BGS (B-3, Terra Associates), which is also the maximum depth of the subsurface exploration for the investigations at the Property. Therefore, the thickness of this unit was not identified during this investigation.

Petroleum odor, sheen, or elevated PID measurements were observed in soil from borings drilled in the area of the former gasoline stations in the northwestern portion of the Property (B-16 through B-20, B-23 through B-28, B-45, and B-50 through B-52). PID measurements of 100 parts per million (ppm) or greater were observed in samples collected from B-17, B-18, B-24, B-26, B-28, B-50A, and B-57 at depths ranging from about 4.5 to 15 ft BGS.

A strong petroleum odor, sheen, and a creosote-like material were observed at boring locations B-2, B-21, B-22, B-35, B-37, B-38, B-40, and B-41 and B-1 (Terra Associates), which were drilled in the northeastern portion of the Property. The creosote-like material appears to be present at the contact between the fill unit and underlying marine sediment. This material was encountered from about 18 ft BGS at location B-2 to 23 ft BGS at location B-40, and ranged from 1 ft to 3 ft in thickness. PID readings of this affected material were collected at several locations, and ranged from 21.2 ppm at 22 ft BGS (B-37) up to 68.6 ppm at 25 ft BGS (B-40). Samples of the creosote-like material were collected for laboratory analysis from borings B-21 and B-41.

Observations during drilling in the northeastern, eastern, and southern portions of the Property and field screening (i.e., PID measurements, see Table 2) did not indicate the presence of potential contamination in the fill material from the surface to about 18 ft BGS, even in those areas where the creosote-like material was encountered.

2.4 GROUNDWATER INVESTIGATION

The groundwater investigation for the Property included evaluation of groundwater quality and/or flow characteristics during the Phase II investigation, RI field investigation, and Supplemental Investigation. The groundwater quality evaluation focused on impacted areas identified in the Phase II

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investigation including the northwestern portion of the Property in the area of the former gasoline stations and the northeastern portion of the Property in areas where creosote-like material was encountered during drilling. Groundwater samples were also collected from the Property boundaries in order to evaluate potential migration of impacted groundwater to or from the Property. Two off-Property wells were also installed to the northeast across King Street. Groundwater flow characteristics were evaluated by estimating groundwater gradients and flow direction based on measured groundwater elevations and estimating a range of hydraulic conductivity based on the soil types encountered within the fill (silty sand to clean sand) and published values (Freeze and Cherry 1979).

The groundwater investigations are discussed chronologically in this section. Although a comprehensive evaluation of the groundwater analytical results is presented in Section 3.3.2, general conclusions are presented in this section to provide the reader an understanding of groundwater conditions at the Property. Groundwater sampling locations are shown on Figure 5. Sample descriptions and analytical parameters for the groundwater samples are presented in Table 1. Construction details for monitoring wells installed during the RI field investigation are presented in Appendix C.

2.4.1 PHASE II INVESTIGATION

The Phase II groundwater investigation was completed to evaluate areas of potential concern at the Property identified in the Phase I ESA. The Phase II investigation included sampling and chemical analysis of groundwater grab samples collected from direct-push borings in various areas of the Property to document groundwater quality and assess potential impacts due to previous on-Property activities, including the location of the former gasoline stations and the locations of the previous structures associated with the former rail yard. Samples were collected near the Property boundaries to document groundwater quality and evaluate the potential for impact to the Property from neighboring properties.

From February 27 to 29, 2008, 12 groundwater grab samples were collected from temporary well points installed using direct-push sampling technology. The groundwater samples were analyzed for volatile organic compounds (VOCs), TPH-G, TPH-D, motor oil-range total petroleum hydrocarbons (TPH-O), PAHs, and dissolved metals (MTCA metals arsenic, cadmium, chromium, lead, and mercury). The Phase II groundwater sampling locations are identified in Table 1 and shown on Figure 5. The analytical results for the Phase II groundwater grab samples are presented in Section 3.3.2.

2.4.2 REMEDIAL INVESTIGATION FIELD INVESTIGATION

The RI field investigation included collection and laboratory analysis of groundwater grab samples from 4 additional direct-push borings, and the installation of 11 monitoring wells for the

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measurement of groundwater elevations and for collection of groundwater samples for laboratory analysis. The primary objectives of the RI groundwater investigation were to:

- Further evaluate groundwater quality in the vicinity of the former gasoline stations in the northwestern portion of the Property and in the area of creosote-like material identified in the northeastern portion of the Property
- Further evaluate groundwater quality at the Property boundaries and across the Property
- Evaluate groundwater elevation and flow.

The four additional groundwater grab samples were collected during the direct-push portion of the RI field investigation between October 7 and October 10, 2008. The groundwater grab samples were collected from temporary well points installed using direct-push technology in borings B-26, B-27, B-38, and B-41. The groundwater grab samples were analyzed for TPH only using Method NWTPH-HCID. TPH-G was detected above the NWTPH-HCID laboratory reporting limit in the sample collected from B-26, which was located in the northwestern portion of the Property, but the result was not further quantified by additional analysis due to limited sample volume. TPH-G, TPH-D, and TPH-O were detected at concentrations above the NWTPH-HCID laboratory reporting limit in the sample collected from B-38, and diesel-range petroleum hydrocarbons were detected at concentrations above the reporting limit in the sample from B-41 in the northeastern portion of the Property; both samples were further analyzed for TPH-D and TPH-O using Method NWTPH-Dx to quantify the results.

2.4.2.1 Monitoring Well Installation and Development

Eleven groundwater monitoring wells, consisting of nine shallow (15 ft in depth) wells (MW-1 through MW-6, MW-7S, MW-8, and MW-9s) and two deeper (20 ft in depth) wells (MW-7D and MW-9d), were installed between November 10 and November 14, 2008. Drilling and construction of the monitoring wells were conducted in general accordance with the Minimum Standards for Construction and Maintenance of Wells (Ecology; WAC 173-160). The shallows wells were constructed with 2-inch PVC casing and 0.020 slot screens placed from 5 to 15 ft BGS to intersect the water table. The deeper wells were constructed with pre-packed well screens (0.010 slot screen packed inside 0.020 slot screen) placed from 15 to 25 ft BGS (MW-7D) and 15 to 20 ft BGS (MW-9D), and located immediately above the elevation of the top of the creosote-like material encountered in the northeastern portion of the Property. A 1-ft length of blank PVC casing was added to the bottom of the well screen to collect any creosote-like material entering the well. Boring and well construction logs for the monitoring wells are presented in Appendix C.

The monitoring wells were developed between November 13 and November 17, 2008. Wells were developed by surging and overpumping the wells using a centrifuge pump and new dedicated

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polyethylene tubing. A minimum of five casing volumes of water were purged from each well, and development was continued until the groundwater was visibly clear. Water from wells MW-3, MW-4, and MW-6 remained slightly turbid even after development.

2.4.2.2 Groundwater Elevation Monitoring

Depth to groundwater measurements were collected from the monitoring wells prior to sampling on November 24 and November 25, 2008 to provide data for evaluation of groundwater flow and gradient. A second round of water level measurements was collected on January 16, 2009. The groundwater elevation data are provided in Table 3 and groundwater contour maps based on the November 2008 and January 2009 data are presented on Figures 6 and 7, respectively.

2.4.2.3 Groundwater Quality Monitoring

Groundwater samples were collected for laboratory analysis from the 11 monitoring wells on November 24 and November 25, 2008. The samples were analyzed for constituents detected in soil or groundwater samples during the Phase II investigation or suspected to be present based on historical Property operations. The samples from the monitoring wells were analyzed for TPH-G, TPH-D, and TPH-O, VOCs including BTEX, PAHs, and dissolved metals.

The analytical results for groundwater samples are discussed in Section 3.3.2.

2.4.3 SUPPLEMENTAL INVESTIGATION

The Supplemental Investigation included the installation of 8 additional monitoring wells, including 2 off-Property wells, measurement of groundwater elevations, and collection and laboratory analysis of groundwater samples from all 19 of the monitoring wells installed for investigation of the Property. The primary objectives of the Supplemental Investigation for groundwater were:

- Further characterization of groundwater quality within and downgradient of the former gasoline station area in the northwestern portion of the Property
- Further characterization of groundwater quality and, specifically, the concentrations of PAHs in deeper groundwater in the eastern portion of the Property
- Further characterization of groundwater quality within and downgradient of the area of creosote-like material identified in the northeastern portion of the Property
- Further characterization of groundwater quality at the Property boundaries
- Evaluation of groundwater quality off-Property to the north-northeast
- Further evaluation of groundwater elevation and flow.

2.4.3.1 Monitoring Well Installation and Development

Eight groundwater monitoring wells, consisting of five shallow (approximately 15 ft in depth) wells (MW-10 through MW-14) and three deeper (MW-15D and MW-16D, approximately 25 ft in depth; MW-17D, approximately 21 ft in depth) wells, were installed on August 3 and 4, 2009. Drilling and construction of the monitoring wells were conducted in general accordance with the Minimum Standards for Construction and Maintenance of Wells (Ecology; WAC 173-160). The shallow wells were constructed with 2-inch PVC casing and 0.020 slot screens placed from about 5 to 15 ft BGS to intersect the water table. The deeper wells were constructed with 2-inch PVC casing and 0.020 slot screens placed with the base of the screen at or near the interface of the fill with the native former tideflat surface. Boring and well construction logs for the monitoring wells are presented in Appendix C.

The monitoring wells were developed on August 11, 2009. Wells were developed by surging and overpumping the wells using a centrifuge pump and new dedicated polyethylene tubing. A minimum of five casing volumes of water were purged from each well, and development was continued until the groundwater was visibly clear. Water from wells MW-10 through MW-17D remained turbid even after purging more than five casing volumes.

2.4.3.2 Groundwater Elevation Monitoring

Depth to groundwater was measured in the on-Property monitoring wells and at five wells located at Union Station to the east on June 3, 2009 prior to the installation of the Supplemental Investigation monitoring wells, and from the 19 wells installed for the RI (including the two off-Property wells) on August 25, 2009 prior to groundwater sampling to provide data for evaluation of groundwater flow and gradient. The groundwater elevation data are provided in Table 3 and groundwater contour maps for the June 3 and August 25, 2009 data are presented on Figures 8 and 9, respectively. Groundwater flow at the Property is discussed in Section 3.2.

2.4.3.3 Groundwater Quality Monitoring

Groundwater samples were collected for laboratory analysis from the 17 on-Property and the 2 off-Property monitoring wells from August 11 to 13, 2009. The samples were analyzed for constituents detected in soil or groundwater samples during the Phase II and RI field investigations and as outlined in the Work Plan. The samples from the monitoring wells were analyzed for TPH-G, TPH-D, and TPH-O, VOCs including BTEX, PAHs, and dissolved metals (i.e., arsenic, cadmium, chromium, copper, lead, mercury, and zinc).

The analytical results for groundwater samples are discussed in Section 3.3.2.

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3.0 REMEDIAL INVESTIGATION RESULTS

This section presents the results of investigative activities conducted for the RI, and discusses the nature and extent of contamination and other relevant Property data. As noted above, the RI data were collected during the Phase II investigation conducted in February 2008, the RI field investigation conducted in October and November 2008, and the Supplemental Investigation conducted in July and August 2009. The results of these investigations and the associated data relevant to Property conditions are integrated in this section to provide the reader with a thorough understanding of Property conditions, and to make the RI a comprehensive document.

3.1 GEOLOGY

General geologic information for the Property was obtained from the *Geologic Map of Seattle* (Troost et al. 2005), *Preliminary Geotechnical Evaluation* (Terra Associates 2008), *Driven Piles for Safeco Field* (Miner and Gurtowski 2001), and from soil borings completed at the Property during the Phase II investigation, RI field investigation, and Supplemental Investigation. The borings drilled at the Property for the RI along with selected borings drilled prior to the RI by other consultants (B-1, GeoGroup Northwest, 1996; B-15, Metropolitan Engineers, 1966; BH-3 and BH-4, Geosciences Inc., 1998; and B-2, Shannon & Wilson, 1993) were used to interpret subsurface geologic conditions. Two east-west geologic cross sections, A-A' and B-B', and three north-south cross sections, C-C', D-D', and E-E' were developed for the Property from the geologic logs for the selected borings. The boring and cross-section locations are shown on Figure 10 and the cross sections are presented on Figures 11 through 14. Boring logs are provided in Appendix C.

The ground surface of the Property is generally level and is at an average elevation of 18 ft [North American Vertical Datum of 1988 (NAVD88)] (Pacific Geomatic Services 2008). The stratigraphy within the depth range of exploration at the Property consists primarily of four geologic units identified as: fill, marine sediments, alluvial deposits, and glacial deposits.

Fill is present directly below the existing parking lot pavement section extending to depths ranging from 18 to 30 ft BGS. The fill likely originated from the Jackson Street Regrade, and Duwamish Waterway dredging projects (Terra Associates 2008). As discussed in Section 2.3.3, the fill material is variable in composition, including very loose to medium dense, fine to coarse sand, silty sand, silt, gravels, wood chips, sawdust, and solid wood. In places, coal, ash, concrete and brick fragments, metal debris, and glass fragments were observed in the fill. In general, the fill encountered in the eastern portion of the Property appears more uniform (less variable) in composition and has less debris than the fill encountered in the western portion of the Property, likely due to the different filling episodes

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identified during the Phase I ESA. Layers of wood were encountered within the central portion of the Property, ranging from about 1 to 17 ft in thickness. Thinner, discontinuous layers of wood were observed in most of the borings throughout the Property.

The marine sediment directly underlying the fill consists of very soft to medium stiff silt, ranging from approximately 2 to 18 ft in thickness. As discussed above, locally the unit consisted of a silty, fine to medium sand with shell fragments, a fine to medium sand with silt, gravel and shell fragments, or a silty gravel with sand and shell fragments.

Alluvial deposits directly underlying the marine sediment consist of silty sand, with interbedded gravel, silt, clay, or peat. This unit was observed in B-1 through B-5 (Terra Associates) and recorded in boring logs B-1 (GeoGroup Northwest 1996), BH-3 and BH-4 (Geosciences Inc. 1998), B-15 (Metropolitan Engineers 1966), and B-2 (Shannon & Wilson 1993). As noted above, the depth of the upper contact of these alluvial deposits ranges from 25.0 ft BGS (B-40) to 45.5 ft BGS (BH-4) and the thickness of the alluvial deposits ranges from 11 ft (B-2, Shannon & Wilson) to 26 ft (B-3, Terra Associates).

Underlying the alluvial deposits, are glacial deposits, which are similar in composition to the alluvial deposits, but generally have a higher density. The glacial deposits range from dense to very dense; whereas the alluvial deposits are loose to medium dense. The upper contact of the glacial deposits was encountered in seven borings, B-1 through B-5 (Terra Associates), and BH-3 and BH-4 (Geosciences Inc.) at depths ranging from approximately 44 ft BGS (B-1, Terra Associates) to 68 ft BGS (BH-4, Geosciences, Inc.). The glacial deposits were encountered to a maximum depth of 80.5 ft BGS (B-3, Terra Associates) during the RI field investigation.

3.2 HYDROGEOLOGY

Hydrogeologic conditions at the Property were evaluated using geologic data from previous investigations and data collected during the RI. Based on available boring and groundwater data, the uppermost hydrostratigraphic unit at the Property is the water table aquifer within the fill that overlies the marine sediment unit. The marine sediment unit forms the uppermost aquitard beneath the Property. Based on available information, the overall groundwater flow in the Property area is to the west toward Elliott Bay and Puget Sound.

Groundwater levels were measured in monitoring wells at and near the Property four times from November 2008 to August 2009. Groundwater elevation contours for the monitoring events are presented on Figures 6 through 9. The groundwater elevation contours presented on Figures 6 and 7 were developed from water level measurements collected from the initial 11 on-Property monitoring wells.

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The groundwater contours shown on Figure 8 were developed from water level measurements collected from the initial 11 on-Property wells plus five additional wells located near Union Station about 300 ft to the east (MW-101R, MW-102R, MW-104, MW-105, and HC-103). The groundwater elevation contours shown on Figure 9 were developed from water level measurements collected from the initial 11 on-Property wells and the 8 additional wells installed in August 2009. As shown on Figures 6 through 9, the local groundwater gradient and flow pattern across the Property are variable, which is characteristic of shallow unconfined aquifers consisting of fill material, especially in urban areas where constructed features, such as foundation drainage systems and utility trenches, can distort the groundwater table. As noted above, the available information indicates that the western and eastern portions of the Property were filled at different times and the fill encountered during drilling in the eastern portion of the Property was relatively less variable in composition than the fill encountered in the western portion. The different fill histories and compositions have likely resulted in the variable groundwater conditions observed at the Property. As part of this RI, local conditions were evaluated in an effort to identify features that could locally affect shallow groundwater flow. However, no specific features were identified that can be directly associated with the variable flow patterns across the Property. Based on the available groundwater elevation data, there is a localized area of relatively lower groundwater elevations (i.e., groundwater low) roughly between the corner of South King Street and 2nd Avenue South on the west and King Street Station on the east, and an area of relatively higher groundwater elevations (i.e., groundwater high) near monitoring well MW-14 in the central portion of the Property. The data from these areas strongly affect the groundwater flow directions calculated from the groundwater elevations measured in the Property and off-Property monitoring wells. The groundwater low is prominent on all four of the groundwater contour maps and results in apparent local groundwater flow to the northeast in the central and eastern portions of the Property. The most recent round of groundwater measurements (including the newest wells) indicates a groundwater high in the central portion of the Property, as shown on Figure 9. The groundwater high results in apparent local groundwater flow radially from the area of the high including flow to the west and northwest in the western portion of the Property. The local flow to the west-northwest is consistent with overall area flow toward Elliott Bay and Puget Sound. As noted above, no specific features have been identified to explain the groundwater low or the groundwater high. The existing monitoring well network at the Property includes wells along the perimeter of the Property and provides documentation of local groundwater flow on and off the Property.

The depths to groundwater measured during the RI range from about 5.5 to 11 ft BGS with groundwater elevations ranging from about 7.2 ft Mean Sea Level (MSL) to 11.7 ft MSL (Table 3). Based on the elevations measured to date (i.e., November 2008; January, June, and August 2009), the

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groundwater elevations do not appear to show any significant seasonal variation(s). Deeper groundwater beneath the marine silt unit was not evaluated as part of this study.

Hydrogeologic conditions for Union Station, which is located 300 ft east of the Property, were evaluated based on data from reports completed by Landau Associates in October 2004 and October 2009 as part of the Union Station Purchaser Consent Decree requirements. Based on available groundwater elevation contours from October 2009, the groundwater elevations at Union Station appear generally higher near the southeastern portion of the site, and lower near the western and northwestern portions of the site, suggesting localized groundwater flow toward the western and northwestern Union Station property boundary. No hydrogeologic data were available for the former Kingdome site (adjacent to the south) or King Street Center (adjacent to the north).

Hydrogeologic parameters for the uppermost hydrostratigraphic unit are discussed in the following subsections, including saturated thickness, flow direction, hydraulic conductivity, and groundwater velocity.

3.2.1 SATURATED THICKNESS AND FLOW DIRECTION

As noted above, the groundwater elevation data developed during the RI are presented in Table 3. The depths to groundwater measured during the RI ranged from approximately 5.5 to 11.0 ft BGS. The saturated thickness of the uppermost hydrostratigraphic unit generally ranges from approximately 11 ft to 25 ft in thickness, based on available geologic data and water level measurements.

The well reference elevations in conjunction with groundwater monitoring data were used to determine groundwater elevations at each well location. The direction of groundwater flow and groundwater flow gradient were estimated based on these data. Groundwater flow at the Property, based on the four rounds of monitoring from November 2008 to August 2009 noted above, is locally variable. Due to the groundwater low near the northeastern portion of the Property and the groundwater high in the central portion of the Property discussed above, the flow direction calculated from the measurements collected from the on- and off-Property wells for the RI is locally inconsistent with overall area groundwater flow to the west toward Elliott Bay and Puget Sound except in the western portion of the Property.

3.2.2 HYDRAULIC CONDUCTIVITY AND GROUNDWATER VELOCITY

Property-specific data were not collected to document aquifer properties, so the hydraulic conductivity of the uppermost hydrostratigraphic unit was estimated as a range based on the soil types encountered within the fill (silty sand to clean sand) and published values (Freeze and Cherry 1979). The

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highly variable nature of the fill results in a large range of estimated values for hydraulic conductivity from 10^{-3} to 10^{-1} centimeters per second (cm/s; approximately 28 to 2,800 ft/day). As discussed above, the fill generally tends to have slightly less fines and be coarser-grained in the eastern portion of the Property than in the western portion, and in the west-central portion the fill contains significantly more wood debris. Therefore, the hydraulic conductivity of the fill in the eastern portion is more similar to that for clean sand (10^{-2} to 10^{-1} cm/s; approximately 280 to 2,800 ft/day), and the hydraulic conductivity of the fill in the western portion is more similar to that for silty sand to clean sand (10^{-3} to 10^{-2} cm/s; approximately 28 to 280 ft/day). No attempt was made to estimate the hydraulic conductivity for the wood debris.

Effective porosity (n) of the fill unit was estimated to range between 25 and 50 percent, based on a published porosity range for sand (Freeze and Cherry 1979). An average value of 37 percent (0.37) was used for effective porosity to estimate the groundwater velocity.

Average hydraulic gradients were calculated based on the water levels measured at the Property during the monitoring events in January 2009, June 2009, and August 2009. The gradients between selected well pairs (i.e., MW-4 and MW-6 in the eastern portion of the Property, MW-3 and MW-7 in the central portion, and MW-2 and MW-8 in the western portion) were calculated for each monitoring event and then an average gradient was calculated for each well pair. The average hydraulic gradient ranges from about 0.0025 ft/feet between wells MW-4 and MW-6 in the eastern portion to 0.012 ft/feet between wells MW-3 and MW-7 in the central portion (Table 3, Figures 7, 8, and 9). The average hydraulic gradient in the western portion of the Property was 0.0054 ft/feet between wells MW-2 and MW-8.

The groundwater average linear (seepage) velocity (V) is estimated for the eastern and western portions of the Property using the equation:

$$V = \frac{Ki}{n}$$

where:

- K = hydraulic conductivity (L/t)
- i = hydraulic gradient (dimensionless)
- n = effective porosity (dimensionless).

Given the range in horizontal hydraulic gradient and soil composition across the Property, estimations of linear velocity were made for the eastern and western portions of the Property. In the eastern portion of the Property, the horizontal hydraulic gradient ranges from 0.0025 ft/feet to 0.0122 ft/feet and the hydraulic conductivity ranges from approximately 280 to 2,800 ft/day. In the western portion of the Property, the gradient ranges from 0.0054 ft/feet to 0.0122 ft/feet and the hydraulic

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conductivity ranges from approximately 28 to 280 ft/day. Given an effective porosity of 0.37 (mean value), the average seepage velocity is calculated to range between 2.4 ft/day and 92.3 ft/day in the eastern portion of the Property, and between 0.4 and 9.2 ft/day in the western portion. The calculations are as follows:

$$\text{Eastern portion: } V_{\min} = \frac{(0.0025)(280)}{0.37} = 1.89 \text{ (ft/day)} \text{ and } V_{\max} = \frac{(0.0122)(2800)}{0.37} = 92.3 \text{ (ft/day)}$$

$$\text{Western portion: } V_{\min} = \frac{(0.0054)(28)}{0.37} = 0.4 \text{ (ft/day)} \text{ and } V_{\max} = \frac{(0.0122)(280)}{0.37} = 9.2 \text{ (ft/day)}$$

3.2.3 POTENTIAL FOR VAPOR INTRUSION

Based on the RI analytical data, and as discussed above, the VOC benzene is present in shallow (less than 8 ft BGS) soil above the groundwater table in the northwestern portion of Property (in the former gasoline station area) at concentrations greater than the preliminary cleanup level. Benzene was not detected at concentrations greater than the preliminary cleanup level in any of the groundwater samples collected in the northwestern portion of the Property. Benzene was not detected above the preliminary cleanup level in shallow soil or shallow groundwater monitoring well samples collected in the eastern portion of the Property. Benzene was the only VOC that was detected at concentrations that pose a potential vapor intrusion concern and, therefore, was the only analyte evaluated for potential vapor intrusion.

Due to the detected concentrations of benzene in shallow soil and the planned commercial and residential uses for the western portion of the Property, the Johnson and Ettinger (1991) model was used to evaluate the potential incremental increase in risk to users of the building planned for the western portion of the Property from benzene that enters indoor air via vapor intrusion. The planned residential units will be located on the third floor and will be separated from the ground floor by a mechanically vented parking garage; therefore, vapor intrusion is not anticipated to be a concern for residential use. Therefore, employees and visitors of the ground floor commercial areas were considered in the model. Based on the results from the model, which are summarized in Appendix E, the benzene concentrations in soil indicate an incremental risk greater than 10^{-6} for occupants of a building in the northwestern portion of the Property. Results from the model indicate that if the one highest benzene concentration in soil (location B-23 in the northwesternmost corner of the Property) is removed from the data set, the risk would be at an acceptable level of less than 10^{-6} .

Based on this evaluation of the potential risk due to vapor intrusion to future users of the planned building on the Property, mitigation for vapor intrusion will be considered in the FS.

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3.3 ENVIRONMENTAL CONDITIONS

This section describes Property environmental conditions including soil and groundwater quality. Property environmental conditions were evaluated based on analytical results for soil and groundwater generated during the Phase II investigation, the RI field investigation, and the Supplemental Investigation.

All analytical data were evaluated for data quality prior to use. The data quality evaluation was conducted in accordance with the procedures identified in the RI Work Plan (Landau Associates 2008). Accuracy of the data was determined through recovery of spiked surrogates, matrix spikes, duplicates, and spiked laboratory control samples. Control limits for spike recovery were based on laboratory acceptance limits generated according to EPA guidelines. A summary of data validation qualifiers is presented in Appendix F. No data were rejected and the data, as qualified, are acceptable for use.

The nature and extent of contamination were evaluated based on relevant criteria and standards for affected media. Groundwater quality was generally evaluated based on MTCA Method B groundwater cleanup levels, based on the lower of protection of groundwater as drinking water and protection of marine surface water. Soil quality was generally evaluated using MTCA Method B cleanup levels, based on the lowest of direct contact, protection of groundwater as drinking water, and protection of groundwater as marine surface water values. For soil and groundwater constituents that do not have a Method B soil cleanup level, MTCA Method A soil cleanup levels for unrestricted land uses, where available, were used.

These evaluation criteria are presented as preliminary cleanup levels in this document. Actual Property cleanup levels will be established by Ecology as part of the Cleanup Action Plan (CAP). A more detailed discussion of the development of the preliminary cleanup levels is presented in Appendix G.

3.3.1 SOIL QUALITY

Preliminary Method B soil cleanup levels (or for lead and TPH, MTCA Method A cleanup levels for soil) have been identified as preliminary soil cleanup levels for the detected constituents. MTCA Method B soil cleanup levels were developed based on the most stringent of the constituent concentrations in soil protective of groundwater as drinking water and marine surface water, and protection of human health based on direct contact (Method B standard formula values for carcinogens and non-carcinogens). MTCA Method A soil cleanup levels, where available, were used for lead, TPH-G, TPH-D, and TPH-O for which Method B cleanup levels could not be calculated. Cleanup levels were adjusted upward if the calculated cleanup level was lower than the natural background concentration

for the constituent. Cleanup levels for non-carcinogens were evaluated based on total Property risk and were adjusted downward, where necessary, in order to achieve a total Property hazard index of 1. Adjustment of cleanup levels for carcinogens for total Property risk was not necessary.

Soil quality data and the associated preliminary soil cleanup levels for constituents detected in soil samples are presented in Table 4. The criteria used in developing the preliminary cleanup levels are provided in Table 5. The analytical results for constituents detected in soil at concentrations greater than the preliminary cleanup levels are presented in Table 6. The analytical results for all of the constituents tested for and the laboratory analytical reports are presented in Appendix F.

3.3.1.1 General Property Soil Quality

As noted above, based on the historical operations conducted at the Property, the constituents of concern for this RI are TPH, VOCs (including BTEX), PAHs, and metals. Five samples were analyzed for PCBs due to the various oils that may have been associated with historical Property operations. Two samples collected during the Supplemental Investigation were also analyzed for dioxins/furans. The number of soil samples analyzed for each of these constituents are listed below:

- 30 soil samples were analyzed for TPH using Method NWTPH-HCID
- 27 soil samples were analyzed for TPH-D and TPH-O using Method NWTPH-Dx
- 31 soil samples were analyzed for TPH-G using Method NWTPH-Gx
- 13 soil samples were analyzed for arsenic, cadmium, chromium, copper, lead, mercury, and zinc
- 29 soil samples were analyzed for arsenic, cadmium, chromium, lead, and mercury
- 28 soil samples were analyzed for BTEX
- 51 soil samples were analyzed for PAHs
- 13 soil samples were analyzed for SVOCs
- 5 soil samples were analyzed for PCBs
- 2 soil samples were analyzed for dioxins/furans.

Based on the analytical results for these samples, the detected concentration in one or more samples was greater than the preliminary cleanup levels in shallow soil (i.e., less than 15 ft BGS) for:

- TPH-O (1 sample; Figures 15)
- TPH-G (13 samples; Figure 21)
- BTEX (11 samples; Figure 21)
- Arsenic (4 samples; Figure 17)
- Mercury (10 samples; Figure 17)

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- cPAHs (24 samples; Figure 19).

Based on the analytical results for these samples, the detected concentration in one or more samples was greater than the preliminary cleanup levels in deeper soil (i.e., greater than 15 ft BGS) for:

- TPH-D or TPH-O (3 samples; Figure 16)
- TPH-G (6 samples; Figure 22)
- BTEX (5 samples; Figure 22)
- Arsenic (1 sample; Figure 18)
- Mercury (2 samples; Figure 18)
- cPAHs (12 samples; Figure 20).

PCBs were not detected in any of the soil samples at a concentration greater than the laboratory reporting limit.

Dioxins and furans were analyzed for and detected in two shallow soil samples from the western and eastern halves of the Property at borings B-62 and B-65, respectively. Analytical results for dioxin and furans are provided in Table 7 and discussed in Section 3.3.1.4.

Based on these data, soil quality at the Property is impacted by one or more of the listed constituents in two primary areas:

- The northwestern portion in the area of the former gasoline stations
- The northeastern portion where the creosote-like material was observed.

In addition, PAHs, including primarily carcinogenic PAHs (cPAHs; Figures 19 and 20), were detected at concentrations greater than the preliminary cleanup levels at locations across the Property. Limited concentrations of metals including arsenic, copper, mercury, and zinc, and motor oil-range petroleum hydrocarbons were also detected at concentrations greater than the preliminary cleanup levels at various locations across the Property. The analytical results for soil samples collected in the two primary areas and those collected at locations throughout the Property are discussed further below by area.

3.3.1.2 Soil Quality in the Vicinity of the Former Gasoline Stations (Northwestern Portion)

Soil quality in the northwestern portion of the Property was primarily impacted by operations associated with the former gasoline stations, probably including the associated underground storage tanks (USTs), transfer piping, and/or dispenser islands. As discussed in the Phase I ESA (Landau Associates 2007), few details of the former station operations and footprints are available; however, the field-screening data and observations discussed in Section 2.3.3, the analytical data indicating the presence of TPH-G and BTEX, and the localized areal extent of the contamination suggest that the contamination is

related to surface or shallow subsurface releases from the former station(s). The detected concentrations of TPH-G, usually along with one or more BTEX constituents, were greater than the preliminary cleanup levels in the soil samples collected from 13 borings at depths ranging from about 5 to 8 ft BGS (Figure 21) near the depth of the groundwater table at the time of drilling. Concentrations of TPH-G, benzene, toluene, and ethylbenzene were also greater than the preliminary cleanup levels in four (B-26-17.0, B-50A-15-16, B-51-15-15, and B-52-15-16) of the seven deeper soil samples collected from this area (Figure 22). The soil contamination appears to primarily be near the top of the groundwater table, but extends to a depth of at least 17 ft BGS locally; however, as noted below, TPH-G was detected at a concentration greater than the preliminary cleanup level in only 1 of 10 groundwater samples collected from eight locations (four temporary wells set in borings and four permanent wells) in this area (Figure 27). No BTEX was detected at concentrations greater than the preliminary cleanup levels in any of the groundwater samples from this area.

3.3.1.3 Soil Quality in the Northeastern Portion

As discussed in Section 2.3.3, no visual or field-screening evidence of potential contamination was identified in soils from the surface to about 20 ft BGS in any areas of the Property except the northwestern portion, discussed above. The drilling, and soil sampling and analysis in the northeastern portion focused on evaluation of the extent of the creosote-like material that was first encountered at boring B-2 at the base of the fill at the contact with the underlying marine sediments layer. The RI field investigation included drilling 11 borings in the area around B-2; soil samples were selected for laboratory analysis from near the contact with the marine sediments where the creosote-like material was encountered. The creosote-like material was encountered in nine borings at depths of about 18 to 23 ft BGS and was estimated to be up to about 3 ft in thickness (Table 2 and Figure 23). The analytical results for the two samples collected of the creosote-like material for laboratory analysis are discussed in Section 3.3.3.

The analytes detected in soil in the northeastern portion of the Property at concentrations greater than the preliminary cleanup levels were all in samples collected from greater than 15 ft BGS and consisted of:

- PAHs (B-36, B-38, B-39, B-40, B-41)
- cPAHs (B-38, B-39, B-40, B-47, MW-17D-15.5-16.5; Figure 20)
- TPH-D (B-2, B-36; Figure 16)
- TPH-O (B-2; Figure 16)
- TPH-G (B-36, B-38, B-41; Figure 22)

- BTEX (B-38, B-41, B-47; Figure 22).

Based on the field screening, observations during drilling, and analytical data, the soil contamination appears to be primarily associated with the creosote-like material at the base of the fill.

As noted below, four shallow groundwater monitoring wells and two deeper wells were installed in the northeastern portion of the Property. The groundwater samples from deeper well MW-9D indicated detected concentrations of PAHs, cPAHs, TPH-G, TPH-D, and BTEX greater than the preliminary cleanup levels (Figures 24, 26, and 27). Well MW-9D is screened from 15 to 20 ft BGS, at approximately the depth where the creosote-like material was encountered. Well MW-7D, located east of MW-9D but outside of the extent of creosote-like material observed in the soil borings, is also screened at the approximate depth of the creosote-like material. Unlike well MW-9D, well MW-7D has not had any constituents of concern detected at concentrations greater than preliminary cleanup levels, suggesting that groundwater contamination associated with the creosote-like material does not extend beyond locations where groundwater is in contact with the creosote-like material.

Two additional off-Property deeper groundwater monitoring wells (MW-16D and MW-17D) were installed to the north and the northeast of the Property during the Supplemental Investigation to further evaluate the extent of the creosote-like material. Due to the presence of various utilities and permanent structures, these two off-Property wells could not be located nearer to the Property boundaries. The creosote-like material was not encountered during installation and drilling of either MW-16D or MW-17D. Preliminary cleanup levels were not exceeded for any constituent in the groundwater sample from off-Property deeper well MW-16D to the north of the Property. The sample from off-Property deeper well MW-17D to the northeast of the Property indicated low concentrations of cPAHs [0.02 micrograms per liter ($\mu\text{g/L}$)] slightly above the cleanup level.

Based on the occurrence of the creosote-like material at the base of the fill material, and the lack of evidence of contamination within the fill at shallower depths, the creosote-like material appears to be from a distinct source and likely predates placement of the overlying fill. The creosote-like material was not observed in soil borings from MW-16D and MW-17D indicating the creosote-like material does not extend off-Property to those locations to the north and northeast.

3.3.1.4 Soil Quality Property-wide

Carcinogenic PAHs were detected at concentrations greater than preliminary cleanup levels in soil samples collected across the Property, as shown on Figures 19 and 20. In the shallow soil, cPAHs were detected above the preliminary cleanup level primarily in the western portion of the Property, although some cPAH exceedances were identified in the eastern portion of the Property as well (B-66 and

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B-67). The highest concentrations of cPAHs in the shallow soil were in the sample from 4.6 ft BGS at boring B-23, which is the location of monitoring well MW-8. In the deeper soil, concentrations of cPAHs were detected above the preliminary cleanup level at 10 of the 15 locations across the Property where samples were collected and analyzed. The occurrence of the cPAHs in soil at various depths throughout the Property (ranging from less than 1 ft to about 17 ft BGS on the western side of the Property to greater than 20 ft BGS on the eastern side) suggest the presence of a source within the fill material placed over the native marine sediments and/or impacts due to the Seattle Fire in 1889.

Property-wide concentrations of the metals arsenic and mercury greater than the preliminary cleanup levels were identified in soil during the RI field investigation and the Supplemental Investigation. Arsenic was detected in shallow soils Property-wide, and exceeded the cleanup level at four locations, with the highest concentration at B-65 [30 milligrams per kilogram (mg/kg)]. In the deeper soils, arsenic exceeded the preliminary cleanup level in only the sample from off-Property location MW-17D (8 mg/kg). Because this location is off-Property, the detected concentration is likely indicative of area background concentrations. Due to the change in preliminary cleanup levels to include criteria for protection of marine surface water, the preliminary cleanup level for mercury decreased from the preliminary cleanup level presented in the draft RI/FS report and is equal to the Puget Sound background level (Ecology 1994). Mercury concentrations are greater than the revised preliminary cleanup level at 10 locations across the Property (9 in shallow soil, 1 in deeper soil), with the highest concentration of 1.88 mg/kg at B-33 from 17.5 to 18.5 BGS. These Property-wide detections of metals suggest the presence of a source within the fill material placed over the native marine sediments.

Dioxins and furans were detected in two shallow soil samples from the western and eastern halves of the Property at borings B-62 and B-65, respectively. The TEQ of dioxins/furans at B-62 was 0.0922 nanograms per kilogram (ng/kg), and the TEQ of dioxins/furans at B-65 was 34.4 ng/kg. Dioxins and furans may be formed during combustion of organic compounds in the presence of chloride. Typical sources include combustion of saltwater-soaked wood, waste incineration including home burn barrels, and some types of chemical manufacturing. Various studies have evaluated background levels of dioxin in soil. Ecology found dioxin/furan concentrations (as 2,3,7,8 TEQ) ranging from 0.13 ng/kg to 19 ng/kg in urban soil statewide (Ecology 1999); a recent study of dioxins/furans in soil from residential and undeveloped areas of Port Angeles found TEQ concentrations ranging from 0.49 ng/kg to 76 ng/kg (Ecology & Environment 2009). The concentrations found at North Lot are within this range and may reflect combustion in the downtown Seattle area prior to the Property being paved.

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3.3.2 GROUNDWATER QUALITY

Preliminary Method B groundwater cleanup levels based on drinking water use and discharge to marine surface water, or MTCA Method A cleanup levels for groundwater were used to identify preliminary groundwater cleanup levels for detected constituents. MTCA Method B groundwater cleanup levels were developed based on the most stringent of the federal or state maximum contaminant levels (MCLs), state primary and secondary MCLs, protection of marine surface water, and Method B standard formula values. MTCA Method A groundwater cleanup levels, where available, were used for constituents for which Method B cleanup levels could not be calculated. Cleanup levels were adjusted upward if the calculated cleanup level was lower than the natural background concentration for the constituent. Cleanup levels for non-carcinogens were evaluated based on total Property risk and were adjusted downward, where necessary, in order to achieve a hazard index equal to or less than 1. Adjustment of cleanup levels for carcinogens for total Property risk was not necessary. Total risk adjustment tables are provided in Appendix G.

The western edge of Union Station is about 300 ft hydraulically upgradient of the Property. The groundwater monitoring data for Union Station from 1997 through 2009 indicate the presence of arsenic in groundwater at concentrations greater than the unadjusted preliminary MTCA Method B groundwater cleanup level. Dissolved arsenic concentrations in the June 2004 samples collected from six Union Station wells, which appear to be hydraulically upgradient of the Property (USMW-101R, USMW-102R, USMW-104, USMW-105, USMW-108R, USB-4R, and USB-6R¹), ranged from 2.0 µg/L to 30 µg/L, with one non-detected value at a reporting limit of 5 µg/L. The samples collected in August 2009 had arsenic concentrations ranging from 1.4 µg/L to 31 µg/L with one non-detected value at a reporting limit of 2 µg/L. The arsenic background concentration calculated in 2004 was 36 µg/L; the arsenic background concentration being calculated for the 2009 data is expected to be similar to the 2004 value (Landau Associates 2004, 2009d).

An arsenic background concentration for the Property of 25 µg/L was calculated in accordance with WAC 173-340-709; the Ecology Toxics Cleanup Program guidance document, *Statistical Guidance for Ecology Site Managers* (Ecology 1992) using the MTCA Stat97 Background Module; and the 2004 and 2009 arsenic concentrations detected in the Union Station wells identified above. The MTCA Stat97 calculations worksheet for the background calculation showing the screening level based on the 90th percentile value as well as the data upon which it is based is provided in Appendix H. The calculated arsenic background level was used for comparison with groundwater data from Property monitoring wells because it is considered to represent conditions upgradient of the Property.

Groundwater quality data, along with the preliminary groundwater cleanup levels, for the constituents detected in the groundwater samples are presented in Table 8. The water quality criteria used in developing the preliminary cleanup levels is provided in Table 9. The analytical results for constituents detected in groundwater at concentrations greater than the preliminary cleanup levels are presented in Table 10. Analytical results for all constituents tested for and analytical laboratory reports are presented in Appendix F.

As discussed below, the available groundwater analytical data do not indicate off-Property migration of potential groundwater contamination. The groundwater elevations were compared to elevations of main sewer and storm drain pipes surrounding the Property to assess potential impacts to marine surface water due to groundwater infiltration into leaky underground pipes or along backfill associated with utility trenches. The 18-inch diameter combined sewer piping located in areas to the north and northwest of the Property is generally at elevations above the water table and, therefore, groundwater migration off-Property along the sewer alignment in these areas is not considered to be a concern. The 102-inch diameter main extending across the northern perimeter of the Property is at elevations below the groundwater table in most areas. As discussed below, the only groundwater contamination on the Property is limited to the northeastern portion of the Property and there is no evidence of migration off-Property; therefore, there is no concern regarding groundwater migration along the 102-inch diameter main sewer alignment. The evaluation of groundwater elevations compared to main sewer and storm drain elevations is presented in Table 11.

3.3.2.1 General Groundwater Quality

Groundwater quality was evaluated based on laboratory analysis of samples collected from 17 temporary wells installed at direct-push boring locations during the Phase II and RI field investigations, from samples collected from 11 monitoring wells installed during the RI field investigation, and from samples collected from 8 monitoring wells installed during the Supplemental RI field investigation. The 11 monitoring wells installed during the RI field investigation were also sampled during the Supplemental RI field investigation and those data are included in the discussion below. The samples were analyzed as follows:

- 43 groundwater samples were analyzed for TPH-G using Method NWTPH-Gx
- 43 groundwater samples were analyzed for TPH-D and TPH-O using Method NWTPH-Dx
- 43 groundwater samples were analyzed for PAHs

¹ A prefix of US is added to Union Station well names to prevent confusion with the Property wells that have similar names.

- 43 groundwater samples were analyzed for dissolved MTCA metals (arsenic, cadmium, copper, chromium, lead, mercury, and zinc)
- 24 groundwater samples were analyzed for VOCs, including BTEX
- 19 groundwater samples were analyzed for BTEX
- 4 groundwater samples were analyzed for TPH using Method NWTPH-HCID.

Based on the analytical results for these samples, a limited number of constituents were detected at concentrations greater than the laboratory reporting limit in one or more samples. With the exception of benzo(a)pyrene, all of the laboratory reporting limits were less than the preliminary cleanup levels. Concentrations greater than the preliminary cleanup levels were detected in samples from 4 of 19 monitoring wells, and from 8 of 17 temporary wells. The analytes detected in one or more samples at a concentration greater than the preliminary cleanup level, and the sample location are as follows:

- TPH-D or TPH-O (3 sample locations: MW-9D, and temporary wells B-38 and B-41; Figure 24)
- TPH-G (3 sample locations: MW-9D, and temporary wells B-18 and B-38; Figure 27)
- Benzene (2 sample locations: MW-9D and temporary well B-2; Figure 27)
- Metals (i.e., arsenic and/or lead) (4 sample locations: MW-5 and temporary wells B-1, B-3, and B-7; Figure 25)
- PAHs (2 sample locations: MW-9D and MW-17D; Figure 26).

Based on these data, groundwater contamination at the Property primarily occurs in the northeastern portion in the deeper portion of the shallow aquifer in the area where the creosote-like material was encountered (MW-9D). As noted above, most of the detections above the preliminary cleanup levels were in grab samples from the temporary direct-push wells and not in the monitoring well samples. In most cases, the detection from a temporary well sample was not duplicated in the sample from the nearby monitoring well. The temporary wells do not allow for proper development and, therefore, the sample results from these wells are considered valuable for screening purposes but are not considered representative of Property groundwater quality.

Due to the variable groundwater flow direction across the Property, monitoring wells installed during the RI and Supplemental Investigations were placed around the perimeter of the Property, including the two off-Property monitoring wells, to evaluate the potential migration of contaminants on to or off of the Property. Based on the groundwater quality data, there is no migration of contaminants on to or off of the Property.

The groundwater quality at the Property is discussed by area, similar to the soil quality discussion, as follows:

- The northwestern portion in the area of the former gasoline stations

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- The northeastern portion where the creosote-like material was observed.

In addition, arsenic was detected in groundwater at concentrations greater than the preliminary cleanup level at seven locations in the eastern half of the Property and at one location in the north-central portion of the Property (Figure 25). Lead was detected in one groundwater sample at a concentration greater than the preliminary cleanup level at one location in the north-central portion of the Property (Figure 25). The analytical results for groundwater samples collected in the two areas noted above and those with metals concentrations greater than the preliminary cleanup levels from other areas of the Property are discussed below.

3.3.2.2 Groundwater Quality in the Northwestern Portion

The groundwater sampling identified minimal impact to groundwater quality in the vicinity of the former gasoline stations (northwestern portion of the Property). The only constituent that exceeded preliminary cleanup levels for groundwater in the northwestern portion of the Property was TPH-G, which was detected in the groundwater sample collected from the temporary well at direct boring B-18 at a concentration of 1.3 milligrams per liter (mg/L), as shown on Figure 27. The localized impact to groundwater appears to be the result of releases from former gasoline USTs and/or the associated piping and pump dispensers. No other constituents of concern were detected at concentrations greater than the preliminary cleanup levels in groundwater samples collected in this area of the Property.

3.3.2.3 Groundwater Quality in the Northeastern Portion

Based on the analytical data, constituents of concern were detected at concentrations greater than the preliminary cleanup levels at the following locations in the northeastern portion of the Property:

- MW-9D (TPH-D and TPH-G, benzene, ethylbenzene, naphthalene, 2-methylnaphthalene, cPAHs)
- B-38 (TPH-D, TPH-O, and TPH-G)
- B-41 (TPH-D)
- B-2 (benzene).

These impacts likely are the result of the presence of the creosote-like material identified at the fill/marine sediments interface in this area (see Section 3.3.3), and three of the four sampling locations are temporary wells. Monitoring well MW-9D is screened from 15 ft to 20 ft BGS, just at or above the top of where the creosote-like material was identified. Constituents of concern were not detected at concentrations greater than the preliminary cleanup levels in the groundwater samples collected from MW-9S, which is located in the immediate vicinity of MW-9D and is screened from 5 ft to 15 ft BGS. Groundwater samples collected from monitoring wells and soil borings in other areas of the Property

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support the conclusion that the groundwater impacts from PAHs and from TPH-D and TPH-O are localized at the northeastern portion of the Property. Groundwater impacts from TPH-G and BTEX compounds in this area do not appear to be related to the former gasoline station operations in the northwestern portion of the Property as samples collected from several locations between the northeastern and northwestern portions of the Property (MW-7S, MW-7D, B-3, MW-12, B-14, MW-11, B-27) did not contain reported concentrations of these constituents, with the exception of toluene, which was detected at a concentration slightly greater than the reporting limit [0.5 micrograms per liter ($\mu\text{g/L}$)] in the groundwater sample collected from MW-7D. In addition, the off-Property well to the north, MW-16D, did not contain reported concentrations of these constituents. The groundwater sample from off-Property well MW-17D to the northeast slightly exceeded the preliminary cleanup level for cPAHs; however, given that the creosote-like material was not encountered at MW-17D, it is unlikely that the cPAH exceedance at MW-17D is related to on-Property contamination.

3.3.2.4 Metals in Groundwater

Total arsenic was detected at a concentration greater than the calculated groundwater background level of 25 $\mu\text{g/L}$ in samples from three locations (MW-5, B-1, and B-7). Lead was detected at a concentration greater than the preliminary cleanup level at one location (B-3).

The detected concentrations of arsenic greater than the calculated background level ranged from 29 $\mu\text{g/L}$ to 58 $\mu\text{g/L}$, or 1.2 to approximately 2.3 times the calculated background level of 25 $\mu\text{g/L}$. The highest concentration of arsenic (58 $\mu\text{g/L}$) was detected at monitoring well MW-5 during the RI field investigation. During the Supplemental Investigation, monitoring well MW-5 was sampled again, and the arsenic concentration was 17 $\mu\text{g/L}$, which is significantly lower and below the calculated background level. Arsenic was detected at concentrations greater than the preliminary cleanup level in 5 of 42 soil samples analyzed for arsenic. Organic material (wood debris) was observed in soil borings advanced across the Property (Figure 8). The presence of organic material, including TPH, which is known to be present in groundwater hydraulically upgradient of the Property, has a significant potential to cause reducing conditions in groundwater and arsenic is more soluble under reducing conditions. Increased solubility of naturally occurring arsenic may be the cause of the elevated arsenic concentrations detected in groundwater.

The lead concentration greater than the preliminary groundwater cleanup level at B-3 was the only exceedance for this constituent, and the detected concentration of 26 $\mu\text{g/L}$ was less than twice the preliminary cleanup level of 15 $\mu\text{g/L}$. In addition, lead was not detected in any of the soil samples collected from the Property during the RI or Supplemental Investigation (including the sample collected

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from B-3) at concentrations greater than the preliminary cleanup levels and there has been no source of lead identified on the Property. Because only one exceedance of the cleanup level was detected, and the exceedance was less than twice the cleanup level, lead is not anticipated to be a significant contaminant for Property groundwater.

As discussed in Section 3.3.1.4, at some locations Property-wide mercury was detected in soil at concentrations above the preliminary cleanup level. Mercury was not detected in any groundwater samples during either the RI or the Supplemental Investigation, demonstrating that the low concentrations of mercury detected across the Property are not mobile and are not affecting groundwater quality.

3.3.3 FORENSIC ANALYSIS

During the Phase II investigation, one soil sample was collected from the zone of creosote-like material observed in the northeastern portion of the Property and analyzed by the laboratory as a product sample due to the presence of free phase petroleum in the sample (Sample ID: B-21-20-23). The sample was analyzed for TPH (using Method NWTPH-HCID) and for TPH-D, TPH-O, total metals, PCBs and PAHs. The analytical results for this sample are presented in Table 12. TPH-D (77,000 mg/kg), TPH-O (36,000 mg/kg), chromium (5.4 mg/kg), lead (7 mg/kg), and PAHs [120,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$) to 19,000,000 $\mu\text{g}/\text{kg}$] were detected in the sample at concentrations greater than the laboratory reporting limits. TPH-G and PCBs were not detected in the sample at concentrations greater than the reporting limits; however, the reporting limits for TPH-G were elevated.

During the RI field investigation, an additional sample of the creosote-like material was collected for forensic analysis by Friedman & Bruya, Inc. A hydrocarbon fuel scan was conducted by analyzing the sample using a gas chromatograph with a flame ionization detector. In addition, the sample was analyzed for parent and alkylated PAHs and sulfur. The analytical results are presented in Table 13 and the full laboratory report is included in Appendix F. Based on the analytical results, Friedman & Bruya, Inc. identified the material as coal tar, or a coal tar-based material such as creosote.

4.0 SUMMARY AND CONCLUSIONS

Landau Associates has prepared this remedial investigation (RI) for the approximately 3.85-acre North Lot Development property (Property), located at the southeastern corner of the intersection of South King Street (to the north) and Occidental Avenue South (to the west) in Seattle, Washington. The Property consists of a paved parking lot, which is currently used for commuter parking and parking for events at Qwest Field.

North Lot Development (NLD), as prospective purchaser of the Property from the owner, King County, has conducted various investigations to document and characterize soil and groundwater conditions at the Property and off-Property, and has identified localized contamination in soil and groundwater on the Property. The RI and FS, which will be prepared and submitted as a separate document, are being conducted, as required under the Washington State Model Toxics Control Act (MTCA; Chapter 173-340 WAC), to document and evaluate contamination at the Property and to identify the appropriate cleanup action.

NLD, as the prospective purchaser of the Property, has been in communication with Ecology since April 2008 regarding a suitable regulatory mechanism to facilitate the RI/FS and Cleanup Action Plan (CAP) review and concurrence by Ecology. NLD submitted a proposal for a Prospective Purchaser Agreement/Consent Decree to Ecology in May 2008. Proposal approval has been delayed due to limited Ecology and Attorney General staff resources. Ecology subsequently proposed temporary use of Voluntary Cleanup Program (VCP) staff for completion of the RI/FS work.

The use of VCP staff has allowed the RI/FS work to progress; however, the technical opinion letters available under the VCP will not provide sufficient liability protection for the viability of the proposed development for the Property. Therefore, NLD has requested that Ecology continue to consider the existing Prospective Purchaser Agreement/Consent Decree Proposal, and that Ecology formal program and Attorney General office staff be made available to oversee the cleanup action after the work with the VCP staff has been completed.

4.1 HISTORICAL INFORMATION, FIELD INVESTIGATIONS, AND PHYSICAL CONDITIONS

- The Property was originally undeveloped tidflats of Elliott Bay and was filled in the late 1890s and early 1900s. The Property was operated as a rail yard from the late 1800s until the late 1960s. In addition, two gasoline stations were formerly located in the northwestern corner of the Property at different times between the late 1930s and approximately 1966. The Property has been used as a parking lot since the 1970s.
- Based on the historical operations conducted on the Property, the constituents of concern for this RI are TPH, VOCs including BTEX, PAHs, metals, and PCBs.

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- The field investigations included the drilling and sampling of 80 soil borings for evaluation of shallow (about 6 to 32 ft BGS) subsurface conditions (69 direct-push borings and 11 hollow-stem auger borings), installation of 19 groundwater monitoring wells (14 shallow wells and 5 deeper wells), and a geophysical survey.
- Five Landau Associates boring locations were selected as locations for drilling of deeper borings by Terra Associates for use in their geotechnical evaluation of the Property. These deeper (maximum depth of 80.5 ft BGS) boring data were used to assess geologic and hydrogeologic conditions at the Property.
- Soil conditions encountered during drilling consisted of: 1) various types of fill to maximum depths of 30.75 ft BGS; 2) beneath the fill, a marine sediment layer (former native tideflat) with the upper contact at depths ranging from 18 ft BGS to 30.75 ft BGS; 3) underlying the marine sediment layer, a unit interpreted to be alluvial deposits with the upper contact at depths ranging from 25.0 ft BGS to 45.5 ft BGS.
- The uppermost hydrostratigraphic unit consists of the water table aquifer within the fill that overlies the marine sediment unit, which is the uppermost aquitard beneath the Property. The depths to groundwater measured during the RI range from about 5.5 to 11.0 ft BGS. Based on the limited groundwater measurements collected for the RI, the groundwater elevations appear generally higher toward the southwestern portion of the Property, and lower toward the eastern portion of the Property, suggesting localized mounding and/or variable flow with some localized flow to the north and northeast. This is inconsistent with area and regional flow to the west toward Puget Sound. Deeper groundwater beneath the marine silt unit was not evaluated as part of this study. Groundwater elevations were measured during different seasons, and overall groundwater flow across the Property does not vary significantly with the seasons.
- Field-screening results indicated: 1) petroleum odor, sheen, and elevated PID measurements in shallow soil (less than 15 ft BGS) from borings drilled in the area of the former gasoline stations in the northwestern portion of the Property; and 2) a strong petroleum odor, sheen, and a creosote-like material at depths of about 18 to 23 ft BGS at boring locations in the northeastern portion of the Property. The creosote-like material appears to be present at the contact between the fill unit and underlying marine sediment, and ranges from 1 ft to 3 ft in thickness. Observations during drilling in the northeastern, eastern, and southern portions of the Property and field-screening did not indicate the presence of potential contamination in the fill material from the surface to about 18 ft BGS, even in those areas where the creosote-like material was encountered.

4.2 NATURE AND EXTENT OF CONTAMINATION

- **Northwestern Portion of the Property:** The laboratory analytical and field-screening data indicate that shallow soil (less than 15 ft BGS) has been impacted by releases resulting from the former gasoline station operations. The soil contamination appears to be primarily near the top of the groundwater table, but extends to a depth of at least 17 ft BGS locally. TPH-G was detected at a concentration greater than the preliminary cleanup level in one of six groundwater samples collected in this area. No BTEX was detected at concentrations greater than the preliminary cleanup levels in any of the groundwater samples from this area. Due to the presence of benzene in shallow soil in the northwestern portion of the Property, the potential for vapor intrusion was evaluated and will be addressed in the FS document.

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- **Northeastern Portion of the Property:** Deeper soil (greater than 15 ft BGS) has been impacted by petroleum hydrocarbons and PAHs. Based on the field screening, observations during drilling, and analytical data, the soil contamination appears to be primarily associated with the creosote-like material observed at the base of the fill. Groundwater impact was detected in one deeper well (screened from 15 to 20 ft BGS, at approximately the depth where the creosote-like material was encountered). Based on the occurrence of the creosote-like material at the base of the fill material, and the lack of evidence of contamination within the fill at shallower depths, the creosote-like material appears to be from a distinct source and likely predates placement of the overlying fill.
- **Other Portions of the Property:** PAHs including primarily cPAHs, were detected at concentrations greater than the preliminary cleanup levels in most of the soil samples collected across the southern portion of the Property. Arsenic and motor-oil-range petroleum hydrocarbons were also detected at concentrations greater than the preliminary cleanup levels in soil samples collected in the west-central portion of the Property. The occurrence of these analytes in shallow surface soil suggest a source within the fill material placed over the native marine sediment layer. PAHs were not detected at concentrations greater than the preliminary cleanup levels in groundwater samples collected from the southern portion of the Property. Arsenic was detected in several groundwater samples collected from the southern and western portions of the Property and lead was detected in one groundwater sample collected from the north-central portion of the Property; however, the concentrations of arsenic and lead detected above the preliminary cleanup levels in groundwater were low and are not considered a concern for the Property. Off-Property borings to the northwest of the Property, and off-Property wells to the north and northeast of the Property were generally clean and bounded contaminants of concern to demonstrate that contamination is not migrating off-Property. The analytes detected at off-Property well MW-17D are likely to be indicative of background concentrations and not Property-related due to the well's location relative to and distance from the Property.

4.3 CONCLUSIONS

The information developed and presented for the RI found that groundwater contamination at concentrations greater than the preliminary cleanup levels is present near the base of the water table aquifer (approximately 20 ft BGS) where creosote-like material is present, and that there is localized soil contamination due to gasoline constituents associated with the former gasoline stations in the northwestern portion of the Property near the depth of the water table. Based on the data collected for the RI, the extent of contamination from Property activities is limited to the Property. The FS document will identify the areas and volumes of contamination requiring remedial action and remedial action objectives, provide identification and screening of technologies, develop remedial action alternatives, and recommend a cleanup action plan.

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5.0 USE OF THIS REPORT

This report was prepared for the exclusive use of North Lot Development, and applicable regulatory agencies, for specific application to the North Lot Development Property, including review by the public. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied. This document was prepared under the supervision and direction of the undersigned.

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Senior Engineer

Timothy L. Syverson, L.G.
Senior Associate Geologist

KFH/PMR/TLS/ccy

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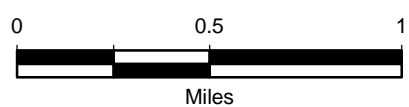
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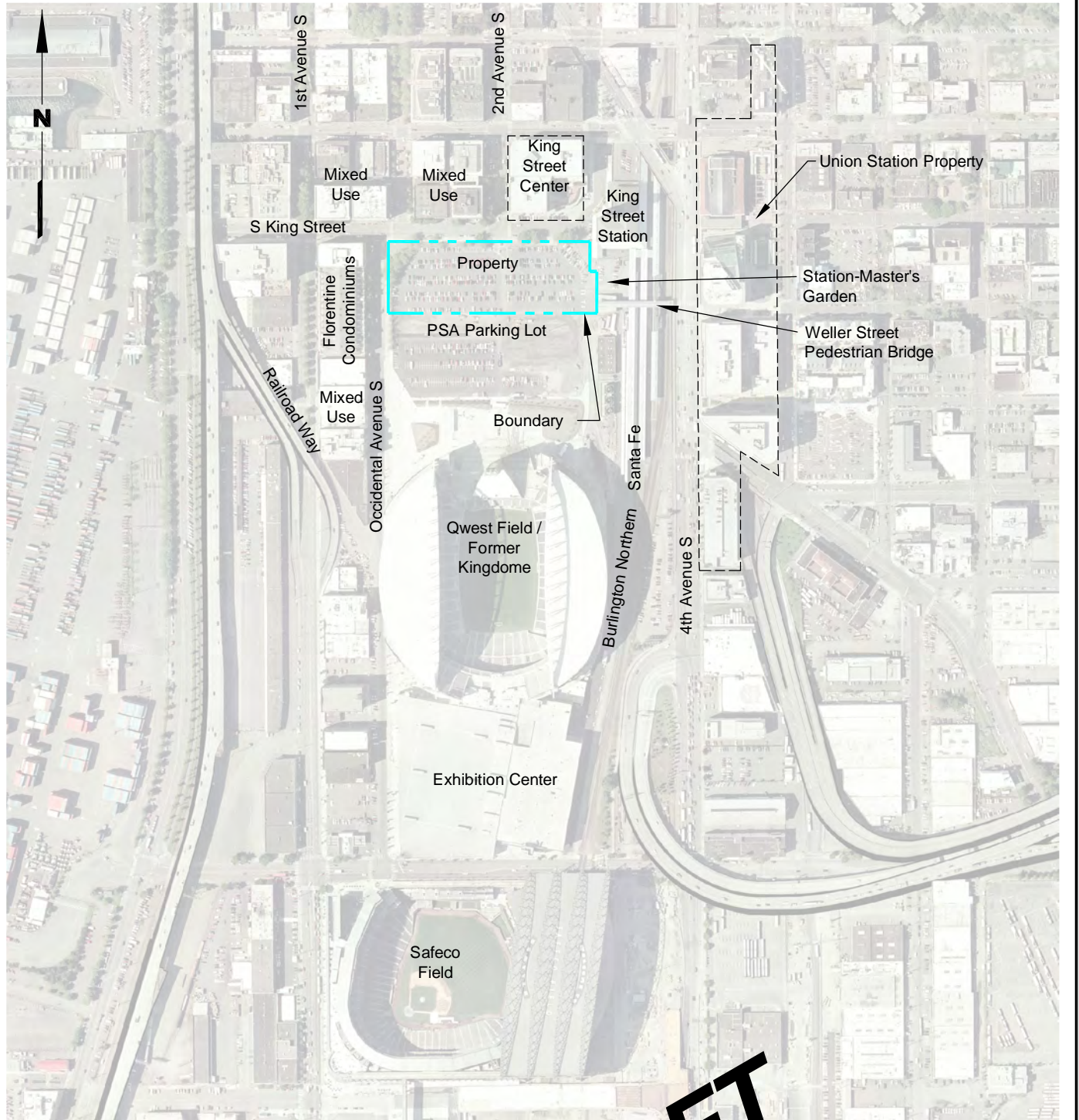
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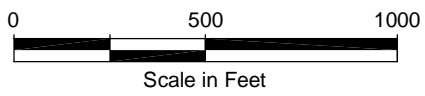
North Lot Development
Seattle, Washington

Vicinity Map

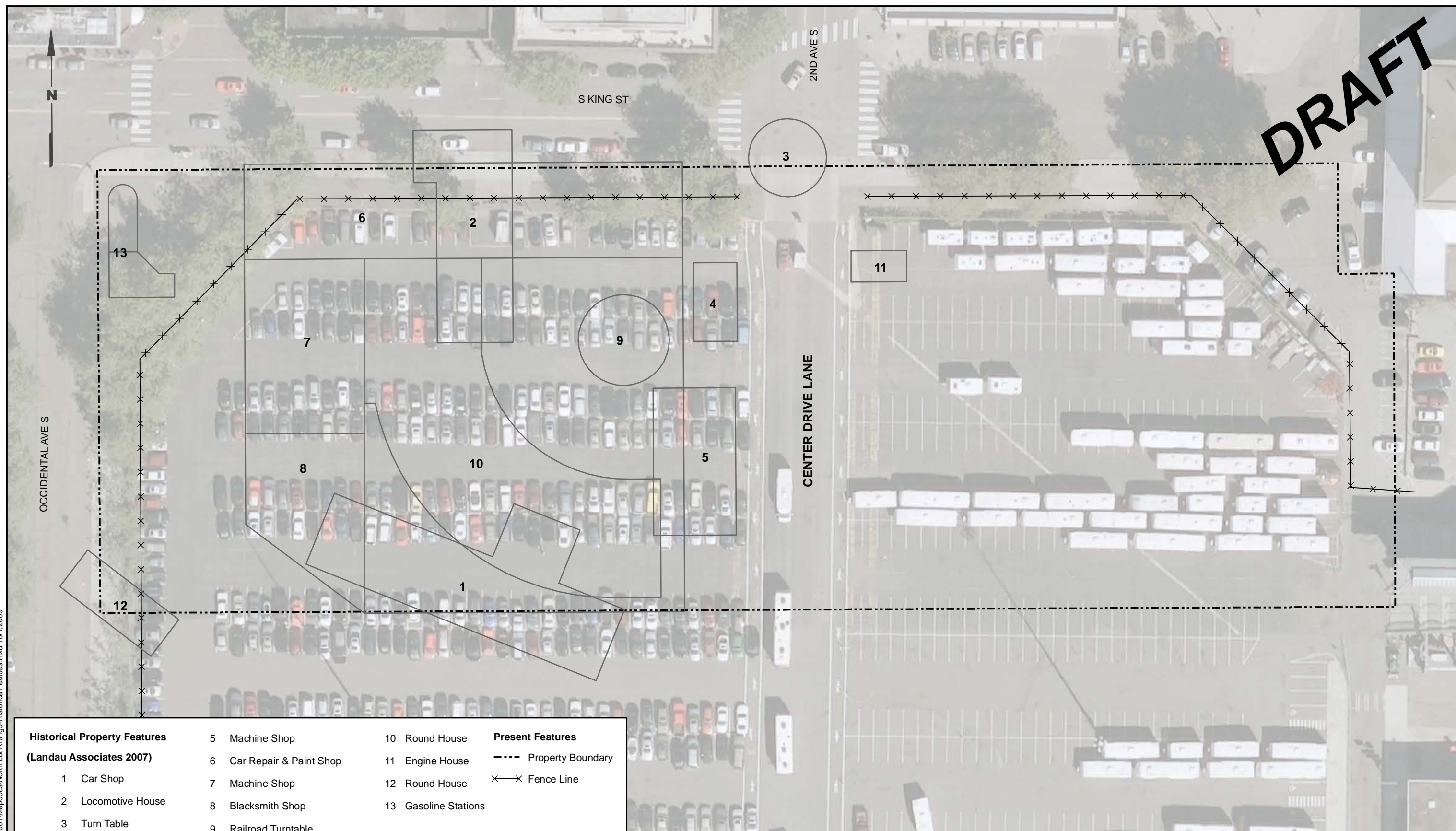
Figure
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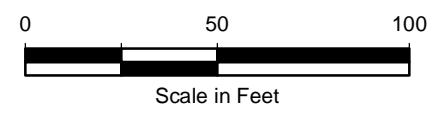
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Historical Property Features (Landau Associates 2007)			Present Features
1	Car Shop	5	Machine Shop
2	Locomotive House	6	Car Repair & Paint Shop
3	Turn Table	7	Machine Shop
4	Blacksmith	8	Blacksmith Shop
		9	Railroad Turntable
		10	Round House
		11	Engine House
		12	Round House
		13	Gasoline Stations
			--- Property Boundary
			×—× Fence Line



Data Source: Triad Boundary Survey, King County

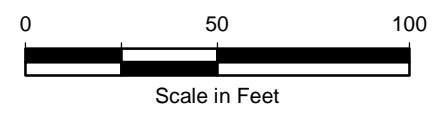
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Legend

- x—x— Fence Line
- - - - Property Boundary
- Storm Drain
- Utilities and Other Features



Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Property Plan and Existing Features	Figure 4
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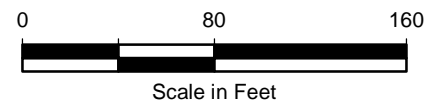


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Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- × Fence Line
- - - Property Boundary



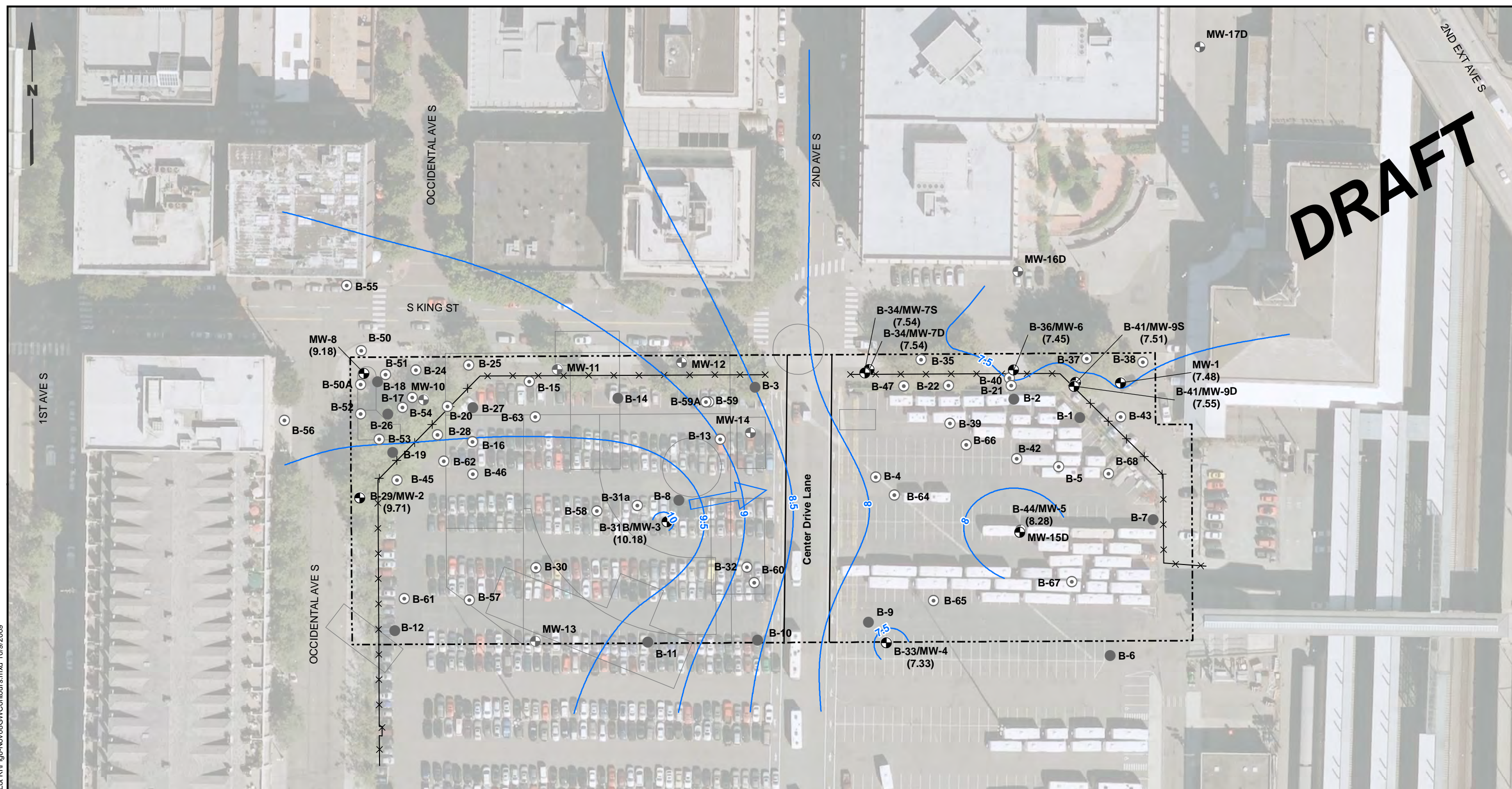
Data Source: Triad Boundary Survey, King County

North Lot Development
Seattle, Washington

Sampling Locations

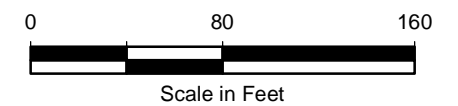
Figure
5

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Legend

- MW-8 (9.18) Groundwater Monitoring Wells with Groundwater Elevations (ft) MSL
- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Groundwater Elevation Contour (ft)
- Groundwater Flow Direction
- Historical Building Outlines
- Fence Line
- Property Boundary



Note

1. Refer to Figure 3 for Historical Property Features Legend.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

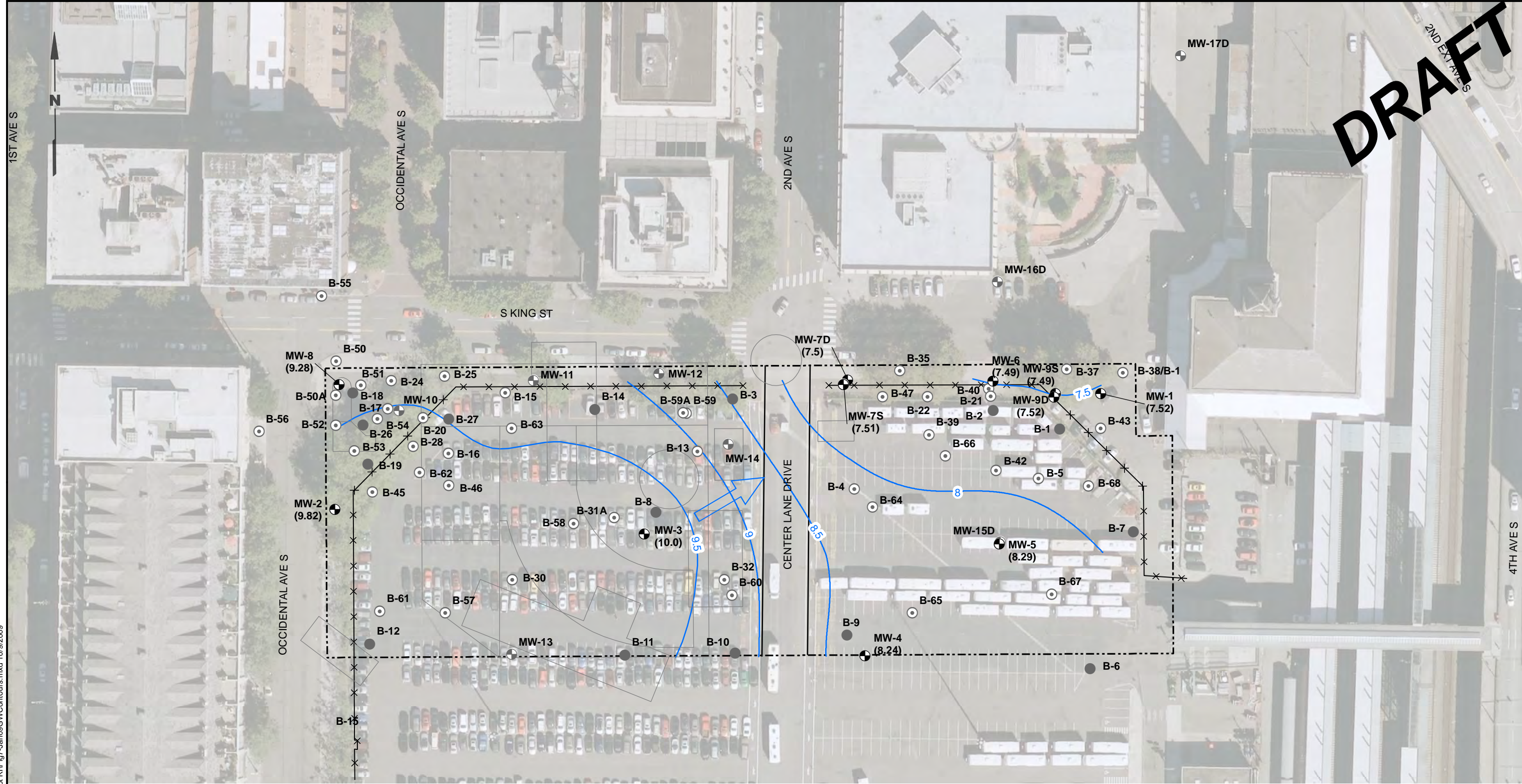
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Groundwater Elevation Contours for November 24, 2008	Figure 6
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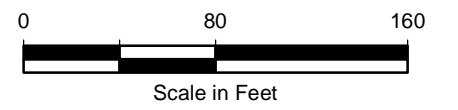


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Legend

- MW-8 (9.28) Groundwater Monitoring Wells with Groundwater Elevations (ft) MSL
- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- 9.5- Groundwater Elevation Contour (ft)
- Groundwater Flow Direction
- Historical Building Outlines
- Fence Line
- Property Boundary



Note

1. Refer to Figure 3 for Historical Property Features Legend.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

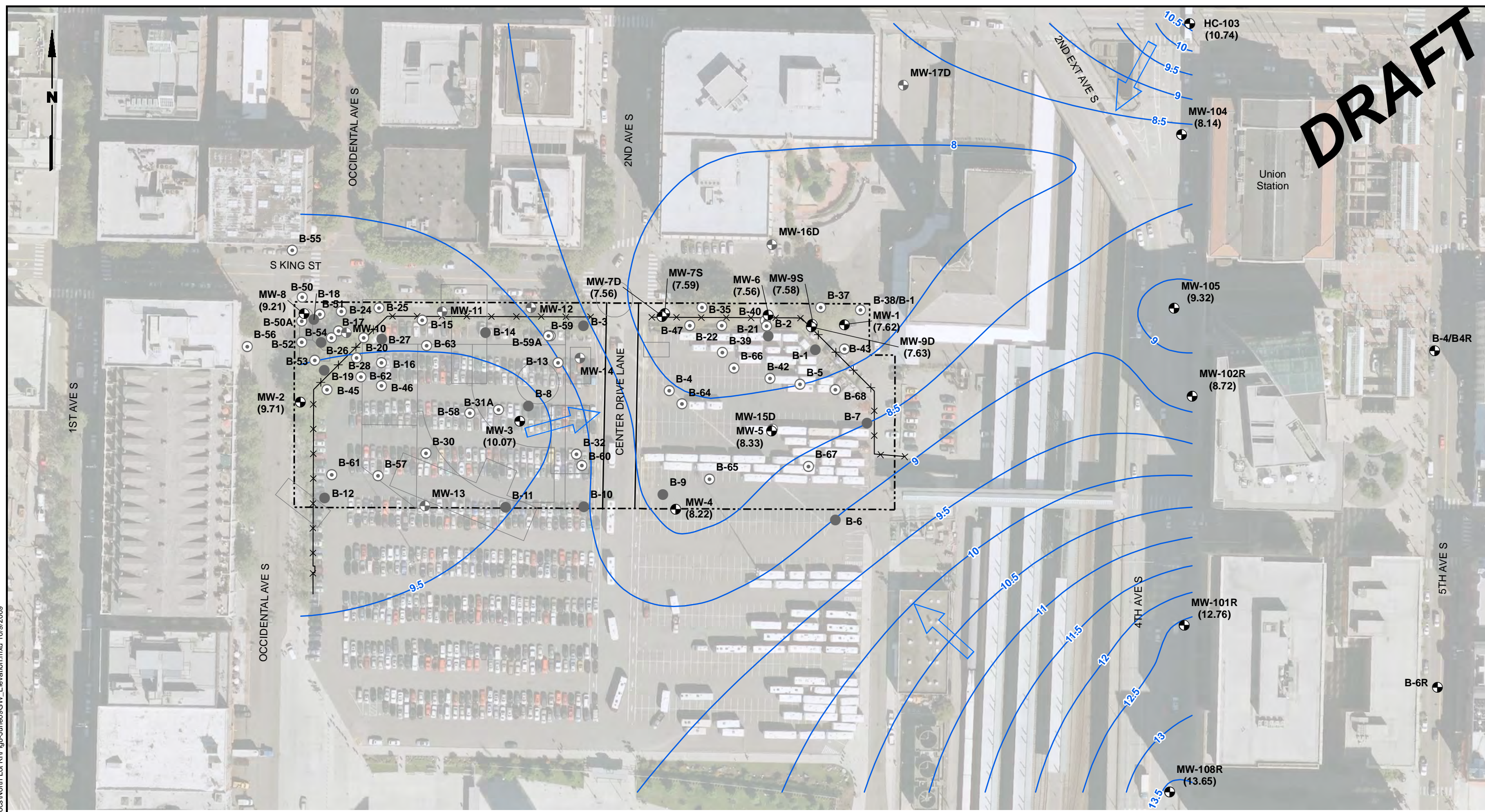
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Groundwater Elevation Contours for January 16, 2009	Figure 7
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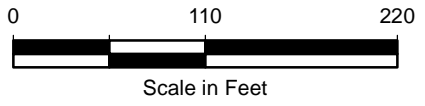
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|-------------|--|---|--|--|--|------------------------------|
| MW-8 (9.21) | | Groundwater Monitoring Wells with Groundwater Elevations (ft) MSL | | Direct-Push Soil Boring Location | | Groundwater Flow Direction |
| | | Direct-Push Soil Boring and Monitoring Well Location | | Direct-Push Soil and Groundwater Sample Location | | Historical Building Outlines |
| | | Groundwater Elevation Contour (ft) | | Fence Line | | Property Boundary |

Note

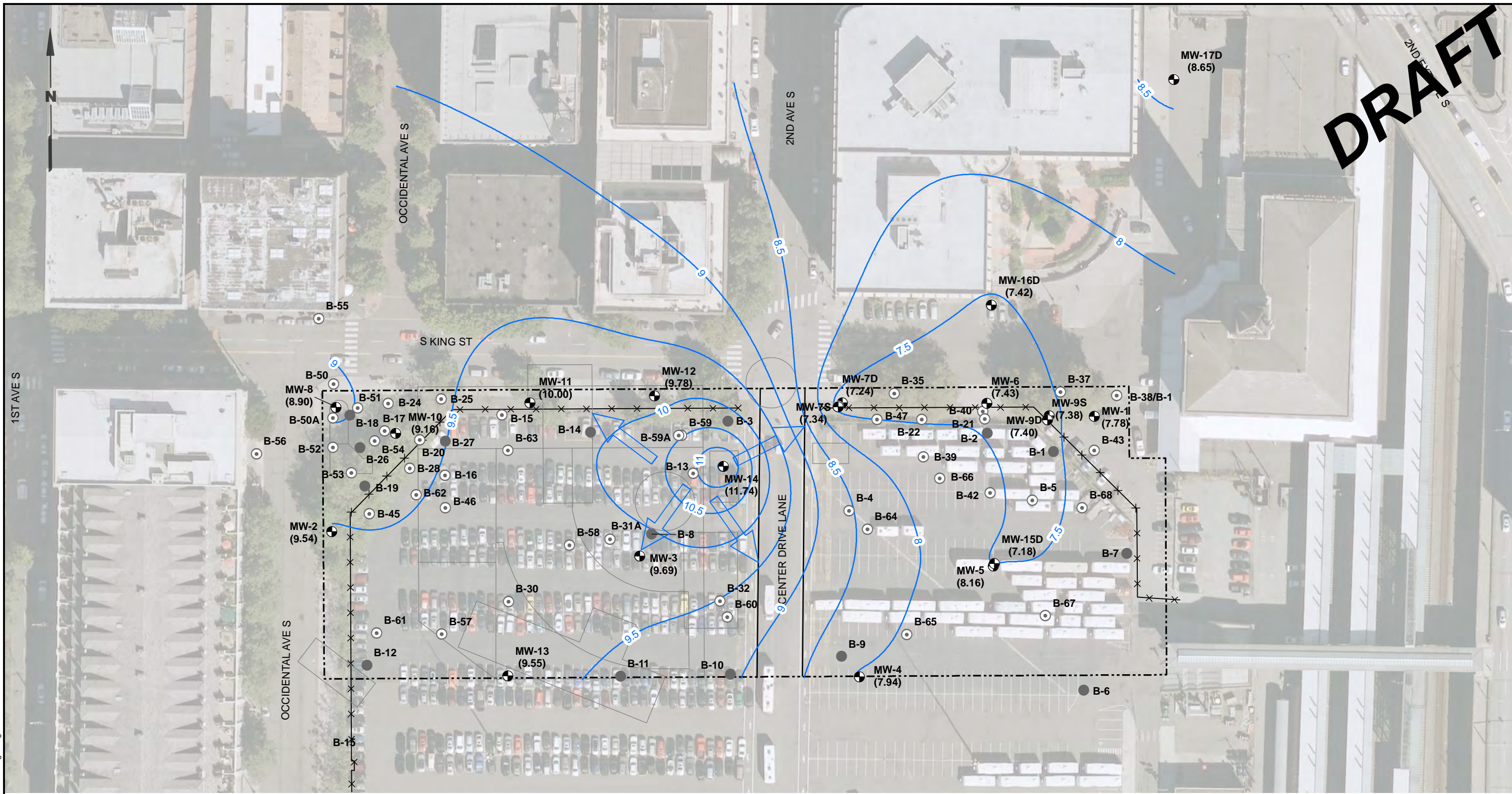
1. Refer to Figure 3 for Historical Property Features Legend.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Triad Boundary Survey, King County



North Lot Development Seattle, Washington	Groundwater Elevation Contours for June 3, 2009	Figure 8
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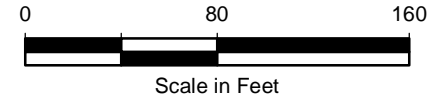
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- MW-8 (8.90) Groundwater Monitoring Wells with Groundwater Elevations
- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Groundwater Elevation Contour (ft)
- Groundwater Flow Direction
- Historical Building Outlines
- Fence Line
- Property Boundary

Note

1. Refer to Figure 3 for Historical Property Features Legend.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Triad Boundary Survey, King County

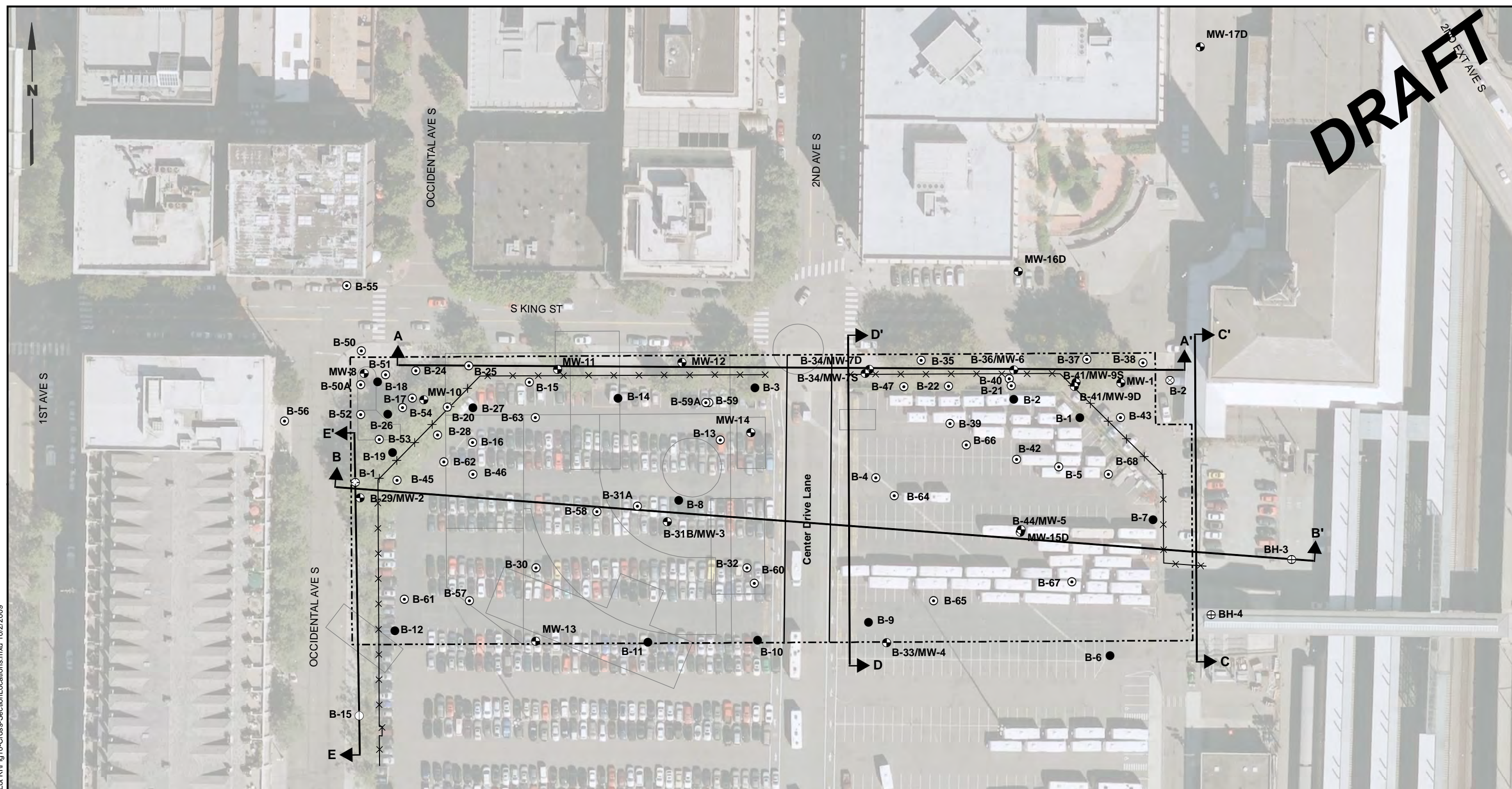


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North Lot Development Seattle, Washington	Groundwater Elevation Contours for August 25, 2009	Figure 9
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Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Previous Boring - Metropolitan Engineers, 1966
- ⊗ Previous Boring - Shannon & Wilson, 1993
- ⊕ Previous Boring - Geosciences Inc, 1998
- ⊖ Previous Boring - Geogroup NW, 1996
- Historical Building Outlines
- ××× Fence Line
- - - Property Boundary



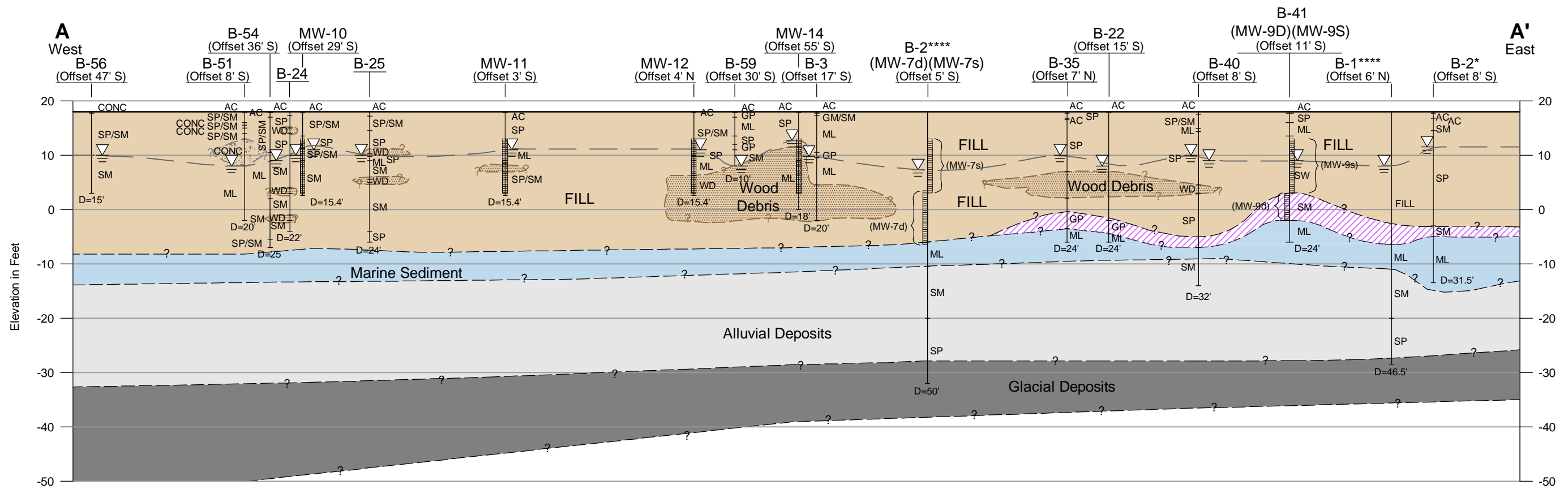
Data Source: Triad Boundary Survey, King County

Note
1. Refer to Figure 3 for Historical Property Features Legend.

North Lot Development Seattle, Washington	Cross-Section Locations	Figure 10
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Legend

- * Shannon & Wilson 1993
- ** Geogroup NW 1996
- *** Geosciences Inc. 1998
- **** Terra Associates 2008
- ***** Metropolitan Engineers 1966

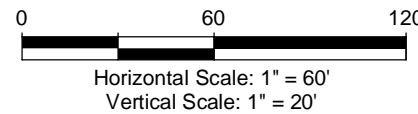
- B-1** — Project Exploration Designation
 (Offset 160' W) — Offset Distance in Feet and Direction
- Top of Exploration
 - Groundwater Level (At time of drilling)
 - GM — Unified Soils Classification Symbol (see Appendix A-1)
 - Inferred Groundwater Table
 - Inferred Geologic Contact
 - Well Screen Interval (If a Monitoring Well was Constructed)
 - Bottom of Exploration
 - D=14' — Total Depth of Exploration

- Fill: Primarily SAND, with varying percentages of silt and gravel; SILT with varying percentages of sand; GRAVEL with varying percentages of sand and silt; Debris contained in matrix includes concrete, brick, and trace to substantial percentages of wood.
- Creosote Affected Zone: Creosote-like material in soil
- Wood Debris: Brown wood debris as sawdust, wood chippings, and timber (loose to very dense)
- Concrete Debris: Crushed concrete
- Marine Sediment: Primarily SILT, with varying percentages of sand; SAND with varying percentages of silt; trace shell fragments contained in matrix (very soft to medium stiff).
- Alluvial Deposits: Primarily SAND with varying percentages of silt, gravel, and clay (very loose to dense).
- Glacial Deposits: Mixture of sand, gravels, silt, and clay (dense to very dense). Contact between alluvial deposits and glacial deposits corresponds to increased material density.

Notes

1. This cross section has been interpreted and generalized from project field data. Variations between this cross section and actual conditions may exist. The project boring logs and written report must be referenced for a proper understanding of the nature of the subsurface conditions. This cross section was prepared for environmental interpretation purposes and is not intended to be used for geotechnical planning purposes.
2. See report text for descriptions of geologic units.
3. For cross-section line location, see Figure 7.
4. Water level data for borings B-2 and B-1 (Terra Associates 2008) adjusted based on data from monitoring wells MW-7 and MW-1.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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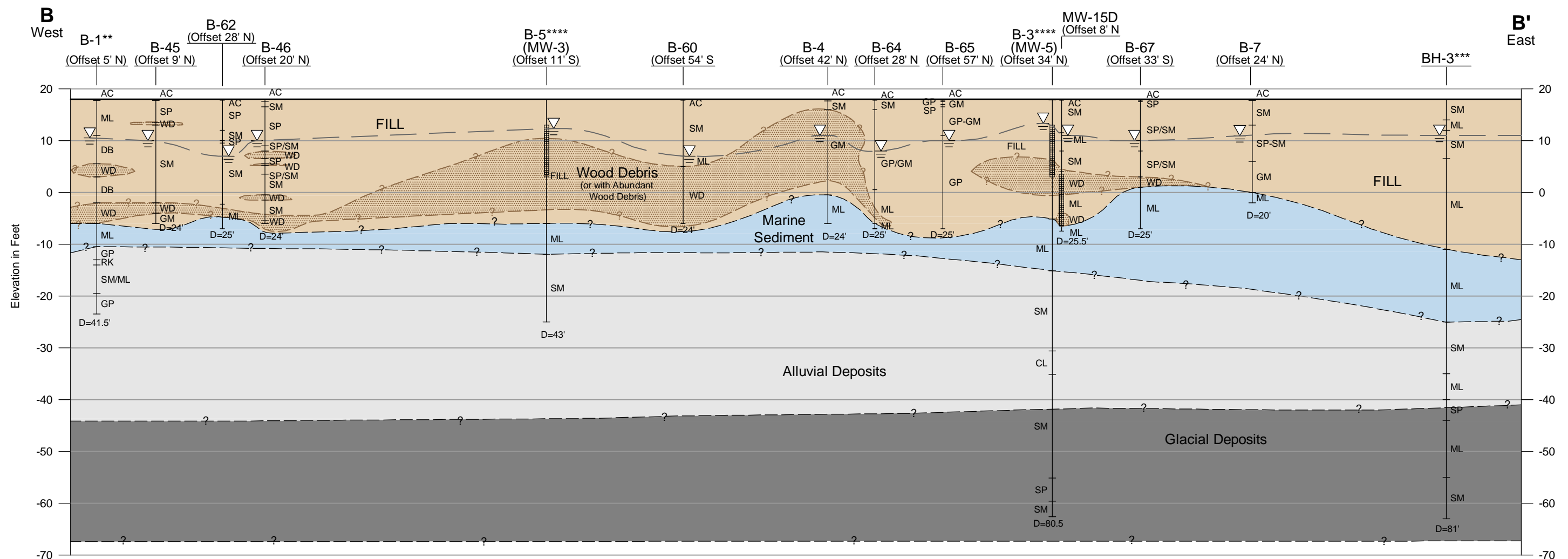
Data Source: Triad Boundary Survey, King County

North Lot Development
 Seattle, Washington

Geologic Cross Section A-A'

Figure
11

C:\west\field\1\101404044\Supplemental RIFS\Fig11-14.dwg (A) "Figure 12" 10/9/2009



Legend

- * Shannon & Wilson 1993
- ** Geogroup NW 1996
- *** Geosciences Inc. 1998
- **** Terra Associates 2008
- ***** Metropolitan Engineers 1966

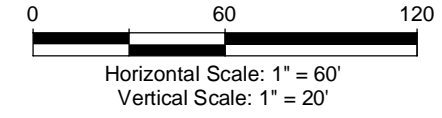
- B-1** — Project Exploration Designation
- (Offset 160' W) — Offset Distance in Feet and Direction
- Top of Exploration
- Groundwater Level (At time of drilling)
- GM — Unified Soils Classification Symbol (see Appendix A-1)
- Inferred Groundwater Table
- Inferred Geologic Contact
- Well Screen Interval (If a Monitoring Well was Constructed)
- Bottom of Exploration
- D=14' — Total Depth of Exploration

- Fill
Primarily SAND, with varying percentages of silt and gravel; SILT with varying percentages of sand; GRAVEL with varying percentages of sand and silt; Debris contained in matrix includes concrete, brick, and trace to substantial percentages of wood.
- Creosote Affected Zone
Creosote-like material in soil
- Wood Debris
Brown wood debris as sawdust, wood chippings, and timber (loose to very dense).
- Marine Sediment
Primarily SILT, with varying percentages of sand; SAND with varying percentages of silt; trace shell fragments contained in matrix (very soft to medium stiff).
- Alluvial Deposits
Primarily SAND with varying percentages of silt, gravel, and clay (very loose to dense).
- Glacial Deposits
Mixture of sand, gravels, silt, and clay (dense to very dense). Contact between alluvial deposits and glacial deposits corresponds to increased material density.

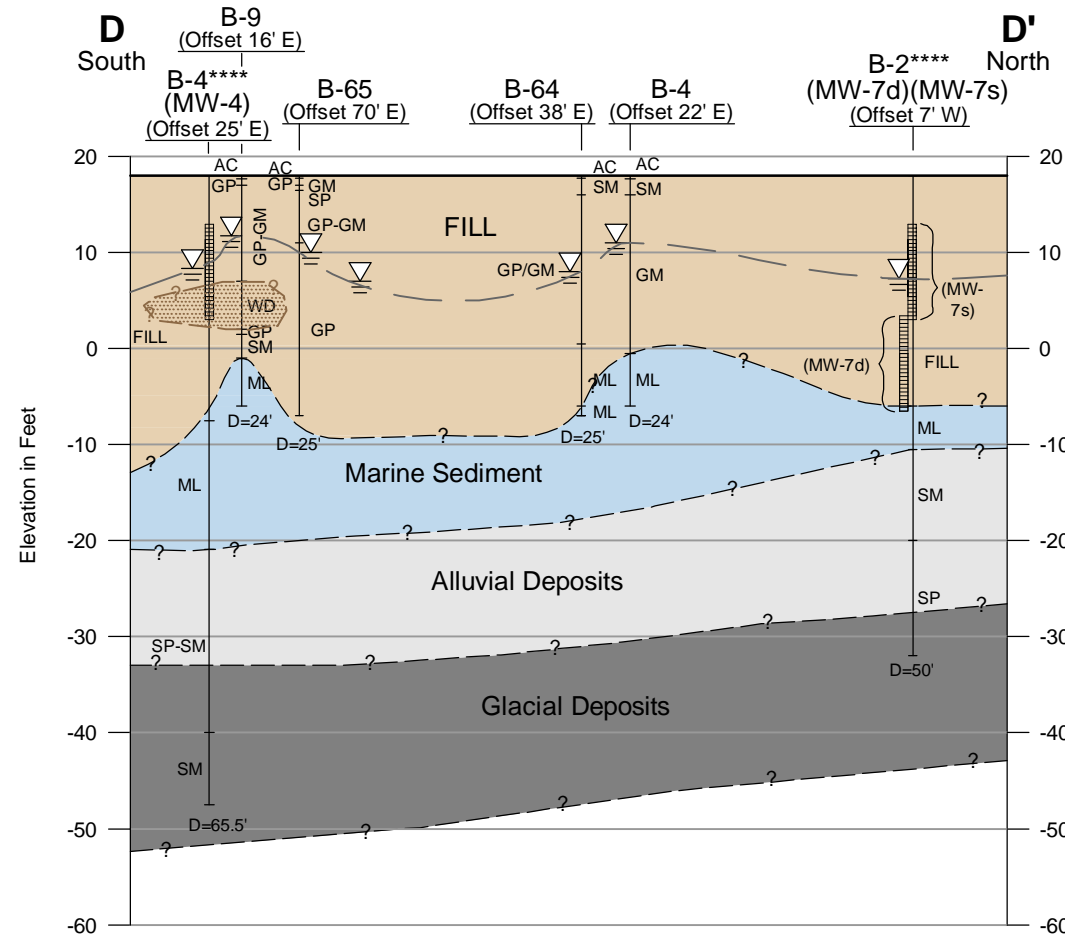
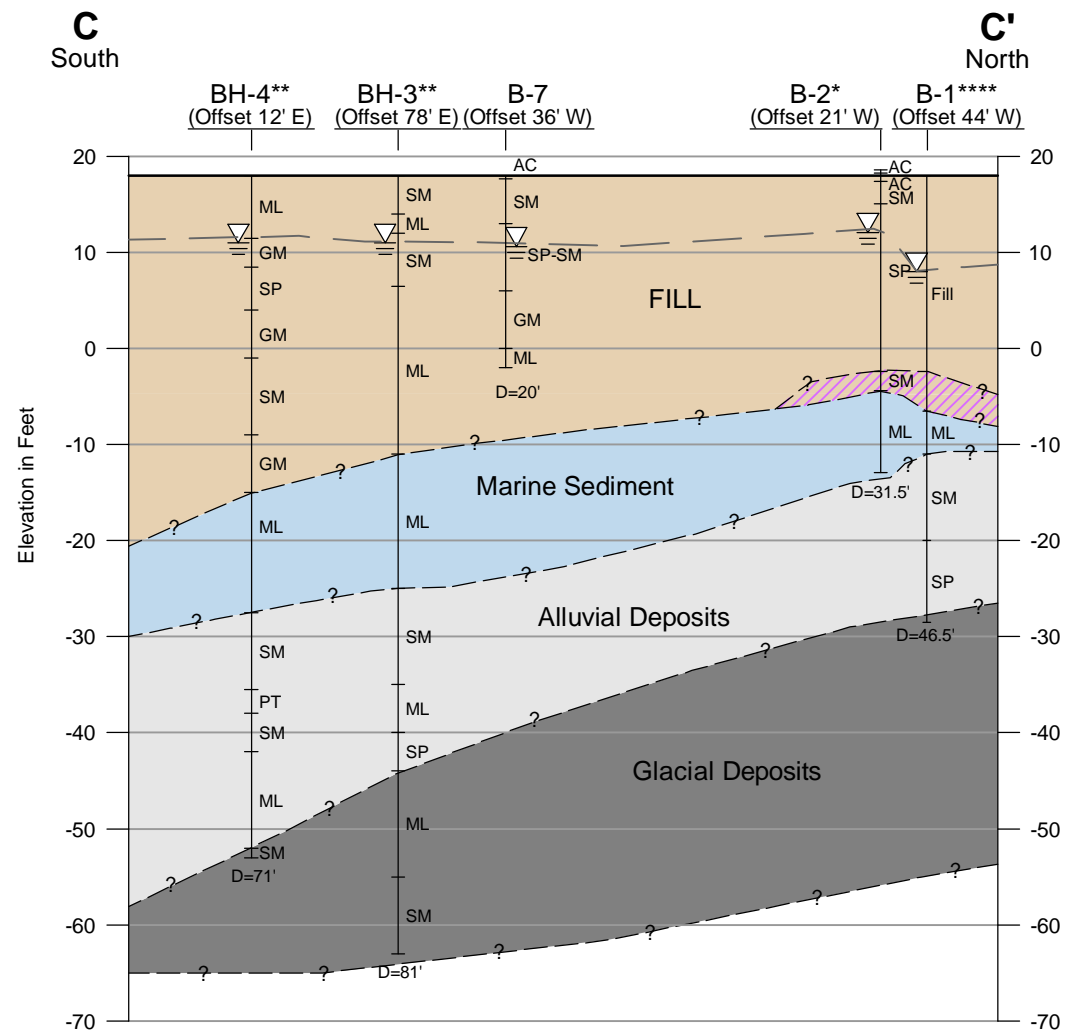
Notes

1. This cross section has been interpreted and generalized from project field data. Variations between this cross section and actual conditions may exist. The project boring logs and written report must be referenced for a proper understanding of the nature of the subsurface conditions. This cross section was prepared for environmental interpretation purposes and is not intended to be used for geotechnical planning purposes.
2. See report text for descriptions of geologic units.
3. For cross-section line location, see Figure 7.
4. Water level data from borings B-5 and B-3 (Terra Associates 2008) adjusted based on data from monitoring wells MW-3 and MW-5.
5. Wood debris observations in B-5 and B-3 (Terra Associates 2008) noted from co-located borings B-31b and B-44.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Triad Boundary Survey, King County



C:\west\field\1\101404044\Supplemental RIFS\Fig11-14.dwg (A) "Figure 13" 10/9/2009



Legend

- * Shannon & Wilson 1993
- ** Geogroup NW 1996
- *** Geosciences Inc. 1998
- **** Terra Associates 2008
- ***** Metropolitan Engineers 1966

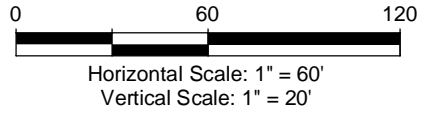
- B-1** — Project Exploration Designation
- (Offset 160' W) — Offset Distance in Feet and Direction
- Top of Exploration
- Groundwater Level (At time of drilling)
- GM — Unified Soils Classification Symbol (see Appendix A-1)
- Inferred Groundwater Table
- Inferred Geologic Contact
- Well Screen Interval (If a Monitoring Well was Constructed)
- Bottom of Exploration
- D=14' — Total Depth of Exploration

- Fill: Primarily SAND, with varying percentages of silt and gravel; SILT with varying percentages of sand; GRAVEL with varying percentages of sand and silt; Debris contained in matrix includes concrete, brick, and trace to substantial percentages of wood.
- Creosote Affected Zone: Creosote-like material in soil
- Wood Debris: Brown wood debris as sawdust, wood chippings, and timber (loose to very dense).
- Marine Sediment: Primarily SILT, with varying percentages of sand; SAND with varying percentages of silt; trace shell fragments contained in matrix (very soft to medium stiff).
- Alluvial Deposits: Primarily SAND with varying percentages of silt, gravel, and clay (very loose to dense).
- Glacial Deposits: Mixture of sand, gravels, silt, and clay (dense to very dense). Contact between alluvial deposits and glacial deposits corresponds to increased material density.

Notes

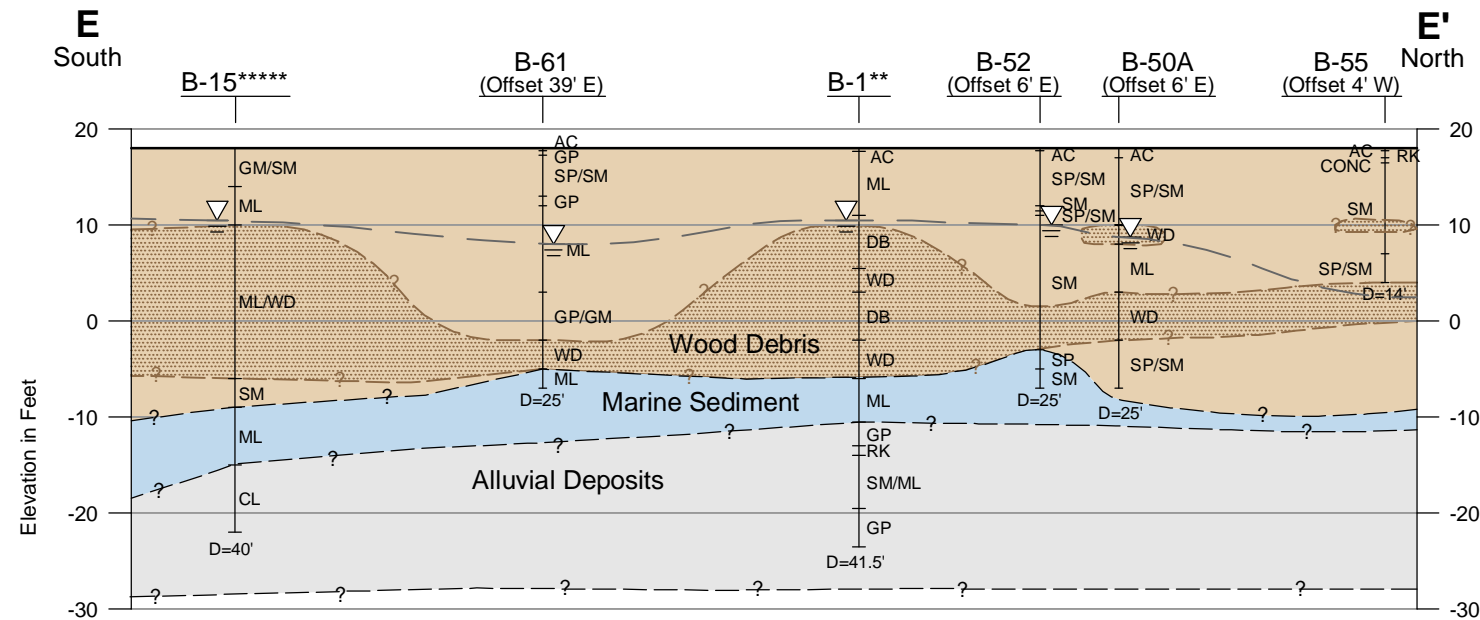
1. This cross section has been interpreted and generalized from project field data. Variations between this cross section and actual conditions may exist. The project boring logs and written report must be referenced for a proper understanding of the nature of the subsurface conditions. This cross section was prepared for environmental interpretation purposes and is not intended to be used for geotechnical planning purposes.
2. See report text for descriptions of geologic units.
3. For cross-section line location, see Figure 7.
4. Water level data from borings B-1, B-4, and B-2 (Terra Associates 2008) adjusted based on data from monitoring wells MW-1, MW-4, and MW-7.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Geologic Cross Sections C-C' & D-D'	Figure 13
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Legend

- * Shannon & Wilson 1993
- ** Geogroup NW 1996
- *** Geosciences Inc. 1998
- **** Terra Associates 2008
- ***** Metropolitan Engineers 1966

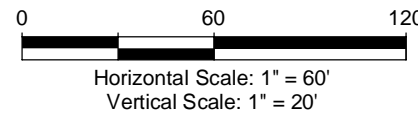
- B-1** — Project Exploration Designation
- (Offset 160' W) — Offset Distance in Feet and Direction
- Top of Exploration
- Groundwater Level (At time of drilling)
- GM — Unified Soils Classification Symbol (see Appendix A-1)
- Inferred Groundwater Table
- Inferred Geologic Contact
- Well Screen Interval (If a Monitoring Well was Constructed)
- Bottom of Exploration
- D=14' — Total Depth of Exploration

- Fill
Primarily SAND, with varying percentages of silt and gravel; SILT with varying percentages of sand; GRAVEL with varying percentages of sand and silt; Debris contained in matrix includes concrete, brick, and trace to substantial percentages of wood.
- Creosote Affected Zone
Creosote-like material in soil
- Wood Debris
Brown wood debris as sawdust, wood chippings, and timber (loose to very dense).
- Marine Sediment
Primarily SILT, with varying percentages of sand; SAND with varying percentages of silt; trace shell fragments contained in matrix (very soft to medium stiff).
- Alluvial Deposits
Primarily SAND with varying percentages of silt, gravel, and clay (very loose to dense).
- Glacial Deposits
Mixture of sand, gravels, silt, and clay (dense to very dense). Contact between alluvial deposits and glacial deposits corresponds to increased material density.

Notes

1. This cross section has been interpreted and generalized from project field data. Variations between this cross section and actual conditions may exist. The project boring logs and written report must be referenced for a proper understanding of the nature of the subsurface conditions. This cross section was prepared for environmental interpretation purposes and is not intended to be used for geotechnical planning purposes.
2. See report text for descriptions of geologic units.
3. For cross-section line location, see Figure 7.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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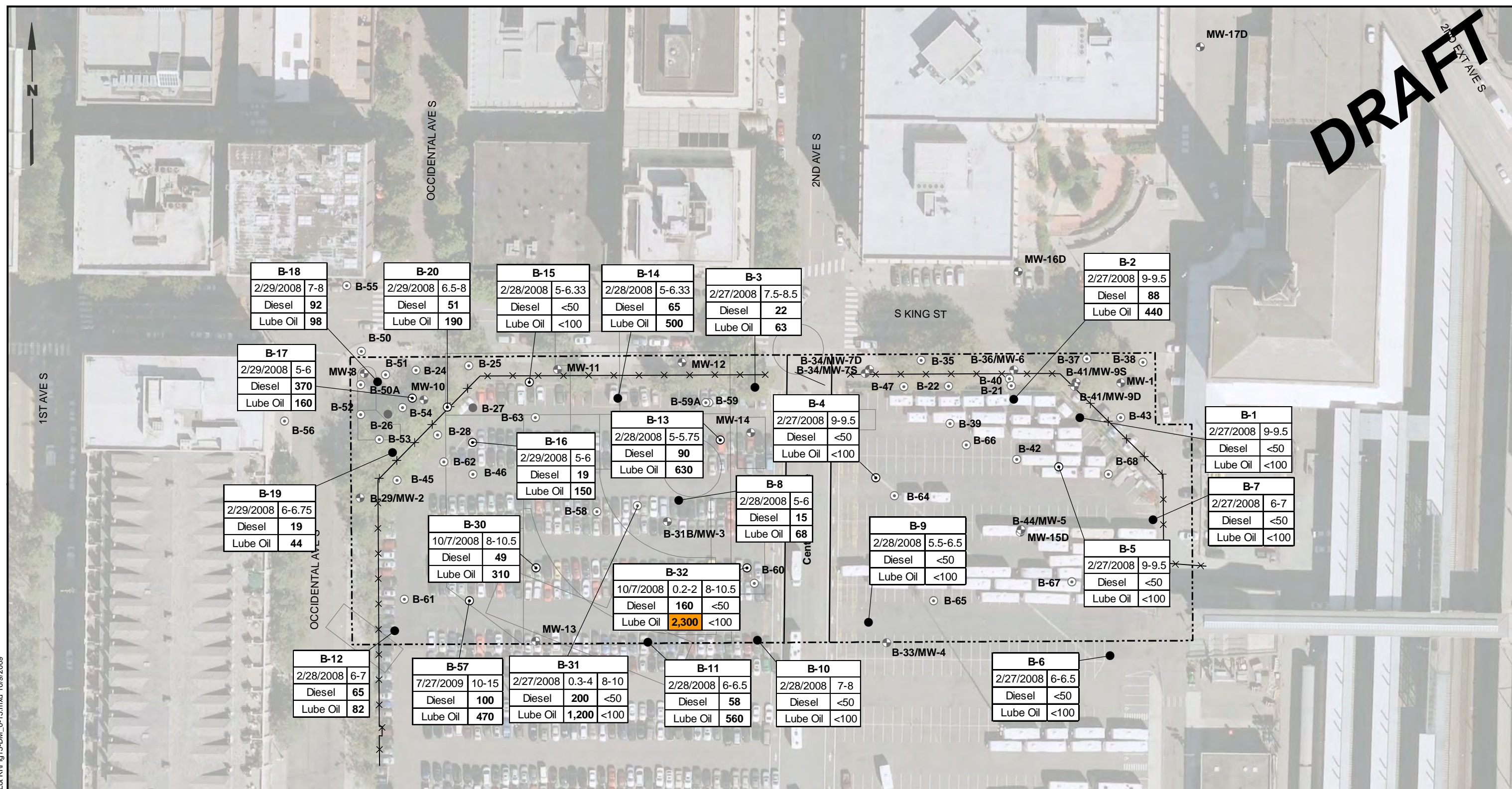
Data Source: Triad Boundary Survey, King County

North Lot Development
Seattle, Washington

**Geologic Cross Section
E-E'**

Figure
14

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Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ××× Fence Line
- - - Property Boundary

Location ID	
Date	Depth (ft)
Diesel	Result mg/kg
Lube Oil	Result mg/kg

Notes

1. Gray symbol indicates sample was not analyzed for this constituent at this depth.
2. Depths are in feet below ground surface.
3. Diesel soil cleanup level is 2,000 mg/kg, Motor Oil soil cleanup level is 2,000 mg/kg.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration
6. Refer to Figure 3 for Historical Property Features Legend.
7. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



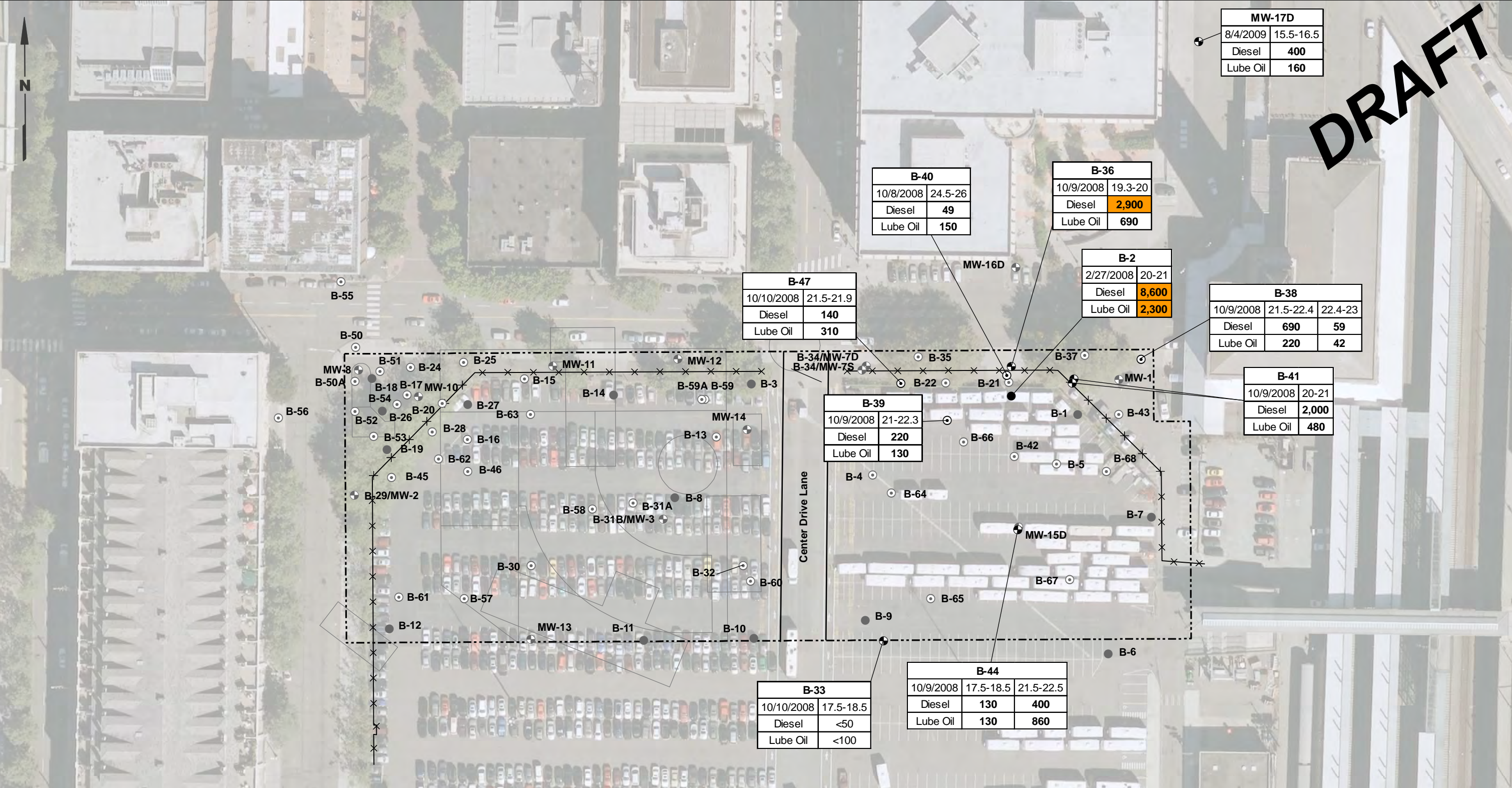
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Diesel and Motor Oil Detected in Soil 0-15 Feet Below Ground Surface	Figure 15
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MW-17D	
8/4/2009	15.5-16.5
Diesel	400
Lube Oil	160

B-40	
10/8/2008	24.5-26
Diesel	49
Lube Oil	150

B-36	
10/9/2008	19.3-20
Diesel	2,900
Lube Oil	690

B-2	
2/27/2008	20-21
Diesel	8,600
Lube Oil	2,300

B-38		
10/9/2008	21.5-22.4	22.4-23
Diesel	690	59
Lube Oil	220	42

B-47	
10/10/2008	21.5-21.9
Diesel	140
Lube Oil	310

B-41	
10/9/2008	20-21
Diesel	2,000
Lube Oil	480

B-39	
10/9/2008	21-22.3
Diesel	220
Lube Oil	130

B-33	
10/10/2008	17.5-18.5
Diesel	<50
Lube Oil	<100

B-44		
10/9/2008	17.5-18.5	21.5-22.5
Diesel	130	400
Lube Oil	130	860

Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ××× Fence Line
- - - Property Boundary

Location ID	
Date	Depth (ft)
Diesel	Result mg/kg
Lube Oil	Result mg/kg

Notes

1. Gray symbol indicates sample was not analyzed for this constituent at this depth.
2. Depths are in feet below ground surface.
3. Diesel soil cleanup level is 2,000 mg/kg, Motor Oil soil cleanup level is 2,000 mg/kg.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration
6. Refer to Figure 3 for Historical Property Features Legend.
7. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



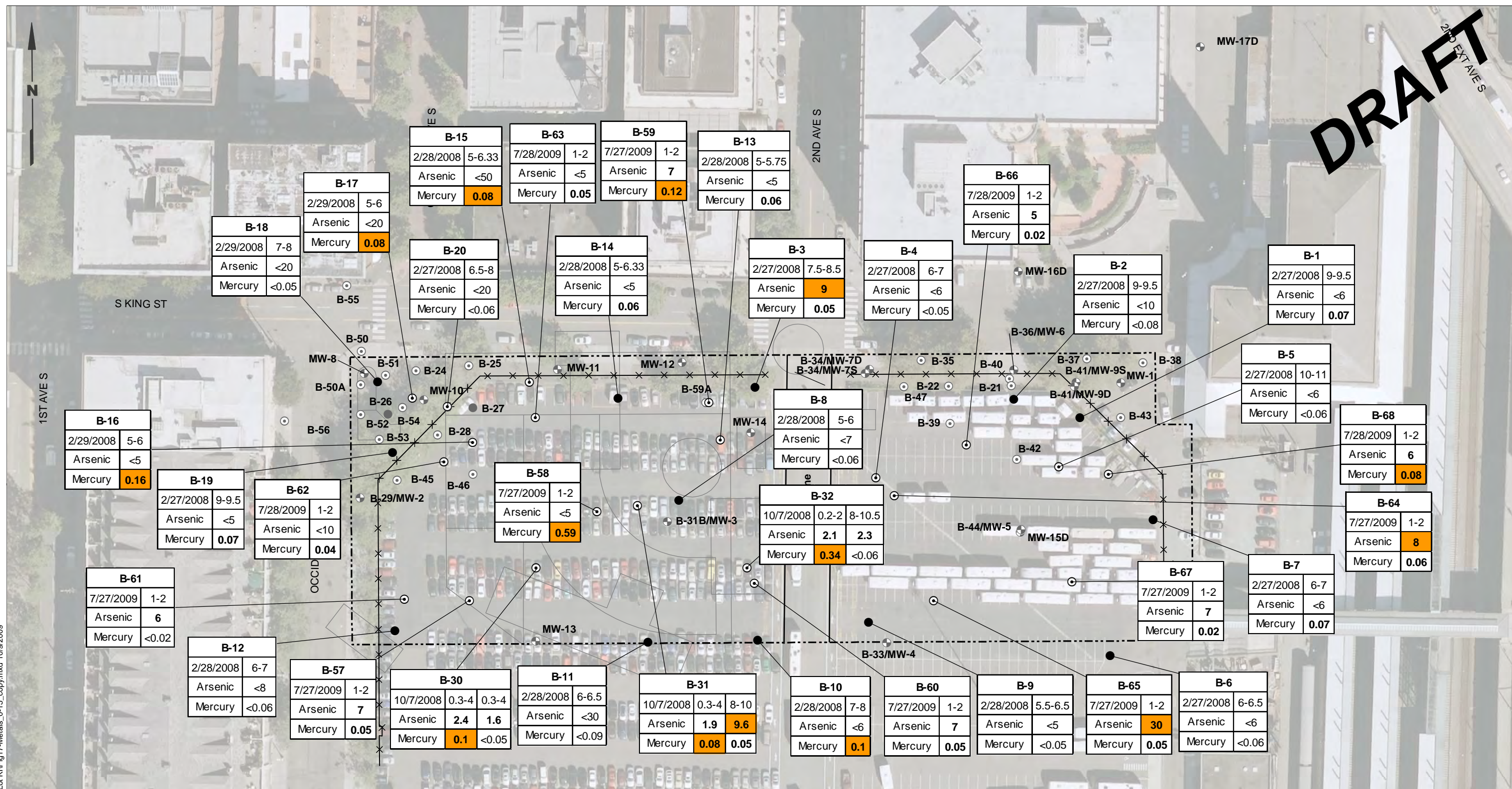
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Diesel and Motor Oil Detected in Soil 15+ Feet Below Ground Surface	Figure 16
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Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ✕✕ Fence Line
- Property Boundary

Location ID	
Date	Depth (ft)
Arsenic	Result mg/kg
Mercury	Result mg/kg

Notes

1. Gray symbol indicates sample was not analyzed for this constituent at this depth.
2. Depths are in feet below ground surface.
3. Soil cleanup levels for metals are as follows: Arsenic is 7 mg/kg, Mercury is 0.07 mg/kg.
4. NA = Not Analyzed
5. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
6. <1.00 = The analyte was not detected at the reported concentration
7. Refer to Figure 3 for historical property features legend.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



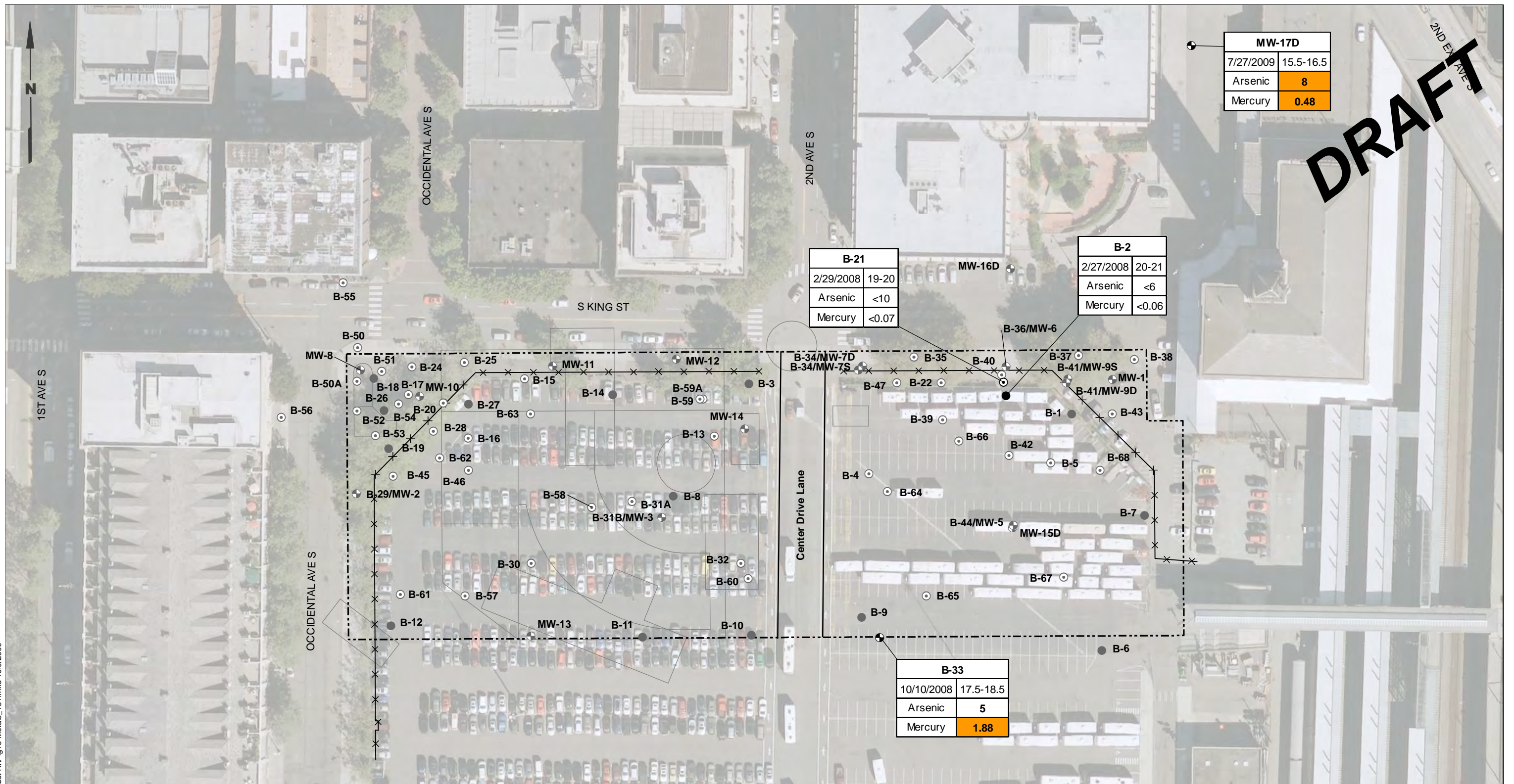
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Arsenic, and Mercury Detected in Soil 0-15 Feet Below Ground Surface	Figure 17
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Legend

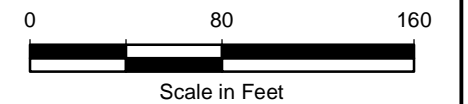
- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ××× Fence Line
- Property Boundary

Location ID	
Date	Depth (ft)
Arsenic	Result mg/kg
Mercury	Result mg/kg

Notes

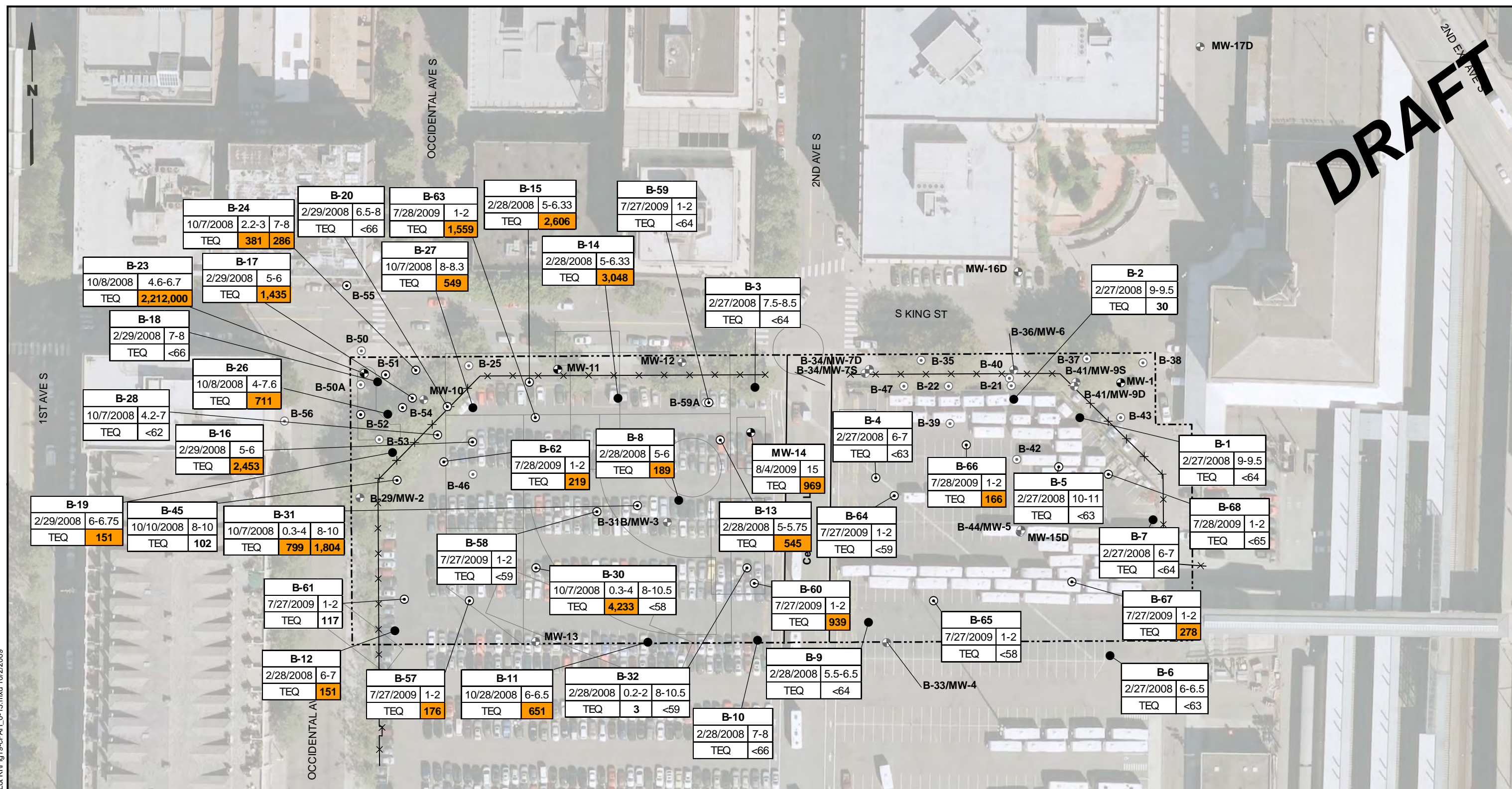
1. Gray symbol indicates sample was not analyzed for this constituent at this depth.
2. Depths are in feet below ground surface.
3. Metal soil cleanup levels are as follows: Arsenic = 7 mg/kg, Mercury = 0.07 mg/kg
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. NA = Not Analyzed
6. <1.00 = The analyte was not detected at the reported concentration
7. Refer to Figure 3 for Historical Property Features Legend.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Triad Boundary Survey, King County



North Lot Development Seattle, Washington	Arsenic, and Mercury Detected in Soil 15+ Feet Below Ground Surface	Figure 18
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Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ×× Fence Line
- - - Property Boundary

Location ID	
Date	Depth (ft)
TEQ	Result µg/kg

Notes

1. Gray symbol indicates sample was not analyzed for this constituent at this depth.
2. Depths are in feet below ground surface.
3. Soil cPAH TEQ cleanup level is 140 µg/kg.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration.
6. Refer to Figure 3 for Historical Property Features Legend.
7. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



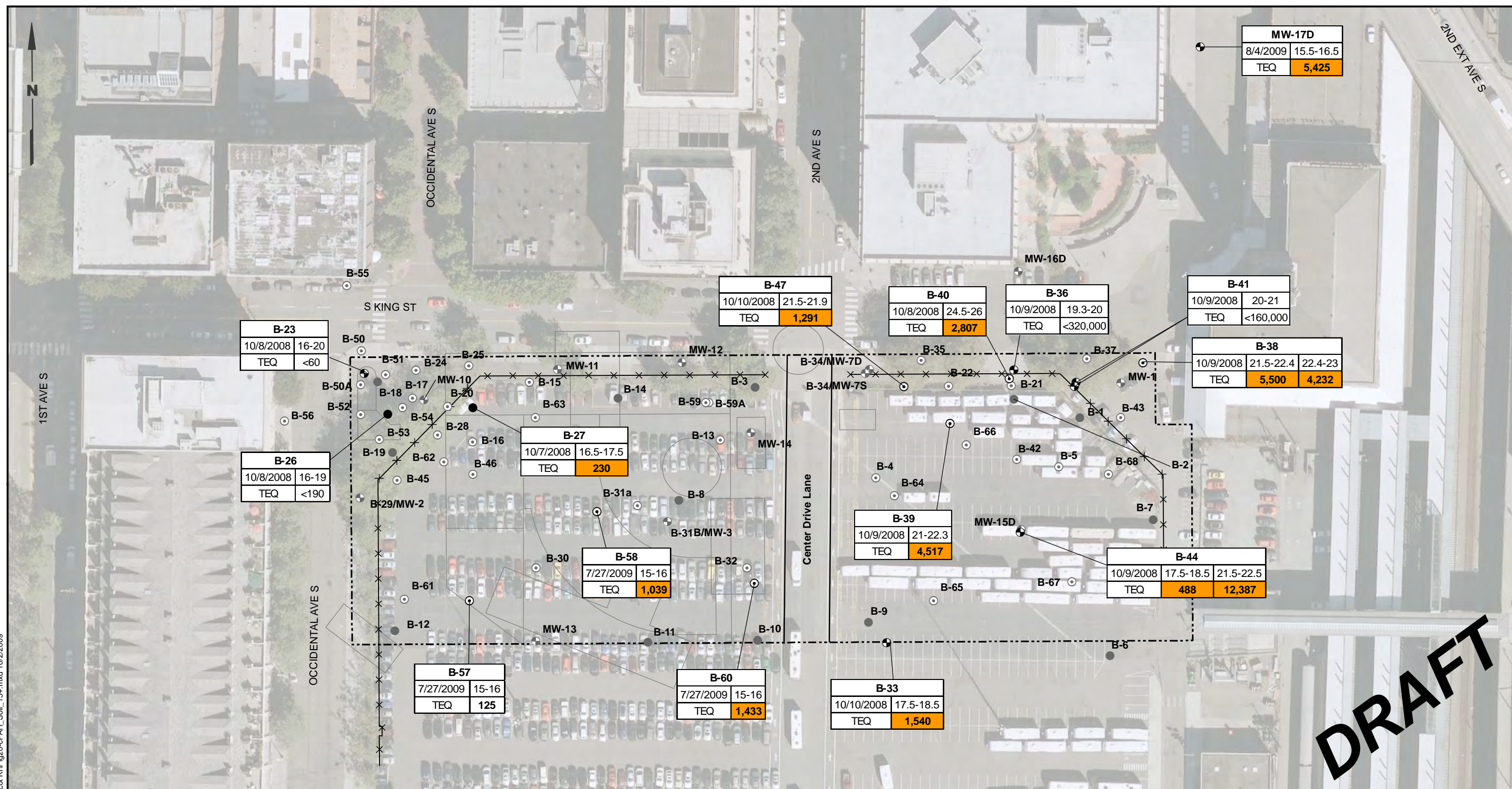
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	cPAHs (TEQ) Detected in Soil 0-15 Feet Below Ground Surface	Figure 19
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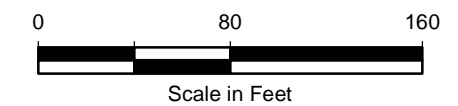
Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ✕✕ Fence Line
- Property Boundary

Location ID	
Date	Depth (ft)
TEQ	Result µg/kg

Notes

1. Gray symbol indicates sample was not analyzed for this constituent at this depth.
2. Depths are in feet below ground surface.
3. Soil cPAH TEQ is 140 µg/kg.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration
6. Refer to Figure 3 for Historical Property Features Legend.
7. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

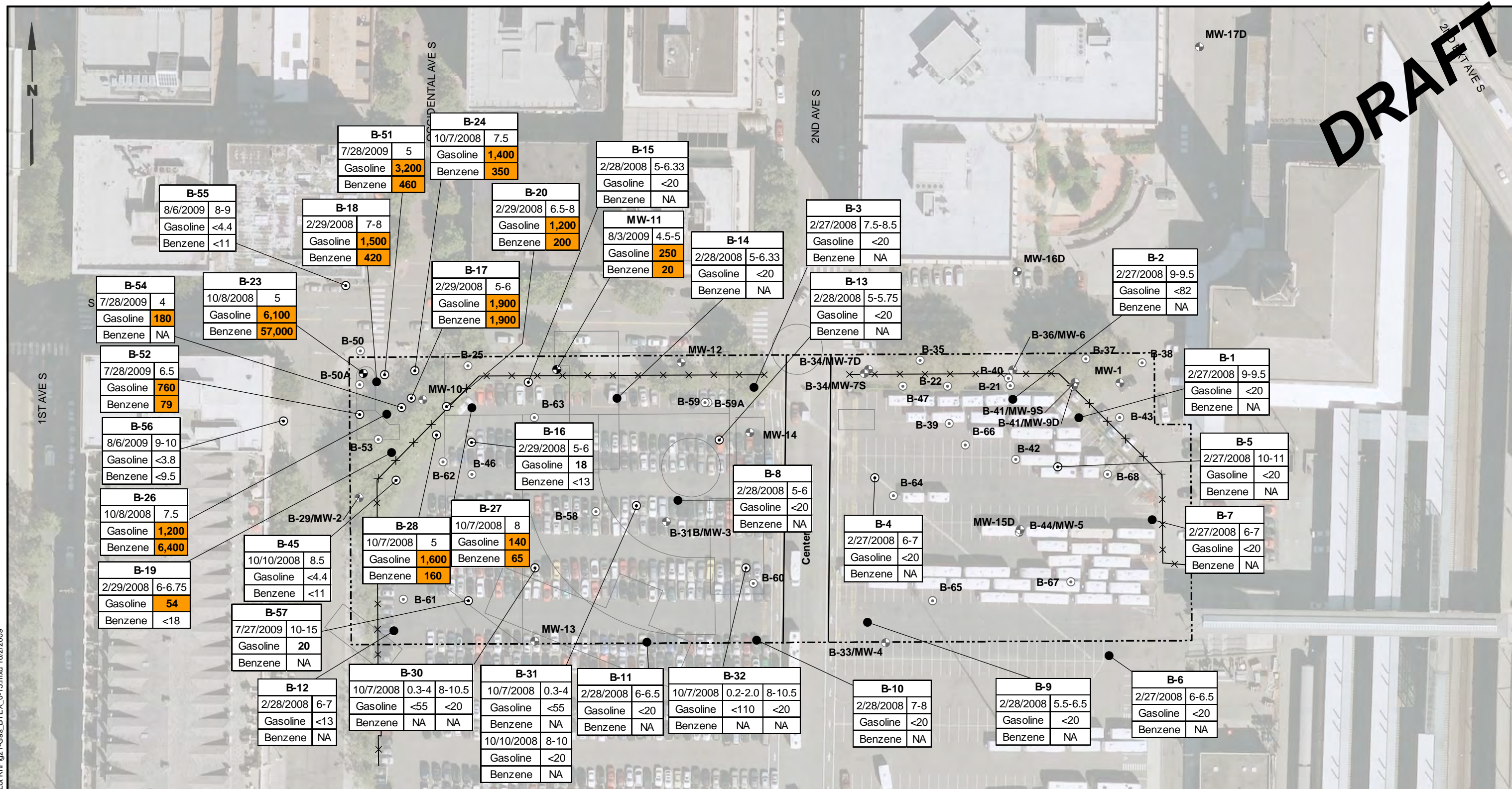


Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	cPAHs (TEQ) Detected in Soil 15+ Feet Below Ground Surface	Figure 20
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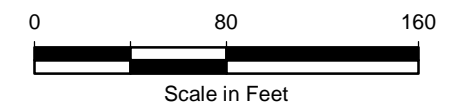
Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ✕✕ Fence Line
- Property Boundary

Location ID	
Date	Depth (ft)
Gasoline	Result mg/kg
Benzene	Result µg/kg

Notes

1. Gray symbol indicates sample was not analyzed for the constituent at this depth.
2. Depths are in feet below ground surface.
3. Gasoline soil cleanup level is 30 mg/kg, Benzene soil cleanup level is 4.5 µg/kg.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration.
6. Refer to Figure 3 for Historical Property Features Legend.
7. NA = Not Analyzed.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

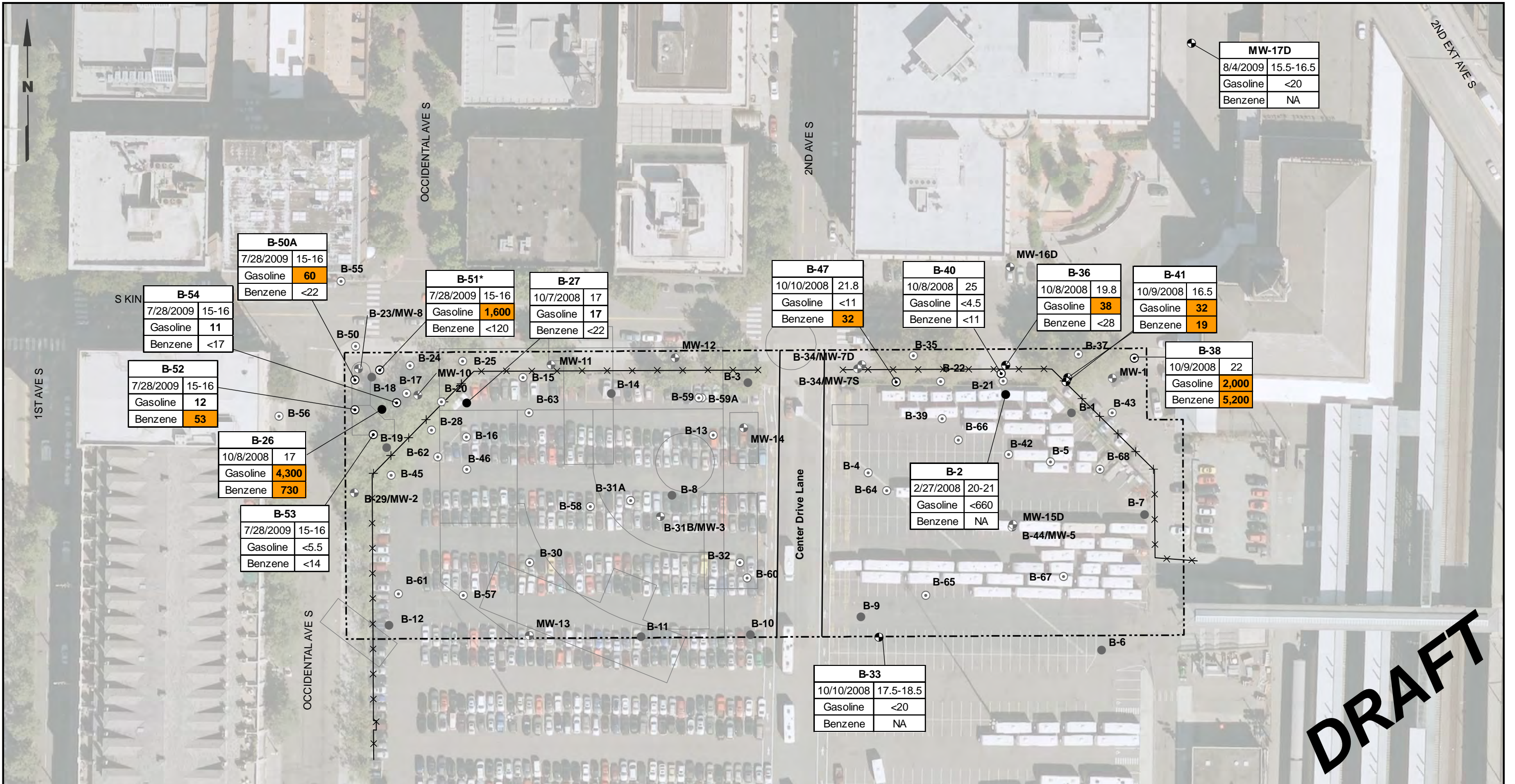


Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Gasoline and Benzene Detected in Soil 0-15 Feet Below Ground Surface	Figure 21
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Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- ✕✕ Fence Line
- - - Property Boundary

Location ID	
Date	Depth (ft)
Gasoline	Result mg/kg
Benzene	Result µg/kg

Notes

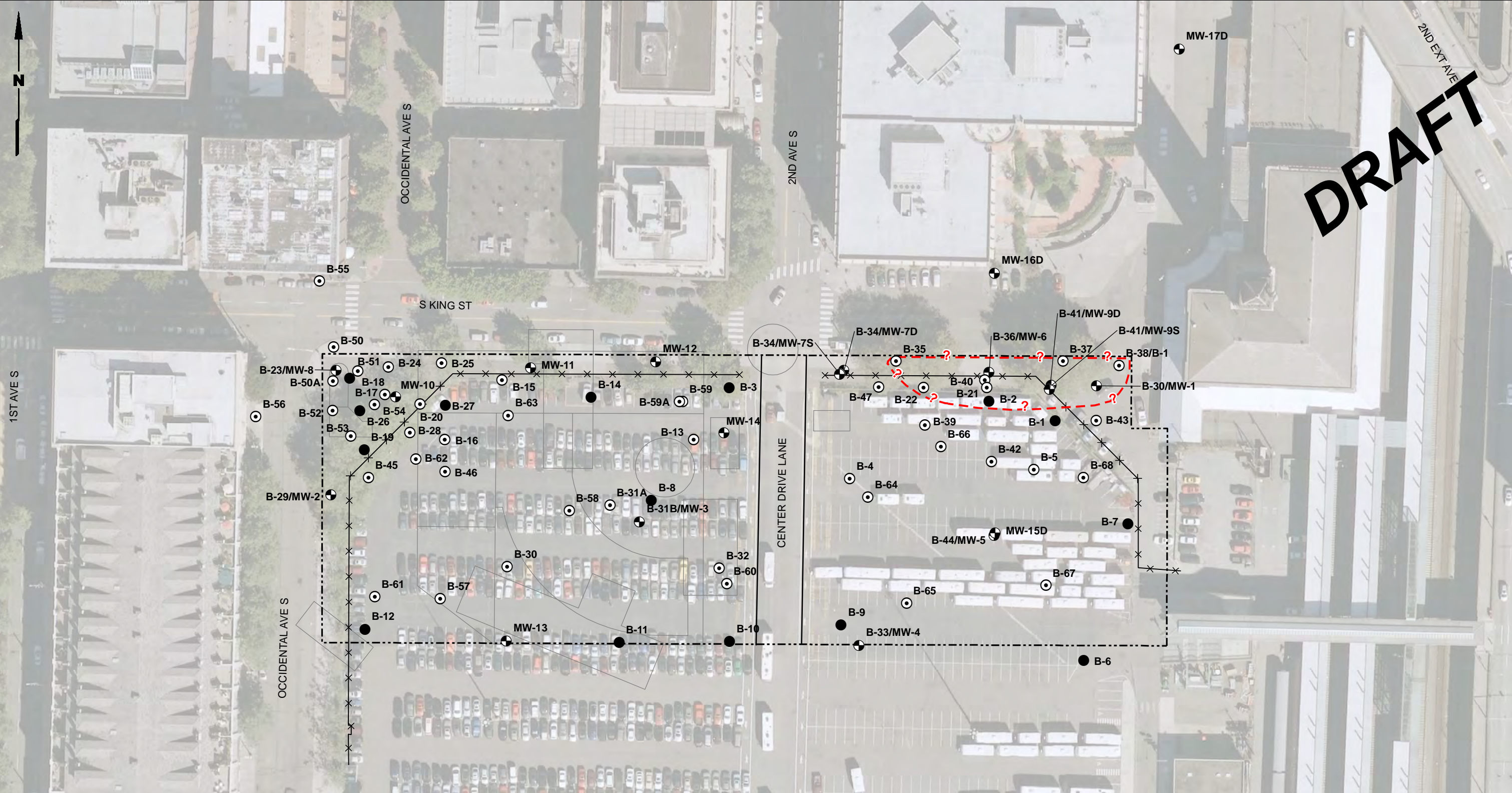
1. Gray symbol indicates sample was not analyzed for this constituent at this depth.
2. Depths are in feet below ground surface.
3. Gasoline soil cleanup level is 30 mg/kg, Benzene soil cleanup level is 4.5 µg/kg.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration.
6. Refer to Figure 3 for Historical Property Features Legend.
7. NA = Not Analyzed.
- * Benzene reporting limit elevated at B-51 due to sample conditions. Toluene was detected at B-51 at 700 µg/kg.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



Data Source: Triad Boundary Survey, King County

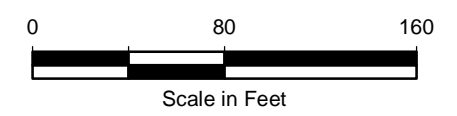
North Lot Development Seattle, Washington	Gasoline and Benzene Detected in Soil 15+ Feet Below Ground Surface	Figure 22
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Legend

- - - ? Approximate Extent of Creosote-Like Material
- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- Historical Building Outlines
- × × Fence Line
- - - Property Boundary



Note

1. Refer to Figure 3 for Historical Property Features Legend.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

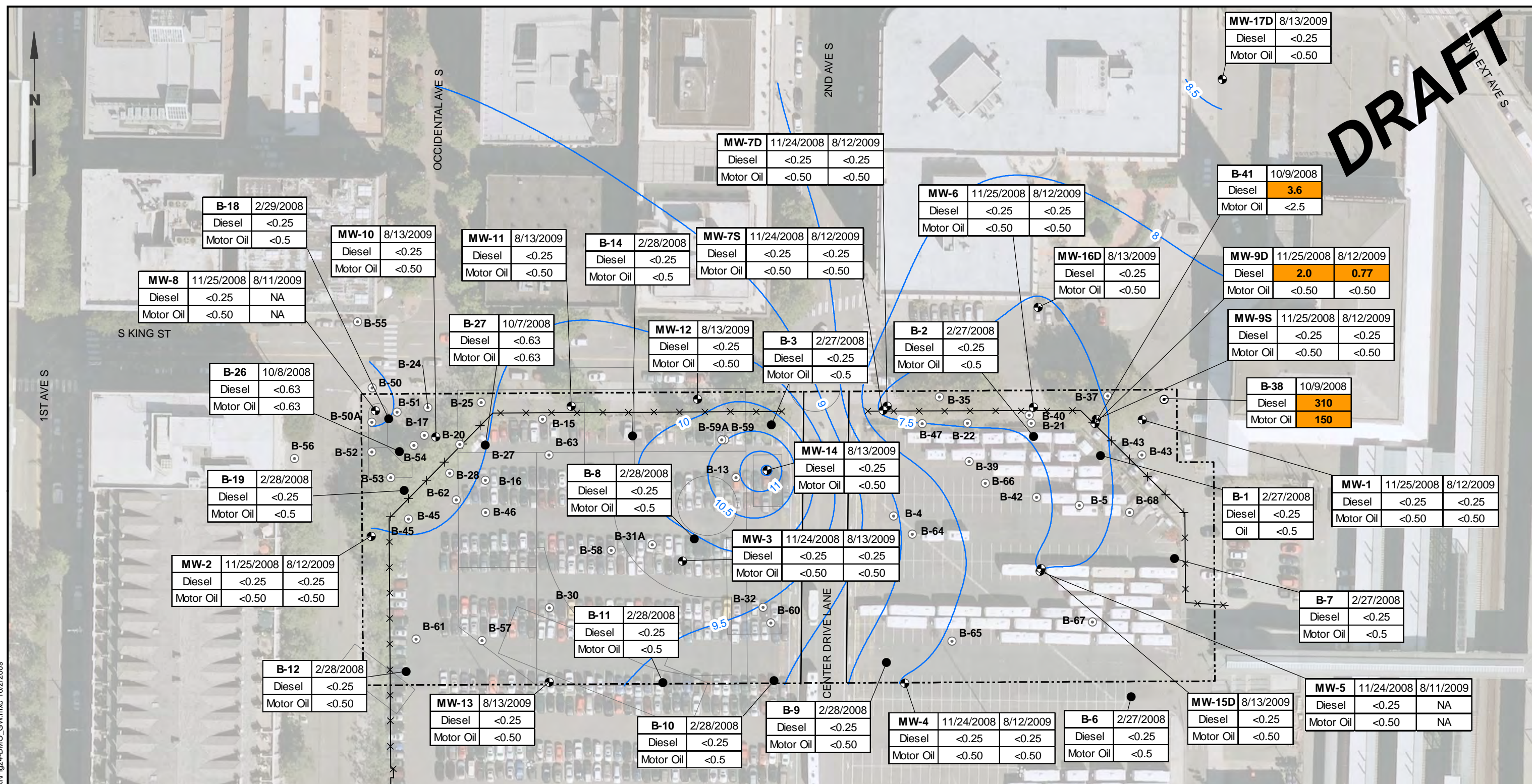
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Approximate Extent of Observed Creosote-Like Material	Figure 23
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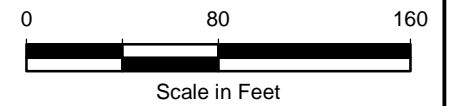
Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- 9.5— Groundwater Elevation Contour (ft) August 2009
- Historical Building Outlines
- ✕✕✕ Fence Line
- Property Boundary

Location ID	Date
Diesel	Result mg/L
Motor Oil	Result mg/L

Notes

1. Gray symbol indicates groundwater was not analyzed for this constituent at this location.
2. Depths are in feet below ground surface.
3. Diesel groundwater cleanup level is 0.5 mg/L, Motor Oil groundwater cleanup level is 0.5 mg/L.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration.
6. Refer to Figure 3 for Historical Property Features Legend.
7. NA = Not Analyzed.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



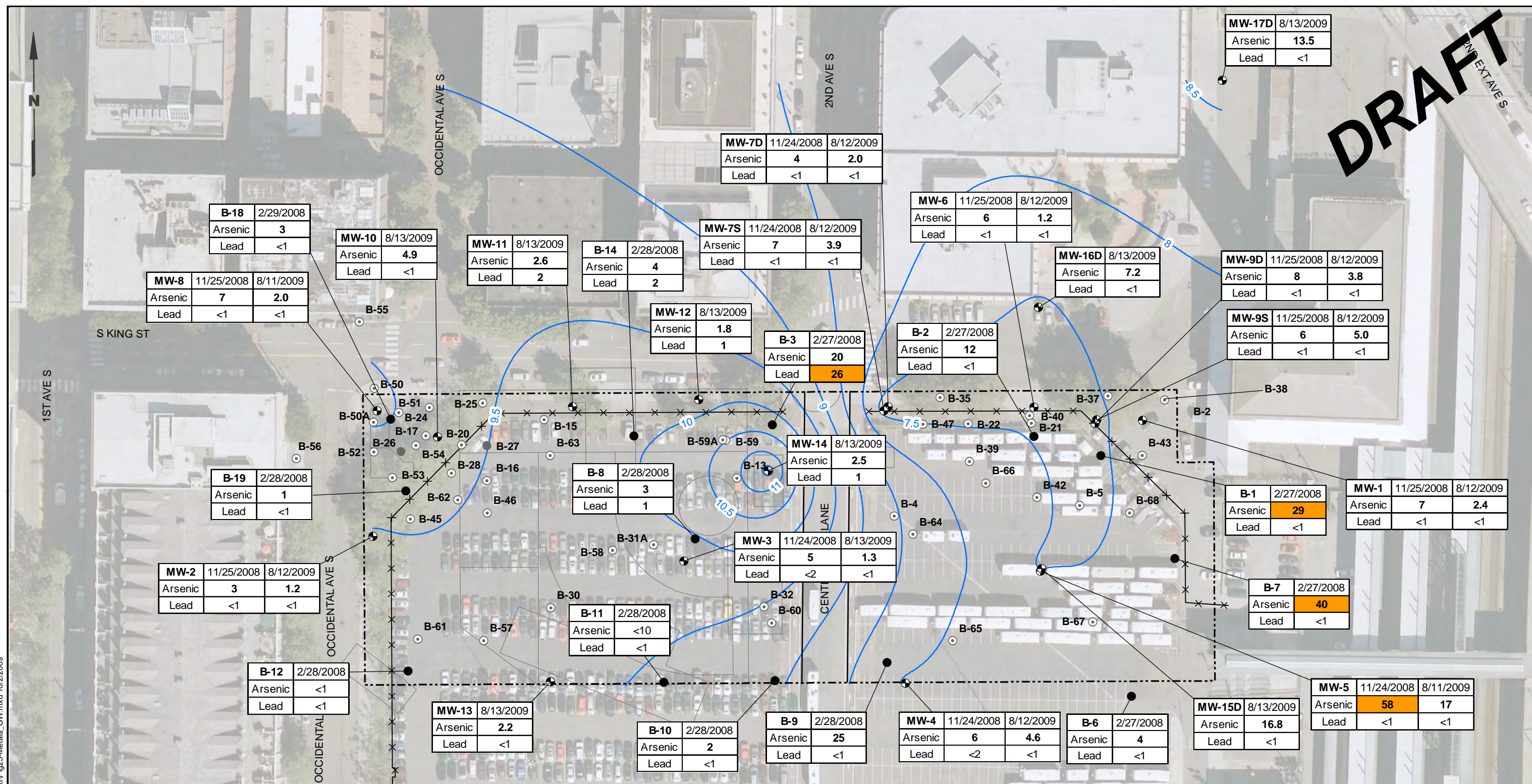
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Diesel and Motor Oil Detected in Groundwater	Figure 24
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Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- 9.5— Groundwater Elevation Contour (ft) August 2009
- Historical Building Outlines
- ××× Fence Line
- Property Boundary

Location ID	Date
Arsenic	Result µg/L
Lead	Result µg/L

Notes

1. Gray symbol indicates groundwater was not analyzed for this constituent at this location.
2. Depths are in feet below ground surface.
3. Dissolved Arsenic groundwater cleanup level is 25 µg/L, dissolved Lead cleanup level is 15 µg/L.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration.
6. Refer to Figure 3 for Historical Property Features Legend.
7. NA = Not Analyzed.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



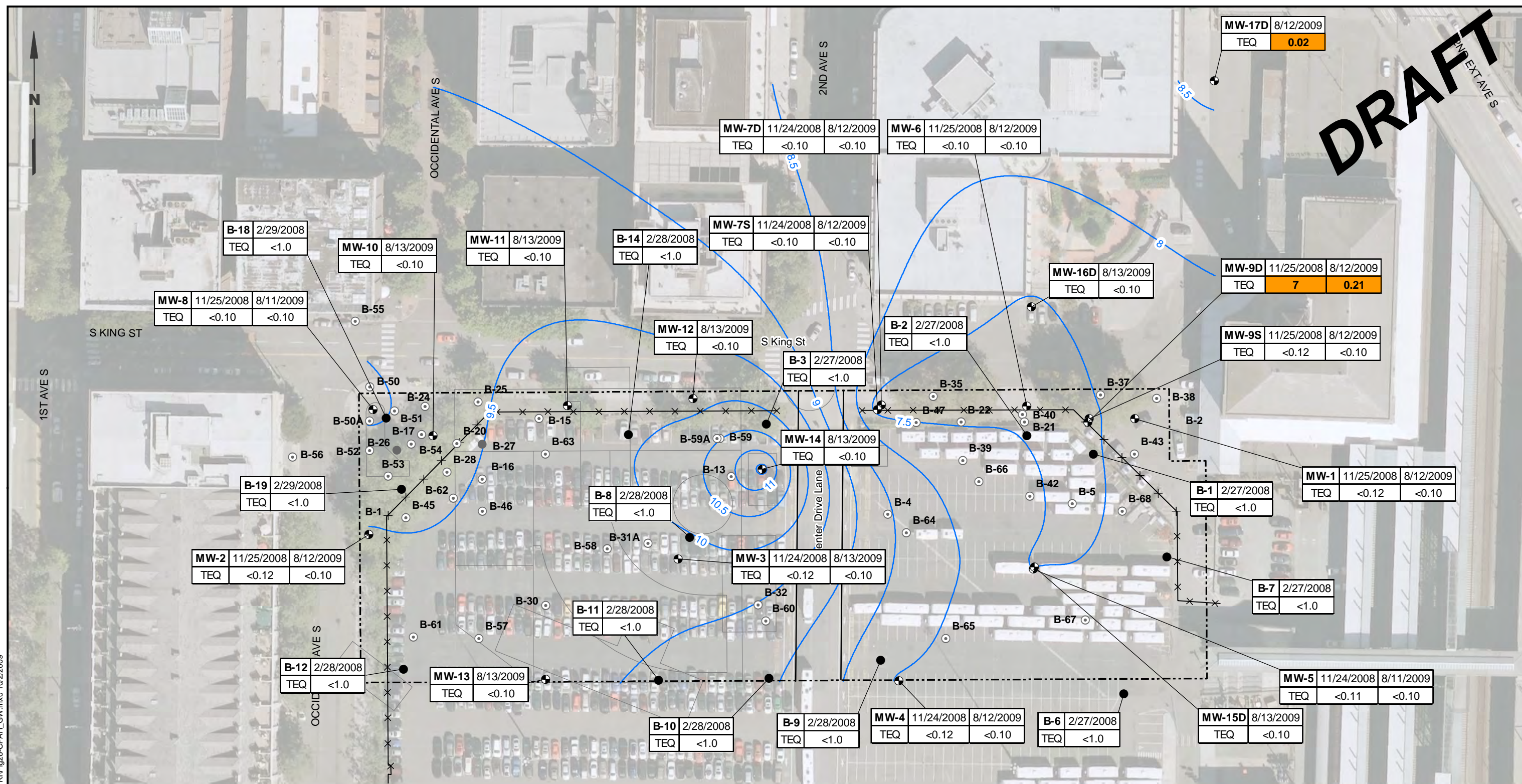
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	Arsenic and Lead Detected in Groundwater	Figure 25
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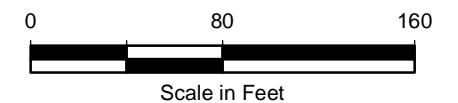
Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- 9.5— Groundwater Elevation Contour (ft) August 2009
- Historical Building Outlines
- ××× Fence Line
- Property Boundary

Location ID	Date
TEQ for cPAHs	Result µg/L

Notes

1. Gray symbol indicates groundwater was not analyzed for this constituent at this location.
2. Depths are in feet below ground surface.
3. Groundwater cPAH TEQ cleanup level is 0.012 µg/L.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration.
6. Refer to Figure 3 for Historical Property Features Legend.
7. NA = Not Analyzed.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



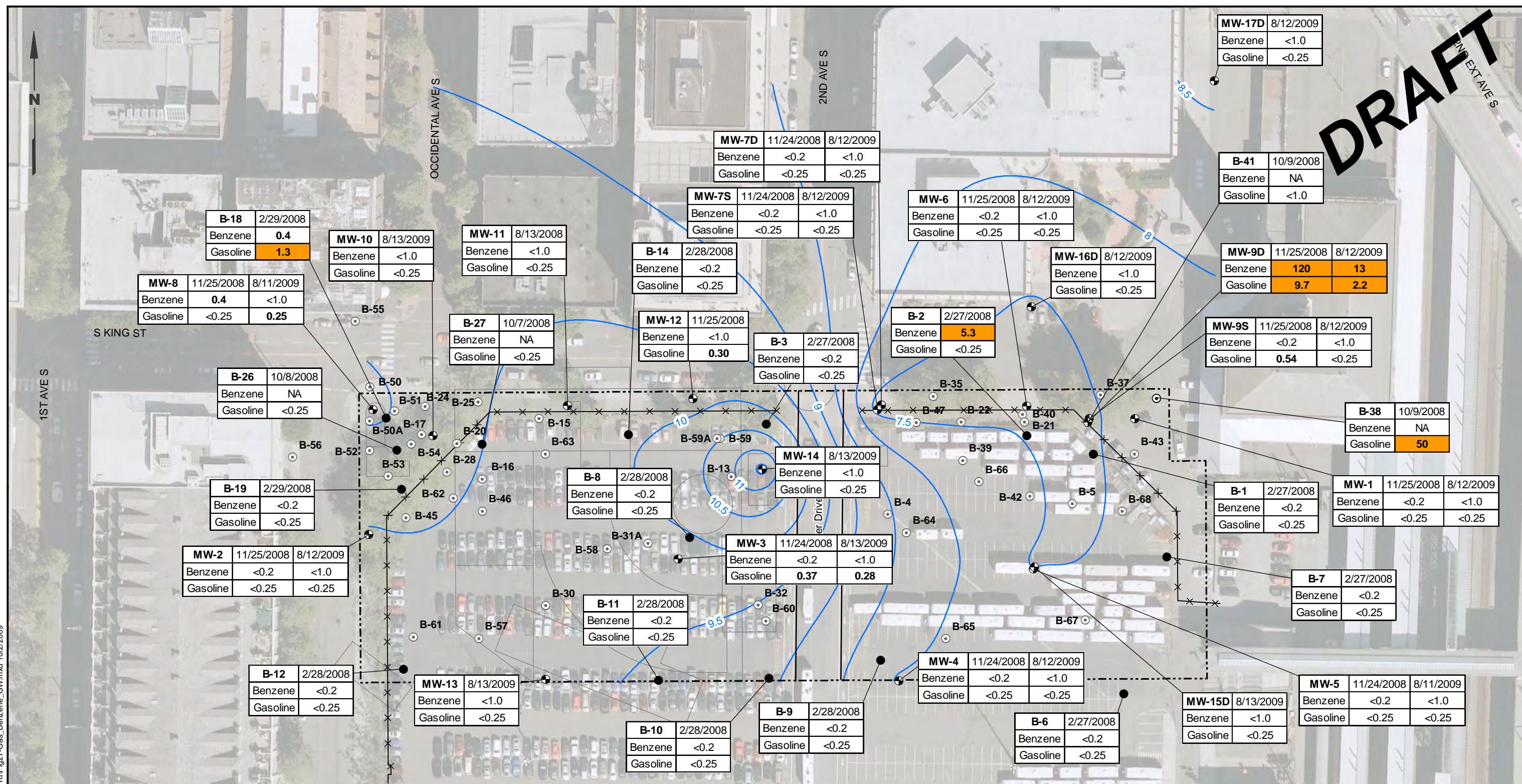
Data Source: Triad Boundary Survey, King County

North Lot Development Seattle, Washington	cPAHs (TEQ) Detected in Groundwater	Figure 26
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Y:\Projects\1014001\Mapdocs\North Lot RUI\Fig26-CPAH_GW.mxd 10/2/2009



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Y:\Projects\1014001\Mapdocs\North Lot R\Fig27-Gas-Benzene_GW.mxd 10/2/2009

Legend

- Direct-Push Soil Boring and Monitoring Well Location
- Direct-Push Soil Boring Location
- Direct-Push Soil and Groundwater Sample Location
- 9.5— Groundwater Elevation Contour (ft) August 2009
- Historical Building Outlines
- ××× Fence Line
- Property Boundary

Location ID	Date
Benzene	Result µg/L
Gasoline	Result mg/L

Notes

1. Gray symbol indicates groundwater was not analyzed for this constituent at this location.
2. Depths are in feet below ground surface.
3. Gasoline groundwater cleanup level is 0.8 mg/L, Benzene groundwater cleanup level is 0.8 µg/L.
4. **Bold** values indicate compound was detected at the reported concentration. Orange highlight indicates compound exceeds cleanup level.
5. <1.00 = The analyte was not detected at the reported concentration.
6. Refer to Figure 3 for Historical Property Features Legend.
7. NA = Not Analyzed.
8. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 80 160

Scale in Feet

Data Source: Triad Boundary Survey, King County

North Lot Development
Seattle, Washington

**Gasoline and Benzene
Detected in Groundwater**

Figure
27

**TABLE 1
SUMMARY OF SAMPLES AND ANALYSES
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

		Analysis and Depth of Sample in Feet																	
Location	Maximum Depth (ft BGS)	Soil										Water (a)							
		HCID	TPH-G	TPH-Dx	PAHs	Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	BTEX	PCBs	SVOCs	Sulfur	Dioxin/Furans	HCID	TPH-G	TPH-Dx	PAHs	Dissolved Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	VOCs	BTEX	SVOCs
		NWTPH-HCID	NWTPH-Gx	NWTPH-DxSG	SW8270D/SW8270DSIM	6000/7000 Series	SW8021B Mod	SW8082	SW8270D		SW8290	NWTPH-HCID	NWTPH-Gx	NWTPH-DxSG	SW8270D/SW8270DSIM	200.8/6010B/7470A	SW8260B	SW8021B Mod	
Phase II ESA (February 2008)																			
B-1	16	9-9.5	9-9.5		9-9.5	9-9.5								X	X	X	X	X	
B-2	21	9-9.5	9-9.5	9-9.5	9-9.5	9-9.5		20-21						X	X	X	X	X	
B-3	20	7.5-8.5	7.5-8.5	7.5-8.5	7.5-8.5	7.5-8.5								X	X	X	X	X	
B-4	24	6-7			6-7	6-7													
B-5	20	10-11			10-11	10-11													
B-6	16	6-6.5			6-6.5	6-6.5								X	X	X	X	X	
B-7	20	6-7			6-7	6-7								X	X	X	X	X	
B-8	13.5	5-6		5-6	5-6	5-6								X	X	X	X	X	
B-9	24	5.5-6.5			5.5-6.5	5.5-6.5								X	X	X	X	X	
B-10	12	7-8			7-8	7-8								X	X	X	X	X	
B-11	7	6-6.5		6-6.5	6-6.5	6-6.5								X	X	X	X	X	
B-12	12	6-7	6-7	6-7	6-7	6-7								X	X	X	X	X	
B-13	8	5-5.75		5-5.75	5-5.75	5-5.75													
B-14	7	5-6.33		5-6.33	5-6.33	5-6.33								X	X	X	X	X	
B-15	8	5-6.33			5-6.33	5-6.33													
B-16	16	5-6	5-6	5-6	5-6	5-6	5-6												
B-17	16	5-6	5-6	5-6	5-6	5-6	5-6												
B-18	16	7-8	7-8	7-8	7-8	7-8	7-8							X	X	X	X	X	
B-19	16	6-6.75	6-6.75	6-6.75	6-6.75	6-6.75	6-6.75							X	X	X	X	X	
B-20	11.8	6.5-8	6.5-8	6.5-8	6.5-8	6.5-8	6.5-8												
B-21	24				20-23	19-20 & 20-23		20-23											
B-22	24																		
RI Field Investigation (October and November 2008)																			
B-23	21		5		4.6-6.7 & 16-20		5												
B-24	22		7.5		2.2-3 & 7-8		7.5	7-8											
B-25	24																		
B-26	22.8		7.5 & 17		4-7.6 & 16-19		7.5 & 17							X					
B-27	24		8 & 17		8-8.3 & 16.5-17.5		8 & 17	16.5-17.5						X					
B-28	24		5		4.2-7		5												
B-29	16																		
B-30	12	0.3-4 & 8-10.5		8-10.5	0.3-4 & 8-10.5	0.3-4 & 8-10.5		8-10.5											
B-31 (a)	28	0.3-4 & 8-10		0.3-4	0.3-4 & 8-10	0.3-4 & 8-10													
B-32	12	0.2-2 & 8-10.5		0.2-2	0.2-2 & 8-10.5	0.2-2 & 8-10.5		8-10.5											
B-33	20	17.5-18.5			17.5-18.5	17.5-18.5													
B-34	26																		
B-35	24																		
B-36	20		19.8	19.3-20	19.3-20		19.8												
B-37	24																		
B-38	24		22	21.5-22.4 & 22.4-23	21.5-22.4 & 22.4-23		22							X		X			
B-39	24			21-22.3	21-22.3														
B-40	32		25	24.5-26	24.5-26		25												
B-41	24		16.5	20-21	20-21		16.5		20-21	20-21	20-21			X		X			
B-42	20																		
B-43	28																		
B-44	24			17.5-18.5 & 21.5-22.5	17.5-18.5 & 21.5-22.5														

**TABLE 1
SUMMARY OF SAMPLES AND ANALYSES
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Location	Analysis and Depth of Sample in Feet																	
	Maximum Depth (ft BGS)	Soil										Water (a)						
		HCID	TPH-G	TPH-Dx	PAHs	Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	BTEX	PCBs	SVOCs	Sulfur	Dioxin/ Furans	HCID	TPH-G	TPH-Dx	PAHs	Dissolved Metals (As, Cd, Cr, Cu, Pb, Hg, Zn)	VOCs	BTEX
B-45	24		8.5		8-10		8.5											
B-46	24																	
B-47	24		21.8	21.5-21.9	21.5-21.9		21.8											
MW-1												X	X	X	X	X		
MW-2												X	X	X	X	X		
MW-3												X	X	X	X	X		
MW-4												X	X	X	X	X		
MW-5												X	X	X	X	X		
MW-6												X	X	X	X	X		
MW-7S												X	X	X	X	X		
MW-7D												X	X	X	X	X		
MW-8												X	X	X	X	X		
MW-9S												X	X	X	X	X		
MW-9D												X	X	X	X	X		
Supplemental Investigation (July and August 2009)																		
B-50	6																	X
B-50A	25		15-16				15-16											X
B-51	25		5 & 15-16				5 & 15-16											X
B-52	25		6.5 & 15-16				6.5 & 15-16											X
B-53	21		15-16				15-16											X
B-54	25		4				4											X
B-55	14		8-9				8-9											X
B-56	15		9-10				9-10											X
B-57	25	10-15	10-15	10-15	15-16	1-2		1-2						X				X
B-58	19				15-16	1-2		1-2						X				X
B-59	20					1-2		1-2										X
B-60	25				15-16	1-2		1-2						X				X
B-61	25					1-2		1-2										X
B-62	25					1-2		1-2		1-2								X
B-63	9					1-2		1-2										X
B-63A	10																	X
B-64	25					1-2		1-2										X
B-65	25					1-2		1-2		1-2								X
B-66	25					1-2		1-2										X
B-67	25					1-2		1-2										X
B-68	15					1-2		1-2										X
MW-10	15.4																	
MW-11	15.4		4.5-5				4.5-5					X	X	X	X		X	
MW-12	15.4											X	X	X	X			
MW-13	15.4											X	X	X	X			
MW-14	18				15							X	X	X	X			
MW-15D	25.5											X	X	X	X			
MW-16D	24.5											X	X	X	X			
MW-17D	21.5	15.5-16.5		15.5-16.5	15.5-16.5	15.5-16.5		15.5-16.5				X	X	X	X			X

TABLE 1
SUMMARY OF SAMPLES AND ANALYSES
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

(a) Groundwater grab samples collected from temporary well (direct-push boring).

(b) Samples collected from boring B-31A; no samples were collected from boring B-31B (see Table 1).

BGS = Below Ground Surface

HCID = Hydrocarbon Identification

TPH-G = Gasoline-range Total Petroleum Hydrocarbons

TPH-Dx = Diesel-range (Extended) Total Petroleum Hydrocarbons

PAH = Polycyclic Aromatic Hydrocarbons

Metals = Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, and Zinc

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

PCBs = Polychlorinated Biphenyls

VOCs = Volatile Organic Compounds

SVOCs = Semivolatile Organic Compounds

MW = Monitoring Well

TABLE 2
SUMMARY OF SUBSURFACE CONDITIONS ENCOUNTERED DURING DRILLING
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

Boring ID (alternate IDs)	Boring Depth (ft)	Native Soil Encountered (ft)	Native Material at Contact	Creosote-Like Material Encountered? (depth in ft)	Highest PID Reading in ppm (depth in ft)	Notes/Observations
B-01	16	Not Encountered		No	0	
B-02	21	Not Encountered		Yes (18-21)	57.5 (20.5)	
B-03	20	Not Encountered		No	0	
B-04	24	18.5 - 24	SILT	No	0	
B-05	20	Not Encountered		No	0	
B-06	16	Not Encountered		No	0	
B-07	20	18 - 20	SILT	No	0	
B-08	13.5	Not Encountered		No	0	
B-09	24	19 - 24	SILT	No	0	
B-10	12	Not Encountered		No	0	
B-11	7	Not Encountered		No	0	
B-12	12	Not Encountered		No	11.2 (4.5)	
B-13	8	Not Encountered		No	0	
B-14	7	Not Encountered		No	0	
B-15	8	Not Encountered		No	0	
B-16	16	Not Encountered		No	6.2 (4.5)	
B-17	16	Not Encountered		No	104 (4.5)	
B-18	16	Not Encountered		No	99.8 (4.5)	
B-19	16	Not Encountered		No	5.1 (4.5)	
B-20	11.75	Not Encountered		No	63.7 (4.5)	
B-21	24	23 - 24	SILT	Yes (20-23)	N/A	
B-22	24	22.5 - 24	SILT	Yes (20-22.5)	N/A	
B-23 (MW-8)	21	Not Encountered		No	45.6 (5)	
B-24	22	Not Encountered		No	106 (7.5)	
B-25	24	Not Encountered		No	4.2 (8)	
B-26	22.75	19.5 - 22.75	Silty, fine to medium SAND	No	106 (6)	
B-27	24	Not Encountered		No	23.4 (8)	
B-28	24	22.5 - 24	SAND with silt, gravel & shells	No	101 (5.5)	
B-29 (MW-2)	16	Not Encountered		No	0	
B-30	12	Not Encountered		No	N/A	
B-31A	6	Not Encountered		No	0	

TABLE 2
SUMMARY OF SUBSURFACE CONDITIONS ENCOUNTERED DURING DRILLING
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

Boring ID (alternate IDs)	Boring Depth (ft)	Native Soil Encountered (ft)	Native Material at Contact	Creosote-Like Material Encountered? (depth in ft)	Highest PID Reading in ppm (depth in ft)	Notes/Observations
B-31B	28	Not Encountered		No	N/A	
B-31C (MW-3)(B-5 Terra Associates)	45.5	22.75 - 28.75	SILT	No	N/A	
B-32	12	Not Encountered		No	0	
B-33	20	Not Encountered		No	0	
B-33B (MW-4)(B-4 Terra Associates)	65.5	30.75 - 40.8	SILT	No	N/A	
B-34 (MW-7)	26	24-25	SILT	No	0	
B-34B (B-2 Terra Associates)	50.1	24-25	SILT	No	N/A	
B-35	24	21.5- 24	SILT	Yes (18.5-21.5)	0	Creosote sample attempt unsuccessful, depth estimated
B-36 (MW-6)	20	19.5-20	SILT	No	N/A	Creosote-like material present in fill, with strong sheen and creosote odor
B-37	24	Not Encountered		Yes (21-24)	21.2 (22)	Creosote sample attempt unsuccessful
B-38 (MW-1)	24	22.5 - 24	SILT	Yes (21.5-22.5)	N/A	
B-38B (B-1 Terra Associates)	46.5	25.5 - 33	SILT	Yes (20-21.5)	N/A	
B-39	24	22 - 24	SILT	No	N/A	
B-40	32	25 - 32	Silty SAND with shells	Yes (23-25)	68.6 (25)	Boring overdriven from 24-32 ft, poor recovery, contacts estimated; creosote-like material thickness estimated
B-41	24	20 - 24	SILT	Yes (19-21)	0	Creosote-like material saturated silt, creosote layer estimated
B-42	20	18.5 - 20	SILT	No	0	
B-43	28	Not Encountered		No	0	
B-44 (MW-5)	24	22 - 24	SILT	No	N/A	
B-44B (B-3 Terra Associates)	80.5	23.25 - 33	SILT	No	N/A	
B-45	24	22 - 24	Silty GRAVEL with sand & shells	No	6.2 (9.5)	
B-46	24	Not Encountered		No	0	
B-47	24	21.5 - 24	SILT	No	0	
B-50	6	Not Encountered		No	1.7	
B-50A	25	Not Encountered		No	219	

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TABLE 2
SUMMARY OF SUBSURFACE CONDITIONS ENCOUNTERED DURING DRILLING
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

Boring ID (alternate IDs)	Boring Depth (ft)	Native Soil Encountered (ft)	Native Material at Contact	Creosote-Like Material Encountered? (depth in ft)	Highest PID Reading in ppm (depth in ft)	Notes/Observations
B-51	20	Not Encountered		No	36	
B-52	25	Not Encountered		No	0.8	
B-53	21	Not Encountered		No	1.9	
B-54	25	Not Encountered		No	23.4	
B-55	14	Not Encountered		No	0	
B-56	15	Not Encountered		No	0	
B-57	25	23 - 25	SILT	No	132	
B-58	19	Not Encountered		No	85.3	
B-59	10	Not Encountered		No	0	
B-60	24	Not Encountered		No	0	
B-61	25	23 - 25	SILT with shell fragments	No	0	
B-62	25	20.5 - 25	SILT	No	0.5	
B-63	9	Not Encountered		No	0	
B-63A	10	Not Encountered		No	0	
B-64	25	24.5 - 25	SILT	No	1	
B-65	25	Not Encountered		No	0	
B-66	25	Not Encountered		No	0	
B-67	25	18 - 25	SILT	No	0	
B-68	15	Not Encountered		No	13.7	
MW-10	15.4	Not Encountered		No	3.0	
MW-11	15.4	Not Encountered		No	0	
MW-12	15.4	Not Encountered		No	30.1	
MW-13	15.4	Not Encountered		No		
MW-14	18	Not Encountered		No	0	
MW-15D	25.5	24.5 - 25.5	SILT	No	0	
MW-16D	24.5	24 - 24.5	SILT	No	0	
MW-17D	21.5	18 - 21.5	SILT	No	0	Creosote-like odor noted at about 16 ft BGS, but no visible evidence of creosote-like material.

N/A = Not available.

**TABLE 3
MONITORING WELL GROUNDWATER ELEVATIONS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Monitoring Well	Elevation of Top of PVC Casing		Depth to Water (ft)				Groundwater Elevation (ft)			
			11/24/08	1/16/09	6/3/09	8/25/09	11/24/08	1/16/09	6/3/09	8/25/09
MW-1	17.48	(a)	10.00	9.96	9.86	10.00	7.48	7.52	7.62	7.48
MW-2	16.89	(a)	7.18	7.07	7.18	7.35	9.71	9.82	9.71	9.54
MW-3	15.51	(a)	5.33	5.51	5.44	5.82	10.18	10.00	10.07	9.69
MW-4	16.88	(a)	9.55	8.64	8.66	8.94	7.33	8.24	8.22	7.94
MW-5	16.48	(a)	8.20	8.19	8.15	8.32	8.28	8.29	8.33	8.16
MW-6	17.71	(a)	10.26	10.22	10.15	10.28	7.45	7.49	7.56	7.43
MW-7S	18.29	(a)	10.75	10.78	10.70	10.95	7.54	7.51	7.59	7.34
MW-7D	18.24	(a)	10.70	10.74	10.68	11.00	7.54	7.50	7.56	7.24
MW-8	17.57	(a)	8.39	8.29	8.36	8.67	9.18	9.28	9.21	8.90
MW-9S	17.26	(a)	9.75	9.77	9.68	9.88	7.51	7.49	7.58	7.38
MW-9D	17.30	(a)	9.75	9.78	9.67	9.90	7.55	7.52	7.63	7.40
MW-10	17.62	(b)	(c)	(c)	(c)	8.46	(c)	(c)	(c)	9.16
MW-11	17.90	(b)	(c)	(c)	(c)	7.90	(c)	(c)	(c)	10.00
MW-12	17.64	(b)	(c)	(c)	(c)	7.86	(c)	(c)	(c)	9.78
MW-13	16.71	(b)	(c)	(c)	(c)	7.16	(c)	(c)	(c)	9.55
MW-14	17.04	(b)	(c)	(c)	(c)	5.30	(c)	(c)	(c)	11.74
MW-15D	16.18	(b)	(c)	(c)	(c)	9.00	(c)	(c)	(c)	7.18
MW-16D	17.55	(b)	(c)	(c)	(c)	10.13	(c)	(c)	(c)	7.42
MW-17D	17.28	(b)	(c)	(c)	(c)	8.63	(c)	(c)	(c)	8.65

Notes:

- (a) Top of casing elevation surveyed by Pacific Geomatic Services, Inc. on December 12, 2008.
- (b) Top of casing elevation surveyed by Pacific Geomatic Services, Inc. on August 13, 2009.
- (c) Well not yet installed at time of measurement.

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-1-9-9.5 MK66A 2/27/2008	B-2-9-9.5 MK66B 2/27/2008	B-2-20-21 MK66G 2/27/2008	B-3-7.5-8.5 MK66H 2/27/2008	B-4-6-7 MK66C 2/27/2008	B-5-10-11 MK66D 2/27/2008	B-6-6-6.5 MK66E 2/27/2008	B-7-6-7 MK66F 2/27/2008	B-8-5-6 MK82A 2/28/2008	B-9-5.5-6.5 MK82B 2/28/2008	B-10-7-8 MK82C 2/28/2008	B-11-6-6.5 MK82D 2/28/2008	B-12-6-7 MK82E 2/28/2008	B-13-5-5.75 MK82F 2/28/2008	B-14-5-6.33 MK82G 2/28/2008	B-15-5-6.33 MK82H 2/28/2008	B-16-5-6 ML02A 2/29/2008	B-17-5-6 ML02B 2/29/2008	B-18-7-8 ML02C 2/29/2008	B-19-6-6.75 ML02D 2/29/2008	B-20-6-5-8 ML02E 2/29/2008	B-21-19-20 ML02F 2/29/2008
NWTPH-HCID (mg/kg)																							
Gasoline Range Organics	30	20 U	82 U	> 660	> 20	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	> 20	20 U	20 U	20 U	20 U	> 20	> 20	20 U	> 20	
Diesel Range Organics	2,000	50 U	210 U	> 1,600	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	> 50	> 50	> 50	> 50	> 50	> 50	> 50	> 50	50 U	> 50	
Motor Oil	2,000	100 U	> 410	> 3,300	> 100	100 U	100 U	100 U	100 U	> 100	100 U	100 U	> 100	> 100	> 100	> 100	> 100	> 100	> 100	> 100	100 U	> 100	
NWTPH-DxSG (mg/kg)																							
Diesel Range Hydrocarbons	2,000		88	8,600	22					15			58	65	90	65		19	370	92	19	51	
Motor Oil	2,000		440	2,300	63					68			560	82	630	500		150	160	98	44	190	
NWTPH-GX (mg/kg)																							
Gasoline	30												13 U					18	1,900	1,500	54	1,200	
TOTAL METALS (mg/kg)																							
Method 6000/7000 series																							
Arsenic	7	6 U	10 U	6 U	9	6 U	6 U	6 U	6 U	7 U	5 U	6 U	30 U	8 U	5 U	5 U	50 U	5 U	20 U	20 U	5 U	20 U	
Cadmium	1	0.2 U	0.4 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.2 U	1 U	0.3 U	0.2 U	0.2 U	2 U	0.2 U	0.7 U	0.7 U	0.2 U	0.6 U	
Chromium	120,000	28.5	6	11.1	30.6	28.9	12.6	17.9	11.1	21.5	29.6	38.9	12	7.0	36.3	34.5	39	19.5	12	11	26.2	6	
Copper	3,000																						
Lead	250	13 J	5	5	143	7	3	5	3	39	3	25	10	5	10	85	70	2 U	38	18	22	8	
Mercury	0.07	0.07	0.08 U	0.06 U	0.05	0.05 U	0.06 U	0.06 U	0.07	0.06 U	0.05 U	0.10	0.09 U	0.06 U	0.06	0.06	0.08	0.16	0.08	0.05 U	0.07	0.06 U	
Zinc	24,000																						
BTEX (A89g/kg)																							
Method SW8021BMod																							
Benzene	4.5																	13 U	1,900	420	18 U	200	
Toluene	580																	13 U	1,800	1,000	18 U	180	
Ethylbenzene	2,400																	13 U	3,200	1,800	18 U	240	
m,p-Xylene																		26 U	5,100	4,700	36 U	700	
o-Xylene																		13 U	1,900	1,900	18 U	870	
Total Xylenes	15,000																	ND	7,000	6,600	ND	1,570	
PAHs (µg/kg)																							
Method SW8270D/SW8270DSIM																							
Naphthalene	4,500	64 U	300		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	66	65 U	280	83	1,600	1,000	64 U	66 U	
2-Methylnaphthalene	320,000	64 U	580		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	330	78	3,000	1,200	64 U	66 U	
1-Methylnaphthalene		64 U	640		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	350	64 U	2,200	1,200	64 U	66 U	
Acenaphthylene		64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	65 U	64 U	65 U	66 U	64 U	66 U	
Acenaphthene	25,000	64 U	66		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	730	240	320	66 U	64 U	66 U	
Fluorene	79,000	64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	830	300	240	66 U	64 U	66 U	
Phenanthrene		64 U	510		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	6,400	2,300	2,400	70	230	66 U	
Anthracene	2,300,000	64 U	90		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	500	1,700	680	66 U	64 U	66 U	
Fluoranthene	49,000	64 U	450		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	7,200	3,800	2,900	66 U	280	66 U	
Pyrene	140,000	64 U	290		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	3,500	4,100	2,500	66 U	210	66 U	
Benzo(a)anthracene		64 U	120		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	2,100	1,800 J	1,500	1,100	66 U	110	
Chrysene		64 U	160		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	2,400	1,900	1,800	1,200	66 U	120	
Benzo(b)fluoranthene		64 U	66		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	3,000	1,700 J	2,000	1,000	66 U	86	
Benzo(k)fluoranthene		64 U	100		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	2,100	1,700	2,000	860	66 U	100	
Benzo(a)pyrene	140	64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	2,200	1,800	1,100	66 U	120	66 U	
Indeno(1,2,3-cd)pyrene		64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	740	580	590	270	66 U	64 U	
Dibenz(a,h)anthracene		64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	300	91	260	65 U	66 U	64 U	
Benzo(g,h,i)perylene		64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	660	600	260	66 U	64 U	66 U	
Dibenzofuran	160,000	64 U	180		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	64 U	65 U	140	290	120	150	66 U	64 U	
TEQ	140	ND	30		ND	ND	ND	ND	ND	189	ND	ND	651	151	545	3,048	2,606	2,453	1,435	ND	151	ND	

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-1-9-9.5 MK66A 2/27/2008	B-2-9-9.5 MK66B 2/27/2008	B-2-20-21 MK66G 2/27/2008	B-3-7.5-8.5 MK66H 2/27/2008	B-4-6-7 MK66C 2/27/2008	B-5-10-11 MK66D 2/27/2008	B-6-6-6.5 MK66E 2/27/2008	B-7-6-7 MK66F 2/27/2008	B-8-5-6 MK82A 2/28/2008	B-9-5.5-6.5 MK82B 2/28/2008	B-10-7-8 MK82C 2/28/2008	B-11-6-6.5 MK82D 2/28/2008	B-12-6-7 MK82E 2/28/2008	B-13-5-5.75 MK82F 2/28/2008	B-14-5-6.33 MK82G 2/28/2008	B-15-5-6.33 MK82H 2/28/2008	B-16-5-6 ML02A 2/29/2008	B-17-5-6 ML02B 2/29/2008	B-18-7-8 ML02C 2/29/2008	B-19-6-6.75 ML02D 2/29/2008	B-20-6.5-8 ML02E 2/29/2008	B-21-19-20 ML02F 2/29/2008
SEMIVOLATILES (µg/kg)																							
Method SW8270D																							
Phenol	22,000																						
4-Methylphenol																							
Naphthalene	4,500																						
2-Methylnaphthalene	320,000																						
Acenaphthylene																							
Acenaphthene	25,000																						
Dibenzofuran	160,000																						
Fluorene	79,000																						
Phenanthrene																							
Carbazole	320																						
Anthracene	2,300,000																						
Di-n-Butylphthalate	57,000																						
Fluoranthene	49,000																						
Pyrene	140,000																						
Benzo(a)anthracene																							
Chrysene																							
Benzo(b)fluoranthene																							
Benzo(k)fluoranthene																							
Benzo(a)pyrene	140																						
Indeno(1,2,3-cd)pyrene																							
Dibenz(a,h)anthracene																							
Benzo(g,h,i)perylene																							
1-Methylnaphthalene																							
TEQ	140																						

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-23-4.6-6.7 NT63B 10/8/2008	B-23-5.0 NT63A 10/8/2008	B-23-16.0-20.0 NT63C 10/8/2008	B-24-2.2-3.0 NT61M 10/7/2008	B-24-7.0-8.0 NT61O 10/7/2008	B-24-7.5 NT61N 10/7/2008	B-26-4.0-7.6 NT63F 10/8/2008	B-26-7.5 NT63E 10/8/2008	B-26-16-19 NT63J 10/8/2008	B-26-17.0 NT63I 10/8/2008	B-27-8.0-8.3 NT61I 10/7/2008	B-27-8.0 NT61H 10/7/2008	B-27-16.5-17.5 NT61K 10/7/2008	B-27-17.0 NT61J 10/7/2008	B-28-4.2-7.0 NT61F 10/7/2008	B-28-5.0 NT61G 10/7/2008	B-30-0.3-4.0 NT61D 10/7/2008	B-30-8.0-10.5 NT61E 10/7/2008	B-31-0.3-4.0 (b) NT61C 10/7/2008	B-31-8.0-10.0 (b) NU11C 10/10/2008	B-32-0.2-2.0 NT61A 10/7/2008		
NWTPH-HCID (mg/kg)																								
Gasoline Range Organics	30																							
Diesel Range Organics	2,000																	55 U	20 U	55 U	20 U	110 U		
Motor Oil	2,000																	>140	50 U	>140	50 U	280 U		
																		>280	100 U	>270	100 U	>550		
NWTPH-DxSG (mg/kg)																								
Diesel Range Hydrocarbons	2,000																							
Motor Oil	2,000																			49	200	160		
																				310	1,200	2,300		
NWTPH-GX (mg/kg)																								
Gasoline	30	6,100				1,400		1,200		4,300		140			17		1,600							
TOTAL METALS (mg/kg)																								
Method 6000/7000 series																								
Arsenic	7																			2.4	1.6	1.9	9.6	2.1
Cadmium	1																			0.2 U	0.2 U	0.2	0.2 U	0.2 U
Chromium	120,000																			28.7	21.7	31.5	26.7	31.2
Copper	3,000																							
Lead	250																							
Mercury	0.07																							
Zinc	24,000																							
																				24	19	37	22	12.4
																				0.10	0.05 U	0.08	0.05	0.34
BTEX (A89g/kg)																								
Method SW8021BMod																								
Benzene	4.5	57,000				350		6,400		730		65			22 U		160							
Toluene	580	34,000				390		810		1,100		40			22 U		190							
Ethylbenzene	2,400	5,900				29 U		2,600		3,600		15 U			22 U		21 U							
m,p-Xylene		43,000				2,200		1,200		1,800		100			43 U		410							
o-Xylene		18,000				1,100		850		2,000		52			22 U		730							
Total Xylenes	15,000	61,000				3,300		2,050		3,800		152			ND		1,140							
PAHs (µg/kg)																								
Method SW8270D/SW8270DSIM																								
Naphthalene	4,500	5,500,000		120	390	1,100		4,100		1,900		360		330		2,300		180 U	58 U	170 U	190 U	180 U		
2-Methylnaphthalene	320,000	760,000		74	500	1,300		9,500		5,300		1,200		210		2,100		180 U	58 U	170 U	190 U	180 U		
1-Methylnaphthalene		440,000		90	470	900		7,300		4,900		880		230		1,500		180 U	58 U	170 U	190 U	180 U		
Acenaphthylene		1,600,000		60 U	64 U	62 U		62 U		190 U		65 U		100		62 U		180 U	58 U	170 U	190 U	180 U		
Acenaphthene	25,000	300,000		60 U	66	64		100		190 U		82		93		62 U		280	58 U	170 U	230	180 U		
Fluorene	79,000	1,200,000		60 U	64 U	74		100		190 U		110		240		62 U		320	58 U	170 U	420	180 U		
Phenanthrene		7,400,000		71	810	940		1,700		380		1,000		1,300		270		4,000	94	1,100 J	3,700	200		
Anthracene	2,300,000	1,600,000		60 U	120	100		280		190 U		120		260		62 U		1,100	58 U	250 J	1,300	180 U		
Fluoranthene	49,000	5,000,000		60 U	610	610		780		190 U		980		650		62 U		12,000	95	1,300 J	3,500	540		
Pyrene	140,000	5,300,000		60 U	560	440		680		210		670		420		62 U		6,600	74	1,400 J	3,700 J	330		
Benzo(a)anthracene		1,400,000		60 U	270	130		500		190 U		430		170		62 U		3,100	58 U	580 J	1,600	180 U		
Chrysene		1,600,000		60 U	360	320		700		190 U		590		270		62 U		3,800	58 U	660 J	1,600	290		
Benzo(b)fluoranthene		1,200,000		60 U	220	160		390		190 U		390		130		62 U		2,900	58 U	430 J	830	180 U		
Benzo(k)fluoranthene		1,000,000		60 U	210	190		410		190 U		360		110		62 U		3,200	58 U	460 J	1,100	180 U		
Benzo(a)pyrene	140	1,700,000		60 U	280	220		540		190 U		410		180		62 U		3,100	58 U	610 J	1,400	180 U		
Indeno(1,2,3-cd)pyrene		1,100,000		60 U	200	150		250		190 U		150		66		62 U		1,300	58 U	350 J	350	180 U		
Dibenz(a,h)anthracene		260,000		60 U	69	62 U		94		190 U		65 U		60 U		62 U		450	58 U	170 U	190 U	180 U		
Benzo(g,h,i)perylene		1,200,000		60 U	230	180		270		190 U		140		63		62 U		950	58 U	400 J	340	180 U		
Dibenzofuran	160,000	810,000		60 U	120	240		470		190 U		110		200		120		180	58 U	170 U	190 U	180 U		
TEQ	140	2,212,000		ND	381	286		711		ND		549		230		ND		4,233	ND	799	1,804	3		

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-23-4.6-6.7 NT63B 10/8/2008	B-23-5.0 NT63A 10/8/2008	B-23-16.0-20.0 NT63C 10/8/2008	B-24-2.2-3.0 NT61M 10/7/2008	B-24-7.0-8.0 NT61O 10/7/2008	B-24-7.5 NT61N 10/7/2008	B-26-4.0-7.6 NT63F 10/8/2008	B-26-7.5 NT63E 10/8/2008	B-26-16-19 NT63J 10/8/2008	B-26-17.0 NT63I 10/8/2008	B-27-8.0-8.3 NT61I 10/7/2008	B-27-8.0 NT61H 10/7/2008	B-27-16.5-17.5 NT61K 10/7/2008	B-27-17.0 NT61J 10/7/2008	B-28-4.2-7.0 NT61F 10/7/2008	B-28-5.0 NT61G 10/7/2008	B-30-0.3-4.0 NT61D 10/7/2008	B-30-8.0-10.5 NT61E 10/7/2008	B-31-0.3-4.0 (b) NT61C 10/7/2008	B-31-8.0-10.0 (b) NU11C 10/10/2008	B-32-0.2-2.0 NT61A 10/7/2008
SEMIVOLATILES (µg/kg)																						
Method SW8270D																						
Phenol	22,000																					
4-Methylphenol																						
Naphthalene	4,500																					
2-Methylnaphthalene	320,000																					
Acenaphthylene																						
Acenaphthene	25,000																					
Dibenzofuran	160,000																					
Fluorene	79,000																					
Phenanthrene																						
Carbazole	320																					
Anthracene	2,300,000																					
Di-n-Butylphthalate	57,000																					
Fluoranthene	49,000																					
Pyrene	140,000																					
Benzo(a)anthracene																						
Chrysene																						
Benzo(b)fluoranthene																						
Benzo(k)fluoranthene																						
Benzo(a)pyrene	140																					
Indeno(1,2,3-cd)pyrene																						
Dibenz(a,h)anthracene																						
Benzo(g,h,i)perylene																						
1-Methylnaphthalene																						
TEQ	140																					

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-32-8.0-10.5 NT61B 10/7/2008	B-33-17.5-18.5 NU11B 10/10/2008	B-36-19.3-20.0 NT85I 10/9/2008	B-36-19.8 NT85H 10/9/2008	B-38-21.5-22.4 NT85E 10/9/2008	B-38-22.0 NT85D 10/9/2008	B-38-22.4-23.0 NT85F 10/9/2008	B-39-21.0-22.3 NT85J 10/9/2008	B-40-24.5-26.0 NT63G 10/8/2008	B-40-25.0 NT63H 10/8/2008	B-41-16.5 NT85A 10/9/2008	B-41-20.0-21.0 NT85B 10/9/2008	B-44-17.5-18.5 NT85K 10/9/2008	B-44-21.5-22.5 NU11A 10/10/2008	B-45-8.0-10.0 NU11E 10/10/2008	B-45-8.5 NU11D 10/10/2008	B-47-21.5-21.9 NU11G 10/10/2008	B-47-21.8 NU11F 10/10/2008	B50A-15-16 PI35A 7/28/2009	B51-5 PI35C 7/28/2009	B51-15-16 PI35B 7/28/2009
NWTPH-HCID (mg/kg)																						
Gasoline Range Organics	30	20 U	20 U																			
Diesel Range Organics	2,000	50 U	50 U																			
Motor Oil	2,000	100 U	100 U																			
NWTPH-DxSG (mg/kg)																						
Diesel Range Hydrocarbons	2,000			2,900		690		59	220	49			2,000	130	400							140 J
Motor Oil	2,000			690		220		42	130	150			480	130	860							310
NWTPH-GX (mg/kg)																						
Gasoline	30				38		2,000				4.5 U	32				4.4 U			11 U	60	3200	1600
TOTAL METALS (mg/kg)																						
Method 6000/7000 series																						
Arsenic	7	2.3	5.0																			
Cadmium	1	0.3 U	0.3 U																			
Chromium	120,000	16.6	22.9																			
Copper	3,000																					
Lead	250	9.2	33																			
Mercury	0.07	0.06 U	1.88																			
Zinc	24,000																					
BTEX (A89g/kg)																						
Method SW8021BMod																						
Benzene	4.5				28 U	5,200				11 U	19						11 U		32	22 U	460	120 U
Toluene	580				35	6,100				11 U	93						11 U		48	81	2,200	700
Ethylbenzene	2,400				170	35,000				11 U	150						11 U		27 U	55	1,400	510
m,p-Xylene					180	34,000				23 U	440						22 U		55 U	170	3,800	1,200
o-Xylene					110	14,000				11 U	230						11 U		27 U	22 U	1,700	640
Total Xylenes	15,000				290	48,000				ND	670						ND		ND	170	5,500	1,840
PAHs (µg/kg)																						
Method SW8270D/SW8270DSIM																						
Naphthalene	4,500	300	360	1,400,000		1,700,000		49,000	170,000	23,000			1,500,000	1,200 J	5,000		60 U					500
2-Methylnaphthalene	320,000	59 U	180 U	500,000		590,000		9,100	51,000	8,100			460,000	2,100	1,100 J		60 U					150 J
1-Methylnaphthalene		59 U	180 U	320,000 U		360,000		6,400	33,000	5,000			290,000	3,100	850		60 U					170
Acenaphthylene		59 U	180 U	320,000 U		30,000		160	1,000	1,600			160,000 U	64 U	320		60 U					110
Acenaphthene	25,000	59 U	320	320,000 U		380,000		4,700	28,000	4,100			260,000	170	2,000		60 U					480
Fluorene	79,000	59 U	470	320,000 U		240,000		4,000	16,000	4,100			180,000	290	2,400		60 U					320
Phenanthrene		59 U	3,700	650,000		820,000		12,000	38,000	12,000			570,000	2,000 J	19,000		73					1,200
Anthracene	2,300,000	59 U	820	320,000 U		150,000		3,800	5,600 E	2,400			160,000 U	230	3,800		60 U					580
Fluoranthene	49,000	59 U	2,400 J	320,000 U		310,000		7,300	11,000 E	4,900			200,000	830 J	20,000		280					1,900
Pyrene	140,000	59 U	3,000 J	320,000 U		330,000		6,900	12,000 E	5,900			220,000	700 J	17,000 J		230 J					1,600 J
Benzo(a)anthracene		59 U	1,100	320,000 U		120,000		3,400	3,800	2,200			160,000 U	380	7,800		97					1,000
Chrysene		59 U	1,200	320,000 U		84,000 E		3,400	3,700	2,000			160,000 U	530 J	7,800		100					1,100
Benzo(b)fluoranthene		59 U	820	320,000 U		45,000 E		1,800	370	1,300			160,000 U	200 J	7,200		64					490
Benzo(k)fluoranthene		59 U	970	320,000 U		47,000 E		1,900	380	1,200			160,000 U	290	7,300		71					850
Benzo(a)pyrene	140	59 U	1,200	320,000 U		100,000 E		3,300	3,800	2,200			160,000 U	380	9,700		78					1,000
Indeno(1,2,3-cd)pyrene		59 U	390	320,000 U		41,000		1,400	1,700	940			160,000 U	160	2,900		60 U					370
Dibenz(a,h)anthracene		59 U	180 U	320,000 U		14,000		480	550	230			160,000 U	64 U	890		60 U					91
Benzo(g,h,i)perylene		59 U	390	320,000 U		32,000		1,200	1,400	730			160,000 U	200	3,000		60 U					370
Dibenzofuran	160,000	59 U	210	320,000 U		100,000 U		1,300	4,900	900			160,000 U	510 J	1,700		60 U					130
TEQ	140	ND	1,540	ND		5,500		4,232	4,517	2,807			ND	488	12,387		102					1,291

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-32-8.0-10.5	B-33-17.5-18.5	B-36-19.3-20.0	B-36-19.8	B-38-21.5-22.4	B-38-22.0	B-38-22.4-23.0	B-39-21.0-22.3	B-40-24.5-26.0	B-40-25.0	B-41-16.5	B-41-20.0-21.0	B-44-17.5-18.5	B-44-21.5-22.5	B-45-8.0-10.0	B-45-8.5	B-47-21.5-21.9	B-47-21.8	B50A-15-16	B51-5	B51-15-16
		NT61B 10/7/2008	NU11B 10/10/2008	NT85I 10/9/2008	NT85H 10/9/2008	NT85E 10/9/2008	NT85D 10/9/2008	NT85F 10/9/2008	NT85J 10/9/2008	NT63G 10/8/2008	NT63H 10/8/2008	NT85A 10/9/2008	NT85B 10/9/2008	NT85K 10/9/2008	NU11A 10/10/2008	NU11E 10/10/2008	NU11D 10/10/2008	NU11G 10/10/2008	NU11F 10/10/2008	PI35A 7/28/2009	PI35C 7/28/2009	PI35B 7/28/2009
SEMIVOLATILES (µg/kg)																						
Method SW8270D																						
Phenol	22,000																					
4-Methylphenol																						
Naphthalene	4,500																					
2-Methylnaphthalene	320,000																					
Acenaphthylene																						
Acenaphthene	25,000																					
Dibenzofuran	160,000																					
Fluorene	79,000																					
Phenanthrene																						
Carbazole	320																					
Anthracene	2,300,000																					
Di-n-Butylphthalate	57,000																					
Fluoranthene	49,000																					
Pyrene	140,000																					
Benzo(a)anthracene																						
Chrysene																						
Benzo(b)fluoranthene																						
Benzo(k)fluoranthene																						
Benzo(a)pyrene	140																					
Indeno(1,2,3-cd)pyrene																						
Dibenz(a,h)anthracene																						
Benzo(g,h,i)perylene																						
1-Methylnaphthalene																						
TEQ	140																					

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B52-6.5 PI35E 7/28/2009	B52-15-16 PI35D 7/28/2009	B53-15-16 PI35F 7/28/2009	B54-4 PI35H 7/28/2009	B54-15-16 PI35G 7/28/2009	B-55-8-9 PJ46A 8/6/2009	B-56-9-10 PJ46B 8/6/2009	B57-1-2 PI16A 7/27/2009	B57-10-15 PI16B/PI154A 7/27/2009	B57-15-16 PI16C 7/27/2009	B58-1-2 PI16D 7/27/2009	B58-15-16 PI16E 7/27/2009	B59-1-2 PI16K 7/27/2009	B60-1-2 PI16F 7/27/2009	B60-15-16 PI16G 7/27/2009	B61-1-2 PI16H 7/27/2009	B62-1-2 PI35I 7/28/2009	B63-1-2 PI35J 7/28/2009	B64-1-2 PI16L 7/27/2009	B65-1-2 PI16I 7/27/2009	B66-1-2 PI35K 7/28/2009	B67-1-2 PI16J 7/27/2009	B68-1-2 PI35L 7/28/2009	
NWTPH-HCID (mg/kg)																									
Gasoline Range Organics	30																								
Diesel Range Organics	2,000																								
Motor Oil	2,000																								
NWTPH-DxSG (mg/kg)																									
Diesel Range Hydrocarbons	2,000																								
Motor Oil	2,000																								
NWTPH-GX (mg/kg)																									
Gasoline	30	760	12	5.5 U	180	11	4.4 U	3.8 U																	
TOTAL METALS (mg/kg)																									
Method 6000/7000 series																									
Arsenic	7								7			5 U		7	7			6	10 U	5 U	8	30	5	7	6
Cadmium	1								0.2 U			0.2 U		0.2 U	0.2 U			0.2 U	0.5 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.2 U
Chromium	120,000								13.2			31.9		38.5	28.5			10.8	26	32.7	18.0	42.1	22.2	26.2	25.9
Copper	3,000								75.5			26.9		33.5	29.8			49.1	36.3	23.4	34.9	64.3	47.7	25.1	38.9
Lead	250								59 J			25		67	37			17	53	39	6	132	6	12	41
Mercury	0.07								0.05			0.59		0.12	0.05			0.02 U	0.04	0.05	0.06	0.05	0.02	0.02	0.08
Zinc	24,000								74			58		82	56			31	94	57	42	104	47	41	71
BTEX (A89g/kg)																									
Method SW8021BMod																									
Benzene	4.5	79	53	14 U	17 U			11 U	9.5 U																
Toluene	580	110	26	18	17 U			11 U	9.5 U																
Ethylbenzene	2,400	430	20	14 U	17 U			11 U	9.5 U																
m,p-Xylene		530	62	27 U	33 U			22 U	19 U																
o-Xylene		440	180	14 U	17 U			160	9.5 U																
Total Xylenes	15,000	970	242	ND	ND			160	ND																
PAHs (µg/kg)																									
Method SW8270D/SW8270DSIM																									
Naphthalene	4,500									100			210												28
2-Methylnaphthalene	320,000									180			150												12
1-Methylnaphthalene										220			130												7.2
Acenaphthylene										12			150												37
Acenaphthene	25,000									19			140 J												5.8
Fluorene	79,000									48			370 J												19
Phenanthrene										260 J			1800 J												260 J
Anthracene	2,300,000									39			500												210
Fluoranthene	49,000									120 J			2000 J												1400 J
Pyrene	140,000									130			1600												1400
Benzo(a)anthracene										82			840												1100
Chrysene										120			800												1100
Benzo(b)fluoranthene										55 J			610 J												720 J
Benzo(k)fluoranthene										73			570												720
Benzo(a)pyrene	140									96			790												1100
Indeno(1,2,3-cd)pyrene										43			260												360
Dibenz(a,h)anthracene										29 J			130 J												320 J
Benzo(g,h,i)perylene										43			210												410
Dibenzofuran	160,000									50			170 J												8.6
TEQ	140									125			1,039												1,433

TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

	Preliminary Cleanup Level (a)	B52-6.5 PI35E 7/28/2009	B52-15-16 PI35D 7/28/2009	B53-15-16 PI35F 7/28/2009	B54-4 PI35H 7/28/2009	B54-15-16 PI35G 7/28/2009	B-55-8-9 PJ46A 8/6/2009	B-56-9-10 PJ46B 8/6/2009	B57-1-2 PI16A 7/27/2009	B57-10-15 PI16B/PI154A 7/27/2009	B57-15-16 PI16C 7/27/2009	B58-1-2 PI16D 7/27/2009	B58-15-16 PI16E 7/27/2009	B59-1-2 PI16K 7/27/2009	B60-1-2 PI16F 7/27/2009	B60-15-16 PI16G 7/27/2009	B61-1-2 PI16H 7/27/2009	B62-1-2 PI35I 7/28/2009	B63-1-2 PI35J 7/28/2009	B64-1-2 PI16L 7/27/2009	B65-1-2 PI16I 7/27/2009	B66-1-2 PI35K 7/28/2009	B67-1-2 PI16J 7/27/2009	B68-1-2 PI35L 7/28/2009	
SEMIVOLATILES (µg/kg)																									
Method SW8270D																									
Phenol	22,000							63 U			59 U			64 U	63 U			62 U	61 U	58 U	59 U	58 U	64 U	60 U	65 U
4-Methylphenol								63 U			59 U			64 U	63 U			62 U	61 U	58 U	59 U	58 U	64 U	60 U	65 U
Naphthalene	4,500							1300			59 U			270	69			130	61 U	130	59 U	58 U	180	71	65 U
2-Methylnaphthalene	320,000							2800			59 U			64 U	63 U			410	61 U	180	59 U	58 U	200	83	65 U
Acenaphthylene								63 U			59 U			64 U	180			62 U	61 U	58 U	59 U	58 U	64 U	60 U	65 U
Acenaphthene	25,000							63 U			59 U			100	63 U			62 U	61 U	370	59 U	58 U	64 U	60 U	65 U
Dibenzofuran	160,000							580			59 U			64 U	63 U			62 U	61 U	210	59 U	58 U	64 U	60 U	65 U
Fluorene	79,000							150			59 U			70	63 U			62 U	61 U	520	59 U	58 U	64 U	60 U	65 U
Phenanthrene								1900			120			170	340			350	250	3600	59 U	58 U	190	100	65 U
Carbazole	320							140			59 U			64 U	63 U			62 U	61 U	300	59 U	58 U	64 U	60 U	65 U
Anthracene	2,300,000							130			59 U			64 U	94			62 U	61 U	750	59 U	58 U	64 U	60 U	65 U
Di-n-Butylphthalate	57,000							72			59 U			64 U	63 U			62 U	61 U	58 U	59 U	58 U	64 U	60 U	65 U
Fluoranthene	49,000							230			110			67	1300			150	390	2900	59 U	58 U	160	260	65 U
Pyrene	140,000							300			110			64 U	1500			160	300	2700	59 U	58 U	150	310	65 U
Benzo(a)anthracene								260			59 U			64 U	720			98	160	1100	59 U	58 U	91	180	65 U
Chrysene								420			59 U			64 U	920			160	180	1100	59 U	58 U	140	190	65 U
Benzo(b)fluoranthene								130			59 U			64 U	500			85	160	890	59 U	58 U	140	140	65 U
Benzo(k)fluoranthene								130			59 U			64 U	840			75	150	700	59 U	58 U	120	180	65 U
Benzo(a)pyrene	140							120			59 U			64 U	680			90	160	1200	59 U	58 U	120	220	65 U
Indeno(1,2,3-cd)pyrene								63 U			59 U			64 U	320			62 U	100	570	59 U	58 U	93	64	65 U
Dibenz(a,h)anthracene								63 U			59 U			64 U	120			62 U	61 U	220	59 U	58 U	64 U	60 U	65 U
Benzo(g,h,i)perylene								63 U			59 U			64 U	320			62 U	120	680	59 U	58 U	120	62	65 U
1-Methylnaphthalene								2900			59 U			97	63 U			270	61 U	180	59 U	58 U	120	60 U	65 U
TEQ	140							176			ND			ND	939.2			117	219	1559			166	278	

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	MW-11-4.5-5 PI99A 8/3/2009	MW-14-15 PJ11A 8/4/2009	MW-17D-15.5-16.5 PJ11B/PJ23A 8/4/2009
NWTPH-HCID (mg/kg)				
Gasoline Range Organics	30			20 U
Diesel Range Organics	2,000			50
Motor Oil	2,000			100
NWTPH-DxSG (mg/kg)				
Diesel Range Hydrocarbons	2,000			400
Motor Oil	2,000			160
NWTPH-GX (mg/kg)				
Gasoline	30	250		
TOTAL METALS (mg/kg)				
Method 6000/7000 series				
Arsenic	7			8
Cadmium	1			0.3 U
Chromium	120,000			41.6
Copper	3,000			35.8
Lead	250			24
Mercury	0.07			0.48
Zinc	24,000			61
BTEX (A89g/kg)				
Method SW8021BMod				
Benzene	4.5	20		
Toluene	580	48		
Ethylbenzene	2,400	170		
m,p-Xylene		140		
o-Xylene		200		
Total Xylenes	15,000	340		
PAHs (µg/kg)				
Method SW8270D/SW8270DSIM				
Naphthalene	4,500		160	1,900
2-Methylnaphthalene	320,000		81	1,400
1-Methylnaphthalene			69	1,100
Acenaphthylene			36	180
Acenaphthene	25,000		74	3,300
Fluorene	79,000		100	2,900
Phenanthrene			1,100 J	14,000 J
Anthracene	2,300,000		250 J	4,200 J
Fluoranthene	49,000		2,200	8,900
Pyrene	140,000		1,600	7,700
Benzo(a)anthracene			780	4,200
Chrysene			820	4,400
Benzo(b)fluoranthene			620	2,000
Benzo(k)fluoranthene			770	3,100
Benzo(a)pyrene	140		700	4,200
Indeno(1,2,3-cd)pyrene			310 J	1,700 J
Dibenz(a,h)anthracene			130 J	810 J
Benzo(g,h,i)perylene			280	1,500
Dibenzofuran	160,000		90	1,400
TEQ	140		969	5,425

**TABLE 4
SOIL ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	MW-11-4.5-5 PI99A 8/3/2009	MW-14-15 PJ11A 8/4/2009	MW-17D-15.5-16.5 PJ11B/PJ23A 8/4/2009
SEMIVOLATILES (µg/kg)				
Method SW8270D				
Phenol	22,000			460
4-Methylphenol				400
Naphthalene	4,500			10,000
2-Methylnaphthalene	320,000			6,700
Acenaphthylene				1,100
Acenaphthene	25,000			17,000
Dibenzofuran	160,000			7,600 J
Fluorene	79,000			14,000
Phenanthrene				69,000
Carbazole	320			3,400
Anthracene	2,300,000			22,000
Di-n-Butylphthalate	57,000			180 U
Fluoranthene	49,000			45,000
Pyrene	140,000			40,000
Benzo(a)anthracene				18,000
Chrysene				21,000
Benzo(b)fluoranthene				13,000
Benzo(k)fluoranthene				7,200
Benzo(a)pyrene	140			18,000
Indeno(1,2,3-cd)pyrene				5,600
Dibenz(a,h)anthracene				2,700
Benzo(g,h,i)perylene				4,800
1-Methylnaphthalene				5,500
TEQ	140			22860

(a) See Table 5 for criteria used to develop preliminary cleanup levels.

(b) Samples collected from boring B-31A; no samples were collected from boring B-31B (see Table 1).

U = Indicates the compound was undetected at the reported concentration.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.

Bold = Detected compound.

Box = Exceedance of preliminary cleanup level.

mg/kg = Milligrams per kilogram

µg/kg = Micrograms per kilogram

**TABLE 5
PRELIMINARY SOIL CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Analyte	Protection of Groundwater and Marine Surface Water (Fixed Parameter 3-Phase Model) mg/kg	Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use For soil from 0 - 15 ft BGS		Preliminary Cleanup Levels (Before adjustment for background) mg/kg	Background Soil Metals Concentrations Puget Sound Region 90th Percentile value mg/kg	Preliminary Cleanup Levels (After adjustment for background) mg/kg	Preliminary Cleanup Levels (After adjustment for total site risk) mg/kg	Preliminary Cleanup Levels in Final Units	Units
		Standard Formula Values							
		Carcinogen mg/kg	Non-carcinogen mg/kg						
TPH									
Gasoline-Range Petroleum Hydrocarbons	(b) (c)		30 (b,c)	30		30		30	mg/kg
Diesel-Range Petroleum Hydrocarbons	(b)		2,000 (b)	2,000		2,000		2,000	mg/kg
Motor Oil-Range Petroleum Hydrocarbons	(b)		2,000 (b)	2,000		2,000		2,000	mg/kg
TOTAL METALS									
Arsenic	0.034	0.67	24	0.034	7	7		7	mg/kg
Chromium	1,000,000		120,000 (d)	120,000	42 (e)	120,000		120,000	mg/kg
Lead	3,000		250 (b)	250	17	250		250	mg/kg
Cadmium	0.69		80	0.69	1	1		1	mg/kg
Zinc	(h)		24,000	24,000	86	24,000		24,000	mg/kg
Copper	(h)		3,000	3,000	36	3,000		3,000	mg/kg
Mercury	0.026		24	0.026	0.07	0.07		0.07	mg/kg
BTEX									
Benzene	0.0045	18.0	320	0.0045		0.0045		4.5	µg/kg
Toluene	4.60		6,400	4.6		4.6	0.58	580	µg/kg
Ethylbenzene	6.10		8,000	6.1		6.1	2.4	2,400	µg/kg
Total Xylenes	15.0		16,000	15		15		15,000	µg/kg
PAHs									
Naphthalene	4.5		1,600	4.5		4.5		4,500	µg/kg
2-Methylnaphthalene	(a)		320	320		320		320,000	µg/kg
1-Methylnaphthalene	(a)								
Acenaphthylene	(a)								
Acenaphthene	98		4,800	98		98	25	25,000	µg/kg
Fluorene	100		3,200	100		100	79	79,000	µg/kg
Phenanthrene	(a)								
Anthracene	2,300		24,000	2,300		2,300		2,300,000	µg/kg

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**TABLE 5
PRELIMINARY SOIL CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Analyte	Protection of Groundwater and Marine Surface Water (Fixed Parameter 3-Phase Model) mg/kg	Direct Contact Pathway (Ingestion Only) Method B: Unrestricted Land Use For soil from 0 - 15 ft BGS		Preliminary Cleanup Levels (Before adjustment for background) mg/kg	Background Soil Metals Concentrations Puget Sound Region 90th Percentile value mg/kg	Preliminary Cleanup Levels (After adjustment for background) mg/kg	Preliminary Cleanup Levels (After adjustment for total site risk) mg/kg	Preliminary Cleanup Levels in Final Units	Units
		Standard Formula Values							
		Carcinogen mg/kg	Non-carcinogen mg/kg						
Fluoranthene	630		3,200	630		630	49	49,000	µg/kg
Pyrene	660		2,400	660		660	140	140,000	µg/kg
Benzo(a)anthracene	(f)	(g)		(g)		(g)		(g)	µg/kg
Chrysene	(f)	(g)		(g)		(g)		(g)	µg/kg
Benzo(b)fluoranthene	(f)	(g)		(g)		(g)		(g)	µg/kg
Benzo(k)fluoranthene	(f)	(g)		(g)		(g)		(g)	µg/kg
Benzo(a)pyrene	0.23	0.14		0.14		0.14		140	µg/kg
Indeno(1,2,3-cd)pyrene	(f)	(g)		(g)		(g)		(g)	µg/kg
Dibenz(a,h)anthracene	(f)	(g)		(g)		(g)		(g)	µg/kg
Benzo(g,h,i)perylene	(a)					---		---	
Dibenzofuran	(a)		160	160		160		160,000	µg/kg
SVOCs									
Phenol	22		48,000	22		22		22,000	µg/kg
4-Methylphenol	(a)					---		---	
Di-n-butylphthalate	57		8000	57		57		57,000	µg/kg
Carbazole	0.32	50		0.32		0.32		320	µg/kg
DIOXINS/FURANS									
2,3,7,8-TCDD	0.00000027	0.000011		0.00000027		0.00000027		0.27	ng/kg

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**TABLE 5
PRELIMINARY SOIL CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Notes:

Screening level based on lowest of soil concentrations for protection of groundwater and protection of human direct contact (Method B standard formula values for carcinogens and non-carcinogens).

Cleanup levels are developed for all constituents detected above laboratory reporting limits in soil.

Shading indicates basis for cleanup level.

--- = No screening criteria available.

mg/kg = Milligrams per kilogram.

µg/kg = Micrograms per kilogram.

ng/kg = Nanograms per kilogram.

- (a) Values for K_{oc} and Henry's Law Constant are not available; therefore, cleanup levels protective of groundwater can not be calculated using the three-phase partitioning model.
- (b) MTCA Method A soil cleanup levels are used for gasoline-range, diesel-range, motor oil-range petroleum hydrocarbons, and lead.
- (c) For gasoline-range petroleum hydrocarbons, if benzene is present. If benzene is not present, screening level is 100 mg/kg.
- (d) Value is for chromium III. Based on site history, chromium VI is not expected to be present.
- (e) Value is for total chromium.
- (f) If toxicity equivalency factors (TEFs) are considered, cleanup levels protective of groundwater for other cPAHs are less than the value for benzo(a)pyrene.
- (g) Evaluated using toxicity equivalency quotient (TEQ) based on benzo(a)pyrene.
- (h) Due to empirical demonstration, values not representative of protection of groundwater and marine surface water.

**TABLE 6
CONSTITUENTS DETECTED IN SOIL AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-1-9-9.5 MK66A 2/27/2008	B-2-9-9.5 MK66B 2/27/2008	B-2-20-21 MK66G 2/27/2008	B-3-7.5-8.5 MK66H 2/27/2008	B-4-6-7 MK66C 2/27/2008	B-5-10-11 MK66D 2/27/2008	B-6-6-6.5 MK66E 2/27/2008	B-7-6-7 MK66F 2/27/2008	B-8-5-6 MK82A 2/28/2008	B-9-5.5-6.5 MK82B 2/28/2008	B-10-7-8 MK82C 2/28/2008	B-11-6-6.5 MK82D 2/28/2008	B-12-6-7 MK82E 2/28/2008	B-13-5-5.75 MK82F 2/28/2008	B-14-5-6.33 MK82G 2/28/2008	B-15-5-6.33 MK82H 2/28/2008	B-16-5-6 ML02A 2/29/2008	B-17-5-6 ML02B 2/29/2008	B-18-7-8 ML02C 2/29/2008	B-19-6-6.75 ML02D 2/29/2008
NWTPH-DxSG (mg/kg)																					
Diesel Range Hydrocarbons	2,000		88	8,600	22					15			58	65	90	65		19	370	92	19
Motor Oil	2,000		440	2,300	63					68			560	82	630	500		150	160	98	44
NWTPH-GX (mg/kg)																					
Gasoline	30													13 U				18	1,900	1,500	54
TOTAL METALS (mg/kg)																					
Method 6000/7000 series																					
Arsenic	7	6 U	10 U	6 U	9	6 U	6 U	6 U	6 U	7 U	5 U	6 U	30 U	8 U	5 U	5 U	50 U	5 U	20 U	20 U	5 U
Mercury	0.07	0.07	0.08 U	0.06 U	0.05	0.05 U	0.06 U	0.06 U	0.07	0.06 U	0.05 U	0.10	0.09 U	0.06 U	0.06	0.06	0.08	0.16	0.08	0.05 U	0.07
BTEX (µg/kg)																					
Method SW8021BMod																					
Benzene	4.5																	13 U	1,900	420	18 U
Toluene	580																	13 U	1,800	1,000	18 U
Ethylbenzene	2,400																	13 U	3,200	1,800	18 U
Total Xylenes	15,000																	ND	7,000	6,600	ND
PAHs (µg/kg)																					
Method SW8270D/SW8270DSIM																					
Naphthalene	4,500	64 U	300		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	66	65 U	280	83	1,600	1,000	64 U
2-Methylnaphthalene	320,000	64 U	580		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	64 U	66 U	80	64 U	65 U	330	78	3,000	1,200
Acenaphthene	25,000	64 U	66		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	100	66 U	75	150	730	240	320	66 U	64 U
Fluorene	79,000	64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	110	66 U	89	200	830	300	240	66 U	64 U
Fluoranthene	49,000	64 U	450		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	1,700	200	1,200	7,200	6,200	3,800	2,900	66 U	280
Pyrene	140,000	64 U	290		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	1,000	170	810	3,500	4,100	2,800	2,500	66 U	210
Benzo(a)pyrene	140	64 U	66 U		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	480	120	410	2,200	2,000	1,800	1,100	66 U	120
Dibenzofuran	160,000	64 U	180		64 U	63 U	63 U	63 U	64 U	66 U	64 U	66 U	67	66 U	64 U	140	290	120	150	66 U	64 U
TEQ	140	ND	30		ND	ND	ND	ND	ND	189	ND	ND	651	151	545	3,048	2,606	2,453	1,435	ND	151
SEMIVOLATILES (µg/kg)																					
Method SW8270D																					
Naphthalene	4,500																				
Carbazole	320																				
Benzo(a)pyrene	140																				
TEQ	140																				

**TABLE 6
CONSTITUENTS DETECTED IN SOIL AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-20-6.5-8 ML02E 2/29/2008	B-21-19-20 ML02F 2/29/2008	B-23-4.6-6.7 NT63B 10/8/2008	B-23-5.0 NT63A 10/8/2008	B-23-16.0-20.0 NT63C 10/8/2008	B-24-2.2-3.0 NT61M 10/7/2008	B-24-7.0-8.0 NT61O 10/7/2008	B-24-7.5 NT61N 10/7/2008	B-26-4.0-7.6 NT63F 10/8/2008	B-26-7.5 NT63E 10/8/2008	B-26-16-19 NT63J 10/8/2008	B-26-17.0 NT63I 10/8/2008	B-27-8.0-8.3 NT61I 10/7/2008	B-27-8.0 NT61H 10/7/2008	B-27-16.5-17.5 NT61K 10/7/2008	B-27-17.0 NT61J 10/7/2008	B-28-4.2-7.0 NT61F 10/7/2008	B-28-5.0 NT61G 10/7/2008
NWTPH-DxSG (mg/kg)																			
Diesel Range Hydrocarbons	2,000	51																	
Motor Oil	2,000	190																	
NWTPH-GX (mg/kg)																			
Gasoline	30	1,200			6,100			1,400		1,200		4,300		140			17		1,600
TOTAL METALS (mg/kg)																			
Method 6000/7000 series																			
Arsenic	7	20 U	10 U																
Mercury	0.07	0.06 U	0.07 U																
BTEX (µg/kg)																			
Method SW8021BMod																			
Benzene	4.5	200			57,000			350		6,400		730		65			22 U		160
Toluene	580	180			34,000			390		810		1,100		40			22 U		190
Ethylbenzene	2,400	240			5,900			29 U		2,600		3,600		15 U			22 U		21 U
Total Xylenes	15,000	1,570			61,000			3,300		2,050		3,800		152			ND		1,140
PAHs (µg/kg)																			
Method SW8270D/SW8270DSIM																			
Naphthalene	4,500	66 U		5,500,000		120	390	1,100		4,100		1,900		360			330		2,300
2-Methylnaphthalene	320,000	66 U		760,000		74	500	1,300		9,500		5,300		1,200			210		2,100
Acenaphthene	25,000	66 U		300,000		60 U	66	64		100		190 U		82			93		62 U
Fluorene	79,000	66 U		1,200,000		60 U	64 U	74		100		190 U		110			240		62 U
Fluoranthene	49,000	66 U		5,000,000		60 U	610	610		780		190 U		980			650		62 U
Pyrene	140,000	66 U		5,300,000		60 U	560	440		680		210		670			420		62 U
Benzo(a)pyrene	140	66 U		1,700,000		60 U	280	220		540		190 U		410			180		62 U
Dibenzofuran	160,000	66 U		810,000		60 U	120	240		470		190 U		110			200		120
TEQ	140	ND		2,212,000		ND	381	286		711		ND		549			230		ND
SEMIVOLATILES (µg/kg)																			
Method SW8270D																			
Naphthalene	4,500																		
Carbazole	320																		
Benzo(a)pyrene	140																		
TEQ	140																		

**TABLE 6
 CONSTITUENTS DETECTED IN SOIL AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
 NORTH LOT DEVELOPMENT
 SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-30-0.3-4.0 NT61D 10/7/2008	B-30-8.0-10.5 NT61E 10/7/2008	B-31-0.3-4.0 (b) NT61C 10/7/2008	B-31-8.0-10.0 (b) NU11C 10/10/2008	B-32-0.2-2.0 NT61A 10/7/2008	B-32-8.0-10.5 NT61B 10/7/2008	B-33-17.5-18.5 NU11B 10/10/2008	B-36-19.3-20.0 NT85I 10/9/2008	B-36-19.8 NT85H 10/9/2008	B-38-21.5-22.4 NT85E 10/9/2008	B-38-22.0 NT85D 10/9/2008	B-38-22.4-23.0 NT85F 10/9/2008	B-39-21.0-22.3 NT85J 10/9/2008	B-40-24.5-26.0 NT63G 10/8/2008	B-40-25.0 NT63H 10/8/2008	B-41-16.5 NT85A 10/9/2008	B-41-20.0-21.0 NT85B 10/9/2008	B-44-17.5-18.5 NT85K 10/9/2008
NWTPH-DxSG (mg/kg)																			
Diesel Range Hydrocarbons	2,000		49	200		160		2,900		690		59	220		49			2,000	130
Motor Oil	2,000		310	1,200		2,300		690		220		42	130		150			480	130
NWTPH-GX (mg/kg)																			
Gasoline	30								38		2,000					4.5 U		32	
TOTAL METALS (mg/kg)																			
Method 6000/7000 series																			
Arsenic	7	2.4	1.6	1.9	9.6	2.1	2.3	5.0											
Mercury	0.07	0.10	0.05 U	0.08	0.05	0.34	0.06 U	1.88											
BTEX (µg/kg)																			
Method SW8021BMod																			
Benzene	4.5								28 U		5,200					11 U		19	
Toluene	580								35		6,100					11 U		93	
Ethylbenzene	2,400								170		35,000					11 U		150	
Total Xylenes	15,000								290		48,000					ND		670	
PAHs (µg/kg)																			
Method SW8270D/SW8270DSIM																			
Naphthalene	4,500	180 U	58 U	170 U	190 U	180 U	300	360	1,400,000		1,700,000		49,000	170,000	23,000			1,500,000	1,200 J
2-Methylnaphthalene	320,000	180 U	58 U	170 U	190 U	180 U	59 U	180 U	500,000		590,000		9,100	51,000	8,100			460,000	2,100
Acenaphthene	25,000	280	58 U	170 U	230	180 U	59 U	320	320,000 U		380,000		4,700	28,000	4,100			260,000	170
Fluorene	79,000	320	58 U	170 U	420	180 U	59 U	470	320,000 U		240,000		4,000	16,000	4,100			180,000	290
Fluoranthene	49,000	12,000	95	1,300 J	3,500	540	59 U	2,400 J	320,000 U		310,000		7,300	11,000 E	4,900			200,000	830 J
Pyrene	140,000	6,600	74	1,400 J	3,700 J	330	59 U	3,000 J	320,000 U		330,000		6,900	12,000 E	5,900			220,000	700 J
Benzo(a)pyrene	140	3,100	58 U	610 J	1,400	180 U	59 U	1,200	320,000 U		100,000 E		3,300	3,800	2,200			160,000 U	380
Dibenzofuran	160,000	180	58 U	170 U	190 U	180 U	59 U	210	320,000 U		100,000 U		1,300	4,900	900			160,000 U	510 J
TEQ	140	4,233	ND	799	1,804	3	ND	1,540	ND		5,500		4,232	4,517	2,807			ND	488
SEMIVOLATILES (µg/kg)																			
Method SW8270D																			
Naphthalene	4,500																		
Carbazole	320																		
Benzo(a)pyrene	140																		
TEQ	140																		

**TABLE 6
CONSTITUENTS DETECTED IN SOIL AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B-44-21.5-22.5 NU11A 10/10/2008	B-45-8.0-10.0 NU11E 10/10/2008	B-45-8.5 NU11D 10/10/2008	B-47-21.5-21.9 NU11G 10/10/2008	B-47-21.8 NU11F 10/10/2008	B50A-15-16 PI35A 7/28/2009	B51-5 PI35C 7/28/2009	B51-15-16 PI35B 7/28/2009	B52-6.5 PI35E 7/28/2009	B52-15-16 PI35D 7/28/2009	B53-15-16 PI35F 7/28/2009	B54-4 PI35H 7/28/2009	B54-15-16 PI35G 7/28/2009	B-55-8-9 PJ46A 8/6/2009	B-56-9-10 PJ46B 8/6/2009	B57-1-2 PI16A 7/27/2009	B57-10-15 PI16B/PI54A 7/27/2009	B57-15-16 PI16C 7/27/2009	B58-1-2 PI16D 7/27/2009
NWTPH-DxSG (mg/kg)																				
Diesel Range Hydrocarbons	2,000	400			140 J														100	
Motor Oil	2,000	860			310														470	
NWTPH-GX (mg/kg)																				
Gasoline	30			4.4 U		11 U	60	3200	1600	760	12		5.5 U	180	11	4.4 U	3.8 U		20	
TOTAL METALS (mg/kg)																				
Method 6000/7000 series																				
Arsenic	7																		7	5 U
Mercury	0.07																		0.05	0.59
BTEX (µg/kg)																				
Method SW8021BMod																				
Benzene	4.5			11 U		32	22 U	460	120 U	79	53		14 U	17 U					11 U	9.5 U
Toluene	580			11 U		48	81	2200	700	110	26		18	17 U					11 U	9.5 U
Ethylbenzene	2,400			11 U		27 U	55	1400	510	430	20		14 U	17 U					11 U	9.5 U
Total Xylenes	15,000			ND		ND	170	5500	1840	970	242		ND	ND					160	ND
PAHs (µg/kg)																				
Method SW8270D/SW8270DSIM																				
Naphthalene	4,500	5,000	60 U		500															100
2-Methylnaphthalene	320,000	1,100 J	60 U		150 J															180
Acenaphthene	25,000	2,000	60 U		480															19
Fluorene	79,000	2,400	60 U		320															48
Fluoranthene	49,000	20,000	280		1,900															120 J
Pyrene	140,000	17,000 J	230 J		1,600 J															130
Benzo(a)pyrene	140	9,700	78		1,000															96
Dibenzofuran	160,000	1,700	60 U		130															50
TEQ	140	12,387	102		1,291															125
SEMIVOLATILES (µg/kg)																				
Method SW8270D																				
Naphthalene	4,500																		1300	59 U
Carbazole	320																		140	59 U
Benzo(a)pyrene	140																		120	59 U
TEQ	140																		176	ND

**TABLE 6
CONSTITUENTS DETECTED IN SOIL AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Level (a)	B58-15-16 PI16E 7/27/2009	B59-1-2 PI16K 7/27/2009	B60-1-2 PI16F 7/27/2009	B60-15-16 PI16G 7/27/2009	B61-1-2 PI16H 7/27/2009	B62-1-2 PI35I 7/28/2009	B63-1-2 PI35J 7/28/2009	B64-1-2 PI16L 7/27/2009	B65-1-2 PI16I 7/27/2009	B66-1-2 PI35K 7/28/2009	B67-1-2 PI16J 7/27/2009	B68-1-2 PI35L 7/28/2009	MW-11-4.5-5 PI99A 8/3/2009	MW-14-15 PJ11A 8/4/2009	MW-17D-15.5-16.5 PJ11B/PJ23A 8/4/2009	
NWTPH-DxSG (mg/kg)																	
Diesel Range Hydrocarbons	2,000																400
Motor Oil	2,000																160
NWTPH-GX (mg/kg)																	
Gasoline	30																250
TOTAL METALS (mg/kg)																	
Method 6000/7000 series																	
Arsenic	7		7	7		6	10 U	5 U	8	30	5	7	6				8
Mercury	0.07		0.12	0.05		0.02 U	0.04	0.05	0.06	0.05	0.02	0.02	0.08				0.48
BTEX (µg/kg)																	
Method SW8021BMod																	
Benzene	4.5																20
Toluene	580																48
Ethylbenzene	2,400																170
Total Xylenes	15,000																340
PAHs (µg/kg)																	
Method SW8270D/SW8270DSIM																	
Naphthalene	4,500	210			28											160	1,900
2-Methylnaphthalene	320,000	150			12											81	1,400
Acenaphthene	25,000	140 J			5.8											74	3,300
Fluorene	79,000	370 J			19											100	2,900
Fluoranthene	49,000	2000 J			1400 J											2,200	8,900
Pyrene	140,000	1600			1400											1,600	7,700
Benzo(a)pyrene	140	790			1100											700	4,200
Dibenzofuran	160,000	170 J			8.6											90	1,400
TEQ	140	1,039			1,433											969	5,425
SEMIVOLATILES (µg/kg)																	
Method SW8270D																	
Naphthalene	4,500	270	69		130	61 U	130	59 U	58 U	180	71	65 U					10,000
Carbazole	320	64 U	63 U		62 U	61 U	300	59 U	58 U	64 U	60 U	65 U					3,400
Benzo(a)pyrene	140	64 U	680		90	160	1200	59 U	58 U	120	220	65 U					18,000
TEQ	140	ND	939.2		117	219	1559			166	278						22860

(a) See Table 5 for criteria used to develop preliminary cleanup levels.
 (b) Samples collected from boring B-31A; no samples were collected from boring B-31B (see Table 1).
 U = Indicates the compound was undetected at the reported concentration.
 J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
 Bold = Detected compound.
 Box = Exceedance of preliminary cleanup level.

TABLE 7
DIOXIN/FURAN ANALYTICAL RESULTS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

	Preliminary Cleanup Levels	B62-1-2 P135I 7/28/2009	B65-1-2 P116I 7/27/2009
DIOXIN AND FURANS (ng/kg)			
Method 8290			
2,3,7,8-TCDD		8.25 UJ	12.4 UJ
1,2,3,7,8-PeCDD		41.2 UJ	62.2 UJ
1,2,3,4,7,8-HxCDD		41.2 UJ	62.2 UJ
1,2,3,6,7,8-HxCDD		41.2 UJ	62.2 UJ
1,2,3,7,8,9-HxCDD		41.2 UJ	62.2 UJ
1,2,3,4,6,7,8-HpCDD		7.70 J	131 J
OCDD		50.5 J	1020 J
2,3,7,8-TCDF		8.25 UJ	12.4 UJ
1,2,3,7,8-PeCDF		41.2 UJ	62.2 UJ
2,3,4,7,8-PeCDF		41.2 UJ	92.1 J
1,2,3,4,7,8-HxCDF		41.2 UJ	62.2 UJ
1,2,3,6,7,8-HxCDF		41.2 UJ	19.3 J
2,3,4,6,7,8-HxCDF		41.2 UJ	19.8 J
1,2,3,7,8,9-HxCDF		41.2 UJ	62.2 UJ
1,2,3,4,6,7,8-HpCDF		41.2 UJ	115 J
1,2,3,4,7,8,9-HpCDF		41.2 UJ	62.2 UJ
OCDF		82.5 UJ	198 J
Total TCDD		8.25 UJ	12.4 UJ
Total PeCDD		41.2 UJ	62.2 UJ
Total HxCDD		41.2 UJ	76.0 J
Total HpCDD		15.7 J	214 J
Total TCDF		8.25 UJ	110 J
Total PeCDF		41.2 UJ	795 J
Total HxCDF		41.2 UJ	583 J
Total HpCDF		41.2 UJ	315 J
TEQ (ND=0)	0.27	0.0922 J	34.4 J

U = Indicates the compound was undetected at the reported concentration.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.

Bold = Detected compound.

Box = Exceedance of preliminary cleanup level.

TEQ = Total toxic equivalent concentration of 2,3,7,8 TCDD.

**TABLE 8
GROUNDWATER ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	B-1 MK66I 2/27/2008	B-2 MK66M 2/27/2008	B-3 MK66J 2/27/2008	B-6 MK66K 2/27/2008	B-7 MK66L 2/27/2008	B-8 MK82I 2/28/2008	B-9 MK82J 2/28/2008	B-10 MK82K 2/28/2008	B-11 MK82L 2/28/2008	B-12 MK82M 2/28/2008	B-14 MK82N 2/28/2008	B-18 ML02H 2/29/2008	B-19 ML02I 2/29/2008	B-26 NT63K 10/7/2008	B-27 NT61L 10/7/2008	B-38 NT85G 10/9/2008	B-41 NT85C 10/9/2008
NWTPH-HCID (mg/L)																		
Gas	0.8																	
Diesel	0.5														>0.25	0.25 U	>50	1.0 U
Oil	0.5														0.63 U	0.63 U	>120	>2.5
															0.63 U	0.63 U	>120	2.5 U
NWTPH-DxSG (mg/L)																		
Diesel Range Organics	0.5	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			310	3.6
Motor Oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			150	2.5 U
NWTPH-GX (mg/L)																		
Gasoline	0.8	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1.3	0.25 U				
BTEX (µg/L)																		
Method SW8021BMod																		
Benzene	0.8																	
Toluene	80																	
Ethylbenzene	275																	
m,p-Xylene																		
o-Xylene																		
Total Xylenes	1600																	
PAHs (µg/L)																		
Method SW8270D/SW8270DSIM																		
Naphthalene	160	1.0 U	43	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	3.1	1.0 U	1.0 U	1.0 U	1.0 U				
2-Methylnaphthalene	32	1.0 U	5.1	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
1-Methylnaphthalene		1.0 U	3.2	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Acenaphthylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Acenaphthene	250	1.0 U	1.5	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Fluorene	500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Phenanthrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Anthracene	4800	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Fluoranthene	50	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Pyrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Benzo(a)anthracene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Chrysene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Benzo(b)fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Benzo(k)fluoranthene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Benzo(a)pyrene	0.012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Indeno(1,2,3-cd)pyrene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Benzo(g,h,i)perylene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Dibenzofuran	32	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
TEQ	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				

**TABLE 8
GROUNDWATER ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	B-1 MK66I 2/27/2008	B-2 MK66M 2/27/2008	B-3 MK66J 2/27/2008	B-6 MK66K 2/27/2008	B-7 MK66L 2/27/2008	B-8 MK82I 2/28/2008	B-9 MK82J 2/28/2008	B-10 MK82K 2/28/2008	B-11 MK82L 2/28/2008	B-12 MK82M 2/28/2008	B-14 MK82N 2/28/2008	B-18 ML02H 2/29/2008	B-19 ML02I 2/29/2008	B-26 NT63K 10/7/2008	B-27 NT61L 10/7/2008	B-38 NT85G 10/9/2008	B-41 NT85C 10/9/2008
DISSOLVED METALS (µg/L)																		
Method 200.8/6010B/7470A																		
Arsenic	25 (b)	29	12	20	4	40	3	25	2	10 U	1 U	4	3	1				
Lead	15	1 U	1 U	26	1 U	1 U	1	1 U	1 U	1 U	1 U	2	1 U	1 U				
VOLATILES (µg/L)																		
Method SW8260B																		
Chloromethane	3.4	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	3	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone	35	3.0 U	3.0 U	3.0 U	3.0 U	6.6	3.1	7.0	3.0 U	4.8	3.0 U	4.2	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Carbon Disulfide	400	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	7.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Butanone	2400	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Benzene	0.8	0.2 U	5.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	80	0.2 U	2.2	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	275	0.2 U	5.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Styrene	1.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylene		0.4 U	5.7	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	1.1	0.4 U	0.4 U	0.4 U	0.4 U
o-Xylene		0.2 U	2.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	0.2 U	0.2 U	0.2 U	0.2 U
Total Xylenes	1600	ND	8.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	ND	ND	ND	ND
1,3,5-Trimethylbenzene	400	0.2 U	0.6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trimethylbenzene	400	0.2 U	1.1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U
Isopropylbenzene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.2	0.2 U	0.2 U	0.2 U
n-Propylbenzene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	3.1	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	3.0	0.2 U	0.2 U	0.2 U	0.2 U
sec-Butylbenzene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.6	0.2 U	0.2 U	0.2 U	0.2 U
4-Isopropyltoluene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.2 U
n-Butylbenzene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.3	0.2 U	0.2 U	0.2 U	0.2 U
Naphthalene	160	0.5 U	68	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

**TABLE 8
GROUNDWATER ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	MW-1 OB80A 11/25/08	MW-1 PK34B 08/12/09	MW-2 OB80B 11/25/08	MW-2 PK34A 08/12/09	MW-3 OB80C 11/24/08	MW-3 PK44A 08/13/09	MW-4 OB80D 11/24/08	MW-4 PK34C 08/12/09	MW-5 OB80E 11/24/08	MW-5 PK15A 08/11/09	MW-6 OB80F 11/25/08	MW-6 PK34D 08/12/09	MW-7D OB80G 11/24/08	MW-7D PK34F 08/12/09	MW-7S OB80H 11/24/08	MW-7S PK34E 08/12/09	MW-8 OB80I 11/25/08	MW-8 PK15B 08/11/09	MW-88 PK15C 08/11/09	MW-9D OB80J 11/25/08
NWTPH-HCID (mg/L)																					
Gas	0.8																				
Diesel	0.5																				
Oil	0.5																				
NWTPH-DxSG (mg/L)																					
Diesel Range Organics	0.5	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			2.0
Motor Oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			0.50 U
NWTPH-GX (mg/L)																					
Gasoline	0.8	0.25 U	0.25 U	0.25 U	0.25 U	0.37	0.28	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25	9.7
BTEX (µg/L) Method SW8021BMod																					
Benzene	0.8		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U
Toluene	80		1.0 U		1.0 U		22		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U
Ethylbenzene	275		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U
m,p-Xylene			1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.2
o-Xylene			1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U		1.0 U
Total Xylenes	1600		ND		ND		ND		ND		ND		ND		ND		ND		1.1		1.2
PAHs (µg/L) Method SW8270D/SW8270DSIM																					
Naphthalene	160	5.6	0.13	7.8	0.10 U	9.3	0.10 U	4.4	0.29	1.7	0.10 U	1.1	0.32	0.58	1.9	0.40	0.73	4.0	0.10 U	0.10 U	4,800
2-Methylnaphthalene	32	0.61	0.10 U	0.85	0.10 U	1.1	0.10 U	0.45	0.10 U	0.18	0.10 U	0.13	0.10 U	0.10 U	0.39	0.10 U	0.19	0.47	0.10 U	0.10 U	660
1-Methylnaphthalene		0.32	0.10 U	0.44	0.10 U	0.57	0.10 U	0.29	0.10 U	0.11	0.10 U	0.10 U	0.10 U	0.10 U	0.25	0.10 U	0.10	0.28	0.10 U	0.10 U	360
Acenaphthylene		0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	13
Acenaphthene	250	0.15	0.10 U	0.20	0.10 U	0.30	0.10 U	0.39	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.15	0.10 U	0.10 U	0.11	0.10 U	0.10 U	240
Fluorene	500	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	70
Phenanthrene		0.12 U	0.10 U	0.12 U	0.10 U	0.17	0.10 U	0.27	0.32	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	95
Anthracene	4800	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	17
Fluoranthene	50	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	20
Pyrene	100	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	23
Benzo(a)anthracene		0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	6.2
Chrysene		0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	5.7
Benzo(b)fluoranthene		0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	2.6
Benzo(k)fluoranthene		0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	3.1
Benzo(a)pyrene	0.012	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	5.5
Indeno(1,2,3-cd)pyrene		0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	2.3
Benzo(g,h,i)perylene		0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	2.4
Dibenzofuran	32	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	24
TEQ	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.0

**TABLE 8
GROUNDWATER ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	MW-1 OB80A 11/25/08	MW-1 PK34B 08/12/09	MW-2 OB80B 11/25/08	MW-2 PK34A 08/12/09	MW-3 OB80C 11/24/08	MW-3 PK44A 08/13/09	MW-4 OB80D 11/24/08	MW-4 PK34C 08/12/09	MW-5 OB80E 11/24/08	MW-5 PK15A 08/11/09	MW-6 OB80F 11/25/08	MW-6 PK34D 08/12/09	MW-7D OB80G 11/24/08	MW-7D PK34F 08/12/09	MW-7S OB80H 11/24/08	MW-7S PK34E 08/12/09	MW-8 OB80I 11/25/08	MW-8 PK15B 08/11/09	MW-88 PK15C 08/11/09	MW-9D OB80J 11/25/08
DISSOLVED METALS (µg/L)																					
Method 200.8/6010B/7470A																					
Arsenic	25 (b)	7	2.4	3	1.2	5	1.3	6	4.6	58	17	6	1.2	4	2.0	7	3.9	7	2.0	1.8	8
Lead	15	1 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VOLATILES (µg/L)																					
Method SW8260B																					
Chloromethane	3.4	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	0.2
Methylene Chloride	3	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	0.5 U
Acetone	35	3.0 U		6.2		27		10		3.6		3.4		4.1		8.4		7.5		7.5	3.0 U
Carbon Disulfide	400	0.2 U		0.2 U		0.2 U		0.3		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	0.2 U
Chloroform	7.2	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.5		0.2 U		0.2 U		0.2 U	0.2
2-Butanone	2400	2.5 U		2.5 U		7.4		2.5 U		2.5 U		2.5 U		2.5 U		2.5 U		2.5 U		2.5 U	2.5 U
Benzene	0.8	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.4	120
Toluene	80	0.3		0.2 U		0.9		0.3		0.2 U		0.2 U		0.5		0.2 U		0.2 U		0.9	60 E
Ethylbenzene	275	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.4	370
Styrene	1.5	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	0.9
m,p-Xylene		0.4 U		0.4 U		0.4 U		0.4 U		0.4 U		0.4 U		0.4 U		0.4 U		0.4 U		1.8	310
o-Xylene		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.5	150
Total Xylenes	1600	ND		ND		ND		ND		ND		ND		ND		ND		ND		2.3	460
1,3,5-Trimethylbenzene	400	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	58 E
1,2,4-Trimethylbenzene	400	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	110
Isopropylbenzene		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	20 E
n-Propylbenzene		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	0.2 U
tert-Butylbenzene		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	0.2 U
sec-Butylbenzene		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	0.2 U
4-Isopropyltoluene		0.2 U		7.2		130		0.4		0.2 U		0.4		0.2 U		0.2 U		0.2 U		36	0.2 U
n-Butylbenzene		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	0.2 U
Naphthalene	160	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U	7,400

**TABLE 8
GROUNDWATER ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	MW-9D PK34G 08/12/09	MW-9S OB80K 11/25/08	MW-9S PK34H 08/12/09	MW-10 PK44B 8/13/2009	MW-11 PK44C 8/13/2009	MW-12 PK44D 8/13/2009	MW-13 PK44E 8/13/2009	MW-14 PK44F 8/13/2009	MW-15D PK44G 8/13/2009	MW-16D PK34I 08/12/09	MW-17D PK34J 08/12/09
NWTPH-HCID (mg/L)												
Gas	0.8											
Diesel	0.5											
Oil	0.5											
NWTPH-DxSG (mg/L)												
Diesel Range Organics	0.5	0.77	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Motor Oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
NWTPH-GX (mg/L)												
Gasoline	0.8	2.2	0.54	0.25 U	0.25 U	0.25 U	0.30	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
BTEX (µg/L) Method SW8021BMod												
Benzene	0.8	13		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	80	3.1		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	275	37		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene		28		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene		16		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	1600	44		ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs (µg/L) Method SW8270D/SW8270DSIM												
Naphthalene	160	880	16	0.99	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.8	0.28	8.3
2-Methylnaphthalene	32	230	1.9	0.23	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.23	0.10 U	3.1
1-Methylnaphthalene		130	1.1	0.15	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.20	0.10 U	4.2
Acenaphthylene		2.6	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Acenaphthene	250	120	0.67	0.16	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.31	0.27	6.5
Fluorene	500	56	0.19	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.19	0.10 U	3.9
Phenanthrene		73	0.27	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.54	0.16	10
Anthracene	4800	7.9	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.8
Fluoranthene	50	4.7	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.13	0.10 U	1.6
Pyrene	100	6.6	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.15	0.10 U	1.8
Benzo(a)anthracene		0.36	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.16
Chrysene		0.31	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.15
Benzo(b)fluoranthene		0.10	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(k)fluoranthene		0.10	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(a)pyrene	0.012	0.15	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)pyrene		0.10 U	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(g,h,i)perylene		0.10 U	0.12 U	0.10 U	0.10 U	0.14	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Dibenzofuran	32	15	0.12 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.11	0.10 U	2.0
TEQ	0.012	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02

**TABLE 8
GROUNDWATER ANALYTICAL RESULTS - DETECTED COMPOUNDS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	MW-9D PK34G 08/12/09	MW-9S OB80K 11/25/08	MW-9S PK34H 08/12/09	MW-10 PK44B 8/13/2009	MW-11 PK44C 8/13/2009	MW-12 PK44D 8/13/2009	MW-13 PK44E 8/13/2009	MW-14 PK44F 8/13/2009	MW-15D PK44G 8/13/2009	MW-16D PK34I 08/12/09	MW-17D PK34J 08/12/09
DISSOLVED METALS (µg/L)												
Method 200.8/6010B/7470A												
Arsenic	25 (b)	3.8	6	5.0	4.9	2.6	1.8	2.2	2.5	16.8	7.2	13.5
Lead	15	1 U	1 U	1 U	1 U	2	1	1 U	1	1 U	1 U	1 U
VOLATILES (µg/L)												
Method SW8260B												
Chloromethane	3.4		0.2 U									
Methylene Chloride	3		0.5 U									
Acetone	35		3.0 U									
Carbon Disulfide	400		0.2 U									
Chloroform	7.2		0.2 U									
2-Butanone	2400		2.5 U									
Benzene	0.8		0.2 U									
Toluene	80		0.3									
Ethylbenzene	275		0.2 U									
Styrene	1.5		0.2 U									
m,p-Xylene			0.4 U									
o-Xylene			0.2 U									
Total Xylenes	1600		ND									
1,3,5-Trimethylbenzene	400		0.2 U									
1,2,4-Trimethylbenzene	400		0.2 U									
Isopropylbenzene			0.2 U									
n-Propylbenzene			0.2 U									
tert-Butylbenzene			0.2 U									
sec-Butylbenzene			0.2 U									
4-Isopropyltoluene			0.2 U									
n-Butylbenzene			0.2 U									
Naphthalene	160		0.6									

(a) See Table 8 for criteria used to develop preliminary cleanup levels.
 (b) Calculated background concentration.
 U = Indicates the compound was undetected at the reported concentration.
 E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
 Bold = Detected compound.
 Box = Exceedance of preliminary cleanup level.
 mg/L = Milligrams per liter.
 µg/L = Micrograms per liter.

**TABLE 9
PRELIMINARY GROUNDWATER CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Analyte	Protective of Drinking Water							Protective of Marine Surface Water								Preliminary Cleanup Levels (Before adjustment for background) µg/L	Background Groundwater from PTI 1989 Draft Report 90th Percentile µg/L	Preliminary Cleanup Levels (After adjustment for background) µg/L	Preliminary Cleanup Levels (After adjustment for total site risk) µg/L	Preliminary Cleanup Levels in Final Units	Units					
	MCL Treatment Technique			WA State Board of Health MCLs		Standard Formula Values		AWQC for Protection of Aquatic Life (a)		National Toxics Rule (b)			National Recommended Water Quality Criteria (c)									Standard Formula Values				
	MCL µg/L	Action Level µg/L	MCL Goal µg/L	Primary µg/L	Secondary µg/L	Carcinogen µg/L	Non-carcinogen µg/L	Acute µg/L	Chronic µg/L	Acute µg/L	Chronic µg/L	AWQC for Protection of Human Health µg/L	Protection of Aquatic Life - Acute µg/L	Protection of Aquatic Life - Chronic µg/L	Protection of Human Health µg/L							Carcinogen µg/L	Non Carcinogen µg/L			
TPH																										
Gasoline-Range Petroleum Hydrocarbons						800 (d,e)										800 (d,e)		800	0.8	mg/L						
Diesel-Range Petroleum Hydrocarbons						500 (d)										500 (d)		500	0.5	mg/L						
Oil-Range Petroleum Hydrocarbons						500 (d)										500 (d)		500	0.5	mg/L						
BTEX																										
Benzene	5	0	5		0.8	32					71			51	23	2,000		0.8	0.8	0.8	µg/L					
Toluene	1,000		1,000	1,000		640					200,000			15,000		19,000		640	640	80	µg/L					
Ethylbenzene	700		700	700		800					29,000			2,100		6,900		700	700	275	µg/L					
Total Xylenes	10,000		10,000	10,000		1,600 (f)												1,600 (f)	1,600 (f)	1,600 (f)	µg/L					
PAHs																										
Naphthalene						160										4,900		160	160	160	µg/L					
2-Methylnaphthalene						32												32	32	32	µg/L					
1-Methylnaphthalene																						µg/L				
Acenaphthylene																						µg/L				
Acenaphthene						960								990		640		640	640	250	µg/L					
Fluorene						640					14,000			5,300		3,500		640	640	500	µg/L					
Phenanthrene																						µg/L				
Anthracene						4,800					110,000			40,000		26,000		4,800	4,800	4,800	µg/L					
Fluoranthene						640					370			140		90		90	90	50	µg/L					
Pyrene						480					11,000			4,000		2,600		480	480	100	µg/L					
Benzo(a)anthracene						(g)					0.031			0.018	(g)		(g)	(g)	(g)	(g)	µg/L					
Chrysene						(g)					0.031			0.018	(g)		(g)	(g)	(g)	(g)	µg/L					
Benzo(b)fluoranthene						(g)					0.031			0.018	(g)		(g)	(g)	(g)	(g)	µg/L					
Benzo(k)fluoranthene						(g)					0.031			0.018	(g)		(g)	(g)	(g)	(g)	µg/L					
Benzo(a)pyrene	0.2		0	0.2		0.012					0.031			0.018	0.030		0.012 (g)	0.012 (g)	0.012 (g)	0.012 (g)	µg/L					
Indeno(1,2,3-cd)pyrene						(g)					0.031			0.018	(g)		(g)	(g)	(g)	(g)	µg/L					
Dibenzo(a,h)anthracene						(g)					0.031			0.018	(g)		(g)	(g)	(g)	(g)	µg/L					
Benzo(g,h,i)perylene																						µg/L				
Dibenzofuran						32												32	32	32	µg/L					
DISSOLVED METALS																										
Arsenic	10			10		0.058					69	36	69	36	0.14		69	36	0.14	0.10	18	0.058	25 (i)	25	25	µg/L
Lead		15	0			15 (d)					210	8.1	210	8.1			210	8.1					10	15	15	µg/L
Chromium	100		100	100		24,000 (h)										240,000		100	100	100	100	100	100	100	100	µg/L
Cadmium	5		5	5		8.0					42	9.3	42	9.3		40	8.8	5	2	5	5	5	5	5	5	µg/L
Zinc					5,000	4,800					90	81	90	81		90	81	81	160	160	160	160	160	160	160	µg/L
Copper		1,300	1,300	1,300		590					4.8	3.1	2.4	2.4		4.8	3.1	2.4	20	20	20	20	20	20	20	µg/L
Mercury	2		2	2		4.8					1.8	0.025	2.1	0.025	0.15		1.8	0.94	0.3			0.025	0.025	0.025	0.025	µg/L

**TABLE 9
PRELIMINARY GROUNDWATER CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Analyte	Protective of Drinking Water							Protective of Marine Surface Water									Preliminary Cleanup Levels (Before adjustment for background) µg/L	Background Groundwater from PTI 1989 Draft Report 90th Percentile µg/L	Preliminary Cleanup Levels (After adjustment for background) µg/L	Preliminary Cleanup Levels (After adjustment for total site risk) µg/L	Preliminary Cleanup Levels in Final Units	Units	
	MCL Treatment Technique			WA State Board of Health MCLs		Standard Formula Values		AWQC for Protection of Aquatic Life (a)		National Toxics Rule (b)			National Recommended Water Quality Criteria (c)			Standard Formula Values							
				Primary µg/L	Secondary µg/L	Carcinogen µg/L	Non-carcinogen µg/L	Acute µg/L	Chronic µg/L	Acute µg/L	Chronic µg/L	AWQC for Protection of Human Health µg/L	Protection of Aquatic Life - Acute µg/L	Protection of Aquatic Life - Chronic µg/L	Protection of Human Health µg/L	Carcinogen µg/L							Non Carcinogen µg/L
	MCL µg/L	Action Level µg/L	MCL Goal µg/L																				
VOLATILES																							
Chloromethane						3.4									130		3		3		3	µg/L	
Methylene Chloride	5		0	5		5.8	480			1,600				590	960	170,000	5		5		3	µg/L	
Acetone							800										800		800		35	µg/L	
Carbon Disulfide							800										800		800		350	µg/L	
Chloroform	80			80		7.2	80			470				470	280	6,900	7.2		7.2		7.2	µg/L	
2-Butanone							4,800										4,800		4,800		2,400	µg/L	
Styrene	100		100	100		1.5	1600														1.5		
1,3,5-Trimethylbenzene							400										400		400			µg/L	
1,2,4-Trimethylbenzene							400										400		400			µg/L	
Isopropylbenzene																							
n-Propylbenzene																							
tert-Butylbenzene																							
sec-Butylbenzene																							
4-Isopropyltoluene																							
n-Butylbenzene																							
SEMIVOLATILES																							
Phenol							4,800			4,600,000				1,700,000	1,100,000		4,800		4,800		4,800	µg/L	
4-Methylphenol																							
Di-n-butylphthalate							1,600			12,000				4,500	2,900		1,600		1,600		1,600	µg/L	
Carbazole						4.4											4.4		4.4		4.4	µg/L	
DIOXINS AND FURANS																							
2,3,7,8-TCDD	3.0E-05			3.0E-05						1.4E-08				5.1E-09			5.1E-09		5.1E-09		5.1E-03	pg/L	

Notes:

- Preliminary cleanup level is based on lowest of federal or state MCL, state secondary MCL, and Method B standard formula values, for carcinogens without federal or state MCLs on the Method B standard formula value, and for carcinogens with federal or state MCLs.
- Preliminary cleanup levels are developed for all constituents detected in groundwater or soil.
- Shading indicates basis for preliminary cleanup level.
- = No cleanup level available.
- mg/L = Milligrams per liter.
- µg/L = Micrograms per liter.
- pg/L = Picograms per liter.
- (a) Ambient water quality criteria for protection of aquatic life from WAC 173-201A-240.
- (b) Ambient water quality criteria for protection of human health from 40 CFR Part 131d (National Toxics Rule).
- (c) National Recommended Water Quality Criteria (EPA website 2006).
- (d) MTCA Method A groundwater cleanup levels are used for gasoline-range, diesel-range, oil-range petroleum hydrocarbons, and lead.
- (e) For gasoline-range petroleum hydrocarbons, if benzene is present. If benzene is not present, screening level is 1,000 µg/L (1.0 mg/L).
- (f) Screening level is for total xylenes.
- (g) Evaluated using toxicity equivalency quotient (TEQ) based on benzo(a)pyrene.
- (h) Value is for chromium III. Based on site history, chromium VI is not expected to be present.
- (i) Calculated background concentration.

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**TABLE 10
 CONSTITUENTS DETECTED IN GROUNDWATER AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
 NORTH LOT DEVELOPMENT
 SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	B-1 MK66I 2/27/2008	B-2 MK66M 2/27/2008	B-3 MK66J 2/27/2008	B-6 MK66K 2/27/2008	B-7 MK66L 2/27/2008	B-8 MK82I 2/28/2008	B-9 MK82J 2/28/2008	B-10 MK82K 2/28/2008	B-11 MK82L 2/28/2008	B-12 MK82M 2/28/2008	B-14 MK82N 2/28/2008	B-18 ML02H 2/29/2008	B-19 ML02I 2/29/2008	B-38 NT85G 10/9/2008	B-41 NT85C 10/9/2008	MW-1 OB80A 11/25/08	MW-1 PK34B 08/12/09	MW-2 OB80B 11/25/08	MW-2 PK34A 08/12/09	
NWTPH-DxSG (mg/L)																					
Diesel Range Organics	0.5	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	310	3.6	0.25 U	0.25 U	0.25 U	0.25 U
Motor Oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	150	2.5 U	0.50 U	0.50 U	0.50 U	0.50 U
NWTPH-GX (mg/L)																					
Gasoline	0.8	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	1.3	0.25 U			0.25 U	0.25 U	0.25 U	0.25 U	
PAHs (µg/L) Method SW8270D/SW8270DSIM																					
Naphthalene	160	1.0 U	43	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	3.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		5.6	0.13	7.8	0.10 U	
2-Methylnaphthalene	32	1.0 U	5.1	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		0.61	0.10 U	0.85	0.10 U	
Benzo(a)pyrene	0.012	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		0.12 U	0.10 U	0.12 U	0.10 U	
TEQ	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	
DISSOLVED METALS (µg/L) Method 200.8/6010B/7470A																					
Arsenic	25 (b)	29	12	20	4	40	3	25	2	10 U	1 U	4	3	1			7	2.4	3	1.2	
Lead	15	1 U	1 U	26	1 U	1 U	1	1 U	1 U	1 U	1 U	2	1 U	1 U			1 U	1 U	1 U	1 U	
VOLATILES (µg/L) Method SW8260B																					
Benzene	0.8	0.2 U	5.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2 U			0.2 U		0.2 U		
Ethylbenzene	275	0.2 U	5.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2 U			0.2 U		0.2 U		
Naphthalene	160	0.5 U	68	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.5	0.5 U	0.5 U	0.5 U	0.5 U			0.5 U		0.5 U		

**TABLE 10
 CONSTITUENTS DETECTED IN GROUNDWATER AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
 NORTH LOT DEVELOPMENT
 SEATTLE, WASHINGTON**

	Preliminary Cleanup Levels (a)	MW-3 OB80C 11/24/08	MW-3 PK44A 08/13/09	MW-4 OB80D 11/24/08	MW-4 PK34C 08/12/09	MW-5 OB80E 11/24/08	MW-5 PK15A 08/11/09	MW-6 OB80F 11/25/08	MW-6 PK34D 08/12/09	MW-7D OB80G 11/24/08	MW-7D PK34F 08/12/09	MW-7S OB80H 11/24/08	MW-7S PK34E 08/12/09	MW-8 OB80I 11/25/08	MW-8 PK15B 08/11/09	MW-88 PK15C 08/11/09	MW-9D OB80J 11/25/08	MW-9D PK34G 08/12/09	MW-9S OB80K 11/25/08	
NWTPH-DxSG (mg/L)																				
Diesel Range Organics	0.5	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			2.0	0.77	0.25 U
Motor Oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U			0.50 U	0.50 U	0.50 U
NWTPH-GX (mg/L)																				
Gasoline	0.8	0.37	0.28	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25		9.7	2.2	0.54
PAHs (µg/L) Method SW8270D/SW8270DSIM																				
Naphthalene	160	9.3	0.10 U	4.4	0.29	1.7	0.10 U	1.1	0.32	0.58	1.9	0.40	0.73	4.0	0.10 U	0.10 U		4,800	880	16
2-Methylnaphthalene	32	1.1	0.10 U	0.45	0.10 U	0.18	0.10 U	0.13	0.10 U	0.10 U	0.39	0.10 U	0.19	0.47	0.10 U	0.10 U		660	230	1.9
Benzo(a)pyrene	0.012	0.12 U	0.10 U	0.12 U	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U		5.5	0.15	0.12 U
TEQ	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		7.0	0.21	ND
DISSOLVED METALS (µg/L) Method 200.8/6010B/7470A																				
Arsenic	25 (b)	5	1.3	6	4.6	58	17	6	1.2	4	2.0	7	3.9	7	2.0	1.8		8	3.8	6
Lead	15	2 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1 U	1 U	1 U
VOLATILES (µg/L) Method SW8260B																				
Benzene	0.8	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.4				120		0.2 U
Ethylbenzene	275	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.4				370		0.2 U
Naphthalene	160	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U		0.5 U				7,400		0.6

TABLE 10
CONSTITUENTS DETECTED IN GROUNDWATER AT CONCENTRATIONS GREATER THAN THE PRELIMINARY CLEANUP LEVELS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

	Preliminary Cleanup Levels (a)	MW-9S PK34H 08/12/09	MW-10 PK44B 8/13/2009	MW-11 PK44C 8/13/2009	MW-12 PK44D 8/13/2009	MW-13 PK44E 8/13/2009	MW-14 PK44F 8/13/2009	MW-15D PK44G 8/13/2009	MW-16D PK34I 08/12/09	MW-17D PK34J 08/12/09
NWTPH-DxSG (mg/L)										
Diesel Range Organics	0.5	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Motor Oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
NWTPH-GX (mg/L)										
Gasoline	0.8	0.25 U	0.25 U	0.25 U	0.30	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PAHs (µg/L)										
Method SW8270D/SW8270DSIM										
Naphthalene	160	0.99	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.8	0.28	8.3
2-Methylnaphthalene	32	0.23	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.23	0.10 U	3.1
Benzo(a)pyrene	0.012	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
TEQ	0.012	ND	ND	ND	ND	ND	ND	ND	ND	0.02
DISSOLVED METALS (µg/L)										
Method 200.8/6010B/7470A										
Arsenic	25 (b)	5.0	4.9	2.6	1.8	2.2	2.5	16.8	7.2	13.5
Lead	15	1 U	1 U	2	1	1 U	1	1 U	1 U	1 U
VOLATILES (µg/L)										
Method SW8260B										
Benzene	0.8									
Ethylbenzene	275									
Naphthalene	160									

(a) See Table 9 for criteria used to develop preliminary cleanup levels

(b) Calculated background concentration.

U = Indicates the compound was undetected at the reported concentration

E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate

Bold = Detected compound.

Box = Exceedance of preliminary cleanup level.

mg/L = Milligrams per liter.

µg/L = Micrograms per liter.

TABLE 11
MAINLINE SEWER/STORM DRAIN ELEVATIONS COMPARED TO GROUNDWATER ELEVATIONS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

Diameter (inches)	Type	Rim Elevation (a) (ft)	Corrected Rim Elevation (b) (ft)	Invert Elevation (a) (ft)	Corrected Invert Elevation (b) (ft)	Corrected Top of Pipe Elevation (c) (ft)	Above Average GW Elevation? (d)
18	Combined Mainline	8.2	17.9	1.7	11.4	12.9	yes
18	Combined Mainline	8	17.7	0.94	10.64	12.14	yes
18	Combined Mainline	8.9	18.6	0.62	10.32	11.82	yes
18	Combined Mainline	8.6	18.3	-0.09	9.61	11.11	yes
18	Combined Mainline	8.93	18.63	1.96	11.66	13.16	yes
102	Metro Mainline	---	---	-12.02	-2.32	6.18	no
102	Metro Mainline	---	---	-12.77	-3.07	5.43	no
102	Metro Mainline	---	---	-12.79	-3.09	5.41	no
102	Metro Mainline	---	---	-12.75	-3.05	5.45	no

Notes:

- (a) Elevations are Rim and Invert elevations based on City of Seattle Datum given on side sewer cards.
(b) Corrected elevations were determined by adding 9.7 ft to City of Seattle datum to convert to NAVD88 datum.
(c) Corrected Top of Pipe Elevation was calculated by adding the diameter of the line in feet to the corrected invert elevation.
(d) Average GW elevation is 8.34 ft. Average was calculated across all groundwater elevations measured during each event Property-wide.

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TABLE 12
PRODUCT ANALYTICAL RESULTS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

	B-21-20-23 ML02G 2/29/2008
NWTPH-HCID (mg/kg)	
Gasoline Range Organics	> 1,800 U
Diesel Range Organics	> 4,600
Motor Oil	> 9,300
NWTPH-DxSG (mg/kg)	
Diesel Range Hydrocarbons	77,000
Motor Oil	36,000
TOTAL METALS (mg/kg)	
Method 6000/7000 series	
Arsenic	8 U
Cadmium	0.3 U
Chromium	5.4
Lead	7
Mercury	0.07 U
PCBs (µg/kg)	
Method SW8082	
PCB-Aroclor 1016	170 U
PCB-Aroclor 1242	170 U
PCB-Aroclor 1248	170 U
PCB-Aroclor 1254	170 U
PCB-Aroclor 1260	170 U
PCB-Aroclor 1221	170 U
PCB-Aroclor 1232	170 U
PAHs (µg/kg)	
Method SW8270D	
Naphthalene	19,000,000
2-Methylnaphthalene	7,300,000
1-Methylnaphthalene	3,800,000
Acenaphthylene	500,000
Acenaphthene	3,800,000
Dibenzofuran	590,000
Fluorene	2,900,000
Phenanthrene	7,900,000
Anthracene	1,600,000
Fluoranthene	3,500,000
Pyrene	2,900,000
Benzo(a)anthracene	1,100,000
Chrysene	980,000
Benzo(b)fluoranthene	610,000
Benzo(k)fluoranthene	390,000
Benzo(a)pyrene	1,000,000
Indeno(1,2,3-cd)pyrene	280,000
Dibenz(a,h)anthracene	120,000
Benzo(g,h,i)perylene	270,000
TEQ	1,259,800

U = Indicates the compound was undetected at the reported concentration
 Bold indicates detected compound.
 mg/kg = Milligrams per kilogram
 µg/kg = Micrograms per kilogram

TABLE 13
SOIL ANALYTICAL FORENSIC RESULTS
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

B-41-20.0-21.0 08-27351-NT85B 10/9/2008	
SEMIVOLATILES (mg/kg)	
Method SW8270C	
Decalin	20 U
C1-Decalins	20 U
C2-Decalins	20 U
C3-Decalins	20 U
C4-Decalins	20 U
Naphthalene	1,500
C1-naphthalenes	730
C2-naphthalenes	330
C3-naphthalenes	84
C4-naphthalenes	20 U
Biphenyl	130
Acenaphthylene	63
Acenaphthene	400
Dibenzofuran	78
Fluorene	270
C1-fluorenes	110
C2-fluorenes	27
C3-fluorenes	20 U
Dibenzothiophene	43
C1-dibenzothiophenes	27
C2-dibenzothiophenes	20 U
C3-dibenzothiophenes	20 U
C4-dibenzothiophenes	20 U
Phenanthrene	760
Anthracene	160
C1-phenanthrenes/anthracenes	260
C2-phenanthrenes/anthracenes	78
C3-phenanthrenes/anthracenes	23
C4-phenanthrenes/anthracenes	20 U
Fluoranthene	330
Pyrene	330
C1-fluoranthenes/pyrenes	190
C2-fluoranthenes/pyrenes	48
C3-fluoranthenes/pyrenes	20 U
Benzo(a)anthracene	110
Chrysene	99
C1-benzo(a)anthracenes/chrysenes	61
C2-benzo(a)anthracenes/chrysenes	20 U
C3-benzo(a)anthracenes/chrysenes	20 U
C4-benzo(a)anthracenes/chrysenes	20 U
Benzo(e)pyrene	49
Benzo(a)pyrene	110
Perylene	24
Benzo(b)fluoranthene	79
Benzo(k)fluoranthene	36
Indeno(1,2,3-cd)pyrene	48
Dibenz(a,h)anthracene	20 U
Benzo(g,h,i)perylene	49
Sulfur (wt %)	
Method D-1152	0.64

U = Indicates the compound was undetected at the reported concentration.
 Bold indicates detected compound.
 mg/kg = Milligrams per kilogram.

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Selected Historical Sanborn Maps



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Sanborn® Map Report

Ship To: Kathryn McCarthy Landau Associates, Inc. 130 Second Avenue South Edmonds, WA 98020	Order Date: 1/11/2007 Completion Date: 1/15/2007
Customer Project: Qwest Field Nor 1018313BRU 425-778-0907	Inquiry #: 1834245.3s P.O. #: 1014001.010 Site Name: Qwest Field North Lot Address: S King St / Occidental Ave S City/State: Seattle, WA 98104 Cross Streets:

Based on client-supplied information, fire insurance maps for the following years were identified

1888 - 1 Map
1893 - 2 Maps
1904 - 3 Maps
1916 - 4 Maps
1950 - 4 Maps
1969 - 4 Maps

Limited Permission to Photocopy

Total Maps: 18

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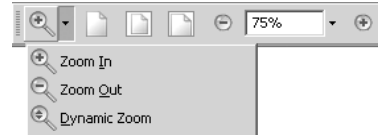
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- Sanborn Map Report, listing years of coverage
- User's Guide
- Oldest Sanborn Map Image
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3. Find TP on older printed images.
4. Using Acrobat® Reader®, zoom to 250% in order to view more clearly. (200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.)
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4. "Right click" on your mouse
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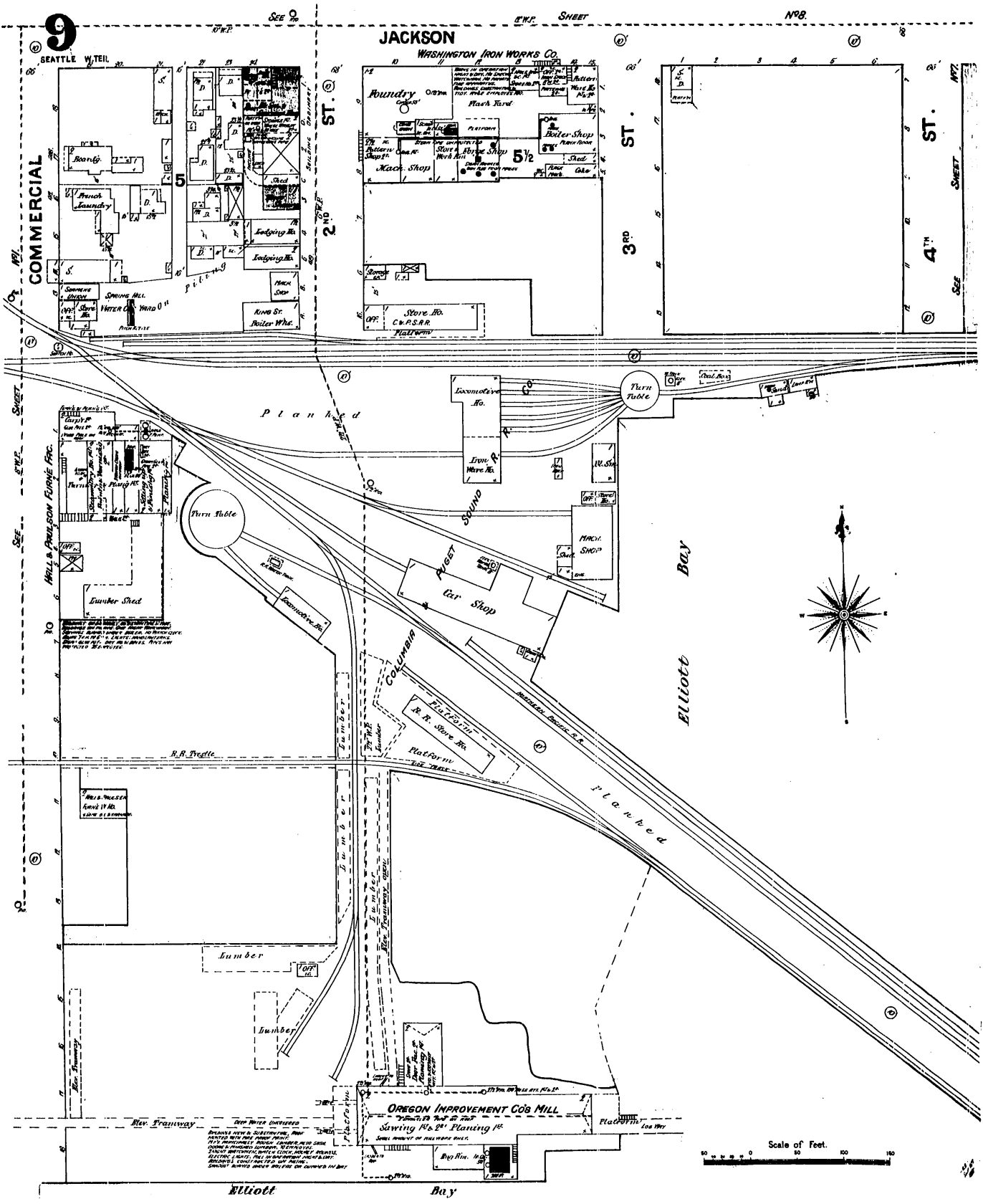
Acrobat Version 5

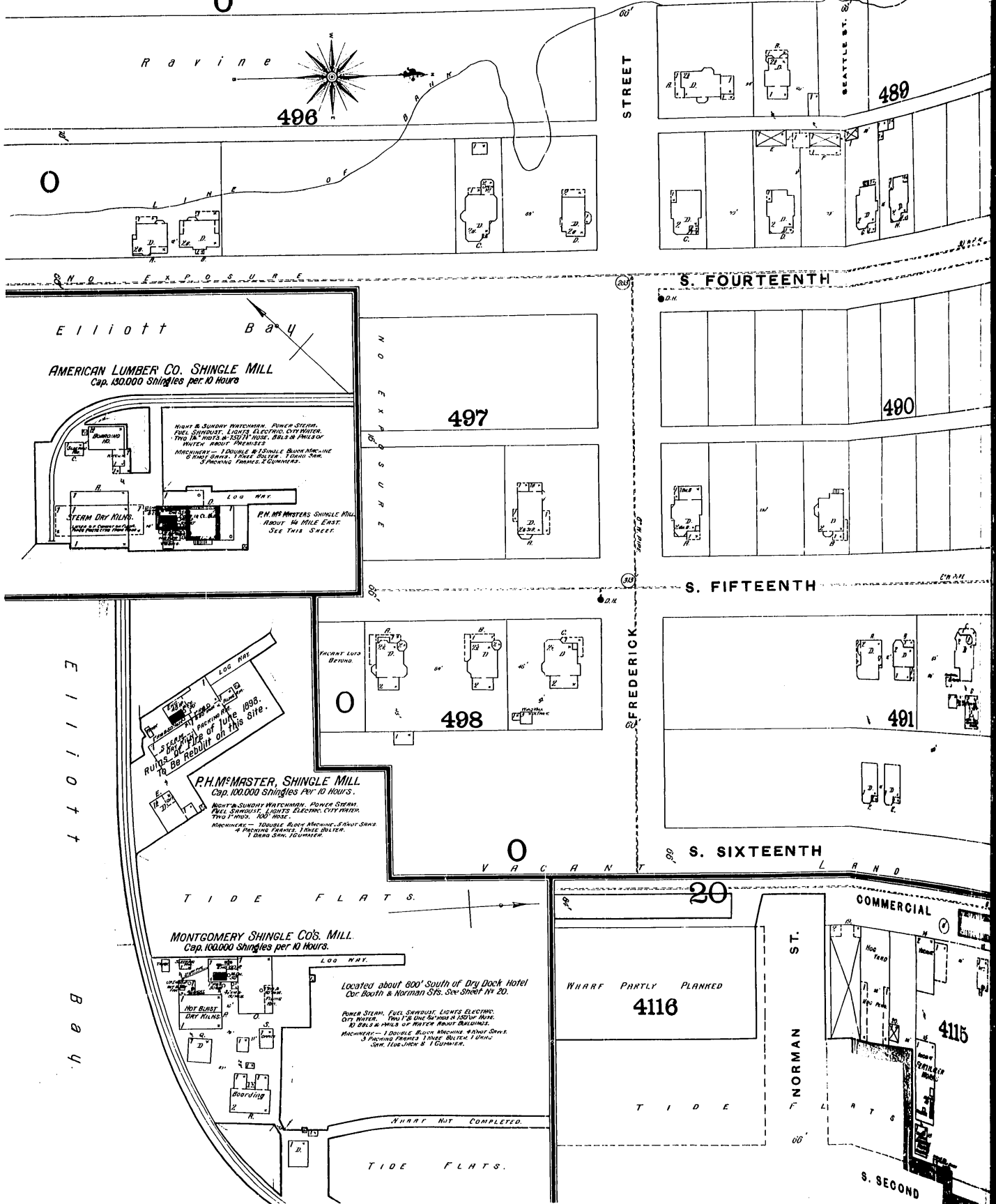
1. Go to the menu bar
2. Click the "Graphics Select Tool"
3. Draw a box around the area selected
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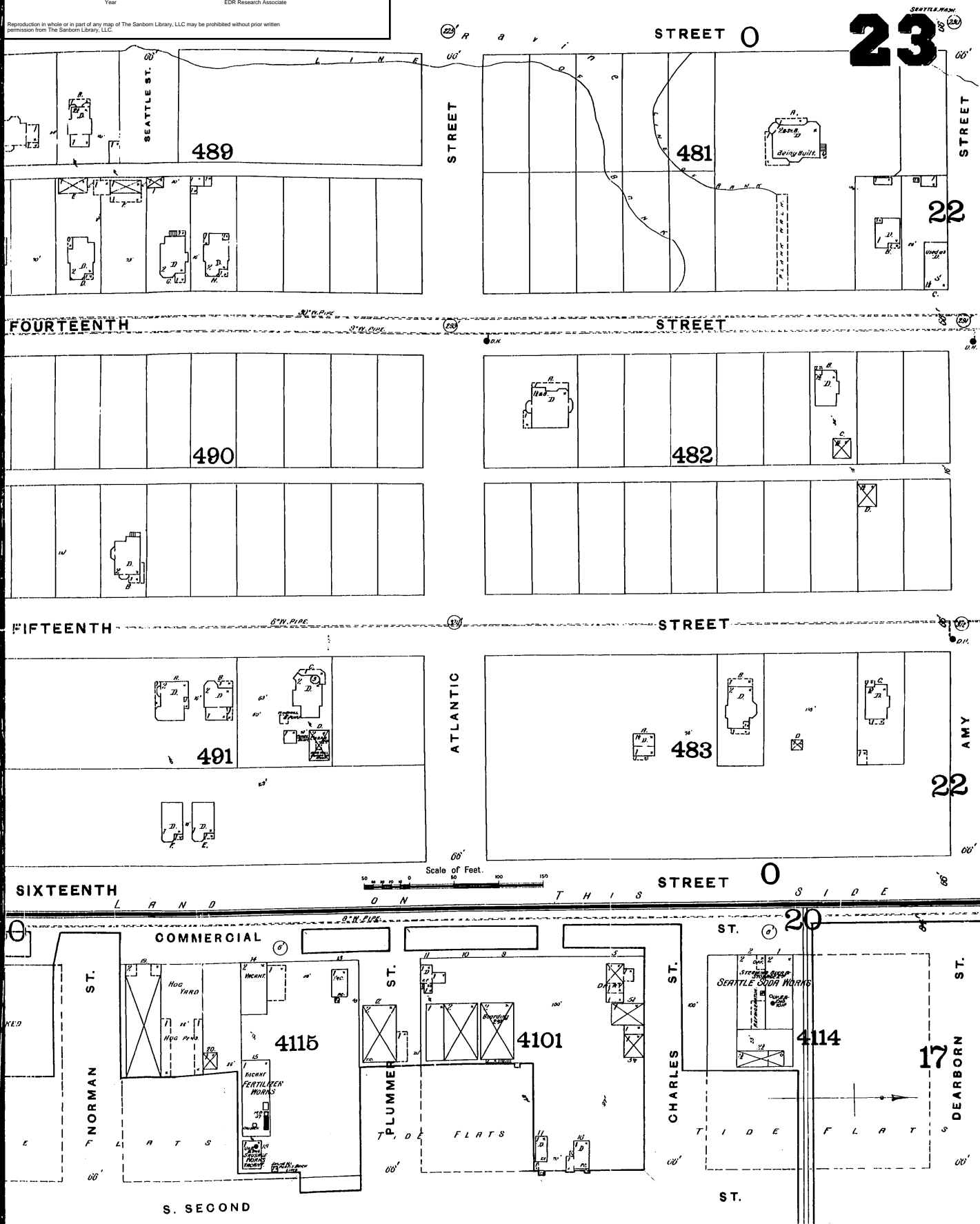




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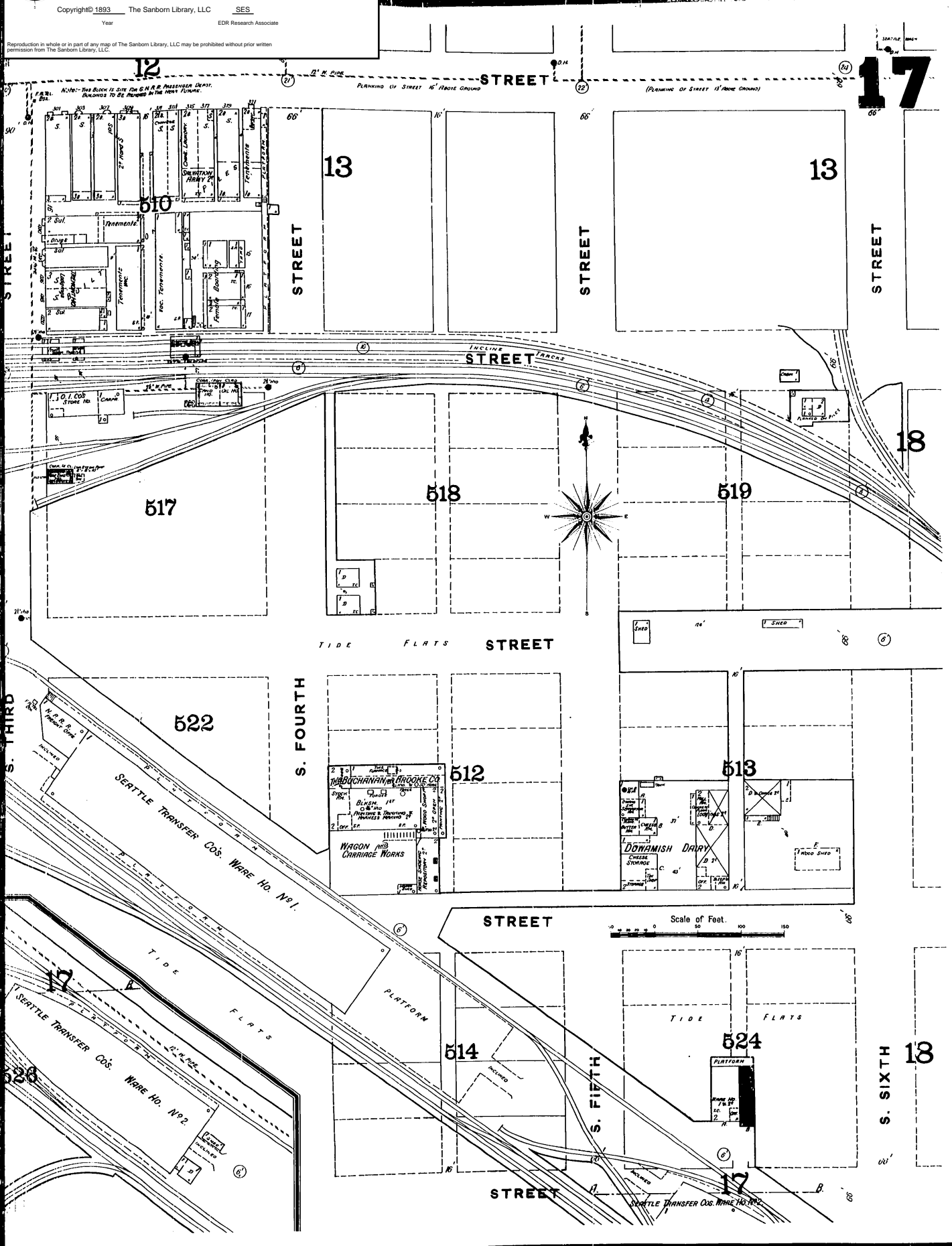
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12

STREET

17

13

13

STREET

STREET

STREET

INCLINE TRACKS

517

518

519

18

TIDE FLATS STREET

522

S. FOURTH

512

513

BUCHANAN & BROOKE CO
WAGON and CHARIAGE WORKS

DOWMISH DAIRY
CHEESE STORAGE

STREET

Scale of Feet. 0 50 100 150

TIDE FLATS

514

524

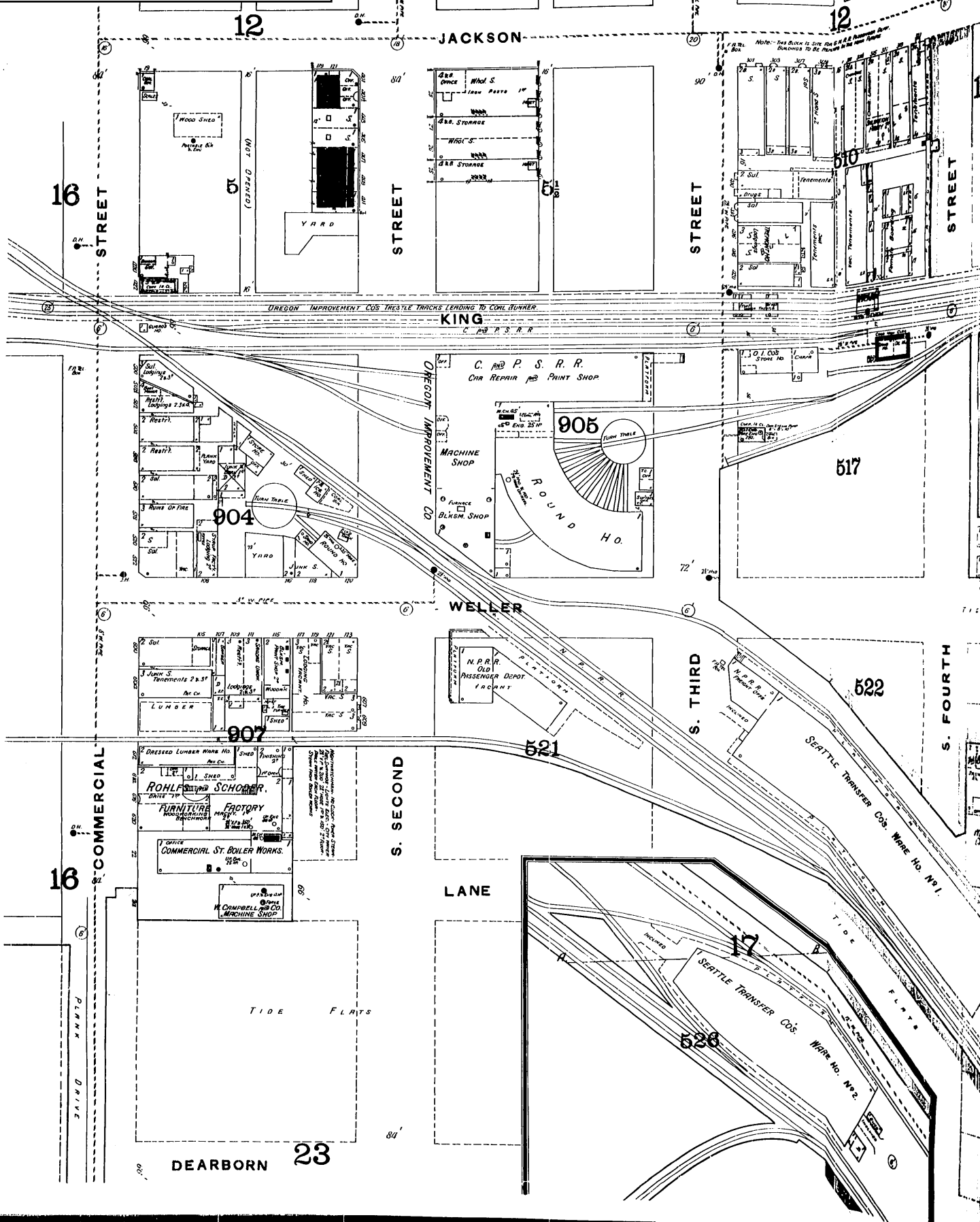
S. FIFTH

S. SIXTH

18

STREET

SEATTLE TRANSFER CO'S. WARE HO. NO. 1



16

12

JACKSON

12

STREET

STREET

STREET

STREET

OREGON IMPROVEMENT CO'S TRESTLE TRACKS LEADING TO COAL BUNKER

KING

C. AND P. S. R. R.
CAR REPAIR AND PAINT SHOP

904

905

ROUND H.O.

517

WELDER

907

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522

16

COMMERCIAL

S. SECOND

LANE

S. THIRD

S. FOURTH

DEARBORN

23

526

19

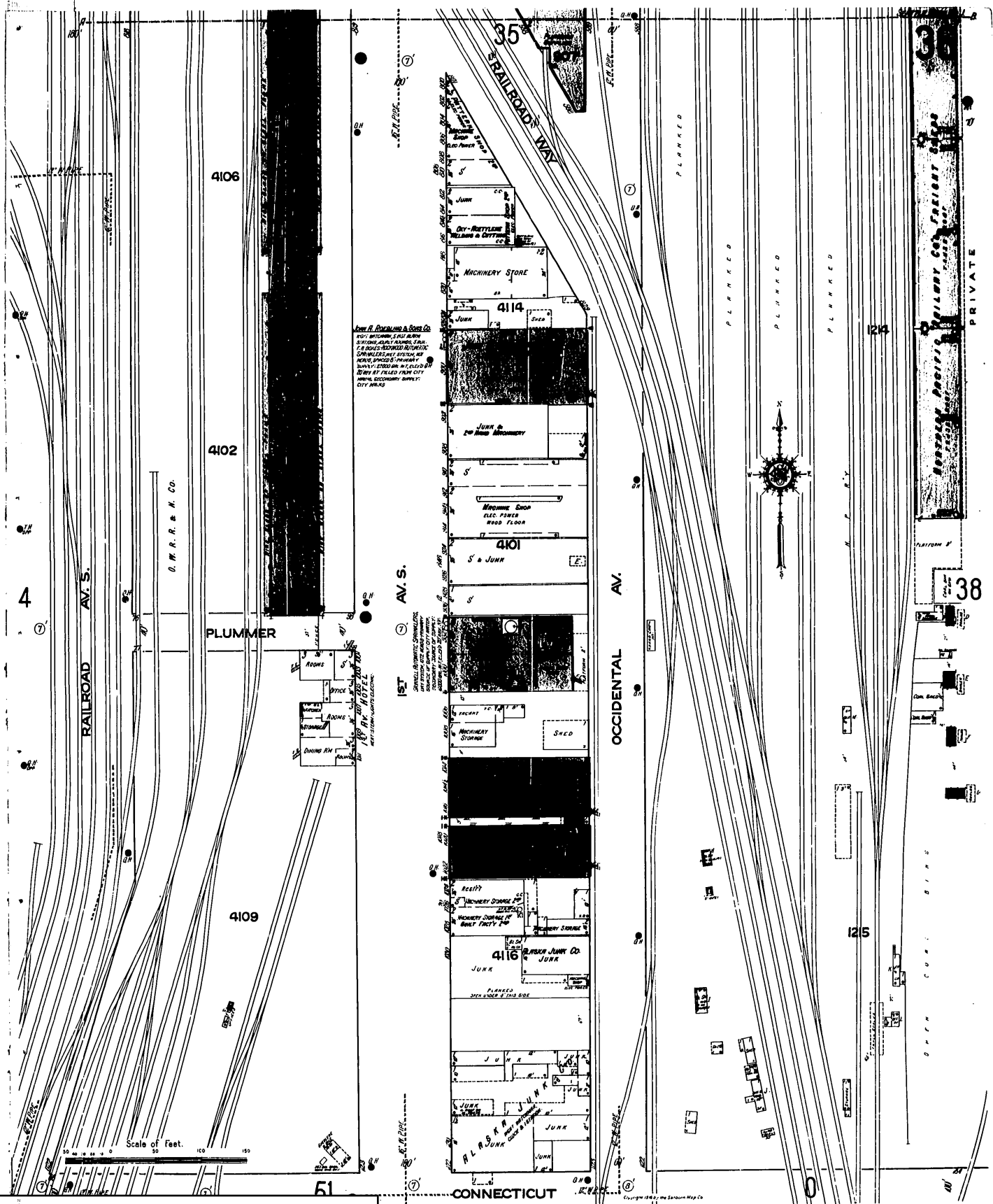
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TIDE FLATS

PINK DRIVE

TIDE FLATS



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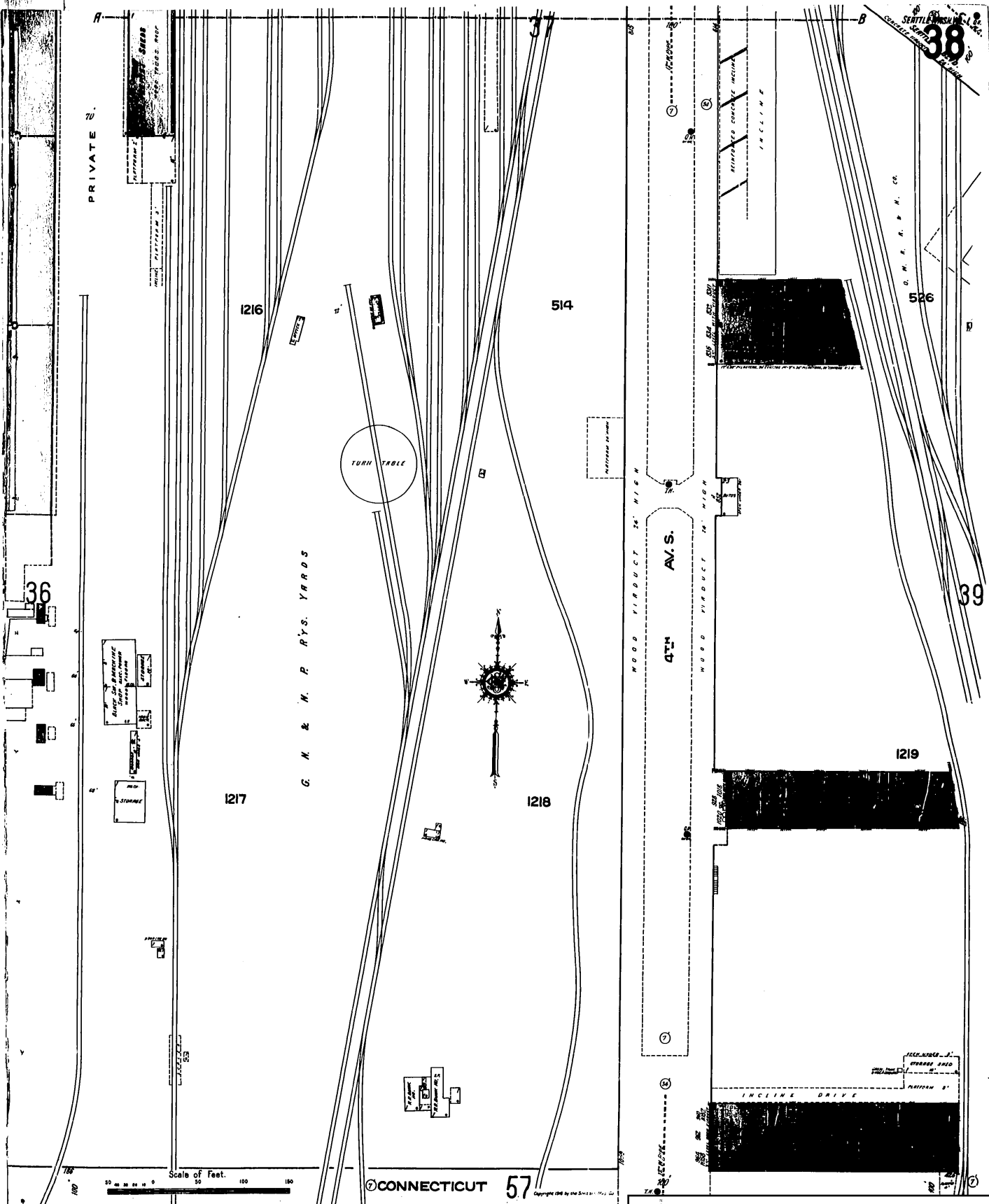
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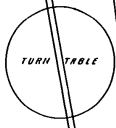
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PRIVATE W.

1216

514



G. M. & M. P. RYS. YARDS

1217

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AV. S.

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38

Scale of Feet. 0 50 100 150

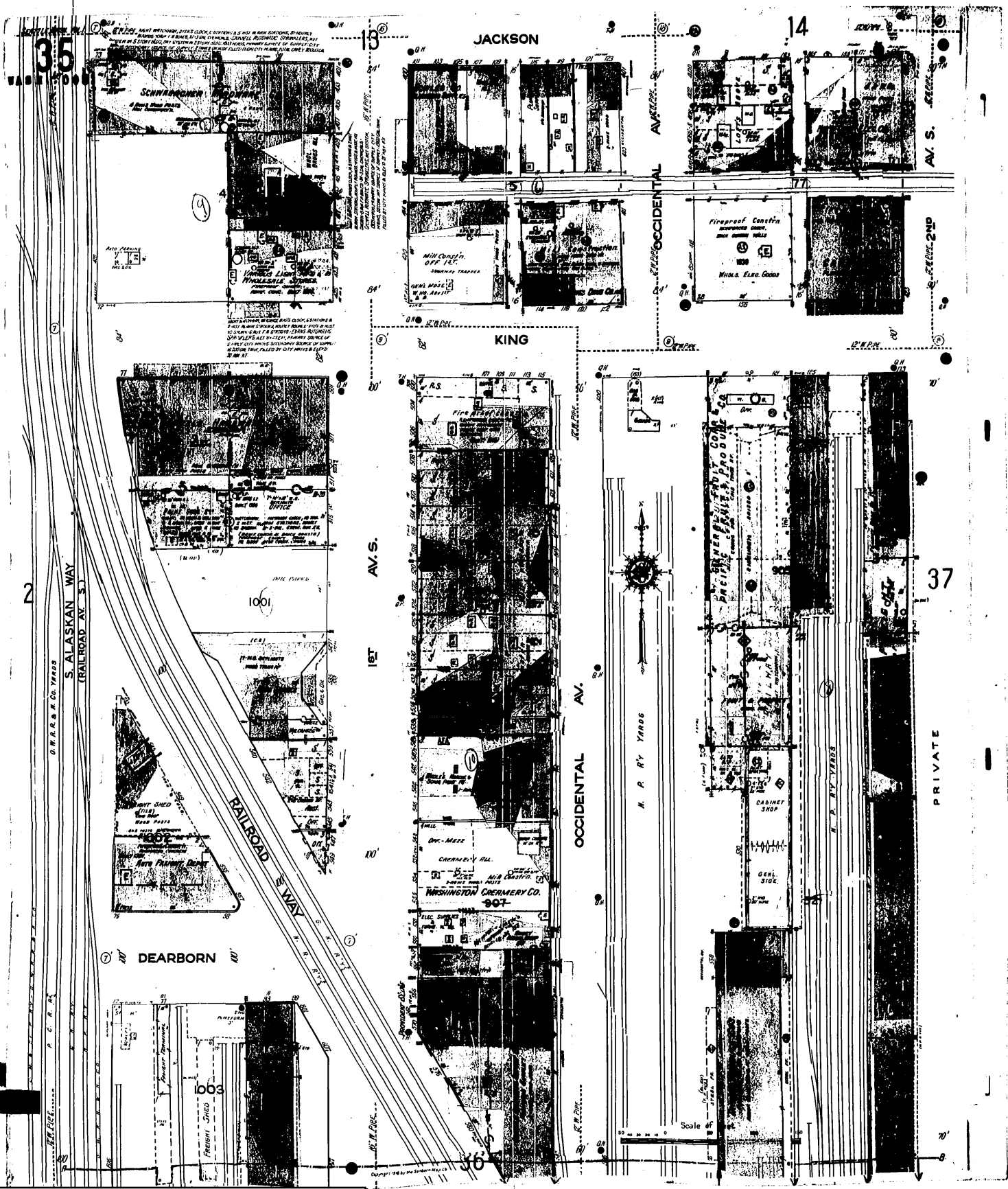
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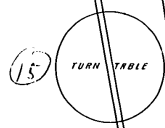


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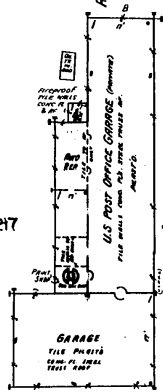
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OFF. 1st FLOOR

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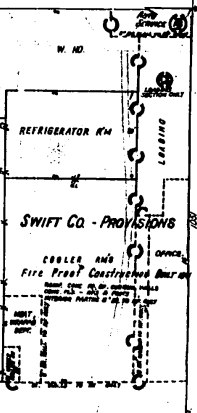
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1218



4TH AV. S.



General Fireproof Constrn

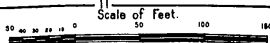
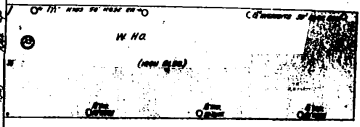
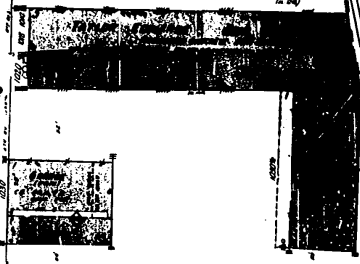
Mill Constrn

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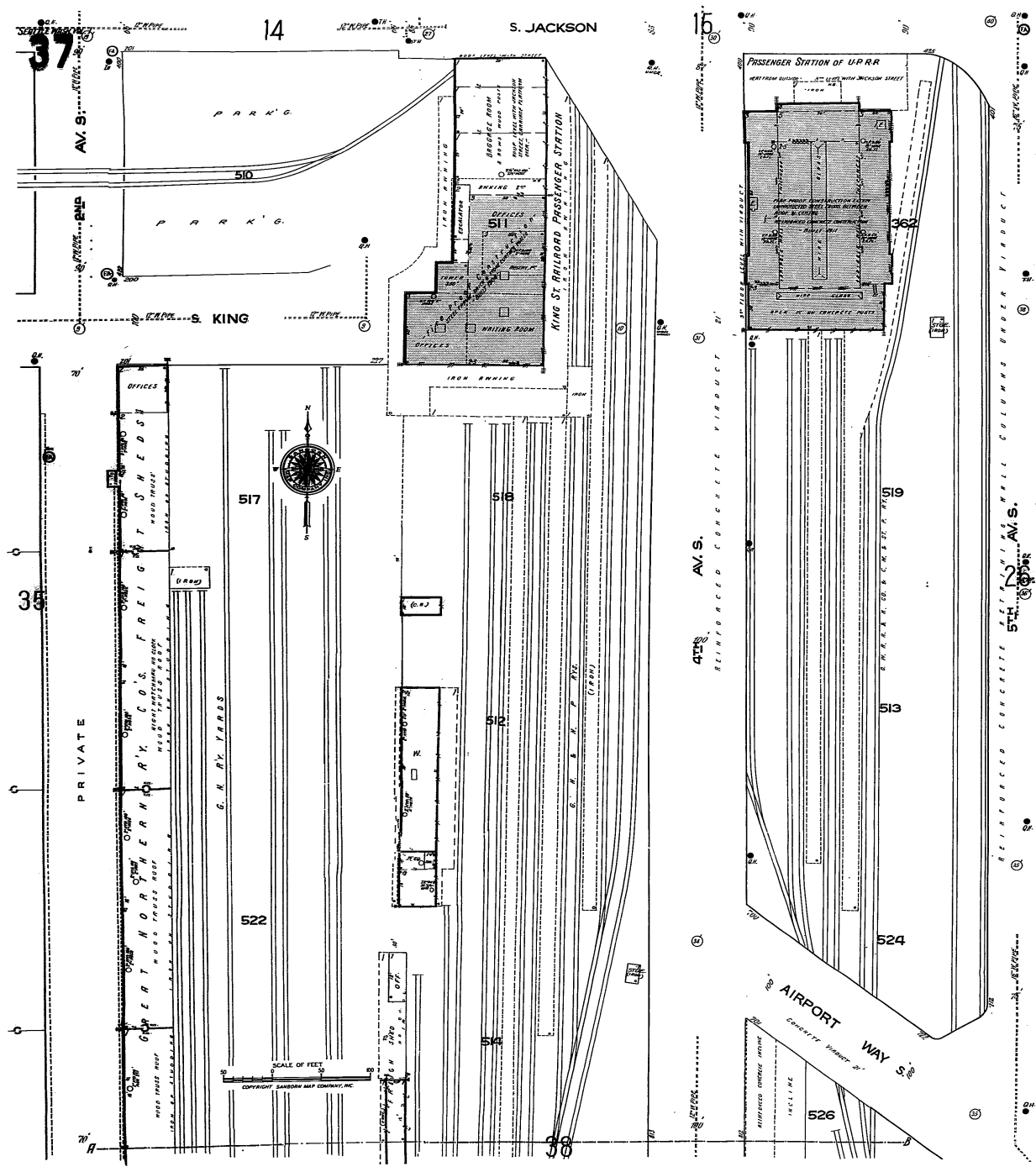


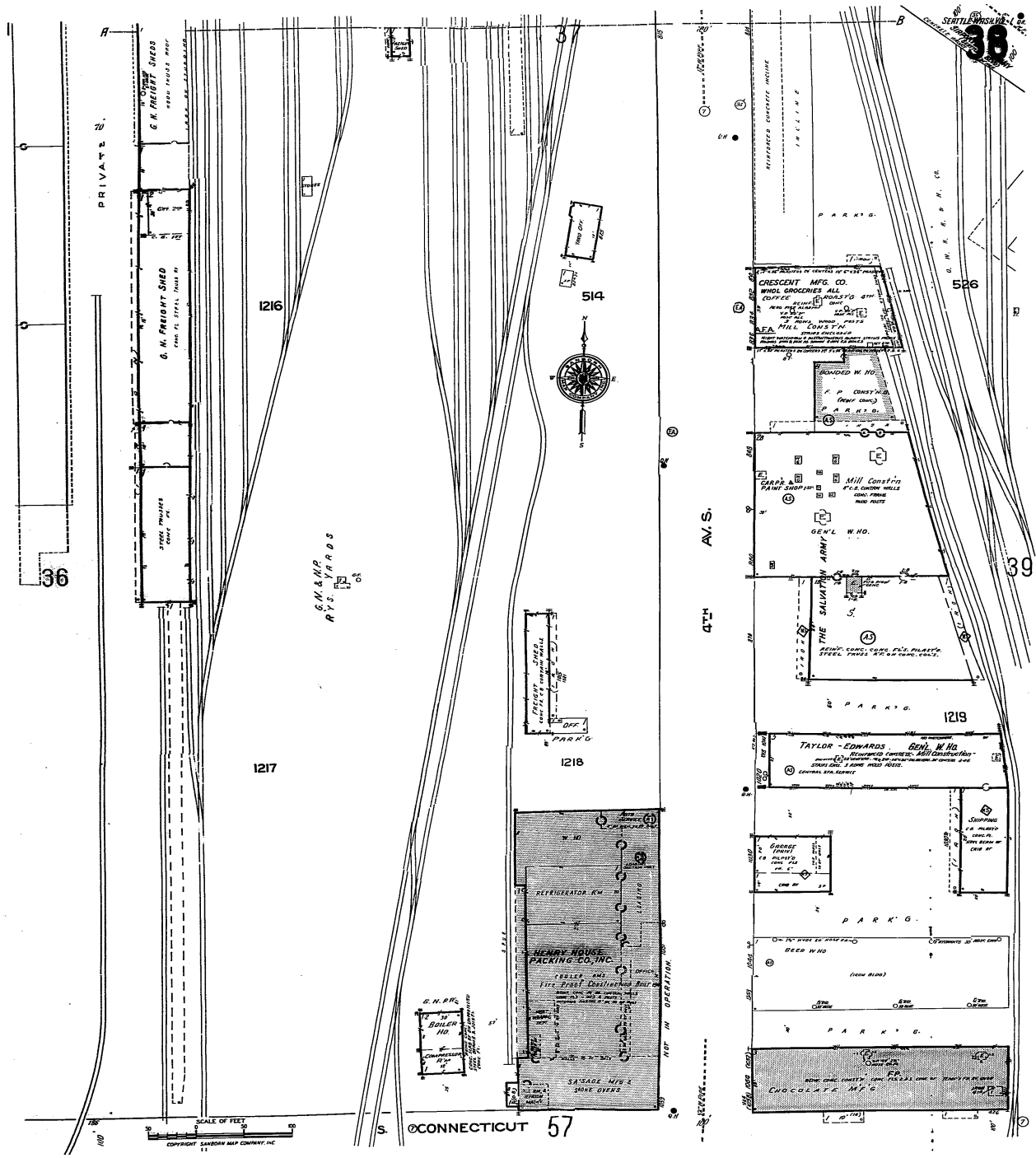
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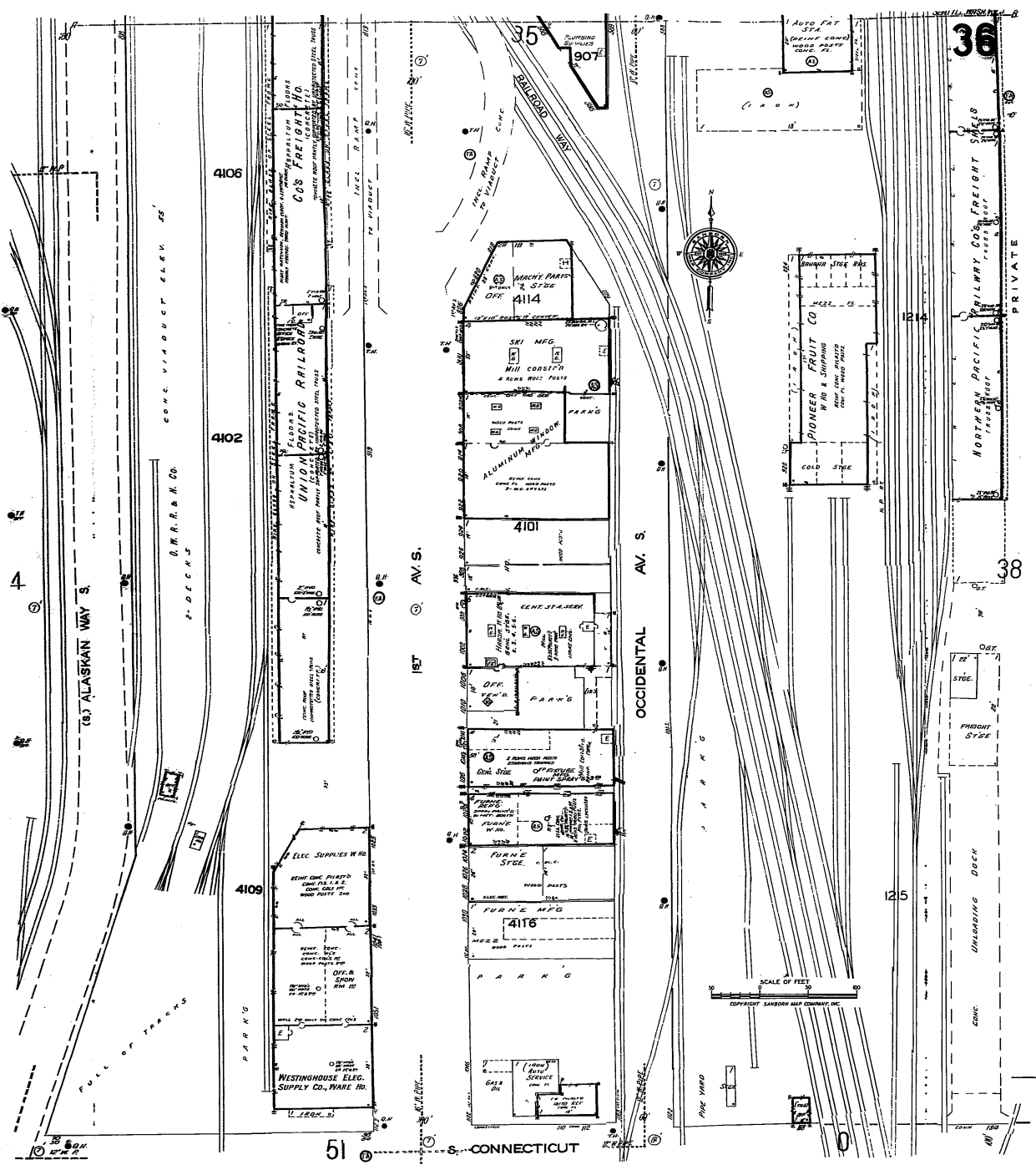
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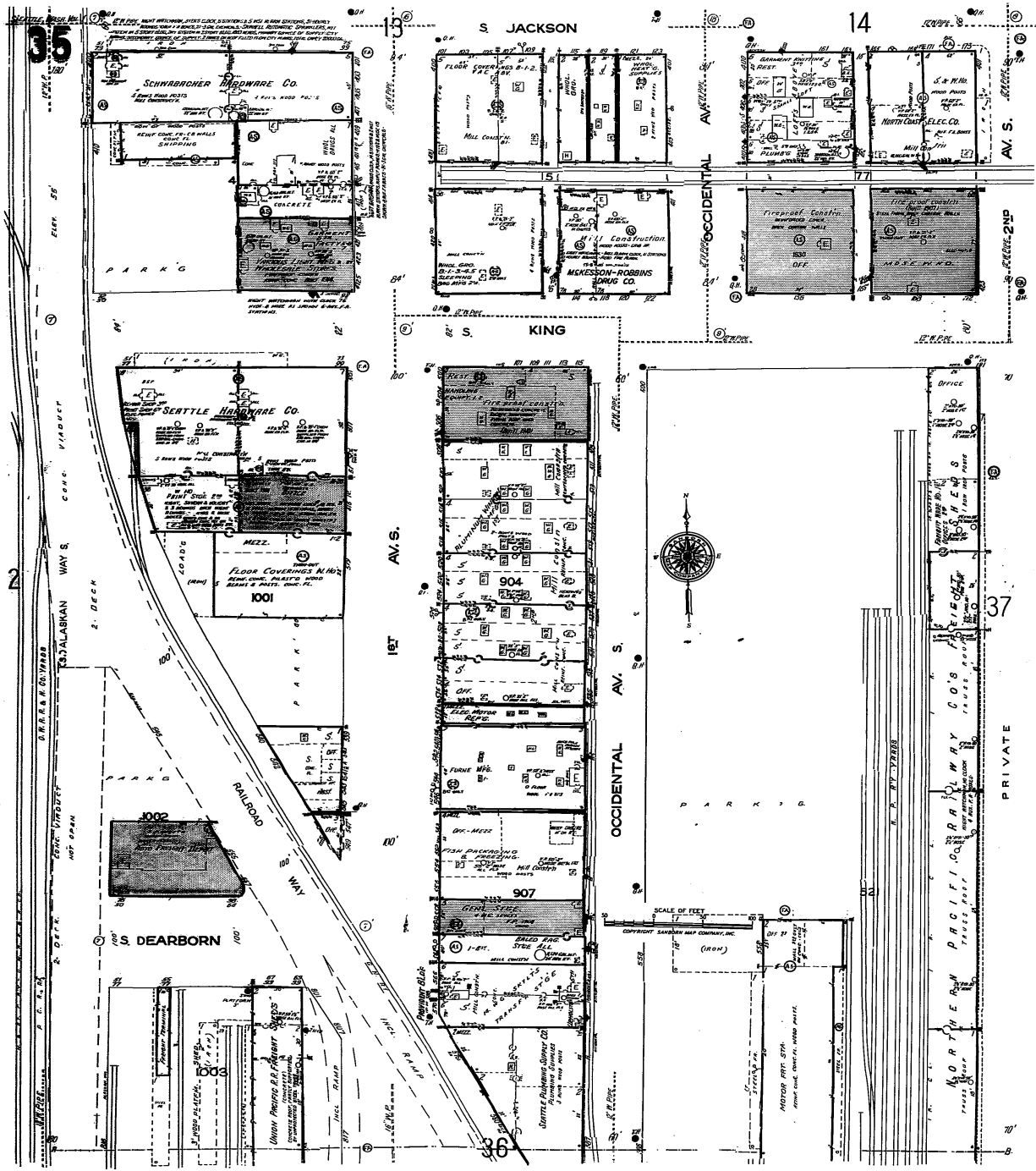




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Selected Historical Aerial Photographs



1936 AERO-METRIC/ SEATTLE



Boring Logs and Monitoring Well Construction Details

Soil Classification System

	MAJOR DIVISIONS	CLEAN GRAVEL (Little or no fines)	GRAPHIC SYMBOL	LETTER SYMBOL ⁽¹⁾	TYPICAL DESCRIPTIONS ⁽²⁾⁽³⁾
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
		SAND WITH FINES (Appreciable amount of fines)		SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)	SILT AND CLAY (Liquid limit less than 50)		ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
		SILT AND CLAY (Liquid limit less than 50)		CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
		SILT AND CLAY (Liquid limit less than 50)		OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)	SILT AND CLAY (Liquid limit greater than 50)		MH	Inorganic silt; micaceous or diatomaceous fine sand
		SILT AND CLAY (Liquid limit greater than 50)		CH	Inorganic clay of high plasticity; fat clay
		SILT AND CLAY (Liquid limit greater than 50)		OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL		PT	Peat; humus; swamp soil with high organic content	

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

- Notes:
- USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
 - Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
 - Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:
 - Primary Constituent: > 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.
 - Secondary Constituents: > 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.
 - > 15% and ≤ 30% - "gravelly," "sandy," "silty," etc.
 - Additional Constituents: > 5% and ≤ 15% - "with gravel," "with sand," "with silt," etc.
 - ≤ 5% - "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.
 - Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key		Field and Lab Test Data	
SAMPLER TYPE	SAMPLE NUMBER & INTERVAL	Code	Description
Code	Description		
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon	PP = 1.0	Pocket Penetrometer, tsf
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon	TV = 0.5	Torvane, tsf
c	Shelby Tube	PID = 100	Photoionization Detector VOC screening, ppm
d	Grab Sample	W = 10	Moisture Content, %
e	Single-Tube Core Barrel	D = 120	Dry Density, pcf
f	Double-Tube Core Barrel	-200 = 60	Material smaller than No. 200 sieve, %
g	2.50-inch O.D., 2.00-inch I.D. WSDOT	GS	Grain Size - See separate figure for data
h	3.00-inch O.D., 2.375-inch I.D. Mod. California	AL	Atterberg Limits - See separate figure for data
i	Other - See text if applicable	GT	Other Geotechnical Testing
1	300-lb Hammer, 30-inch Drop	CA	Chemical Analysis
2	140-lb Hammer, 30-inch Drop		
3	Pushed		
4	Vibrocure (Rotasonic/Geoprobe)		
5	Other - See text if applicable		
Groundwater			
			Approximate water level at time of drilling (ATD)
			Approximate water level at time other than ATD

10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL CLASS SHEET

B-01

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Water Level
0					AC		Asphalt	
					SM		Mottled brown, tan, gray, and black, silty, fine to medium SAND with gravel (medium dense, damp) (FILL)	
		e3		0	ML		Dark gray, very sandy, SILT (soft, moist) (FILL)	
					SP		Gray, fine to coarse SAND with trace gravel (medium dense, damp) (FILL)	
5					SM		Gray, very silty, fine to medium SAND (medium dense, moist) (FILL)	
		e3		0				
					SP		Gray, fine to coarse SAND with trace silt (medium dense, wet) (FILL)	
10					ML		Collected soil sample B-1-9-9.5 from 9 to 9.5 ft BGS Collected groundwater sample B-1-GW Gray, clayey, fine sandy, SILT with trace gravel and organics (stiff, wet) (FILL)	▽ ATD
		e3		0				
15					GM		Gray, silty, sandy, GRAVEL (dense, wet) (FILL)	
		e3		0				

Boring Completed 02/27/08
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-01

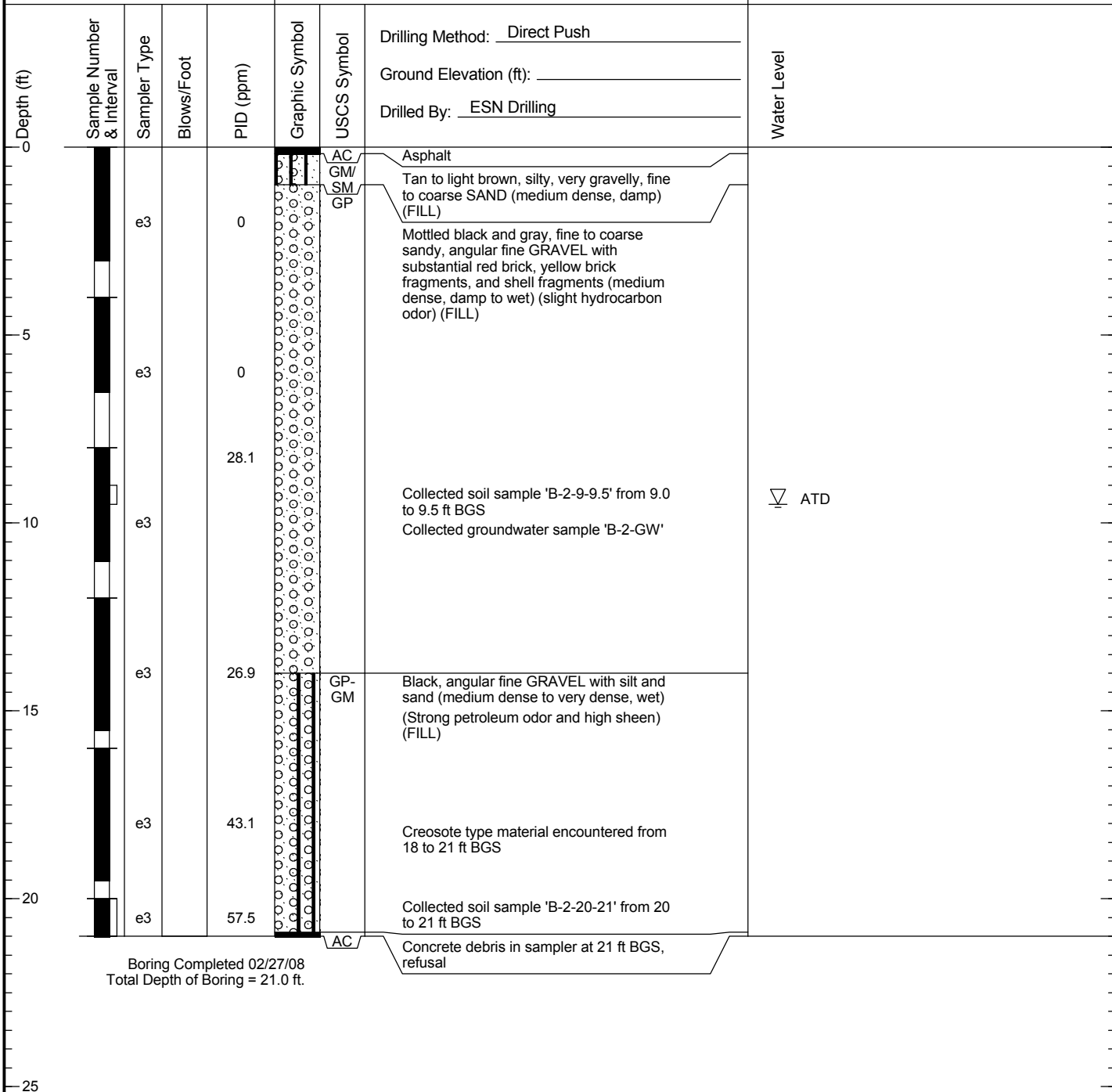
Figure
C-2

B-02

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 02/27/08
Total Depth of Boring = 21.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-02

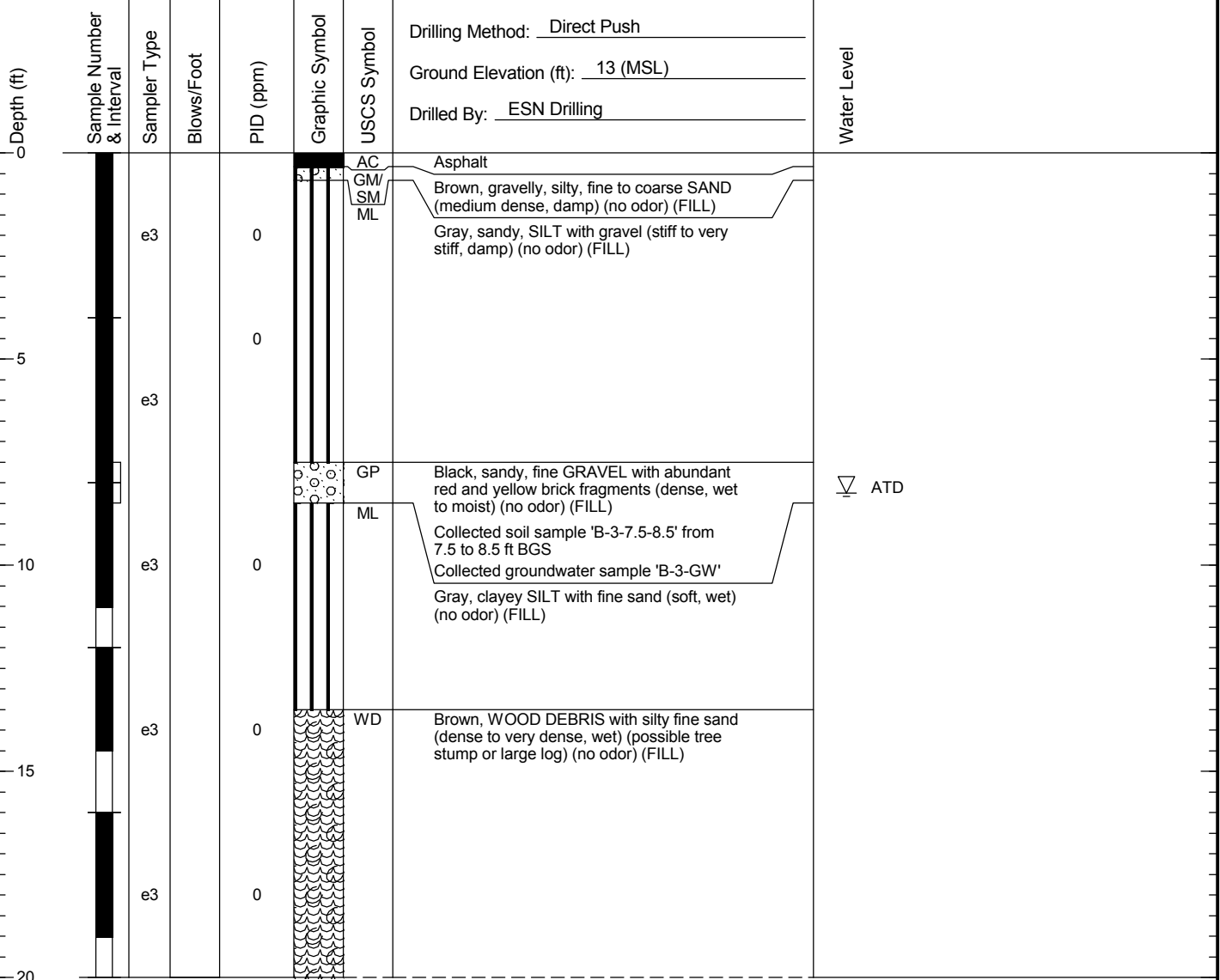
Figure
C-3

B-03

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 02/27/08
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-03

Figure
C-4

B-04

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Information		Water Level
							Drilling Method: <u>Direct Push</u>	Ground Elevation (ft): <u>13 (MSL)</u>	
0							Drilled By: <u>ESN Drilling</u>		
0 - 1						AC	Asphalt		
1 - 2	e3			0		SM	Brown to tan, gravelly, silty, fine to medium SAND (medium dense, damp) (no odor) (FILL)		
2 - 3						GM	Greenish-gray, silty, sandy, fine GRAVEL with abundant wood debris (medium dense, moist to wet) (no odor) (FILL)		
3 - 4	e3			0			Collected soil sample 'B-4-6-7' from 6 to 7 ft BGS		▽ ATD
4 - 5									
5 - 6	e3			0					
6 - 7									
7 - 8	e3			0					
8 - 9									
9 - 10	e3			0					
10 - 11									
11 - 12	e3			0					
12 - 13									
13 - 14	e3			0					
14 - 15									
15 - 16	e3			0					
16 - 17									
17 - 18	e3			0					
18 - 19									
19 - 20	e3			0					
20 - 21									
21 - 22	e3			0					
22 - 23									
23 - 24	e3			0		ML	Dark gray, SILT (stiff, wet) (moderate organic-like odor, no sheen) (MARINE DEPOSIT??)		
24 - 25									

Boring Completed 02/27/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-04

Figure
C-5

B-05

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push</u>		Water Level
							Ground Elevation (ft): _____		
							Drilled By: <u>ESN Drilling</u>		
0					AC		Asphalt		
				0	SM		Brown and black, silty, gravelly, fine to medium SAND (loose, damp) (no odor) (FILL)		
	e3				SP		Gray, medium to coarse SAND with silt (loose to medium dense, damp) (no odor) (FILL)		
5				0	SM/ML		Gray-black, silty, fine SAND to a fine sandy SILT with wood debris (medium dense to dense/stiff to very stiff, moist to wet) (no odor) (FILL)		
	e3								
				0			Collected soil sample 'B-5-10-11' from 10 to 11 ft BGS		▽ ATD
10									
	e3				WD		Brown to dark brown, WOOD DEBRIS (possible tree stump) with fine sand (dense, wet) (no odor) (FILL)		
	e3								
15				0	SM		Gray, silty, fine SAND (loose to dense, wet) (no odor) (FILL)		
	e3				WD		Light brown to dark brown, WOOD DEBRIS (possible tree stump) with fine sand (dense, wet) (no odor) (FILL)		
20									

Boring Completed 02/27/08
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG



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Seattle, Washington

Log of Boring B-05

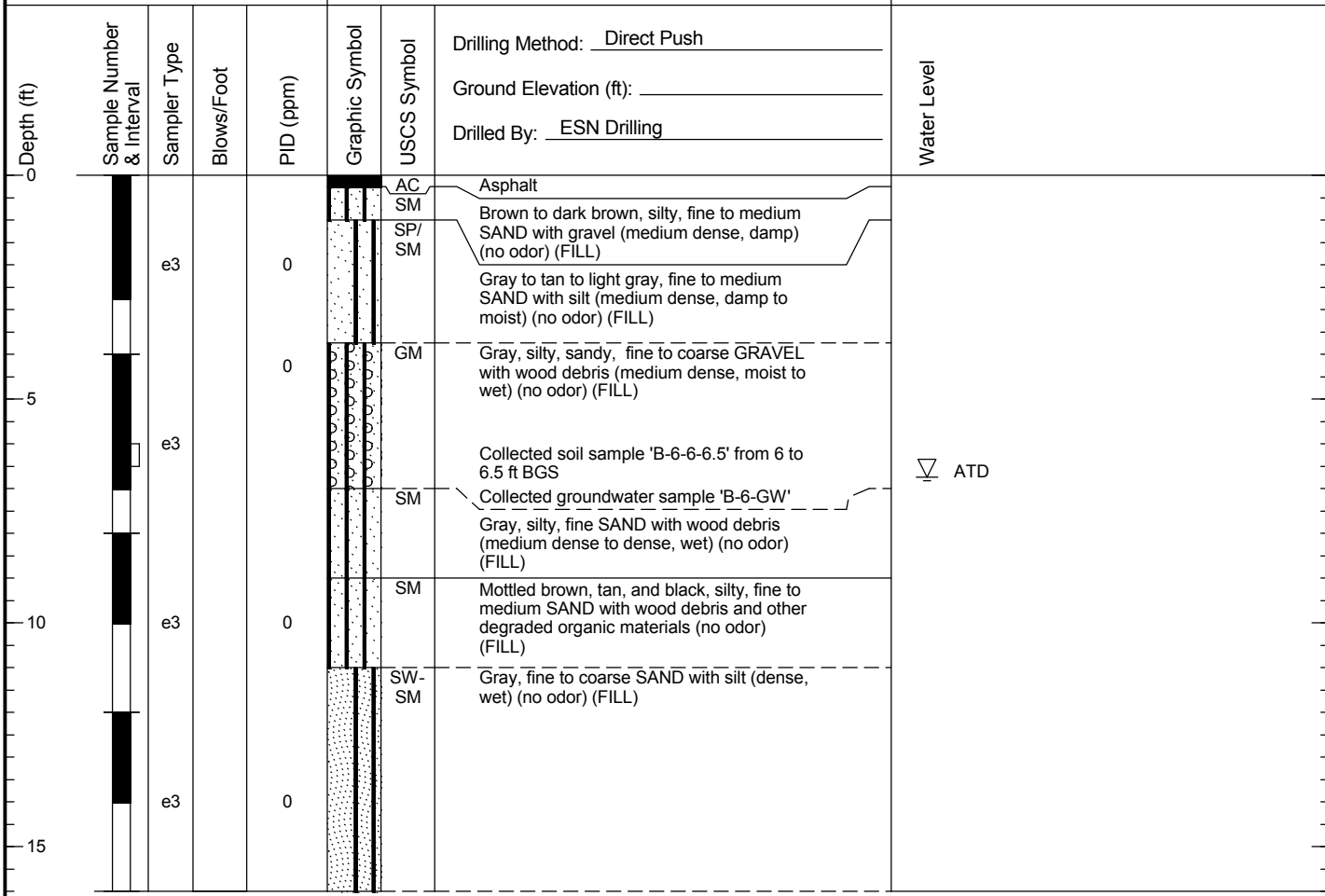
Figure
C-6

B-06

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 02/27/08
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-06

Figure
C-7

B-07

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description	Water Level
0							Asphalt	
0 - 1		e3		0		AC SM	Gray, silty, fine SAND with gravel and wood debris (medium dense, damp) (no odor) (FILL)	
1 - 2		e3		0		SP-SM	Gray, fine SAND with silt and trace gravel (medium dense, damp to wet) (no odor) (FILL)	
2 - 3		e3		0			Collected soil sample 'B-7-6-7' from 6 to 7 ft BGS Collected groundwater sample 'B-7-GW'	▽ ATD
3 - 4		e3		0		GM	Gray, very silty, sandy, fine GRAVEL (medium dense, wet) (no odor) (FILL)	
4 - 5		e3		0		ML	Dark gray, SILT (stiff, wet) (moderate organic-like odor) (MARINE DEPOSIT??)	

Boring Completed 02/27/08
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-07

Figure
C-8

B-08

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	e3	e3	0	0	AC GM	Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u> Asphalt Greenish-gray, silty, very sandy, fine to coarse GRAVEL (medium dense to dense, damp) (no odor) (FILL)	Water Level
	e3	e3	0	0	SM	Black, green, gray, and red, very silty, gravelly, fine to medium SAND with angular gravel, red brick fragments, and WOOD DEBRIS (medium dense, moist to wet) (no odor) (FILL) Collected soil sample 'B-8-5-6' from 5 to 6 ft BGS Collected groundwater sample 'B-8-GW'	▽ ATD
	e3	e3	0	0	SP	Gray, fine to medium SAND (medium dense, wet) (no odor) (FILL)	
	e3	e3	0	0	SM WD	Gray, silty, fine SAND with gravel and roots (medium dense, wet) (no odor) (FILL) Brown, WOOD DEBRIS with silty sand (dense to very dense, wet) (no odor) (FILL)	

Boring Completed 02/28/08
Total Depth of Boring = 13.5 ft.

Refusal encountered at 13.5 ft BGS

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Log of Boring B-08

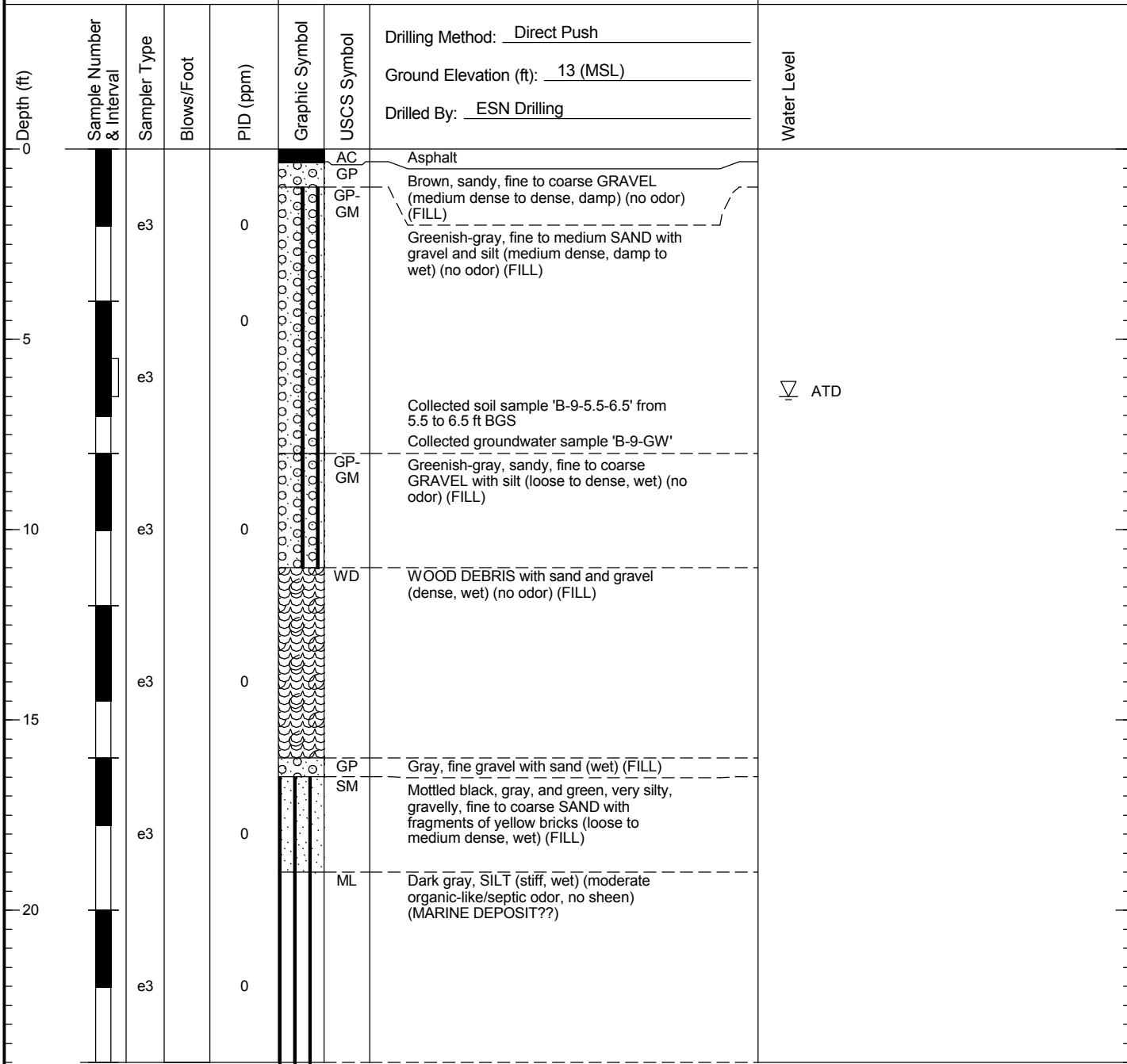
Figure
C-9

B-09

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 02/28/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG



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Log of Boring B-09

Figure
C-10

B-10

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	e3	e3	0	0	AC GM	Asphalt Brown to tan, silty, sandy, GRAVEL (medium dense, damp) (no odor) (FILL)	ATD
5	e3	e3	0	0	SM	Mottled black, green, and gray, gravelly, very silty, SAND (medium dense, damp) (no odor) (FILL) becomes a greenish-gray, silty, fine to medium SAND with trace gravel below 3 ft BGS red brick fragments at 6 ft BGS Collected soil sample 'B-10-7-8' from 7 to 8 ft BGS Collected groundwater sample 'B-10-GW'	ATD
10	e3	e3	0	0			ATD

Boring Completed 02/28/08
Total Depth of Boring = 12.0 ft.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

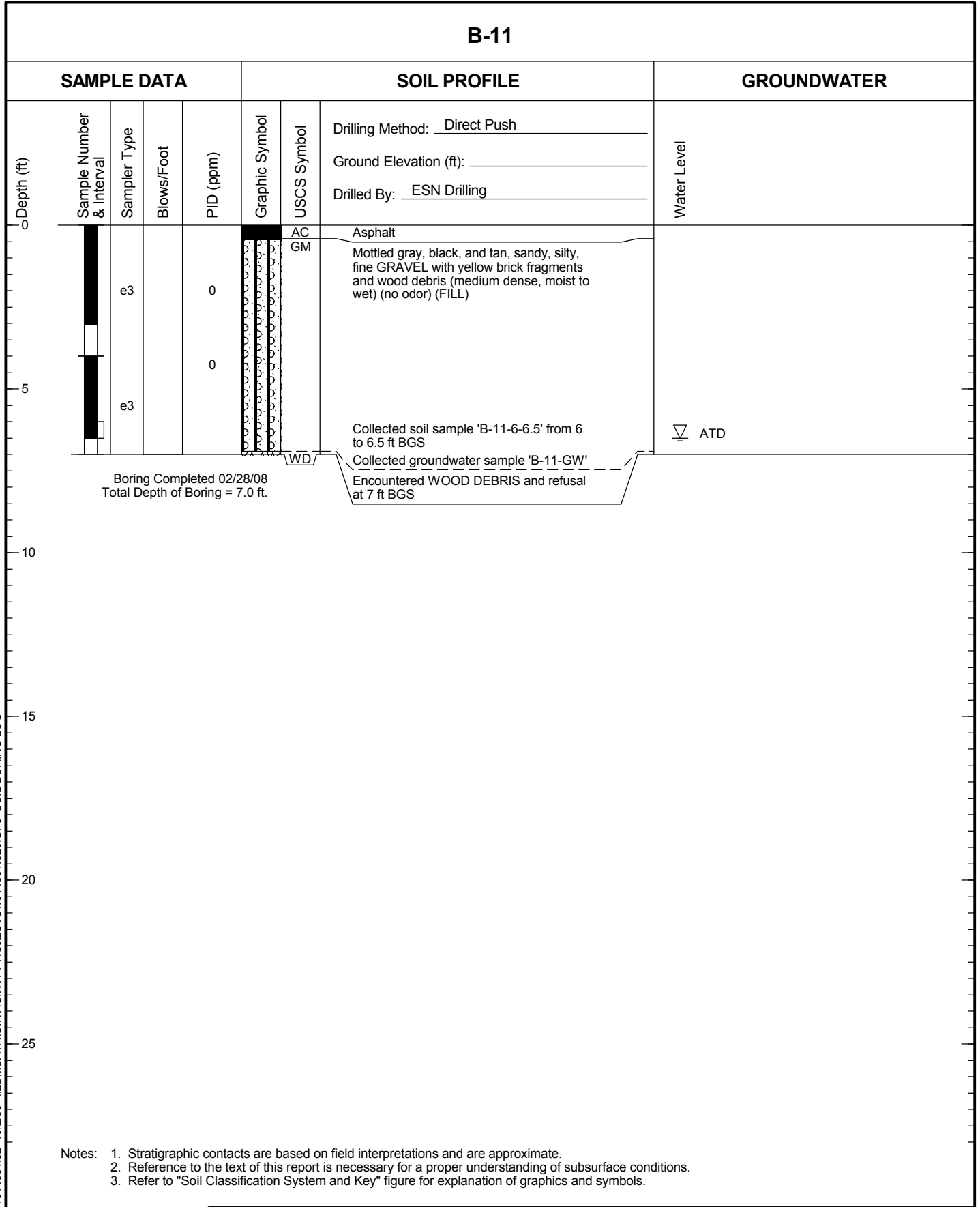


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Log of Boring B-10

Figure
C-11

B-11



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-11

Figure
C-12

B-12

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	e3	e3		0	AC GM/SM SM ML SP	Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>	▽ ATD
5		e3		11.2	[Dotted Pattern]	Gray, sandy, SILT (medium stiff, moist) (FILL) Gray to black, fine to medium SAND with silt (medium dense, damp) (slight hydrocarbon odor, no sheen) (FILL) becomes a mottled black, gray, red, and orange, gravelly, medium to coarse SAND with silt and brick fragments below 6 ft BGS Moderate hydrocarbon odor from 6 to 10 ft BGS Collected soil sample 'B-12-6-7' from 6 to 7 ft BGS	
10	e3			0	SM	Collected groundwater sample 'B-12-GW' Gray, silty, fine SAND with moderate septic odor and wood chips (no sheen) (FILL)	

Boring Completed 02/28/08
Total Depth of Boring = 12.0 ft.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Log of Boring B-12

Figure
C-13

B-13

SAMPLE DATA		SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>	Water Level
	e3	e3	0	0	AC	SM	Asphalt	ATD
5	e3	e3	0	0	GM/SM	SM	Brown, gravelly, silty, fine to coarse SAND (medium dense, damp) (no odor) (FILL) Black, brown, green, and gray, silty, fine to medium SAND with gravel and chunks of coal and wood (loose to medium dense, moist)(no odor, no sheen) (FILL)	Collected soil sample 'B-13-5-5.75' from 5 to 5.75 ft BGS

Boring Completed 02/28/08
Total Depth of Boring = 8.0 ft.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

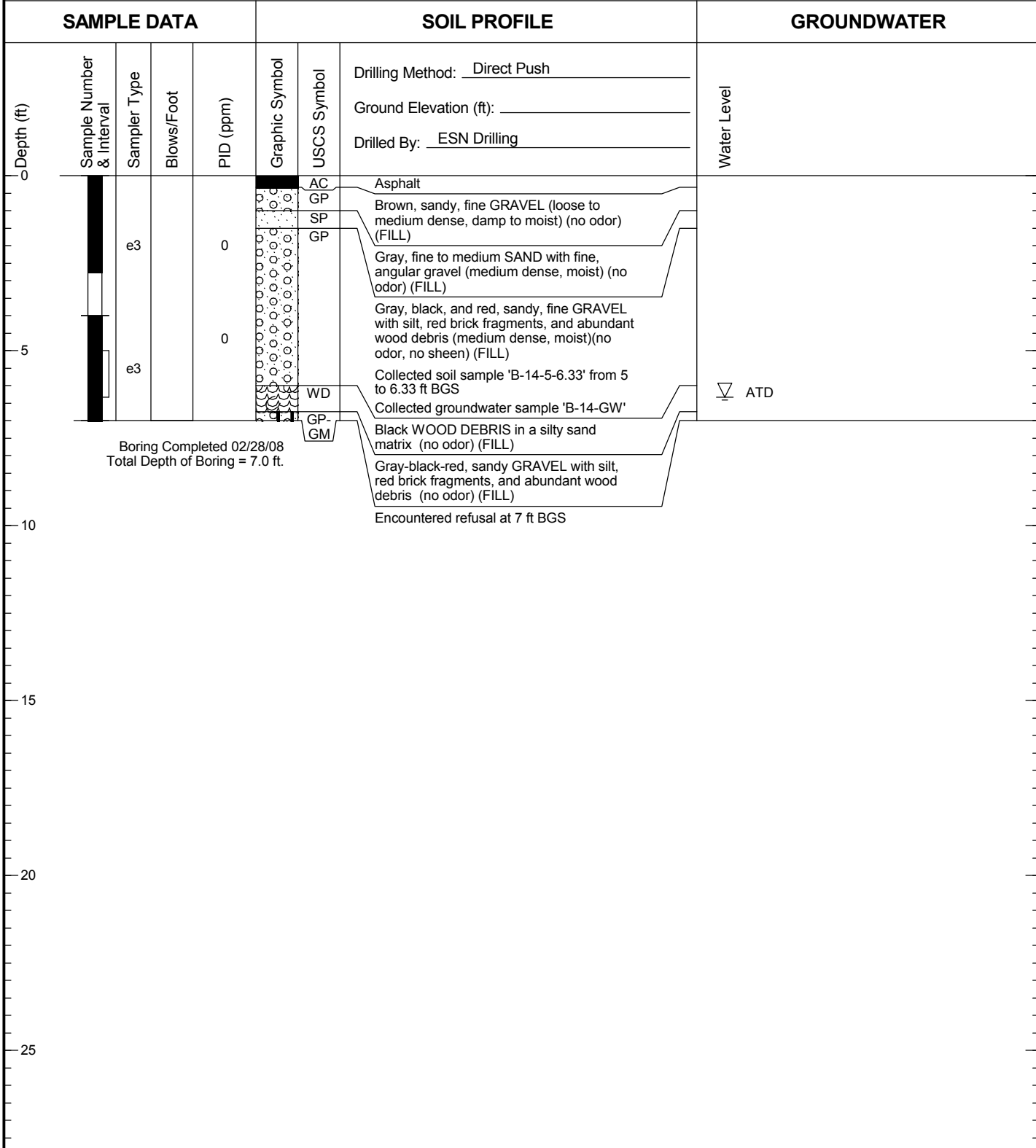


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Log of Boring B-13

Figure
C-14

B-14



1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Log of Boring B-14

Figure
C-15

B-15

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	e3	e3		0	AC	Asphalt	
				0	GP	Brown, sandy, fine GRAVEL (no odor) (FILL)	
				0	SP	Gray, fine to medium SAND with angular gravel (medium dense, damp) (no odor) (FILL)	
				0	GP	Gray, fine to medium SAND with angular gravel (medium dense, damp) (no odor) (FILL)	
				0	GP	Gray, black, and red, sandy, GRAVEL with silt, red brick fragments, and abundant wood debris (no odor) (FILL)	
	e3			0	SP	Collected soil sample 'B-15-5-6.33' from 5 to 6.33 ft BGS	▽ ATD
				0	SP	Fine to medium sand with metal fragments and shavings (loose to medium dense, moist)(no odor) (FILL)	

Boring Completed 02/28/08
Total Depth of Boring = 8.0 ft.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Log of Boring B-15

Figure
C-16

B-16

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	e3	e3		0	AC SM	Asphalt	
	e3	e3		6.2	SP	Brown, silty, fine to medium SAND with gravel (loose, damp) (no odor) (FILL) becomes a green/gray, very silty, fine to medium SAND from 1.0 to 1.5 ft BGS Greenish gray to brown, gravelly, fine to medium SAND with silt (loose, damp to moist) (FILL) Hydrocarbon odor and sheen present from 5 to 6.5 ft BGS Collected soil sample 'B-16-5-6' from 5 to 6 ft BGS	▽ ATD
	e3	e3		0.7	SM	Gray, silty, fine to medium SAND with wood debris (medium dense, wet) (no odor, no sheen) (FILL)	
	e3	e3		0			

Boring Completed 02/29/08
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-16

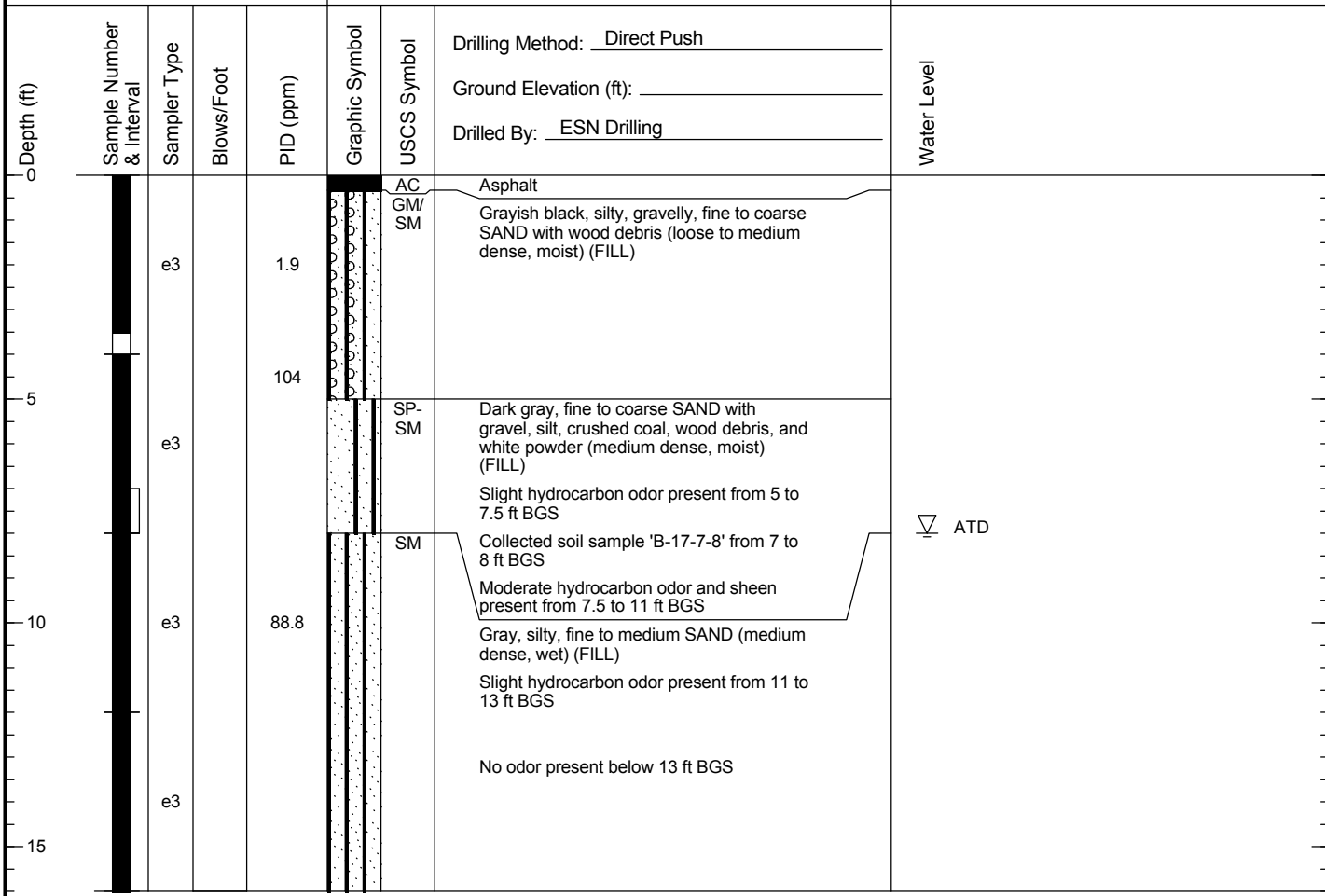
Figure
C-17

B-17

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 02/29/08
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-17

Figure
C-18

B-18

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
				Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>			
0					AC	Asphalt	
					GM		
		e3		36.4	SP	Brown, sandy, silty, fine GRAVEL (medium dense, damp) (slight hydrocarbon odor, no sheen) (FILL)	
					CON	Gray-black SAND with angular gravel and wood debris (moderate hydrocarbon odor, low sheen) (FILL)	
					C		
					SP	Crushed concrete (moderate hydrocarbon odor, no sheen) (FILL)	
5		e3		99.8		Gray-green, fine to medium SAND with gravel (loose to medium dense, damp) (moderate hydrocarbon odor, low sheen) (FILL)	
						becomes a black-gray, fine to coarse SAND with crushed rock, silt, wood debris and white powder from 6.5 to 8.5 ft BGS	
						Collected soil sample 'B-18-7-8' from 7 to 8 ft BGS	▽ ATD
		e3		88.1	SM	Collected groundwater sample 'B-18-GW'	
						Gray, silty, fine to medium SAND (loose to medium dense, wet)(slight hydrocarbon odor, no sheen) (FILL)	
10							
		e3		15.2			
15							

Boring Completed 02/29/08
 Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
 Seattle, Washington

Log of Boring B-18

Figure
C-19

B-19

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	e3	e3	e3	e3	e3	e3	e3
0					AC	GM	
4.4					SM	SP	
5.1					SW		
6					SM		▽ ATD
10							
15							

Boring Completed 02/29/08
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

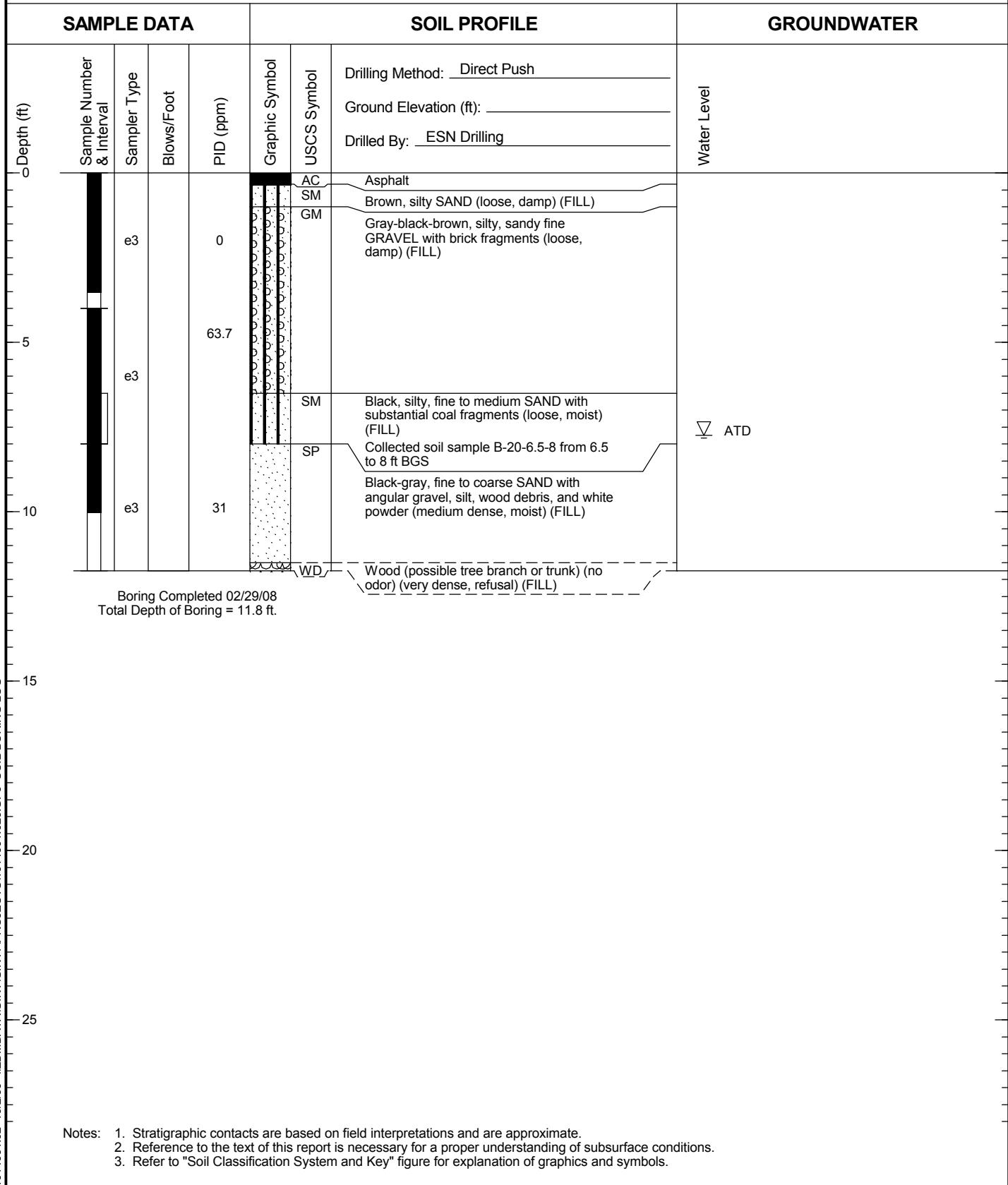


North Lot Development
Seattle, Washington

Log of Boring B-19

Figure
C-20

B-20



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-20

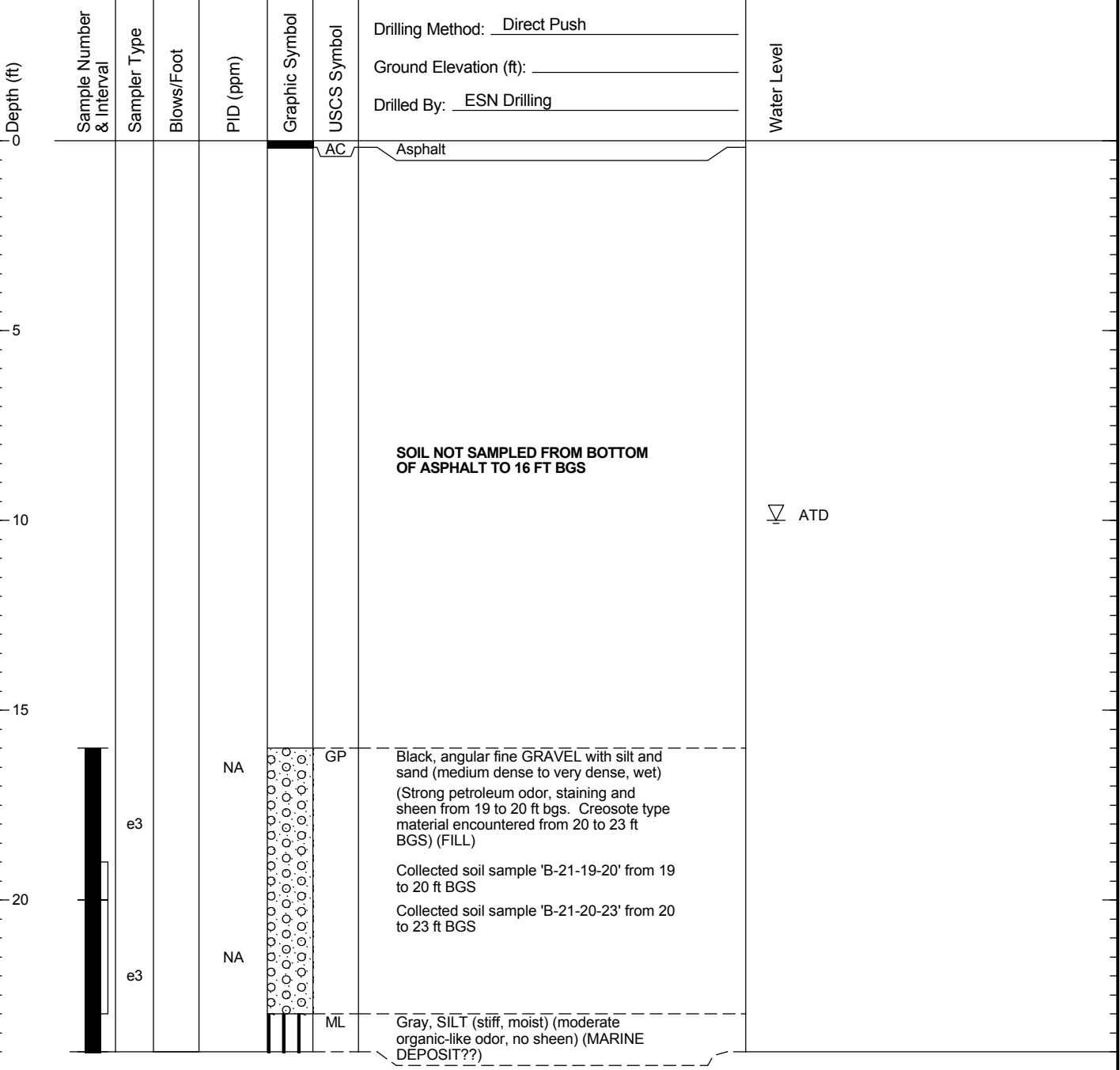
Figure
C-21

B-21

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 02/29/08
 Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG



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Log of Boring B-21

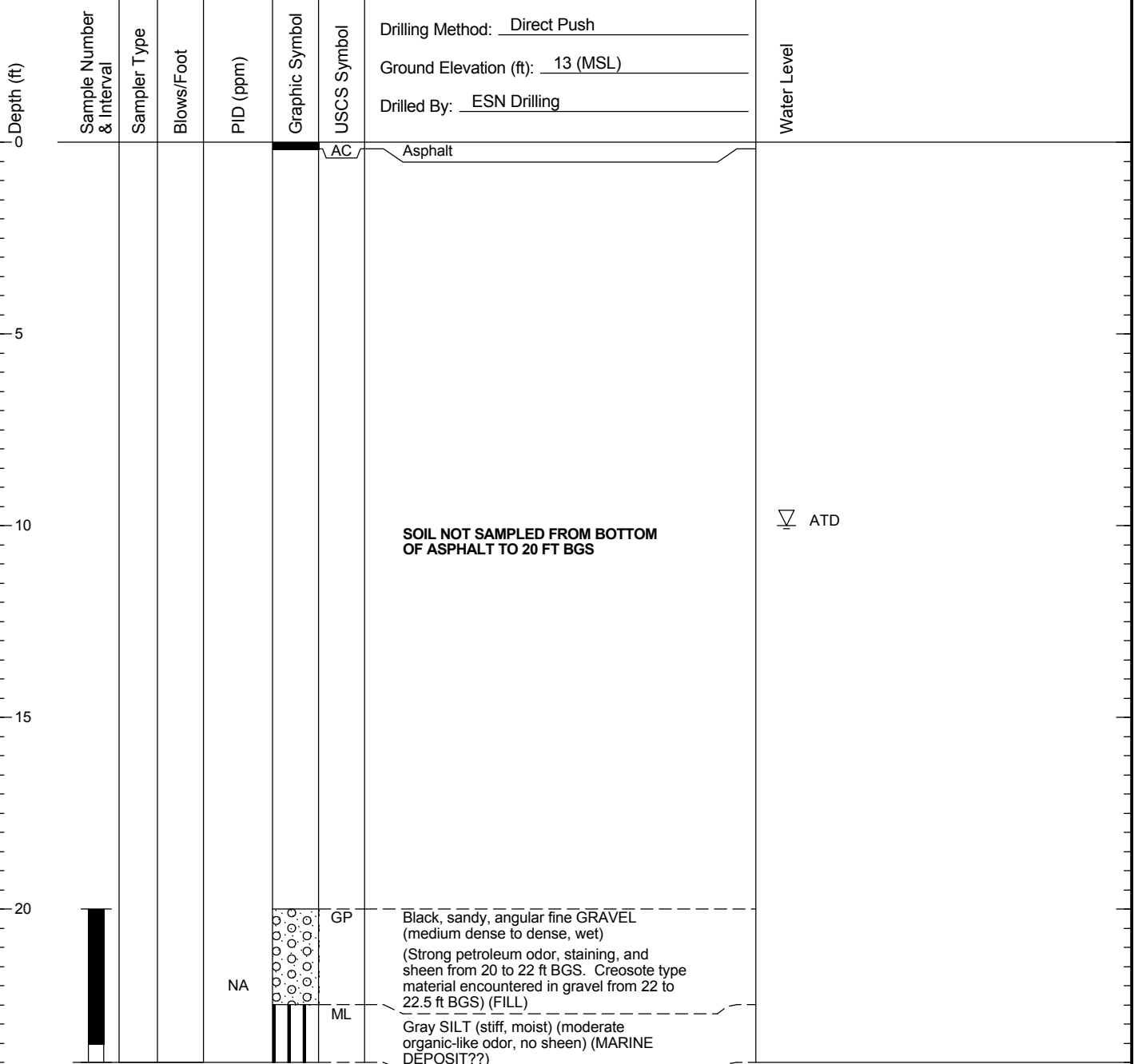
Figure
C-22

B-22

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 02/29/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG

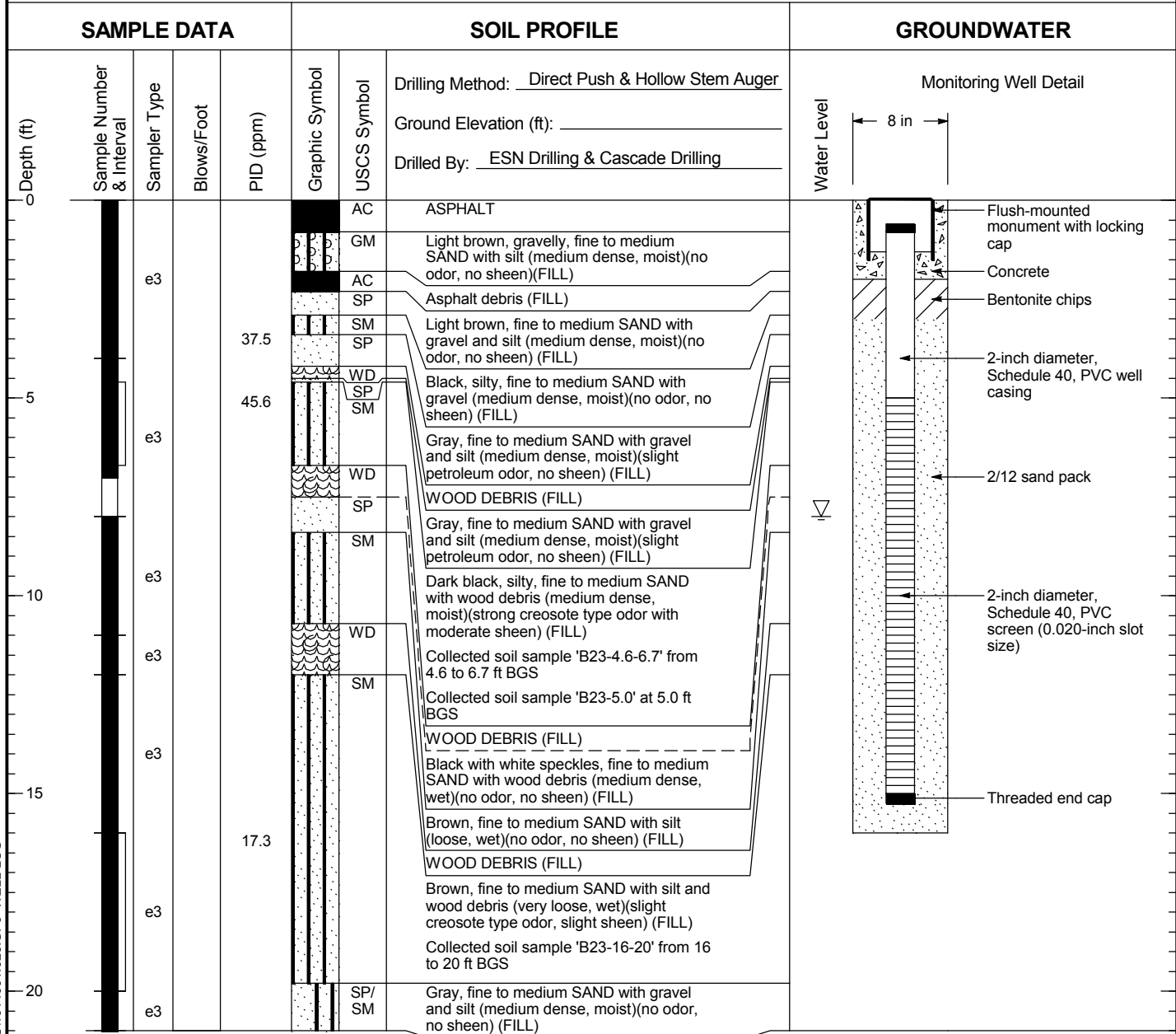


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Log of Boring B-22

Figure
C-23

B-23 (MW-8)



Boring Completed 10/08/08
Total Depth of Boring = 21.0 ft.

Monitoring Well Completed 11/13/08
Total Depth of Monitoring Well = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well B-23 (MW-8)

Figure
C-24

B-24

SAMPLE DATA			SOIL PROFILE				GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	<p>Drilling Method: <u>Direct Push</u></p> <p>Ground Elevation (ft): <u>13 (MSL)</u></p> <p>Drilled By: <u>ESN Drilling</u></p>						
0					AC	Asphalt	
		e3		0.0	SP	Light brown, fine to medium SAND with gravel and trace silt (medium dense, moist)(no odor, no sheen) (FILL) becomes a dark brown, gravelly, fine to medium SAND with silt from 1.8 to 2.2 ft BGS	
5		e3			WD	Becomes black with white speckles and contains gravel from 2.2 to 3 ft BGS	
					SP	Collected soil sample 'B24-2.2-3.0' from 2.2 to 3.0 ft BGS	
					WD	WOOD DEBRIS (FILL)	
				106		Black with white speckles, fine to medium SAND with gravel and silt (medium dense, moist to wet)(strong petroleum odor, no sheen) (FILL)	▽ ATD
		e3		72	SM	Collected soil sample 'B24-7.5' at 7.5 ft BGS Collected soil sample 'B24-7.0-8.0' from 7.0 to 8.0 ft BGS	
10						Brown, silty, fine to medium SAND with trace gravel (loose, wet)(no odor, no sheen) (FILL) Petroleum odor decreases below 10 ft shell fragments from 8.5 to 10 ft	
		e3			WD	WOOD DEBRIS (FILL)	
15					SM	Brown, silty, fine to medium SAND with trace gravel (loose, wet)(no odor, no sheen) (FILL)	
		e3			WD	WOOD DEBRIS (FILL)	
20					SM	Brown, silty, fine to medium SAND with trace gravel (loose, wet)(no odor, no sheen) (FILL)	
		e3			WD	WOOD DEBRIS (FILL)	

Boring Completed 10/07/08
Total Depth of Boring = 22.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Seattle, Washington

Log of Boring B-24

Figure
C-25

B-25

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
	e3	e3	e3	0.0	AC	ASPHALT	
5					SP	Light brown, fine to medium SAND with gravel and silt (medium dense, moist)(no odor, no sheen)(FILL) becomes very dark brown at 1.2 ft BGS becomes gray at 3.5 ft BGS becomes light brown at 5 ft BGS	
10				4.2	WD SP ML SP	WOOD DEBRIS (FILL) Black with white speckles, fine to medium SAND with gravel (medium dense, moist to wet)(no odor, no sheen) (FILL) Brown, fine sandy, SILT (medium stiff, wet)(no odor, no sheen) (FILL) Brown, fine to medium SAND with silt (loose to medium dense, wet)(no odor, no sheen) (FILL)	▽ ATD
15				0.0	WD SM	WOOD DEBRIS (FILL) Brown, silty, fine to medium SAND (very loose, wet)(no odor, no sheen) (FILL)	
20					SP	with wood debris 18 to 22 ft BGS trace shell fragments 21.5 to 22.0 ft BGS Gray, fine to medium SAND with gravel (medium dense, moist)(no odor, no sheen) (FILL)	

Boring Completed 10/07/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

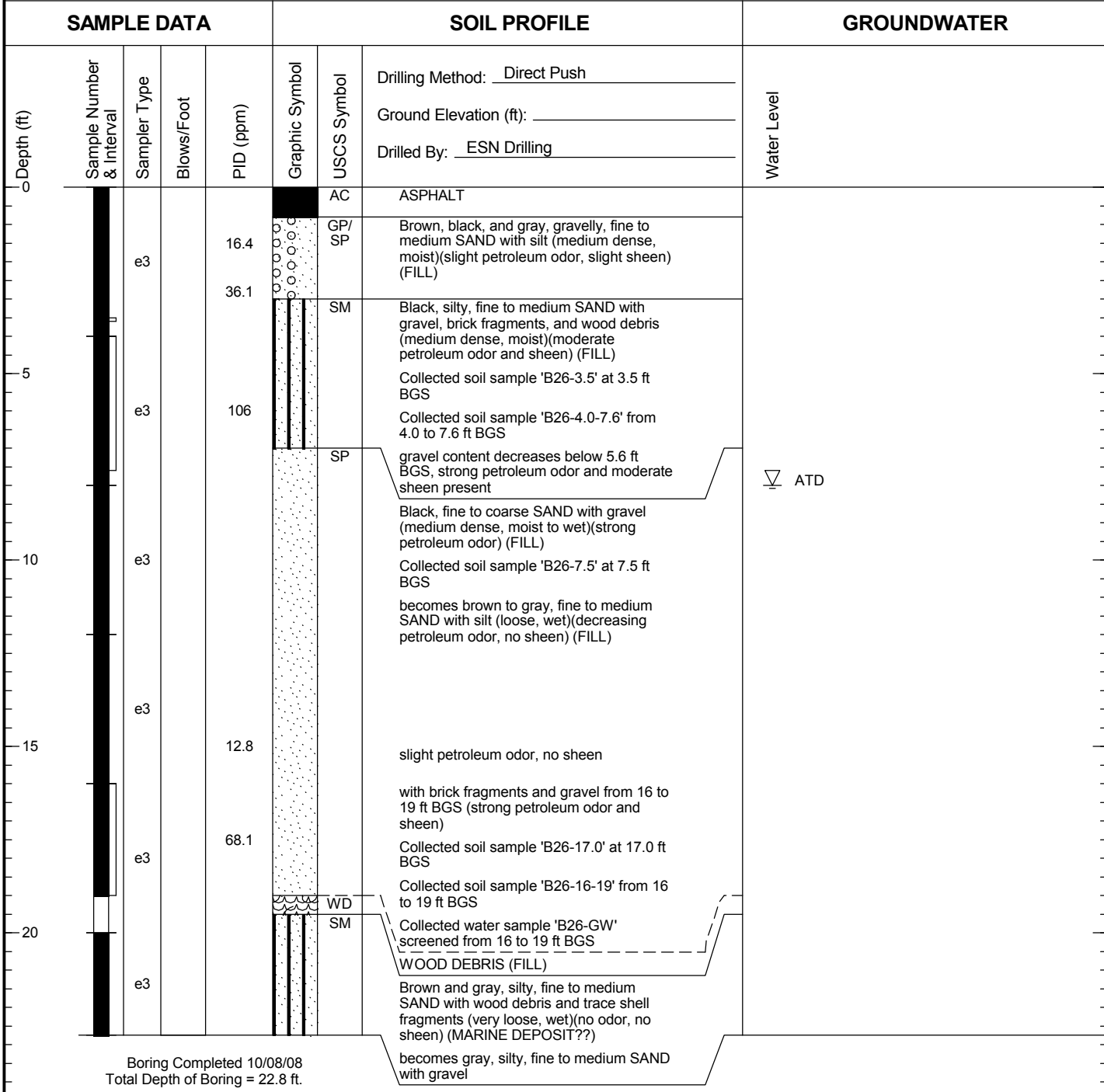


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Log of Boring B-25

Figure
C-26

B-26



1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

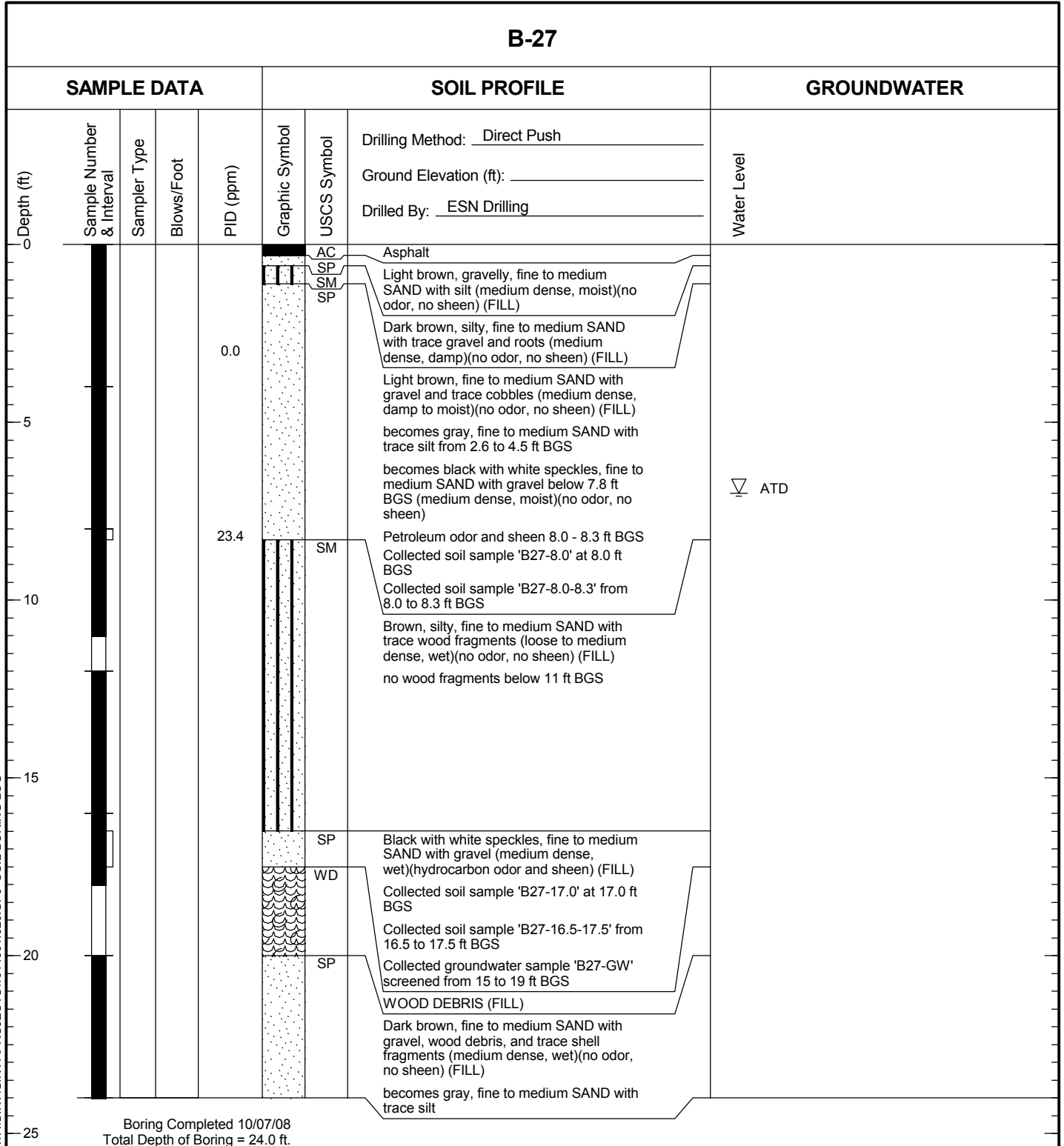


North Lot Development
Seattle, Washington

Log of Boring B-26

Figure
C-27

B-27



Boring Completed 10/07/08
 Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-27

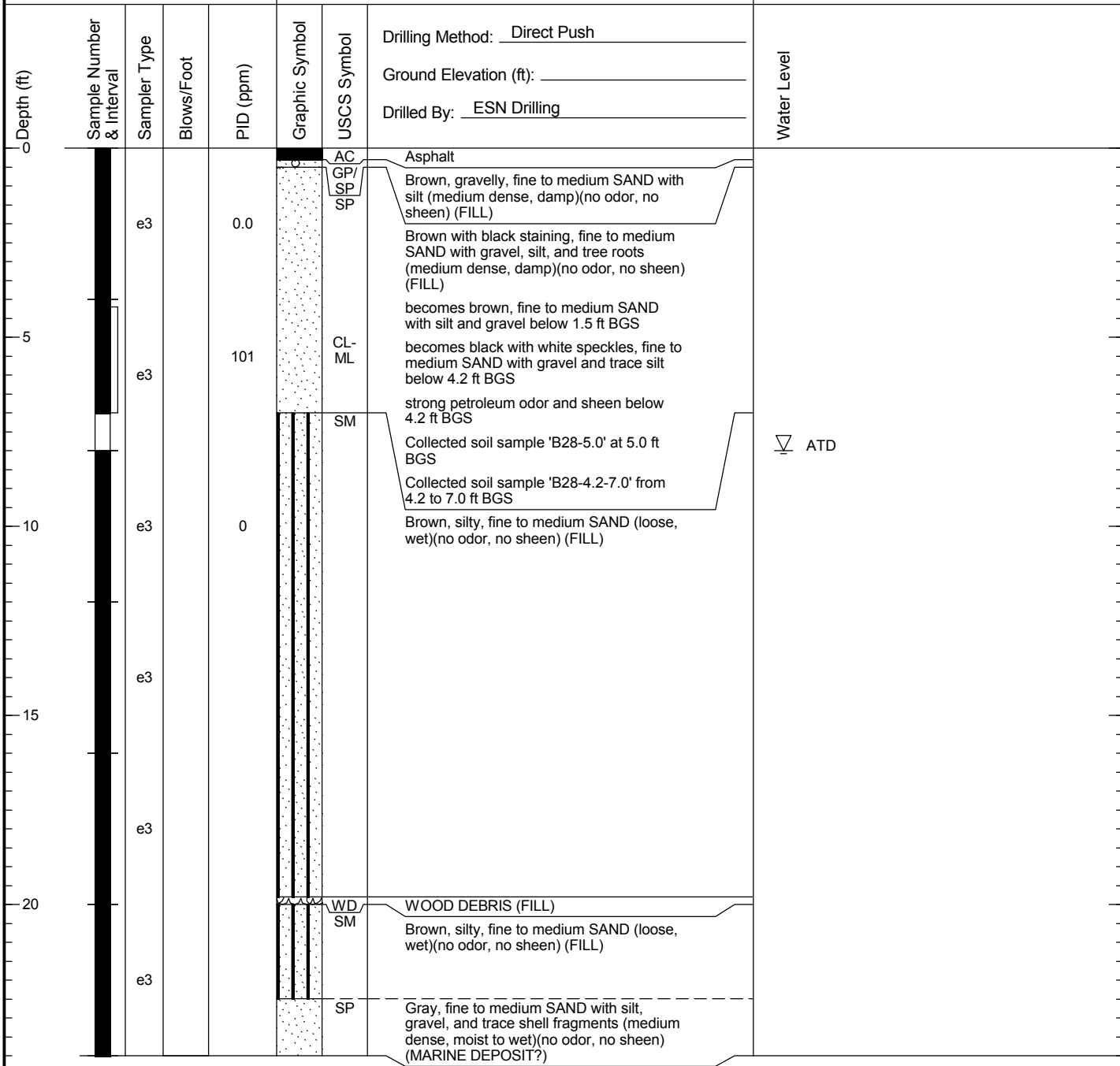
Figure
C-28

B-28

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/07/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

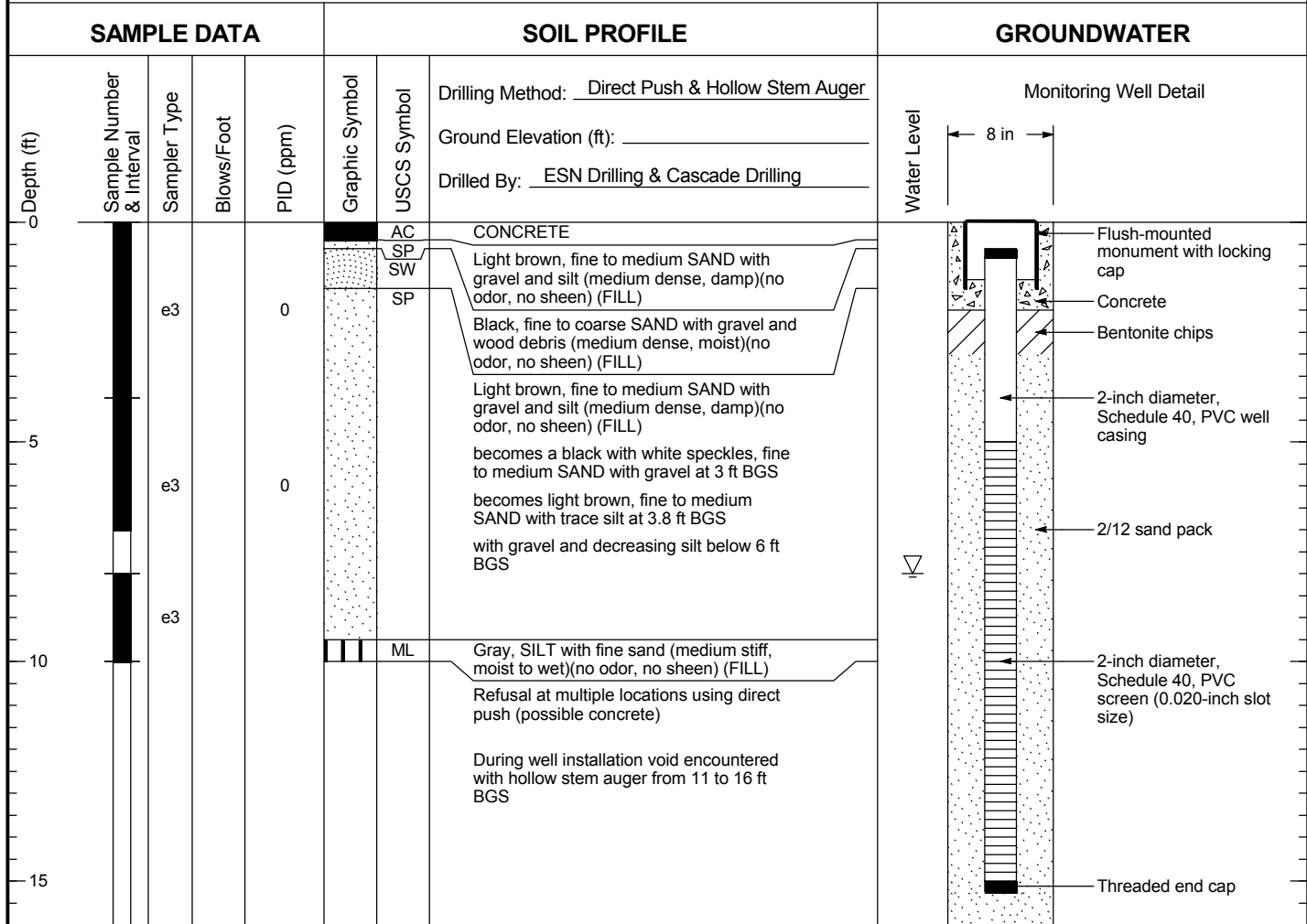


North Lot Development
Seattle, Washington

Log of Boring B-28

Figure
C-29

B-29 (MW-2)



Boring Completed 10/08/08
Total Depth of Boring = 16.0 ft.

Monitoring Well Completed 11/11/08
Total Depth of Monitoring Well = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG

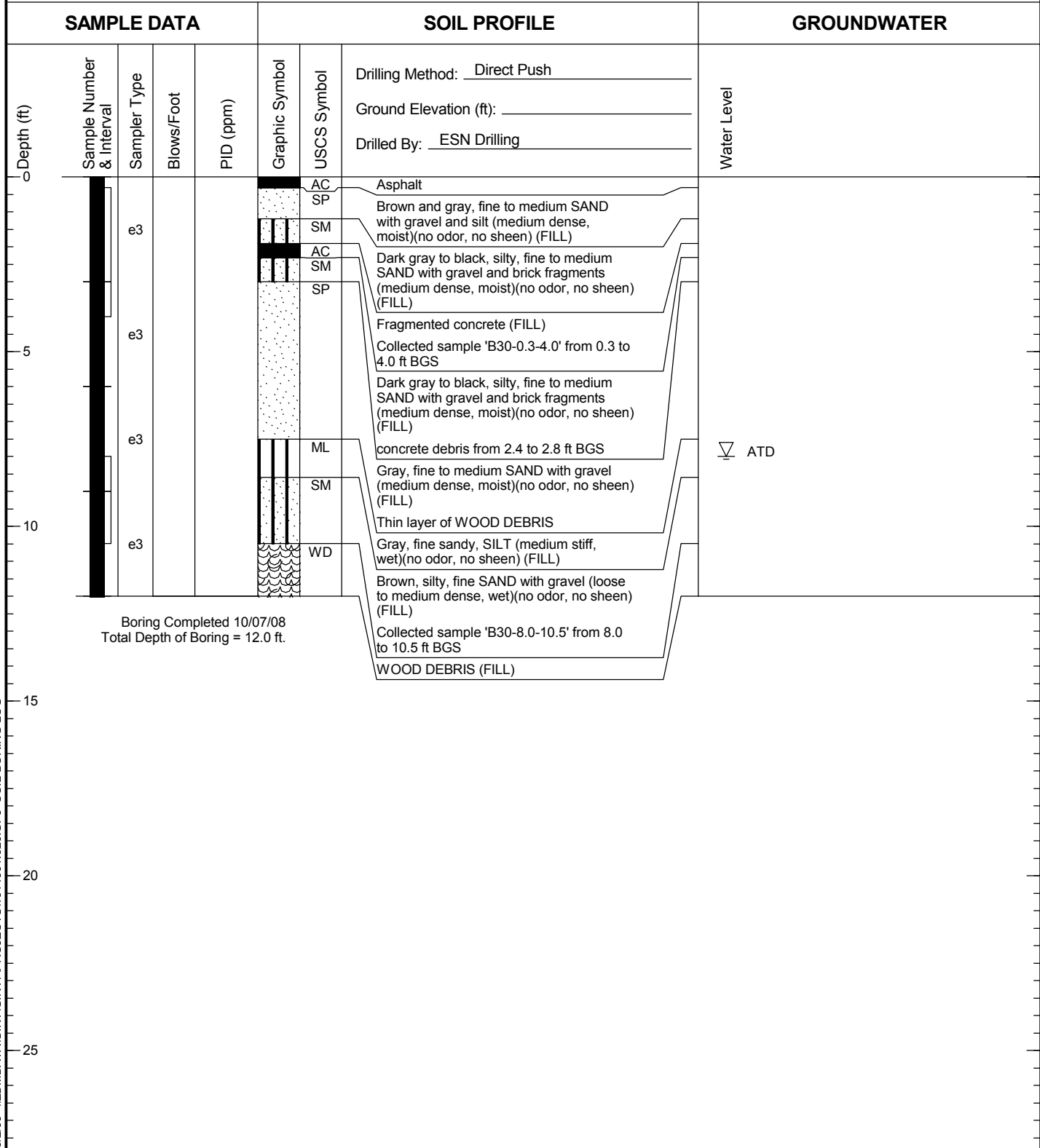


North Lot Development
Seattle, Washington

Log of Monitoring Well B-29 (MW-2)

Figure
C-30

B-30



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-30

Figure
C-31

B-31a

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	
	e3	e3		0	[Symbol]	AC	ASPHALT
	e3				[Symbol]	GP/SP	Brown and gray, gravelly, fine to coarse SAND with silt (medium dense, moist)(no odor, no sheen) (FILL)
					[Symbol]	AC	Red brick fragments, concrete debris, brick joint sand (FILL)
							Refusal encountered at 6 ft BGS

Drilling Method: Direct Push
 Ground Elevation (ft): _____
 Drilled By: ESN Drilling

Groundwater not encountered.

Boring Completed 10/07/08
 Total Depth of Boring = 6.0 ft.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



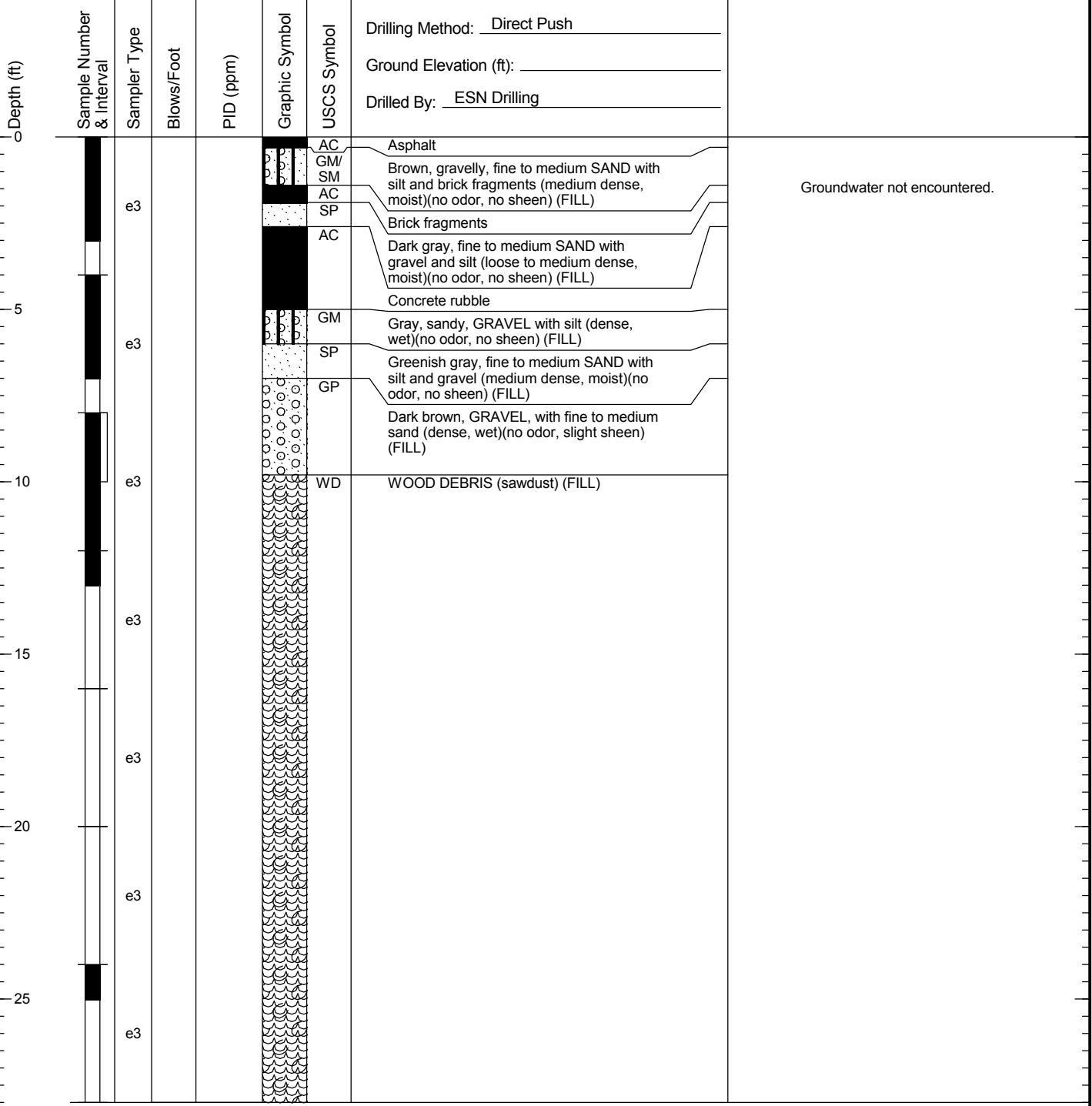
North Lot Development Seattle, Washington	Log of Boring B-31a	Figure C-32
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B-31b

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/10/08
 Total Depth of Boring = 28.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

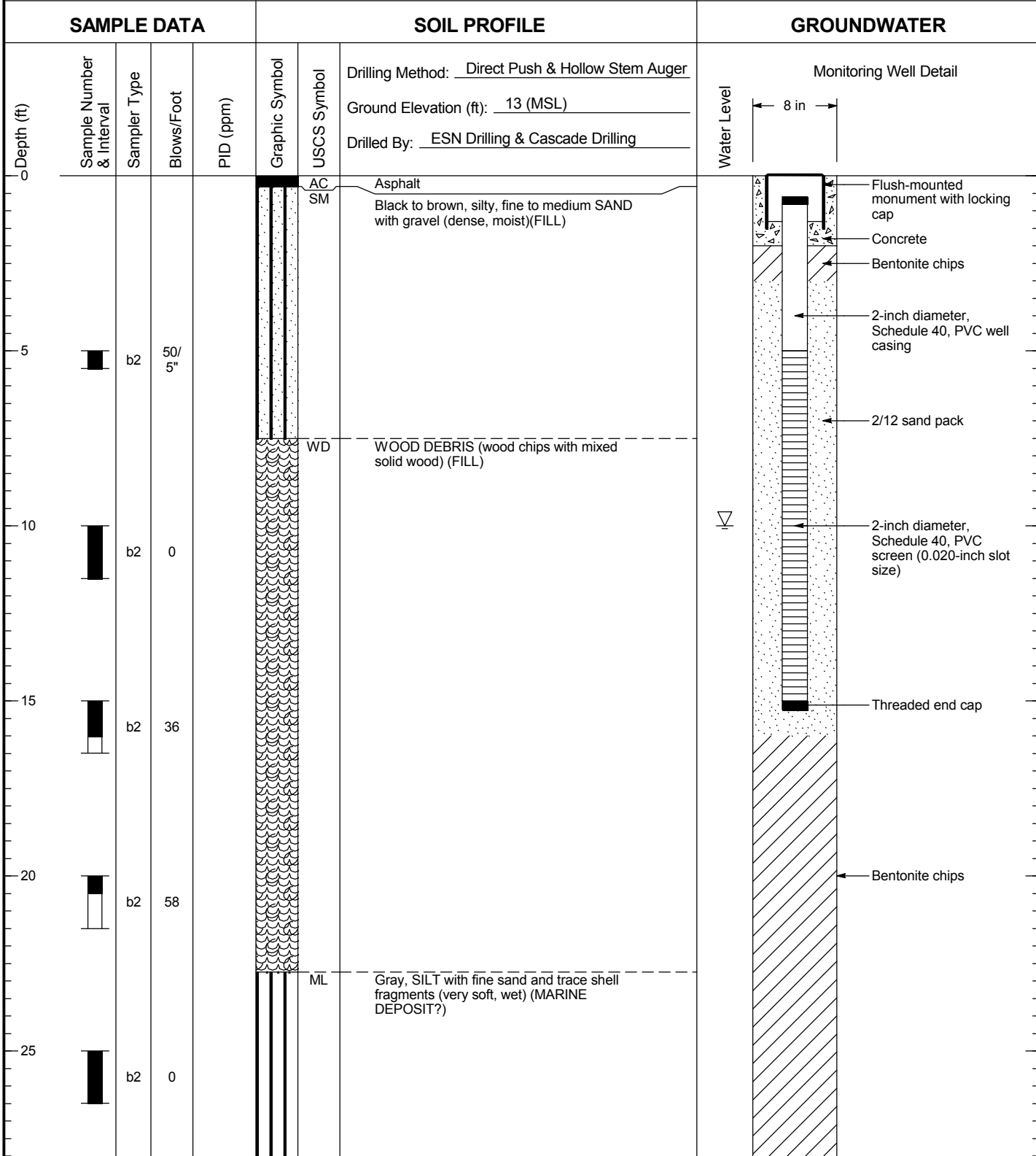


North Lot Development
 Seattle, Washington

Log of Boring B-31b

Figure
C-33

B-31c (MW-3)



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well B-31c (MW-3)

Figure
C-34
(1 of 2)

B-31c (MW-3)

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push & Hollow Stem Auger</u>	Water Level
							Ground Elevation (ft): <u>13 (MSL)</u>	
							Drilled By: <u>ESN Drilling & Cascade Drilling</u>	
							Monitoring Well Detail	
30	b2	50/5"		ML	SP	Gray, fine to medium SAND with coarse sand and gravel (dense, moist)		
						decreasing coarse sand below 32 ft BGS		
35	b2	50/6"						
40	b2	50/4"						
45	b2	50/6"						

Boring Completed 11/11/08
Total Depth of Boring = 45.5 ft.

Monitoring Well Completed 11/11/08
Total Depth of Monitoring Well = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG

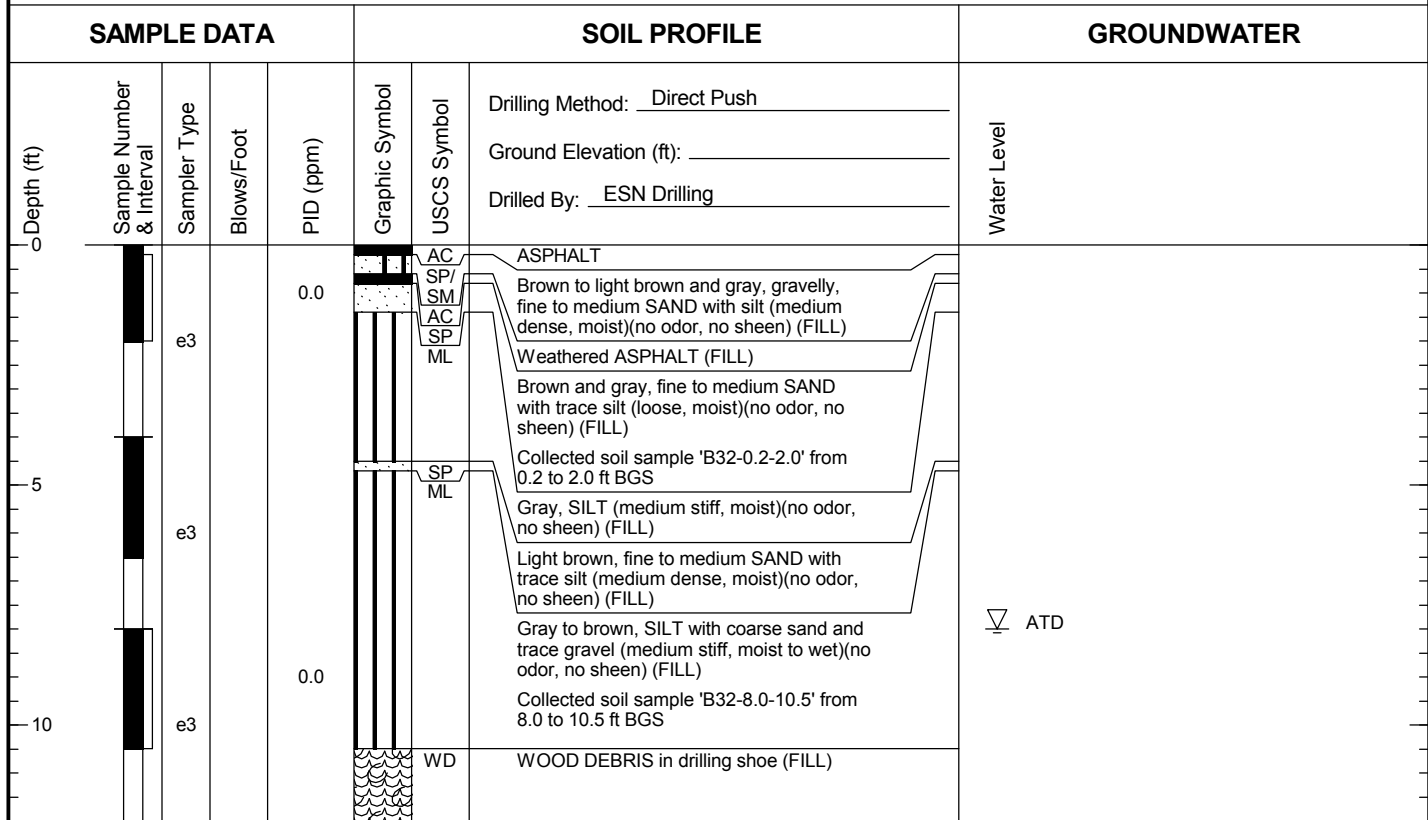


North Lot Development
Seattle, Washington

Log of Monitoring Well B-31c (MW-3)

Figure
C-34
(2 of 2)

B-32



Boring Completed 10/07/08
Total Depth of Boring = 12.0 ft.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Log of Boring B-32

Figure
C-35

B-33

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>	Water Level
0					AC		Asphalt	
5	e3				GP SP		Brown, fine to coarse sandy, GRAVEL with silt (medium dense, moist)(no odor, no sheen) (FILL) Greenish gray, fine to medium SAND with trace gravel (medium dense, moist)(no odor, no sheen) (FILL)	
10	e3			0.0	SP/ SM		Greenish gray, gravelly, fine to medium SAND with silt (medium dense, wet)(no odor, no sheen) (FILL)	▽ ATD
15	e3				WD		WOOD DEBRIS (FILL)	
20	e3			0.0	ML		Gray, SILT with wood debris (medium stiff, wet)(no odor, no sheen) (FILL) Collected soil sample 'B33-17.5-18.5' from 17.5 to 18.5 ft BGS	

Boring Completed 10/10/08
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG

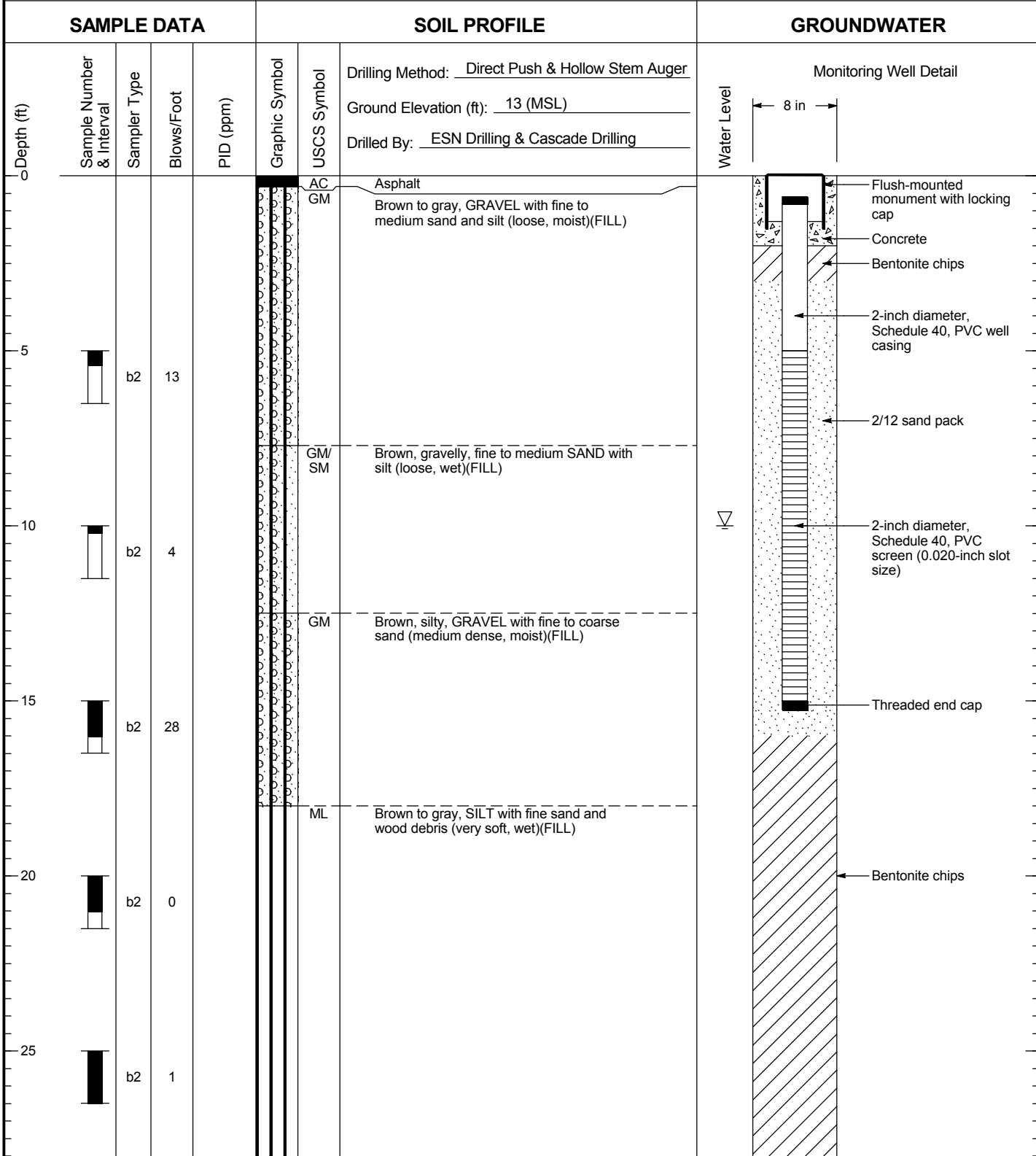


North Lot Development
Seattle, Washington

Log of Boring B-33

Figure
C-36

B-33b (MW-4)



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG

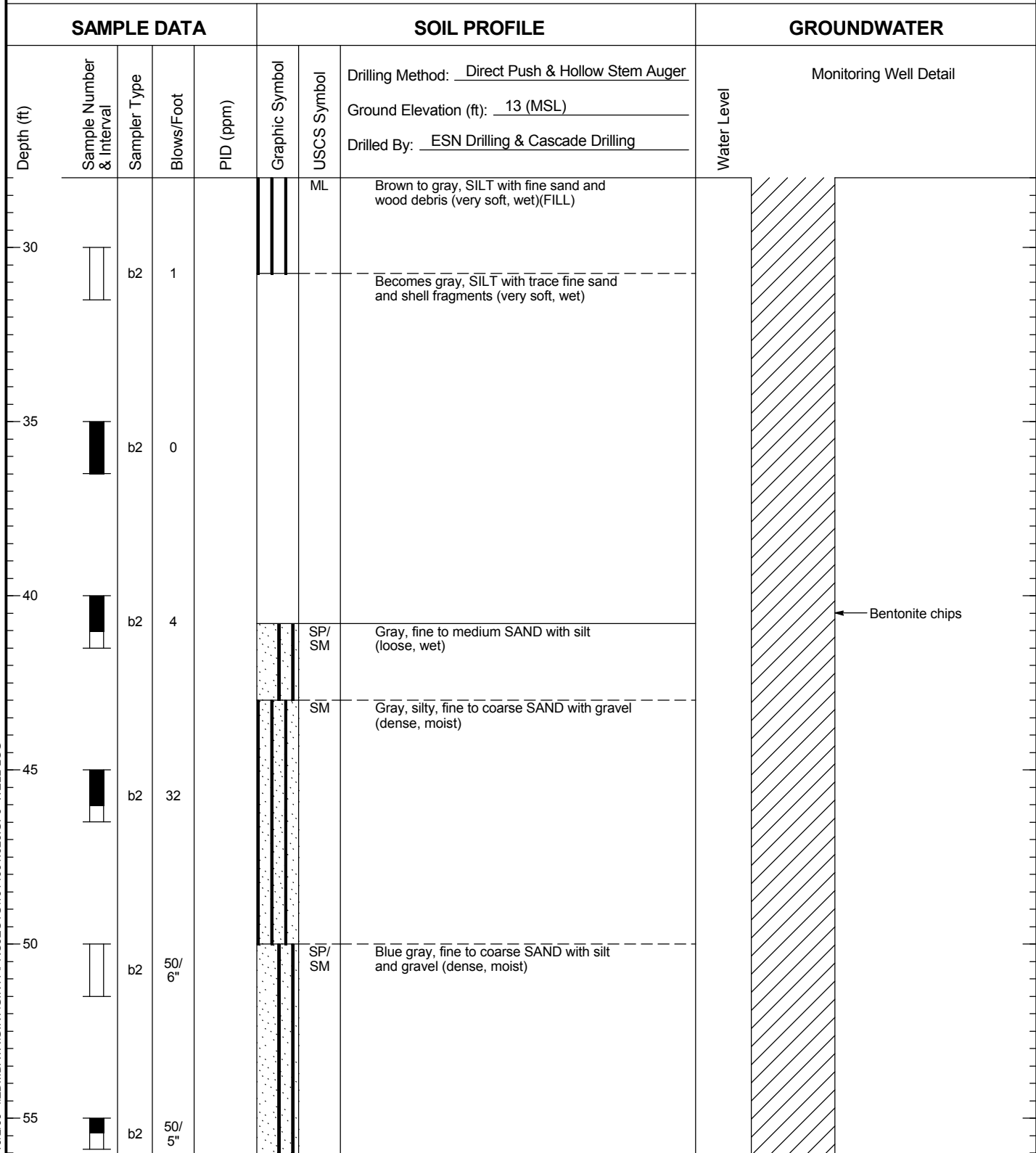


North Lot Development
Seattle, Washington

Log of Monitoring Well B-33b (MW-4)

Figure
C-37
(1 of 3)

B-33b (MW-4)



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well B-33b (MW-4)

Figure
C-37
(2 of 3)

B-33b (MW-4)

SAMPLE DATA				SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push & Hollow Stem Auger</u>	Water Level	Monitoring Well Detail
							Ground Elevation (ft): <u>13 (MSL)</u>		
							Drilled By: <u>ESN Drilling & Cascade Drilling</u>		
60	b2	88/12"			SP/SM		Blue gray, fine to coarse SAND with silt and gravel (dense, moist)		
65	b2	50/6"			SP		Blue gray, fine to coarse SAND with trace silt and gravel (very dense, moist)		Bentonite chips

Boring Completed 11/11/08
Total Depth of Boring = 65.5 ft.

Monitoring Well Completed 11/11/08
Total Depth of Monitoring Well = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG

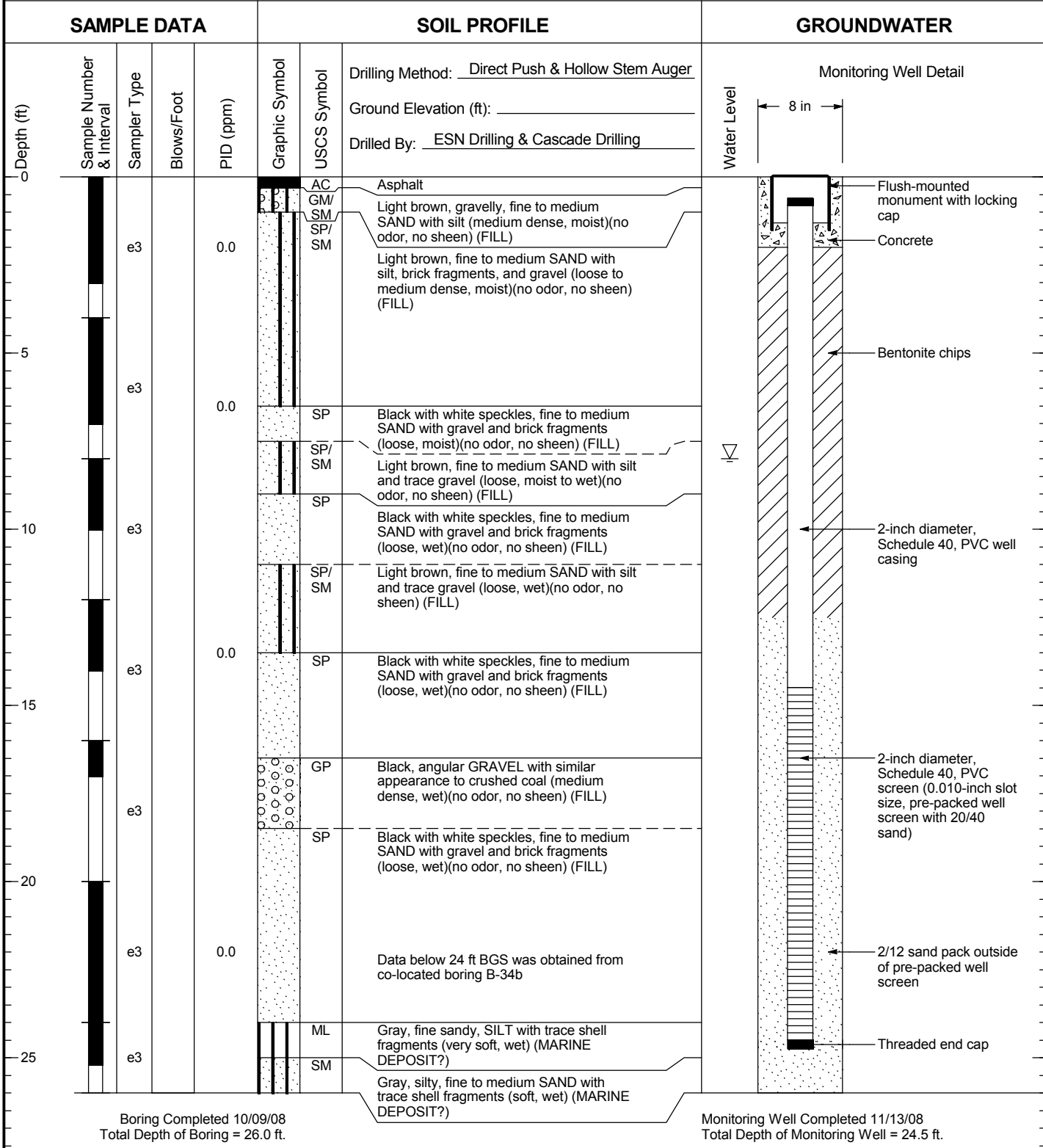


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Log of Monitoring Well B-33b (MW-4)

Figure
C-37
(3 of 3)

B-34 (MW-7d)



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG

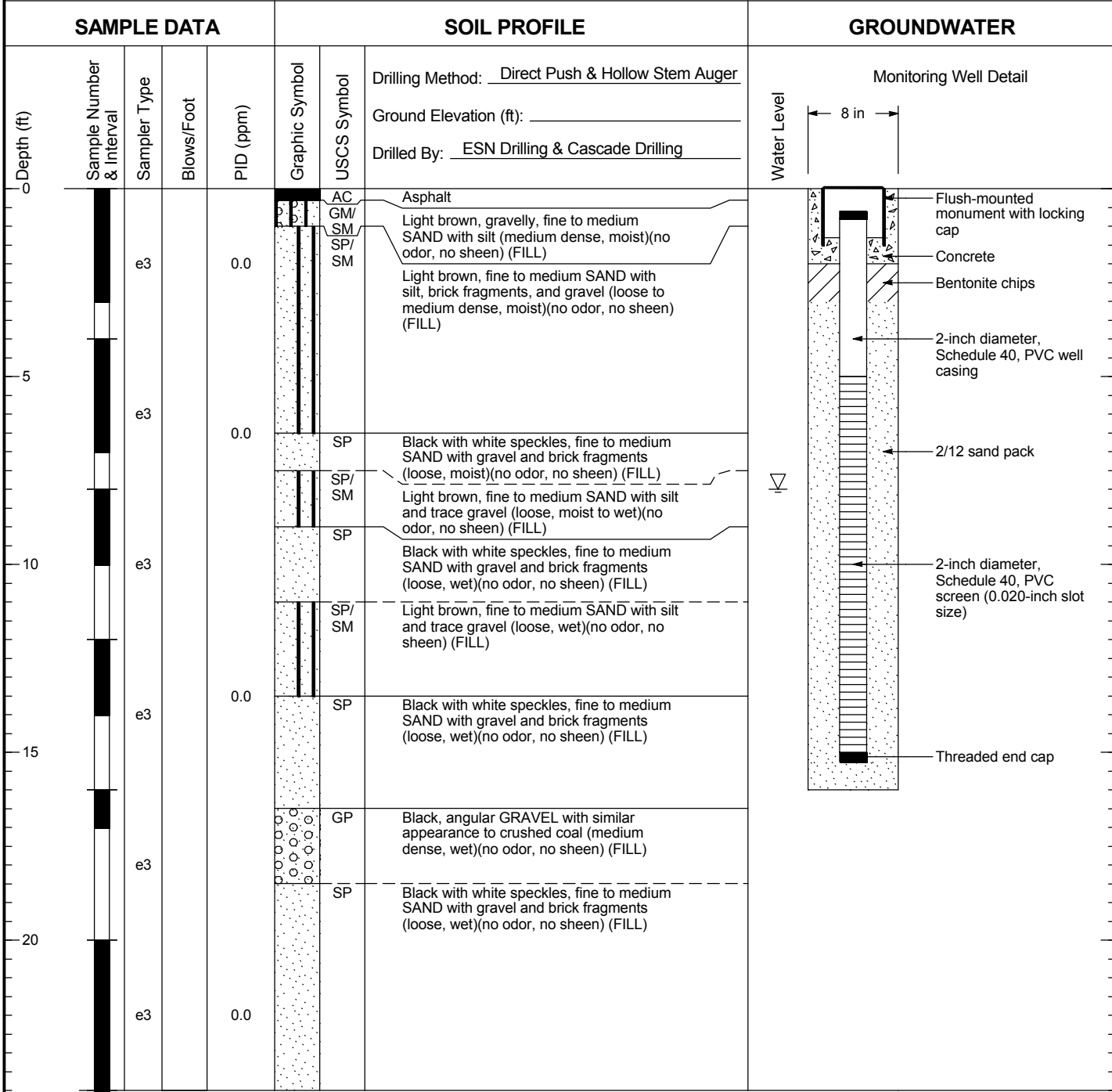


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Log of Monitoring Well B-34 (MW-7d)

Figure
C-38

B-34 (MW-7s)



Boring Completed 10/09/08
Total Depth of Boring = 24.0 ft.

Monitoring Well Completed 11/13/08
Total Depth of Monitoring Well = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well B-34 (MW-7s)

Figure
C-39

B-34b

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Water Level
0							Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>13 (MSL)</u> Drilled By: <u>Cascade Drilling Inc.</u>	
0 - 5					AC SP		Asphalt	
5 - 10	b2	b2	6		SM		Brown, fine to medium SAND with trace silt (loose, moist)(FILL)	
10 - 15	b2	b2	3		SP		Dark brown to black, fine to medium SAND with silt and gravel (loose, wet)(FILL)	▽ ATD
15 - 20	b2	b2	1		SP		Black with white speckles, fine to coarse SAND with trace gravel (loose, wet)(FILL)	
20 - 25	b2	b2	7		ML		Gray, fine sandy, SILT with trace shell fragments (very soft, wet) (MARINE DEPOSIT?)	
25 - 30	b2	b2	1		SM		Gray, silty, fine to medium SAND with trace shell fragments (loose to medium dense, wet) (MARINE DEPOSIT?)	

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-34b

Figure
C-40
(1 of 2)

B-34b

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description	Water Level
							Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>13 (MSL)</u> Drilled By: <u>Cascade Drilling Inc.</u>	
30		b2	9		[Dotted pattern]	SM	Gray, silty, fine to medium SAND with trace shell fragments (loose to medium dense, wet) (MARINE DEPOSIT?)	
35		b2	26		[Dotted pattern]			
40		b2	44		[Circular pattern]	GM	Gray, GRAVEL with sand, silt, and trace shell fragments (dense, wet) (GLACIAL/INTERGLACIAL DEPOSIT)	
45		b2	50/ 3"		[Dotted pattern]	SM	Gray, fine to medium SAND with silt and gravel (dense, moist) (GLACIAL/INTERGLACIAL DEPOSIT)	
50		b2	50/ 1"		[Dotted pattern]	RK	Rock debris in sampler, refusal	

Boring Completed 11/10/08
Total Depth of Boring = 50.1 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-34b

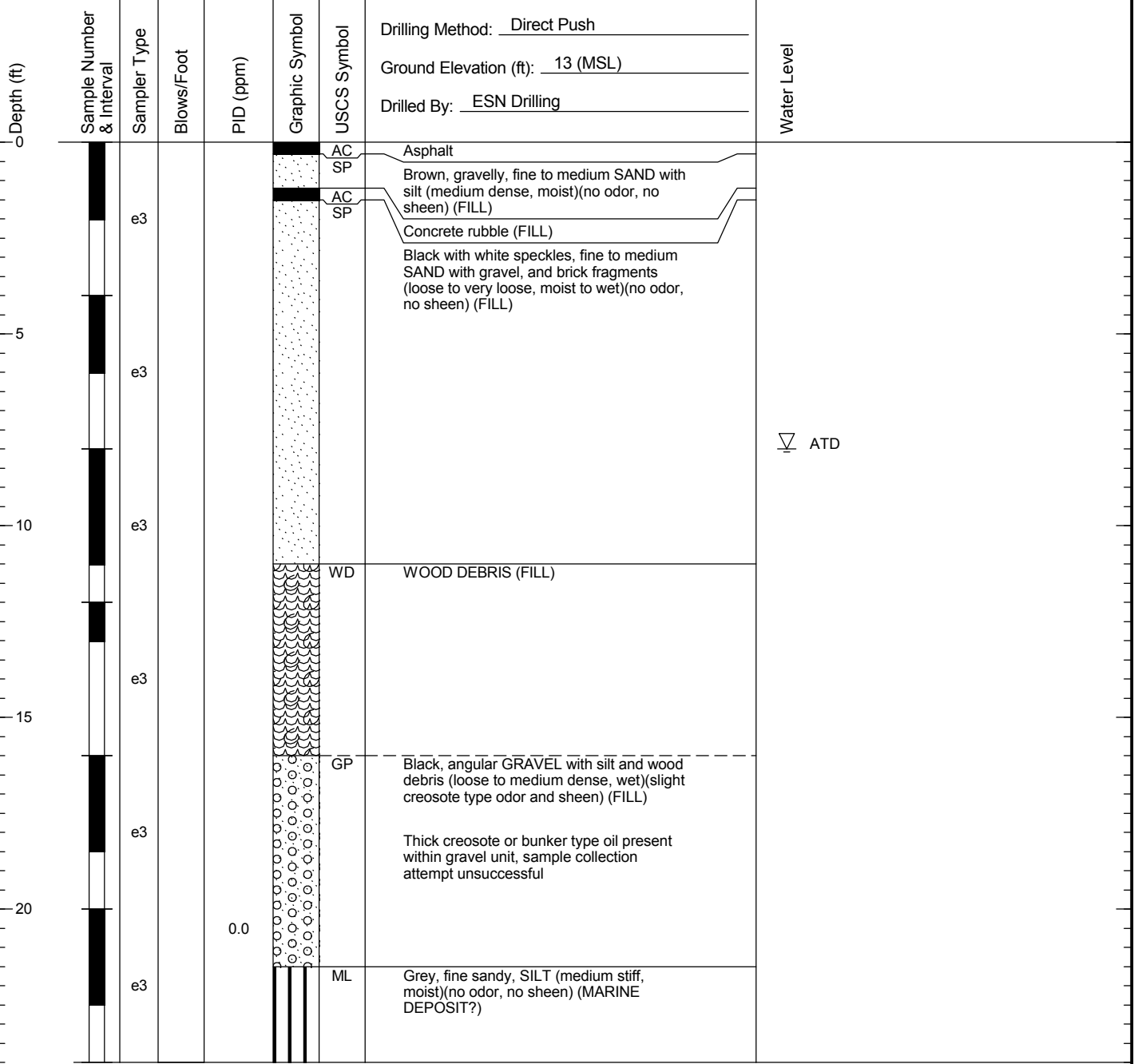
Figure
C-40
(2 of 2)

B-35

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



▽ ATD

Boring Completed 10/09/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\GINT7\PROJECTS\1014001.020.GPJ SOIL BORING LOG

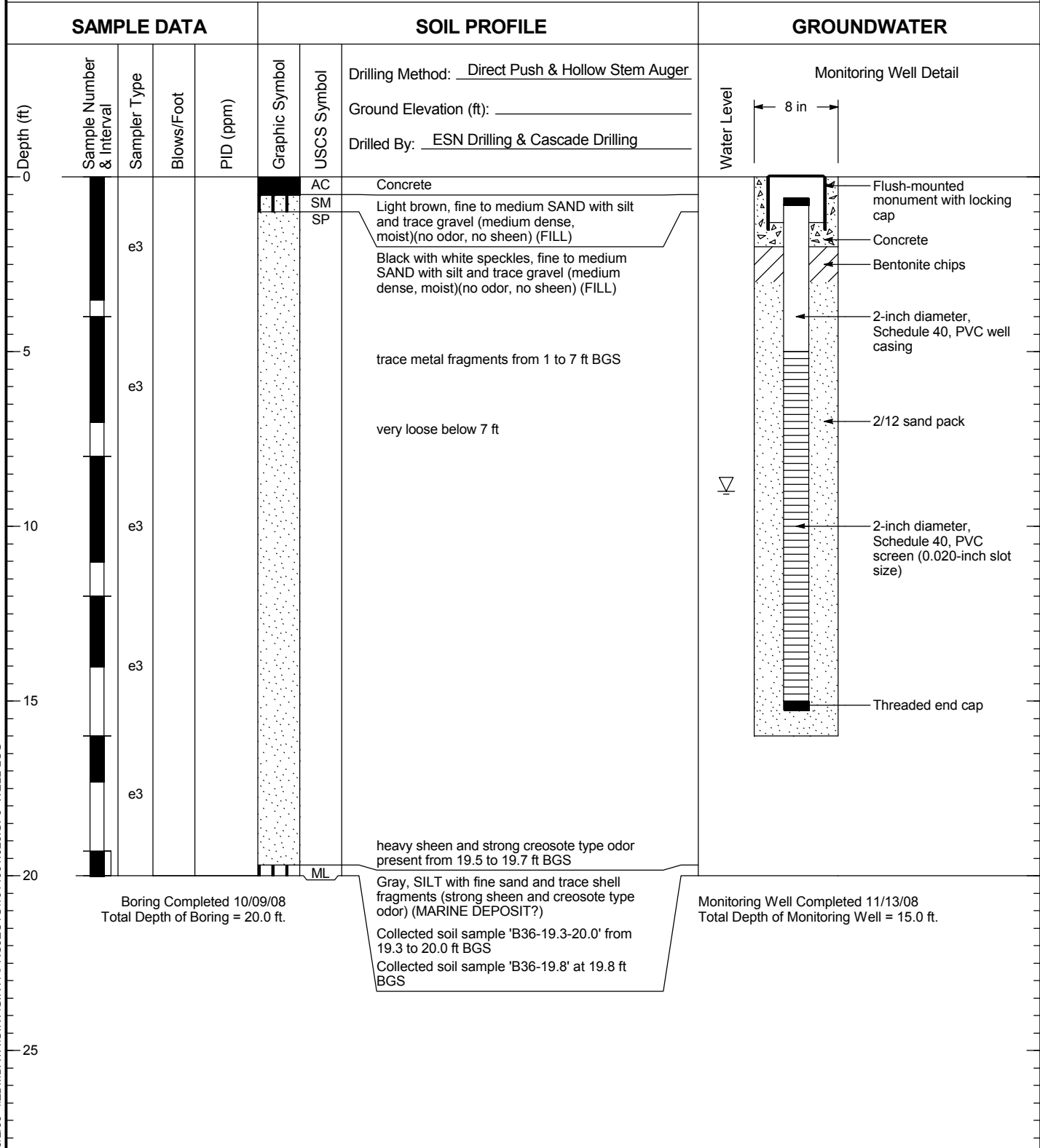


North Lot Development
Seattle, Washington

Log of Boring B-35

Figure
C-41

B-36 (MW-6)



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well B-36 (MW-6)

Figure
C-42

B-37

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>	Water Level
0					AC	ASPHALT	
					SM	Brown, silty, fine to medium SAND with gravel (medium dense, moist)(no odor, no sheen) (FILL)	
					AC	CONCRETE DEBRIS (FILL)	
					SM	Light brown, silty, fine to medium SAND with trace gravel (medium dense, moist)(no odor, no sheen) (FILL)	
					AC	CONCRETE DEBRIS (FILL)	
					SM	CONCRETE DEBRIS (FILL)	
5					WD	Black with white speckles, silty, fine to medium SAND with gravel (medium dense, moist)(no odor, no sheen) (FILL)	
					WD	WOOD DEBRIS (FILL)	
					SM	Black with white speckles, silty, fine to medium SAND with gravel (medium dense, moist to wet)(no odor, no sheen) (FILL)	▽ ATD
10					GP	Black and gray, angular GRAVEL (medium dense, wet)(no odor, no sheen) (FILL)	
						with cobble fragments 16 to 19 ft BGS	
15							
						slight creosote odor 20-21 ft BGS, no visible sheen	
				21.2		Free product visible as coating on temporary well screen 21 to 24 ft BGS, sample attempt unsuccessful.	
20							
25							

Boring Completed 10/08/08
 Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG

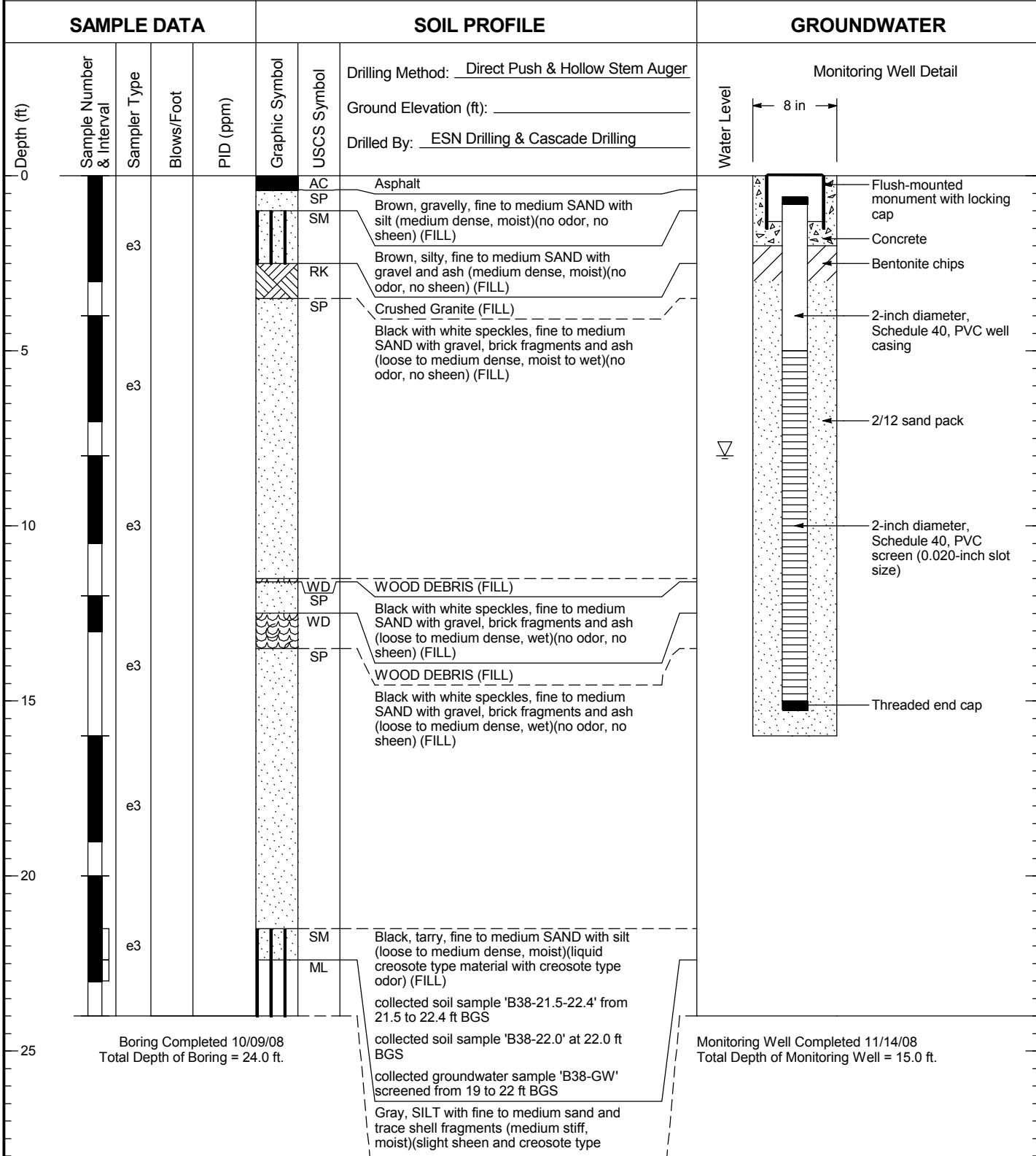


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 Seattle, Washington

Log of Boring B-37

Figure
C-43

B-38 (MW-1)



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well B-38 (MW-1)

Figure
C-44
(1 of 2)

B-38 (MW-1)

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push & Hollow Stem Auger</u>		Water Level	Monitoring Well Detail
							Ground Elevation (ft): _____	Drilled By: <u>ESN Drilling & Cascade Drilling</u>		
30							odor) (MARINE DEPOSIT?)			
							Collected soil sample 'B38-22.4-23.0' from 22.4 to 23.0 ft BGS			
35										
40										
45										
50										
55										

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well B-38 (MW-1)

Figure
C-44
(2 of 2)

B-38b

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description	Water Level
0							Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>13 (MSL)</u> Drilled By: <u>Cascade Drilling Inc.</u>	
0 - 5					AC SM		Asphalt Black with white speckles, fine to medium SAND with silt (loose, moist)(FILL)	
5 - 10	b2	b2	5		SP		Black with white speckles, fine to coarse SAND (loose, wet)(FILL)	▽ ATD
10 - 15	b2	b2	2					
15 - 20	b2	b2	3					
20 - 25	b2	b2	4				Heavy creosote type sheen / free product visible 20 to 25 ft BGS Becomes brown from 21 to 25.3 ft BGS	
25 - 30	b2	b2	1		ML		Gray, SILT with shell fragments and trace fine sand (very soft, wet)(creosote type material, strong odor)(MARINE DEPOSIT?)	

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Log of Boring B-38b

Figure
C-45
(1 of 2)

B-38b

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
						Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>13 (MSL)</u> Drilled By: <u>Cascade Drilling Inc.</u>	
30	b2	b2	1		ML	Gray, SILT with shell fragments and trace fine sand (very soft, wet)(creosote type material, strong odor)(MARINE DEPOSIT?) Collected soil sample 'B38b-31' at 31 ft BGS	
35	b2	b2	39		SM	Gray, fine to medium SAND with silt (dense, moist)(no odor, no sheen)	
40	b2	b2	27		SP	Gray, fine to medium SAND (dense, moist) (no odor, no sheen)	
45	b2	b2	56				

Boring Completed 11/10/08
Total Depth of Boring = 46.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-38b

Figure
C-45
(2 of 2)

B-39

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
					AC SP	Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>	
0		e3			WD SP ML SM	ASPHALT Brown to gray, fine to medium SAND with gravel, silt, brick fragments, and wood debris (medium dense, moist)(no odor, no sheen) (FILL) WOOD DEBRIS (FILL) Black, fine to medium SAND with gravel and silt (medium dense, moist)(no odor, no sheen) (FILL) Gray, fine sandy, SILT (medium stiff, moist)(no odor, no sheen) (FILL)	
5		e3			WD SP	Brown and gray, fine to medium SAND with silt and gravel (medium dense, moist)(no odor, no sheen) (FILL) WOOD DEBRIS (FILL)	
10		e3				Black with white speckles, fine to medium SAND with gravel and brick fragments (medium dense, moist)(no odor, no sheen) (FILL)	▽ ATD
15		e3				glass fragment present at 13 ft	
20		e3				slight creosote type odor present at 20 ft BGS, no sheen visible Collected soil sample 'B39-21.0-22.3' from 21.0 to 22.3 ft BGS	
25		e3			ML	Gray, SILT with wood debris and shell fragments (medium stiff, moist)(no odor, no sheen) (MARINE DEPOSIT??)	

Boring Completed 10/09/08
 Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

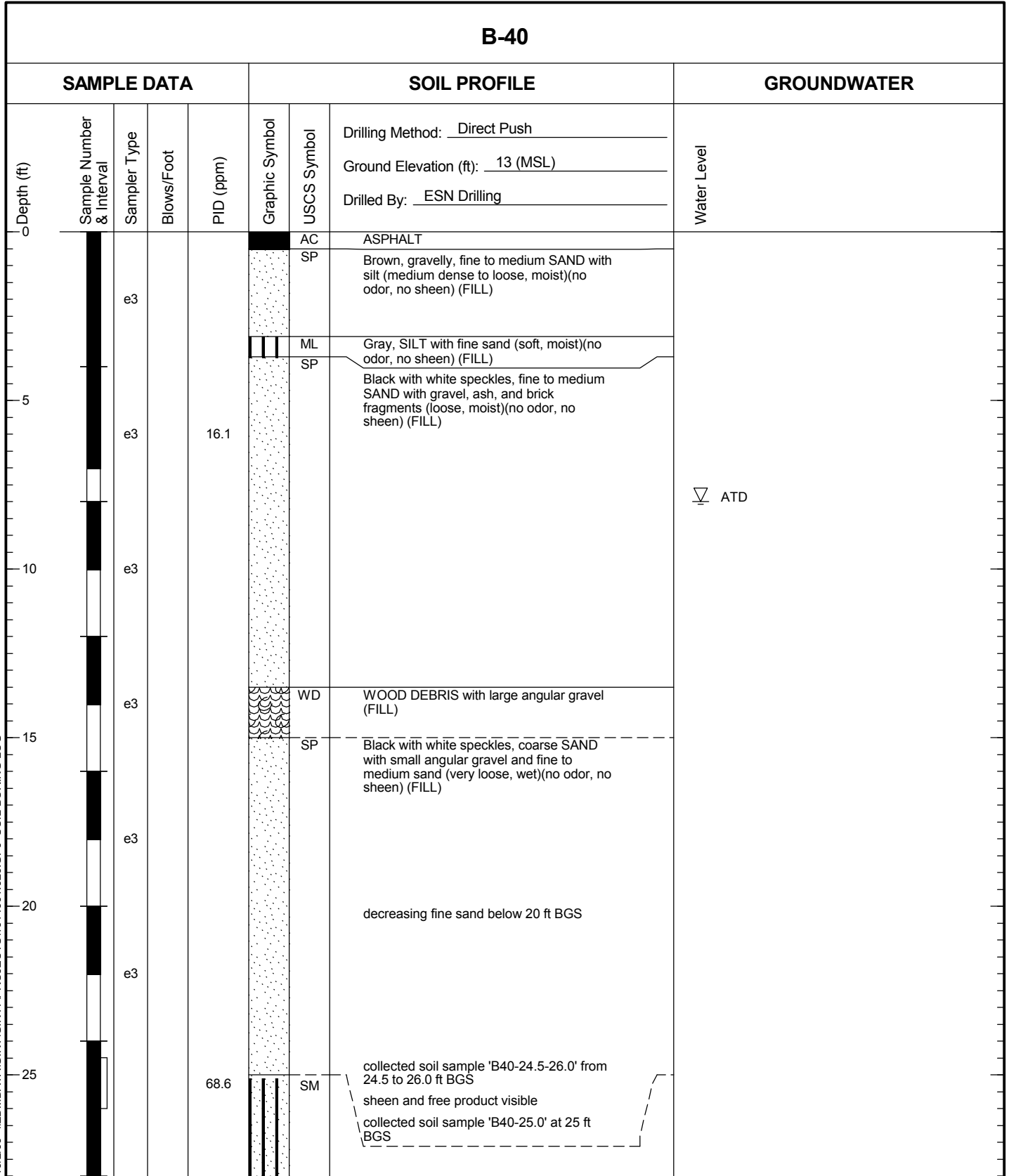


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 Seattle, Washington

Log of Boring B-39

Figure
C-46

B-40



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG



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Log of Boring B-40

Figure
C-47
(1 of 2)

B-40

SAMPLE DATA		SOIL PROFILE				GROUNDWATER				
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push</u>	Ground Elevation (ft): <u>13 (MSL)</u>	Drilled By: <u>ESN Drilling</u>	Water Level
30		e3				SM	Gray, silty, fine to medium SAND with shell fragments (soft, wet)(strong creosote odor, no sheen)(MARINE DEPOSIT?)			
Boring Completed 10/08/08 Total Depth of Boring = 32.0 ft.										
35										
40										
45										
50										
55										

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

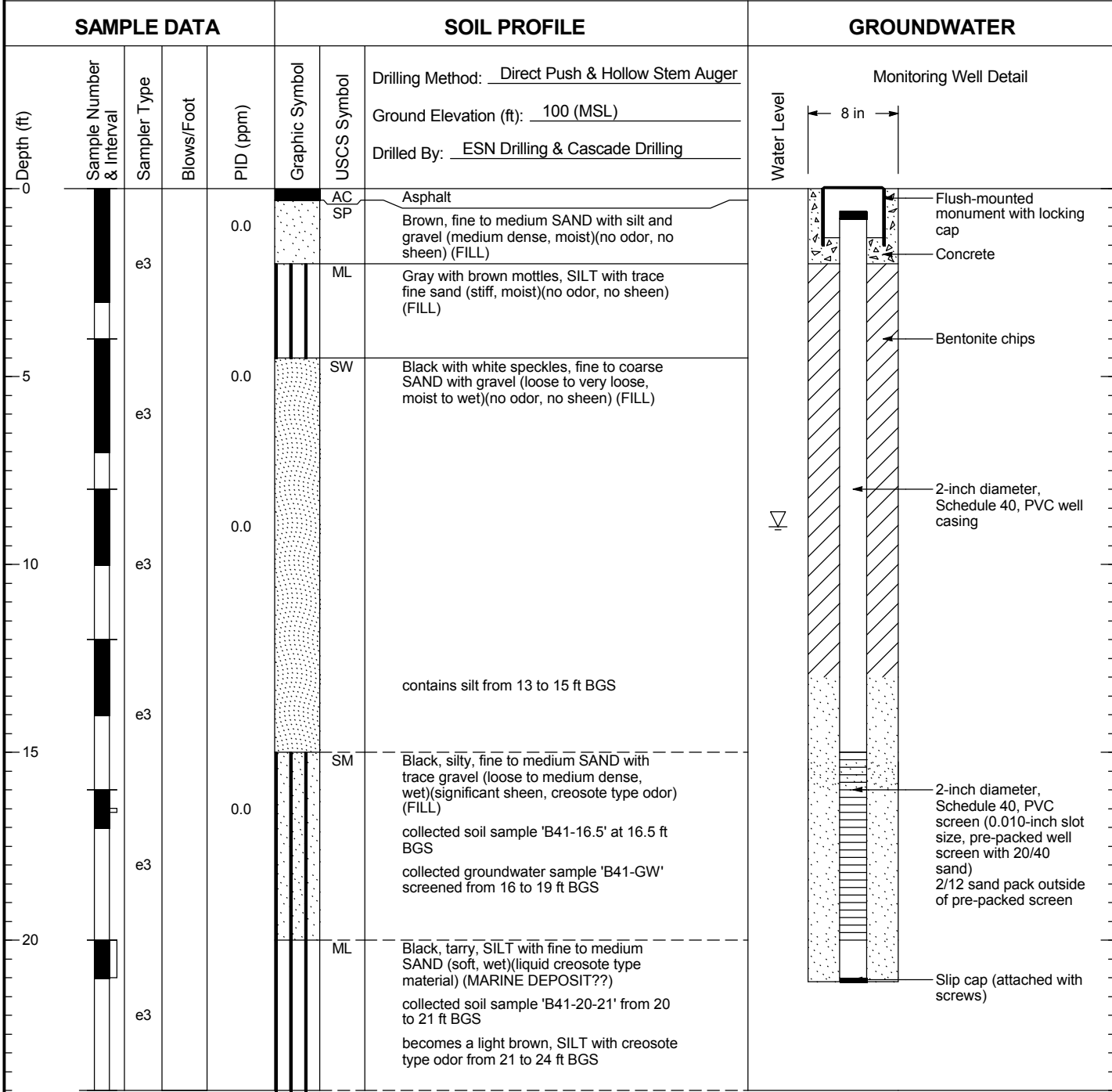


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Seattle, Washington

Log of Boring B-40

Figure
C-47
(2 of 2)

B-41 (MW-9d)



Boring Completed 10/09/08
Total Depth of Boring = 24.0 ft.

Monitoring Well Completed 11/14/08
Total Depth of Monitoring Well = 21.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG

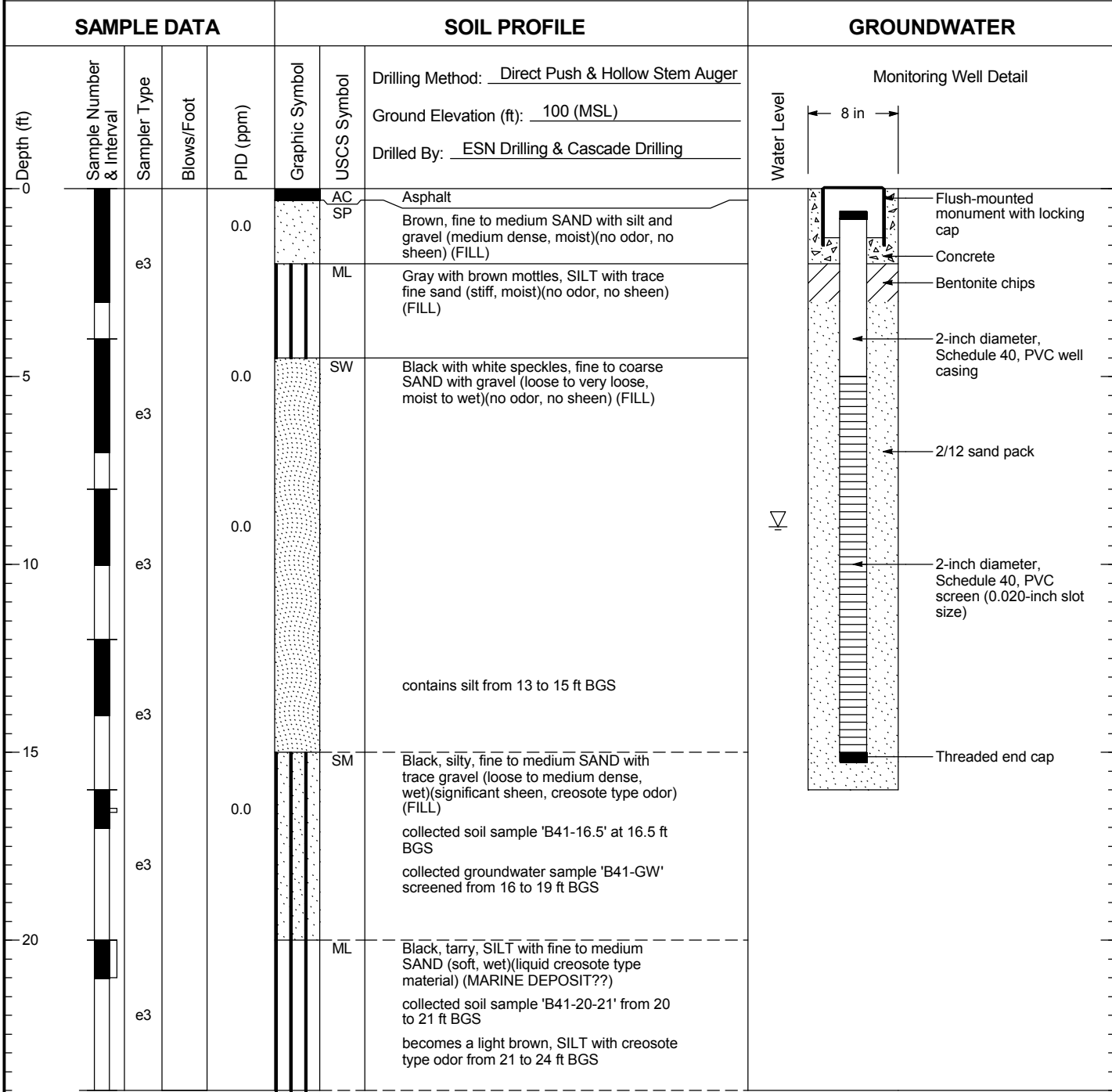


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Log of Monitoring Well B-41 (MW-9d)

Figure
C-48

B-41 (MW-9s)



Boring Completed 10/09/08
Total Depth of Boring = 24.0 ft.

Monitoring Well Completed 11/14/08
Total Depth of Monitoring Well = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



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Seattle, Washington

Log of Monitoring Well B-41 (MW-9s)

Figure
C-49

B-42

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
						Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>	
0					AC	Asphalt	
					SP	Brown, fine to medium SAND with gravel and silt (medium dense, moist)(no odor, no sheen) (FILL)	
	e3			0	ML	Gray, fine sandy, SILT (medium stiff, moist)(no odor, no sheen) (FILL)	
					SM	Gray, silty, fine to medium SAND (medium dense, moist)(no odor, no sheen) (FILL)	
5							
	e3			0	ML	Gray, fine sandy, SILT (soft, moist)(no odor, no sheen) (FILL)	
						sand content decreases from 10 to 11.5 ft BGS	▽ ATD
10							
	e3				SM	Gray, silty, fine to medium SAND with trace gravel (medium dense, moist)(no odor, no sheen) (FILL)	
					WD	WOOD DEBRIS (sawdust) (FILL)	
15							
	e3				SM	Gray, silty, fine to medium SAND with trace gravel (medium dense, moist)(no odor, no sheen) (FILL)	
					SP	Black with white speckles, fine to medium SAND with gravel (loose, wet)(no odor, no sheen) (FILL)	
20							
	e3			0	ML	Collected soil sample 'B42-17.5-18.5' from 17.5 to 18.5 ft BGS Gray, SILT with shell fragments (medium stiff, wet)(no odor, no sheen) (MARINE DEPOSIT?)	

Boring Completed 10/09/08
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



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Seattle, Washington

Log of Boring B-42

Figure
C-50

B-43

SAMPLE DATA			SOIL PROFILE				GROUNDWATER
Depth (ft) 0 5 10 15 20 25	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
		e3			[Solid Black]	AC	Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u> ∇ ATD
		e3			[Dotted]	SP	
		e3			[Vertical Lines]	SM	
		e3		0.0	[Vertical Lines]	ML	
		e3		0.0	[Dotted]	SP	
		e3			[Circles]	GP	
		e3		0.0	[Vertical Lines]	SM	
		e3			[Dotted]	SP	
		e3			[Dotted]	SP	
	e3			[Dotted]	SP		

Boring Completed 10/09/08
 Total Depth of Boring = 28.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

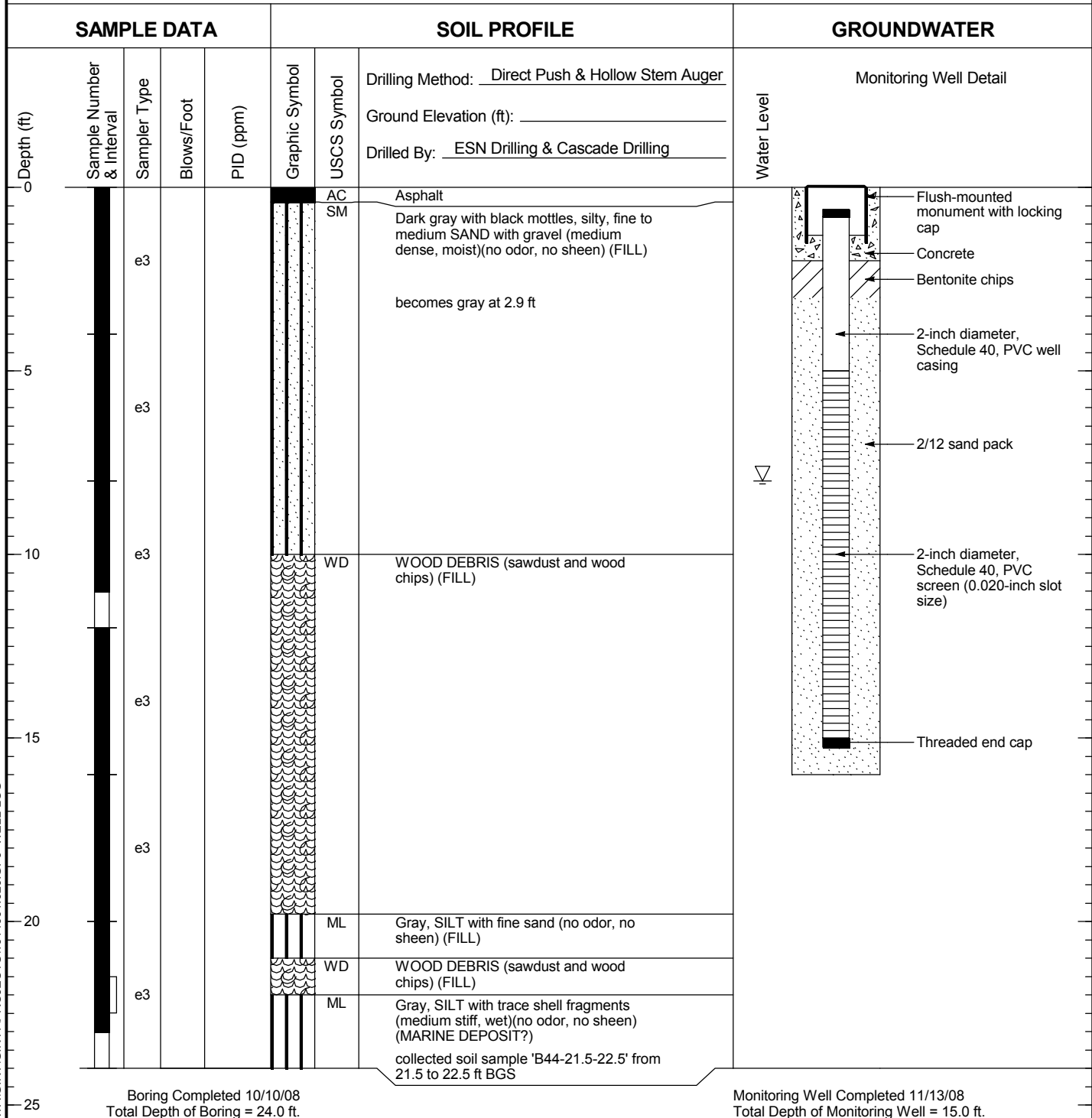


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Log of Boring B-43

Figure
C-51

B-44 (MW-5)



Boring Completed 10/10/08
Total Depth of Boring = 24.0 ft.

Monitoring Well Completed 11/13/08
Total Depth of Monitoring Well = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Direct Push by ESN Drilling; Hollow Stem Auger by Cascade Drilling Inc.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ WELL LOG



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Seattle, Washington

Log of Monitoring Well B-44 (MW-5)

Figure
C-52

B-44b

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Water Level
0						AC	Asphalt	
						SP	Brown, gravelly, fine to medium SAND with silt (loose, moist)(FILL)	
5		b2	16				becomes gray, fine to medium SAND with trace silt	
10		b2	4				becomes brown, gravelly, fine to medium SAND	▽ ATD
15		b2	4			WD	WOOD DEBRIS (wood chips)(FILL)	
20		b2	0			ML	Gray, SILT, with trace fine sand (very soft, wet)(FILL)	
						WD	WOOD DEBRIS (wood chips)(FILL)	
						ML	Gray, SILT with trace fine sand and shell fragments (very loose, wet)	
25		b2	0				Collected soil sample 'B44b-25' at 25 ft BGS	

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.02\0.GPJ SOIL BORING LOG



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Log of Boring B-44b

Figure
C-53
(1 of 3)

B-44b

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Description	Water Level
							Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>13 (MSL)</u> Drilled By: <u>Cascade Drilling Inc.</u>	
30		b2	0			ML	Gray, SILT with trace fine sand and shell fragments (very loose, wet)	
35		b2	9			SM	Gray, fine SAND with silt and trace shell fragments (loose, wet)	
40		b2	16					
45		b2	34				Contains trace coarse sand	
50		b2	19			ML	Becomes blue gray in color Blue gray, SILT (or clay??)(stiff, moist)	
55		b2	17			SM	Blue gray, silty, fine to medium SAND with trace coarse sand (medium dense, wet)	

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
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Log of Boring B-44b

Figure
C-53
(2 of 3)

B-44b

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
						Drilling Method: <u>Hollow-Stem Auger</u> Ground Elevation (ft): <u>13 (MSL)</u> Drilled By: <u>Cascade Drilling Inc.</u>	
					ML	Blue gray, SILT with fine sand and trace coarse sand (stiff, wet)	
60	b2	b2	47		SP/SM	Blue gray, silty, fine to medium SAND with coarse sand and gravel (dense, wet)	
65	b2	b2	74		SM	Gray, fine to medium SAND with silt (very dense, moist)	
70	b2	b2	50/6		RK SP	Rock debris visible in sampler Gray, coarse sand with trace gravel (very dense, moist)	
75	b2	b2	50/4		SM	Gray, silty, fine to medium SAND with trace gravel (very dense, moist)	
80	b2	b2	50/3		SM	Gray, silty, fine to medium SAND with trace gravel (very dense, moist)	

Boring Completed 11/12/08
Total Depth of Boring = 80.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-44b

Figure
C-53
(3 of 3)

B-45

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description	Water Level
0							Drilling Method: <u>Direct Push</u> Ground Elevation (ft): <u>13 (MSL)</u> Drilled By: <u>ESN Drilling</u>	
0.0		e3			AC SP		Asphalt Dark gray and black to light brown, fine to medium SAND with gravel, silt, and brick fragments (medium dense, damp)(no odor, no sheen)(FILL)	
5		e3			WD SM		WOOD DEBRIS (FILL) Gray, silty, fine to medium SAND (loose to medium dense, wet)(no odor, no sheen) (FILL)	
6.2		e3					very loose below 8 ft BGS collected soil sample 'B45-8.5' at 8.5 ft BGS collected soil sample 'B45-8.0-10.0' from 8.0 to 10.0 ft BGS	▽ ATD
10		e3						
15		e3						
20		e3			WD		WOOD DEBRIS (FILL)	
25		e3			GM		Blue gray, silty, GRAVEL with fine to medium sand and shell fragments (no odor, no sheen)(dense, moist) (Marine Sediment?)	

Boring Completed 10/10/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-45

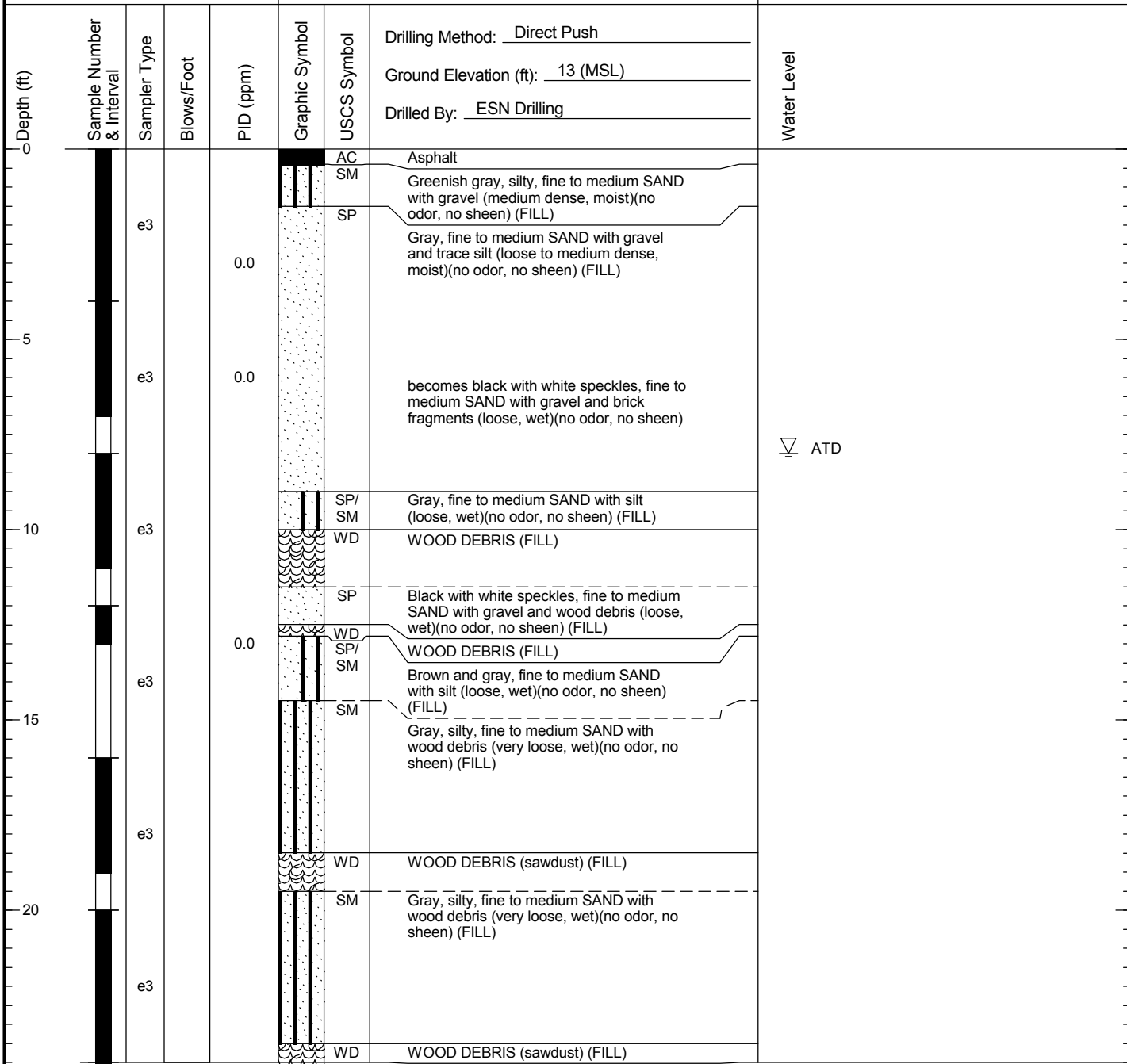
Figure
C-54

B-46

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/10/08
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDMDATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-46

Figure
C-55

B-47

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Direct Push</u> Ground Elevation (ft): _____ Drilled By: <u>ESN Drilling</u>	Water Level
0				0.0		AC SNS	Asphalt	
5	e3			0.0			Light brown, fine to medium SAND with trace silt (medium dense, moist)(no odor, no sheen) (FILL)	
10	e3			0.0		SP	Black with white speckles, fine to medium SAND with gravel and brick fragments (medium dense, moist to wet)(no odor, no sheen) (FILL)	▽ ATD
15	e3			0.0				
20	e3			0.0		WD	WOOD DEBRIS (FILL)	
21						ML	Gray, SILT with wood debris (medium stiff, wet)(no odor, no sheen) (FILL)	
22						SP SM	Gray, fine to medium SAND (very dense, dry)(no odor, no sheen) (FILL)	
23	e3			0.0		ML	Gray, silty, fine SAND with wood debris (very loose, wet)(slight creosote type odor and sheen) (FILL)	
24							Black, fine sandy, SILT (soft, wet)(slight creosote type odor and sheen)	
25							Collected soil sample 'B47-21.5-21.9' from 21.5 to 21.9 ft BGS	
	Boring Completed 10/10/08 Total Depth of Boring = 24.0 ft.						becomes gray, SILT with trace fine sand and shell fragments (soft, wet)(no odor, no sheen)(MARINE DEPOSIT?)	
							collected soil sample 'B47-21.8' at 21.8 ft BGS	

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.02 10/2/09 \\EDM\DATA\GINT\PROJECTS\1014001.020.GPJ SOIL BORING LOG

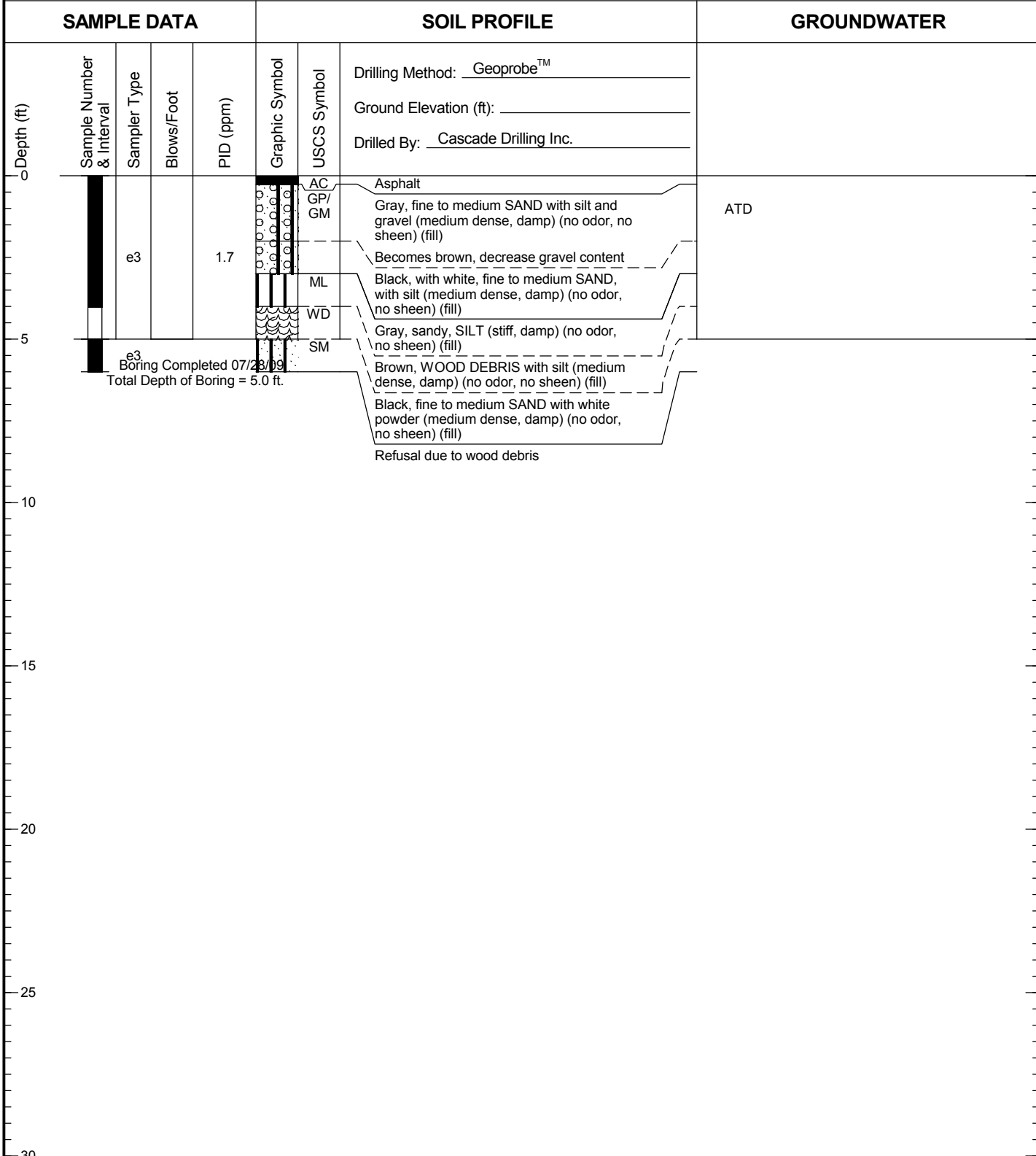


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Seattle, Washington

Log of Boring B-47

Figure
C-56

B-50



1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG

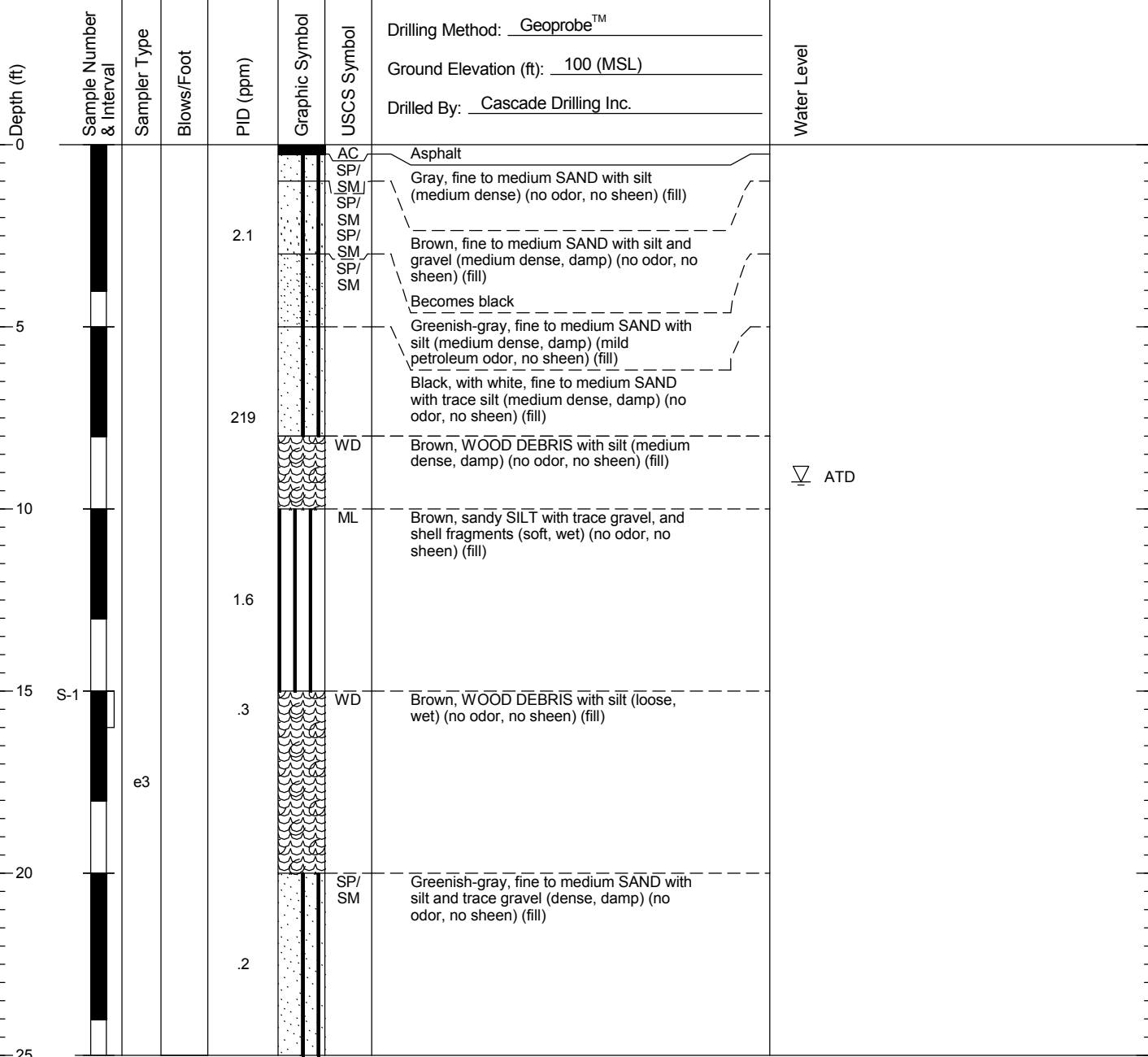


B-50A

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Log of Boring B-50A

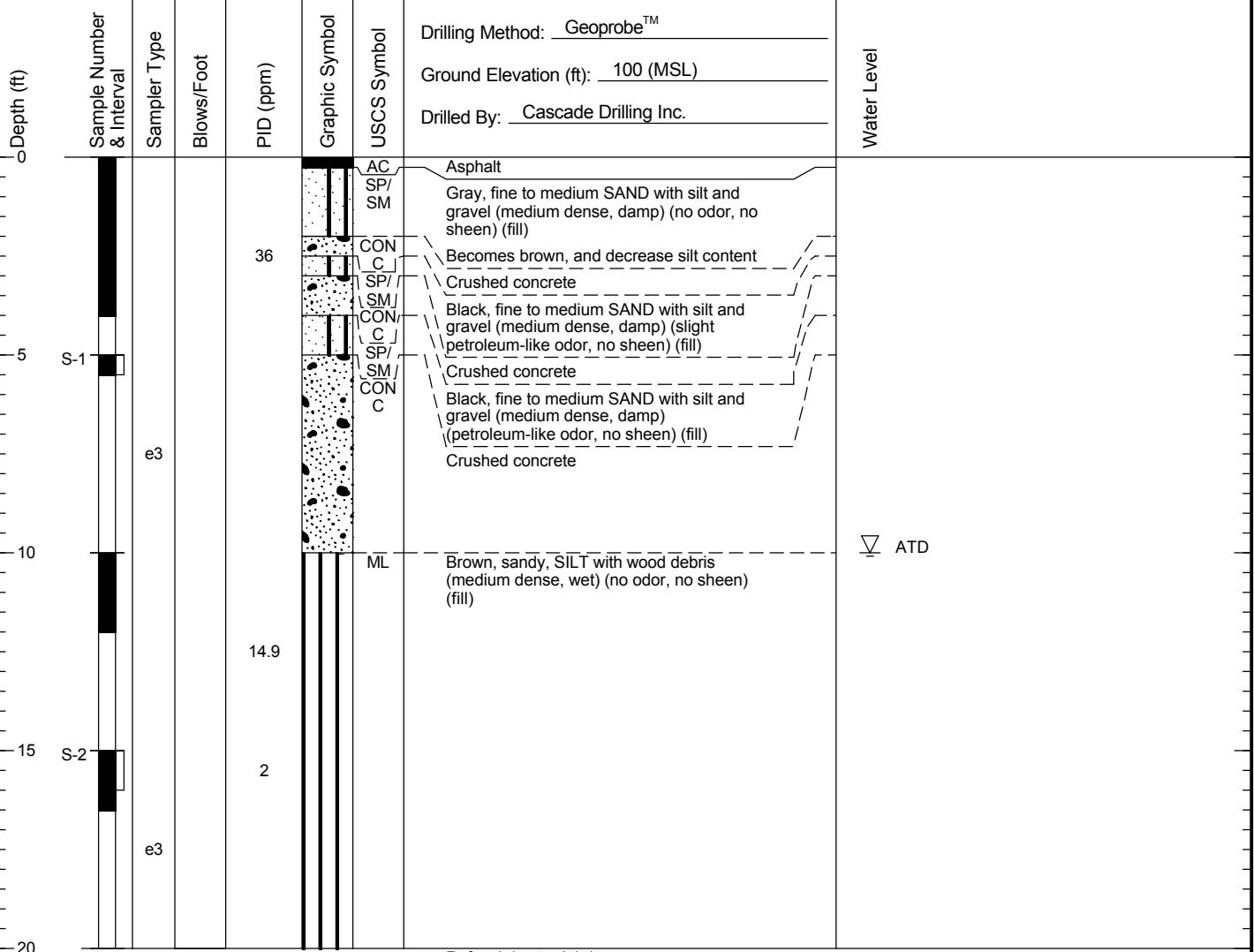
Figure
C-58

B-51

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Log of Boring B-51

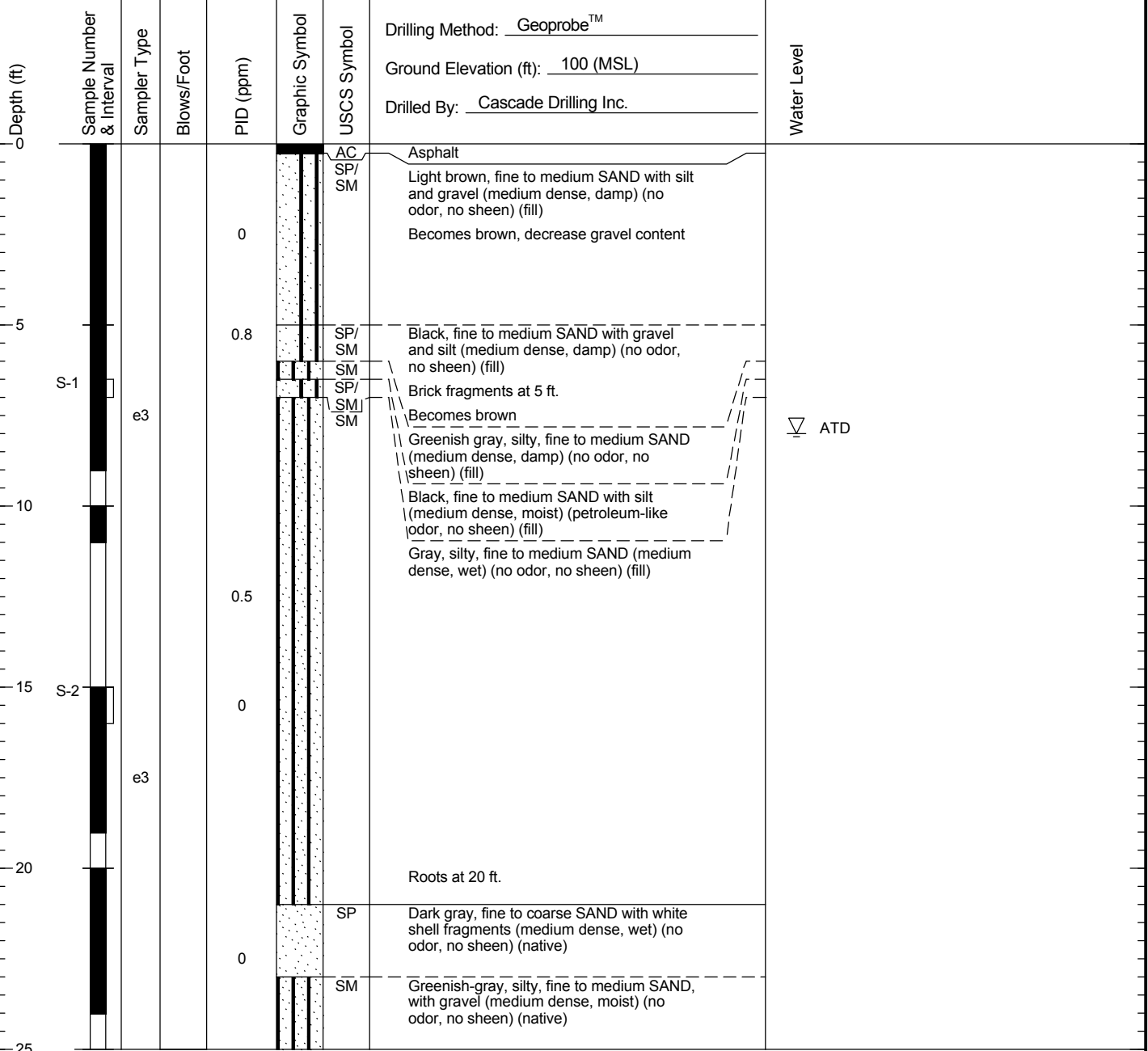
Figure
C-59

B-52

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-52

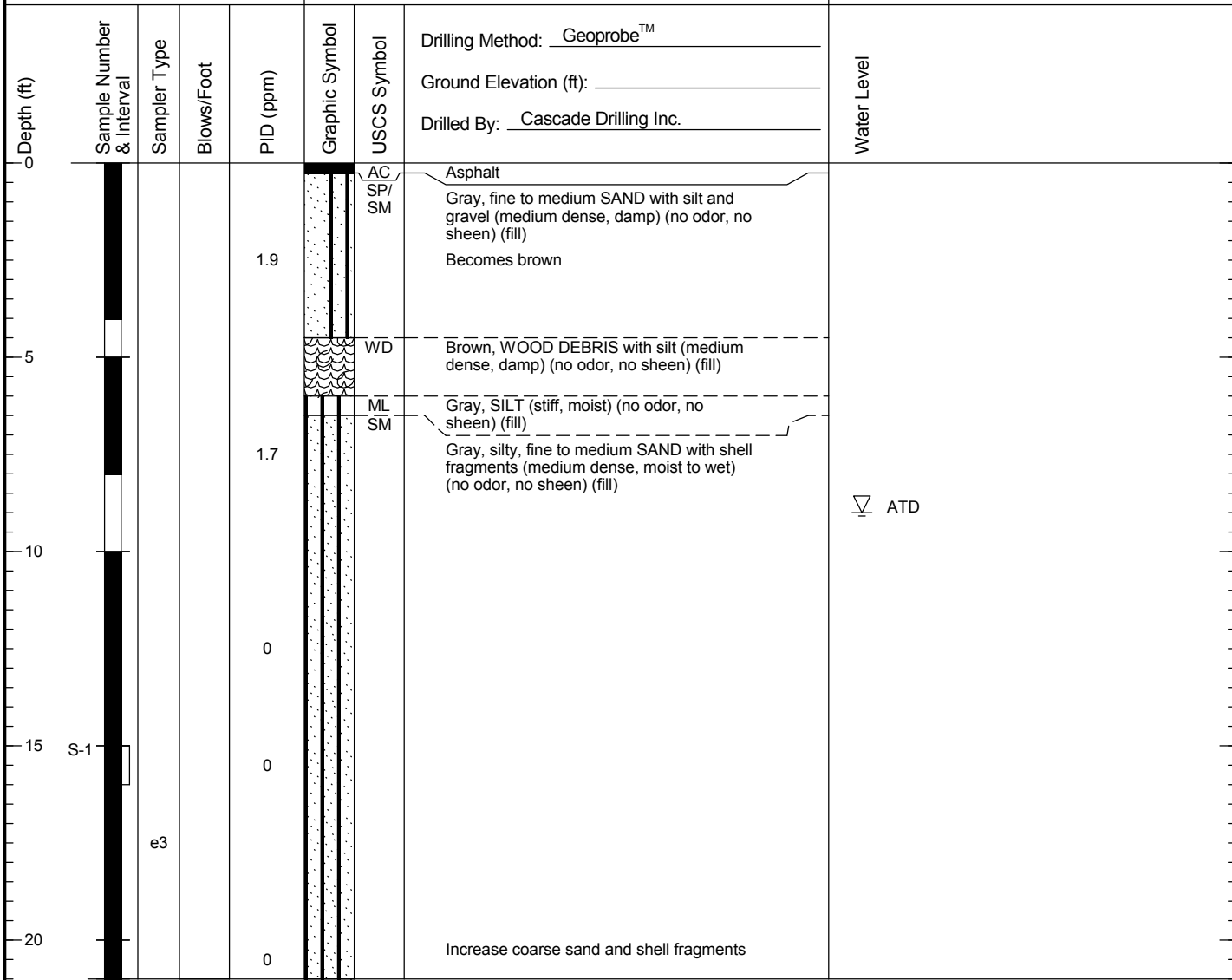
Figure
C-60

B-53

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
 Total Depth of Boring = 21.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/9/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



North Lot Development
 Seattle, Washington

Log of Boring B-53

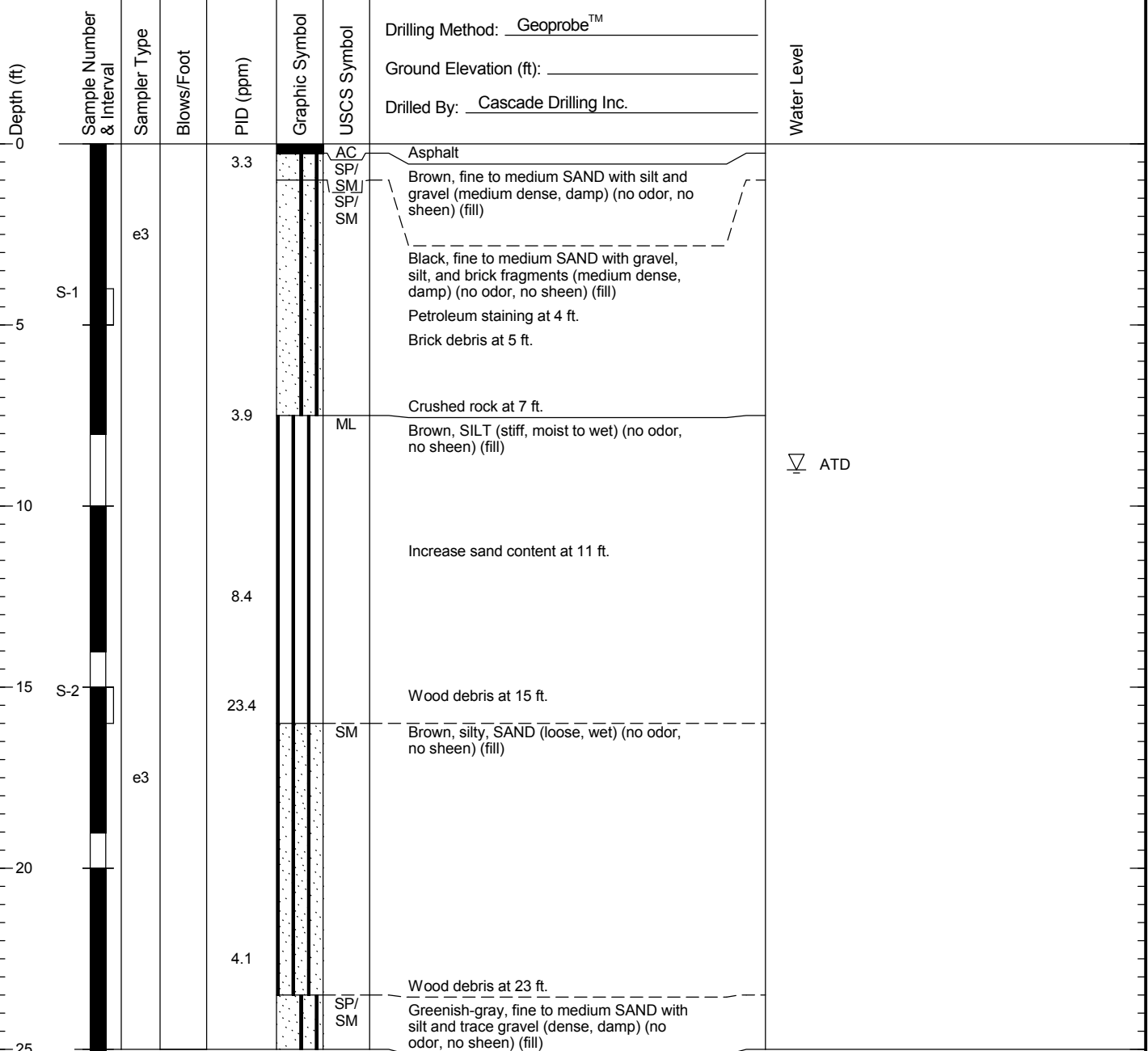
Figure
C-61

B-54

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
 Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



North Lot Development
 Seattle, Washington

Log of Boring B-54

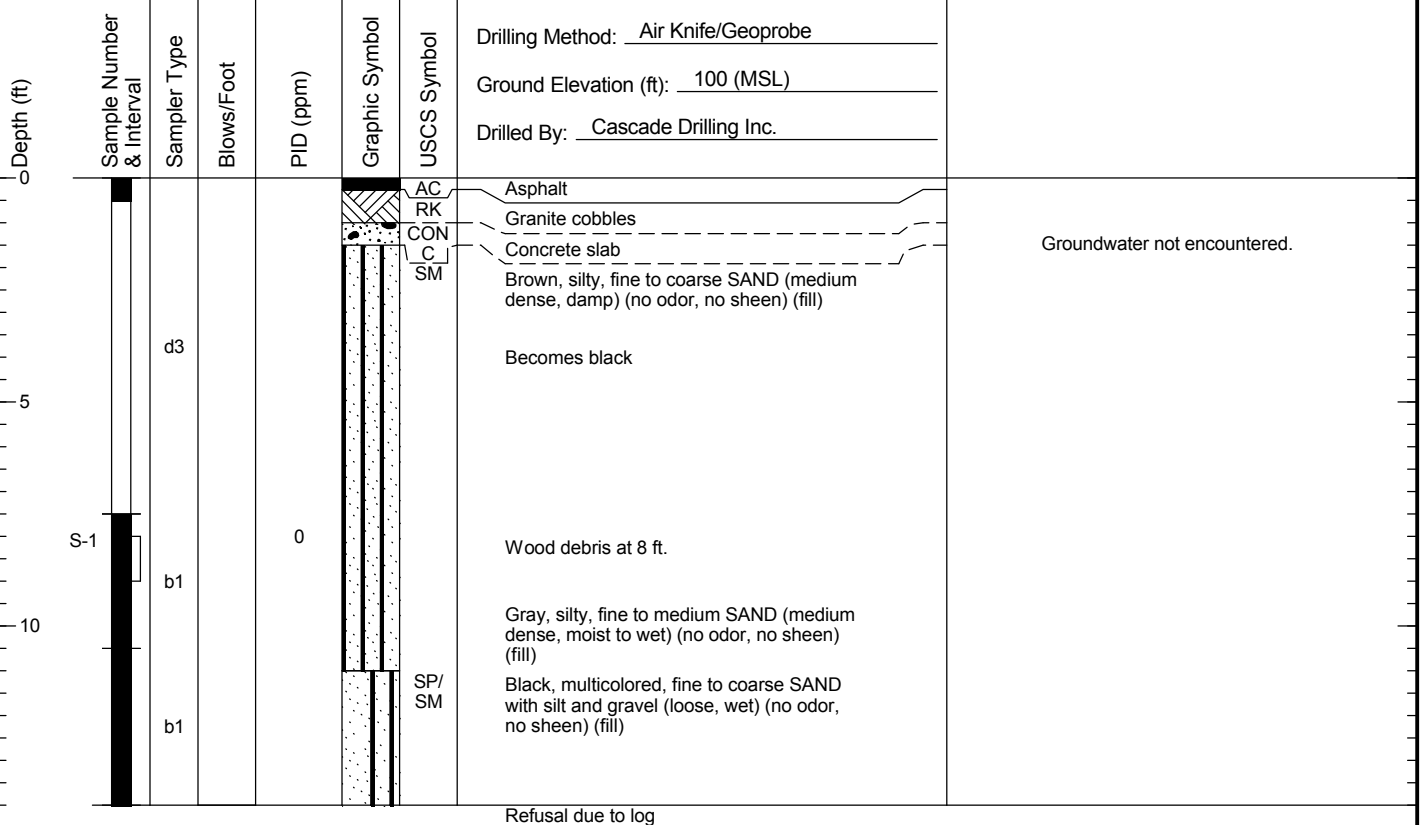
Figure
C-62

B-55

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 08/06/09
Total Depth of Boring = 14.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Log of Boring B-55

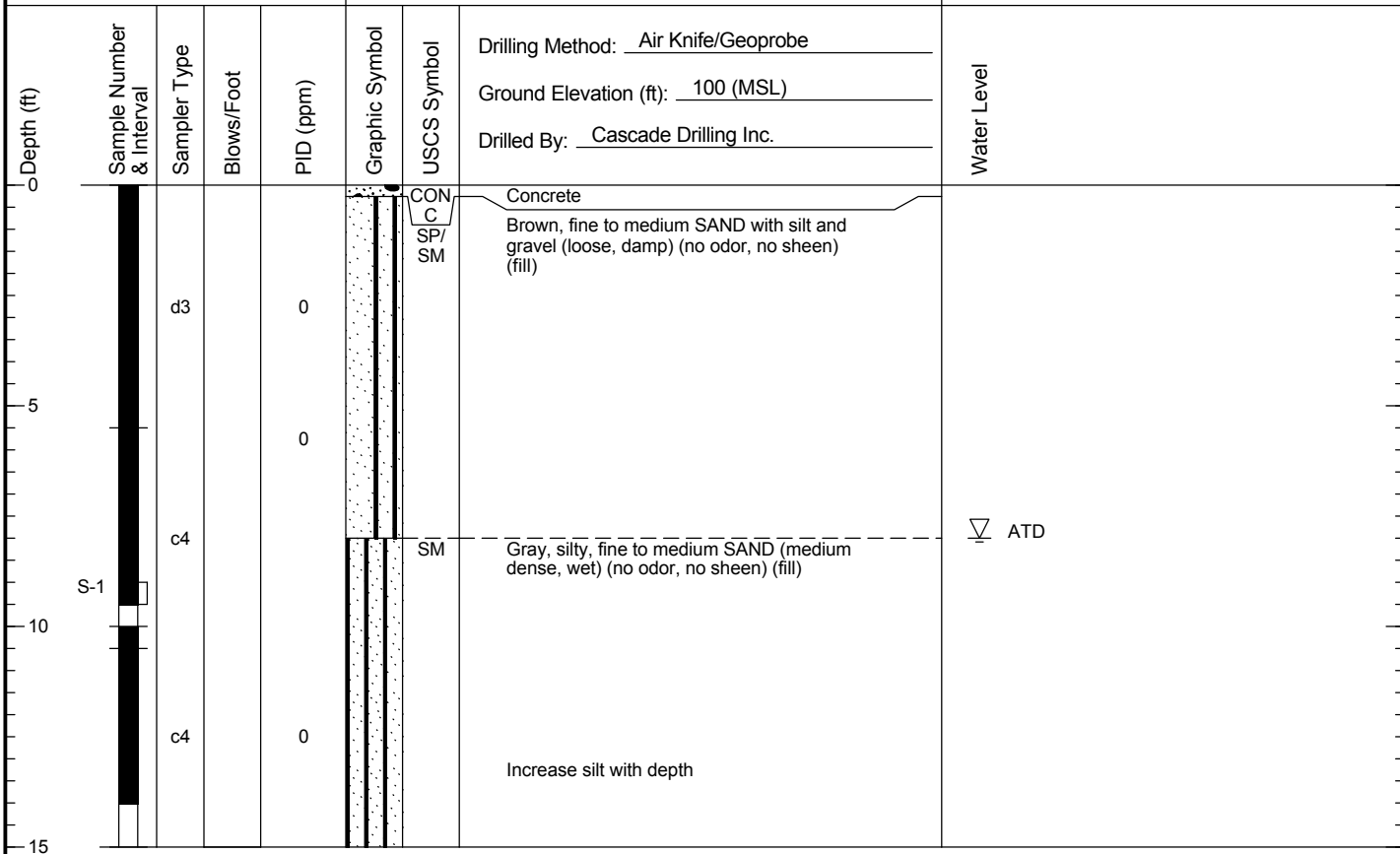
Figure
C-63

B-56

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 08/06/09
Total Depth of Boring = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Log of Boring B-56

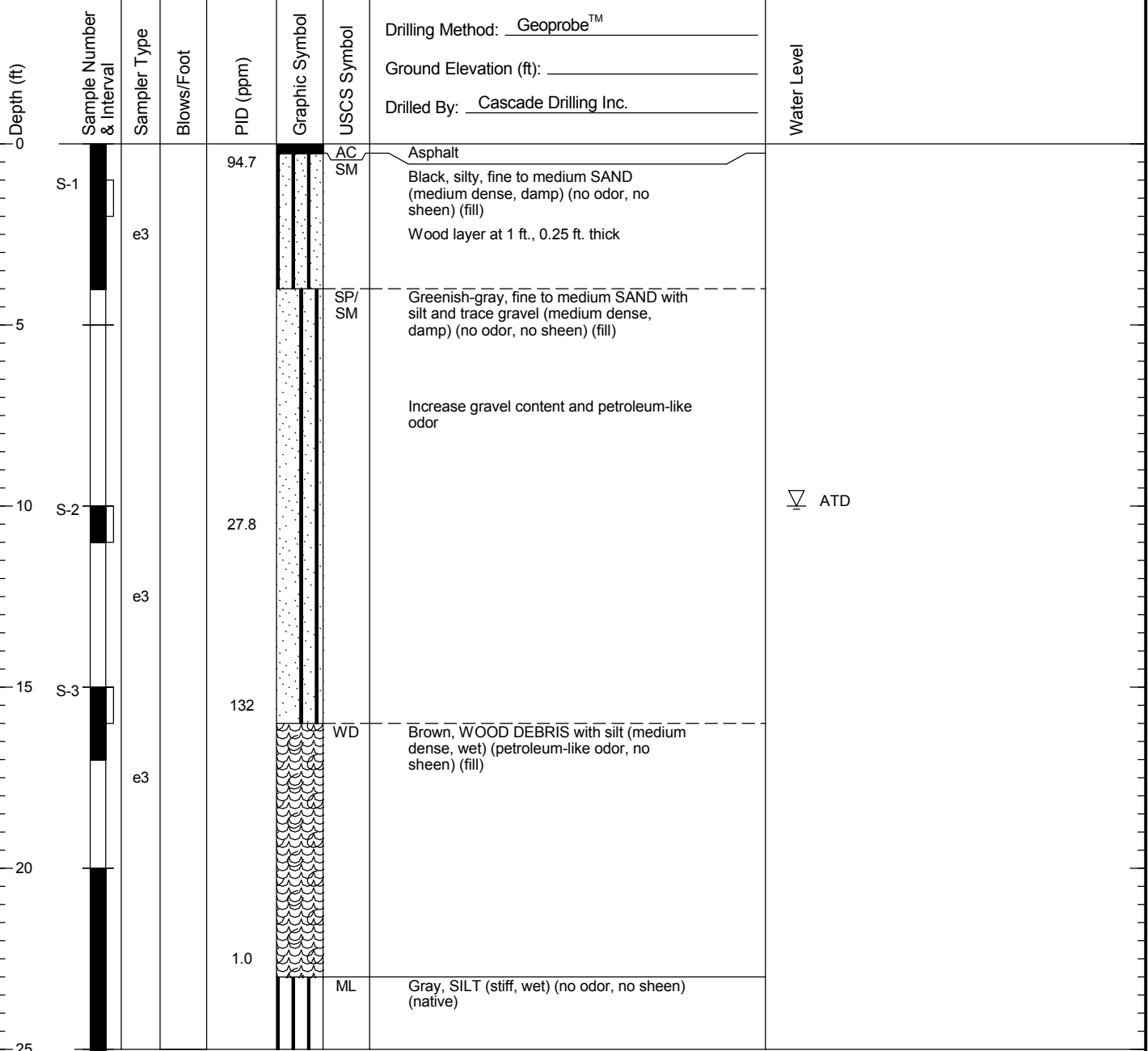
Figure
C-64

B-57

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Seattle, Washington

Log of Boring B-57

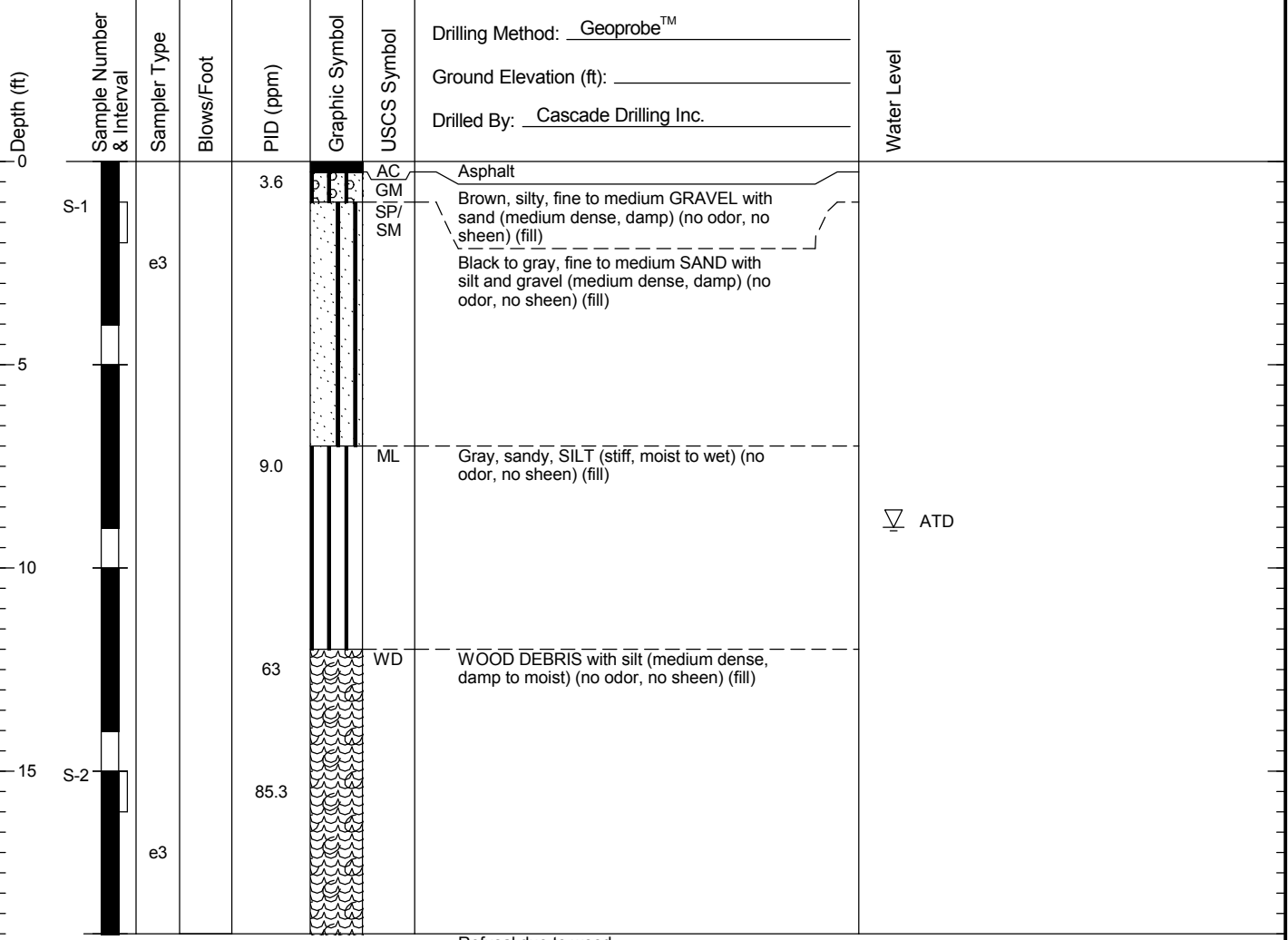
Figure
C-65

B-58

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 19.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Log of Boring B-58

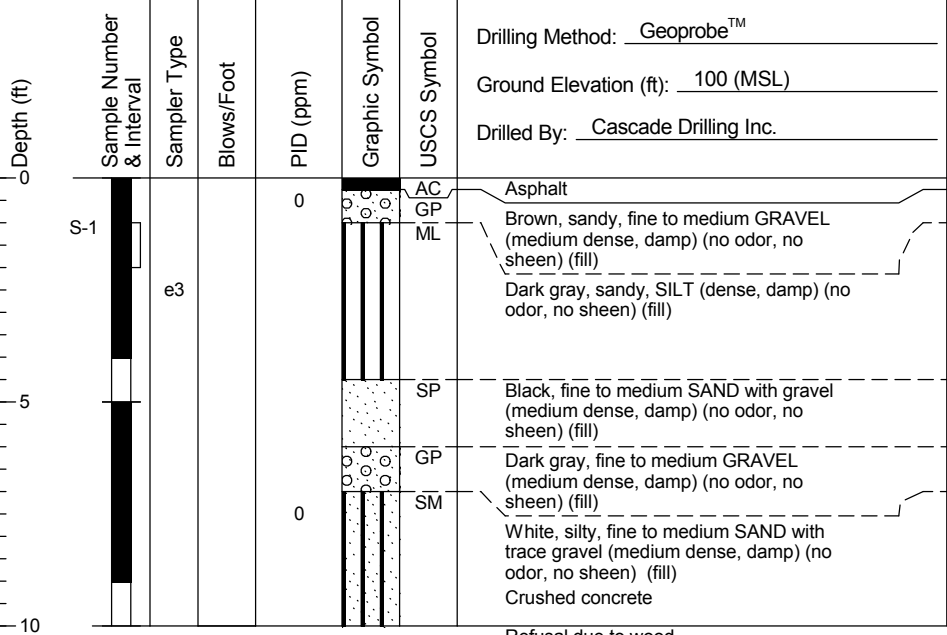
Figure
C-66

B-59

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 10.0 ft.

Refusal due to wood

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Log of Boring B-59

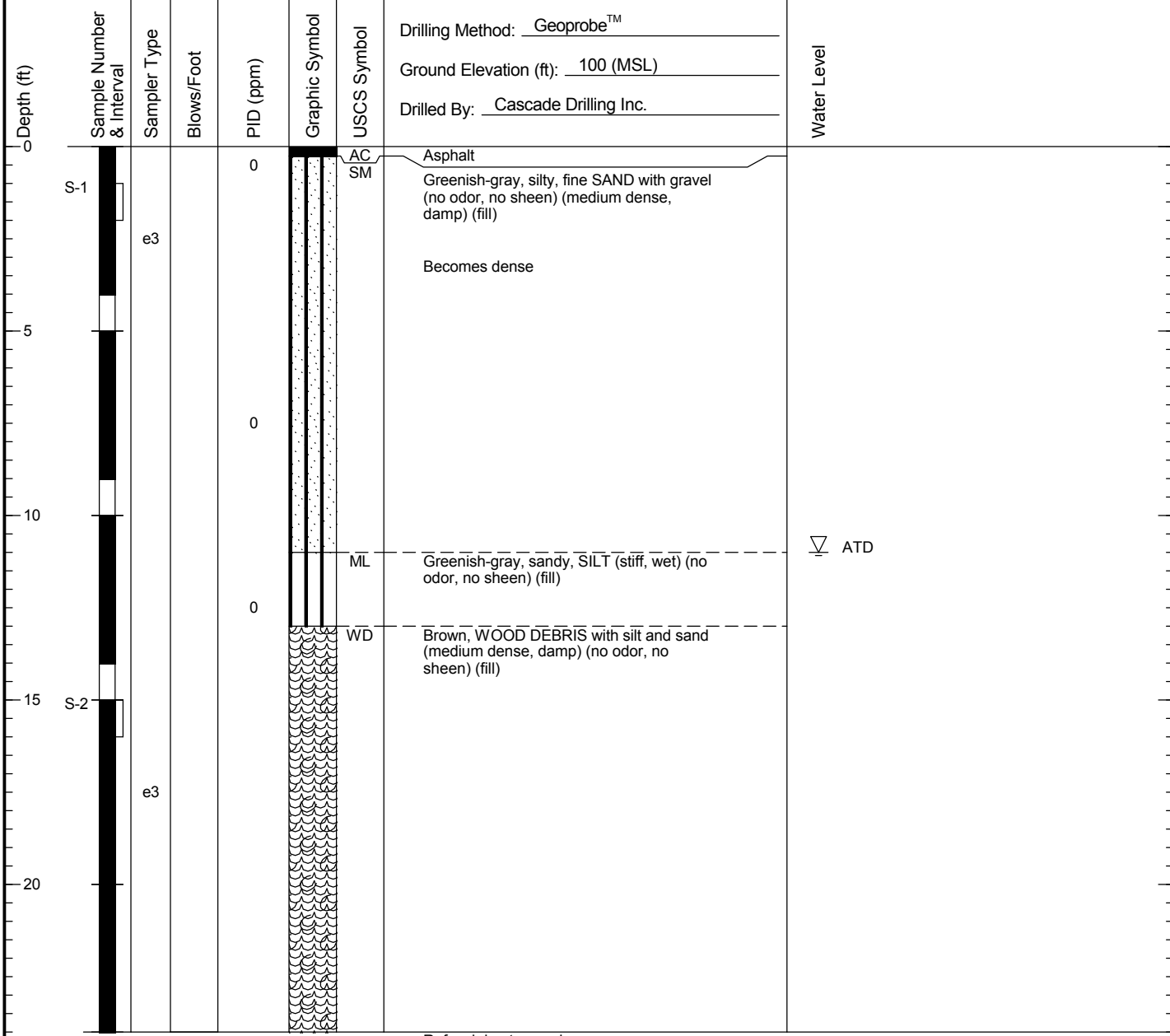
Figure
C-67

B-60

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Log of Boring B-60

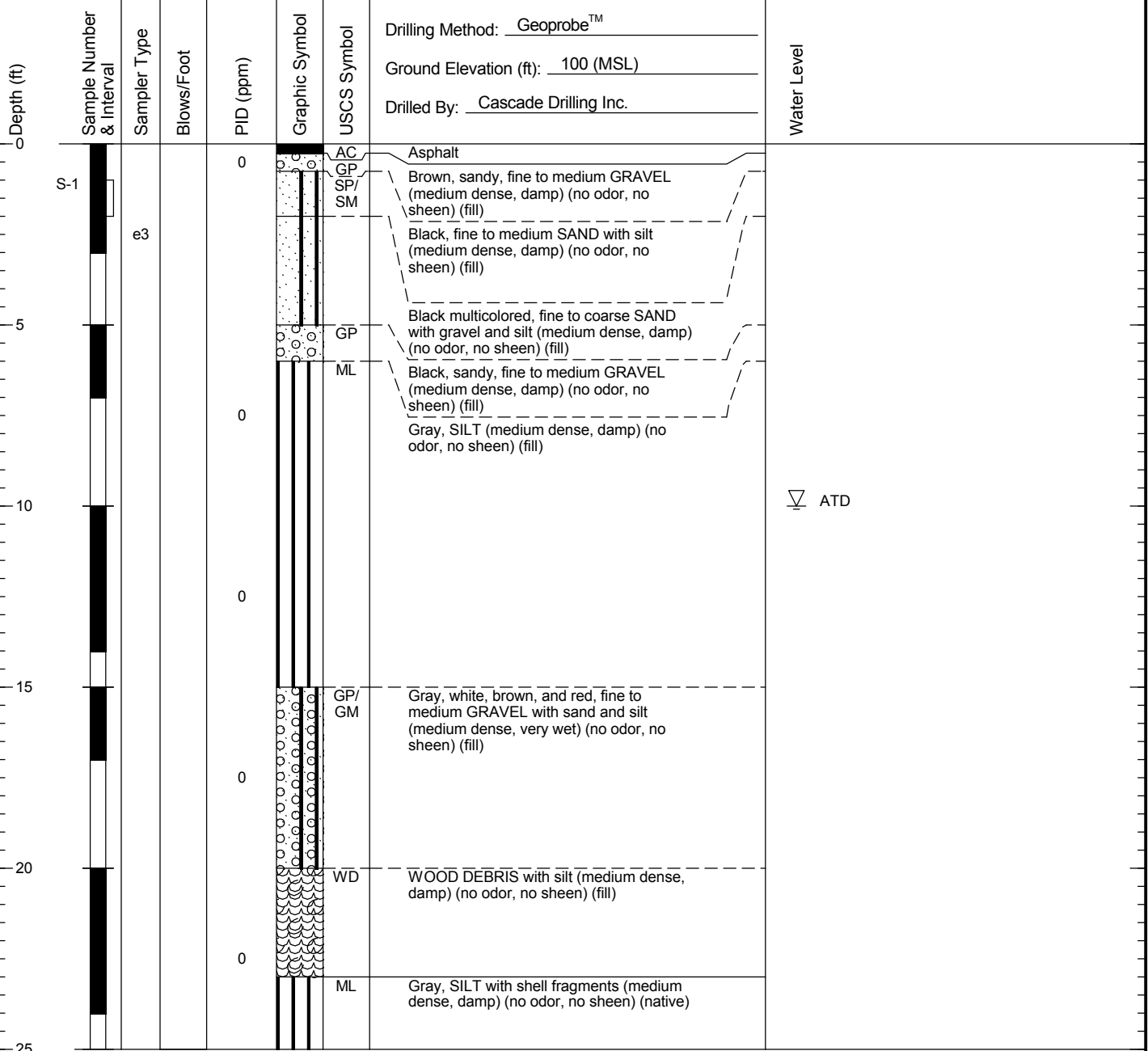
Figure
C-68

B-61

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Seattle, Washington

Log of Boring B-61

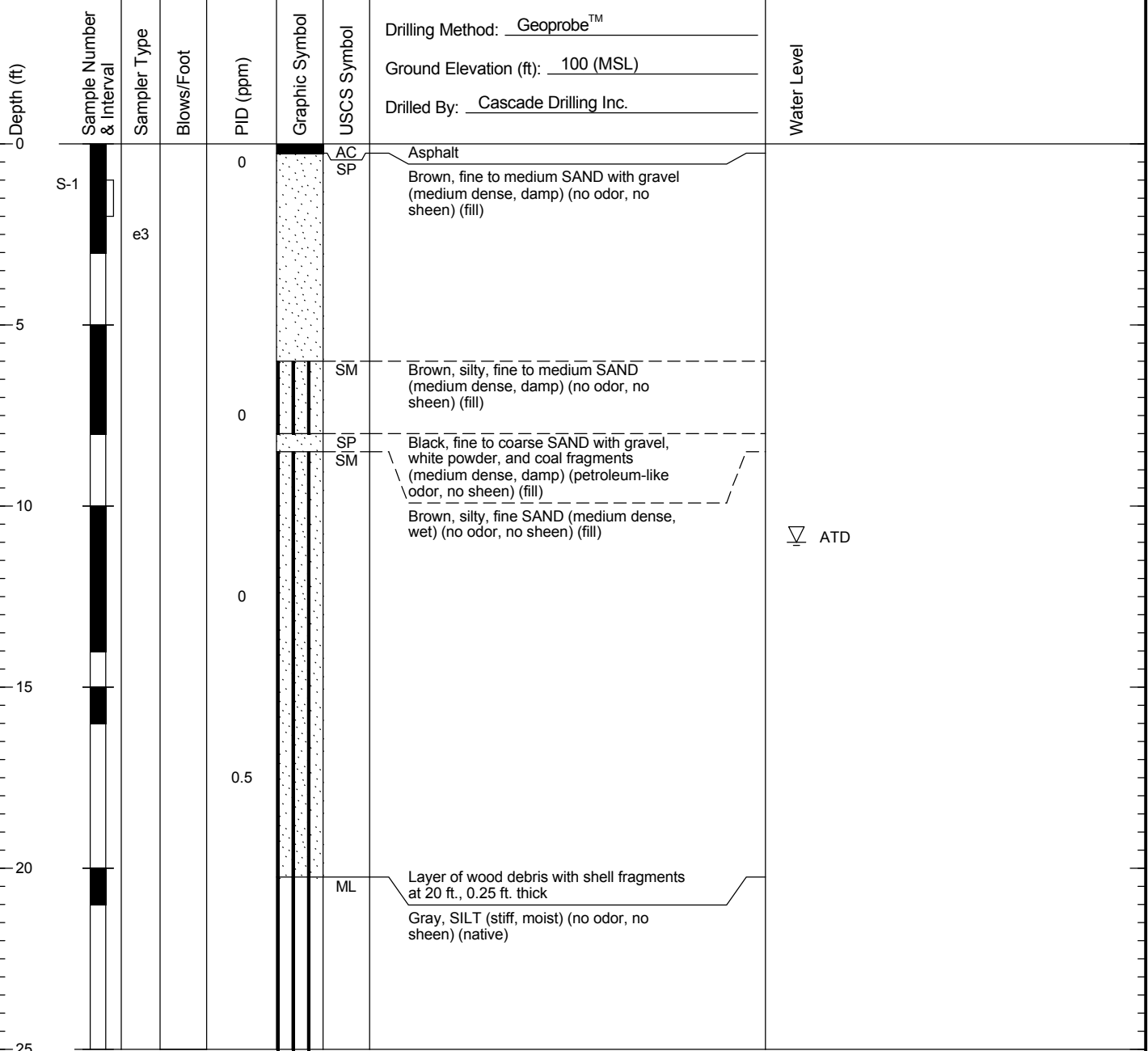
Figure
C-69

B-62

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
 Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



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Log of Boring B-62

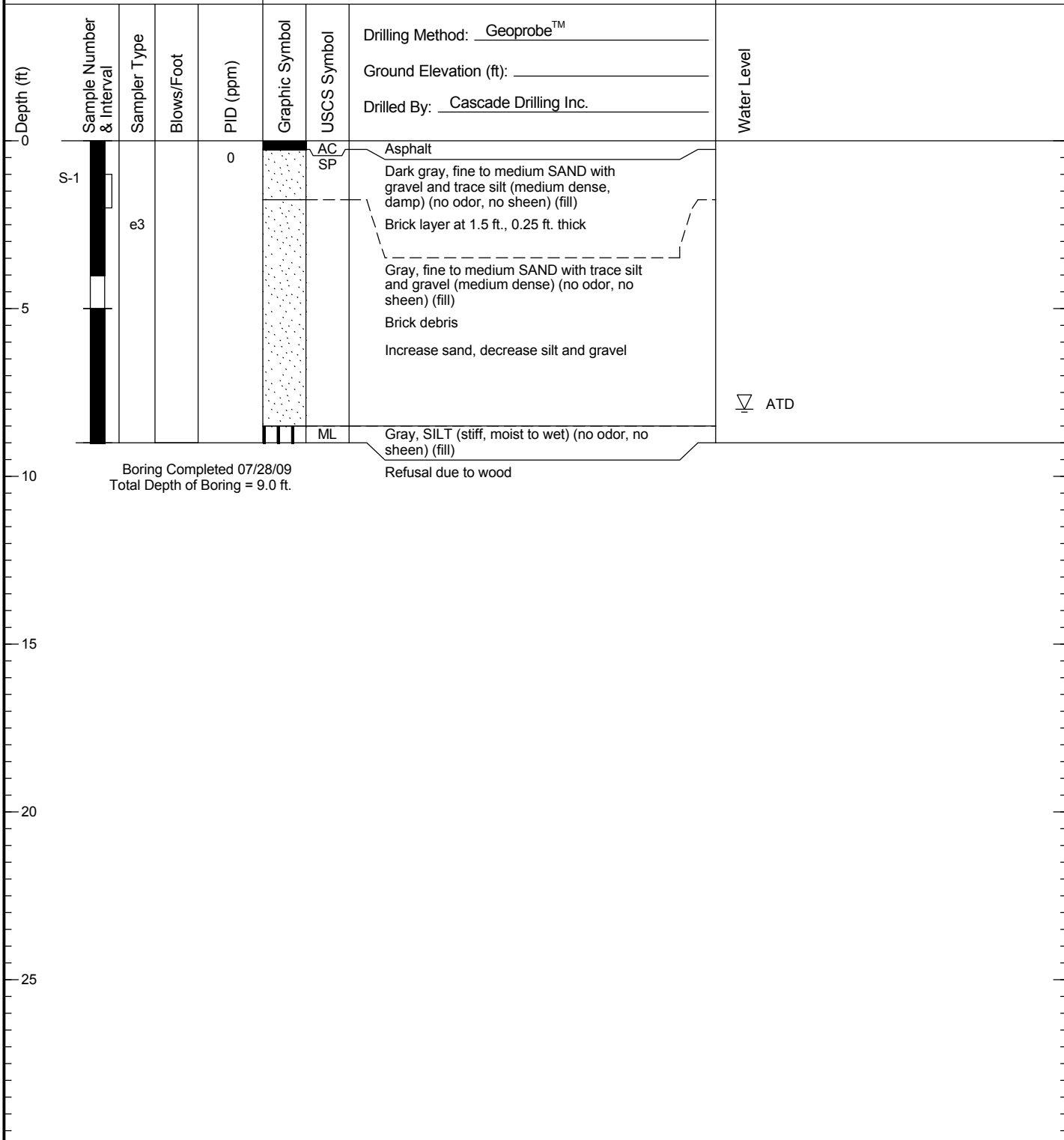
Figure
C-70

B-63

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-63

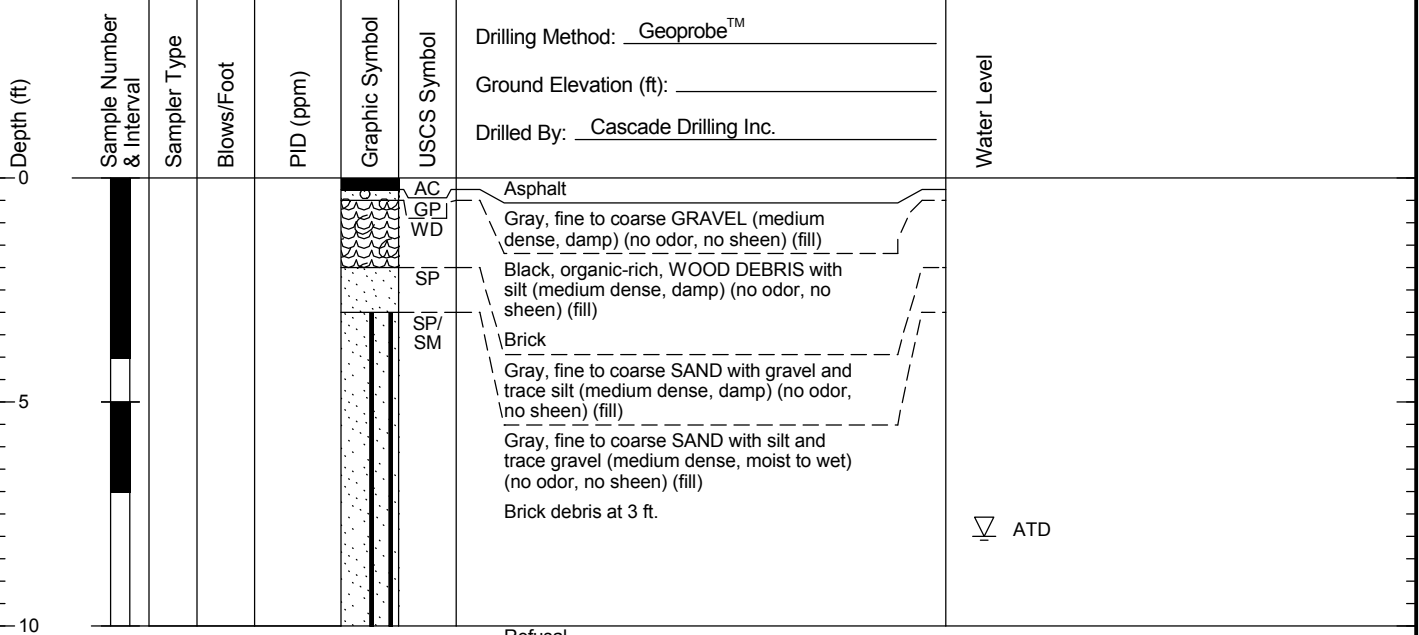
Figure
C-71

B-63A

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
 Total Depth of Boring = 10.0 ft.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



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Log of Boring B-63A

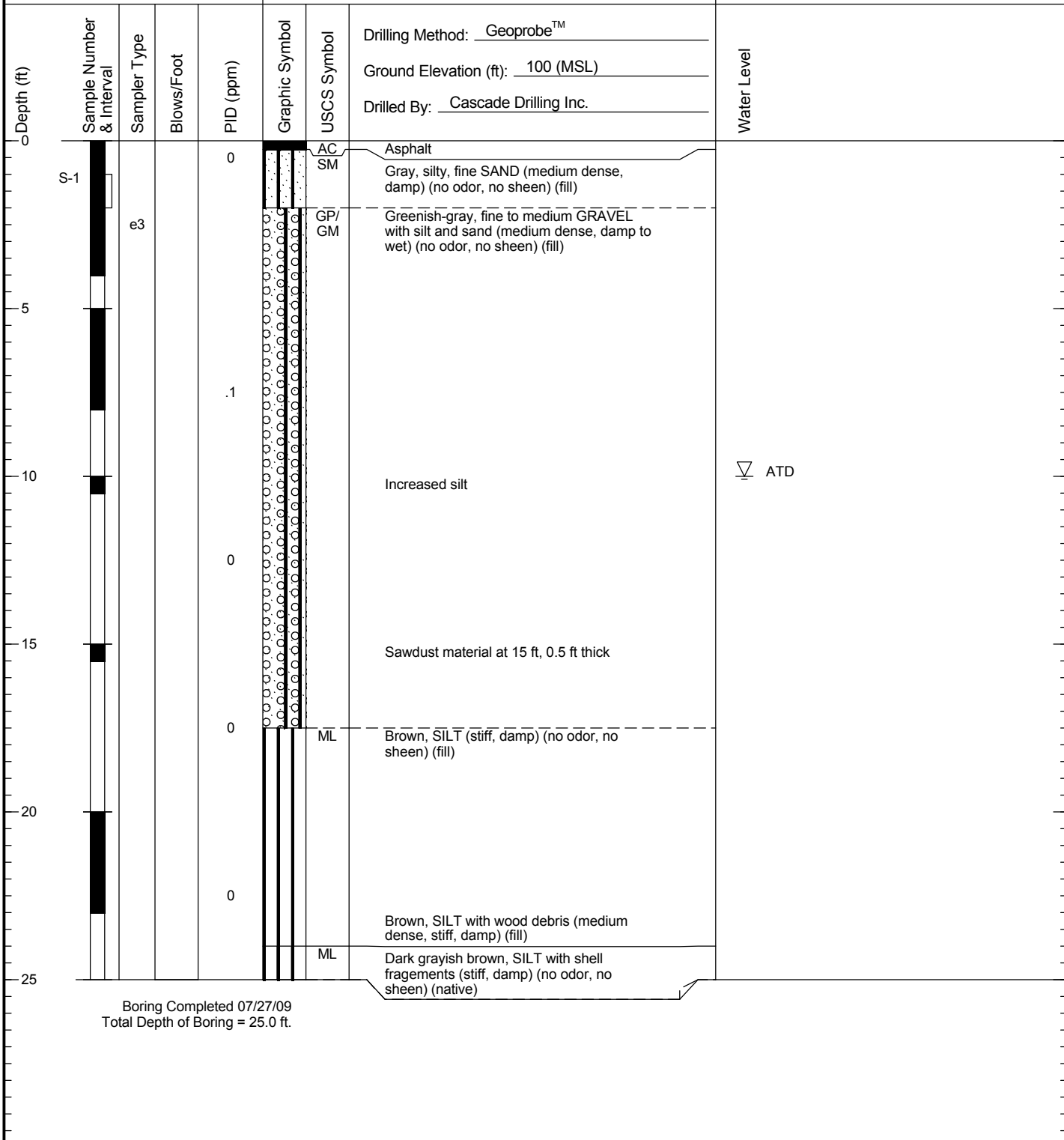
Figure
C-72

B-64

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-64

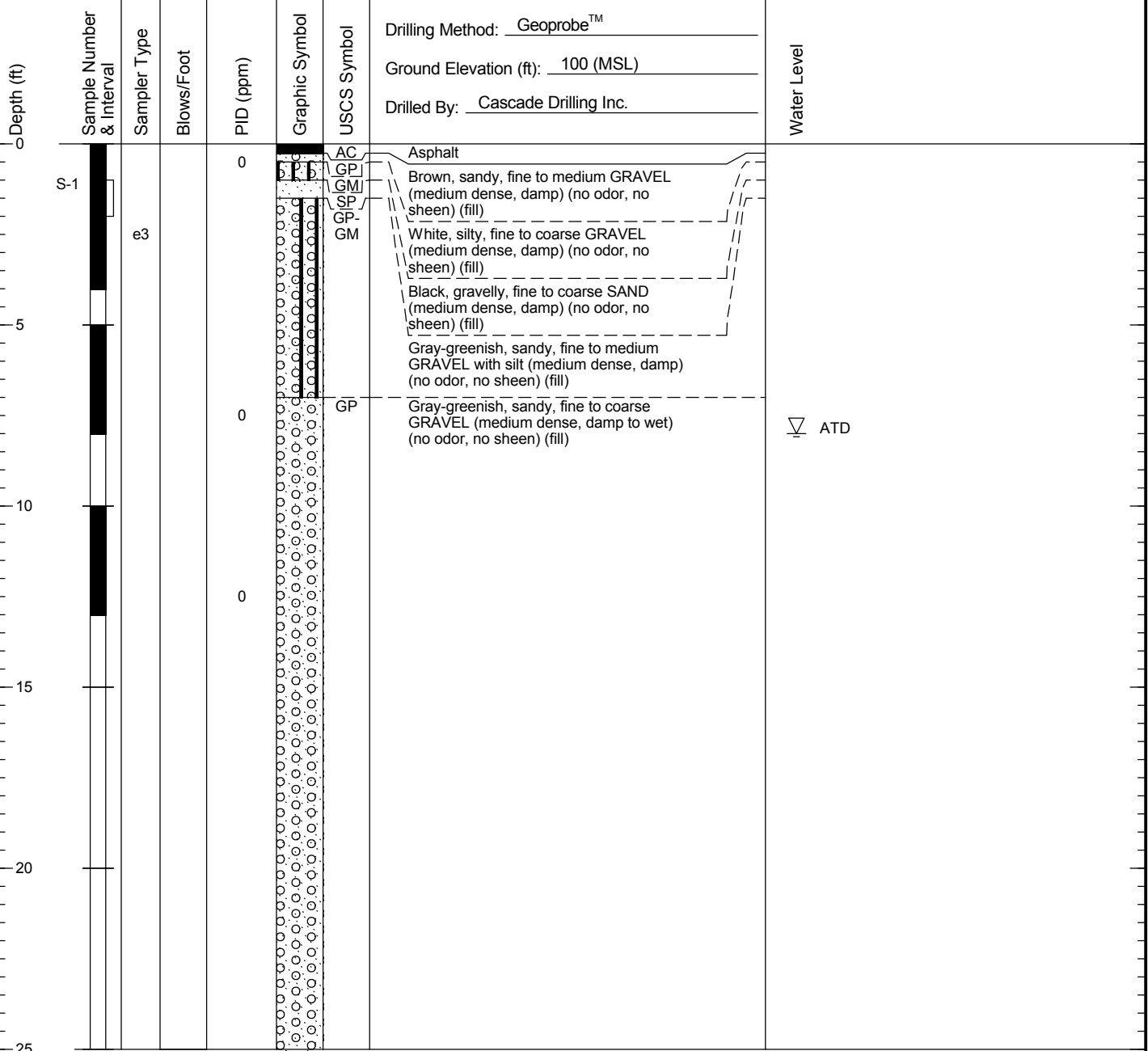
Figure
C-73

B-65

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.04\GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-65

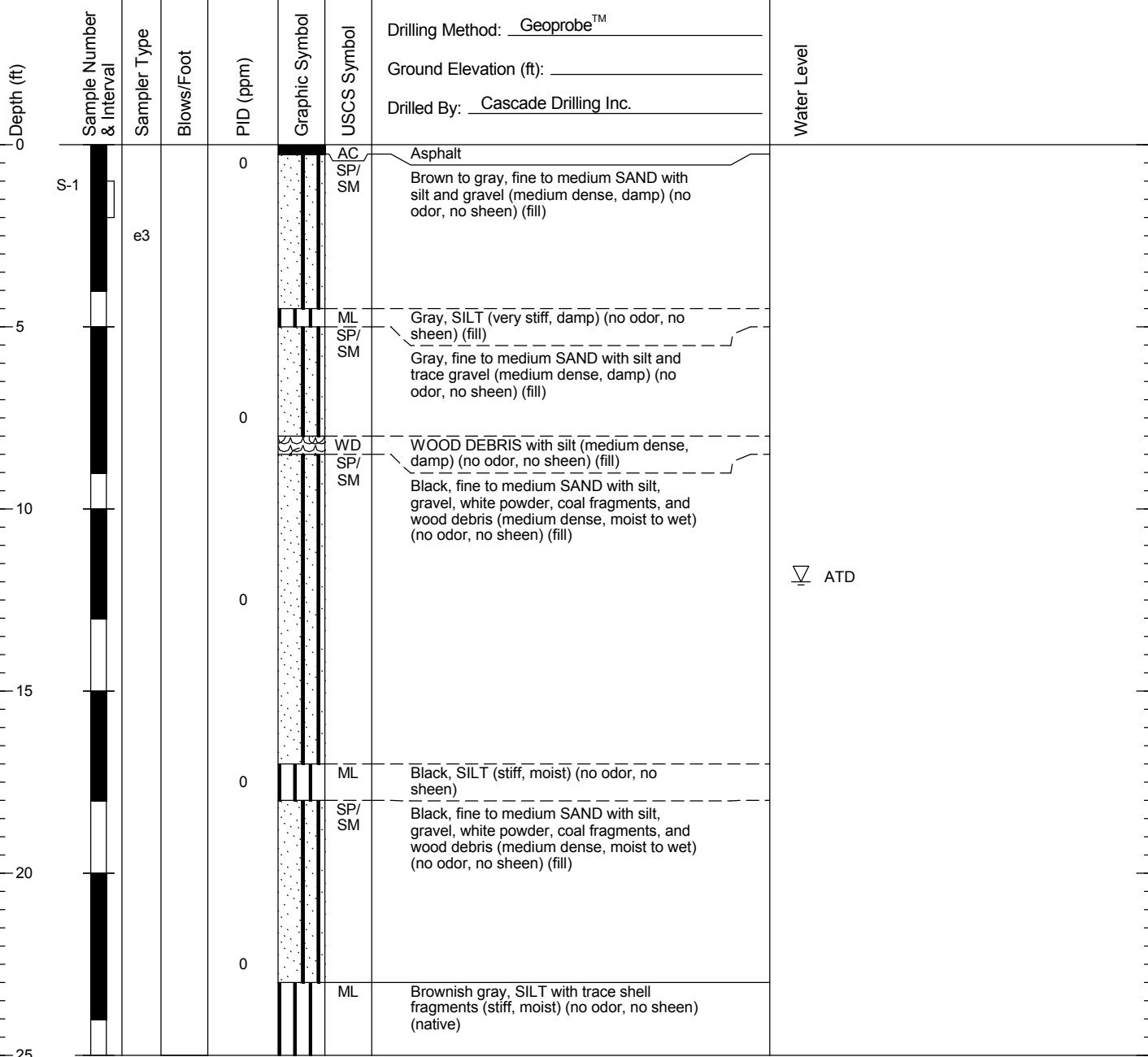
Figure
C-74

B-66

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



North Lot Development
Seattle, Washington

Log of Boring B-66

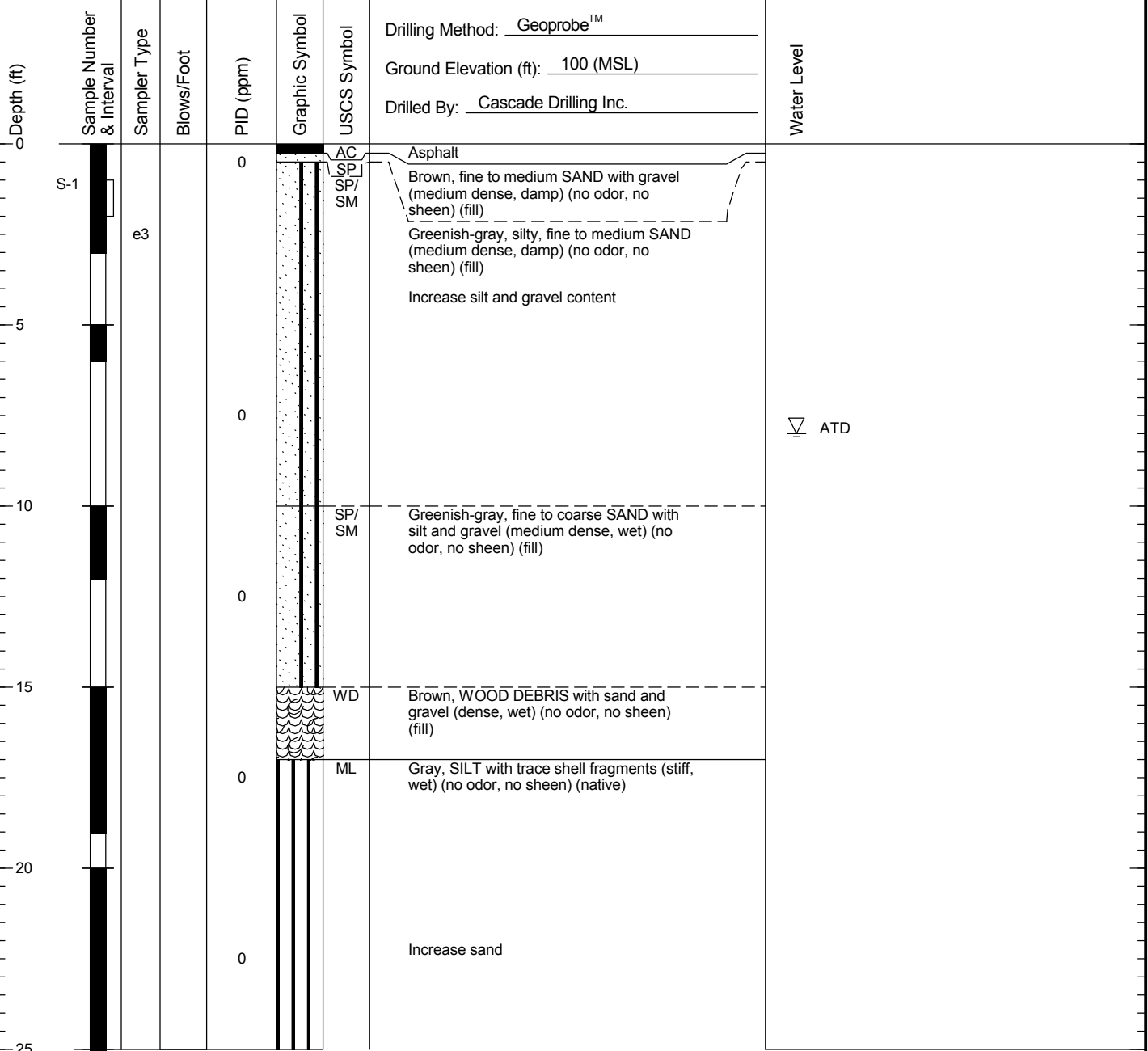
Figure
C-75

B-67

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/27/09
Total Depth of Boring = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDMDATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG



North Lot Development
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Log of Boring B-67

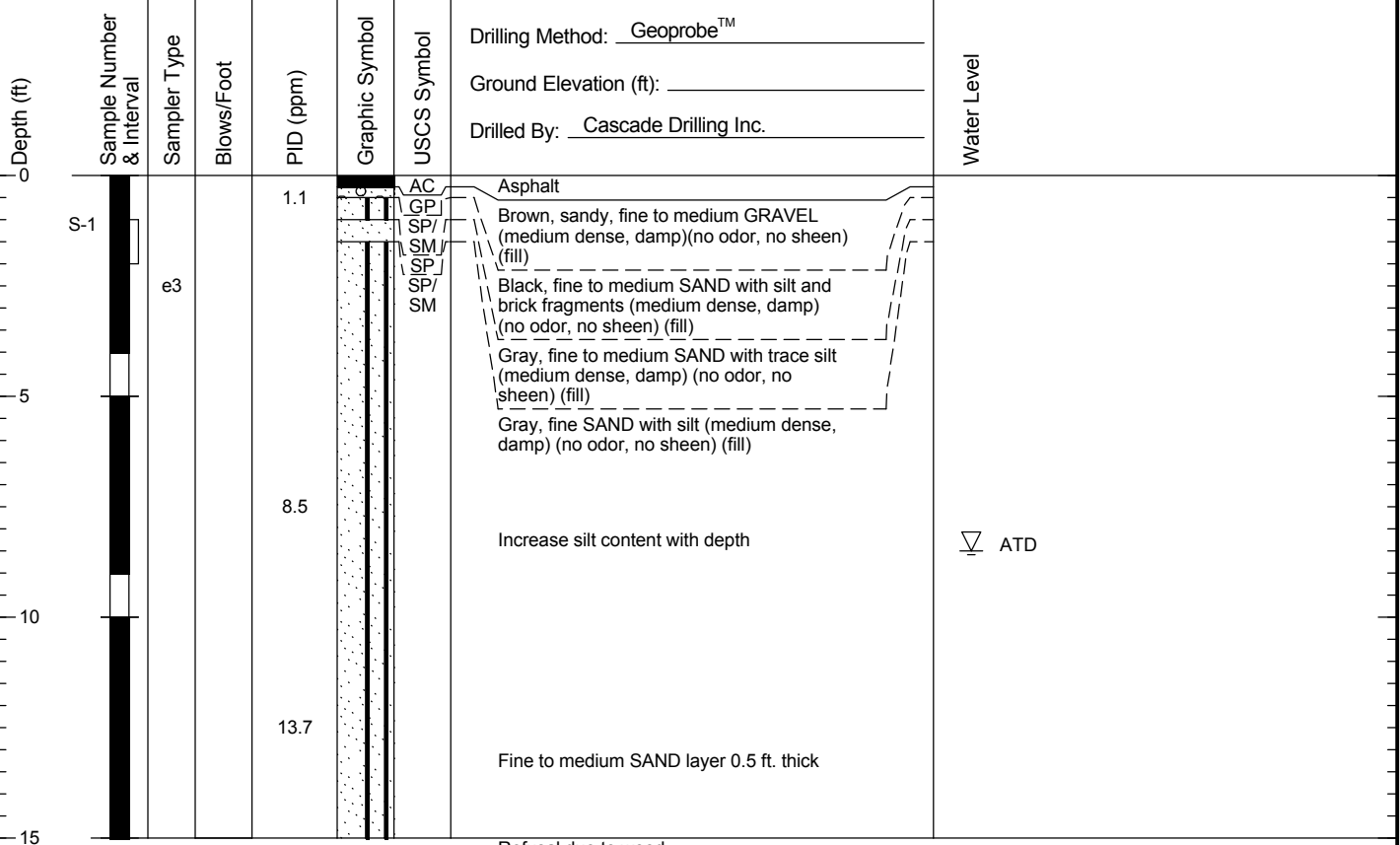
Figure
C-76

B-68

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/28/09
Total Depth of Boring = 15.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ SOIL BORING LOG

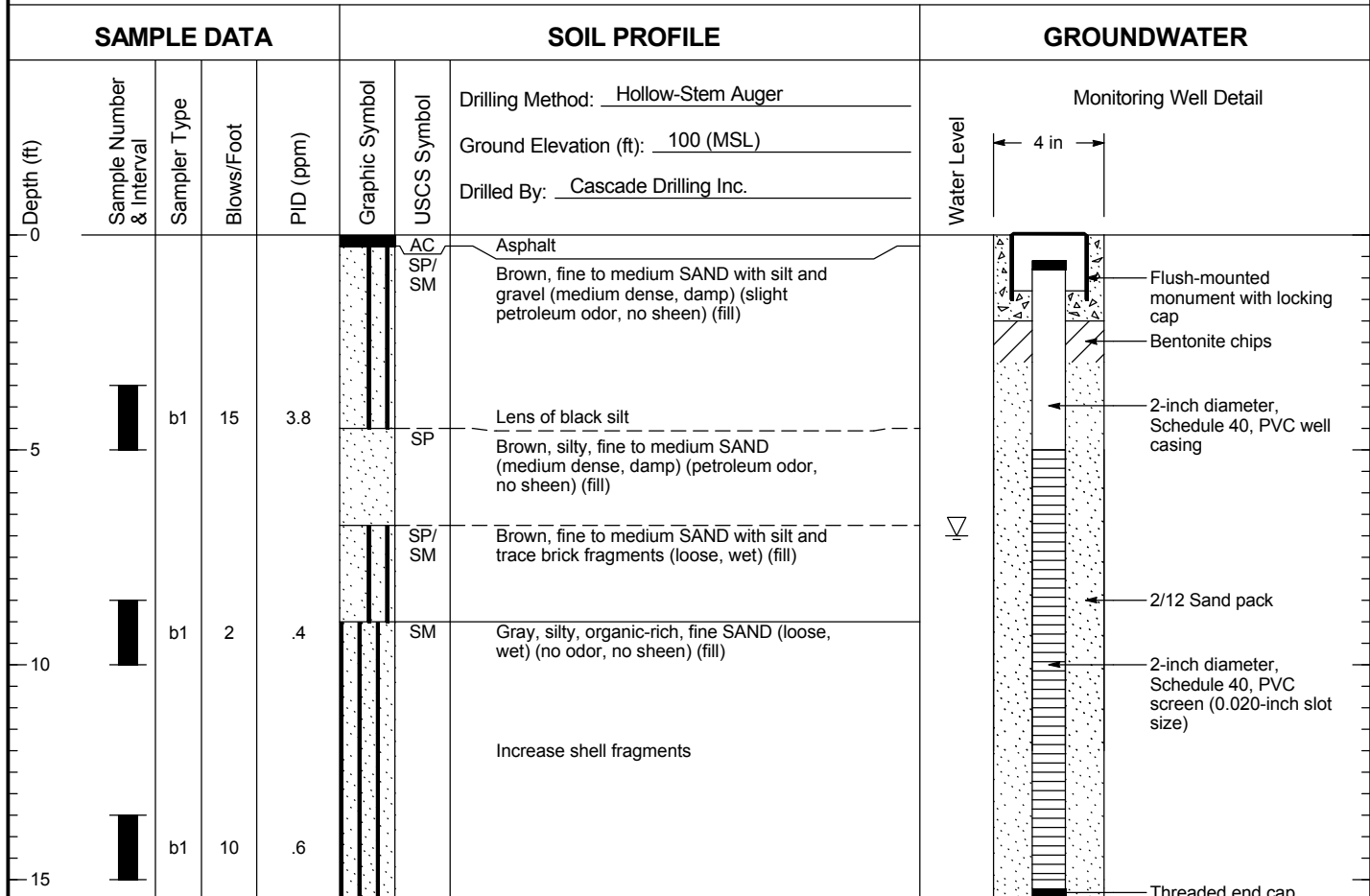


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Log of Boring B-68

Figure
C-77

MW-10



Boring Completed 08/03/09
Total Depth of Boring = 15.4 ft.

Monitoring Well Completed 08/03/09
Total Depth of Monitoring Well = 15.4 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/9/09 \\EDM\DATA\GINT\PROJECTS\1014001.040.GPJ WELL LOG

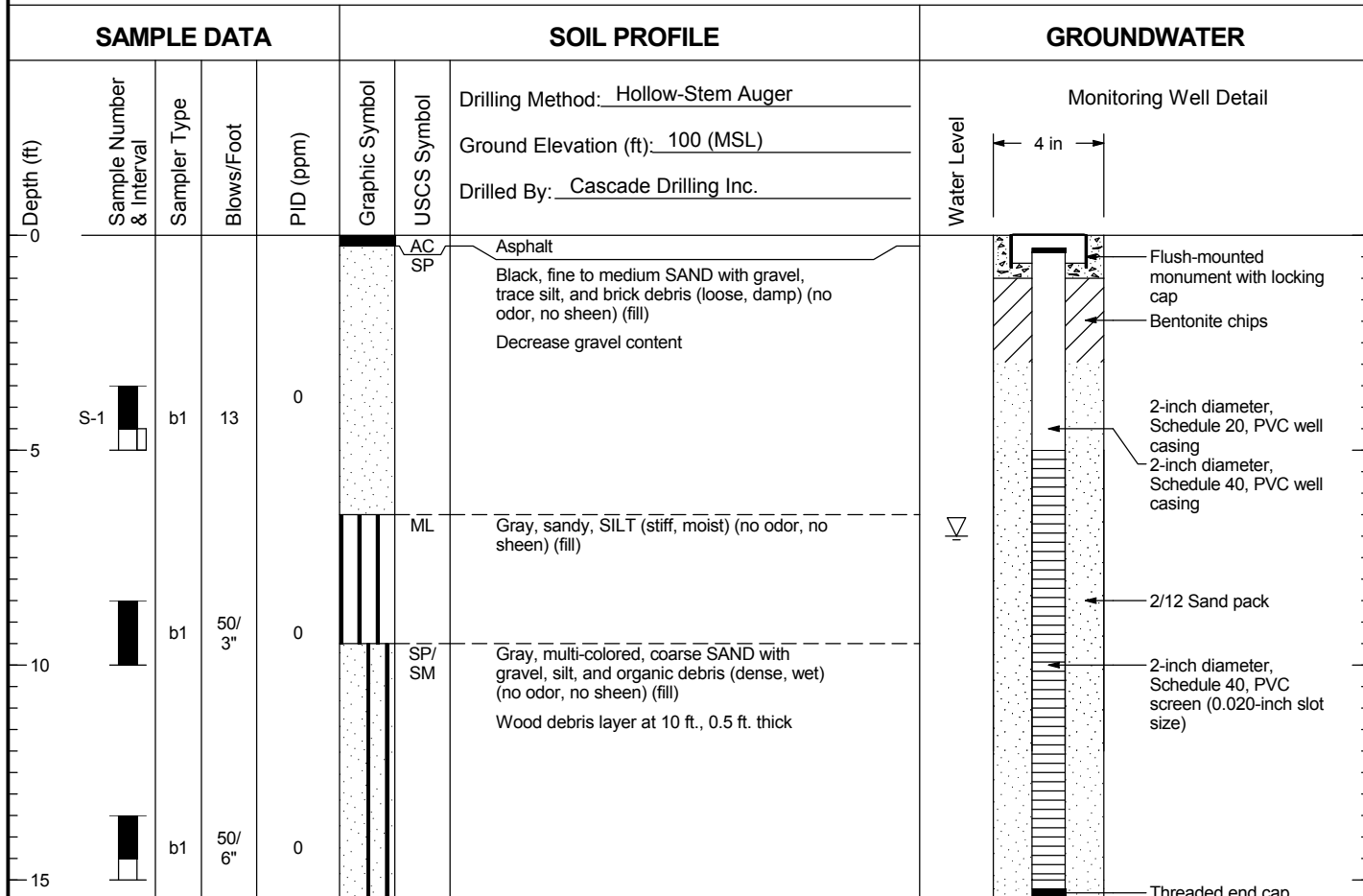


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Seattle, Washington

Log of Monitoring Well MW-10

Figure
C-78

MW-11



Boring Completed 08/03/09
Total Depth of Boring = 15.4 ft.

Monitoring Well Completed 08/03/09
Total Depth of Monitoring Well = 15.4 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/05/09 \\EDMIDATA\GINT\GINT7\PROJECTS\1014001.040.GPJ WELL LOG

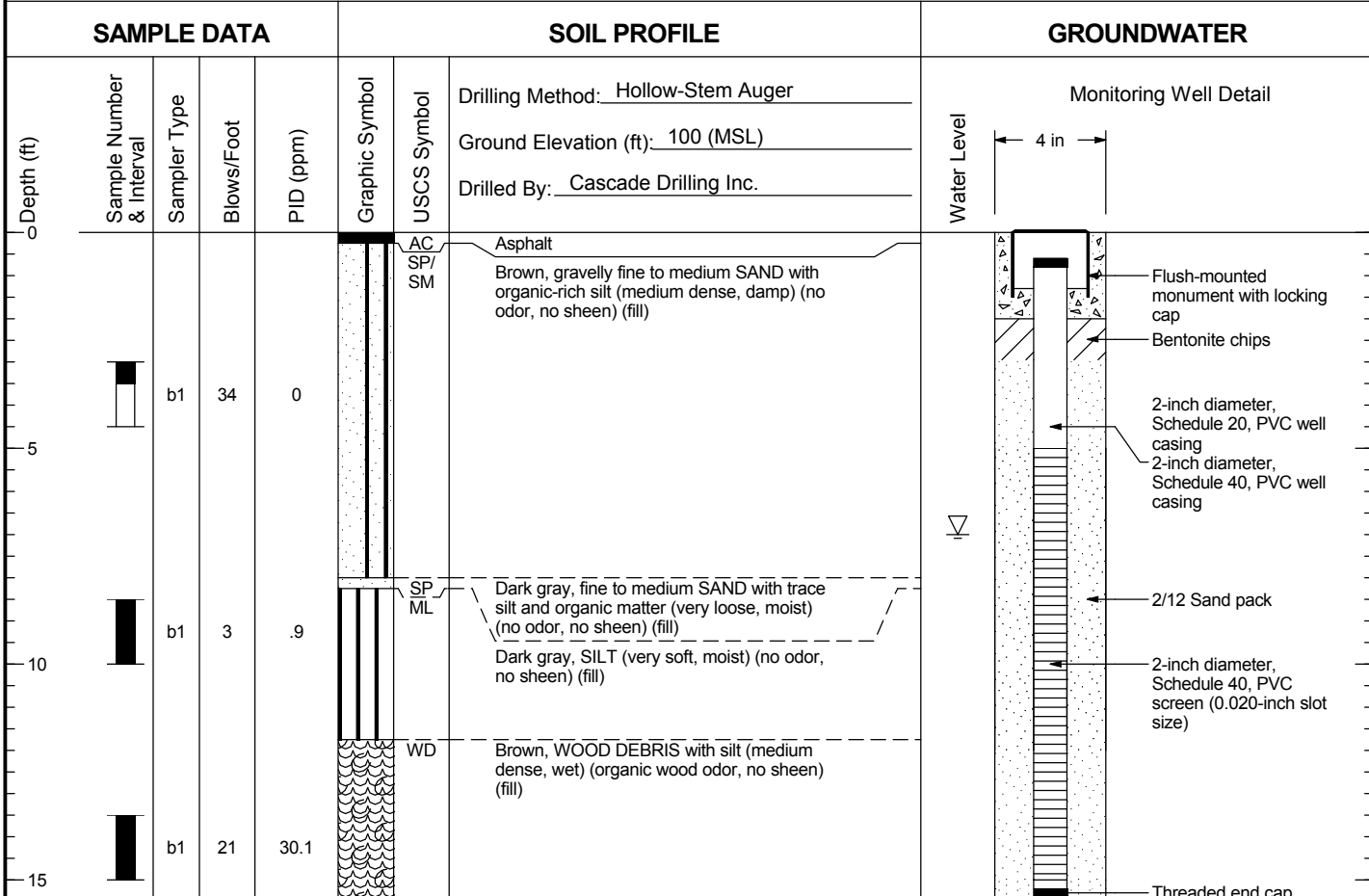


North Lot Development
Seattle, Washington

Log of Monitoring Well MW-11

Figure
C-79

MW-12



Boring Completed 08/03/09
Total Depth of Boring = 15.4 ft.

Monitoring Well Completed 08/03/09
Total Depth of Monitoring Well = 15.4 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/05/09 \\EDMIDATA\GINT\GINT7\PROJECTS\1014001.040.GPJ WELL LOG

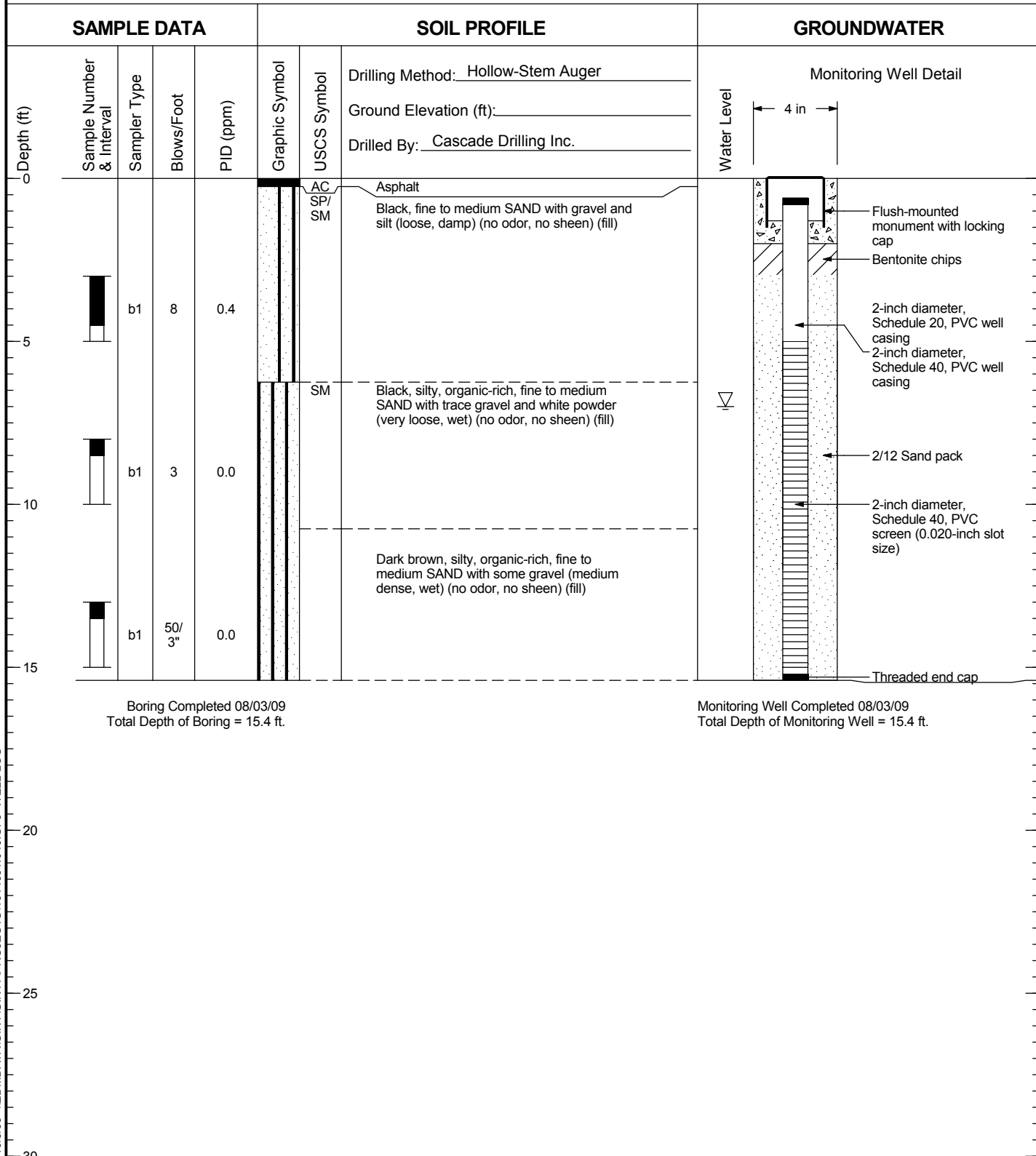


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Log of Monitoring Well MW-12

Figure
C-80

MW-13



Boring Completed 08/03/09
Total Depth of Boring = 15.4 ft.

Monitoring Well Completed 08/03/09
Total Depth of Monitoring Well = 15.4 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/05/09 \\EDMIDATA\GINT\GINT7\PROJECTS\1014001.040.GPJ WELL LOG

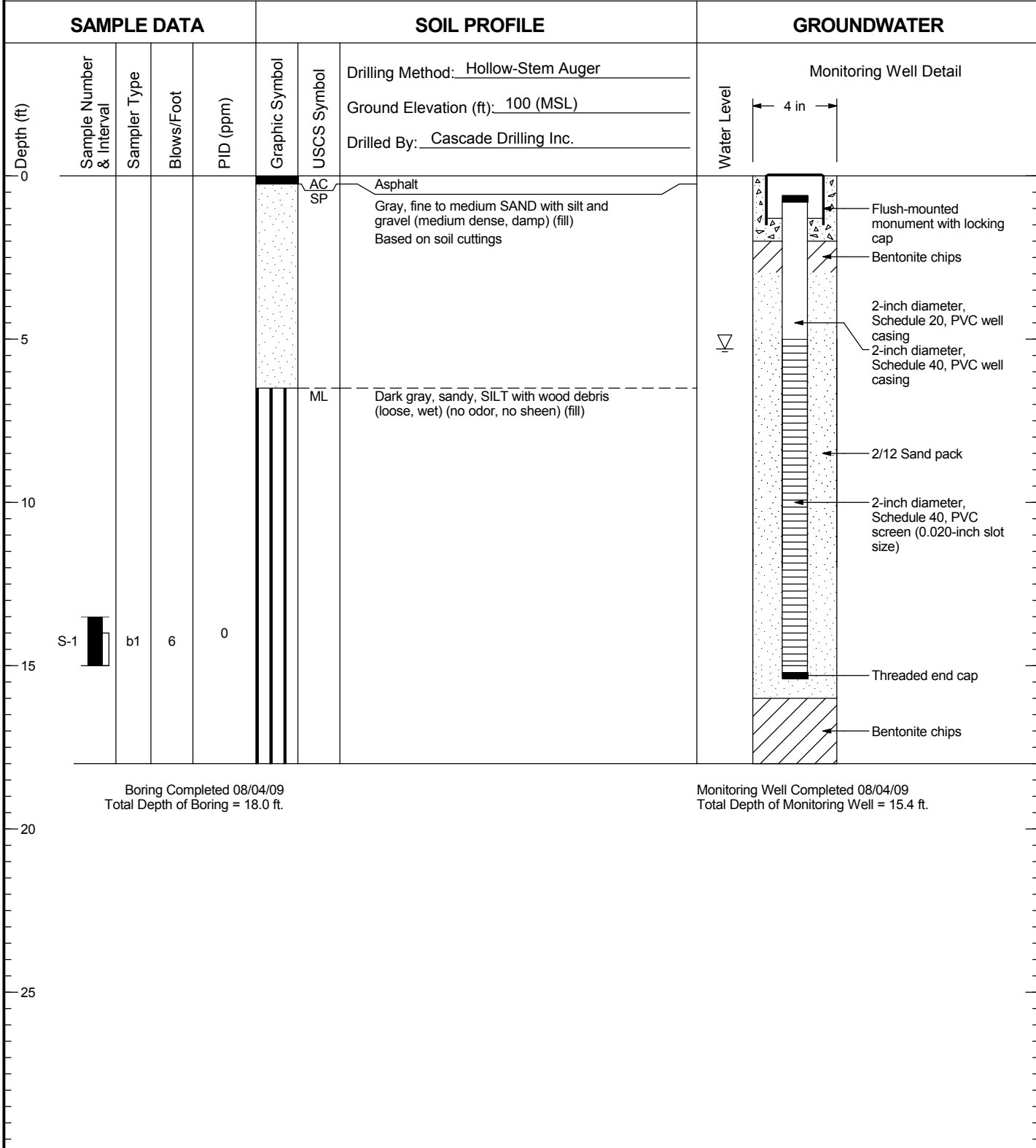


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Log of Monitoring Well MW-13

Figure
C-81

MW-14



Boring Completed 08/04/09
Total Depth of Boring = 18.0 ft.

Monitoring Well Completed 08/04/09
Total Depth of Monitoring Well = 15.4 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDMIDATA\GINT\GINT7\PROJECTS\1014001.040.GPJ WELL LOG

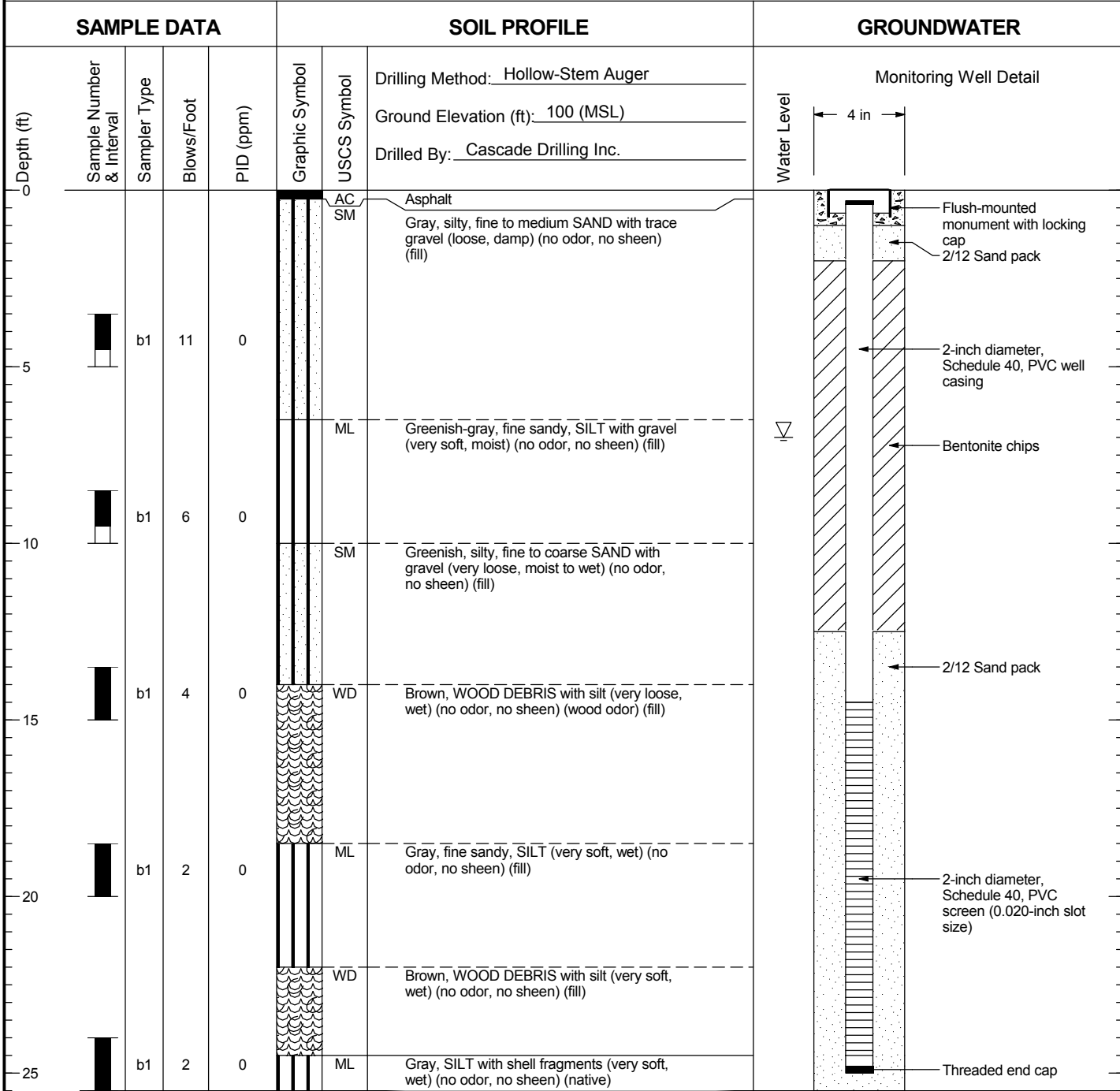


North Lot Development
Seattle, Washington

Log of Monitoring Well MW-14

Figure
C-82

MW-15D



Boring Completed 08/04/09
Total Depth of Boring = 25.5 ft.

Monitoring Well Completed 08/04/09
Total Depth of Monitoring Well = 25.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/5/09 \\EDMIDATA\GINT\GINT7\PROJECTS\1014001.040.GPJ WELL LOG

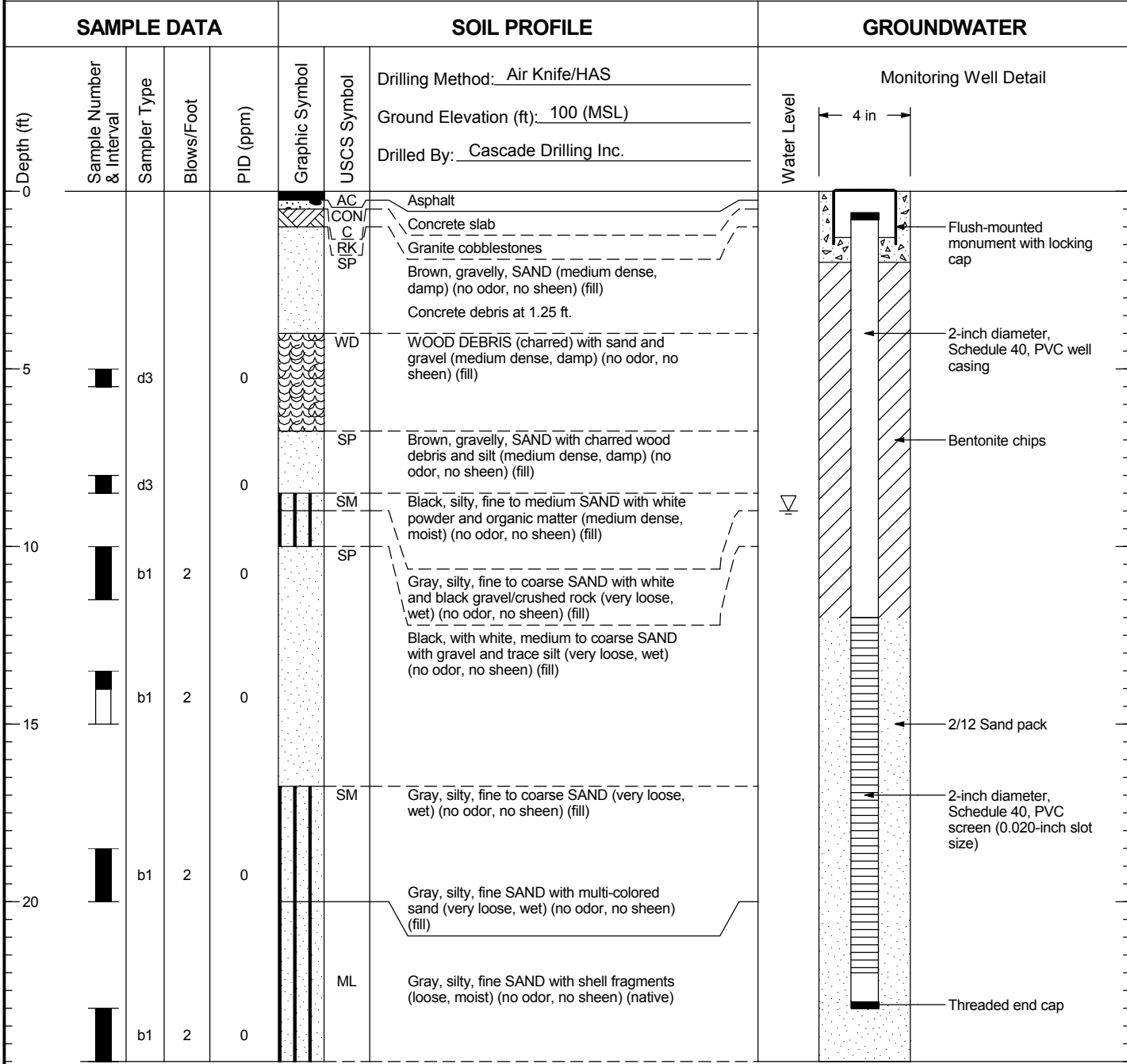


North Lot Development
Seattle, Washington

Log of Monitoring Well MW-15D

Figure
C-83

MW-16D



Boring Completed 08/04/09
Total Depth of Boring = 24.5 ft.

Monitoring Well Completed 08/04/09
Total Depth of Monitoring Well = 23.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/05/09 \\EDMIDATA\GINT\PROJECTS\1014001.040.GPJ WELL LOG

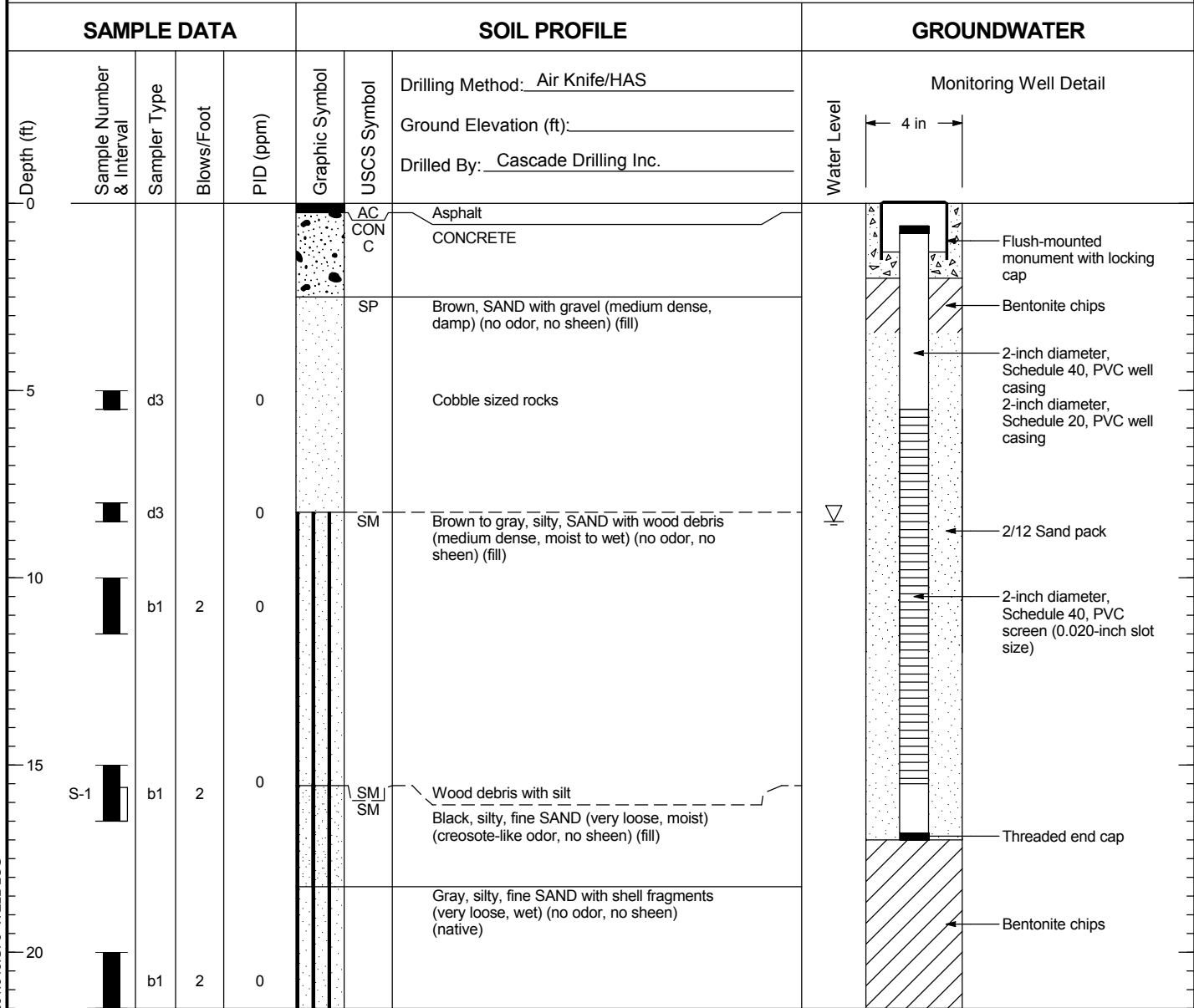


North Lot Development
Seattle, Washington

Log of Monitoring Well MW-16D

Figure
C-84

MW-17D



Boring Completed 08/04/09
Total Depth of Boring = 21.5 ft.

Monitoring Well Completed 08/04/09
Total Depth of Monitoring Well = 17.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1014001.04 10/05/09 \\EDMIDATA\GINT\PROJECTS\1014001.040.GPJ WELL LOG



North Lot Development
Seattle, Washington

Log of Monitoring Well MW-17D

Figure
C-85

LOG OF BORING NO. 1

Figure No. A-2

Project: North Lot Project No: T-6199 Date Drilled: 11/10/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Observ. Well
					1	2	3	4	
1		(4 inches ASPHALT)							
2		FILL: black organic material, coal-like with some sand and gravel, small wood debris in shoe, moist.	Loose	27.7 *	5	●			
3									
4									
5									
6		FILL: black sand with gravel, organics, charcoal-like, fine to coarse grained, wet.	Loose	58.4 *	2	●			
7									
8									
9									
10		FILL: black sand with gravel, fine to coarse grained, saturated.	Loose	76.0 *	3	●			
11									
12									
13									
14		FILL: black sand, fine to coarse grained, saturated, creosote smell.	Loose	86.4 *	4	●			
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25		*Continued on Next Page							

DRAFT

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



Terra Associates, Inc.
 Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF BORING NO. 1

Figure No. A-2

Project: North Lot Project No: T-6199 Date Drilled: 11/10/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Monitor Well
					Δ	TSF	Δ	SPT (N) ● Blows/ft ●	
26		Gray SILT, saturated, creosote smell. (ML)	Loose	41.2 *	1				
27									
28									
29									
30		Gray silty SAND, fine grained, shell fragments, wet. (SM)	Loose	22.5 *	1				
31									
32									
33									
34									
35		*Soil becomes moist.	Dense	18.3 *				39	
36									
37									
38									
39		Gray SAND, fine to coarse grained, shell fragments, saturated. (SP)	Medium Dense	21.0 *				27	
40									
41									
42									
43									
44									
45		Boring terminated at 46.5 feet. Groundwater observed at approximately 13 feet.	Very Dense	17.7 *					56
46									
47									
48									
49									
50									

DRAFT

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LOG OF BORING NO. 2

Figure No. A-3

Project: North Lot Project No: T-6199 Date Drilled: 11/10/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Observ. Well
					1	2	3	4	
1		(2 inches ASPHALT)							
2									
3		FILL: brown sand with gravel, fine to coarse grained, moist.	Loose	17.6 *				6	
4									
5									
6									
7									
8									
9									
10		FILL: black sand with gravel, fine to coarse grained, charcoal-like, wet.	Loose	32.6 *				3	
11									
12									
13									
14									
15									
16									
17		*Wood debris, saturated.						1	
18									
19									
20		FILL: black gravel with sand and wood debris, fine to coarse grained, saturated.	Loose	47.3 *				7	
21									
22									
23									
24									
25									
26		Gray sandy SILT, fine grained, shell fragments, saturated. (ML)	Loose	22.7 *				1	
27									
28									
29									
30		* Continued on Next Page							

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Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



Terra Associates, Inc.
 Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF BORING NO. 2

Figure No. A-3

Project: North Lot Project No: T-6199 Date Drilled: 11/10/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Monitor Well
					1	2	3	4	
					SPT (N)				
					Blows/ft				
31		Gray silty SAND, fine to coarse grained, shell fragments, wet. (SM)	Loose	19.6 *					
32									
33									
34									
35			Medium Dense	15.7 *				26	
36									
37									
38									
39		Gray SAND with gravel and silt, fine to coarse grained, shell fragments, saturated. (SP)	Dense	17.6 *					42
40									
41									
42									
43									
44									
45		*12 inches of heave	Very Dense	8.6 *					50/3"
46									
47									
48									
49		*Hit refusal							50/1"
50									
51		Boring terminated at 50 feet. Groundwater observed at approximately 13 feet.							
52									
53									
54									
55									
56									
57									
58									
59									
60									

DRAFT

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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LOG OF BORING NO. 3

Figure No. A-4

Project: North Lot Project No: T-6199 Date Drilled: 11/12/08
 Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS
 Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Observ. Well
					1	2	3	4	
1		(2 inches ASPHALT)							
2		FILL: brown silty sand with gravel, fine to coarse grained, moist.	Medium Dense	15.0 *					
3									
4									
5									
6		FILL: gray silt, moist.							
7		FILL: gray sand, fine grained, moist.							
8									
9									
10		FILL: brown gravel with sand, fine to coarse grained, wet.	Loose	12.0 *					
11									
12									
13									
14									
15		FILL: brown black mulched wood debris, wet.	Loose						
16									
17									
18									
19									
20		FILL: gray silt with pockets of wood debris, saturated.	Loose	44.3 *					
21									
22									
23									
24									
25		Brown gray SILT with shell fragments, saturated, 6 inches of heave. (ML)	Loose	50.1 *					
26									
27									
28									
29									
30		*Continued on Next Page.							

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



DRAFT

Terra Associates, Inc.
 Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF BORING NO. 3

Figure No. A-4

Project: North Lot Project No: T-6199 Date Drilled: 11/12/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp ----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Monitor Well
					1	2	3	4	
					TSF				
					SPT (N)				
					Blows/ft				
31		Gray SILT with shell fragments, saturated, 6 inches of heave. (ML)	Loose	30.7 *					
32									
33									
34									
35		Gray silty SAND, fine grained, wet, 3 inches of heave. (SM)	Loose	24.7 *					
36									
37									
38									
39									
40		*No heave	Medium Dense	20.8 *			16		
41									
42									
43									
44									
45		*Trace gravel	Dense	17.4 *				34	
46									
47									
48									
49		Blue sandy lean CLAY, fine grained, wet. (CL)	Very Stiff	23.0 *			19		
50									
51				27.1 *					
52		Blue lean CLAY, wet. (CL)							
53									
54									
55		Blue gray silty SAND, trace gravel, fine to coarse grained, wet. (SM)	Medium Dense	19.8 *			19		
56									
57									
58									
59		*Continued on Next Page							
60									

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



DRAFT

Terra Associates, Inc.
 Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF BORING NO. 3

Figure No. A-4

Project: North Lot Project No: T-6199 Date Drilled: 11/12/08

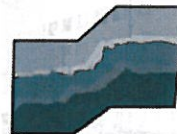
Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Monitor Well	
					1	2	3	4		
					SPT (N)					
					Blows/ft					
61		Gray silty SAND with gravel, fine to coarse grained, moist to wet. (SM)	Dense	13.6 *					47	
62			Very Dense							
63										
64										
65				10.2 *					74	
66										
67										
68										
69										
70				20.9 *					50/6"	
71										
72										
73										
74		Gray SAND with gravel, fine to coarse grained, moist. (SP)	Very Dense	8.3 *						
75										
76										
77										
78		Gray silty SAND with gravel, fine to coarse grained, moist. (SM)	Very Dense	8.6 *						
79										
80										
81		Boring terminated at 80.5 feet. Groundwater observed at approximately 12 feet.								
82										
83										
84										
85										
86										
87										
88										
89										
90										

DRAFT

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LOG OF BORING NO. 4

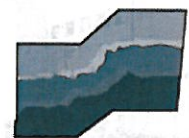
Figure No. A-5

Project: North Lot Project No: T-6199 Date Drilled: 11/11/08
 Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS
 Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Observ. Well
					TSF				
					SPT (N)				
					Blows/ft				
					1	2	3	4	
1		(2 inches ASPHALT)							
2									
3									
4		FILL: gray sand with gravel and silt, coarse grained, moist.							
5			Medium Dense	5.7 x				13	
6									
7									
8									
9									
10			Loose	12.0 x				4	
11									
12									
13									
14									
15		FILL: gray silty gravel with sand, fine to coarse grained, saturated.	Medium Dense	14.9 x				28	
16									
17									
18									
19									
20		FILL: brown silt with sand and wood debris, saturated.	Loose	50.0 x				0	
21									
22									
23									
24		FILL: brown sandy silt with wood debris, fine to coarse grained, saturated.	Loose	43.3 x				1	
25									
26									
27									
28									
29		Brown SILT with shell fragments, wet. (ML)							
30								2	
31		*No recovery	Loose						
32									
33									
34		*Continued on Next Page							
35									

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Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



Terra Associates, Inc.
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LOG OF BORING NO. 4

Figure No. A-5

Project: North Lot Project No: T-6199 Date Drilled: 11/11/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Monitor Well	
					1	2	3	4		
					TSF					
					SPT (N)					
					Blows/ft					
36		Brown SILT with shell fragments, fine grained, saturated. (ML)	Loose	48.1 *						
37										
38		4 inches gray SILT with shell fragments, saturated. 2 inches gray SAND, fine grained, saturated. 3 inches gray SILT. 3 inches gray SAND.	Loose	41.3 *						
39										
40										
41										
42		Gray SAND with silt and gravel, fine to coarse grained, wet. (SP-SM)	Dense	14.2 *						
43										
44										
45										
46										
47										
48										
49										
50				No recovery.	Very Dense					50/6"
51										
52		*Soil becomes saturated.		21.4 *						
53										
54										
55										
56		Gray silty SAND, fine to coarse grained, wet. (SM)	Very Dense	14.9 *						
57										
58										
59										
60										
61		Boring terminated at 65.5 feet. Groundwater observed at approximately 10 feet.		10.8 *						
62										
63										
64										
65										

DRAFT

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



Terra Associates, Inc.
 Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

LOG OF BORING NO. 5

Figure No. A-6

Project: North Lot Project No: T-6199 Date Drilled: 11/11/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer				Observ. Well
					1	2	3	4	
1		(2 inches ASPHALT)							
2									
3									
4									
5		FILL: black brown silty sand with gravel, fine to coarse grained, moist, hammer was bouncing on a rock or wood timber.	Very Dense	8.5 *					50/5"
6									
7									
8									
9									
10									
11		*No recovery, wood debris in cuttings.							
12									
13									
14									
15									
16		FILL: wood debris, small amount of gray silt, saturated.	Dense			>100.0		36	
17									
18									
19									
20									
21			Very Dense			>100.0			58
22									
23									
24		*Continued on Next Page							
25									

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



Terra Associates, Inc.
 Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

DRAFT

LOG OF BORING NO. 5

Figure No. A-6

Project: North Lot Project No: T-6199 Date Drilled: 11/11/08

Client: Nitze-Stagen Driller: Cascade Drilling Logged By: CS

Location: Seattle, Washington Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Consistency/ Relative Density	Moisture Content % Wp -----x----- Wl 10 30 50 70 90	Pocket Penetrometer		Monitor Well
					Δ TSF Δ	SPT (N) ● Blows/ft ●	
26		Gray SILT with sand and shell fragments, fine grained, saturated. (ML)	Loose	48.0 *			
27							
28							
29							
30		Gray silty SAND with gravel, fine to coarse grained, moist. (SM)	Very Dense	10.6 *			50/4"
31							
32							
33							
34							
35				16.5 *			50/6"
36							
37							
38							
39							
40				11.2 *			50/5"
41							
42		*Hit refusal, hammer bouncing on a rock.					
43				6.2 *			50/1"
44		Boring terminated at 43 feet. Groundwater observed at approximately 11 feet.					
45							
46							
47							
48							
49							
50							

DRAFT

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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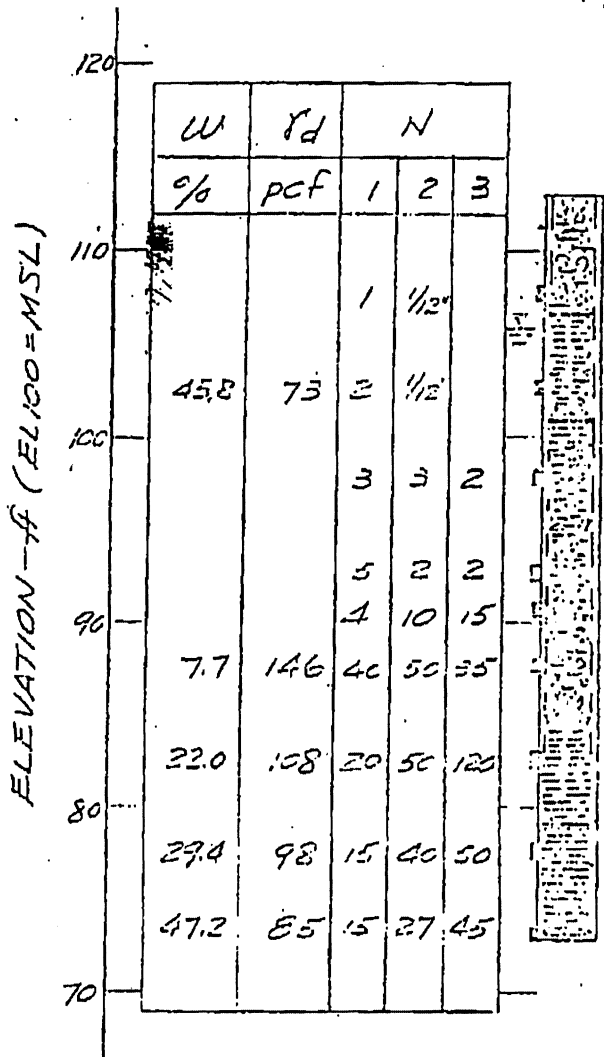
CALCULATION SHEET
METROPOLITAN ENGINEERS
SEATTLE, WASHINGTON

BORING B15

ELEVATION 113

LOCATION STA. 194+69 (43' L.)

DATE DRILLED 6-7, 8-66



GRAY SILTY SAND AND GRAVEL (FILL) - VERY LOOSE

BROWN GRAY SILT (FILL) - SOFT

BROWN SILT AND WOOD - MODERATELY FIRM

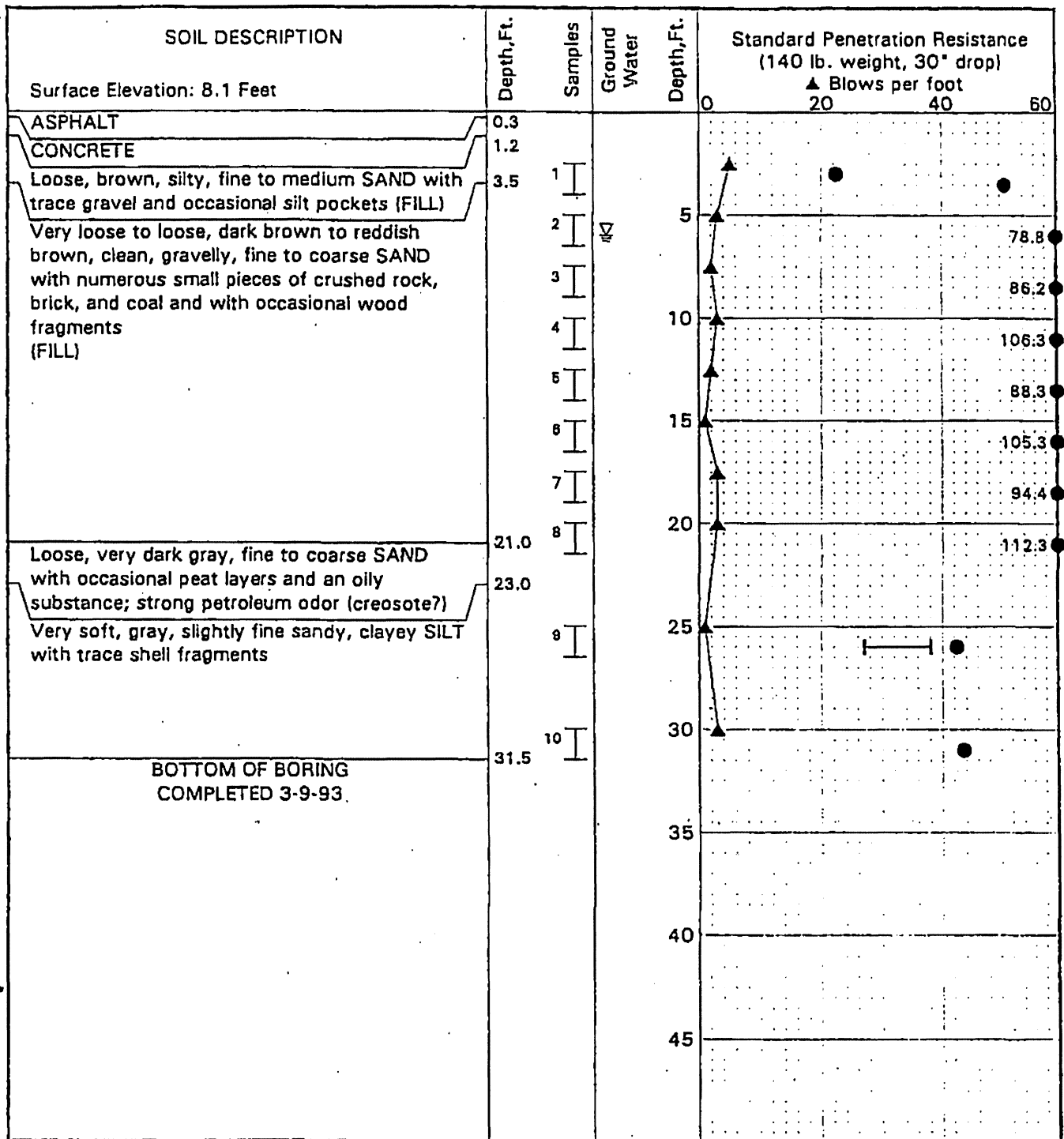
GREEN-GRAY SILTY SAND AND GRAVEL - VERY COMPACT
GRAY SILT - VERY COMPACT

GRADES TO SILTY CLAY

CASING AT ELEV. 83 BORING AT ELEV. 73 OVERNIGHT WATER LEVEL AT ELEV. 106

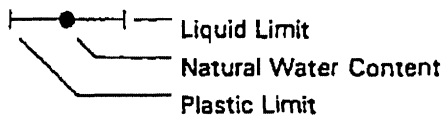
NOTE: UPON COMPLETION, CASING REMOVED AND BORING BACKFILLED WITH PEA GRAVEL

DATE	BY	JOB NO. W210J	TITLE LOG OF BORING	PLATE A-12
------	----	------------------	------------------------	---------------



LEGEND

- I 2" O.D. split spoon sample
- II 3" O.D. thin-wall sample
- * Sample not recovered
- Impervious seal
- Water Level
- Piezometer screen



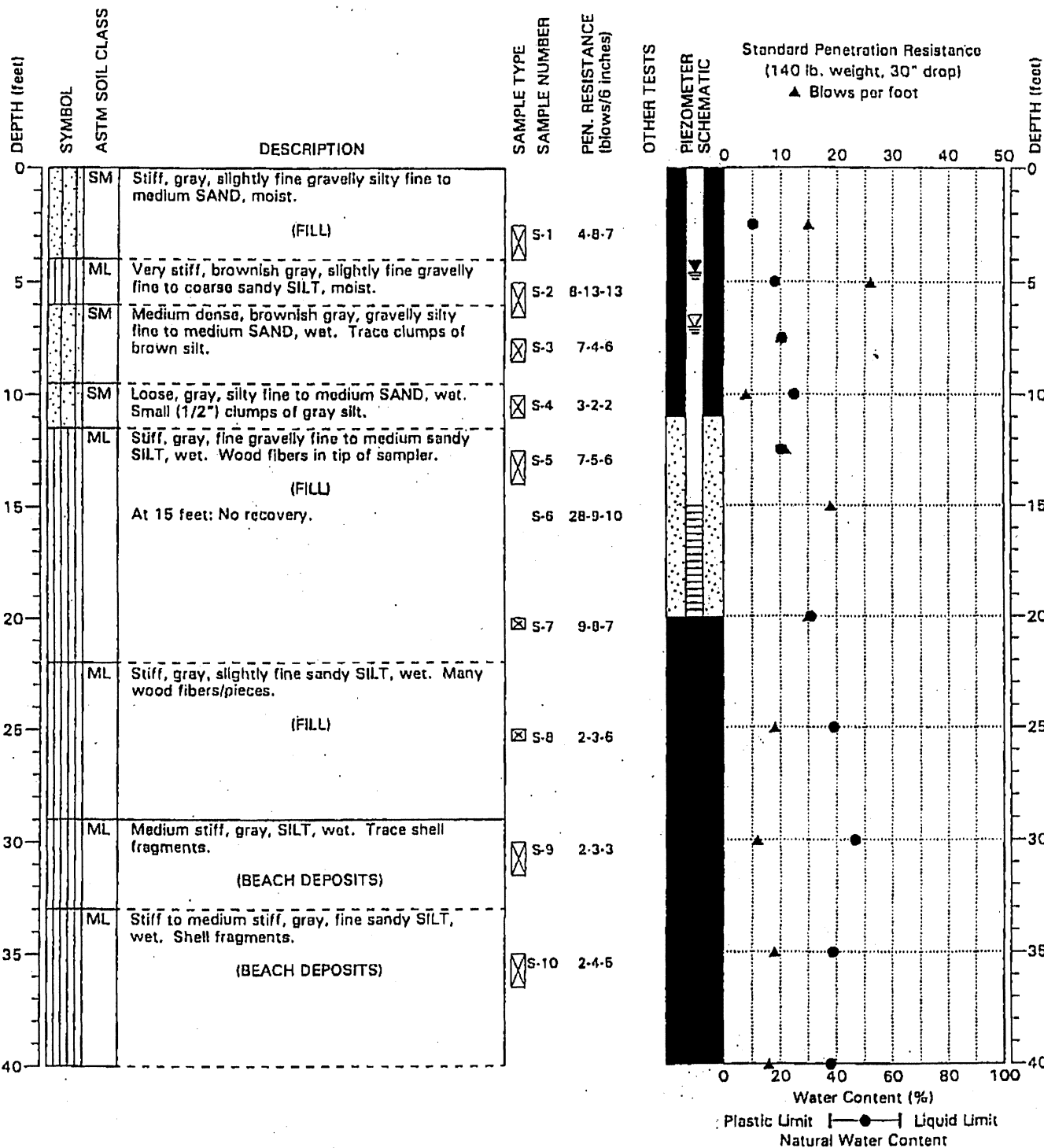
The stratification lines represent the approx. boundaries between soil types, and the transition may be gradual.

King Street Station
Seattle, Washington

LOG OF BORING B-2

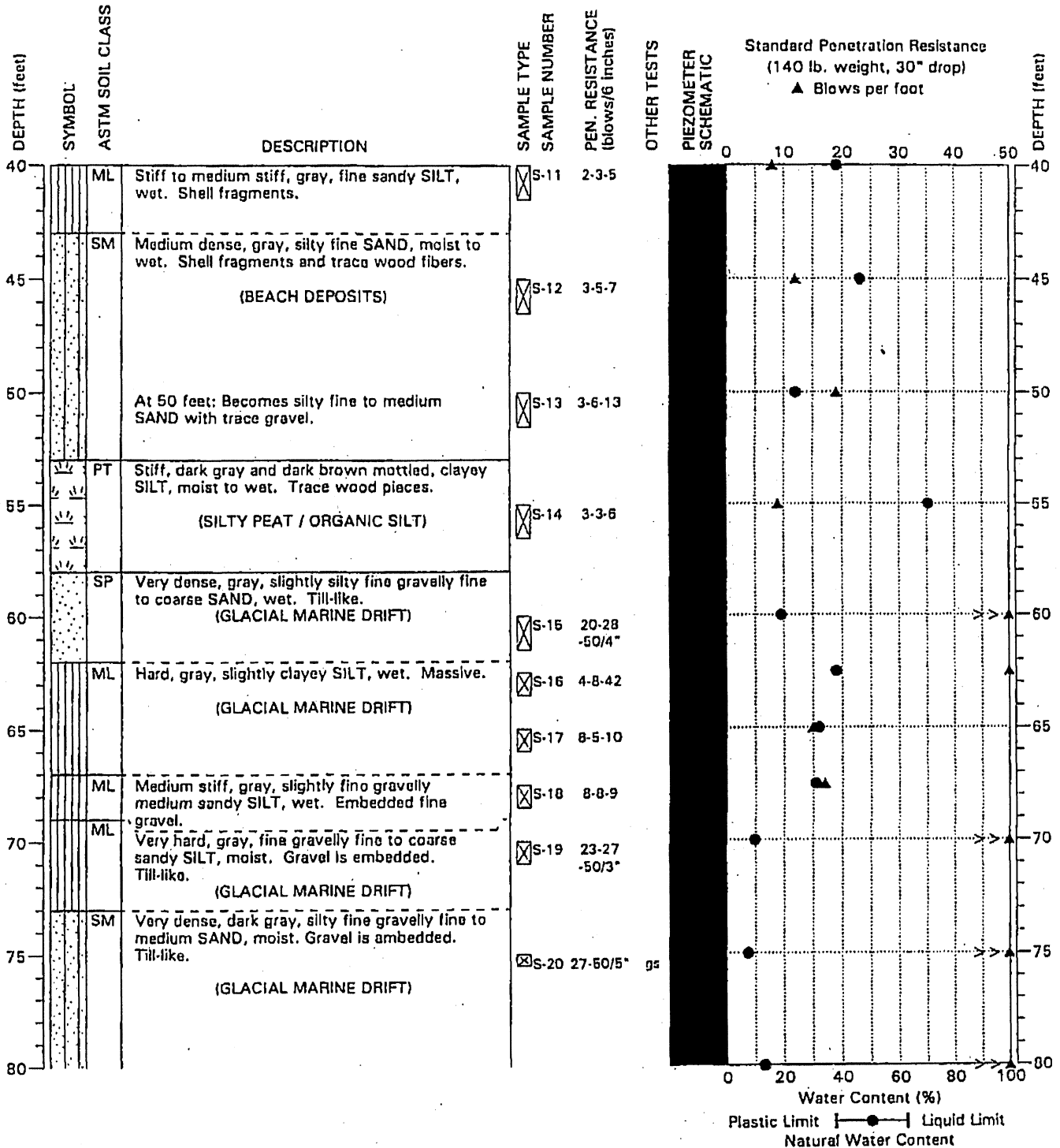
March 1993 W-6464-01

SHANNON & WILSON, INC. <small>Geotechnical and Environmental Consultants</small>	FIG. 4 Sheet 1 of 1
---	------------------------



NOTE: This log of subsurface conditions applies only at the specified location and on the data indicated and therefore may not necessarily be indicative of other times and/or locations.

BORING: BH-3

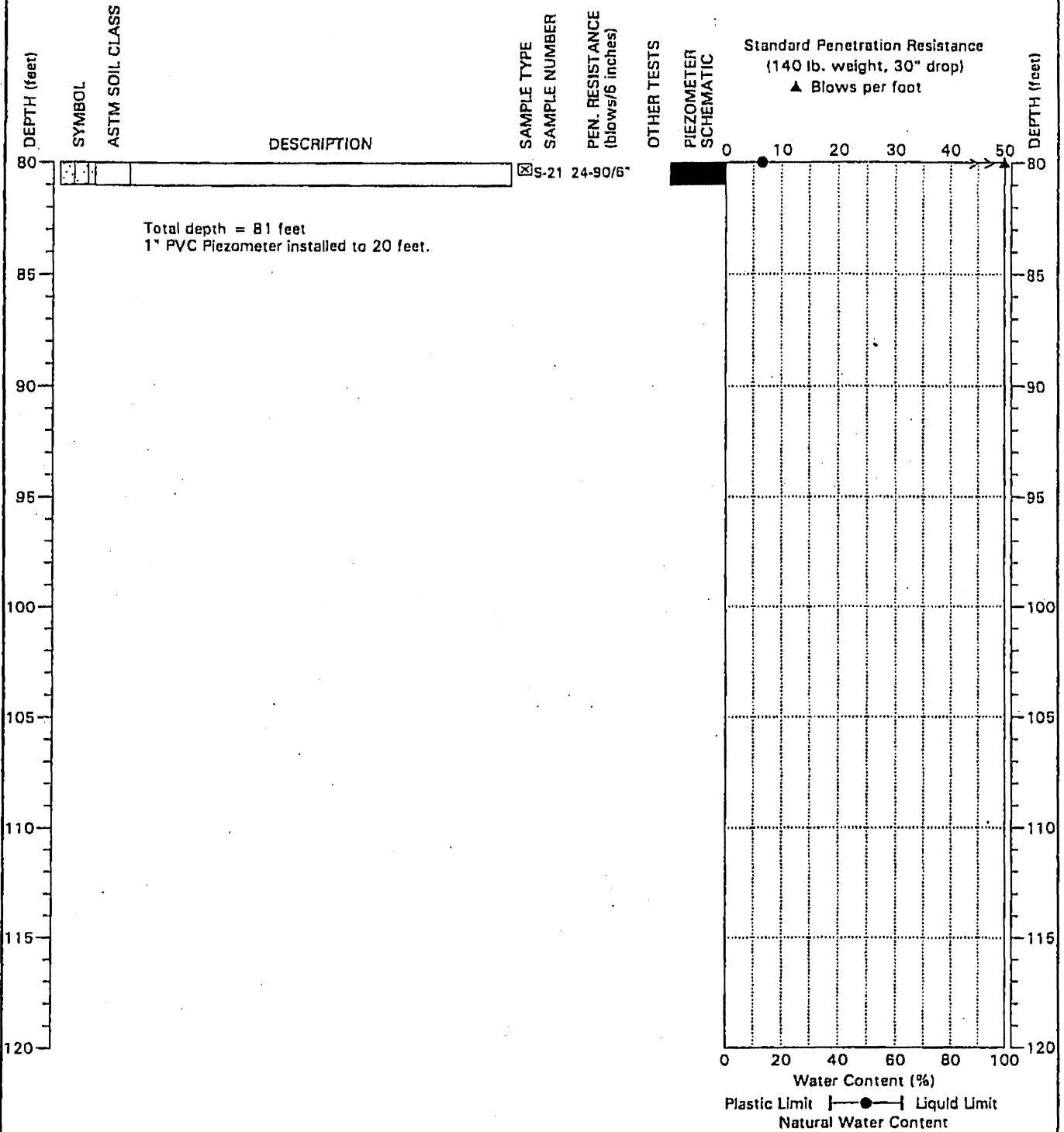


NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

BORING: BH-3

DRILLING METHOD: B-61 MOBILE DRILL, HOLLOW STEM AUGER
 SURFACE ELEVATION: 17 ± Feet

DATE COMPLETED: 3/8/98
 LOGGED BY: MLR



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

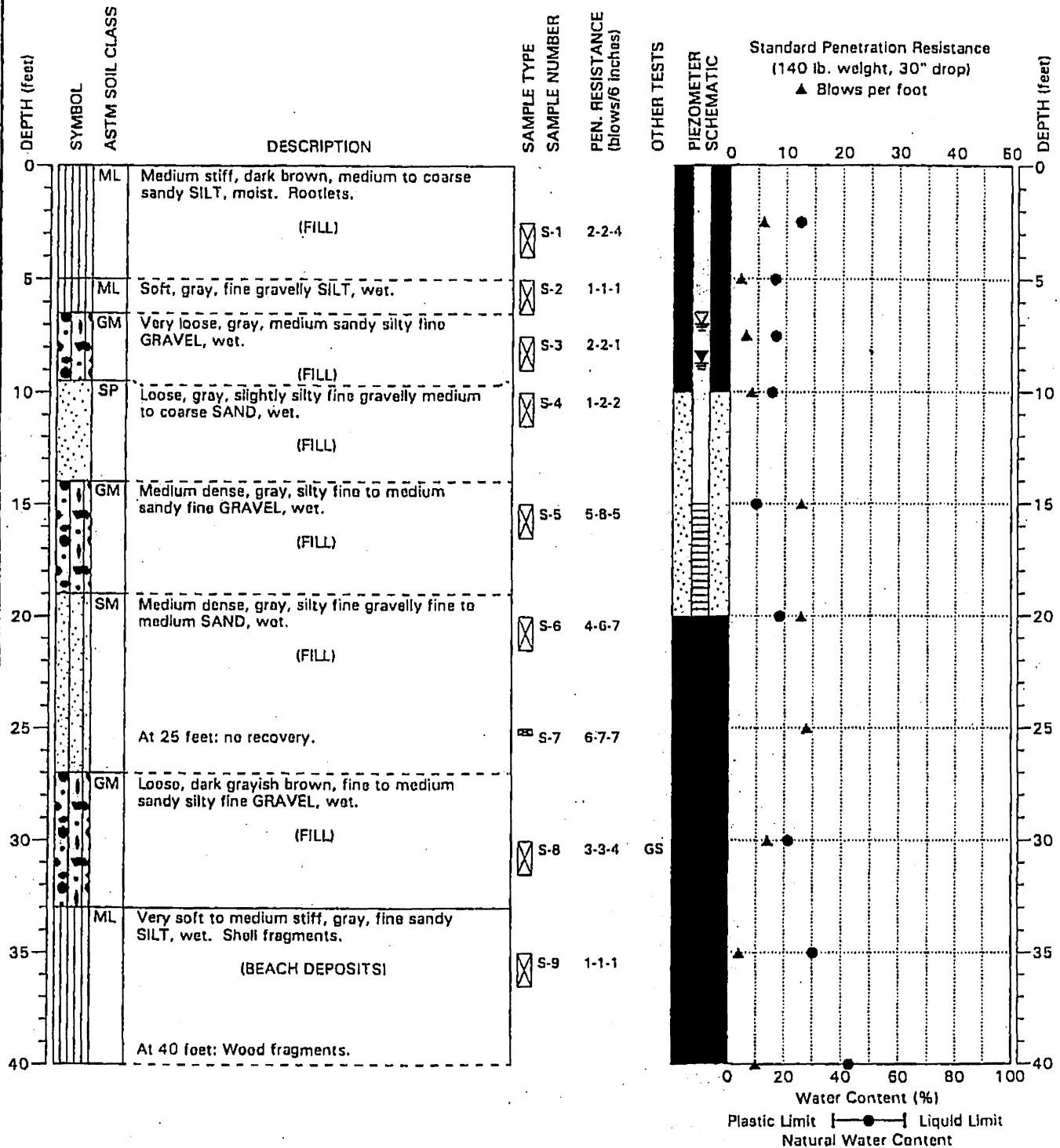
BORING: BH-3

EWA Stadium Area Elevated Pedestrian Walkway
GEOSCIENCES INC. Seattle, Washington

PAGE: 3 of 3

PROJECT NO.: 98010

FIGURE: A-4



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

BORING: BH-4

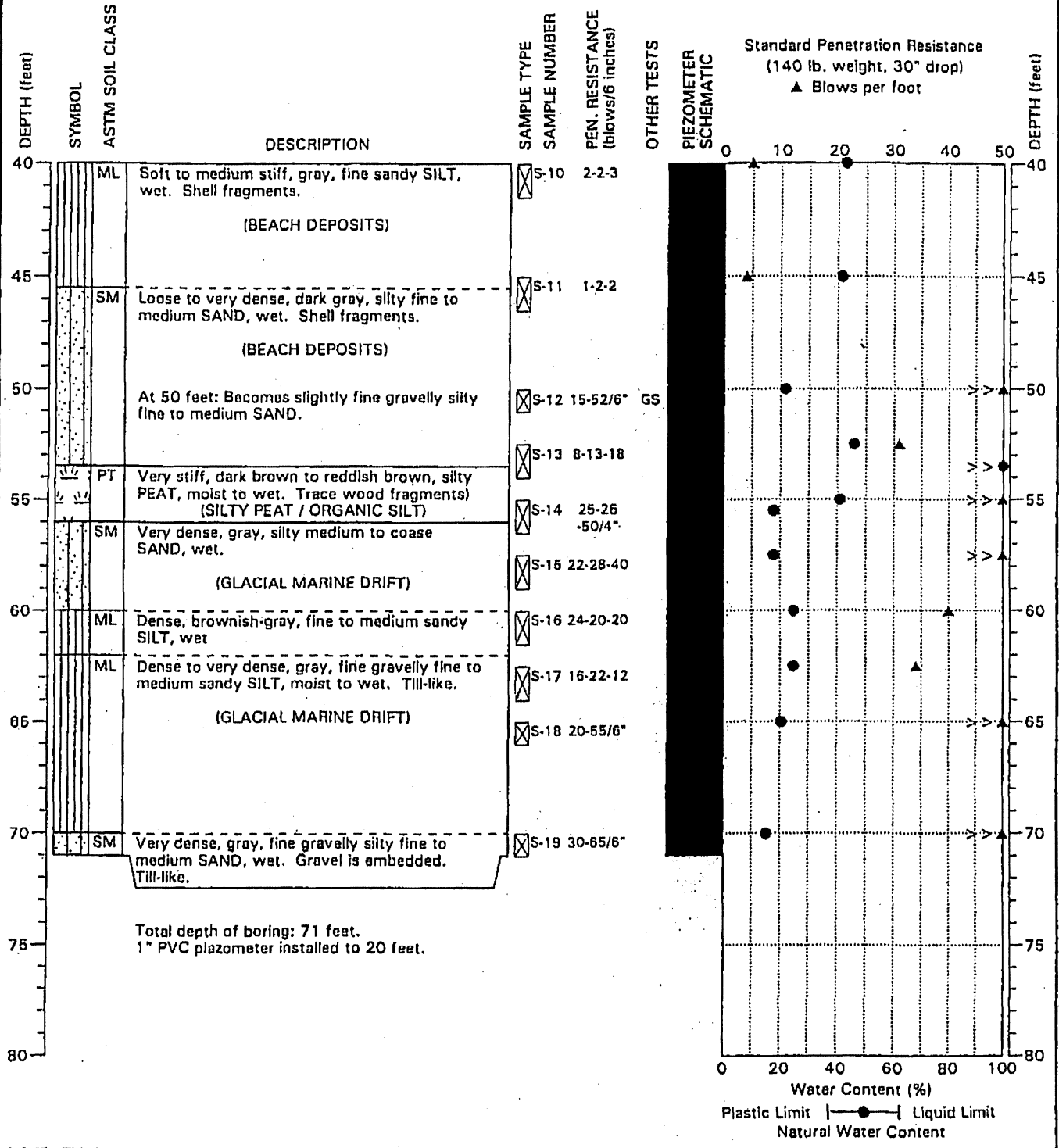


Stadium Area Elevated Pedestrian Walkway
 Seattle, Washington

PAGE: 1 of 2

PROJECT NO.: 98010

FIGURE: A-5



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

BORING: BH-4




BORING NO. B-1

Logged By: TP




Date Drilled: 9/10/96

Surface Elev: 13 feet +/-

Depth ft.	USCS	Soil Description	SAMPLE		Blows per 6-inches	SPT N Blows per 1-foot	Water Content %	Other Tests & Comment
			Type	No.				
		3" Asphalt-concrete						
5	ML	Brown SILT with fine to coarse gravel, medium dense, plastic. (FILL)	I	S1	19,10,10	20	17.0	
	ML	Brown SILT with brick debris and gravel, medium dense. (FILL)	I	S2	10,8,4	12	N/R	
10		Black wood and red brick, loose. (FILL)	I	S3	3,3,3	6	152	
			I	S4	5,2,3	5	57.9	
15		Wood. (FILL)						
		Black wood and red brick, loose (FILL)	I	S5	2,2,1	3	71.2	
20								
		Wood, loose. (FILL)	I	S6	6,3,2	5	N/R	
25	ML	Gray SILT with fine sand and fine gravel, dense, plastic, wet.	I	S7	14,13,18	31	14.1	
30	GP	Gray fine GRAVEL with occ shells, very dense, wet.	I	S8	50/3"	50/3"	23.7	
		ROCK						
35	SM/ ML	Gray silty SAND to sandy SILT with fine gravel, very dense, moist.	I	S9	36,50/5"	50/5"	17.1	
40								

LEGEND:
 2' O.D. Split-Spoon Sampler
 3' O.D. Shelby-Tube Sampler
 3' O.D. California Sampler

**GROUNDWATER
OBSERVATION WELL:**

 Seal
 Measured Water Level
 Well Tip (Screen)



Group Northwest, Inc.

Geotechnical Engineers, Geologists, &
Environmental Scientists

BORING LOG

SEATTLE WATER DEPT 12 INCH MAIN REPLACEMENT
500 - 1000 BLOCK OCCIDENTAL AVENUE SOUTH
SEATTLE, WASHINGTON

DATE: 10/25/06 JOB NO: G-0662 PLATE: 6

BORING NO. B-1

Logged By: TP




Date Drilled: 9/10/96

Surface Elev: 13 feet +/-

Depth ft.	USCS	Soil Description	SAMPLE		Blows per 6-inches	SPT N Blows per 1-foot	Water Content %	Other Tests & Comment
			Type	No.				
	GP	Gray fine GRAVEL, very dense, wct.	I	S10	50/5"	50/5"	17.1	
45		End of Boring at 41.5 feet						
		Drilling Method: 4.25" OD Mud Rotary.						
		Sampling Method: 2-inch Split Spoon Sampler driven by a 140 lb. hammer from a 30 inch drop.						
50		Groundwater level at approximately 7.5 feet, based on condition of soil samples.						
		N/R indicates no sample recovery						
55								
60								
65								
70								
75								
80								

LEGEND: I 2" O.D. Split-Spoon Sampler
 II 3" O.D. Shelby-Tube Sampler
 III 3" O.D. Split-Spoon Sampler

GROUNDWATER
 OBSERVATION WELL:

 Seal
 Measured Water Level
 Well Tip (Screen)



Group Northwest, Inc.
 Geotechnical Engineers, Geologists, &
 Environmental Scientists

BORING LOG

SEATTLE WATER DEPT 12 MAIN REPLACEMENT
 500 - 1000 BLOCK OCCIDENTAL AVENUE SOUTH
 SEATTLE, WASHINGTON

DATE: 10/25/96 | LOG NO: G-0647 | PAGE: 7

Geophysical Investigation Report

GEOPHYSICAL INVESTIGATION REPORT

**QWEST FIELD
NORTH LOT AREA
SEATTLE, WASHINGTON**

FOR

**LANDAU ASSOCIATES, INC.
EDMONDS, WASHINGTON**

MARCH 2008

**PHILIP H. DUOOS
GEOPHYSICAL CONSULTANT**

March 21, 2008

Our Ref.: 816-08

Ms. Kathryn F. Hartley
Landau Associates, Inc.
130 2nd Ave. S.
Edmonds, WA 98020

REPORT: Geophysical Investigation
Qwest Field, North Lot Site
Seattle, Washington

Dear Ms. Hartley:

This letter report summarizes the results of the geophysical investigation that I performed during the period February 28 – March 1. The primary purpose of the investigation was to determine if any underground storage tanks (USTs) were still present at the site and to provide a general overview of subsurface conditions with respect to features that may impact the proposed development, such as areas with buried metal debris or large objects in the fill material associated with the former facilities at the site. Linear features were also observed in the data and may indicate possible utilities or foundations, but locating all of the possible pipes and utilities was beyond the purpose of this investigation.

The northern portion of the North Parking Lot and the Northwest Corner Area were investigated using electromagnetic (EM-61 High-Resolution Metal Detector) and ground penetrating radar (GPR) methods. A brief description of the methods is attached.

INTERPRETATION RESULTS

The results of the geophysical interpretation are provided on Figures 1 and 2 (Northwest Corner Area and North Lot Area, respectively). These figures show the locations of the coordinate system, visible features at the site such as the curbs, chain link fence, catch basins, etc. along with the interpretation results of both the EM-61 and GPR data. Please note that the two figures are at different scales.

Interpretation results of the EM-61 data are shown as anomalous zones indicating buried metal and linear trends indicating a metal pipe, foundation with reinforcement or other linear feature. The EM-61 anomalous zones are ranked according to the magnitude of the data anomaly (High, Moderate and Low). These categories typically indicate the amount of buried metal in a zone, but the depth of burial is also a factor. Smaller amounts of metal at a shallow depth will cause a high magnitude anomaly, and a large object at depth will cause a low anomaly.

Interpretation of the GPR data indicated possible linear features (pipes, foundations, etc.), zones with scattered GPR targets and sloping layers with targets. The GPR linear features include metal features that were observed in the EM-61 data, as well as possible non-metal features such as non-metallic pipes or foundations (concrete, wood, brick, clay, etc.). Scattered GPR targets indicate zones with possible coarser-grained fill material (gravel, cobbles, construction debris) and may indicate filled-in excavations from the former facilities at the site. The GPR sloping layers with targets is similar to the scattered targets zones, but a more definite layer indicating the boundaries is observed.

Areas where the GPR zones overlap with the EM-31 anomalous zones indicate areas with metal debris or other metallic objects. GPR zones with no EM-31 anomalies are probably composed of non-metal features such as gravel, cobbles, bricks, concrete, etc. Please note that areas outside of the interpreted EM-61 anomalous zones may also have small amounts of scattered buried metal.

Northwest Corner Area

The interpretation results for the Northwest Corner are provided on Figure 1. A EM-61 Low anomalous zone is observed near 60W, 90N. No significant GPR targets are observed in this low anomalous zone, which may indicate the area has very small pieces of buried metal. Two EM linear features are observed, and one zone with GPR sloping layers. All of these features are in the vicinity of the former service station based on the historical map that you provided.

The presence of the reinforced concrete rings around the trees, the large utility covers and other cultural features affected the EM-61 data to a large degree. However, this area was investigated using a closer line spacing for both the EM and GPR surveys to help minimize the effects of this interference on the interpretation. The large EM-61 anomalies are limited to the visible cultural features, and the detailed GPR data near these features did not indicate any large buried objects typical of USTs.

Several underground utilities were previously marked at the site by others, and their locations are shown based on the marks on the pavement. These features were also observed in the GPR data, but were not plotted in detail.

North Lot Area

The interpretation results for the North Lot area are provided on Figure 2. The coordinates shown are northings and westings (west = negative number). The small red "x"s are the locations of every 5th EM-61 data point and gives an indication of the fairly detailed coverage at the site.

The large rectangular High Anomaly that is oriented north-south and centered along about Line 450W is of interest. The depths to the buried metal that the EM-61 indicates are up to 13 feet deep overall. Major individual anomalies within this zone are indicated by a red circle and approximate depth to the metal feature ranging in depth from 3 to 7 feet deep. No large GPR targets typical of large USTs were observed in this zone, but targets of moderate size were observed scattered in the zone. Perhaps this large anomalous zone is a former building excavation, former rail yard below ground level (to facilitate top loading of the cars), or some other feature. Perhaps metal debris from the former feature was buried as the excavation was filled in.

Some limited surveying with the EM-61 was performed to the north of the survey area to determine if this anomalous zone extended into the existing street. The anomaly seems to stop near the south edge of the sidewalk near the north edge of the concrete slab of the driveway. However, the presence of the slab and utilities makes interpretation difficult. I did not extend the survey to the south of the anomalous zone.

The rectangular High Anomaly near 180W, 50N is caused by a shallow (1 foot deep) reinforced concrete slab. No large features were observed below the slab, although some small targets and soil layering is observed at depths up to about 4 feet, indicating that the GPR signal had reasonable penetration through the slab.

A small GPR target (probably metal) is located near coordinate 295W, 150N and may be a shallow buried utility cover associated with the linear trends nearby.

The linear feature that runs northwest-southeast in the eastern portion of the site seems to have a shallow sloping layer associated with it. It may indicate a non-metallic drainage pipe lying in a former swale, with the swale now filled in.

METHODOLOGY

The detailed EM survey was performed using a Geonics EM-61 High Resolution Metal Detector with data digitally recorded and downloaded to a laptop computer. EM-61 data were recorded at approximate 1-foot intervals along survey lines usually spaced 10 feet apart and oriented north-south in the North Lot. Additional survey lines were run in some areas based on field review of the data. A 5-foot line spacing was used in the North Lot access road as traffic may have prevented further detailed data acquisition if it was required. Numerous EM-61 lines were also oriented east-west at 30 to 40 foot spacings to provide additional coverage. In the Northwest Corner, a detailed 5-foot spacing between lines oriented north-south was used for the EM-61 survey due to the numerous cultural features in this area.

Contour maps of the EM-61 data are provided for both the Northwest Corner and the North Lot on Figures 3 and 4, respectively. The contour maps show the response over the anomalous zones as well as to nearby metal objects such as the catch basins and other cultural features.

The EM-61 depth of investigation depends on the size of the target, but a typical 55-gallon drum can be detected at approximately 9 feet deep. Rough depth calculations can be made from the EM data, and in the large high anomalous zone that runs north-south, some estimates of metal at 13 feet deep were made.

GPR data were obtained using a GSSI SIR 3000 Digital Radar with a 400 MHz antenna. In the North Lot, GPR data were recorded along lines typically spaced 20 feet apart and oriented north-south. A 10-foot spacing was used in many of the areas with EM anomalous zones. A five-foot line spacing was used in the access road. Numerous GPR lines were also oriented east-west and spaced 20 to 30 feet apart. Additional detail was obtained over many of the EM anomalous zones. In the Northwest Corner a detailed GPR survey was performed along lines spaced 5 feet apart in two directions (north-south and east-west).

Two example GPR profiles are provided on Figure 5. The profiles show distance along the top and estimated depth along the side. The depth is estimated based on the shape and depth of the GPR signature for the water line in the Northwest Corner of the site. A roundtrip travel time of 6 ns/foot was calculated, and is in the range of typical values observed in the Seattle area.

Maximum depth of investigation of the GPR in the Northwest Corner Area was about 6 to 7 feet deep. In the North Lot Area, some GPR targets at 8 to 9 feet were observed. Other areas may have had shallower maximum depths, but large objects about 5 to 6 feet deep or shallower should have been detected by the GPR below most of the site.

The surveys were referenced to numerous reference baselines that were marked using tape measures and white spray paint.

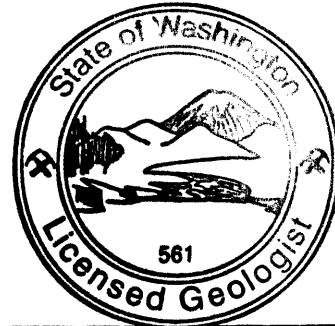
The use of the EM-61 and GPR provided a rapid and non-intrusive means of investigating the area of interest for possible USTs and general soil conditions. No large buried metal objects typical of large USTs were observed in the data. However, because of the numerous variables involved in geophysical investigations, there is a possibility that some features may not have been detected. Only direct observations using test pits or other means can ultimately characterize subsurface conditions.

Please contact me if you have any questions or comments regarding this information, or if you require further assistance. I appreciated the opportunity to work with you on this project and look forward to providing you with geophysical services in the future.

Sincerely,



Philip H. Duoos
Geophysical Consultant



Philip H. Duoos

DESCRIPTION OF METHODS

ELECTROMAGNETICS (EM-61)

The EM-61 is a high-resolution metal detector that can detect both ferrous and non-ferrous metallic objects. It is a rapid, wheel-mounted system requiring one operator, and digitally records data at a high density (usually at 1-foot intervals or less along a survey line).

The EM-61 utilizes time-domain EM theory, and uses a pulsed primary magnetic field to induce EM currents in metallic objects below the instrument. The decay of these currents over time is measured by two receiver coils, and digitally recorded for further processing. The relative response of the anomalies on the two coils can often be evaluated to provide a depth estimate of the buried metal. The EM-61 can detect a 55 gallon drums at depths of over 5 feet, and will also respond to small shallow objects only inches in diameter.

The EM-61 is not affected by changes in subsurface conductivity due to soil and moisture conditions. It is also less sensitive than other methods to surface metal such as buildings, fences, and vehicles as it is focused to detect objects directly below (and above) the receiver coils. However, this also requires that spacing between survey lines should be small to provide adequate coverage.

GROUND PENETRATING RADAR

Some of the uses of GPR include locating buried tanks and drums, delineating boundaries of landfills and trenches, and defining voids and geologic stratigraphy. Although other techniques can also provide this information, GPR is less affected by cultural interferences such as overhead powerlines, buildings, and fences. GPR can also provide higher resolution of the target in many cases. A variety of antennas can be used depending on subsurface conditions and the objective of the survey. Resolution of shallow objects requires higher frequencies, while lower frequencies work better for deeper investigations.

Several factors can affect the effectiveness of the GPR method including reinforced concrete at the surface, the presence of highly conductive materials (such as clays and water), the size, depth, and physical property of the target and; in stratigraphic investigations, the conductivity contrast between stratigraphic units. The presence of numerous buried objects may mask objects and/or stratigraphy below.

EXPLANATION

GEOPHYSICAL RESULTS

QUEST FIELD NORTH LOT & NORTHWEST CORNER

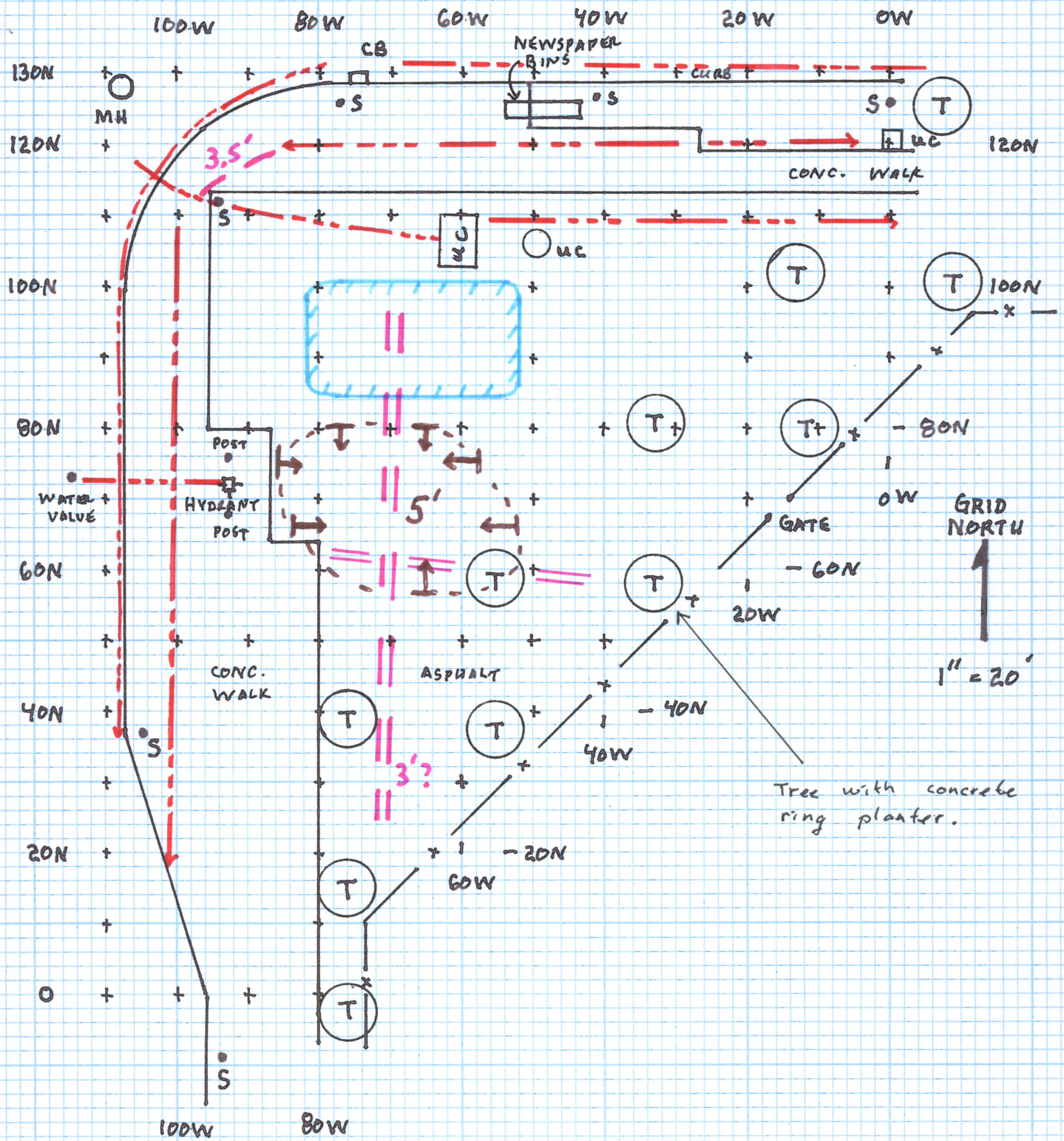
VISIBLE FEATURES

CB		Catch Basin	MH		Manhole
uc		Utility Cover	S		Sign Post

INTERPRETED SUBSURFACE FEATURES

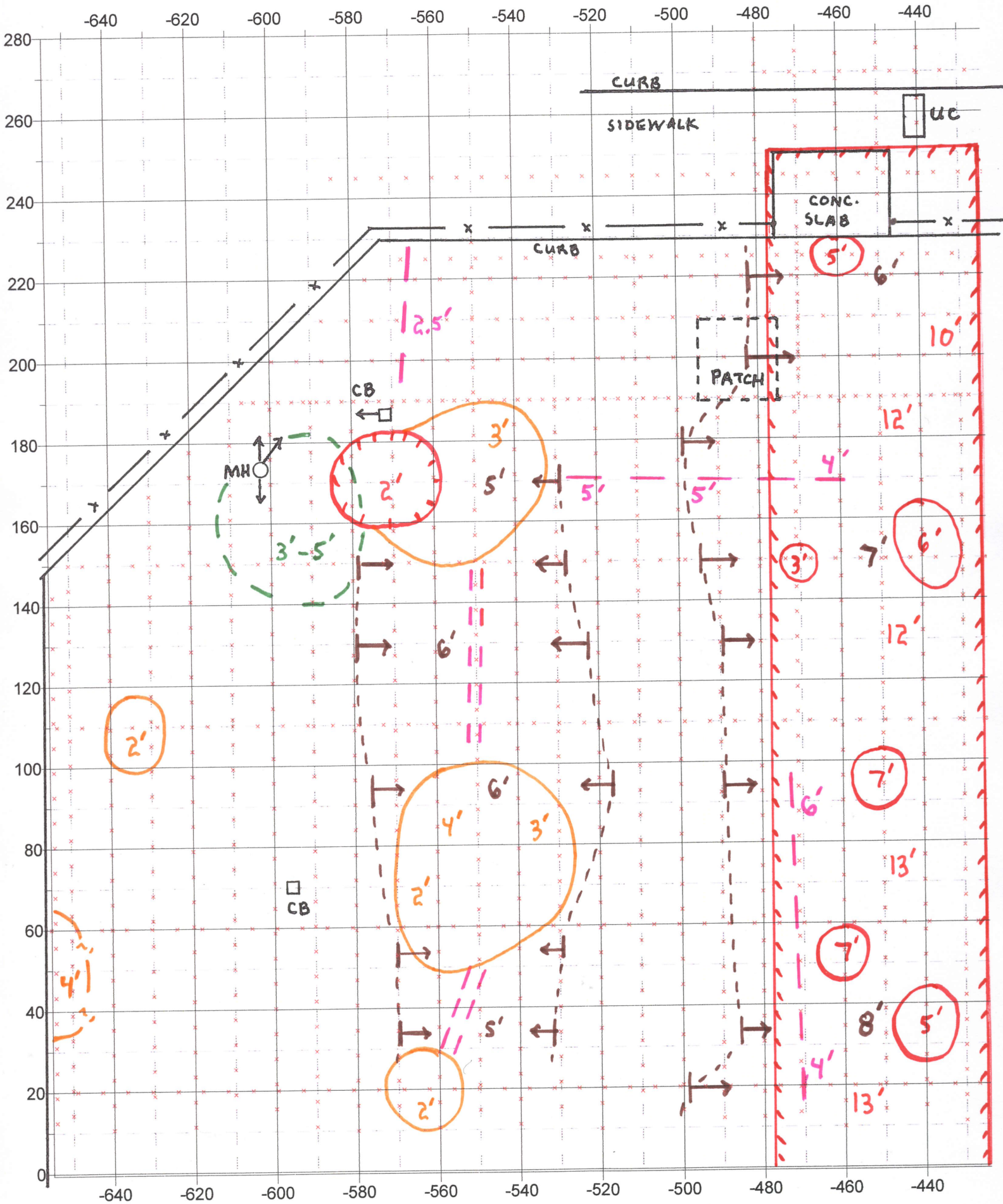
	Utility located by others
	Linear Trend observed with GPR
	Linear Trend observed with EM-61
	EM High Anomalous Zone
	EM Moderate Anomalous Zone
	EM Low Anomalous Zone
	Scattered GPR Targets
	Sloping GPR Layers with Targets

EM linear trends and anomalous zones indicate buried metal. Amount of buried metal is relative to the rank of the zone (High indicates large amounts of buried metal), but can also be affected by depth. Scattered GPR targets indicate small to moderate sized buried objects. Sloping GPR layers typically include scattered targets to the depth (in brown) noted in the sloping layer zone. Depths noted on figures are estimated depths

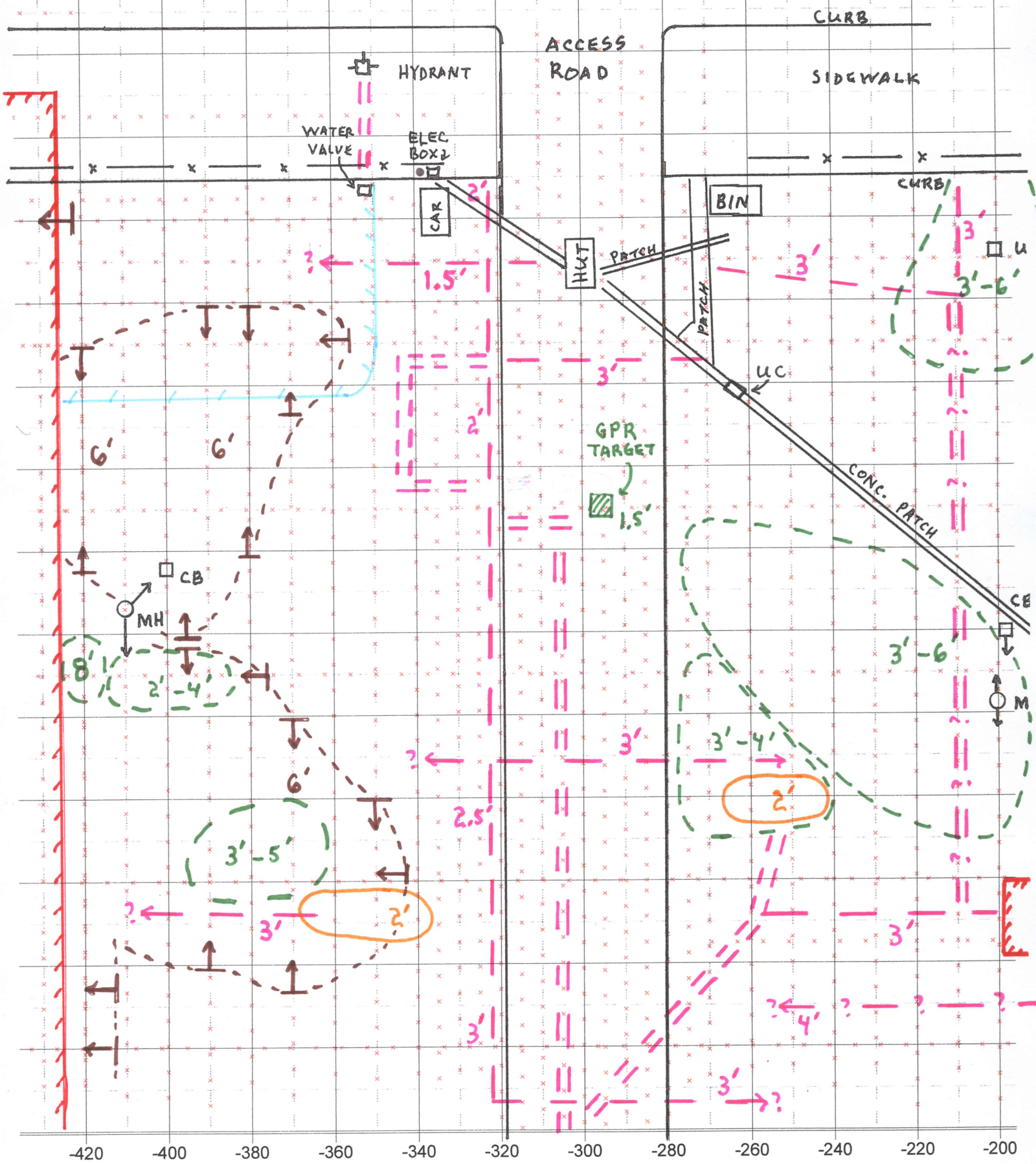


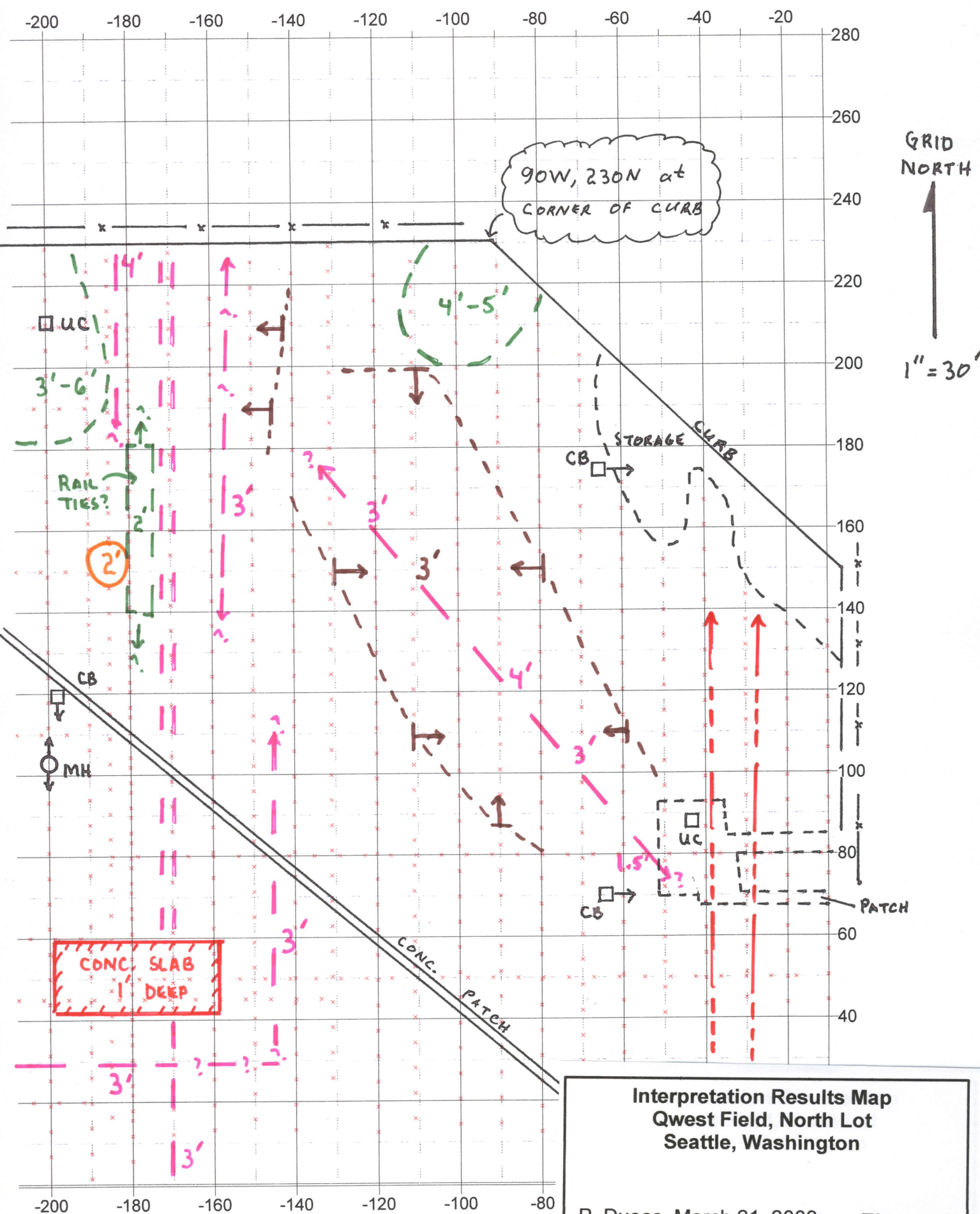
Interpretation Results Map
Qwest Field Lot, Northwest Corner
Seattle, Washington

P. Duoos, March 21, 2008 **Figure 1**



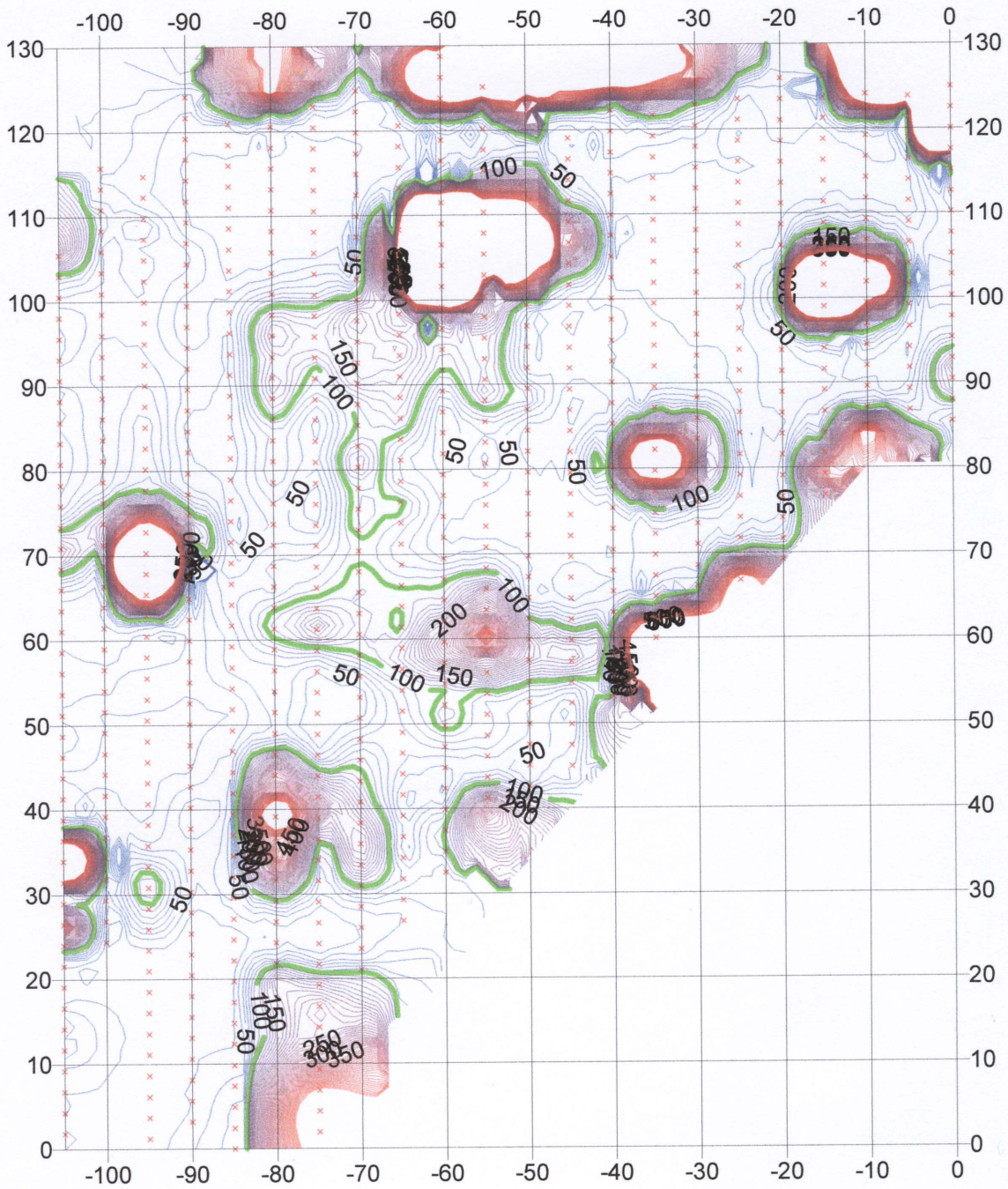
-420 -400 -380 -360 -340 -320 -300 -280 -260 -240 -220 -200





Interpretation Results Map
Qwest Field, North Lot
Seattle, Washington

P. Duoos, March 21, 2008 **Figure 2**



Grid North



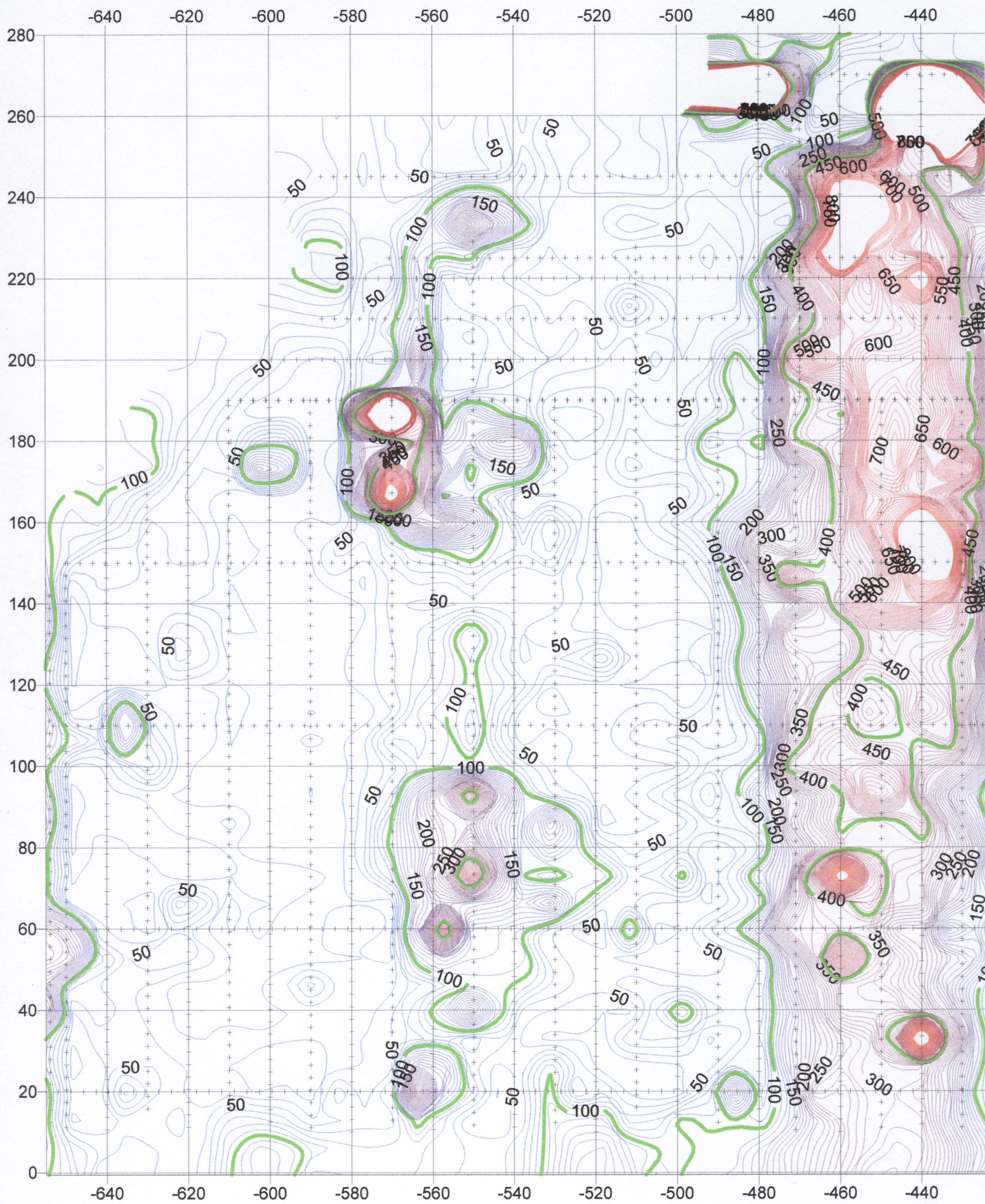
Scale: 1" = 20'

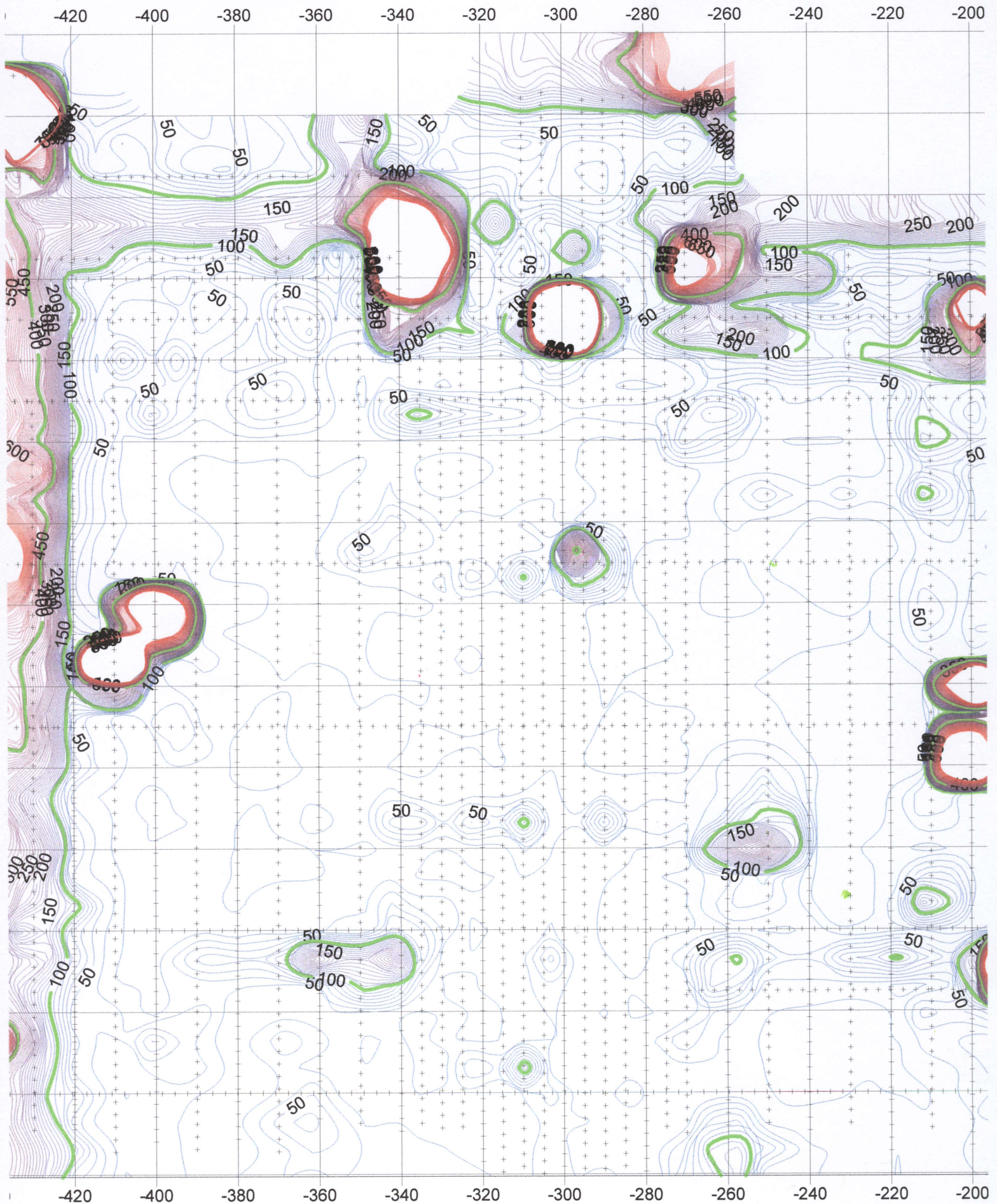
**EM-61 Data Contour Map
Qwest Field, Northwest Corner Area
Seattle, WA**

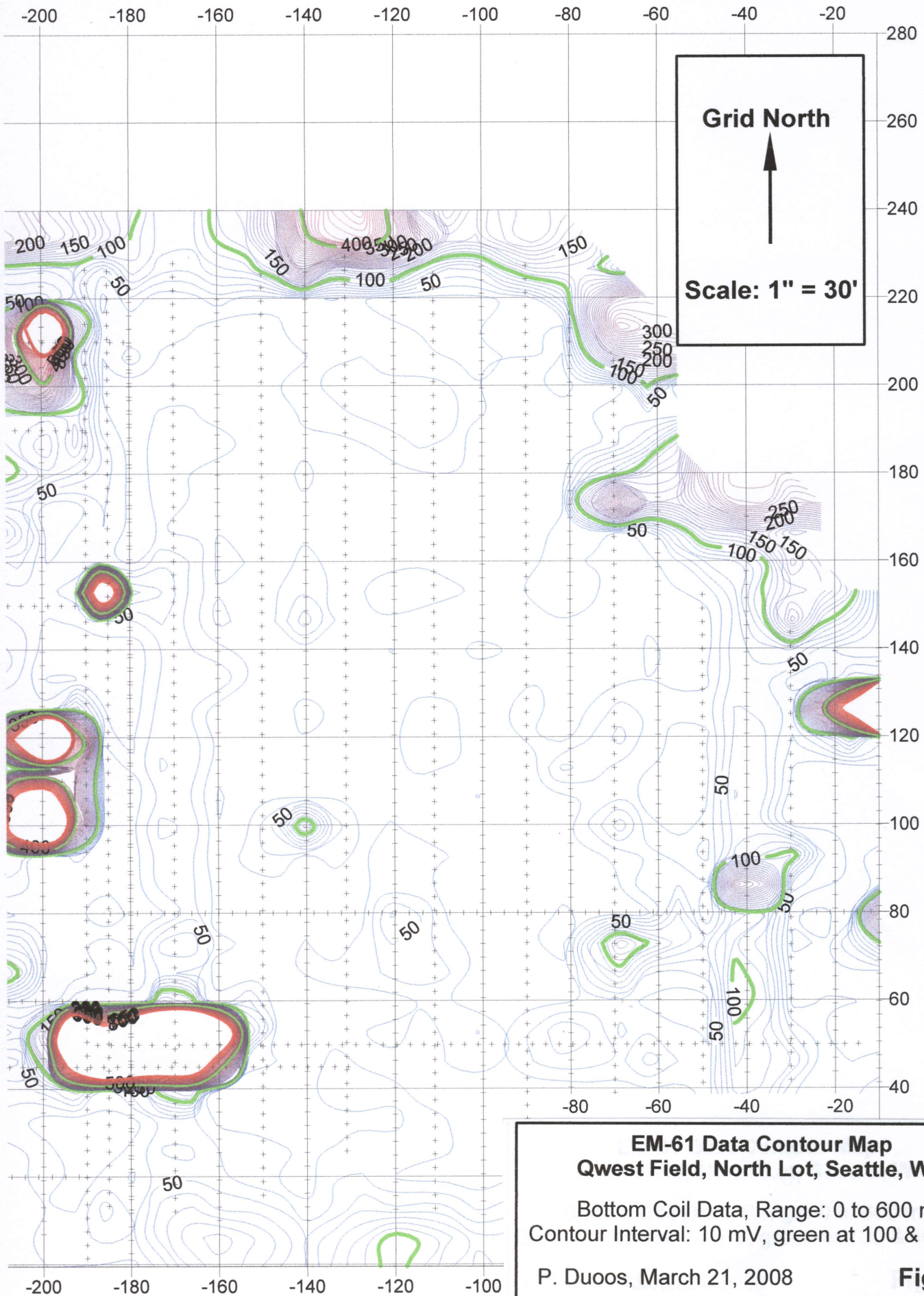
Bottom Coil Data, Range: 0 to 600 mV
Contour Interval: 10 mV, green at 100 mV

P. Duoos, March 21, 2008

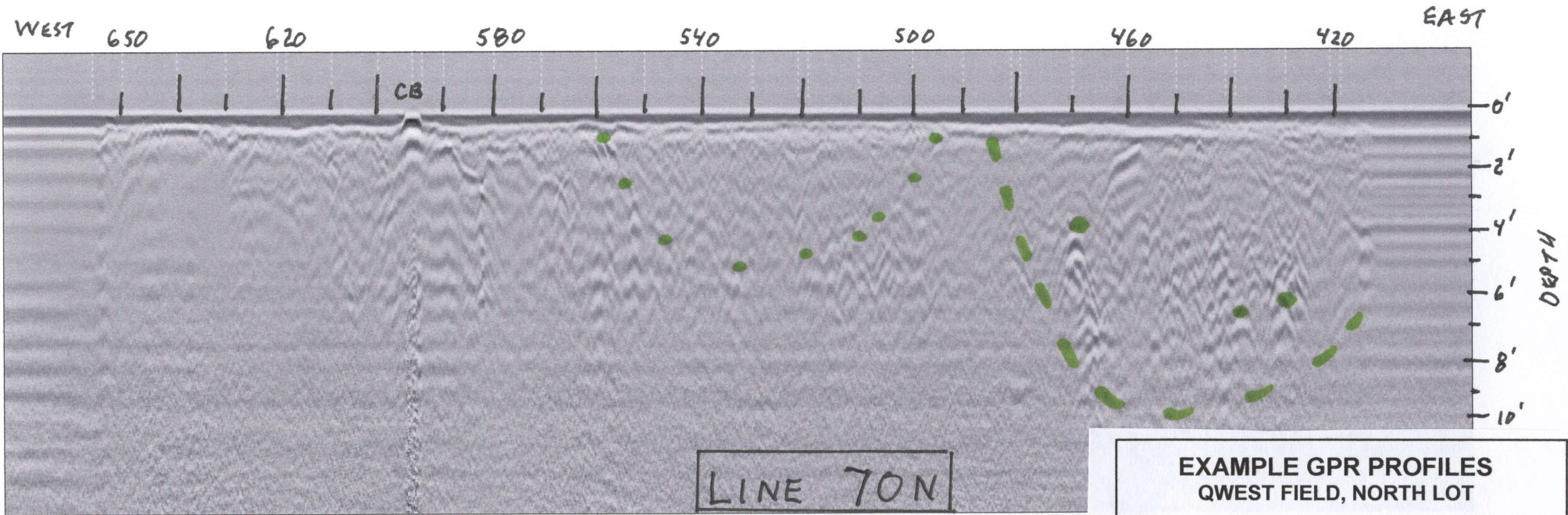
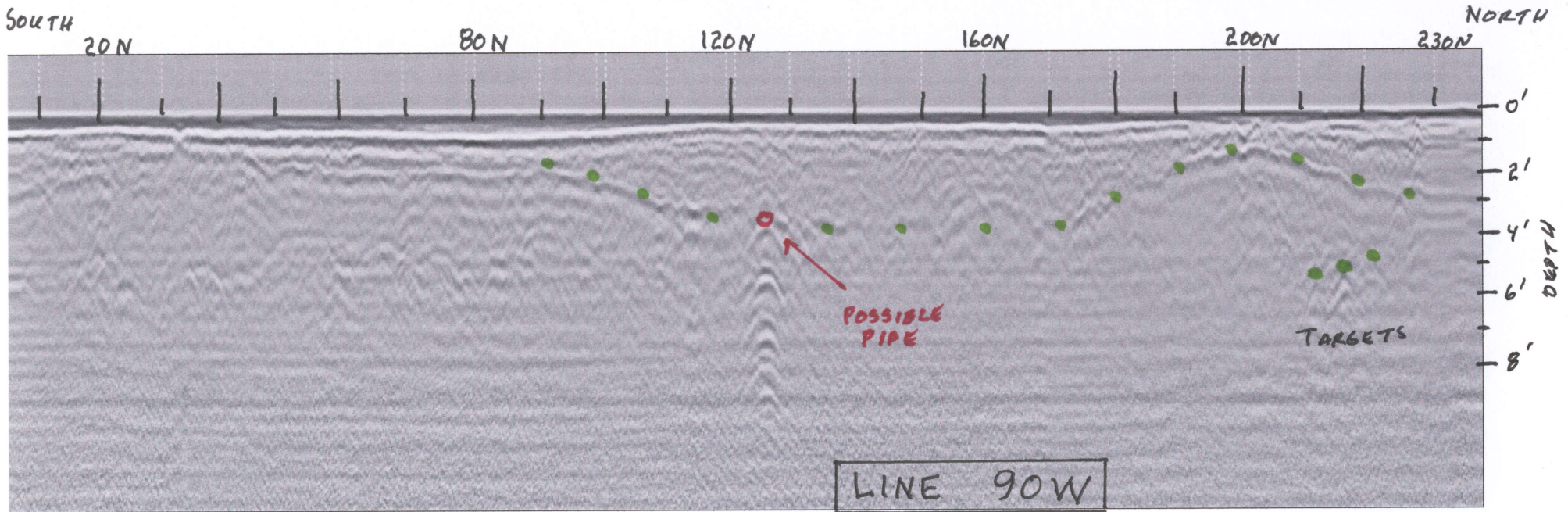
Figure 3







EM-61 Data Contour Map
Qwest Field, North Lot, Seattle, WA
 Bottom Coil Data, Range: 0 to 600 mV
 Contour Interval: 10 mV, green at 100 & 400 mV
 P. Duos, March 21, 2008 **Figure 4**



EXAMPLE GPR PROFILES
QWEST FIELD, NORTH LOT

P. Duos, 3/21/2008 **FIGURE 5**

Vapor Intrusion

TABLE E-1
JOHNSON AND ETTINGER MODEL GROUNDWATER INPUT VALUES
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

Groundwater Model Type: Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings: GW-ADV Versions 3.1; 02/04				
Calculate Incremental Risks from Actual				
Groundwater Concentration:	Yes	Yes	Yes	
Calculate Risk-Based Groundwater Concentration:	Yes	Yes	Yes	
Well ID:	MW-2	MW-3	MW-8	a
Description:	Far west side	Central west portion	NW corner	
ASSUMPTIONS:				
Highest measured benzene concentration in GW:	0.2 U	0.2 U	0.4	µg/L b
Chemical ID:	Benzene	Benzene	Benzene	
Average soil/groundwater temperature:	15.9	16.0	16.9	C c
Depth to water below ground surface (BGS):	7.2	5.4	8.4	ft c
Depth below grade to bottom of enclosed space floor:	15	15	15	cm d
Depth below grade to water table:	219	165	256	cm c
Soil stratum A Thickness:	19	165	122	cm e
Soil stratum B Thickness:	200	0	76	cm f
Soil stratum C Thickness:	0	0	58	cm g
Soil stratum A:	Sand (S)	Loamy Sand (LS)	Loamy Sand (LS)	--- h
Soil stratum B:	Loamy Sand (LS)	---	Sandy loam (SL)	--- h
Soil stratum C:	---	---	Sand (S)	--- h
Soil stratum soil vapor permeability (based on stratum A):	Model calculated	Model calculated	Model calculated	cm ² i
Enclosed space building parameters/dimensions:	Default	Default	Default	--- j
Carcinogen/noncarcinogen parameters:	Default	Default	Default	--- j
Indoor air exchange rate:	1.5	1.5	1.5	k
Average vapor flow rate into buildings:	Model calculated	Model calculated	Model calculated	L/min l
Reasonable Maximum Exposure Assumptions:	Commercial	Commercial	Commercial	m
Atc:	70	70	70	yr n
Atnc:	30	30	30	yr o
ED:	30	30	30	yr p
EF:	250	250	250	days q
IR:	7	7	7	m ³ /day r
Target Risk:	1.0E-06	1.0E-06	1.0E-06	s
RESULTS:				
Benzene incremental indoor air risk (carcinogen):	1.9E-09	1.3E-09	4.3E-09	unitless t
Benzene target groundwater concentration (carcinogen):	107	150	93	µg/L u

Notes:

U = Analyte not detected at or above the reporting limit.

- a Monitoring well on west side of North Lot Development.
- b Groundwater sampling results from February through November 2008. For groundwater concentrations listed by the laboratory as non-detect (U), the benzene value was assumed to be 100% of the laboratory reporting limit.
- c Based on field notes, field sampling forms, and soil boring logs.
- d JE model default value.
- e Sum of all A layers within the representative boring.
- f Sum of all B layers within representative boring.
- g Sum of all C layers within representative boring.
- h Based on JE Guidance Manual Table 3, and soil boring logs.
- i Soil stratum A used by model to calculate soil vapor permeability.
- j Based on JE guidance for residential buildings or modified for commercial inputs.
- k Based on a study of 38 commercial buildings in the Pacific Northwest in book titled: *Sick Building Syndrome: Sources, Health Effects, Mitigation (Pollution Technology Review)*, Baechler and Hadley 1992, p. 58.
- l Calculated by JE model based on available site-specific inputs.
- m Exposure assumptions based on commercial building use on building floor directly above ground level.
- n ATc = Averaging time for carcinogens.
- o ATnc = Averaging time for noncarcinogens.
- p ED = Exposure duration.
- q EF = Exposure frequency.
- r IR = Inhalation rate.
- s Risk = 1.0E-06 for MTCA Method B unrestricted use (including residential and commercial uses).
- t JE model calculated benzene incremental risk from vapor intrusion to indoor air (carcinogen).
- u JE model calculated risk-based groundwater concentration protective of indoor air (carcinogen).

DRAFT

**TABLE E-2
JOHNSON AND ETTINGER MODEL SOIL INPUT VALUES
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Soil Model Type: Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings: SL-ADV Versions 3.1; 02/04					
Calculate Incremental Risks from Actual					
Soil Concentration Borings:	Yes	Yes			
Calculate Risk-Based Soil Concentration:					
Boring or Well ID:	Average of 11 borings	Excludes B-23 and B-26			a
Description:	West Side of Center Drive Lane	West Side of Center Drive Lane			
ASSUMPTIONS:					
Highest measured benzene concentration in soil:	28,835 (b1)	1,252 (b2)	µg/kg		b
Chemical ID:	Benzene	Benzene			
Average soil/groundwater temperature:	16.4	16.4	C		c
Depth below grade to bottom of enclosed space floor:	15	15	cm		d
Depth to water below ground surface (BGS):	6	6	ft		c,e
Depth to water below ground surface (BGS):	183	183	cm		c,e
Depth BG to top of contamination:	5	5	ft		c,e
Depth BG to top of contamination:	153	153	cm		c,e
Depth BG to bottom of contamination:	6.0	6.0	ft		c,e
Depth BG to bottom of contamination:	183	183	cm		c,e
Soil stratum A Thickness:	46	46	cm		f
Soil stratum B Thickness:	107	107	cm		g
Soil stratum C Thickness:	0	0	cm		h
Soil stratum A:	Sandy loam (SL)	Sandy loam (SL)	---		e,i
Soil stratum B:	Loamy Sand (LS)	Loamy Sand (LS)	---		e,i
Soil stratum C:	---	---	---		e,i
Soil stratum soil vapor permeability (based on stratum A):	Model calculated	Model calculated	cm ²		j
Enclosed space building parameters/dimensions:	Default	Default	---		k
Carcinogen/noncarcinogen parameters:	Default	Default	---		k
Indoor air exchange rate:	1.5	1.5	1/h		l
Average vapor flow rate into buildings:	Model calculated	Model calculated	L/min		m
Reasonable Maximum Exposure Assumptions:	Commercial	Commercial			n
Atc:	70	70	yr		o
ATnc:	30	30	yr		p
ED:	30	30	yr		q
EF:	250	250	days		r
IR:	7	7	m ³ /day		s
Target Risk:	1.0E-06	1.0E-06	unitless		t
RESULTS:					
Benzene Incremental indoor air risk (carcinogen):	1.2E-05	5.1E-07	unitless		u
Benzene target soil concentration (carcinogen):	2,450	2,450	µg/kg		v

Notes:

U = Analyte not detected at or above the reporting limit.

█ = Indicates an elevated JE model estimated risk or indicates a measured concentration above JE model estimated risk-based concentration.

- a Soil samples were collected and analyzed for benzene from February through October 2008 for borings: B-16, -17, -18, -19, -20, -23(MW-8), -24, 26, -27, -28, -45.
- b Value is the 95% upper confidence limit (UCL mean) on the mean of 11 soil borings on property of concern that were analyzed for benzene. "b1" refers to the UCL mean based on all 11 soil borings that were analyzed for benzene, "b2" refers to the UCL mean in which the borings with the two highest detected benzene concentrations (the northwesternmost part of the property) were excluded from the UCL mean calculation. The 95% UCL was calculated with ProUCL version 4.00.02 statistical software developed by the Technical Support Center (TSC) of the U.S. Environmental Protection Agency (EPA).
- c Based on field notes, field sampling forms, and soil boring logs.
- d JE model default value.
- e Based on a survey of 26 borings on the west side of the north lot, B-16 was chosen as the boring with most representative soil conditions and was used in the JE model.
- f Sum of all A layers within the representative boring.
- g Sum of all B layers within representative boring.
- h Sum of all C layers within representative boring.
- i Based on JE Guidance Manual Table 3, and soil boring logs.
- j Soil stratum A used by model to calculate soil vapor permeability.
- k Based on JE guidance for residential buildings or modified for commercial inputs.
- l Based on a study of 38 commercial buildings in the Pacific Northwest in book titled: *Sick Building Syndrome: Sources, Health Effects, Mitigation (Pollution Technology Review)*, Baechler and Hadley 1992, p. 58.
- m Calculated by JE model based on available site-specific inputs.
- n Exposure assumptions based on commercial building use on building floor directly above ground level.
- o ATc = Averaging time for carcinogens.
- p ATnc = Averaging time for noncarcinogens.
- q ED = Exposure duration.
- r EF = Exposure frequency.
- s IR = Inhalation rate.
- t Risk = 1.0E-06 for MTCA Method B unrestricted use (including residential and commercial uses).
- u JE model calculated benzene incremental risk from vapor intrusion to indoor air (carcinogen).
- v JE model calculated risk-based soil concentration protective of indoor air (carcinogen).

DRAFT

**Laboratory Analytical Results
(on CD-ROM)**



Analytical Resources, Incorporated

Analytical Chemists and Consultants

March 15, 2008

Kathryn Hartley
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest Field North Lot
ARI Job: MK66

Dear Kathryn:

Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted eight soil samples and five water samples and a trip blank on February 28, 2008. The samples were received at cooler temperatures of 3.4° and 3.4°C.

The samples were analyzed for VOCs, PCBs, HCID with NWTPH-Dx and NWTPH-Gx follow ups, PCBs, PAHs, Total and Dissolved Metals, NWTPH-Gx plus BTEX and NWTPH-Dx, as requested on the COC.

The sample duplicate RPDs for chromium and lead are outside of the +/- 20 % control limit for the total metals analysis for sample **B-1-9-9.5** on 3/4/08. All percent recoveries and all other QC are in control; therefore no further corrective action was taken.

No other analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

Date 2/27/08
Page 1 of 1

Chain-of-Custody Record

Project Name West Field North Lot Project No. 1014001
 Project Location/Event West Field North Parking Lot, Seattle
 Sampler's Name David Nelson (DMN)
 Project Contact Kathryn Martley, Anne Halvorson
 Send Results To _____

Testing Parameters

Turnaround Time
 Standard
 Accelerated

Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-HCID	MTCAS Metals (Total)	PAHS	NWTPH-Dx	NWTPH-G	VOCs	Archive	Observations/Comments
B-1-9-9.5	2/27/08	0830	S	2	X	X						<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <i>some water samples very turbid</i> NWTPH-Dx: <input checked="" type="checkbox"/> run acid wash/silica gel cleanup <input type="checkbox"/> run samples standardized to _____ product <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input checked="" type="checkbox"/> Dissolved metal water samples field filtered Other _____ _____ _____ _____
B-1-GW		0845	W	10			X	X	X	X		
B-2-9-9.5		1005	S	2	X	X						
B-2-20-21		1015	S	2	X	X		X				
B-2-GW		1030	W	10			X	X	X			
B-3-7.5-8.5		1200	S	2	X	X	X	X	X			
B-3-GW		1215	W	10			X	X	X			
B-4-6-7		1315	S	2	X	X	X	X	X			
B-5-10-11		1420	S	2	X	X	X	X	X			
B-6-6-6.5		1510	S	2	X	X	X	X	X			
B-6-GW		1520	W	10			X	X	X			
B-7-6-7		1600	S	2	X	X	X	X	X			
B-7-GW		1615	W	7			X	X	X			
Trip blank			W	1						X		

Special Shipment/Handling or Storage Requirements

Method of Shipment

Relinquished by David M. Nelson
 Signature _____
 Printed Name David M. Nelson
 Company LAI
 Date 2/27/08 Time 1950

Received by Emily Crowns
 Signature _____
 Printed Name Emily Crowns
 Company API
 Date 2/28/08 Time 916

Relinquished by _____
 Signature _____
 Printed Name _____
 Company _____
 Date _____ Time _____

Received by _____
 Signature _____
 Printed Name _____
 Company _____
 Date _____ Time _____



Cooler Receipt Form

ARI Client: LANNAU
COC No:
Assigned ARI Job No: MK66

Project Name: QUEST FIELD NORTH LOT
Delivered by: EC
Tracking No:

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
Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 3.4 3.4 °C

Cooler Accepted by: EC Date: 2/28/08 Time: 916

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? ICE
Was sufficient ice used (if appropriate)? YES NO
Were all bottles sealed in individual plastic bags? YES NO
Did all bottle arrive in good condition (unbroken)? YES NO
Were all bottle labels complete and legible? 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 checklist) YES NO
Were all VOC vials free of air bubbles? NA YES NO
Was sufficient amount of sample sent in each bottle? YES NO

Samples Logged by: B6 Congleton Date: 2/28/08 Time: 1230

**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

WATER SAMPLE B-2-GW NOT SELECTED FOR
MTEA METALS ON COC BUT METALS VOLUME
PROVIDED.

By:

Date:

Subject: FW: Scan from Upstairs BizHub
From: "Kathryn Hartley" <khartley@landauinc.com>
Date: Tue, 4 Mar 2008 10:26:44 -0800
To: "Kelly Bottem" <kellyb@arilabs.com>
CC: "Anne Halvorsen" <AHalvorsen@landauinc.com>, "Tim Syverson"
<tsyverson@landauinc.com>

Kelly,

Please add the following analyses to samples B-21-20-23:

TPH-HCID

MTCA 5 metals

NWTPH-Dx

PCBs

PAHs

Please add the following analysis to sample B-2-20-21

PCBs

COCs with changes requested are attached. Please confirm that you have received this message.

Thanks,

Kathryn F. Hartley
Senior Staff Scientist
Landau Associates
130 2nd Avenue South
Edmonds, WA 98020
(425) 329-0268

From: administrator@landauinc.com [mailto:administrator@landauinc.com]
Sent: Tuesday, March 04, 2008 3:21 AM

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: B-1-GW

Page 1 of 2

SAMPLE

Lab Sample ID: MK66I

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3807

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: 02/27/08

Reported: 03/04/08

Date Received: 02/28/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 02/28/08 16:47

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-1-GW
SAMPLE

Lab Sample ID: MK66I
LIMS ID: 08-3807
Matrix: Water
Date Analyzed: 02/28/08 16:47

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	106%
Bromofluorobenzene	93.0%
d4-1,2-Dichlorobenzene	114%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-3-GW
SAMPLE

Lab Sample ID: MK66J

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3808

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: 02/27/08

Reported: 03/04/08

Date Received: 02/28/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/03/08 18:18

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-3-GW
SAMPLE

Lab Sample ID: MK66J
LIMS ID: 08-3808
Matrix: Water
Date Analyzed: 03/03/08 18:18

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	95.0%
d8-Toluene	85.8%
Bromofluorobenzene	87.5%
d4-1,2-Dichlorobenzene	98.5%

ORGANICS ANALYSIS DATA SHEET


Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-6-GW
SAMPLE

Lab Sample ID: MK66K

LIMS ID: 08-3809

Matrix: Water

Data Release Authorized: 

Reported: 03/04/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 03/03/08 18:46

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: B-6-GW

Page 2 of 2

SAMPLE

Lab Sample ID: MK66K

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3809

Project: Qwest Field North Lot

Matrix: Water

1014001

Date Analyzed: 03/03/08 18:46

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.0%
d8-Toluene	85.8%
Bromofluorobenzene	88.0%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET


Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-7-GW
SAMPLE

Lab Sample ID: MK66L

LIMS ID: 08-3810

Matrix: Water

Data Release Authorized: 

Reported: 03/04/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 03/03/08 19:13

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	1.3	
67-64-1	Acetone	3.0	6.6	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-7-GW
SAMPLE

Lab Sample ID: MK66L
LIMS ID: 08-3810
Matrix: Water
Date Analyzed: 03/03/08 19:13

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.0%
d8-Toluene	86.5%
Bromofluorobenzene	87.5%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: B-2-GW

Page 1 of 2

SAMPLE

Lab Sample ID: MK66M

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3811

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: 02/27/08

Reported: 03/04/08

Date Received: 02/28/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 02/28/08 18:09

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	5.3	
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	2.2	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	5.9	
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	5.7	
95-47-6	o-Xylene	0.2	2.5	
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-2-GW
SAMPLE

Lab Sample ID: MK66M
LIMS ID: 08-3811
Matrix: Water
Date Analyzed: 02/28/08 18:09

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	0.6	
95-63-6	1,2,4-Trimethylbenzene	0.2	1.1	
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	150	ES
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	105%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	107%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-2-GW
REANALYSIS

Lab Sample ID: MK66M

LIMS ID: 08-3811

Matrix: Water

Data Release Authorized:

Reported: 03/04/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Instrument/Analyst: NT3/AAR

Date Analyzed: 02/29/08 15:34

Sample Amount: 5.00 mL

Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	3.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	1.4	
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	4.0	
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
1330-20-7	m,p-Xylene	1.0	3.8	
95-47-6	o-Xylene	1.0	1.7	
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: B-2-GW
REANALYSIS

Lab Sample ID: MK66M
LIMS ID: 08-3811
Matrix: Water
Date Analyzed: 02/29/08 15:34

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	68	
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	101%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: TRIP BLANK
SAMPLE

Page 1 of 2

Lab Sample ID: MK66N


QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3812

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized: 

Date Sampled: 02/27/08

Reported: 03/04/08

Date Received: 02/28/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 02/28/08 15:24

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: TRIP BLANK
SAMPLE

Lab Sample ID: MK66N
LIMS ID: 08-3812
Matrix: Water
Date Analyzed: 02/28/08 15:24

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	105%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-022808

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-022808

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3812

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: NA

Reported: 03/04/08

Date Received: NA

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 02/28/08 14:44

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: MB-022808
METHOD BLANK

Lab Sample ID: MB-022808
LIMS ID: 08-3812
Matrix: Water
Date Analyzed: 02/28/08 14:44

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	103%
Bromofluorobenzene	96.2%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-022908

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-022908

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3811

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: NA

Reported: 03/04/08

Date Received: NA

Instrument/Analyst: NT3/AAR

Sample Amount: 5.00 mL

Date Analyzed: 02/29/08 14:45

Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
1330-20-7	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: MB-022908
METHOD BLANK

Lab Sample ID: MB-022908
LIMS ID: 08-3811
Matrix: Water
Date Analyzed: 02/29/08 14:45

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-030308

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-030308

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3808

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: NA

Reported: 03/04/08

Date Received: NA

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/03/08 16:29

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: MB-030308
METHOD BLANK

Lab Sample ID: MB-030308

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3808

Project: Qwest Field North Lot

Matrix: Water

1014001

Date Analyzed: 03/03/08 16:29

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.2%
d8-Toluene	87.8%
Bromofluorobenzene	85.0%
d4-1,2-Dichlorobenzene	102%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MK66I	B-1-GW	20	107%	106%	93.0%	114%	0
MB-030308	Method Blank	20	96.2%	87.8%	85.0%	102%	0
LCS-030308	Lab Control	20	98.2%	94.8%	96.8%	99.2%	0
LCSD-030308	Lab Control Dup	20	102%	95.0%	93.8%	100%	0
MK66J	B-3-GW	20	95.0%	85.8%	87.5%	98.5%	0
MK66K	B-6-GW	20	98.0%	85.8%	88.0%	102%	0
MK66L	B-7-GW	20	99.0%	86.5%	87.5%	102%	0
MK66M	B-2-GW	20	100%	105%	101%	107%	0
MB-022808	Method Blank	20	100%	103%	96.2%	104%	0
LCS-022808	Lab Control	20	95.8%	97.8%	102%	97.5%	0
LCSD-022808	Lab Control Dup	20	94.2%	99.5%	104%	98.0%	0
MK66N	TRIP BLANK	20	102%	105%	91.5%	103%	0

LCS/MB LIMITS

QC LIMITS

SW8260B

(DCE) = d4-1,2-Dichloroethane
 (TOL) = d8-Toluene
 (BFB) = Bromofluorobenzene
 (DCB) = d4-1,2-Dichlorobenzene

70-131
 80-120
 74-121
 80-120

64-146
 78-125
 71-120
 80-121

Prep Method: SW5030B
 Log Number Range: 08-3807 to 08-3812

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-022908	Method Blank	5	113%	101%	100%	101%	0
LCS-022908	Lab Control	5	113%	102%	102%	100%	0
LCSD-022908	Lab Control Dup	5	113%	102%	102%	100%	0
MK66MRE	B-2-GW	5	114%	101%	101%	101%	0

LCS/MB LIMITS

QC LIMITS

SW8260B

(DCE) = d4-1,2-Dichloroethane	79-120	80-120
(TOL) = d8-Toluene	80-120	80-120
(BFB) = Bromofluorobenzene	80-120	72-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-124

Prep Method: SW5030B
 Log Number Range: 08-3807 to 08-3812

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-022808

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-022808

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3812

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: NA

Reported: 03/04/08

Date Received: NA

Instrument/Analyst LCS: NT5/JZ

Sample Amount LCS: 20.0 mL

LCSD: NT5/JZ

LCSD: 20.0 mL

Date Analyzed LCS: 02/28/08 13:21

Purge Volume LCS: 20.0 mL

LCSD: 02/28/08 14:07

LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
Bromomethane	4.8	4.0	120%	4.8	4.0	120%	0.0%
Vinyl Chloride	3.5	4.0	87.5%	3.6	4.0	90.0%	2.8%
Chloroethane	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
Methylene Chloride	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
Acetone	16.3	20.0	81.5%	16.2	20.0	81.0%	0.6%
Carbon Disulfide	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
1,1-Dichloroethene	3.4	4.0	85.0%	3.5	4.0	87.5%	2.9%
1,1-Dichloroethane	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
trans-1,2-Dichloroethene	3.3	4.0	82.5%	3.5	4.0	87.5%	5.9%
cis-1,2-Dichloroethene	3.4	4.0	85.0%	3.5	4.0	87.5%	2.9%
Chloroform	3.2	4.0	80.0%	3.3	4.0	82.5%	3.1%
1,2-Dichloroethane	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
2-Butanone	17.4	20.0	87.0%	18.1	20.0	90.5%	3.9%
1,1,1-Trichloroethane	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
Carbon Tetrachloride	3.4	4.0	85.0%	3.5	4.0	87.5%	2.9%
Vinyl Acetate	3.3	4.0	82.5%	3.5	4.0	87.5%	5.9%
Bromodichloromethane	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
1,2-Dichloropropane	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
cis-1,3-Dichloropropene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
Trichloroethene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
Dibromochloromethane	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
1,1,2-Trichloroethane	3.1	4.0	77.5%	3.3	4.0	82.5%	6.2%
Benzene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
trans-1,3-Dichloropropene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
2-Chloroethylvinylether	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
Bromoform	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
4-Methyl-2-Pentanone (MIBK)	14.6	20.0	73.0%	15.4	20.0	77.0%	5.3%
2-Hexanone	14.2	20.0	71.0%	15.5	20.0	77.5%	8.8%
Tetrachloroethene	3.4	4.0	85.0%	3.7	4.0	92.5%	8.5%
1,1,2,2-Tetrachloroethane	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
Toluene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
Chlorobenzene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
Ethylbenzene	3.3	4.0	82.5%	3.5	4.0	87.5%	5.9%
Styrene	3.0	4.0	75.0%	3.1	4.0	77.5%	3.3%
Trichlorofluoromethane	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
1,1,2-Trichloro-1,2,2-trifluoroethane	3.4	4.0	85.0%	3.5	4.0	87.5%	2.9%
m,p-Xylene	6.4	8.0	80.0%	6.7	8.0	83.8%	4.6%
o-Xylene	2.9	4.0	72.5%	3.1	4.0	77.5%	6.7%
1,2-Dichlorobenzene	3.4	4.0	85.0%	3.5	4.0	87.5%	2.9%
1,3-Dichlorobenzene	3.5	4.0	87.5%	3.6	4.0	90.0%	2.8%
1,4-Dichlorobenzene	3.4	4.0	85.0%	3.5	4.0	87.5%	2.9%
Acrolein	17.0	20.0	85.0%	18.2	20.0	91.0%	6.8%
Methyl Iodide	4.3	4.0	108%	4.6	4.0	115%	6.7%
Bromoethane	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-022808

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-022808

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3812

Project: Qwest Field North Lot

Matrix: Water

1014001

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	3.2	4.0	80.0%	3.2	4.0	80.0%	0.0%
1,1-Dichloropropene	3.6	4.0	90.0%	3.8	4.0	95.0%	5.4%
Dibromomethane	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
1,1,1,2-Tetrachloroethane	3.3	4.0	82.5%	3.5	4.0	87.5%	5.9%
1,2-Dibromo-3-chloropropane	3.1	4.0	77.5%	3.2	4.0	80.0%	3.2%
1,2,3-Trichloropropane	3.2	4.0	80.0%	3.2	4.0	80.0%	0.0%
trans-1,4-Dichloro-2-butene	3.3	4.0	82.5%	3.5	4.0	87.5%	5.9%
1,3,5-Trimethylbenzene	3.2	4.0	80.0%	3.3	4.0	82.5%	3.1%
1,2,4-Trimethylbenzene	3.2	4.0	80.0%	3.3	4.0	82.5%	3.1%
Hexachlorobutadiene	3.5	4.0	87.5%	3.6	4.0	90.0%	2.8%
Ethylene Dibromide	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
Bromochloromethane	3.2	4.0	80.0%	3.3	4.0	82.5%	3.1%
2,2-Dichloropropane	3.5	4.0	87.5%	3.6	4.0	90.0%	2.8%
1,3-Dichloropropane	3.3	4.0	82.5%	3.6	4.0	90.0%	8.7%
Isopropylbenzene	3.2	4.0	80.0%	3.3	4.0	82.5%	3.1%
n-Propylbenzene	3.8	4.0	95.0%	3.9	4.0	97.5%	2.6%
Bromobenzene	3.4	4.0	85.0%	3.5	4.0	87.5%	2.9%
2-Chlorotoluene	3.6	4.0	90.0%	3.8	4.0	95.0%	5.4%
4-Chlorotoluene	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
tert-Butylbenzene	3.1	4.0	77.5%	3.2	4.0	80.0%	3.2%
sec-Butylbenzene	3.3	4.0	82.5%	3.5	4.0	87.5%	5.9%
4-Isopropyltoluene	3.2	4.0	80.0%	3.3	4.0	82.5%	3.1%
n-Butylbenzene	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
1,2,4-Trichlorobenzene	3.5	4.0	87.5%	3.6	4.0	90.0%	2.8%
Naphthalene	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
1,2,3-Trichlorobenzene	3.6	4.0	90.0%	3.7	4.0	92.5%	2.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.8%	94.2%
d8-Toluene	97.8%	99.5%
Bromofluorobenzene	102%	104%
d4-1,2-Dichlorobenzene	97.5%	98.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-022908

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LAB CONTROL SAMPLE

Lab Sample ID: LCS-022908

QC Report No: MK66-Landau Associates, Inc.

LIMS ID: 08-3811

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: NA

Reported: 03/04/08

Date Received: NA

Instrument/Analyst LCS: NT3/AAR

Sample Amount LCS: 5.00 mL

LCSD: NT3/AAR

LCSD: 5.00 mL

Date Analyzed LCS: 02/29/08 13:57

Purge Volume LCS: 5.0 mL

LCSD: 02/29/08 14:21

LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	51.9	50.0	104%	52.1	50.0	104%	0.4%
Bromomethane	40.8	50.0	81.6%	42.6	50.0	85.2%	4.3%
Vinyl Chloride	51.3	50.0	103%	52.4	50.0	105%	2.1%
Chloroethane	46.6	50.0	93.2%	45.8	50.0	91.6%	1.7%
Methylene Chloride	49.1	50.0	98.2%	50.6	50.0	101%	3.0%
Acetone	304	250	122%	320	250	128%	5.1%
Carbon Disulfide	49.6	50.0	99.2%	50.0	50.0	100%	0.8%
1,1-Dichloroethene	49.8	50.0	99.6%	50.7	50.0	101%	1.8%
1,1-Dichloroethane	51.2	50.0	102%	52.8	50.0	106%	3.1%
trans-1,2-Dichloroethene	49.2	50.0	98.4%	50.5	50.0	101%	2.6%
cis-1,2-Dichloroethene	50.0	50.0	100%	51.7	50.0	103%	3.3%
Chloroform	50.8	50.0	102%	52.2	50.0	104%	2.7%
1,2-Dichloroethane	50.4	50.0	101%	51.2	50.0	102%	1.6%
2-Butanone	293	250	117%	307	250	123%	4.7%
1,1,1-Trichloroethane	50.1	50.0	100%	51.4	50.0	103%	2.6%
Carbon Tetrachloride	46.2	50.0	92.4%	46.9	50.0	93.8%	1.5%
Vinyl Acetate	53.7	50.0	107%	55.9	50.0	112%	4.0%
Bromodichloromethane	48.1	50.0	96.2%	49.1	50.0	98.2%	2.1%
1,2-Dichloropropane	48.4	50.0	96.8%	50.3	50.0	101%	3.9%
cis-1,3-Dichloropropene	49.0	50.0	98.0%	50.4	50.0	101%	2.8%
Trichloroethene	46.9	50.0	93.8%	48.1	50.0	96.2%	2.5%
Dibromochloromethane	47.2	50.0	94.4%	47.2	50.0	94.4%	0.0%
1,1,2-Trichloroethane	47.6	50.0	95.2%	49.0	50.0	98.0%	2.9%
Benzene	48.3	50.0	96.6%	49.6	50.0	99.2%	2.7%
trans-1,3-Dichloropropene	50.2	50.0	100%	50.6	50.0	101%	0.8%
2-Chloroethylvinylether	52.5	50.0	105%	54.6	50.0	109%	3.9%
Bromoform	45.5	50.0	91.0%	45.4	50.0	90.8%	0.2%
4-Methyl-2-Pentanone (MIBK)	270	250	108%	284	250	114%	5.1%
2-Hexanone	280	250	112%	296	250	118%	5.6%
Tetrachloroethene	44.5	50.0	89.0%	45.3	50.0	90.6%	1.8%
1,1,2,2-Tetrachloroethane	51.0	50.0	102%	53.3	50.0	107%	4.4%
Toluene	47.2	50.0	94.4%	48.4	50.0	96.8%	2.5%
Chlorobenzene	47.0	50.0	94.0%	47.9	50.0	95.8%	1.9%
Ethylbenzene	48.4	50.0	96.8%	50.6	50.0	101%	4.4%
Styrene	49.6	50.0	99.2%	50.8	50.0	102%	2.4%
Trichlorofluoromethane	45.9	50.0	91.8%	36.8	50.0	73.6%	22.0%
1,1,2-Trichloro-1,2,2-trifluoroethane	49.9	50.0	99.8%	51.0	50.0	102%	2.2%
m,p-Xylene	95.8	100	95.8%	98.2	100	98.2%	2.5%
o-Xylene	48.1	50.0	96.2%	49.1	50.0	98.2%	2.1%
1,2-Dichlorobenzene	46.6	50.0	93.2%	47.7	50.0	95.4%	2.3%
1,3-Dichlorobenzene	46.5	50.0	93.0%	47.2	50.0	94.4%	1.5%
1,4-Dichlorobenzene	46.6	50.0	93.2%	47.7	50.0	95.4%	2.3%
Acrolein	292	250	117%	312	250	125%	6.6%
Methyl Iodide	40.5	50.0	81.0%	42.6	50.0	85.2%	5.1%
Bromoethane	48.5	50.0	97.0%	49.6	50.0	99.2%	2.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: LCS-022908
LAB CONTROL SAMPLE

Lab Sample ID: LCS-022908
LIMS ID: 08-3811
Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	57.6	50.0	115%	60.5	50.0	121%	4.9%
1,1-Dichloropropene	49.6	50.0	99.2%	50.7	50.0	101%	2.2%
Dibromomethane	48.0	50.0	96.0%	49.5	50.0	99.0%	3.1%
1,1,1,2-Tetrachloroethane	46.2	50.0	92.4%	47.0	50.0	94.0%	1.7%
1,2-Dibromo-3-chloropropane	54.4	50.0	109%	57.0	50.0	114%	4.7%
1,2,3-Trichloropropane	50.8	50.0	102%	52.0	50.0	104%	2.3%
trans-1,4-Dichloro-2-butene	53.9	50.0	108%	54.7	50.0	109%	1.5%
1,3,5-Trimethylbenzene	50.8	50.0	102%	51.8	50.0	104%	1.9%
1,2,4-Trimethylbenzene	50.8	50.0	102%	51.8	50.0	104%	1.9%
Hexachlorobutadiene	47.2	50.0	94.4%	49.2	50.0	98.4%	4.1%
Ethylene Dibromide	48.5	50.0	97.0%	49.8	50.0	99.6%	2.6%
Bromochloromethane	48.8	50.0	97.6%	50.0	50.0	100%	2.4%
2,2-Dichloropropane	49.5	50.0	99.0%	50.6	50.0	101%	2.2%
1,3-Dichloropropane	49.5	50.0	99.0%	51.0	50.0	102%	3.0%
Isopropylbenzene	49.9	50.0	99.8%	50.8	50.0	102%	1.8%
n-Propylbenzene	51.0	50.0	102%	52.0	50.0	104%	1.9%
Bromobenzene	46.0	50.0	92.0%	46.5	50.0	93.0%	1.1%
2-Chlorotoluene	49.7	50.0	99.4%	50.4	50.0	101%	1.4%
4-Chlorotoluene	50.5	50.0	101%	51.4	50.0	103%	1.8%
tert-Butylbenzene	49.2	50.0	98.4%	50.2	50.0	100%	2.0%
sec-Butylbenzene	50.8	50.0	102%	51.8	50.0	104%	1.9%
4-Isopropyltoluene	51.2	50.0	102%	52.3	50.0	105%	2.1%
n-Butylbenzene	54.3	50.0	109%	55.2	50.0	110%	1.6%
1,2,4-Trichlorobenzene	47.2	50.0	94.4%	49.0	50.0	98.0%	3.7%
Naphthalene	53.7	50.0	107%	56.1	50.0	112%	4.4%
1,2,3-Trichlorobenzene	47.0	50.0	94.0%	48.2	50.0	96.4%	2.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	113%	113%
d8-Toluene	102%	102%
Bromofluorobenzene	102%	102%
d4-1,2-Dichlorobenzene	100%	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: LCS-030308
LAB CONTROL SAMPLE

Lab Sample ID: LCS-030308
LIMS ID: 08-3808
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 03/04/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/JZ
LCSD: NT5/JZ
Date Analyzed LCS: 03/03/08 15:35
LCSD: 03/03/08 16:02

Sample Amount LCS: 20.0 mL
LCSD: 20.0 mL
Purge Volume LCS: 20.0 mL
LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromomethane	3.6	4.0	90.0%	3.8	4.0	95.0%	5.4%
Vinyl Chloride	4.2	4.0	105%	4.5	4.0	112%	6.9%
Chloroethane	4.4	4.0	110%	4.7	4.0	118%	6.6%
Methylene Chloride	4.2	4.0	105%	4.4	4.0	110%	4.7%
Acetone	19.7	20.0	98.5%	21.9	20.0	110%	10.6%
Carbon Disulfide	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,1-Dichloroethene	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,1-Dichloroethane	4.3	4.0	108%	4.6	4.0	115%	6.7%
trans-1,2-Dichloroethene	4.2	4.0	105%	4.5	4.0	112%	6.9%
cis-1,2-Dichloroethene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Chloroform	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,2-Dichloroethane	4.3	4.0	108%	4.5	4.0	112%	4.5%
2-Butanone	20.7	20.0	104%	21.6	20.0	108%	4.3%
1,1,1-Trichloroethane	4.3	4.0	108%	4.6	4.0	115%	6.7%
Carbon Tetrachloride	4.3	4.0	108%	4.4	4.0	110%	2.3%
Vinyl Acetate	4.3	4.0	108%	4.5	4.0	112%	4.5%
Bromodichloromethane	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,2-Dichloropropane	4.1	4.0	102%	4.3	4.0	108%	4.8%
cis-1,3-Dichloropropene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Trichloroethene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Dibromochloromethane	4.1	4.0	102%	4.3	4.0	108%	4.8%
1,1,2-Trichloroethane	4.1	4.0	102%	4.3	4.0	108%	4.8%
Benzene	4.2	4.0	105%	4.3	4.0	108%	2.4%
trans-1,3-Dichloropropene	4.2	4.0	105%	4.3	4.0	108%	2.4%
2-Chloroethylvinylether	4.0	4.0	100%	4.1	4.0	102%	2.5%
Bromoform	4.1	4.0	102%	4.2	4.0	105%	2.4%
4-Methyl-2-Pentanone (MIBK)	20.4	20.0	102%	21.8	20.0	109%	6.6%
2-Hexanone	20.4	20.0	102%	21.5	20.0	108%	5.3%
Tetrachloroethene	4.2	4.0	105%	4.3	4.0	108%	2.4%
1,1,2,2-Tetrachloroethane	4.1	4.0	102%	4.4	4.0	110%	7.1%
Toluene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Chlorobenzene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Ethylbenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%
Styrene	4.3	4.0	108%	4.4	4.0	110%	2.3%
Trichlorofluoromethane	4.5	4.0	112%	4.7	4.0	118%	4.3%
1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	4.0	108%	4.5	4.0	112%	4.5%
m,p-Xylene	8.5	8.0	106%	8.8	8.0	110%	3.5%
o-Xylene	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,2-Dichlorobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
1,3-Dichlorobenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,4-Dichlorobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
Acrolein	22.0	20.0	110%	23.0	20.0	115%	4.4%
Methyl Iodide	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromoethane	4.2	4.0	105%	4.4	4.0	110%	4.7%



ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: LCS-030308
LAB CONTROL SAMPLE

Lab Sample ID: LCS-030308
LIMS ID: 08-3808
Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	4.2	4.0	105%	4.5	4.0	112%	6.9%
1,1-Dichloropropene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Dibromomethane	4.1	4.0	102%	4.2	4.0	105%	2.4%
1,1,1,2-Tetrachloroethane	4.2	4.0	105%	4.3	4.0	108%	2.4%
1,2-Dibromo-3-chloropropane	3.9	4.0	97.5%	4.4	4.0	110%	12.0%
1,2,3-Trichloropropane	4.1	4.0	102%	4.5	4.0	112%	9.3%
trans-1,4-Dichloro-2-butene	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,3,5-Trimethylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
1,2,4-Trimethylbenzene	4.3	4.0	108%	4.6	4.0	115%	6.7%
Hexachlorobutadiene	4.3	4.0	108%	4.4	4.0	110%	2.3%
Ethylene Dibromide	4.2	4.0	105%	4.3	4.0	108%	2.4%
Bromochloromethane	4.2	4.0	105%	4.4	4.0	110%	4.7%
2,2-Dichloropropane	4.3	4.0	108%	4.6	4.0	115%	6.7%
1,3-Dichloropropane	4.2	4.0	105%	4.4	4.0	110%	4.7%
Isopropylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
n-Propylbenzene	4.4	4.0	110%	4.7	4.0	118%	6.6%
Bromobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
2-Chlorotoluene	4.4	4.0	110%	4.6	4.0	115%	4.4%
4-Chlorotoluene	4.3	4.0	108%	4.6	4.0	115%	6.7%
tert-Butylbenzene	4.3	4.0	108%	4.6	4.0	115%	6.7%
sec-Butylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
4-Isopropyltoluene	4.4	4.0	110%	4.6	4.0	115%	4.4%
n-Butylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
1,2,4-Trichlorobenzene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Naphthalene	4.3	4.0	108%	4.6	4.0	115%	6.7%
1,2,3-Trichlorobenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	98.2%	102%
d8-Toluene	94.8%	95.0%
Bromofluorobenzene	96.8%	93.8%
d4-1,2-Dichlorobenzene	99.2%	100%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-1-9-9.5

SAMPLE

Lab Sample ID: MK66A

LIMS ID: 08-3799

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 12:48

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.80 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 25.7%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	< 64 U
91-57-6	2-Methylnaphthalene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	< 64 U
86-73-7	Fluorene	64	< 64 U
85-01-8	Phenanthrene	64	< 64 U
120-12-7	Anthracene	64	< 64 U
206-44-0	Fluoranthene	64	< 64 U
129-00-0	Pyrene	64	< 64 U
56-55-3	Benzo (a) anthracene	64	< 64 U
218-01-9	Chrysene	64	< 64 U
205-99-2	Benzo (b) fluoranthene	64	< 64 U
207-08-9	Benzo (k) fluoranthene	64	< 64 U
50-32-8	Benzo (a) pyrene	64	< 64 U
193-39-5	Indeno (1,2,3-cd) pyrene	64	< 64 U
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	< 64 U
132-64-9	Dibenzofuran	64	< 64 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	64.0%
2-Fluorobiphenyl	60.8%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-2-9-9.5

SAMPLE

Lab Sample ID: MK66B
LIMS ID: 08-3800
Matrix: Soil
Data Release Authorized:
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

Date Extracted: 03/05/08
Date Analyzed: 03/07/08 13:23
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.59 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 39.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	300
91-57-6	2-Methylnaphthalene	66	580
90-12-0	1-Methylnaphthalene	66	640
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	Acenaphthene	66	66
86-73-7	Fluorene	66	< 66 U
85-01-8	Phenanthrene	66	510
120-12-7	Anthracene	66	90
206-44-0	Fluoranthene	66	450
129-00-0	Pyrene	66	290
56-55-3	Benzo (a) anthracene	66	120
218-01-9	Chrysene	66	160
205-99-2	Benzo (b) fluoranthene	66	66
207-08-9	Benzo (k) fluoranthene	66	100
50-32-8	Benzo (a) pyrene	66	< 66 U
193-39-5	Indeno (1,2,3-cd) pyrene	66	< 66 U
53-70-3	Dibenz (a,h) anthracene	66	< 66 U
191-24-2	Benzo (g,h,i) perylene	66	< 66 U
132-64-9	Dibenzofuran	66	180

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	60.4%
2-Fluorobiphenyl	67.6%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-4-6-7

SAMPLE

Lab Sample ID: MK66C

LIMS ID: 08-3801

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 13:58

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.92 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 12.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	63	< 63 U
91-57-6	2-Methylnaphthalene	63	< 63 U
90-12-0	1-Methylnaphthalene	63	< 63 U
208-96-8	Acenaphthylene	63	< 63 U
83-32-9	Acenaphthene	63	< 63 U
86-73-7	Fluorene	63	< 63 U
85-01-8	Phenanthrene	63	< 63 U
120-12-7	Anthracene	63	< 63 U
206-44-0	Fluoranthene	63	< 63 U
129-00-0	Pyrene	63	< 63 U
56-55-3	Benzo (a) anthracene	63	< 63 U
218-01-9	Chrysene	63	< 63 U
205-99-2	Benzo (b) fluoranthene	63	< 63 U
207-08-9	Benzo (k) fluoranthene	63	< 63 U
50-32-8	Benzo (a) pyrene	63	< 63 U
193-39-5	Indeno (1,2,3-cd) pyrene	63	< 63 U
53-70-3	Dibenz (a,h) anthracene	63	< 63 U
191-24-2	Benzo (g,h,i) perylene	63	< 63 U
132-64-9	Dibenzofuran	63	< 63 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	66.4%
2-Fluorobiphenyl	60.0%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-4-6-7

MATRIX SPIKE

Lab Sample ID: MK66C

LIMS ID: 08-3801

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 14:33

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.90 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 12.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	63	---
91-57-6	2-Methylnaphthalene	63	---
90-12-0	1-Methylnaphthalene	63	---
208-96-8	Acenaphthylene	63	---
83-32-9	Acenaphthene	63	---
86-73-7	Fluorene	63	---
85-01-8	Phenanthrene	63	---
120-12-7	Anthracene	63	---
206-44-0	Fluoranthene	63	---
129-00-0	Pyrene	63	---
56-55-3	Benzo (a) anthracene	63	---
218-01-9	Chrysene	63	---
205-99-2	Benzo (b) fluoranthene	63	---
207-08-9	Benzo (k) fluoranthene	63	---
50-32-8	Benzo (a) pyrene	63	---
193-39-5	Indeno (1,2,3-cd) pyrene	63	---
53-70-3	Dibenz (a,h) anthracene	63	---
191-24-2	Benzo (g,h,i) perylene	63	---
132-64-9	Dibenzofuran	63	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	64.8%
2-Fluorobiphenyl	56.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-4-6-7

MATRIX SPIKE DUPLICATE

Lab Sample ID: MK66C

LIMS ID: 08-3801

Matrix: Soil

Data Release Authorized: *AB*

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 15:08

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.94 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 12.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	63	---
91-57-6	2-Methylnaphthalene	63	---
90-12-0	1-Methylnaphthalene	63	---
208-96-8	Acenaphthylene	63	---
83-32-9	Acenaphthene	63	---
86-73-7	Fluorene	63	---
85-01-8	Phenanthrene	63	---
120-12-7	Anthracene	63	---
206-44-0	Fluoranthene	63	---
129-00-0	Pyrene	63	---
56-55-3	Benzo (a) anthracene	63	---
218-01-9	Chrysene	63	---
205-99-2	Benzo (b) fluoranthene	63	---
207-08-9	Benzo (k) fluoranthene	63	---
50-32-8	Benzo (a) pyrene	63	---
193-39-5	Indeno (1,2,3-cd) pyrene	63	---
53-70-3	Dibenz (a,h) anthracene	63	---
191-24-2	Benzo (g,h,i) perylene	63	---
132-64-9	Dibenzofuran	63	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	66.4%
2-Fluorobiphenyl	60.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-5-10-11

SAMPLE

Lab Sample ID: MK66D

LIMS ID: 08-3802

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 15:42

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.91 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 25.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	63	< 63 U
91-57-6	2-Methylnaphthalene	63	< 63 U
90-12-0	1-Methylnaphthalene	63	< 63 U
208-96-8	Acenaphthylene	63	< 63 U
83-32-9	Acenaphthene	63	< 63 U
86-73-7	Fluorene	63	< 63 U
85-01-8	Phenanthrene	63	< 63 U
120-12-7	Anthracene	63	< 63 U
206-44-0	Fluoranthene	63	< 63 U
129-00-0	Pyrene	63	< 63 U
56-55-3	Benzo (a) anthracene	63	< 63 U
218-01-9	Chrysene	63	< 63 U
205-99-2	Benzo (b) fluoranthene	63	< 63 U
207-08-9	Benzo (k) fluoranthene	63	< 63 U
50-32-8	Benzo (a) pyrene	63	< 63 U
193-39-5	Indeno (1,2,3-cd) pyrene	63	< 63 U
53-70-3	Dibenz (a,h) anthracene	63	< 63 U
191-24-2	Benzo (g,h,i) perylene	63	< 63 U
132-64-9	Dibenzofuran	63	< 63 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	66.0%
2-Fluorobiphenyl	60.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-6-6-6.5

SAMPLE

Lab Sample ID: MK66E

LIMS ID: 08-3803

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 16:17

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.91 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 21.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	63	< 63 U
91-57-6	2-Methylnaphthalene	63	< 63 U
90-12-0	1-Methylnaphthalene	63	< 63 U
208-96-8	Acenaphthylene	63	< 63 U
83-32-9	Acenaphthene	63	< 63 U
86-73-7	Fluorene	63	< 63 U
85-01-8	Phenanthrene	63	< 63 U
120-12-7	Anthracene	63	< 63 U
206-44-0	Fluoranthene	63	< 63 U
129-00-0	Pyrene	63	< 63 U
56-55-3	Benzo (a) anthracene	63	< 63 U
218-01-9	Chrysene	63	< 63 U
205-99-2	Benzo (b) fluoranthene	63	< 63 U
207-08-9	Benzo (k) fluoranthene	63	< 63 U
50-32-8	Benzo (a) pyrene	63	< 63 U
193-39-5	Indeno (1,2,3-cd) pyrene	63	< 63 U
53-70-3	Dibenz (a,h) anthracene	63	< 63 U
191-24-2	Benzo (g,h,i) perylene	63	< 63 U
132-64-9	Dibenzofuran	63	< 63 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	58.4%
2-Fluorobiphenyl	52.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B-7-6-7

SAMPLE

Lab Sample ID: MK66F

LIMS ID: 08-3804

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 16:52

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.87 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 25.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	< 64 U
91-57-6	2-Methylnaphthalene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	< 64 U
86-73-7	Fluorene	64	< 64 U
85-01-8	Phenanthrene	64	< 64 U
120-12-7	Anthracene	64	< 64 U
206-44-0	Fluoranthene	64	< 64 U
129-00-0	Pyrene	64	< 64 U
56-55-3	Benzo (a) anthracene	64	< 64 U
218-01-9	Chrysene	64	< 64 U
205-99-2	Benzo (b) fluoranthene	64	< 64 U
207-08-9	Benzo (k) fluoranthene	64	< 64 U
50-32-8	Benzo (a) pyrene	64	< 64 U
193-39-5	Indeno (1,2,3-cd) pyrene	64	< 64 U
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	< 64 U
132-64-9	Dibenzofuran	64	< 64 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	63.2%
2-Fluorobiphenyl	56.0%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-3-7.5-8.5
SAMPLE

Lab Sample ID: MK66H

LIMS ID: 08-3806

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 17:27

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.76 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 46.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	< 64 U
91-57-6	2-Methylnaphthalene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	< 64 U
86-73-7	Fluorene	64	< 64 U
85-01-8	Phenanthrene	64	130
120-12-7	Anthracene	64	< 64 U
206-44-0	Fluoranthene	64	< 64 U
129-00-0	Pyrene	64	< 64 U
56-55-3	Benzo (a) anthracene	64	< 64 U
218-01-9	Chrysene	64	< 64 U
205-99-2	Benzo (b) fluoranthene	64	< 64 U
207-08-9	Benzo (k) fluoranthene	64	< 64 U
50-32-8	Benzo (a) pyrene	64	< 64 U
193-39-5	Indeno (1,2,3-cd) pyrene	64	< 64 U
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	< 64 U
132-64-9	Dibenzofuran	64	< 64 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	69.2%
2-Fluorobiphenyl	70.8%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: MB-030508

METHOD BLANK

Lab Sample ID: MB-030508

LIMS ID: 08-3801

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 11:39

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	66.0%
2-Fluorobiphenyl	59.2%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
B-1-9-9.5	64.0%	60.8%	0
B-2-9-9.5	60.4%	67.6%	0
MB-030508	66.0%	59.2%	0
LCS-030508	73.2%	63.6%	0
B-4-6-7	66.4%	60.0%	0
B-4-6-7 MS	64.8%	56.0%	0
B-4-6-7 MSD	66.4%	60.4%	0
B-5-10-11	66.0%	60.4%	0
B-6-6-6.5	58.4%	52.4%	0
B-7-6-7	63.2%	56.0%	0
B-3-7.5-8.5	69.2%	70.8%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl	(41-109)	(39-111)
(FBP) = 2-Fluorobiphenyl	(33-93)	(32-94)

Prep Method: SW3550B
Log Number Range: 08-3799 to 08-3806

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-030508

LAB CONTROL

Lab Sample ID: LCS-030508

LIMS ID: 08-3801

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: 02/28/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 12:14

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Sample Amount: 7.50 g

Final Extract Volume: 0.50 mL

Dilution Factor: 1.00

Alumina Cleanup: No

Analyte	Lab Control	Spike Added	Recovery
Naphthalene	992	1670	59.4%
2-Methylnaphthalene	1290	1670	77.2%
1-Methylnaphthalene	999	1670	59.8%
Acenaphthylene	1120	1670	67.1%
Acenaphthene	1030	1670	61.7%
Fluorene	1150	1670	68.9%
Phenanthrene	1160	1670	69.5%
Anthracene	1210	1670	72.5%
Fluoranthene	1410	1670	84.4%
Pyrene	1090	1670	65.3%
Benzo(a)anthracene	1200	1670	71.9%
Chrysene	1230	1670	73.7%
Benzo(b)fluoranthene	1280	1670	76.6%
Benzo(k)fluoranthene	1380	1670	82.6%
Benzo(a)pyrene	1300	1670	77.8%
Indeno(1,2,3-cd)pyrene	953	1670	57.1%
Dibenz(a,h)anthracene	1120	1670	67.1%
Benzo(g,h,i)perylene	1110	1670	66.5%
Dibenzofuran	1090	1670	65.3%

Semivolatile Surrogate Recovery

d14-p-Terphenyl	73.2%
2-Fluorobiphenyl	63.6%

Results reported in $\mu\text{g}/\text{kg}$

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-4-6-7
MS/MSD

Lab Sample ID: MK66C

LIMS ID: 08-3801

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted MS/MSD: 03/05/08

Sample Amount MS: 7.90 g-dry-wt

MSD: 7.94 g-dry-wt

Date Analyzed MS: 03/07/08 14:33

Final Extract Volume MS: 0.5 mL

MSD: 03/07/08 15:08

MSD: 0.5 mL

Instrument/Analyst MS: NT6/LJR

Dilution Factor MS: 1.00

MSD: NT6/LJR

MSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	< 63.1	803	1580	50.8%	855	1570	54.5%	6.3%
2-Methylnaphthalene	< 63.1	1060	1580	67.1%	1140	1570	72.6%	7.3%
1-Methylnaphthalene	< 63.1	819	1580	51.8%	872	1570	55.5%	6.3%
Acenaphthylene	< 63.1	903	1580	57.2%	963	1570	61.3%	6.4%
Acenaphthene	< 63.1	886	1580	56.1%	940	1570	59.9%	5.9%
Fluorene	< 63.1	987	1580	62.5%	1030	1570	65.6%	4.3%
Phenanthrene	< 63.1	992	1580	62.8%	1020	1570	65.0%	2.8%
Anthracene	< 63.1	990	1580	62.7%	1020	1570	65.0%	3.0%
Fluoranthene	< 63.1	1190	1580	75.3%	1220	1570	77.7%	2.5%
Pyrene	< 63.1	920	1580	58.2%	935	1570	59.6%	1.6%
Benzo(a)anthracene	< 63.1	981	1580	62.1%	997	1570	63.5%	1.6%
Chrysene	< 63.1	1010	1580	63.9%	1010	1570	64.3%	0.0%
Benzo(b)fluoranthene	< 63.1	1060	1580	67.1%	1080	1570	68.8%	1.9%
Benzo(k)fluoranthene	< 63.1	1090	1580	69.0%	1140	1570	72.6%	4.5%
Benzo(a)pyrene	< 63.1	999	1580	63.2%	1040	1570	66.2%	4.0%
Indeno(1,2,3-cd)pyrene	< 63.1	658	1580	41.6%	707	1570	45.0%	7.2%
Dibenz(a,h)anthracene	< 63.1	792	1580	50.1%	870	1570	55.4%	9.4%
Benzo(g,h,i)perylene	< 63.1	761	1580	48.2%	795	1570	50.6%	4.4%
Dibenzofuran	< 63.1	917	1580	58.0%	974	1570	62.0%	6.0%

Results reported in $\mu\text{g}/\text{kg}$

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1



Sample ID: B-1-GW
SAMPLE

Lab Sample ID: MK66I
LIMS ID: 08-3807
Matrix: Water
Data Release Authorized:
Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

Date Extracted: 02/29/08
Date Analyzed: 03/05/08 23:51
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Silica Gel: No

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	66.8%
2-Fluorobiphenyl	64.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS


Page 1 of 1

Sample ID: B-3-GW
SAMPLE

Lab Sample ID: MK66J

LIMS ID: 08-3808

Matrix: Water

Data Release Authorized: 

Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 02/29/08

Date Analyzed: 03/06/08 00:25

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a, h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g, h, i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	48.8%
2-Fluorobiphenyl	65.2%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-6-GW

SAMPLE

Lab Sample ID: MK66K

LIMS ID: 08-3809

Matrix: Water

Data Release Authorized:

Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 02/29/08

Date Analyzed: 03/06/08 00:59

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	60.8%
2-Fluorobiphenyl	62.0%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS


Page 1 of 1

Sample ID: B-7-GW
SAMPLE

Lab Sample ID: MK66L

LIMS ID: 08-3810

Matrix: Water

Data Release Authorized: 

Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 02/29/08

Date Analyzed: 03/06/08 01:34

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	69.2%
2-Fluorobiphenyl	66.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1



Sample ID: B-2-GW
SAMPLE

Lab Sample ID: MK66M

LIMS ID: 08-3811

Matrix: Water

Data Release Authorized:

Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted: 02/29/08

Date Analyzed: 03/06/08 12:13

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	43
91-57-6	2-Methylnaphthalene	1.0	5.1
90-12-0	1-Methylnaphthalene	1.0	3.2
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	1.5
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatle Surrogate Recovery

d14-p-Terphenyl	66.0%
2-Fluorobiphenyl	66.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: MB-022908

METHOD BLANK

Lab Sample ID: MB-022908

LIMS ID: 08-3807

Matrix: Water

Data Release Authorized: 

Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Date Extracted: 02/29/08

Date Analyzed: 03/05/08 18:05

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	65.6%
2-Fluorobiphenyl	57.6%

SW8270 PNA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

Client ID	TER	FBP	TOT OUT
MB-022908	65.6%	57.6%	0
LCS-022908	76.8%	69.2%	0
LCSD-022908	69.6%	67.6%	0
B-1-GW	66.8%	64.0%	0
B-3-GW	48.8%	65.2%	0
B-6-GW	60.8%	62.0%	0
B-7-GW	69.2%	66.4%	0
B-2-GW	66.0%	66.4%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl (38-118) (30-121)
 (FBP) = 2-Fluorobiphenyl (48-108) (47-106)

Prep Method: SW3520C
 Log Number Range: 08-3807 to 08-3811



ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS
Page 1 of 1

Sample ID: LCS-022908
LCS/LCSD

Lab Sample ID: LCS-022908
LIMS ID: 08-3807
Matrix: Water
Data Release Authorized:
Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: 02/28/08

Date Extracted LCS/LCSD: 02/29/08
Date Analyzed LCS: 03/05/08 18:40
LCSD: 03/05/08 19:15
Instrument/Analyst LCS: NT6/LJR
LCSD: NT6/LJR
GPC Cleanup: NO

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Alumina Cleanup: NO

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	13.4	25.0	53.6%	13.1	25.0	52.4%	2.3%
2-Methylnaphthalene	16.9	25.0	67.6%	16.2	25.0	64.8%	4.2%
1-Methylnaphthalene	13.3	25.0	53.2%	12.9	25.0	51.6%	3.1%
Acenaphthylene	17.4	25.0	69.6%	17.0	25.0	68.0%	2.3%
Acenaphthene	15.5	25.0	62.0%	15.0	25.0	60.0%	3.3%
Fluorene	18.2	25.0	72.8%	17.8	25.0	71.2%	2.2%
Phenanthrene	18.0	25.0	72.0%	17.3	25.0	69.2%	4.0%
Anthracene	18.4	25.0	73.6%	17.7	25.0	70.8%	3.9%
Fluoranthene	22.0	25.0	88.0%	20.7	25.0	82.8%	6.1%
Pyrene	16.8	25.0	67.2%	15.9	25.0	63.6%	5.5%
Benzo(a)anthracene	18.4	25.0	73.6%	17.0	25.0	68.0%	7.9%
Chrysene	18.8	25.0	75.2%	17.7	25.0	70.8%	6.0%
Benzo(b)fluoranthene	20.9	25.0	83.6%	19.0	25.0	76.0%	9.5%
Benzo(k)fluoranthene	19.6	25.0	78.4%	19.6	25.0	78.4%	0.0%
Benzo(a)pyrene	19.9	25.0	79.6%	18.6	25.0	74.4%	6.8%
Indeno(1,2,3-cd)pyrene	14.5	25.0	58.0%	14.1	25.0	56.4%	2.8%
Dibenz(a,h)anthracene	17.6	25.0	70.4%	16.6	25.0	66.4%	5.8%
Benzo(g,h,i)perylene	17.0	25.0	68.0%	16.3	25.0	65.2%	4.2%
Dibenzofuran	16.8	25.0	67.2%	16.4	25.0	65.6%	2.4%

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	76.8%	69.6%
2-Fluorobiphenyl	69.2%	67.6%


Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Water

Data Release Authorized:

Reported: 02/29/08 

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-022808 08-3807	Method Blank	02/28/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 100% 105%
MK66I 08-3807	B-1-GW	02/28/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 92.4% 94.3%
MK66J 08-3808	B-3-GW	02/28/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 90.4% 91.7%
MK66K 08-3809	B-6-GW	02/28/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 84.8% 85.6%
MK66L 08-3810	B-7-GW	02/28/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 87.1% 91.9%
MK66M 08-3811	B-2-GW	02/28/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 89.6% 89.9%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: MK66
Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-022808	100%	105%	0
LCS-022808	104%	107%	0
LCSD-022808	106%	109%	0
B-1-GW	92.4%	94.3%	0
B-3-GW	90.4%	91.7%	0
B-6-GW	84.8%	85.6%	0
B-7-GW	87.1%	91.9%	0
B-2-GW	89.6%	89.9%	0

LCS/MB LIMITS QC LIMITS

(TFT) = Trifluorotoluene
(BBZ) = Bromobenzene

(80-120)
(80-120)

(80-120)
(80-120)

Log Number Range: 08-3807 to 08-3811

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: LCS-022808
LAB CONTROL SAMPLE

Lab Sample ID: LCS-022808
LIMS ID: 08-3807
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 02/29/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 02/28/08 08:50
LCSD: 02/28/08 09:15
Instrument/Analyst LCS: PID3/PKC
LCSD: PID3/PKC

Purge Volume: 5.0 mL
Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.15	1.00	115%	1.10	1.00	110%	4.4%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	104%	106%
Bromobenzene	107%	109%



ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1
Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

Data Release Authorized:
Reported: 03/06/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-030408 08-3807	Method Blank HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 85.3%
MK66I 08-3807	B-1-GW HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 88.0%
MK66J 08-3808	B-3-GW HC ID: ---	03/04/08	03/06/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 50.2%
MK66K 08-3809	B-6-GW HC ID: ---	03/04/08	03/06/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 88.0%
MK66L 08-3810	B-7-GW HC ID: ---	03/04/08	03/06/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 93.6%
MK66M 08-3811	B-2-GW HC ID: ---	03/04/08	03/06/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 89.3%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-030408	85.3%	0
LCS-030408	86.4%	0
LCSD-030408	87.6%	0
B-1-GW	88.0%	0
B-3-GW	50.2%	0
B-6-GW	88.0%	0
B-7-GW	93.6%	0
B-2-GW	89.3%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(OTER) = o-Terphenyl	(46-122)	(36-120)

Prep Method: SW3510C
Log Number Range: 08-3807 to 08-3811

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1

Sample ID: LCS-030408
LCS/LCSD

Lab Sample ID: LCS-030408
LIMS ID: 08-3807
Matrix: Water
Data Release Authorized:
Reported: 03/06/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

Date Extracted LCS/LCSD: 03/04/08

Sample Amount LCS: 500 mL
LCSD: 500 mL

Date Analyzed LCS: 03/05/08 20:48
LCSD: 03/05/08 21:03

Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL

Instrument/Analyst LCS: FID/MS
LCSD: FID/MS

Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.37	3.00	79.0%	2.38	3.00	79.3%	0.4%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	86.4%	87.6%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT


ARI Job: MK66
Project: Qwest Field North Lot
1014001

Matrix: Water
Date Received: 02/28/08

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
08-3807-030408MB1	Method Blank	500 mL	1.00 mL	03/04/08
08-3807-030408LCS1	Lab Control	500 mL	1.00 mL	03/04/08
08-3807-030408LCSD1	Lab Control Dup	500 mL	1.00 mL	03/04/08
08-3807-MK66I	B-1-GW	498 mL	1.00 mL	03/04/08
08-3808-MK66J	B-3-GW	485 mL	1.00 mL	03/04/08
08-3809-MK66K	B-6-GW	495 mL	1.00 mL	03/04/08
08-3810-MK66L	B-7-GW	450 mL	1.00 mL	03/04/08
08-3811-MK66M	B-2-GW	480 mL	1.00 mL	03/04/08

ORGANICS ANALYSIS DATA SHEET
 NWTPH-HCID Method by GC/FID
 Page 1 of 2
 Matrix: Soil


QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

Data Release Authorized:
 Reported: 03/03/08 

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MK66A 08-3799	B-1-9-9.5 HC ID: ---	02/29/08	03/01/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 95.1%
MB-022908 08-3800	Method Blank	02/29/08	03/01/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 99.0%
MK66B 08-3800	B-2-9-9.5 HC ID: MOTOR OIL	02/29/08	03/01/08	5.0	Gas Diesel Oil o-Terphenyl	< 82 U < 210 U > 410 113%
MK66BDP 08-3800	B-2-9-9.5 HC ID: MOTOR OIL	02/29/08	03/01/08	5.0	Gas Diesel Oil o-Terphenyl	< 83 U < 210 U > 410 113%
MK66C 08-3801	B-4-6-7 HC ID: ---	02/29/08	03/01/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 104%
MK66D 08-3802	B-5-10-11 HC ID: ---	02/29/08	03/01/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 99.1%
MK66E 08-3803	B-6-6-6.5 HC ID: ---	02/29/08	03/01/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 98.1%
MK66F 08-3804	B-7-6-7 HC ID: ---	02/29/08	03/01/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 101%

ORGANICS ANALYSIS DATA SHEET
 NWTPH-HCID Method by GC/FID
 Page 2 of 2
 Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

Data Release Authorized:
 Reported: 03/03/08 

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MK66G 08-3805	B-2-20-21 HC ID: GRO/DRO/CREOSOTE	02/29/08	03/01/08	50	Gas Diesel Oil o-Terphenyl	> 660 > 1,600 > 3,300 D
MK66H 08-3806	B-3-7.5-8.5 HC ID: MOTOR OIL	02/29/08	03/01/08	1.0	Gas Diesel Oil o-Terphenyl	> 20 < 50 U > 100 102%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.
 Diesel value based on the total peaks in the range from C12 to C24.
 Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
B-1-9-9.5	95.1%	0
022908MB	99.0%	0
B-2-9-9.5	113%	0
B-2-9-9.5 DP	113%	0
B-4-6-7	104%	0
B-5-10-11	99.1%	0
B-6-6-6.5	98.1%	0
B-7-6-7	101%	0
B-2-20-21	D	0
B-3-7.5-8.5	102%	0

LCS/MB LIMITS QC LIMITS

(O-TER) = o-Terphenyl

(68-122)

(50-150)

Prep Method: SW3550B
Log Number Range: 08-3799 to 08-3806

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: MK66
Project: Qwest Field North Lot
1014001

Matrix: Soil
Date Received: 02/28/08

ARI ID	Client ID	Sample Amt	Final Vol	Basis	Prep Date
08-3799-MK66A	B-1-9-9.5	7.44 g	5.00 mL	D	02/29/08
08-3800-022908MB	Method Blank	10.0 g	5.00 mL	-	02/29/08
08-3800-MK66B	B-2-9-9.5	6.06 g	5.00 mL	D	02/29/08
08-3800-MK66BDP	B-2-9-9.5	6.04 g	5.00 mL	D	02/29/08
08-3801-MK66C	B-4-6-7	8.80 g	5.00 mL	D	02/29/08
08-3802-MK66D	B-5-10-11	7.51 g	5.00 mL	D	02/29/08
08-3803-MK66E	B-6-6-6.5	7.85 g	5.00 mL	D	02/29/08
08-3804-MK66F	B-7-6-7	7.49 g	5.00 mL	D	02/29/08
08-3805-MK66G	B-2-20-21	7.58 g	5.00 mL	D	02/29/08
08-3806-MK66H	B-3-7.5-8.5	5.36 g	5.00 mL	D	02/29/08

Basis: D=Dry Weight W=As Received
HCID Extraction Report

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1


Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized:

Reported: 03/05/08 

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-022908	Method Blank	02/29/08	03/03/08	1.00	Diesel	5.0	< 5.0 U
08-3805	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	10	< 10 U 84.7%
MK66G	B-2-20-21	02/29/08	03/03/08	10.0	Diesel	660	8600
08-3805	HC ID: DRO/CREOSOTE		FID3A	10	Motor Oil o-Terphenyl	1300	2300 D

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned


Page 1 of 1

Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized: 

Reported: 03/11/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-030508	Method Blank	03/05/08	03/06/08	1.00	Diesel	5.0	< 5.0 U
08-3800	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	10	< 10 U 94.0%
MK66B	B-2-9-9.5	03/05/08	03/06/08	1.00	Diesel	8.3	88
08-3800	HC ID: DRO/MOTOR OIL		FID3A	1.0	Motor Oil o-Terphenyl	17	440 92.0%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized:

Reported: 03/11/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MK66H	B-3-7.5-8.5	03/05/08	03/06/08	1.00	Diesel	9.3	22
08-3806	HC ID: DRO/MOTOR OIL		FID3A	1.0	Motor Oil o-Terphenyl	19	63 46.4%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-030508	94.0%	0
LCS-030508	93.6%	0
B-2-9-9.5	92.0%	0
MB-022908	84.7%	0
LCS-022908	86.9%	0
B-2-20-21	D	0
B-2-20-21 MS	D	0
B-2-20-21 MSD	D	0
B-3-7.5-8.5	46.4%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(35-123)

(33-117)

Prep Method: SW3550B

Log Number Range: 08-3800 to 08-3806

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 02/28/08

ARI Job: MK66
Project: Qwest Field North Lot
1014001


ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
08-3800-030508MB1	Method Blank	10.0 g	1.00 mL	-	03/05/08
08-3800-030508LCS1	Lab Control	10.0 g	1.00 mL	-	03/05/08
08-3800-MK66B	B-2-9-9.5	6.04 g	1.00 mL	D	03/05/08
08-3805-022908MB1	Method Blank	10.0 g	1.00 mL	-	02/29/08
08-3805-022908LCS1	Lab Control	10.0 g	1.00 mL	-	02/29/08
08-3805-MK66G	B-2-20-21	7.58 g	10.0 mL	D	02/29/08
08-3805-MK66GMS	B-2-20-21	7.58 g	10.0 mL	D	02/29/08
08-3805-MK66GMSD	B-2-20-21	7.58 g	10.0 mL	D	02/29/08
08-3806-MK66H	B-3-7.5-8.5	5.38 g	1.00 mL	D	03/05/08

Basis: D=Dry Weight W=As Received
Diesel Extraction Report

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1

Sample ID: LCS-022908
LAB CONTROL

Lab Sample ID: LCS-022908
LIMS ID: 08-3805
Matrix: Soil
Data Release Authorized: 
Reported: 03/05/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

Date Extracted: 02/29/08
Date Analyzed: 03/03/08 18:15
Instrument/Analyst: FID/MS

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	123	150	82.0%

TPHD Surrogate Recovery

o-Terphenyl	86.9%
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Results reported in mg/kg

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1

Sample ID: LCS-030508
LAB CONTROL

Lab Sample ID: LCS-030508
LIMS ID: 08-3800
Matrix: Soil
Data Release Authorized:
Reported: 03/11/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

Date Extracted: 03/05/08
Date Analyzed: 03/06/08 01:25
Instrument/Analyst: FID/MS

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	133	150	88.7%

TPHD Surrogate Recovery

o-Terphenyl	93.6%
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Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: MK66
Project: Qwest Field North Lot
1014001

Matrix: Soil
Date Received: 02/28/08

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
08-3805-022908MB1	Method Blank	10.0 g	1.00 mL	-	02/29/08
08-3805-022908LCS1	Lab Control	10.0 g	1.00 mL	-	02/29/08
08-3805-MK66G	B-2-20-21	7.58 g	10.0 mL	D	02/29/08
08-3805-MK66GMS	B-2-20-21	7.58 g	10.0 mL	D	02/29/08
08-3805-MK66GMSD	B-2-20-21	7.58 g	10.0 mL	D	02/29/08

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Sample ID: B-2-20-21

MS/MSD

Lab Sample ID: MK66G

LIMS ID: 08-3805

Matrix: Soil

Data Release Authorized: *AB*

Reported: 03/05/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Date Extracted MS/MSD: 02/29/08

Sample Amount MS: 7.58 g-dry-wt

MSD: 7.58 g-dry-wt

Date Analyzed MS: 03/03/08 19:33

Final Extract Volume MS: 10 mL

MSD: 03/03/08 19:49

MSD: 10 mL

Instrument/Analyst MS: FID/MS

Dilution Factor MS: 10.0

MSD: FID/MS

MSD: 10.0

Percent Moisture: 24.2%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	8610	8360	198	NA	8840	198	NA	5.6%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	D	D

Results reported in mg/kg

NA-No recovery due to high concentration of analyte in original sample and/or calculated negative recovery.

RPD calculated using sample concentrations per SW846.



ORGANICS ANALYSIS DATA SHEET
 PCB by GC/ECD Method SW8082
 Page 1 of 1

Sample ID: B-2-20-21
 SAMPLE

Lab Sample ID: MK66G
 LIMS ID: 08-3805
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/13/08

QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/27/08
 Date Received: 02/28/08

Date Extracted: 03/07/08
 Date Analyzed: 03/09/08 12:24
 Instrument/Analyst: ECD5/JGR
 GPC Cleanup: No
 Sulfur Cleanup: Yes
 Acid Cleanup: Yes
 Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
 Final Extract Volume: 4.0 mL
 Dilution Factor: 2.00
 Silica Gel: Yes
 Percent Moisture: 24.2%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	66	< 66 U
53469-21-9	Aroclor 1242	66	< 66 U
12672-29-6	Aroclor 1248	66	< 66 U
11097-69-1	Aroclor 1254	66	< 66 U
11096-82-5	Aroclor 1260	66	< 66 U
11104-28-2	Aroclor 1221	66	< 66 U
11141-16-5	Aroclor 1232	66	< 66 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	103%
Tetrachlorometaxylene	82.0%

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: MB-030708
METHOD BLANK

Lab Sample ID: MB-030708
LIMS ID: 08-3805
Matrix: Soil
Data Release Authorized:
Reported: 03/13/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

Date Extracted: 03/07/08
Date Analyzed: 03/09/08 11:50
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.8%
Tetrachlorometaxylene	65.5%

SW8082/PCB SOLIDS SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>DCBP % REC</u>	<u>DCBP LCL-UCL</u>	<u>TCMX % REC</u>	<u>TCMX LCL-UCL</u>	<u>TOT OUT</u>
MB-030708	77.8%	59-122	65.5%	61-118	0
LCS-030708	84.2%	59-122	65.8%	61-118	0
B-2-20-21	103%	40-139	82.0%	49-120	0

Prep Method: SW3550B
Log Number Range: 08-3805 to 08-3805



ORGANICS ANALYSIS DATA SHEET
 PCB by GC/ECD Method SW8082
 Page 1 of 1

Sample ID: LCS-030708
 LAB CONTROL

Lab Sample ID: LCS-030708
 LIMS ID: 08-3805
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/13/08

QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: NA
 Date Received: NA

Date Extracted: 03/07/08
 Date Analyzed: 03/09/08 12:07
 Instrument/Analyst: ECD5/JGR
 GPC Cleanup: No
 Sulfur Cleanup: Yes
 Acid Cleanup: Yes
 Florisil Cleanup: No

Sample Amount: 12.0 g-dry-wt
 Final Extract Volume: 4.0 mL
 Dilution Factor: 1.00
 Silica Gel: Yes
 Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	118	167	70.7%
Aroclor 1260	133	167	79.6%

PCB Surrogate Recovery

Decachlorobiphenyl	84.2%
Tetrachlorometaxylene	65.8%

Results reported in $\mu\text{g}/\text{kg}$ (ppb)

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-1-9-9.5
SAMPLE

Lab Sample ID: MK66A

LIMS ID: 08-3799

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 82.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	6	6	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.6	28.5	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	2	13	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.07	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: B-1-9-9.5
DUPLICATE

Lab Sample ID: MK66A
LIMS ID: 08-3799
Matrix: Soil
Data Release Authorized:
Reported: 03/10/08



QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	6 U	6 U	0.0%	+/- 6	L
Cadmium	6010B	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	6010B	28.5	20.7	31.7%	+/- 20%	*
Lead	6010B	13	6	73.7%	+/- 2	L*
Mercury	7471A	0.07	0.07	0.0%	+/- 0.05	L

Reported in mg/kg-dry

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: B-1-9-9.5
MATRIX SPIKE

Lab Sample ID: MK66A
LIMS ID: 08-3799
Matrix: Soil
Data Release Authorized:
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08



MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	6 U	229	236	97.0%	
Cadmium	6010B	0.2 U	54.6	59.1	92.4%	
Chromium	6010B	28.5	75.9	59.1	80.2%	
Lead	6010B	13	227	236	90.7%	
Mercury	7471A	0.07	0.56	0.471	104%	

Reported in mg/kg-dry

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-2-9-9.5

SAMPLE

Lab Sample ID: MK66B

LIMS ID: 08-3800

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 46.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	10	10	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.4	0.4	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	1	6	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	4	5	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.08	0.08	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-4-6-7

SAMPLE

Lab Sample ID: MK66C

LIMS ID: 08-3801

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 90.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	6	6	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.6	28.9	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	2	7	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-5-10-11
SAMPLE

Lab Sample ID: MK66D

LIMS ID: 08-3802

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 74.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	6	6	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.6	12.6	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	2	3	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.06	0.06	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-6-6-6.5
SAMPLE

Lab Sample ID: MK66E

LIMS ID: 08-3803

Matrix: Soil

Data Release Authorized 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 73.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	6	6	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.6	17.9	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	2	5	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.06	0.06	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-7-6-7

SAMPLE

Lab Sample ID: MK66F

LIMS ID: 08-3804

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 75.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	6	6	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.6	11.1	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	3	3	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.07	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-2-20-21

SAMPLE

Lab Sample ID: MK66G

LIMS ID: 08-3805

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 74.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	6	6	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.6	11.1	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	3	5	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.06	0.06	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-3-7.5-8.5

SAMPLE

Lab Sample ID: MK66H

LIMS ID: 08-3806

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/27/08

Date Received: 02/28/08

Percent Total Solids: 68.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	7	9	
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.7	30.6	
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	3	143	
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.05	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: MK66MB

LIMS ID: 08-3800

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA


Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	02/28/08	6010B	03/04/08	7440-38-2	Arsenic	5	5	U
3050B	02/28/08	6010B	03/04/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	02/28/08	6010B	03/04/08	7440-47-3	Chromium	0.5	0.5	U
3050B	02/28/08	6010B	03/04/08	7439-92-1	Lead	2	2	U
CLP	02/28/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: MK66LCS
LIMS ID: 08-3800
Matrix: Soil
Data Release Authorized: 
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT


Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	217	200	108%	
Cadmium	6010B	50.4	50.0	101%	
Chromium	6010B	49.8	50.0	99.6%	
Lead	6010B	206	200	103%	
Mercury	7471A	1.06	1.00	106%	

Reported in mg/kg-dry

N-Control limit not met
Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-1-GW
SAMPLE

Lab Sample ID: MK66I
LIMS ID: 08-3807
Matrix: Water
Data Release Authorized: 
Reported: 03/10/08


QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	02/29/08	7060A	03/03/08	7440-38-2	Arsenic	0.005	0.029	
6010B	02/29/08	6010B	03/04/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	02/29/08	6010B	03/04/08	7440-47-3	Chromium	0.005	0.005	U
7000A	02/29/08	7421	03/04/08	7439-92-1	Lead	0.001	0.001	U
7470A	02/29/08	7470A	03/06/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-1-GW
DUPLICATE

Lab Sample ID: MK66I
LIMS ID: 08-3807
Matrix: Water
Data Release Authorized: 
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	7060A	0.029	0.028	3.5%	+/- 20%	
Cadmium	6010B	0.002 U	0.002 U	0.0%	+/- 0.002	L
Chromium	6010B	0.005 U	0.005 U	0.0%	+/- 0.005	L
Lead	7421	0.001 U	0.001 U	0.0%	+/- 0.001	L
Mercury	7470A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L

Reported in mg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
 Page 1 of 1

Sample ID: B-1-GW
MATRIX SPIKE

Lab Sample ID: MK66I
 LIMS ID: 08-3807
 Matrix: Water
 Data Release Authorized.
 Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/27/08
 Date Received: 02/28/08



MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	7060A	0.029	0.140	0.100	111%	
Cadmium	6010B	0.002 U	0.560	0.500	112%	
Chromium	6010B	0.005 U	0.528	0.500	106%	
Lead	7421	0.001 U	0.020	0.020	100%	
Mercury	7470A	0.0001 U	0.0011	0.001	110%	

Reported in mg/L

N-Control Limit Not Met
 H-% Recovery Not Applicable, Sample Concentration Too High
 NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-3-GW
SAMPLE

Lab Sample ID: MK66J
LIMS ID: 08-3808
Matrix: Water
Data Release Authorized:
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08



Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	02/29/08	7060A	03/03/08	7440-38-2	Arsenic	0.01	0.02	
6010B	02/29/08	6010B	03/04/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	02/29/08	6010B	03/04/08	7440-47-3	Chromium	0.005	0.005	U
7000A	02/29/08	7421	03/04/08	7439-92-1	Lead	0.002	0.026	
7470A	02/29/08	7470A	03/06/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-6-GW
SAMPLE

Lab Sample ID: MK66K
LIMS ID: 08-3809
Matrix: Water
Data Release Authorized:
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08




Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	02/29/08	7060A	03/03/08	7440-38-2	Arsenic	0.001	0.004	
6010B	02/29/08	6010B	03/04/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	02/29/08	6010B	03/04/08	7440-47-3	Chromium	0.005	0.005	U
7000A	02/29/08	7421	03/04/08	7439-92-1	Lead	0.001	0.001	U
7470A	02/29/08	7470A	03/06/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-7-GW
SAMPLE

Lab Sample ID: MK66L
LIMS ID: 08-3810
Matrix: Water
Data Release Authorized: 
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	02/29/08	7060A	03/04/08	7440-38-2	Arsenic	0.01	0.04	
6010B	02/29/08	6010B	03/04/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	02/29/08	6010B	03/04/08	7440-47-3	Chromium	0.005	0.005	U
7000A	02/29/08	7421	03/04/08	7439-92-1	Lead	0.001	0.001	U
7470A	02/29/08	7470A	03/06/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-2-GW
SAMPLE

Lab Sample ID: MK66M
LIMS ID: 08-3811
Matrix: Water
Data Release Authorized:
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/27/08
Date Received: 02/28/08



Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	02/29/08	7060A	03/04/08	7440-38-2	Arsenic	0.005	0.012	
6010B	02/29/08	6010B	03/04/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	02/29/08	6010B	03/04/08	7440-47-3	Chromium	0.005	0.005	U
7000A	02/29/08	7421	03/04/08	7439-92-1	Lead	0.001	0.001	U
7470A	02/29/08	7470A	03/06/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: MK66MB
LIMS ID: 08-3808
Matrix: Water
Data Release Authorized:
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA



Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	02/29/08	7060A	03/03/08	7440-38-2	Arsenic	0.001	0.001	U
6010B	02/29/08	6010B	03/04/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	02/29/08	6010B	03/04/08	7440-47-3	Chromium	0.005	0.005	U
7000A	02/29/08	7421	03/04/08	7439-92-1	Lead	0.001	0.001	U
7470A	02/29/08	7470A	03/06/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: MK66LCS
LIMS ID: 08-3808
Matrix: Water
Data Release Authorized:
Reported: 03/10/08

QC Report No: MK66-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	7060A	0.021	0.020	105%	
Cadmium	6010B	0.571	0.500	114%	
Chromium	6010B	0.545	0.500	109%	
Lead	7421	0.021	0.020	105%	
Mercury	7470A	0.0022	0.0020	110%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

March 13, 2008

Kathryn Hartley
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest Field North Lot
ARI Job: MK82

Dear Kathryn:


Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted eight soil samples and six water samples and a trip blank on February 29, 2008. The samples were received at cooler temperatures of 2.4° and 0.9°C.

The samples were analyzed for VOCs, PAHs, and HCID with NWTPH-Dx and NWTPH-Gx follow ups, Total and Dissolved Metals and NWTPH-Dx, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC


Kelly Bettem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

Date 2/28/08
Page 1 of _____

Chain-of-Custody Record

Project Name <u>West Field North Lot</u> Project No. <u>1014001</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____	
Project Location/Event <u>West Field North Parking Lot, Seattle</u>					<div style="display: flex; justify-content: space-around; font-size: small;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH - HCLD</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">MTCAS Metals (Total)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHs</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">MTCAS Metals (Dissolved)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NWTPH-Dx</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NWTPH-G</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Archive</div> </div>											
Sampler's Name <u>David Nelson (DMN)</u>																
Project Contact <u>Kathryn Hartley, Anne Halvorson</u>																
Send Results To _____																
Sample I.D.	Date	Time	Matrix	No. of Containers	TPH - HCLD	MTCAS Metals (Total)	PAHs	MTCAS Metals (Dissolved)	NWTPH-Dx	NWTPH-G	VOCS	Archive	Observations/Comments			
B-8-5-6	<u>2/28/08</u>	<u>0910</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>		<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input checked="" type="checkbox"/> NWTPH-Dx: <input type="checkbox"/> run acid wash/silica gel cleanup <input type="checkbox"/> run samples standardized to _____ product <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> freeze upon receipt <input checked="" type="checkbox"/> Dissolved metal water samples field filtered Other _____ 			
<u>B-8-GW</u>		<u>0930</u>	<u>W</u>	<u>10</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-9-5.5-6.5</u>		<u>1020</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-9-GW</u>		<u>1030</u>	<u>W</u>	<u>9</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-10-7-8</u>		<u>1140</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>									
B-10-GW		<u>1200</u>	<u>W</u>	<u>10</u>	<u>MAX</u>											
<u>B-10-GW</u>		<u>1200</u>	<u>W</u>	<u>10</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-11-6-6.5</u>		<u>1230</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-11-GW</u>		<u>1245</u>	<u>W</u>	<u>10</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-12-6-7</u>		<u>1330</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>									
<u>B-12-GW</u>		<u>1345</u>	<u>W</u>	<u>10</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-13-5-5.75</u>		<u>1430</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>									
<u>B-14-5-6.33</u>		<u>1505</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>									
<u>B-14-GW</u>		<u>1515</u>	<u>W</u>	<u>10</u>		<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>						
<u>B-15-5-6.33</u>		<u>1600</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>									
<u>Trip Blank</u>										<u>X</u>						

Special Shipment/Handling or Storage Requirements		Method of Shipment	
Relinquished by <u>David M. Nelson</u> Signature <u>David M. Nelson</u> Printed Name <u>LAI</u> Company Date <u>2/28/08</u> Time <u>1845</u>	Received by <u>Emily Croudis</u> Signature <u>Emily Croudis</u> Printed Name <u>ARI</u> Company Date <u>2/29/08</u> Time <u>937</u>	Relinquished by _____ Signature _____ Printed Name _____ Company Date _____ Time _____	Received by _____ Signature _____ Printed Name _____ Company Date _____ Time _____



Cooler Receipt Form

ARI Client: LANDAU

Project Name: QUEST FIELD NORTH LOT

COC No: -

Delivered by: EC

Assigned ARI Job No: MK 82

Tracking No: -

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
- Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 2, 4, 09 °C

Cooler Accepted by: EC Date: 2/29/08 Time: 931

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? ICE
- Was sufficient ice used (if appropriate)? YES NO
- Were all bottles sealed in individual plastic bags? YES NO *
- Did all bottle arrive in good condition (unbroken)? YES NO
- Were all bottle labels complete and legible? 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 checklist) YES NO
- Were all VOC vials free of air bubbles? NA YES NO
- Was sufficient amount of sample sent in each bottle? YES NO

Samples Logged by: Bob Congdon Date: 2/29/08 Time: 1210

**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

* - BAGGED PER SAMPLE SET

By:

Date:

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Page 1 of 2


Sample ID: B-8-GW

SAMPLE

Lab Sample ID: MK82I

LIMS ID: 08-3989

Matrix: Water

Data Release Authorized: 

Reported: 03/04/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 03/03/08 21:57

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	3.1	
75-15-0	Carbon Disulfide	0.2	0.4	
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.3	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-8-GW
SAMPLE

Lab Sample ID: MK82I
LIMS ID: 08-3989
Matrix: Water
Date Analyzed: 03/03/08 21:57

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	0.8	
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	88.8%
Bromofluorobenzene	87.8%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET


Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-9-GW
SAMPLE

Lab Sample ID: MK82J

LIMS ID: 08-3990

Matrix: Water

Data Release Authorized: 

Reported: 03/04/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 03/03/08 22:24

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	7.0	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoro	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: B-9-GW
SAMPLE

Lab Sample ID: MK82J
LIMS ID: 08-3990
Matrix: Water
Date Analyzed: 03/03/08 22:24

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	0.3	
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	87.8%
Bromofluorobenzene	89.0%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-10-GW
SAMPLE

Lab Sample ID: MK82K

LIMS ID: 08-3991

Matrix: Water

Data Release Authorized:

Reported: 03/04/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 03/03/08 22:51

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoro	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: B-10-GW
SAMPLE

Lab Sample ID: MK82K
LIMS ID: 08-3991
Matrix: Water
Date Analyzed: 03/03/08 22:51

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	90.0%
Bromofluorobenzene	85.2%
d4-1,2-Dichlorobenzene	107%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-11-GW
SAMPLE

Lab Sample ID: MK82L

LIMS ID: 08-3992

Matrix: Water

Data Release Authorized: *AB*

Reported: 03/04/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 03/03/08 23:19

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	4.8	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: B-11-GW
SAMPLE

Lab Sample ID: MK82L
LIMS ID: 08-3992
Matrix: Water
Date Analyzed: 03/03/08 23:19

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	0.4	
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	6.5	
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.0%
d8-Toluene	88.2%
Bromofluorobenzene	86.5%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: B-12-GW

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SAMPLE

Lab Sample ID: MK82M

QC Report No: MK82-Landau Associates, Inc.

LIMS ID: 08-3993

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: 02/28/08

Reported: 03/04/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/03/08 23:46

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: B-12-GW
SAMPLE

Lab Sample ID: MK82M
LIMS ID: 08-3993
Matrix: Water
Date Analyzed: 03/03/08 23:46

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	85.8%
Bromofluorobenzene	92.8%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-14-GW
SAMPLE

Lab Sample ID: MK82N
LIMS ID: 08-3994
Matrix: Water
Data Release Authorized:
Reported: 03/04/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

Instrument/Analyst: NT5/JZ
Date Analyzed: 03/04/08 00:13

Sample Amount: 20.0 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	4.2	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-14-GW
SAMPLE

Lab Sample ID: MK82N
LIMS ID: 08-3994
Matrix: Water
Date Analyzed: 03/04/08 00:13

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	82.2%
Bromofluorobenzene	89.8%
d4-1,2-Dichlorobenzene	99.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: TRIP BLANK

Page 1 of 2

SAMPLE

Lab Sample ID: MK820

QC Report No: MK82-Landau Associates, Inc.

LIMS ID: 08-3995

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized: *JB*

Date Sampled: 02/28/08

Reported: 03/04/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/03/08 16:56

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: TRIP BLANK
SAMPLE

Lab Sample ID: MK820
LIMS ID: 08-3995
Matrix: Water
Date Analyzed: 03/03/08 16:56

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.5%
d8-Toluene	88.5%
Bromofluorobenzene	88.8%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-030308

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-030308

QC Report No: MK82-Landau Associates, Inc.

LIMS ID: 08-3995

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 03/04/08

Date Received: NA

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/03/08 16:29

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: MB-030308
METHOD BLANK

Lab Sample ID: MB-030308
LIMS ID: 08-3995
Matrix: Water
Date Analyzed: 03/03/08 16:29

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.2%
d8-Toluene	87.8%
Bromofluorobenzene	85.0%
d4-1,2-Dichlorobenzene	102%

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MK82I	B-8-GW	20	102%	88.8%	87.8%	100%	0
MK82J	B-9-GW	20	103%	87.8%	89.0%	102%	0
MK82K	B-10-GW	20	113%	90.0%	85.2%	107%	0
MK82L	B-11-GW	20	98.0%	88.2%	86.5%	101%	0
MK82M	B-12-GW	20	107%	85.8%	92.8%	100%	0
MK82N	B-14-GW	20	103%	82.2%	89.8%	99.2%	0
MB-030308	Method Blank	20	96.2%	87.8%	85.0%	102%	0
LCS-030308	Lab Control	20	98.2%	94.8%	96.8%	99.2%	0
LCS-030308	Lab Control Dup	20	102%	95.0%	93.8%	100%	0
MK82O	TRIP BLANK	20	96.5%	88.5%	88.8%	101%	0

LCS/MB LIMITS

QC LIMITS

SW8260B

(DCE) = d4-1,2-Dichloroethane
(TOL) = d8-Toluene
(BFB) = Bromofluorobenzene
(DCB) = d4-1,2-Dichlorobenzene

70-131
80-120
74-121
80-120

64-146
78-125
71-120
80-121

Prep Method: SW5030B
Log Number Range: 08-3989 to 08-3995

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-030308


Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-030308

LIMS ID: 08-3995

Matrix: Water

Data Release Authorized: 

Reported: 03/04/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT5/JZ

LCSID: NT5/JZ

Date Analyzed LCS: 03/03/08 15:35

LCSID: 03/03/08 16:02

Sample Amount LCS: 20.0 mL

LCSID: 20.0 mL

Purge Volume LCS: 20.0 mL

LCSID: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSID	Spike Added-LCSID	LCSID Recovery	RPD
Chloromethane	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromomethane	3.6	4.0	90.0%	3.8	4.0	95.0%	5.4%
Vinyl Chloride	4.2	4.0	105%	4.5	4.0	112%	6.9%
Chloroethane	4.4	4.0	110%	4.7	4.0	118%	6.6%
Methylene Chloride	4.2	4.0	105%	4.4	4.0	110%	4.7%
Acetone	19.7	20.0	98.5%	21.9	20.0	110%	10.6%
Carbon Disulfide	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,1-Dichloroethene	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,1-Dichloroethane	4.3	4.0	108%	4.6	4.0	115%	6.7%
trans-1,2-Dichloroethene	4.2	4.0	105%	4.5	4.0	112%	6.9%
cis-1,2-Dichloroethene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Chloroform	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,2-Dichloroethane	4.3	4.0	108%	4.5	4.0	112%	4.5%
2-Butanone	20.7	20.0	104%	21.6	20.0	108%	4.3%
1,1,1-Trichloroethane	4.3	4.0	108%	4.6	4.0	115%	6.7%
Carbon Tetrachloride	4.3	4.0	108%	4.4	4.0	110%	2.3%
Vinyl Acetate	4.3	4.0	108%	4.5	4.0	112%	4.5%
Bromodichloromethane	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,2-Dichloropropane	4.1	4.0	102%	4.3	4.0	108%	4.8%
cis-1,3-Dichloropropene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Trichloroethene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Dibromochloromethane	4.1	4.0	102%	4.3	4.0	108%	4.8%
1,1,2-Trichloroethane	4.1	4.0	102%	4.3	4.0	108%	4.8%
Benzene	4.2	4.0	105%	4.3	4.0	108%	2.4%
trans-1,3-Dichloropropene	4.2	4.0	105%	4.3	4.0	108%	2.4%
2-Chloroethylvinylether	4.0	4.0	100%	4.1	4.0	102%	2.5%
Bromoform	4.1	4.0	102%	4.2	4.0	105%	2.4%
4-Methyl-2-Pentanone (MIBK)	20.4	20.0	102%	21.8	20.0	109%	6.6%
2-Hexanone	20.4	20.0	102%	21.5	20.0	108%	5.3%
Tetrachloroethene	4.2	4.0	105%	4.3	4.0	108%	2.4%
1,1,2,2-Tetrachloroethane	4.1	4.0	102%	4.4	4.0	110%	7.1%
Toluene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Chlorobenzene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Ethylbenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%
Styrene	4.3	4.0	108%	4.4	4.0	110%	2.3%
Trichlorofluoromethane	4.5	4.0	112%	4.7	4.0	118%	4.3%
1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	4.0	108%	4.5	4.0	112%	4.5%
m,p-Xylene	8.5	8.0	106%	8.8	8.0	110%	3.5%
o-Xylene	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,2-Dichlorobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
1,3-Dichlorobenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,4-Dichlorobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
Acrolein	22.0	20.0	110%	23.0	20.0	115%	4.4%
Methyl Iodide	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromoethane	4.2	4.0	105%	4.4	4.0	110%	4.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-030308

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-030308

QC Report No: MK82-Landau Associates, Inc.

LIMS ID: 08-3995

Project: Qwest Field North Lot

Matrix: Water

1014001

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	4.2	4.0	105%	4.5	4.0	112%	6.9%
1,1-Dichloropropene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Dibromomethane	4.1	4.0	102%	4.2	4.0	105%	2.4%
1,1,1,2-Tetrachloroethane	4.2	4.0	105%	4.3	4.0	108%	2.4%
1,2-Dibromo-3-chloropropane	3.9	4.0	97.5%	4.4	4.0	110%	12.0%
1,2,3-Trichloropropane	4.1	4.0	102%	4.5	4.0	112%	9.3%
trans-1,4-Dichloro-2-butene	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,3,5-Trimethylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
1,2,4-Trimethylbenzene	4.3	4.0	108%	4.6	4.0	115%	6.7%
Hexachlorobutadiene	4.3	4.0	108%	4.4	4.0	110%	2.3%
Ethylene Dibromide	4.2	4.0	105%	4.3	4.0	108%	2.4%
Bromochloromethane	4.2	4.0	105%	4.4	4.0	110%	4.7%
2,2-Dichloropropane	4.3	4.0	108%	4.6	4.0	115%	6.7%
1,3-Dichloropropane	4.2	4.0	105%	4.4	4.0	110%	4.7%
Isopropylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
n-Propylbenzene	4.4	4.0	110%	4.7	4.0	118%	6.6%
Bromobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
2-Chlorotoluene	4.4	4.0	110%	4.6	4.0	115%	4.4%
4-Chlorotoluene	4.3	4.0	108%	4.6	4.0	115%	6.7%
tert-Butylbenzene	4.3	4.0	108%	4.6	4.0	115%	6.7%
sec-Butylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
4-Isopropyltoluene	4.4	4.0	110%	4.6	4.0	115%	4.4%
n-Butylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
1,2,4-Trichlorobenzene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Naphthalene	4.3	4.0	108%	4.6	4.0	115%	6.7%
1,2,3-Trichlorobenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	98.2%	102%
d8-Toluene	94.8%	95.0%
Bromofluorobenzene	96.8%	93.8%
d4-1,2-Dichlorobenzene	99.2%	100%

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Matrix: Water

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized: *AP*

Reported: 03/06/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-030408 08-3989	Method Blank HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 85.3%
MK82I 08-3989	B-8-GW HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 60.2%
MK82J 08-3990	B-9-GW HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 84.7%
MK82K 08-3991	B-10-GW HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 86.2%
MK82L 08-3992	B-11-GW HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 81.8%
MK82M 08-3993	B-12-GW HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 89.8%
MK82N 08-3994	B-14-GW HC ID: ---	03/04/08	03/05/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 84.9%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>OTER</u>	<u>TOT</u>	<u>OUT</u>
MB-030408	85.3%	0	
LCS-030408	86.4%	0	
LCSD-030408	87.6%	0	
B-8-GW	60.2%	0	
B-9-GW	84.7%	0	
B-10-GW	86.2%	0	
B-11-GW	81.8%	0	
B-12-GW	89.8%	0	
B-14-GW	84.9%	0	

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(46-122)

(36-120)

Prep Method: SW3510C
Log Number Range: 08-3989 to 08-3994

ORGANICS ANALYSIS DATA SHEET
 NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1

Sample ID: LCS-030408
 LCS/LCSD

Lab Sample ID: LCS-030408
 LIMS ID: 08-3989
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 03/06/08

QC Report No: MK82-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/28/08
 Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/04/08

Sample Amount LCS: 500 mL
 LCSD: 500 mL

Date Analyzed LCS: 03/05/08 20:48
 LCSD: 03/05/08 21:03

Final Extract Volume LCS: 1.0 mL
 LCSD: 1.0 mL

Instrument/Analyst LCS: FID/MS
 LCSD: FID/MS

Dilution Factor LCS: 1.00
 LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.37	3.00	79.0%	2.38	3.00	79.3%	0.4%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	86.4%	87.6%

Results reported in mg/L
 RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT


Matrix: Water
Date Received: 02/29/08

ARI Job: MK82
Project: Qwest Field North Lot
1014001

<u>ARI ID</u>	<u>Client ID</u>	<u>Samp Amt</u>	<u>Final Vol</u>	<u>Prep Date</u>
08-3989-030408MB1	Method Blank	500 mL	1.00 mL	03/04/08
08-3989-030408LCS1	Lab Control	500 mL	1.00 mL	03/04/08
08-3989-030408LCSD1	Lab Control Dup	500 mL	1.00 mL	03/04/08
08-3989-MK82I	B-8-GW	475 mL	1.00 mL	03/04/08
08-3990-MK82J	B-9-GW	405 mL	1.00 mL	03/04/08
08-3991-MK82K	B-10-GW	485 mL	1.00 mL	03/04/08
08-3992-MK82L	B-11-GW	475 mL	1.00 mL	03/04/08
08-3993-MK82M	B-12-GW	480 mL	1.00 mL	03/04/08
08-3994-MK82N	B-14-GW	500 mL	1.00 mL	03/04/08

ORGANICS ANALYSIS DATA SHEET
 NWTPH-HCID Method by GC/FID
 Page 1 of 2
 Matrix: Soil


QC Report No: MK82-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

Data Release Authorized:
 Reported: 03/05/08 

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MK82A 08-3981	B-8-5-6 HC ID: MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U > 100 104%
MK82B 08-3982	B-9-5.5-6.5 HC ID: ---	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 102%
MK82C 08-3983	B-10-7-8 HC ID: ---	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 100%
MK82D 08-3984	B-11-6-6.5 HC ID: DRO/MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U > 50 > 100 102%
MK82E 08-3985	B-12-6-7 HC ID: GRO/DRO/MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	> 20 > 50 > 100 99.7%
MK82F 08-3986	B-13-5-5.75 HC ID: DRO/MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U > 50 > 100 102%
MK82G 08-3987	B-14-5-6.33 HC ID: DRO/MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U > 50 > 100 104%
MB-030308 08-3988	Method Blank	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 101%
MK82H 08-3988	B-15-5-6.33 HC ID: DRO/MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U > 50 > 100 103%
MK82HDP 08-3988	B-15-5-6.33 HC ID: DRO/MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U > 50 > 100 103%

ORGANICS ANALYSIS DATA SHEET
NWTPH-HCID Method by GC/FID
Page 2 of 2
Matrix: Soil

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

Data Release Authorized:
Reported: 03/05/08 

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
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Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
B-8-5-6	104%	0
B-9-5.5-6.5	102%	0
B-10-7-8	100%	0
B-11-6-6.5	102%	0
B-12-6-7	99.7%	0
B-13-5-5.75	102%	0
B-14-5-6.33	104%	0
030308MB	101%	0
B-15-5-6.33	103%	0
B-15-5-6.33 DP	103%	0

LCS/MB LIMITS QC LIMITS

(O-TER) = o-Terphenyl

(68-122)

(50-150)

Prep Method: SW3550B

Log Number Range: 08-3981 to 08-3988

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: MK82
Project: Qwest Field North Lot
1014001

Matrix: Soil
Date Received: 02/29/08

ARI ID	Client ID	Sample Amt	Final Vol	Basis	Prep Date
08-3981-MK82A	B-8-5-6	6.87 g	5.00 mL	D	03/03/08
08-3982-MK82B	B-9-5.5-6.5	8.70 g	5.00 mL	D	03/03/08
08-3983-MK82C	B-10-7-8	8.39 g	5.00 mL	D	03/03/08
08-3984-MK82D	B-11-6-6.5	7.89 g	5.00 mL	D	03/03/08
08-3985-MK82E	B-12-6-7	6.98 g	5.00 mL	D	03/03/08
08-3986-MK82F	B-13-5-5.75	8.69 g	5.00 mL	D	03/03/08
08-3987-MK82G	B-14-5-6.33	9.07 g	5.00 mL	D	03/03/08
08-3988-030308MB	Method Blank	10.0 g	5.00 mL	-	03/03/08
08-3988-MK82H	B-15-5-6.33	9.02 g	5.00 mL	D	03/03/08
08-3988-MK82HDP	B-15-5-6.33	9.02 g	5.00 mL	D	03/03/08

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Matrix: Soil

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized:

Reported: 03/12/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-030708	Method Blank	03/07/08	03/10/08	1.00	Diesel	5.0	< 5.0 U
08-3981	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	10	< 10 U 90.7%
MK82A	B-8-5-6	03/07/08	03/10/08	1.00	Diesel	7.3	15
08-3981	HC ID: DRO/MOTOR OIL		FID3A	1.0	Motor Oil o-Terphenyl	15	68 93.6%
MK82D	B-11-6-6.5	03/07/08	03/10/08	1.00	Diesel	6.3	58
08-3984	HC ID: DRO/MOTOR OIL		FID3A	1.0	Motor Oil o-Terphenyl	13	560 95.1%
MK82E	B-12-6-7	03/07/08	03/10/08	1.00	Diesel	7.2	65
08-3985	HC ID: DRO/RRO		FID3A	1.0	Motor Oil o-Terphenyl	14	82 97.1%
MK82F	B-13-5-5.75	03/07/08	03/11/08	1.00	Diesel	29	90
08-3986	HC ID: DRO/MOTOR OIL		FID3A	5.0	Motor Oil o-Terphenyl	58	630 87.7%
MK82G	B-14-5-6.33	03/07/08	03/10/08	1.00	Diesel	5.5	65
08-3987	HC ID: DRO/MOTOR OIL		FID3A	1.0	Motor Oil o-Terphenyl	11	500 94.9%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.



ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1

Sample ID: LCS-030708
LCS/LCSD

Lab Sample ID: LCS-030708
LIMS ID: 08-3981
Matrix: Soil
Data Release Authorized:
Reported: 03/12/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/07/08
Date Analyzed LCS: 03/10/08 13:54
LCSD: 03/10/08 14:10
Instrument/Analyst LCS: FID/MS
LCSD: FID/MS

Sample Amount LCS: 10.0 g
LCSD: 10.0 g
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.0
LCSD: 1.0

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	109	150	72.7%	104	150	69.3%	4.7%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	94.7%	89.8%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-030708	90.7%	0
LCS-030708	94.7%	0
LCSD-030708	89.8%	0
B-8-5-6	93.6%	0
B-11-6-6.5	95.1%	0
B-12-6-7	97.1%	0
B-13-5-5.75	87.7%	0
B-14-5-6.33	94.9%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(35-123)

(33-117)

Prep Method: SW3550B
Log Number Range: 08-3981 to 08-3987

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: MK82
Project: Qwest Field North Lot
1014001

Matrix: Soil
Date Received: 02/29/08

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
08-3981-030708MB1	Method Blank	10.0 g	1.00 mL	-	03/07/08
08-3981-030708LCS1	Lab Control	10.0 g	1.00 mL	-	03/07/08
08-3981-030708LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	03/07/08
08-3981-MK82A	B-8-5-6	6.85 g	1.00 mL	D	03/07/08
08-3984-MK82D	B-11-6-6.5	7.89 g	1.00 mL	D	03/07/08
08-3985-MK82E	B-12-6-7	6.93 g	1.00 mL	D	03/07/08
08-3986-MK82F	B-13-5-5.75	8.69 g	1.00 mL	D	03/07/08
08-3987-MK82G	B-14-5-6.33	9.05 g	1.00 mL	D	03/07/08

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-8-5-6

SAMPLE

Lab Sample ID: MK82A

LIMS ID: 08-3981

Matrix: Soil

Data Release Authorized: 

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 15:13

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.52 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 31.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	< 66 U
91-57-6	2-Methylnaphthalene	66	< 66 U
90-12-0	1-Methylnaphthalene	66	< 66 U
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	Acenaphthene	66	< 66 U
86-73-7	Fluorene	66	< 66 U
85-01-8	Phenanthrene	66	190
120-12-7	Anthracene	66	< 66 U
206-44-0	Fluoranthene	66	310
129-00-0	Pyrene	66	230
56-55-3	Benzo (a) anthracene	66	130
218-01-9	Chrysene	66	150
205-99-2	Benzo (b) fluoranthene	66	120
207-08-9	Benzo (k) fluoranthene	66	150
50-32-8	Benzo (a) pyrene	66	140
193-39-5	Indeno (1,2,3-cd) pyrene	66	71
53-70-3	Dibenz (a,h) anthracene	66	< 66 U
191-24-2	Benzo (g,h,i) perylene	66	< 66 U
132-64-9	Dibenzofuran	66	< 66 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.0%
2-Fluorobiphenyl	65.2%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-9-5.5-6.5

SAMPLE

Lab Sample ID: MK82B

LIMS ID: 08-3982

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 15:47

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.88 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 13.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	< 64 U
91-57-6	2-Methylnaphthalene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	< 64 U
86-73-7	Fluorene	64	< 64 U
85-01-8	Phenanthrene	64	< 64 U
120-12-7	Anthracene	64	< 64 U
206-44-0	Fluoranthene	64	< 64 U
129-00-0	Pyrene	64	< 64 U
56-55-3	Benzo (a) anthracene	64	< 64 U
218-01-9	Chrysene	64	< 64 U
205-99-2	Benzo (b) fluoranthene	64	< 64 U
207-08-9	Benzo (k) fluoranthene	64	< 64 U
50-32-8	Benzo (a) pyrene	64	< 64 U
193-39-5	Indeno (1,2,3-cd) pyrene	64	< 64 U
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	< 64 U
132-64-9	Dibenzofuran	64	< 64 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatiles Surrogate Recovery

d14-p-Terphenyl	68.4%
2-Fluorobiphenyl	57.2%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B-10-7-8

SAMPLE

Lab Sample ID: MK82C

LIMS ID: 08-3983

Matrix: Soil

Data Release Authorized: 

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 16:22

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.62 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 16.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	< 66 U
91-57-6	2-Methylnaphthalene	66	< 66 U
90-12-0	1-Methylnaphthalene	66	< 66 U
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	Acenaphthene	66	< 66 U
86-73-7	Fluorene	66	< 66 U
85-01-8	Phenanthrene	66	< 66 U
120-12-7	Anthracene	66	< 66 U
206-44-0	Fluoranthene	66	< 66 U
129-00-0	Pyrene	66	< 66 U
56-55-3	Benzo (a) anthracene	66	< 66 U
218-01-9	Chrysene	66	< 66 U
205-99-2	Benzo (b) fluoranthene	66	< 66 U
207-08-9	Benzo (k) fluoranthene	66	< 66 U
50-32-8	Benzo (a) pyrene	66	< 66 U
193-39-5	Indeno (1,2,3-cd) pyrene	66	< 66 U
53-70-3	Dibenz (a,h) anthracene	66	< 66 U
191-24-2	Benzo (g,h,i) perylene	66	< 66 U
132-64-9	Dibenzofuran	66	< 66 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	66.0%
2-Fluorobiphenyl	55.2%



ORGANICS ANALYSIS DATA SHEET
 PNAs by SW8270D GC/MS
 Page 1 of 1

Sample ID: B-11-6-6.5
 SAMPLE

Lab Sample ID: MK82D
 LIMS ID: 08-3984
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/28/08
 Date Received: 02/29/08

Date Extracted: 03/07/08
 Date Analyzed: 03/10/08 16:56
 Instrument/Analyst: NT6/LJR
 GPC Cleanup: No
 Alumina: No
 Silica Gel: Yes

Sample Amount: 7.86 g-dry-wt
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00
 Percent Moisture: 21.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	< 64 U
91-57-6	2-Methylnaphthalene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	100
86-73-7	Fluorene	64	110
85-01-8	Phenanthrene	64	1,000
120-12-7	Anthracene	64	220
206-44-0	Fluoranthene	64	1,700
129-00-0	Pyrene	64	1,000
56-55-3	Benzo (a) anthracene	64	520
218-01-9	Chrysene	64	600
205-99-2	Benzo (b) fluoranthene	64	520
207-08-9	Benzo (k) fluoranthene	64	460
50-32-8	Benzo (a) pyrene	64	480
193-39-5	Indeno (1,2,3-cd) pyrene	64	150
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	140
132-64-9	Dibenzofuran	64	67

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	65.2%
2-Fluorobiphenyl	65.6%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-12-6-7
SAMPLE

Lab Sample ID: MK82E

LIMS ID: 08-3985

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 17:31

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.61 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 30.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	< 66 U
91-57-6	2-Methylnaphthalene	66	80
90-12-0	1-Methylnaphthalene	66	95
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	Acenaphthene	66	< 66 U
86-73-7	Fluorene	66	< 66 U
85-01-8	Phenanthrene	66	180
120-12-7	Anthracene	66	< 66 U
206-44-0	Fluoranthene	66	200
129-00-0	Pyrene	66	170
56-55-3	Benzo (a) anthracene	66	97
218-01-9	Chrysene	66	130
205-99-2	Benzo (b) fluoranthene	66	99
207-08-9	Benzo (k) fluoranthene	66	100
50-32-8	Benzo (a) pyrene	66	120
193-39-5	Indeno (1,2,3-cd) pyrene	66	< 66 U
53-70-3	Dibenz (a,h) anthracene	66	< 66 U
191-24-2	Benzo (g,h,i) perylene	66	< 66 U
132-64-9	Dibenzofuran	66	< 66 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatiles Surrogate Recovery

d14-p-Terphenyl	52.8%
2-Fluorobiphenyl	53.2%

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D GC/MS
Page 1 of 1

Sample ID: B-13-5-5.75
SAMPLE

Lab Sample ID: MK82F
LIMS ID: 08-3986
Matrix: Soil
Data Release Authorized:
Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

Date Extracted: 03/07/08
Date Analyzed: 03/10/08 18:05
Instrument/Analyst: NT6/LJR
GPC Cleanup: No
Alumina: No
Silica Gel: Yes

Sample Amount: 7.79 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 13.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	66
91-57-6	2-Methylnaphthalene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	75
86-73-7	Fluorene	64	89
85-01-8	Phenanthrene	64	940
120-12-7	Anthracene	64	200
206-44-0	Fluoranthene	64	1,200
129-00-0	Pyrene	64	810
56-55-3	Benzo (a) anthracene	64	380
218-01-9	Chrysene	64	500
205-99-2	Benzo (b) fluoranthene	64	370
207-08-9	Benzo (k) fluoranthene	64	420
50-32-8	Benzo (a) pyrene	64	410
193-39-5	Indeno (1,2,3-cd) pyrene	64	130
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	130
132-64-9	Dibenzofuran	64	< 64 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	62.4%
2-Fluorobiphenyl	63.2%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1



Sample ID: B-14-5-6.33

SAMPLE

Lab Sample ID: MK82G

LIMS ID: 08-3987

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 18:40

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.73 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 9.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	65	< 65 U
91-57-6	2-Methylnaphthalene	65	< 65 U
90-12-0	1-Methylnaphthalene	65	< 65 U
208-96-8	Acenaphthylene	65	< 65 U
83-32-9	Acenaphthene	65	150
86-73-7	Fluorene	65	200
85-01-8	Phenanthrene	65	2,900
120-12-7	Anthracene	65	500
206-44-0	Fluoranthene	65	5,700 E
129-00-0	Pyrene	65	3,500
56-55-3	Benzo (a) anthracene	65	2,100
218-01-9	Chrysene	65	2,400
205-99-2	Benzo (b) fluoranthene	65	3,000
207-08-9	Benzo (k) fluoranthene	65	2,100
50-32-8	Benzo (a) pyrene	65	2,200
193-39-5	Indeno (1,2,3-cd) pyrene	65	740
53-70-3	Dibenz (a,h) anthracene	65	300
191-24-2	Benzo (g,h,i) perylene	65	660
132-64-9	Dibenzofuran	65	140

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.0%
2-Fluorobiphenyl	65.2%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-14-5-6.33

DILUTION

Lab Sample ID: MK82G

LIMS ID: 08-3987

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/11/08 13:46

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.73 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 9.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	190	< 190 U
91-57-6	2-Methylnaphthalene	190	< 190 U
90-12-0	1-Methylnaphthalene	190	< 190 U
208-96-8	Acenaphthylene	190	< 190 U
83-32-9	Acenaphthene	190	< 190 U
86-73-7	Fluorene	190	200
85-01-8	Phenanthrene	190	3,400
120-12-7	Anthracene	190	560
206-44-0	Fluoranthene	190	7,200
129-00-0	Pyrene	190	4,000
56-55-3	Benzo (a) anthracene	190	2,300
218-01-9	Chrysene	190	2,800
205-99-2	Benzo (b) fluoranthene	190	2,400
207-08-9	Benzo (k) fluoranthene	190	2,400
50-32-8	Benzo (a) pyrene	190	2,400
193-39-5	Indeno (1,2,3-cd) pyrene	190	1,000
53-70-3	Dibenz (a,h) anthracene	190	450
191-24-2	Benzo (g,h,i) perylene	190	1,100
132-64-9	Dibenzofuran	190	< 190 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.4%
2-Fluorobiphenyl	73.1%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

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Sample ID: B-15-5-6.33

SAMPLE

Lab Sample ID: MK82H

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized: 

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 19:14

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.72 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 9.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	65	280
91-57-6	2-Methylnaphthalene	65	330
90-12-0	1-Methylnaphthalene	65	350
208-96-8	Acenaphthylene	65	< 65 U
83-32-9	Acenaphthene	65	730
86-73-7	Fluorene	65	830
85-01-8	Phenanthrene	65	5,700 E
120-12-7	Anthracene	65	1,700
206-44-0	Fluoranthene	65	5,400 E
129-00-0	Pyrene	65	4,100
56-55-3	Benzo (a) anthracene	65	1,800
218-01-9	Chrysene	65	1,900
205-99-2	Benzo (b) fluoranthene	65	1,700
207-08-9	Benzo (k) fluoranthene	65	1,700
50-32-8	Benzo (a) pyrene	65	2,000
193-39-5	Indeno (1,2,3-cd) pyrene	65	580
53-70-3	Dibenz (a,h) anthracene	65	91
191-24-2	Benzo (g,h,i) perylene	65	600
132-64-9	Dibenzofuran	65	290

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.4%
2-Fluorobiphenyl	67.2%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-15-5-6.33

DILUTION

Lab Sample ID: MK82H

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/11/08 14:20

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.72 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 9.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	190	270
91-57-6	2-Methylnaphthalene	190	310
90-12-0	1-Methylnaphthalene	190	320
208-96-8	Acenaphthylene	190	< 190 U
83-32-9	Acenaphthene	190	740
86-73-7	Fluorene	190	830
85-01-8	Phenanthrene	190	6,400
120-12-7	Anthracene	190	1,700
206-44-0	Fluoranthene	190	6,200
129-00-0	Pyrene	190	4,300
56-55-3	Benzo (a) anthracene	190	1,800
218-01-9	Chrysene	190	1,900
205-99-2	Benzo (b) fluoranthene	190	1,700
207-08-9	Benzo (k) fluoranthene	190	1,400
50-32-8	Benzo (a) pyrene	190	2,100
193-39-5	Indeno (1,2,3-cd) pyrene	190	860
53-70-3	Dibenz (a,h) anthracene	190	280
191-24-2	Benzo (g,h,i) perylene	190	980
132-64-9	Dibenzofuran	190	280

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	62.9%
2-Fluorobiphenyl	69.5%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B-15-5-6.33

MATRIX SPIKE

Lab Sample ID: MK82H

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized: 

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 19:49

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.72 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 9.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	65	---
91-57-6	2-Methylnaphthalene	65	---
90-12-0	1-Methylnaphthalene	65	---
208-96-8	Acenaphthylene	65	---
83-32-9	Acenaphthene	65	---
86-73-7	Fluorene	65	---
85-01-8	Phenanthrene	65	---
120-12-7	Anthracene	65	---
206-44-0	Fluoranthene	65	---
129-00-0	Pyrene	65	---
56-55-3	Benzo (a) anthracene	65	---
218-01-9	Chrysene	65	---
205-99-2	Benzo (b) fluoranthene	65	---
207-08-9	Benzo (k) fluoranthene	65	---
50-32-8	Benzo (a) pyrene	65	---
193-39-5	Indeno (1,2,3-cd) pyrene	65	---
53-70-3	Dibenz (a,h) anthracene	65	---
191-24-2	Benzo (g,h,i) perylene	65	---
132-64-9	Dibenzofuran	65	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatiles Surrogate Recovery

d14-p-Terphenyl	67.6%
2-Fluorobiphenyl	65.2%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-15-5-6.33

MATRIX SPIKE DUPLICATE

Lab Sample ID: MK82H

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized: *RB*

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 20:23

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.72 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 9.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	65	---
91-57-6	2-Methylnaphthalene	65	---
90-12-0	1-Methylnaphthalene	65	---
208-96-8	Acenaphthylene	65	---
83-32-9	Acenaphthene	65	---
86-73-7	Fluorene	65	---
85-01-8	Phenanthrene	65	---
120-12-7	Anthracene	65	---
206-44-0	Fluoranthene	65	---
129-00-0	Pyrene	65	---
56-55-3	Benzo (a) anthracene	65	---
218-01-9	Chrysene	65	---
205-99-2	Benzo (b) fluoranthene	65	---
207-08-9	Benzo (k) fluoranthene	65	---
50-32-8	Benzo (a) pyrene	65	---
193-39-5	Indeno (1,2,3-cd) pyrene	65	---
53-70-3	Dibenz (a,h) anthracene	65	---
191-24-2	Benzo (g,h,i) perylene	65	---
132-64-9	Dibenzofuran	65	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	72.8%
2-Fluorobiphenyl	66.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: MB-030708

METHOD BLANK

Lab Sample ID: MB-030708

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 11:09

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	70.0%
2-Fluorobiphenyl	56.8%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
B-8-5-6	68.0%	65.2%	0
B-9-5.5-6.5	68.4%	57.2%	0
B-10-7-8	66.0%	55.2%	0
B-11-6-6.5	65.2%	65.6%	0
B-12-6-7	52.8%	53.2%	0
B-13-5-5.75	62.4%	63.2%	0
B-14-5-6.33	68.0%	65.2%	0
B-14-5-6.33 DL	68.4%	73.1%	0
MB-030708	70.0%	56.8%	0
LCS-030708	66.0%	51.6%	0
LCSD-030708	67.6%	58.8%	0
B-15-5-6.33	68.4%	67.2%	0
B-15-5-6.33 DL	62.9%	69.5%	0
B-15-5-6.33 MS	67.6%	65.2%	0
B-15-5-6.33 MSD	72.8%	66.4%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl	(41-109)	(39-111)
(FBP) = 2-Fluorobiphenyl	(33-93)	(32-94)

Prep Method: SW3550B
Log Number Range: 08-3981 to 08-3988

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-030708

LCS/LCSD

Lab Sample ID: LCS-030708

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/07/08

Sample Amount LCS: 7.50 g

LCSD: 7.50 g

Date Analyzed LCS: 03/10/08 11:44

Final Extract Volume LCS: 0.50 mL

LCSD: 03/10/08 12:19

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	Spike		LCS		LCSD		RPD
	LCS	Added-LCS	Recovery	LCS	Added-LCSD	Recovery	
Naphthalene	715	1670	42.8%	898	1670	53.8%	22.7%
2-Methylnaphthalene	990	1670	59.3%	1170	1670	70.1%	16.7%
1-Methylnaphthalene	770	1670	46.1%	906	1670	54.3%	16.2%
Acenaphthylene	917	1670	54.9%	1010	1670	60.5%	9.7%
Acenaphthene	869	1670	52.0%	939	1670	56.2%	7.7%
Fluorene	1010	1670	60.5%	1050	1670	62.9%	3.9%
Phenanthrene	1010	1670	60.5%	1050	1670	62.9%	3.9%
Anthracene	1070	1670	64.1%	1100	1670	65.9%	2.8%
Fluoranthene	1290	1670	77.2%	1310	1670	78.4%	1.5%
Pyrene	979	1670	58.6%	1010	1670	60.5%	3.1%
Benzo(a)anthracene	1080	1670	64.7%	1110	1670	66.5%	2.7%
Chrysene	1120	1670	67.1%	1120	1670	67.1%	0.0%
Benzo(b)fluoranthene	1130	1670	67.7%	1200	1670	71.9%	6.0%
Benzo(k)fluoranthene	1250	1670	74.9%	1230	1670	73.7%	1.6%
Benzo(a)pyrene	1160	1670	69.5%	1190	1670	71.3%	2.6%
Indeno(1,2,3-cd)pyrene	768	1670	46.0%	773	1670	46.3%	0.6%
Dibenz(a,h)anthracene	923	1670	55.3%	929	1670	55.6%	0.6%
Benzo(g,h,i)perylene	827	1670	49.5%	845	1670	50.6%	2.2%
Dibenzofuran	930	1670	55.7%	993	1670	59.5%	6.6%

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	66.0%	67.6%
2-Fluorobiphenyl	51.6%	58.8%

Results reported in µg/kg

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-15-5-6.33
MS/MSD

Lab Sample ID: MK82H

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted MS/MSD: 03/07/08

Sample Amount MS: 7.72 g-dry-wt

MSD: 7.72 g-dry-wt

Date Analyzed MS: 03/10/08 19:49

Final Extract Volume MS: 0.5 mL

MSD: 03/10/08 20:23

MSD: 0.5 mL

Instrument/Analyst MS: NT6/LJR

Dilution Factor MS: 1.00

MSD: NT6/LJR

MSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: No

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	280	1070	1620	48.8%	1170	1620	54.9%	8.9%
2-Methylnaphthalene	334	1440	1620	68.3%	1590	1620	77.5%	9.9%
1-Methylnaphthalene	351	1160	1620	49.9%	1340	1620	61.0%	14.4%
Acenaphthylene	< 64.8	1090	1620	67.3%	1150	1620	71.0%	5.4%
Acenaphthene	731	1430	1620	43.1%	1730	1620	61.7%	19.0%
Fluorene	834	1570	1620	45.4%	1930	1620	67.7%	20.6%
Phenanthrene	5730	4600	1620	NA	6760	1620	63.6%	38.0%
Anthracene	1670	2050	1620	23.5%	2830	1620	71.6%	32.0%
Fluoranthene	5380	4320	1620	NA	6590	1620	74.7%	41.6%
Pyrene	4080	3270	1620	NA	5030	1620	58.6%	42.4%
Benzo(a)anthracene	1830	2000	1620	10.5%	2970	1620	70.4%	39.0%
Chrysene	1940	2120	1620	11.1%	2990	1620	64.8%	34.1%
Benzo(b)fluoranthene	1730	2270	1620	33.3%	3480	1620	108%	42.1%
Benzo(k)fluoranthene	1660	2220	1620	34.6%	2770	1620	68.5%	22.0%
Benzo(a)pyrene	2040	2270	1620	14.2%	3280	1620	76.5%	36.4%
Indeno(1,2,3-cd)pyrene	582	891	1620	19.1%	1190	1620	37.5%	28.7%
Dibenz(a,h)anthracene	91.3	738	1620	39.9%	876	1620	48.4%	17.1%
Benzo(g,h,i)perylene	601	839	1620	14.7%	1120	1620	32.0%	28.7%
Dibenzofuran	288	1200	1620	56.3%	1370	1620	66.8%	13.2%

Results reported in $\mu\text{g}/\text{kg}$

NA-No recovery due to high concentration of analyte in original sample OR calculated negative recovery OR the reporting of an unspiked analyte.

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B-8-GW

SAMPLE

Lab Sample ID: MK82I

LIMS ID: 08-3989

Matrix: Water

Data Release Authorized: 

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 19:45

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 498 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	65.2%
2-Fluorobiphenyl	66.8%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS


Page 1 of 1

Sample ID: B-9-GW
SAMPLE

Lab Sample ID: MK82J

LIMS ID: 08-3990

Matrix: Water

Data Release Authorized: 

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 20:19

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 350 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.4	< 1.4 U
91-57-6	2-Methylnaphthalene	1.4	< 1.4 U
90-12-0	1-Methylnaphthalene	1.4	< 1.4 U
208-96-8	Acenaphthylene	1.4	< 1.4 U
83-32-9	Acenaphthene	1.4	< 1.4 U
86-73-7	Fluorene	1.4	< 1.4 U
85-01-8	Phenanthrene	1.4	< 1.4 U
120-12-7	Anthracene	1.4	< 1.4 U
206-44-0	Fluoranthene	1.4	< 1.4 U
129-00-0	Pyrene	1.4	< 1.4 U
56-55-3	Benzo (a) anthracene	1.4	< 1.4 U
218-01-9	Chrysene	1.4	< 1.4 U
205-99-2	Benzo (b) fluoranthene	1.4	< 1.4 U
207-08-9	Benzo (k) fluoranthene	1.4	< 1.4 U
50-32-8	Benzo (a) pyrene	1.4	< 1.4 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.4	< 1.4 U
53-70-3	Dibenz (a,h) anthracene	1.4	< 1.4 U
191-24-2	Benzo (g,h,i) perylene	1.4	< 1.4 U
132-64-9	Dibenzofuran	1.4	< 1.4 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	64.4%
2-Fluorobiphenyl	59.6%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-10-GW

SAMPLE

Lab Sample ID: MK82K

LIMS ID: 08-3991

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 20:54

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	62.8%
2-Fluorobiphenyl	60.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-11-GW
SAMPLE

Lab Sample ID: MK82L

LIMS ID: 08-3992

Matrix: Water

Data Release Authorized:

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 21:29

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	3.1
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatiles Surrogate Recovery

d14-p-Terphenyl	44.8%
2-Fluorobiphenyl	62.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-12-GW

SAMPLE

Lab Sample ID: MK82M

LIMS ID: 08-3993

Matrix: Water

Data Release Authorized: 

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/10/08 12:54

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 490 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	69.6%
2-Fluorobiphenyl	63.2%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-14-GW

SAMPLE

Lab Sample ID: MK82N

LIMS ID: 08-3994

Matrix: Water

Data Release Authorized: *AB*

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/10/08 13:29

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	63.6%
2-Fluorobiphenyl	64.0%



ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: MB-030508

METHOD BLANK

Lab Sample ID: MB-030508

LIMS ID: 08-3989

Matrix: Water

Data Release Authorized:

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 18:01

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	69.2%
2-Fluorobiphenyl	63.2%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
MB-030508	69.2%	63.2%	0
LCS-030508	71.6%	65.6%	0
LCSD-030508	70.8%	61.6%	0
B-8-GW	65.2%	66.8%	0
B-9-GW	64.4%	59.6%	0
B-10-GW	62.8%	60.0%	0
B-11-GW	44.8%	62.4%	0
B-12-GW	69.6%	63.2%	0
B-14-GW	63.6%	64.0%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl (38-118) (30-121)
(FBP) = 2-Fluorobiphenyl (48-108) (47-106)

Prep Method: SW3520C
Log Number Range: 08-3989 to 08-3994

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-030508

LCS/LCSD

Lab Sample ID: LCS-030508

LIMS ID: 08-3989

Matrix: Water

Data Release Authorized:

Reported: 03/11/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/05/08

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 03/07/08 18:36

Final Extract Volume LCS: 0.50 mL

LCSD: 03/07/08 19:10

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: NO

Alumina Cleanup: NO

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	LCSD		
Naphthalene	14.9	25.0	59.6%	13.9	25.0	55.6%	6.9%		
2-Methylnaphthalene	18.7	25.0	74.8%	17.4	25.0	69.6%	7.2%		
1-Methylnaphthalene	14.6	25.0	58.4%	13.9	25.0	55.6%	4.9%		
Acenaphthylene	17.5	25.0	70.0%	16.6	25.0	66.4%	5.3%		
Acenaphthene	15.8	25.0	63.2%	15.2	25.0	60.8%	3.9%		
Fluorene	17.9	25.0	71.6%	17.4	25.0	69.6%	2.8%		
Phenanthrene	17.8	25.0	71.2%	17.3	25.0	69.2%	2.8%		
Anthracene	18.2	25.0	72.8%	17.7	25.0	70.8%	2.8%		
Fluoranthene	21.1	25.0	84.4%	20.9	25.0	83.6%	1.0%		
Pyrene	16.4	25.0	65.6%	16.1	25.0	64.4%	1.8%		
Benzo(a)anthracene	17.6	25.0	70.4%	17.3	25.0	69.2%	1.7%		
Chrysene	18.3	25.0	73.2%	17.9	25.0	71.6%	2.2%		
Benzo(b)fluoranthene	21.2	25.0	84.8%	18.8	25.0	75.2%	12.0%		
Benzo(k)fluoranthene	18.3	25.0	73.2%	20.6	25.0	82.4%	11.8%		
Benzo(a)pyrene	19.2	25.0	76.8%	18.5	25.0	74.0%	3.7%		
Indeno(1,2,3-cd)pyrene	12.5	25.0	50.0%	11.8	25.0	47.2%	5.8%		
Dibenz(a,h)anthracene	15.3	25.0	61.2%	15.2	25.0	60.8%	0.7%		
Benzo(g,h,i)perylene	13.7	25.0	54.8%	13.4	25.0	53.6%	2.2%		
Dibenzofuran	16.7	25.0	66.8%	16.1	25.0	64.4%	3.7%		

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	71.6%	70.8%
2-Fluorobiphenyl	65.6%	61.6%

Results reported in µg/L

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Water


QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Data Release Authorized: 

Reported: 03/05/08

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-030308 08-3989	Method Blank	03/03/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 96.6% 101%
MK82I 08-3989	B-8-GW	03/03/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 95.6% 97.1%
MB-030408 08-3990	Method Blank	03/04/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 98.1% 104%
MK82J 08-3990	B-9-GW	03/04/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 92.7% 99.7%
MK82K 08-3991	B-10-GW	03/03/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 95.6% 101%
MK82L 08-3992	B-11-GW	03/04/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 95.2% 100%
MK82M 08-3993	B-12-GW	03/04/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 95.6% 98.7%
MK82N 08-3994	B-14-GW	03/04/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 95.3% 102%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.



ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-030308

LAB CONTROL SAMPLE

Lab Sample ID: LCS-030308

LIMS ID: 08-3989

Matrix: Water

Data Release Authorized:

Reported: 03/05/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 03/03/08 12:15

LCSD: 03/03/08 12:39

Instrument/Analyst LCS: PID3/PKC

LCSD: PID3/PKC

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.06	1.00	106%	0.97	1.00	97.0%	8.9%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.6%	95.4%
Bromobenzene	104%	100%

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: MK82
Matrix: Water

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-030308	96.6%	101%	0
LCS-030308	98.6%	104%	0
LCSD-030308	95.4%	100%	0
B-8-GW	95.6%	97.1%	0
MB-030408	98.1%	104%	0
LCS-030408	92.2%	98.3%	0
LCSD-030408	96.8%	104%	0
B-9-GW	92.7%	99.7%	0
B-10-GW	95.6%	101%	0
B-11-GW	95.2%	100%	0
B-12-GW	95.6%	98.7%	0
B-14-GW	95.3%	102%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 08-3989 to 08-3994

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: LCS-030408
LAB CONTROL SAMPLE

Lab Sample ID: LCS-030408
LIMS ID: 08-3990
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 03/05/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 03/04/08 09:26
LCSD: 03/04/08 09:51
Instrument/Analyst LCS: PID3/PKC
LCSD: PID3/PKC

Purge Volume: 5.0 mL
Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.05	1.00	105%	1.06	1.00	106%	0.9%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	92.2%	96.8%
Bromobenzene	98.3%	104%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil

Data Release Authorized:

Reported: 03/10/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-030708 08-3985	Method Blank	03/07/08 PID3	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 5.0 U --- 97.2% 101%
MK82E 08-3985	B-12-6-7	03/07/08 PID3	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 13 U --- 113% 105%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: MK82
Matrix: Soil

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001

<u>Client ID</u>	<u>BFB</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-030708	NA	97.2%	101%	0
LCS-030708	NA	102%	106%	0
LCSD-030708	NA	102%	102%	0
B-12-6-7	NA	113%	105%	0

	LCS/MB LIMITS	QC LIMITS
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(65-137)
(BBZ) = Bromobenzene	(80-120)	(54-144)

Log Number Range: 08-3985 to 08-3985

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: LCS-030708

LAB CONTROL SAMPLE

Lab Sample ID: LCS-030708

LIMS ID: 08-3985

Matrix: Soil

Data Release Authorized: 

Reported: 03/10/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 03/07/08 08:45

LCSD: 03/07/08 10:23

Instrument/Analyst LCS: PID3/PKC

LCSD: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	52.8	50.0	106%	52.2	50.0	104%	1.1%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	102%	102%
Bromobenzene	106%	102%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-8-5-6
SAMPLE

Lab Sample ID: MK82A

LIMS ID: 08-3981

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 73.0%


Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/07/08	7440-38-2	Arsenic	7	7	U
3050B	03/03/08	6010B	03/07/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	03/03/08	6010B	03/07/08	7440-47-3	Chromium	0.7	21.5	
3050B	03/03/08	6010B	03/07/08	7439-92-1	Lead	3	39	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.06	0.06	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: B-8-5-6
DUPLICATE

Lab Sample ID: MK82A
LIMS ID: 08-3981
Matrix: Soil
Data Release Authorized: 
Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

MATRIX DUPLICATE QUALITY CONTROL REPORT


Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	7 U	7 U	0.0%	+/- 7	L
Cadmium	6010B	0.3 U	0.3 U	0.0%	+/- 0.3	L
Chromium	6010B	21.5	24.9	14.7%	+/- 20%	
Lead	6010B	39	46	16.5%	+/- 20%	
Mercury	7471A	0.06 U	0.06	0.0%	+/- 0.06	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: B-8-5-6
MATRIX SPIKE

Lab Sample ID: MK82A
LIMS ID: 08-3981
Matrix: Soil
Data Release Authorized: 
Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	7 U	255	267	95.5%	
Cadmium	6010B	0.3 U	61.0	66.8	91.3%	
Chromium	6010B	21.5	81.8	66.8	90.3%	
Lead	6010B	39	272	267	87.3%	
Mercury	7471A	0.06 U	0.64	0.550	116%	

Reported in mg/kg-dry

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-9-5.5-6.5
SAMPLE

Lab Sample ID: MK82B

LIMS ID: 08-3982

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 92.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/07/08	7440-38-2	Arsenic	5	5	U
3050B	03/03/08	6010B	03/07/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/03/08	6010B	03/07/08	7440-47-3	Chromium	0.5	29.6	
3050B	03/03/08	6010B	03/07/08	7439-92-1	Lead	2	3	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

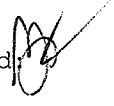
Page 1 of 1

Sample ID: B-10-7-8
SAMPLE

Lab Sample ID: MK82C

LIMS ID: 08-3983

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 85.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/07/08	7440-38-2	Arsenic	6	6	U
3050B	03/03/08	6010B	03/07/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/03/08	6010B	03/07/08	7440-47-3	Chromium	0.6	38.9	
3050B	03/03/08	6010B	03/07/08	7439-92-1	Lead	2	25	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.04	0.10	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-11-6-6.5
SAMPLE

Lab Sample ID: MK82D

LIMS ID: 08-3984

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 46.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/10/08	7440-38-2	Arsenic	30	30	U
3050B	03/03/08	6010B	03/10/08	7440-43-9	Cadmium	1	1	U
3050B	03/03/08	6010B	03/10/08	7440-47-3	Chromium	3	12	
3050B	03/03/08	6010B	03/10/08	7439-92-1	Lead	10	10	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.09	0.09	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

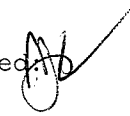
Page 1 of 1

Sample ID: B-12-6-7
SAMPLE

Lab Sample ID: MK82E

LIMS ID: 08-3985

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 64.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/07/08	7440-38-2	Arsenic	8	8	U
3050B	03/03/08	6010B	03/07/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	03/03/08	6010B	03/07/08	7440-47-3	Chromium	0.8	7.0	
3050B	03/03/08	6010B	03/07/08	7439-92-1	Lead	3	5	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.06	0.06	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-13-5-5.75
SAMPLE

Lab Sample ID: MK82F

LIMS ID: 08-3986

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 87.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/07/08	7440-38-2	Arsenic	5	5	U
3050B	03/03/08	6010B	03/07/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/03/08	6010B	03/07/08	7440-47-3	Chromium	0.5	36.3	
3050B	03/03/08	6010B	03/07/08	7439-92-1	Lead	2	10	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.06	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-14-5-6.33

SAMPLE

Lab Sample ID: MK82G

LIMS ID: 08-3987

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 91.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/07/08	7440-38-2	Arsenic	5	5	U
3050B	03/03/08	6010B	03/07/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/03/08	6010B	03/07/08	7440-47-3	Chromium	0.5	34.5	
3050B	03/03/08	6010B	03/07/08	7439-92-1	Lead	2	85	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.06	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-15-5-6.33
SAMPLE

Lab Sample ID: MK82H

LIMS ID: 08-3988

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Percent Total Solids: 89.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/10/08	7440-38-2	Arsenic	50	50	U
3050B	03/03/08	6010B	03/10/08	7440-43-9	Cadmium	2	2	U
3050B	03/03/08	6010B	03/10/08	7440-47-3	Chromium	5	39	
3050B	03/03/08	6010B	03/10/08	7439-92-1	Lead	20	70	
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.08	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: MK82MB


QC Report No: MK82-Landau Associates, Inc.

LIMS ID: 08-3982

Project: Qwest Field North Lot

Matrix: Soil

1014001

Data Release Authorized: 

Date Sampled: NA

Reported: 03/13/08

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/03/08	6010B	03/07/08	7440-38-2	Arsenic	5	5	U
3050B	03/03/08	6010B	03/07/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/03/08	6010B	03/07/08	7440-47-3	Chromium	0.5	0.5	U
3050B	03/03/08	6010B	03/07/08	7439-92-1	Lead	2	2	U
CLP	03/03/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: MK82LCS

LIMS ID: 08-3982

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	210	200	105%	
Cadmium	6010B	51.2	50.0	102%	
Chromium	6010B	49.8	50.0	99.6%	
Lead	6010B	201	200	100%	
Mercury	7471A	1.06	1.00	106%	


Reported in mg/kg-dry

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-8-GW
SAMPLE

Lab Sample ID: MK82I
LIMS ID: 08-3989
Matrix: Water
Data Release Authorized: 
Reported: 03/13/08


QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	2	3	
6010B	03/04/08	6010B	03/07/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/07/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-8-GW
DUPLICATE

Lab Sample ID: MK82I
LIMS ID: 08-3989
Matrix: Water
Data Release Authorized: 
Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	7060A	3	3	0.0%	+/- 2	L
Cadmium	6010B	2 U	2 U	0.0%	+/- 2	L
Chromium	6010B	5 U	5 U	0.0%	+/- 5	L
Lead	7421	1	1 U	0.0%	+/- 1	L
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L

Reported in µg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-8-GW
MATRIX SPIKE

Lab Sample ID: MK82I
LIMS ID: 08-3989
Matrix: Water
Data Release Authorized
Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	7060A	3	48	40	112%	
Cadmium	6010B	2 U	517	500	103%	
Chromium	6010B	5 U	486	500	97.2%	
Lead	7421	1	21	20	100%	
Mercury	7470A	0.1 U	1.0	1.0	100%	

Reported in µg/L

N-Control Limit Not Met


H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
 Page 1 of 1

Sample ID: B-9-GW
SAMPLE

Lab Sample ID: MK82J
 LIMS ID: 08-3990
 Matrix: Water
 Data Release Authorized: 
 Reported: 03/13/08


QC Report No: MK82-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/28/08
 Date Received: 02/29/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	5	25	
6010B	03/04/08	6010B	03/07/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/07/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
 RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-10-GW
SAMPLE

Lab Sample ID: MK82K
LIMS ID: 08-3991
Matrix: Water
Data Release Authorized: 
Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	1	2	
6010B	03/04/08	6010B	03/07/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/07/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


Page 1 of 1

Sample ID: B-11-GW
SAMPLE

Lab Sample ID: MK82L

LIMS ID: 08-3992

Matrix: Water

Data Release Authorized 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/12/08	7440-38-2	Arsenic	10	10	U
6010B	03/04/08	6010B	03/07/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/07/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


Page 1 of 1

Sample ID: B-12-GW
SAMPLE

Lab Sample ID: MK82M

LIMS ID: 08-3993

Matrix: Water

Data Release Authorized: 

Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/28/08

Date Received: 02/29/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	1	1	U
6010B	03/04/08	6010B	03/07/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/07/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: B-14-GW
SAMPLE

Lab Sample ID: MK82N
LIMS ID: 08-3994
Matrix: Water
Data Release Authorized
Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/28/08
Date Received: 02/29/08




Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/12/08	7440-38-2	Arsenic	2	4	
6010B	03/04/08	6010B	03/07/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/07/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	2	
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: MK82MB
LIMS ID: 08-3990
Matrix: Water
Data Release Authorized: 
Reported: 03/13/08


QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	1	1	U
6010B	03/04/08	6010B	03/07/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/07/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: MK82LCS
LIMS ID: 08-3990
Matrix: Water
Data Release Authorized 
Reported: 03/13/08

QC Report No: MK82-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	7060A	21	20	105%	
Cadmium	6010B	521	500	104%	
Chromium	6010B	495	500	99.0%	
Lead	7421	20	20	100%	
Mercury	7470A	2.2	2.0	110%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

March 13, 2008

Kathryn Hartley
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest Field North Lot
ARI Job: ML02

Dear Kathryn:

Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted seven soil samples and two water samples on February 29, 2008. The samples were received at cooler temperatures of 1.6° and 2.1°C.

The samples were analyzed for VOCs, PCBs, HCID with NWTPH-Dx and NWTPH-Gx follow ups, PCBs, Total and Dissolved Metals, NWTPH-Gx plus BTEX and NWTPH-Dx, as requested on the COC.

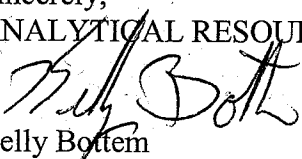
The LCS surrogate TCMX is out of control for the PCBs solid/ product analysis on 3/13/08. The data was deemed usable by the QA officer.

The surrogate o-Terphenyl is out of control high in the LCS and sample **B-21-20-23** for the solid/ product analysis. The data was deemed usable by the QA officer, as ARI has not established applicable control limits for an acid/ silica waste dilution sample.

No other analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC


Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____



MLO2

Date 2/29/08
Page 1 of 1

Chain-of-Custody Record

Project Name <u>West Field North Lot</u> Project No. <u>1014001</u>					Testing Parameters										Turnaround Time	
Project Location/Event <u>Seattle</u>					<div style="display: flex; justify-content: space-around; font-size: small;"> TPH-HCED MICA Smetals (Total) MICA Smetals (Calc) PATs NWTPH-Dx NWTPH-G VOCs Aroclor BTEX only </div>										<input checked="" type="checkbox"/> Standard	
Sampler's Name <u>David Nelson (DMN)</u>															<input type="checkbox"/> Accelerated	
Project Contact <u>Kathryn Hartley</u>															<input type="checkbox"/> _____	
Send Results To <u>Anne Halverson</u>																
Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-HCED	MICA Smetals (Total)	MICA Smetals (Calc)	PATs	NWTPH-Dx	NWTPH-G	VOCs	Aroclor	BTEX only	Observations/Comments		
B-16-5-6	2/29/08	0830	S	5	X	X	X	X	X	X	X	X	X	<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx: <input checked="" type="checkbox"/> run acid wash/silica gel cleanup <input type="checkbox"/> run samples standardized to _____ product <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input checked="" type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> freeze upon receipt <input checked="" type="checkbox"/> Dissolved metal water samples field filtered Other _____		
B-17-5-6		0930	S	5	X	X	X	X	X	X	X	X	X			
B-18-7-8		1015	S	5	X	X	X	X	X	X	X	X	X			
B-18-GW		1045	W	10	X	X	X	X	X	X	X	X	X			
B-19-6-6.75		1120	S	5	X	X	X	X	X	X	X	X	X			
B-19-GW		1135	W	10	X	X	X	X	X	X	X	X	X			
B-20-6.5-8		1305	S	5	X	X	X	X	X	X	X	X	X			
B-21-19-20		1420	S	1												
B-21-20-23		1430	S	1												
Trip Blank			W	1												

Special Shipment/Handling or Storage Requirements		Method of Shipment	
Relinquished by Signature <u>[Signature]</u> Printed Name <u>David M. Nelson</u> Company <u>LAI</u> Date <u>2/29/08</u> Time <u>1625</u>	Received by Signature <u>[Signature]</u> Printed Name <u>ASHLEY MOUNTAIN</u> Company <u>AEI</u> Date <u>2/29/08</u> Time <u>1625</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____



Cooler Receipt Form

ARI Client: LANDAU
COC No: N/A
Assigned ARI Job No: ML02

Project Name: Guast Field North Lot
Delivered by: Hand-delivered
Tracking No: N/A

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
- Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 1.6, 2.1 °C

Cooler Accepted by: al Date: 2/29/08 Time: 1625

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? ICE
- Was sufficient ice used (if appropriate)? YES NO
- Were all bottles sealed in individual plastic bags? YES NO
- Did all bottle arrive in good condition (unbroken)? YES NO
- Were all bottle labels complete and legible? 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 checklist) YES NO
- Were all VOC vials free of air bubbles? NA YES NO
- Was sufficient amount of sample sent in each bottle? YES NO

Samples Logged by: Bob Congleton Date: 2/3/08 Time: 830

**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

1 - BAGGED PER SAMPLE SET

By:

Date:

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: B-18-GW
SAMPLE

Lab Sample ID: ML02H

LIMS ID: 08-4127

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 03/04/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 03/04/08 00:41

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	0.4	
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.5	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	0.2	
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	1.1	
95-47-6	o-Xylene	0.2	0.5	
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-18-GW
SAMPLE

Lab Sample ID: ML02H
LIMS ID: 08-4127
Matrix: Water
Date Analyzed: 03/04/08 00:41

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	0.4	
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	1.2	
103-65-1	n-Propylbenzene	0.2	3.1	
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	3.0	
135-98-8	sec-Butylbenzene	0.2	1.6	
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	2.3	
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	98.2%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	105%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: B-19-GW

Page 1 of 2

SAMPLE

Lab Sample ID: ML02I

QC Report No: ML02-Landau Associates, Inc.

LIMS ID: 08-4128

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: 02/29/08

Reported: 03/04/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/04/08 01:08

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: B-19-GW
SAMPLE

Lab Sample ID: ML02I
LIMS ID: 08-4128
Matrix: Water
Date Analyzed: 03/04/08 01:08

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	0.3	
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	85.5%
Bromofluorobenzene	88.8%
d4-1,2-Dichlorobenzene	99.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: TRIP BLANK
SAMPLE

Lab Sample ID: ML02J

QC Report No: ML02-Landau Associates, Inc.

LIMS ID: 08-4129

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: 02/29/08

Reported: 03/04/08

Date Received: 02/29/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/03/08 17:51

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: TRIP BLANK
SAMPLE

Lab Sample ID: ML02J

QC Report No: ML02-Landau Associates, Inc.

LIMS ID: 08-4129

Project: Qwest Field North Lot

Matrix: Water

1014001

Date Analyzed: 03/03/08 17:51

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	93.8%
d8-Toluene	88.5%
Bromofluorobenzene	86.8%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-030308

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-030308

QC Report No: ML02-Landau Associates, Inc.

LIMS ID: 08-4129

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized:

Date Sampled: NA

Reported: 03/04/08

Date Received: NA

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 03/03/08 16:29

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: MB-030308
METHOD BLANK

Lab Sample ID: MB-030308

QC Report No: ML02-Landau Associates, Inc.

LIMS ID: 08-4129

Project: Qwest Field North Lot

Matrix: Water

1014001

Date Analyzed: 03/03/08 16:29

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.2%
d8-Toluene	87.8%
Bromofluorobenzene	85.0%
d4-1,2-Dichlorobenzene	102%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
ML02H	B-18-GW	20	104%	98.2%	102%	105%	0
ML02I	B-19-GW	20	100%	85.5%	88.8%	99.2%	0
MB-030308	Method Blank	20	96.2%	87.8%	85.0%	102%	0
LCS-030308	Lab Control	20	98.2%	94.8%	96.8%	99.2%	0
LCSD-030308	Lab Control Dup	20	102%	95.0%	93.8%	100%	0
ML02J	TRIP BLANK	20	93.8%	88.5%	86.8%	100%	0

LCS/MB LIMITS

QC LIMITS

SW8260B

(DCE) = d4-1,2-Dichloroethane
 (TOL) = d8-Toluene
 (BFB) = Bromofluorobenzene
 (DCB) = d4-1,2-Dichlorobenzene

70-131
 80-120
 74-121
 80-120

64-146
 78-125
 71-120
 80-121

Prep Method: SW5030B
 Log Number Range: 08-4127 to 08-4129

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-030308

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-030308

LIMS ID: 08-4129

Matrix: Water

Data Release Authorized:

Reported: 03/04/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT5/JZ

LCSID: NT5/JZ

Date Analyzed LCS: 03/03/08 15:35

LCSID: 03/03/08 16:02

Sample Amount LCS: 20.0 mL

LCSID: 20.0 mL

Purge Volume LCS: 20.0 mL

LCSID: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSID	Spike Added-LCSID	LCSID Recovery	RPD
Chloromethane	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromomethane	3.6	4.0	90.0%	3.8	4.0	95.0%	5.4%
Vinyl Chloride	4.2	4.0	105%	4.5	4.0	112%	6.9%
Chloroethane	4.4	4.0	110%	4.7	4.0	118%	6.6%
Methylene Chloride	4.2	4.0	105%	4.4	4.0	110%	4.7%
Acetone	19.7	20.0	98.5%	21.9	20.0	110%	10.6%
Carbon Disulfide	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,1-Dichloroethene	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,1-Dichloroethane	4.3	4.0	108%	4.6	4.0	115%	6.7%
trans-1,2-Dichloroethene	4.2	4.0	105%	4.5	4.0	112%	6.9%
cis-1,2-Dichloroethene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Chloroform	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,2-Dichloroethane	4.3	4.0	108%	4.5	4.0	112%	4.5%
2-Butanone	20.7	20.0	104%	21.6	20.0	108%	4.3%
1,1,1-Trichloroethane	4.3	4.0	108%	4.6	4.0	115%	6.7%
Carbon Tetrachloride	4.3	4.0	108%	4.4	4.0	110%	2.3%
Vinyl Acetate	4.3	4.0	108%	4.5	4.0	112%	4.5%
Bromodichloromethane	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,2-Dichloropropane	4.1	4.0	102%	4.3	4.0	108%	4.8%
cis-1,3-Dichloropropene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Trichloroethene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Dibromochloromethane	4.1	4.0	102%	4.3	4.0	108%	4.8%
1,1,2-Trichloroethane	4.1	4.0	102%	4.3	4.0	108%	4.8%
Benzene	4.2	4.0	105%	4.3	4.0	108%	2.4%
trans-1,3-Dichloropropene	4.2	4.0	105%	4.3	4.0	108%	2.4%
2-Chloroethylvinylether	4.0	4.0	100%	4.1	4.0	102%	2.5%
Bromoform	4.1	4.0	102%	4.2	4.0	105%	2.4%
4-Methyl-2-Pentanone (MIBK)	20.4	20.0	102%	21.8	20.0	109%	6.6%
2-Hexanone	20.4	20.0	102%	21.5	20.0	108%	5.3%
Tetrachloroethene	4.2	4.0	105%	4.3	4.0	108%	2.4%
1,1,2,2-Tetrachloroethane	4.1	4.0	102%	4.4	4.0	110%	7.1%
Toluene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Chlorobenzene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Ethylbenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%
Styrene	4.3	4.0	108%	4.4	4.0	110%	2.3%
Trichlorofluoromethane	4.5	4.0	112%	4.7	4.0	118%	4.3%
1,1,2-Trichloro-1,2,2-trifluoroethane	4.3	4.0	108%	4.5	4.0	112%	4.5%
m,p-Xylene	8.5	8.0	106%	8.8	8.0	110%	3.5%
o-Xylene	4.2	4.0	105%	4.4	4.0	110%	4.7%
1,2-Dichlorobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
1,3-Dichlorobenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,4-Dichlorobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
Acrolein	22.0	20.0	110%	23.0	20.0	115%	4.4%
Methyl Iodide	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromoethane	4.2	4.0	105%	4.4	4.0	110%	4.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: LCS-030308
LAB CONTROL SAMPLE

Lab Sample ID: LCS-030308
LIMS ID: 08-4129
Matrix: Water

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	4.2	4.0	105%	4.5	4.0	112%	6.9%
1,1-Dichloropropene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Dibromomethane	4.1	4.0	102%	4.2	4.0	105%	2.4%
1,1,1,2-Tetrachloroethane	4.2	4.0	105%	4.3	4.0	108%	2.4%
1,2-Dibromo-3-chloropropane	3.9	4.0	97.5%	4.4	4.0	110%	12.0%
1,2,3-Trichloropropane	4.1	4.0	102%	4.5	4.0	112%	9.3%
trans-1,4-Dichloro-2-butene	4.3	4.0	108%	4.5	4.0	112%	4.5%
1,3,5-Trimethylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
1,2,4-Trimethylbenzene	4.3	4.0	108%	4.6	4.0	115%	6.7%
Hexachlorobutadiene	4.3	4.0	108%	4.4	4.0	110%	2.3%
Ethylene Dibromide	4.2	4.0	105%	4.3	4.0	108%	2.4%
Bromochloromethane	4.2	4.0	105%	4.4	4.0	110%	4.7%
2,2-Dichloropropane	4.3	4.0	108%	4.6	4.0	115%	6.7%
1,3-Dichloropropane	4.2	4.0	105%	4.4	4.0	110%	4.7%
Isopropylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
n-Propylbenzene	4.4	4.0	110%	4.7	4.0	118%	6.6%
Bromobenzene	4.2	4.0	105%	4.5	4.0	112%	6.9%
2-Chlorotoluene	4.4	4.0	110%	4.6	4.0	115%	4.4%
4-Chlorotoluene	4.3	4.0	108%	4.6	4.0	115%	6.7%
tert-Butylbenzene	4.3	4.0	108%	4.6	4.0	115%	6.7%
sec-Butylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
4-Isopropyltoluene	4.4	4.0	110%	4.6	4.0	115%	4.4%
n-Butylbenzene	4.4	4.0	110%	4.6	4.0	115%	4.4%
1,2,4-Trichlorobenzene	4.2	4.0	105%	4.4	4.0	110%	4.7%
Naphthalene	4.3	4.0	108%	4.6	4.0	115%	6.7%
1,2,3-Trichlorobenzene	4.3	4.0	108%	4.5	4.0	112%	4.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	98.2%	102%
d8-Toluene	94.8%	95.0%
Bromofluorobenzene	96.8%	93.8%
d4-1,2-Dichlorobenzene	99.2%	100%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: B-16-5-6

SAMPLE

Lab Sample ID: ML02A

LIMS ID: 08-4120

Matrix: Soil

Data Release Authorized: 

Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Analyzed: 03/05/08 14:48

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 95 mg-dry-wt

Percent Moisture: 8.2%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	13	< 13 U
108-88-3	Toluene	13	< 13 U
100-41-4	Ethylbenzene	13	< 13 U
	m,p-Xylene	26	< 26 U
95-47-6	o-Xylene	13	< 13 U

Gasoline Range Hydrocarbons	5.2	18	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	95.8%
Bromobenzene	97.0%

Gasoline Surrogate Recovery

Trifluorotoluene	93.9%
Bromobenzene	97.6%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B-17-5-6
 SAMPLE

Lab Sample ID: ML02B
 LIMS ID: 08-4121
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 Event: 1014001
 Date Sampled: 02/29/08
 Date Received: 02/29/08

Date Analyzed: 03/05/08 15:13
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 45 mg-dry-wt
 Percent Moisture: 27.6%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	28	1,900
108-88-3	Toluene	28	1,800
100-41-4	Ethylbenzene	28	3,200
	m,p-Xylene	56	5,100
95-47-6	o-Xylene	28	1,900

Gasoline Range Hydrocarbons 11 1,900 GAS ID GAS/GRO

BETX Surrogate Recovery

Trifluorotoluene	94.9%
Bromobenzene	120%

Gasoline Surrogate Recovery

Trifluorotoluene	92.4%
Bromobenzene	NR

BETX values reported in µg/kg (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B-18-7-8

SAMPLE

Lab Sample ID: ML02C

LIMS ID: 08-4122

Matrix: Soil

Data Release Authorized:

Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Analyzed: 03/05/08 15:37

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 43 mg-dry-wt

Percent Moisture: 28.0%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	29	420
108-88-3	Toluene	29	1,000
100-41-4	Ethylbenzene	29	1,800
	m,p-Xylene	59	4,700
95-47-6	o-Xylene	29	1,900

Gasoline Range Hydrocarbons

12

1,500

GAS ID
GAS/GRO

BETX Surrogate Recovery

Trifluorotoluene	94.4%
Bromobenzene	104%

Gasoline Surrogate Recovery

Trifluorotoluene	90.7%
Bromobenzene	130%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: B-19-6-6.75

SAMPLE

Lab Sample ID: ML02D

LIMS ID: 08-4123

Matrix: Soil

Data Release Authorized: 

Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Analyzed: 03/05/08 16:02

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 70 mg-dry-wt

Percent Moisture: 18.2%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	18	< 18 U
108-88-3	Toluene	18	< 18 U
100-41-4	Ethylbenzene	18	< 18 U
	m,p-Xylene	36	< 36 U
95-47-6	o-Xylene	18	< 18 U

Gasoline Range Hydrocarbons	7.1	54	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	96.2%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	93.5%
Bromobenzene	102%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B-20-6.5-8
 SAMPLE

Lab Sample ID: ML02E
 LIMS ID: 08-4124
 Matrix: Soil
 Data Release Authorized: *[Signature]*
 Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 Event: 1014001
 Date Sampled: 02/29/08
 Date Received: 02/29/08

Date Analyzed: 03/05/08 16:27
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 48 mg-dry-wt
 Percent Moisture: 25.0%

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	26	200	
108-88-3	Toluene	26	180	
100-41-4	Ethylbenzene	26	240	
	m,p-Xylene	52	700	
95-47-6	o-Xylene	26	870	
	Gasoline Range Hydrocarbons	10	1,200	GAS ID GAS/GRO

BETX Surrogate Recovery

Trifluorotoluene	99.5%
Bromobenzene	118%

Gasoline Surrogate Recovery

Trifluorotoluene	97.0%
Bromobenzene	143%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.



ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-030508

METHOD BLANK

Lab Sample ID: MB-030508

LIMS ID: 08-4120

Matrix: Soil

Data Release Authorized:

Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: NA

Date Received: NA

Date Analyzed: 03/05/08 09:42

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	< 12 U
108-88-3	Toluene	12	< 12 U
100-41-4	Ethylbenzene	12	< 12 U
	m,p-Xylene	25	< 25 U
95-47-6	o-Xylene	12	< 12 U

	RL	Result	GAS ID
Gasoline Range Hydrocarbons	5.0	< 5.0 U	---

BETX Surrogate Recovery

Trifluorotoluene	98.5%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	97.1%
Bromobenzene	102%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: ML02
Matrix: Soil

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001

<u>Client ID</u>	<u>BFB</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-030508	NA	97.1%	102%	0
LCS-030508	NA	104%	108%	0
LCSD-030508	NA	95.8%	102%	0
B-16-5-6	NA	93.9%	97.6%	0
B-17-5-6	NA	92.4%	NR	0
B-18-7-8	NA	90.7%	130%	0
B-19-6-6.75	NA	93.5%	102%	0
B-20-6.5-8	NA	97.0%	143%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(65-137)
(BBZ) = Bromobenzene	(80-120)	(54-144)

Log Number Range: 08-4120 to 08-4124

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: ML02
Matrix: Soil

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-030508	98.5%	102%	0
LCS-030508	105%	109%	0
LCSD-030508	97.5%	102%	0
B-16-5-6	95.8%	97.0%	0
B-17-5-6	94.9%	120%	0
B-18-7-8	94.4%	104%	0
B-19-6-6.75	96.2%	102%	0
B-20-6.5-8	99.5%	118%	0

<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(80-120)	(61-137)
(80-120)	(58-139)

(TFT) = Trifluorotoluene
(BBZ) = Bromobenzene

Log Number Range: 08-4120 to 08-4124

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: LCS-030508
LAB CONTROL SAMPLE

Lab Sample ID: LCS-030508
 LIMS ID: 08-4120
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 Event: 1014001
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 03/05/08 08:53
 LCSD: 03/05/08 09:18
 Instrument/Analyst LCS: PID3/PKC
 LCSD: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount LCS: 100 mg-dry-wt
 LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	54.6	50.0	109%	53.3	50.0	107%	2.4%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	104%	95.8%
Bromobenzene	108%	102%

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
Page 1 of 1

Sample ID: LCS-030508
LAB CONTROL SAMPLE

Lab Sample ID: LCS-030508
LIMS ID: 08-4120
Matrix: Soil
Data Release Authorized:
Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 03/05/08 08:53
LCSD: 03/05/08 09:18
Instrument/Analyst LCS: PID3/PKC
LCSD: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt
LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	348	350	99.4%	339	350	96.9%	2.6%
Toluene	3080	3100	99.4%	2980	3100	96.1%	3.3%
Ethylbenzene	592	595	99.5%	570	595	95.8%	3.8%
m,p-Xylene	2230	2230	100%	2150	2230	96.4%	3.7%
o-Xylene	808	790	102%	786	790	99.5%	2.8%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	105%	97.5%
Bromobenzene	109%	102%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Water

Data Release Authorized: *AS*

Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: 02/29/08

Date Received: 02/29/08



ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-030508 08-4127	Method Blank	03/05/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 97.1% 102%
ML02H 08-4127	B-18-GW	03/05/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	1.3 GAS/GRO 97.7% 99.2%
ML02I 08-4128	B-19-GW	03/05/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 98.5% 98.2%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: ML02
Matrix: Water

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
Event: 1014001

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-030508	97.1%	102%	0
LCS-030508	104%	108%	0
LCSD-030508	95.8%	102%	0
B-18-GW	97.7%	99.2%	0
B-19-GW	98.5%	98.2%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 08-4127 to 08-4128

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: LCS-030508

LAB CONTROL SAMPLE

Lab Sample ID: LCS-030508

LIMS ID: 08-4127

Matrix: Water

Data Release Authorized: 

Reported: 03/06/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

Event: 1014001

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 03/05/08 08:53

LCSD: 03/05/08 09:18

Instrument/Analyst LCS: PID3/PKC

LCSD: PID3/PKC

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.09	1.00	109%	1.07	1.00	107%	1.9%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	104%	95.8%
Bromobenzene	108%	102%

ORGANICS ANALYSIS DATA SHEET
 NWTPH-HCID Method by GC/FID
 Page 1 of 1
 Matrix: Soil

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

Data Release Authorized: *AS*
 Reported: 03/05/08

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-030308 08-4120	Method Blank	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 101%
ML02A 08-4120	B-16-5-6 HC ID: DRO/MOTOR OIL	03/03/08	03/03/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U > 50 > 100 104%
ML02B 08-4121	B-17-5-6 HC ID: GRO/DRO/MOTOR OIL	03/03/08	03/04/08	1.0	Gas Diesel Oil o-Terphenyl	> 20 > 50 > 100 114%
ML02C 08-4122	B-18-7-8 HC ID: GRO/DRO/MOTOR OIL	03/03/08	03/04/08	1.0	Gas Diesel Oil o-Terphenyl	> 20 > 50 > 100 104%
ML02D 08-4123	B-19-6-6.75 HC ID: ---	03/03/08	03/04/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 103%
ML02E 08-4124	B-20-6.5-8 HC ID: GRO/DRO/MOTOR OIL	03/03/08	03/04/08	1.0	Gas Diesel Oil o-Terphenyl	> 20 > 50 > 100 103%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.
 Diesel value based on the total peaks in the range from C12 to C24.
 Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
030308MB	101%	0
B-16-5-6	104%	0
B-17-5-6	114%	0
B-18-7-8	104%	0
B-19-6-6.75	103%	0
B-20-6.5-8	103%	0

LCS/MB LIMITS QC LIMITS

(O-TER) = o-Terphenyl

(68-122)

(50-150)

Prep Method: SW3550B
Log Number Range: 08-4120 to 08-4124

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 02/29/08

ARI Job: ML02
Project: Qwest Field North Lot
1014001

ARI ID	Client ID	Sample Amt	Final Vol	Basis	Prep Date
08-4120-030308MB	Method Blank	10.0 g	5.00 mL	-	03/03/08
08-4120-ML02A	B-16-5-6	9.22 g	5.00 mL	D	03/03/08
08-4121-ML02B	B-17-5-6	7.28 g	5.00 mL	D	03/03/08
08-4122-ML02C	B-18-7-8	7.24 g	5.00 mL	D	03/03/08
08-4123-ML02D	B-19-6-6.75	8.25 g	5.00 mL	D	03/03/08
08-4124-ML02E	B-20-6.5-8	7.53 g	5.00 mL	D	03/03/08

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID


Page 1 of 1

Matrix: Solid/Product

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized: 

Reported: 03/13/08

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-031008 08-4126	Method Blank	03/10/08	03/10/08	1.0	Gas Diesel Oil o-Terphenyl	> 2,000 < 5,000 U < 10,000 U 119%
ML02G 08-4126	B-21-20-23 HC ID: GRO/DRO/CREOSOTE	03/10/08	03/10/08	1.0	Gas Diesel Oil o-Terphenyl	> 1,800 > 4,600 > 9,300 122%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.

Diesel value based on the total peaks in the range from C12 to C24.

Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Solid/Product

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
031008MB	119%	0
B-21-20-23	122%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(O-TER) = o-Terphenyl	(68-122)	(50-150)

Prep Method: SW3550B
Log Number Range: 08-4126 to 08-4126

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Solid/Product
Date Received: 02/29/08

ARI Job: ML02
Project: Qwest Field North Lot
1014001

ARI ID	Client ID	Sample Amt	Final Vol	Basis	Prep Date
08-4126-031008MB	Method Blank	1.00 g	100 mL	-	03/10/08
08-4126-ML02G	B-21-20-23	1.08 g	100 mL	W	03/10/08

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Matrix: Soil

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized:

Reported: 03/12/08



ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-030708 08-4120	Method Blank HC ID: ---	03/07/08	03/10/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	5.0 10	< 5.0 U < 10 U 90.7%
ML02A 08-4120	B-16-5-6 HC ID: DRO/MOTOR OIL	03/07/08	03/10/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	5.4 11	19 150 88.4%
ML02B 08-4121	B-17-5-6 HC ID: DRO/MOTOR OIL	03/07/08	03/12/08 FID3A	1.00 5.0	Diesel Motor Oil o-Terphenyl	34 68	370 160 92.8%
ML02C 08-4122	B-18-7-8 HC ID: DRO/MOTOR OIL	03/07/08	03/10/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	6.9 14	92 98 94.7%
ML02D 08-4123	B-19-6-6.75 HC ID: DRO/RRO	03/07/08	03/10/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	6.1 12	19 44 92.4%
ML02E 08-4124	B-20-6.5-8 HC ID: DRO/MOTOR OIL	03/07/08	03/10/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	6.7 13	51 190 93.3%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-030708	90.7%	0
LCS-030708	94.7%	0
LCSD-030708	89.8%	0
B-16-5-6	88.4%	0
B-17-5-6	92.8%	0
B-18-7-8	94.7%	0
B-19-6-6.75	92.4%	0
B-20-6.5-8	93.3%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(35-123)

(33-117)

Prep Method: SW3550B
Log Number Range: 08-4120 to 08-4124

ORGANICS ANALYSIS DATA SHEET
 NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1

Sample ID: LCS-030708
 LCS/LCSD

Lab Sample ID: LCS-030708
 LIMS ID: 08-4120
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/12/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/29/08
 Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/07/08
 Date Analyzed LCS: 03/10/08 13:54
 LCSD: 03/10/08 14:10
 Instrument/Analyst LCS: FID/MS
 LCSD: FID/MS

Sample Amount LCS: 10.0 g
 LCSD: 10.0 g
 Final Extract Volume LCS: 1.0 mL
 LCSD: 1.0 mL
 Dilution Factor LCS: 1.0
 LCSD: 1.0

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	109	150	72.7%	104	150	69.3%	4.7%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	94.7%	89.8%

Results reported in mg/kg
 RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: ML02
Project: Qwest Field North Lot
1014001

Matrix: Soil
Date Received: 02/29/08

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
08-4120-030708MB1	Method Blank	10.0 g	1.00 mL	-	03/07/08
08-4120-030708LCS1	Lab Control	10.0 g	1.00 mL	-	03/07/08
08-4120-030708LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	03/07/08
08-4120-ML02A	B-16-5-6	9.18 g	1.00 mL	D	03/07/08
08-4121-ML02B	B-17-5-6	7.30 g	1.00 mL	D	03/07/08
08-4122-ML02C	B-18-7-8	7.24 g	1.00 mL	D	03/07/08
08-4123-ML02D	B-19-6-6.75	8.20 g	1.00 mL	D	03/07/08
08-4124-ML02E	B-20-6.5-8	7.50 g	1.00 mL	D	03/07/08



ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Matrix: Solid/Product

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Data Release Authorized:

Reported: 03/13/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-031008	Method Blank	03/10/08	03/10/08	100	Diesel	5000	< 5000 U
08-4126	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	10000	< 10000 U 121%
ML02G	B-21-20-23	03/10/08	03/10/08	100	Diesel	4600	77000
08-4126	HC ID: DRO/CREOSOTE		FID3A	1.0	Motor Oil o-Terphenyl	9300	36000 120%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Solid/Product

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-031008	121%	0
LCS-031008	136%*	1
B-21-20-23	120%*	1

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(35-123)

(33-117)

Prep Method: SW3580A
Log Number Range: 08-4126 to 08-4126



ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1

Sample ID: LCS-031008
LAB CONTROL

Lab Sample ID: LCS-031008
LIMS ID: 08-4126
Matrix: Solid/Product
Data Release Authorized:
Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/29/08
Date Received: 02/29/08

Date Extracted: 03/10/08
Date Analyzed: 03/10/08 21:42
Instrument/Analyst: FID/MS

Sample Amount: 1.00 g
Final Extract Volume: 100 mL
Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	162000	150000	108%

TPHD Surrogate Recovery

o-Terphenyl	136%
-------------	------

Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT


ARI Job: ML02
Project: Qwest Field North Lot
1014001

Matrix: Solid/Product
Date Received: 02/29/08

<u>ARI ID</u>	<u>Client ID</u>	<u>Client Amt</u>	<u>Final Vol</u>	<u>Basis</u>	<u>Prep Date</u>
08-4126-031008MB1	Method Blank	1.00 g	100 mL	-	03/10/08
08-4126-031008LCS1	Lab Control	1.00 g	100 mL	-	03/10/08
08-4126-ML02G	B-21-20-23	1.08 g	100 mL	W	03/10/08

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
 NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1
 Matrix: Water

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001

Data Release Authorized:
 Reported: 03/10/08 

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-030608	Method Blank	03/06/08	03/08/08	1.00	Diesel	0.25	< 0.25 U
08-4127	HC ID: ---		FID3A	1.0	Motor Oil	0.50	< 0.50 U
					o-Terphenyl		77.3%
ML02H	B-18-GW	03/06/08	03/08/08	1.00	Diesel	0.25	< 0.25 U
08-4127	HC ID: ---		FID3A	1.0	Motor Oil	0.50	< 0.50 U
					o-Terphenyl		70.0%
ML02I	B-19-GW	03/06/08	03/08/08	1.00	Diesel	0.25	< 0.25 U
08-4128	HC ID: ---		FID3A	1.0	Motor Oil	0.50	< 0.50 U
					o-Terphenyl		80.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
 DL-Dilution of extract prior to analysis.
 RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
 Motor Oil quantitation on total peaks in the range from C24 to C38.
 HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001


<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-030608	77.3%	0
LCS-030608	72.0%	0
LCSD-030608	71.1%	0
B-18-GW	70.0%	0
B-19-GW	80.0%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(46-122)	(36-120)

Prep Method: SW3510C
Log Number Range: 08-4127 to 08-4128

ORGANICS ANALYSIS DATA SHEET
 NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1

Sample ID: LCS-030608
 LCS/LCSD

Lab Sample ID: LCS-030608
 LIMS ID: 08-4127
 Matrix: Water
 Data Release Authorized: 
 Reported: 03/10/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/29/08
 Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/06/08

Sample Amount LCS: 500 mL
 LCSD: 500 mL

Date Analyzed LCS: 03/08/08 17:45
 LCSD: 03/08/08 18:00

Final Extract Volume LCS: 1.0 mL
 LCSD: 1.0 mL

Instrument/Analyst LCS: FID/JGR
 LCSD: FID/JGR

Dilution Factor LCS: 1.00
 LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	1.85	3.00	61.7%	1.74	3.00	58.0%	6.1%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	72.0%	71.1%

Results reported in mg/L
 RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 02/29/08

ARI Job: ML02
Project: Qwest Field North Lot
1014001

<u>ARI ID</u>	<u>Client ID</u>	<u>Samp Amt</u>	<u>Final Vol</u>	<u>Prep Date</u>
08-4127-030608MB1	Method Blank	500 mL	1.00 mL	03/06/08
08-4127-030608LCS1	Lab Control	500 mL	1.00 mL	03/06/08
08-4127-030608LCSD1	Lab Control Dup	500 mL	1.00 mL	03/06/08
08-4127-ML02H	B-18-GW	500 mL	1.00 mL	03/06/08
08-4128-ML02I	B-19-GW	500 mL	1.00 mL	03/06/08



ORGANICS ANALYSIS DATA SHEET
 PCB by GC/ECD Method SW8082
 Page 1 of 1

Sample ID: B-21-20-23
 SAMPLE

Lab Sample ID: ML02G
 LIMS ID: 08-4126
 Matrix: Solid/Product
 Data Release Authorized: *[Signature]*
 Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/29/08
 Date Received: 02/29/08

Date Extracted: 03/10/08
 Date Analyzed: 03/13/08 04:55
 Instrument/Analyst: ECD5/YZ
 GPC Cleanup: No
 Sulfur Cleanup: Yes
 Acid Cleanup: Yes
 Florisil Cleanup: No

Sample Amount: 12.0 g-as-rec
 Final Extract Volume: 20 mL
 Dilution Factor: 1.00
 Silica Gel: Yes
 Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	170	< 170 U
53469-21-9	Aroclor 1242	170	< 170 U
12672-29-6	Aroclor 1248	170	< 170 U
11097-69-1	Aroclor 1254	170	< 170 U
11096-82-5	Aroclor 1260	170	< 170 U
11104-28-2	Aroclor 1221	170	< 170 U
11141-16-5	Aroclor 1232	170	< 170 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	102%
Tetrachlorometaxylene	76.1%

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: MB-031008
METHOD BLANK

Lab Sample ID: MB-031008
LIMS ID: 08-4126
Matrix: Solid/Product
Data Release Authorized:
Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

Date Extracted: 03/10/08
Date Analyzed: 03/13/08 04:20
Instrument/Analyst: ECD5/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisol Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	68.0%
Tetrachlorometaxylene	62.8%

SW8082/PCB SOLIDS SURROGATE RECOVERY SUMMARY


Matrix: Solid/Product

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

Client ID	DCBP	DCBP	TCMX	TCMX	TOT OUT
	% REC	LCL-UCL	% REC	LCL-UCL	
MB-031008	68.0%	59-122	62.8%	61-118	0
LCS-031008	67.5%	59-122	59.5%*	61-118	1
B-21-20-23	102%	46-153	76.1%	46-135	0

Prep Method: SW3550B
Log Number Range: 08-4126 to 08-4126

Sample ID: LCS-031008
LAB CONTROL

Lab Sample ID: LCS-031008
LIMS ID: 08-4126
Matrix: Solid/Product
Data Release Authorized: 
Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

Date Extracted: 03/10/08
Date Analyzed: 03/13/08 04:37
Instrument/Analyst: ECD5/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g-as-rec
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	104	167	62.3%
Aroclor 1260	111	167	66.5%

PCB Surrogate Recovery

Decachlorobiphenyl	67.5%
Tetrachlorometaxylene	59.5%

Results reported in $\mu\text{g}/\text{kg}$ (ppb)

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-18-GW

SAMPLE

Lab Sample ID: ML02H

LIMS ID: 08-4127

Matrix: Water

Data Release Authorized:

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/10/08 14:03

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 490 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.0%
2-Fluorobiphenyl	61.2%



ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-19-GW

SAMPLE

Lab Sample ID: ML02I

LIMS ID: 08-4128

Matrix: Water

Data Release Authorized:

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Extracted: 03/05/08

Date Analyzed: 03/10/08 14:38

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 480 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	51.2%
2-Fluorobiphenyl	62.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: MB-030508

METHOD BLANK

Lab Sample ID: MB-030508

LIMS ID: 08-4127

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Date Extracted: 03/05/08

Date Analyzed: 03/07/08 18:01

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Silica Gel: No

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Alumina Cleanup: No

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	< 1.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
56-55-3	Benzo (a) anthracene	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
205-99-2	Benzo (b) fluoranthene	1.0	< 1.0 U
207-08-9	Benzo (k) fluoranthene	1.0	< 1.0 U
50-32-8	Benzo (a) pyrene	1.0	< 1.0 U
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	< 1.0 U
53-70-3	Dibenz (a, h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g, h, i) perylene	1.0	< 1.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U

Reported in $\mu\text{g/L}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	69.2%
2-Fluorobiphenyl	63.2%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
MB-030508	69.2%	63.2%	0
LCS-030508	71.6%	65.6%	0
LCSD-030508	70.8%	61.6%	0
B-18-GW	68.0%	61.2%	0
B-19-GW	51.2%	62.4%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl (38-118) (30-121)
(FBP) = 2-Fluorobiphenyl (48-108) (47-106)

Prep Method: SW3520C
Log Number Range: 08-4127 to 08-4128

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-030508

LCS/LCSD

Lab Sample ID: LCS-030508

LIMS ID: 08-4127

Matrix: Water

Data Release Authorized: *AB*

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/05/08

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 03/07/08 18:36

Final Extract Volume LCS: 0.50 mL

LCSD: 03/07/08 19:10

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: NO

Alumina Cleanup: NO

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	14.9	25.0	59.6%	13.9	25.0	55.6%	6.9%
2-Methylnaphthalene	18.7	25.0	74.8%	17.4	25.0	69.6%	7.2%
1-Methylnaphthalene	14.6	25.0	58.4%	13.9	25.0	55.6%	4.9%
Acenaphthylene	17.5	25.0	70.0%	16.6	25.0	66.4%	5.3%
Acenaphthene	15.8	25.0	63.2%	15.2	25.0	60.8%	3.9%
Fluorene	17.9	25.0	71.6%	17.4	25.0	69.6%	2.8%
Phenanthrene	17.8	25.0	71.2%	17.3	25.0	69.2%	2.8%
Anthracene	18.2	25.0	72.8%	17.7	25.0	70.8%	2.8%
Fluoranthene	21.1	25.0	84.4%	20.9	25.0	83.6%	1.0%
Pyrene	16.4	25.0	65.6%	16.1	25.0	64.4%	1.8%
Benzo(a)anthracene	17.6	25.0	70.4%	17.3	25.0	69.2%	1.7%
Chrysene	18.3	25.0	73.2%	17.9	25.0	71.6%	2.2%
Benzo(b)fluoranthene	21.2	25.0	84.8%	18.8	25.0	75.2%	12.0%
Benzo(k)fluoranthene	18.3	25.0	73.2%	20.6	25.0	82.4%	11.8%
Benzo(a)pyrene	19.2	25.0	76.8%	18.5	25.0	74.0%	3.7%
Indeno(1,2,3-cd)pyrene	12.5	25.0	50.0%	11.8	25.0	47.2%	5.8%
Dibenz(a,h)anthracene	15.3	25.0	61.2%	15.2	25.0	60.8%	0.7%
Benzo(g,h,i)perylene	13.7	25.0	54.8%	13.4	25.0	53.6%	2.2%
Dibenzofuran	16.7	25.0	66.8%	16.1	25.0	64.4%	3.7%

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	71.6%	70.8%
2-Fluorobiphenyl	65.6%	61.6%

Results reported in µg/L

RPD calculated using sample concentrations per SW846.



ORGANICS ANALYSIS DATA SHEET
 PNAs by SW8270D GC/MS
 Page 1 of 1

Sample ID: B-16-5-6
 SAMPLE

Lab Sample ID: ML02A
 LIMS ID: 08-4120
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/29/08
 Date Received: 02/29/08

Date Extracted: 03/07/08
 Date Analyzed: 03/10/08 21:32
 Instrument/Analyst: NT6/LJR
 GPC Cleanup: No
 Alumina: No
 Silica Gel: Yes

Sample Amount: 7.84 g-dry-wt
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00
 Percent Moisture: 8.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	83
91-57-6	2-Methylnaphthalene	64	78
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	240
86-73-7	Fluorene	64	300
85-01-8	Phenanthrene	64	2,300
120-12-7	Anthracene	64	650
206-44-0	Fluoranthene	64	3,800
129-00-0	Pyrene	64	2,800
56-55-3	Benzo (a) anthracene	64	1,500
218-01-9	Chrysene	64	1,800
205-99-2	Benzo (b) fluoranthene	64	2,000
207-08-9	Benzo (k) fluoranthene	64	2,000
50-32-8	Benzo (a) pyrene	64	1,800
193-39-5	Indeno (1,2,3-cd) pyrene	64	590
53-70-3	Dibenz (a,h) anthracene	64	260
191-24-2	Benzo (g,h,i) perylene	64	520
132-64-9	Dibenzofuran	64	120

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.4%
2-Fluorobiphenyl	64.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-17-5-6
SAMPLE

Lab Sample ID: ML02B

LIMS ID: 08-4121

Matrix: Soil

Data Release Authorized: *MB*

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 22:06

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.66 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 27.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	65	1,600
91-57-6	2-Methylnaphthalene	65	3,000
90-12-0	1-Methylnaphthalene	65	2,200
208-96-8	Acenaphthylene	65	< 65 U
83-32-9	Acenaphthene	65	320
86-73-7	Fluorene	65	240
85-01-8	Phenanthrene	65	2,400
120-12-7	Anthracene	65	680
206-44-0	Fluoranthene	65	2,900
129-00-0	Pyrene	65	2,500
56-55-3	Benzo (a) anthracene	65	1,100
218-01-9	Chrysene	65	1,200
205-99-2	Benzo (b) fluoranthene	65	1,000
207-08-9	Benzo (k) fluoranthene	65	860
50-32-8	Benzo (a) pyrene	65	1,100
193-39-5	Indeno (1,2,3-cd) pyrene	65	270
53-70-3	Dibenz (a,h) anthracene	65	< 65 U
191-24-2	Benzo (g,h,i) perylene	65	260
132-64-9	Dibenzofuran	65	150

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.8%
2-Fluorobiphenyl	66.8%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-18-7-8

SAMPLE

Lab Sample ID: ML02C

LIMS ID: 08-4122

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/11/08 11:27

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.59 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 28.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	1,000
91-57-6	2-Methylnaphthalene	66	1,200
90-12-0	1-Methylnaphthalene	66	1,200
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	Acenaphthene	66	< 66 U
86-73-7	Fluorene	66	< 66 U
85-01-8	Phenanthrene	66	70
120-12-7	Anthracene	66	< 66 U
206-44-0	Fluoranthene	66	< 66 U
129-00-0	Pyrene	66	< 66 U
56-55-3	Benzo (a) anthracene	66	< 66 U
218-01-9	Chrysene	66	< 66 U
205-99-2	Benzo (b) fluoranthene	66	< 66 U
207-08-9	Benzo (k) fluoranthene	66	< 66 U
50-32-8	Benzo (a) pyrene	66	< 66 U
193-39-5	Indeno (1,2,3-cd) pyrene	66	< 66 U
53-70-3	Dibenz (a,h) anthracene	66	< 66 U
191-24-2	Benzo (g,h,i) perylene	66	< 66 U
132-64-9	Dibenzofuran	66	< 66 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatiles Surrogate Recovery

d14-p-Terphenyl	57.6%
2-Fluorobiphenyl	64.4%



ORGANICS ANALYSIS DATA SHEET
 PNAs by SW8270D GC/MS
 Page 1 of 1

Sample ID: B-19-6-6.75
 SAMPLE

Lab Sample ID: ML02D
 LIMS ID: 08-4123
 Matrix: Soil
 Data Release Authorized:
 Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.
 Project: Qwest Field North Lot
 1014001
 Date Sampled: 02/29/08
 Date Received: 02/29/08

Date Extracted: 03/07/08
 Date Analyzed: 03/11/08 12:01
 Instrument/Analyst: NT6/LJR
 GPC Cleanup: No
 Alumina: No
 Silica Gel: No

Sample Amount: 7.77 g-dry-wt
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00
 Percent Moisture: 18.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	< 64 U
91-57-6	2-Methylnaphthalene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	< 64 U
86-73-7	Fluorene	64	< 64 U
85-01-8	Phenanthrene	64	230
120-12-7	Anthracene	64	< 64 U
206-44-0	Fluoranthene	64	280
129-00-0	Pyrene	64	210
56-55-3	Benzo (a) anthracene	64	110
218-01-9	Chrysene	64	120
205-99-2	Benzo (b) fluoranthene	64	86
207-08-9	Benzo (k) fluoranthene	64	100
50-32-8	Benzo (a) pyrene	64	120
193-39-5	Indeno (1,2,3-cd) pyrene	64	< 64 U
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	< 64 U
132-64-9	Dibenzofuran	64	< 64 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	57.6%
2-Fluorobiphenyl	62.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-20-6.5-8

SAMPLE

Lab Sample ID: ML02E

LIMS ID: 08-4124

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Extracted: 03/07/08

Date Analyzed: 03/11/08 12:36

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: No

Sample Amount: 7.56 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 25.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	66	< 66 U
91-57-6	2-Methylnaphthalene	66	< 66 U
90-12-0	1-Methylnaphthalene	66	< 66 U
208-96-8	Acenaphthylene	66	< 66 U
83-32-9	Acenaphthene	66	< 66 U
86-73-7	Fluorene	66	< 66 U
85-01-8	Phenanthrene	66	< 66 U
120-12-7	Anthracene	66	< 66 U
206-44-0	Fluoranthene	66	< 66 U
129-00-0	Pyrene	66	< 66 U
56-55-3	Benzo (a) anthracene	66	< 66 U
218-01-9	Chrysene	66	< 66 U
205-99-2	Benzo (b) fluoranthene	66	< 66 U
207-08-9	Benzo (k) fluoranthene	66	< 66 U
50-32-8	Benzo (a) pyrene	66	< 66 U
193-39-5	Indeno (1,2,3-cd) pyrene	66	< 66 U
53-70-3	Dibenz (a,h) anthracene	66	< 66 U
191-24-2	Benzo (g,h,i) perylene	66	< 66 U
132-64-9	Dibenzofuran	66	< 66 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	50.0%
2-Fluorobiphenyl	61.6%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: MB-030708

METHOD BLANK

Lab Sample ID: MB-030708

LIMS ID: 08-4120

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Date Extracted: 03/07/08

Date Analyzed: 03/10/08 11:09

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	70.0%
2-Fluorobiphenyl	56.8%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

Client ID	TER	FBP	TOT OUT
MB-030708	70.0%	56.8%	0
LCS-030708	66.0%	51.6%	0
LCSD-030708	67.6%	58.8%	0
B-16-5-6	68.4%	64.0%	0
B-17-5-6	68.8%	66.8%	0
B-18-7-8	57.6%	64.4%	0
B-19-6-6.75	57.6%	62.0%	0
B-20-6.5-8	50.0%	61.6%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl (41-109) (39-111)
(FBP) = 2-Fluorobiphenyl (33-93) (32-94)

Prep Method: SW3550B
Log Number Range: 08-4120 to 08-4124

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-030708
LCS/LCSD

Lab Sample ID: LCS-030708

LIMS ID: 08-4120

Matrix: Soil

Data Release Authorized:

Reported: 03/11/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: 02/29/08

Date Extracted LCS/LCSD: 03/07/08

Sample Amount LCS: 7.50 g

LCSD: 7.50 g

Date Analyzed LCS: 03/10/08 11:44

Final Extract Volume LCS: 0.50 mL

LCSD: 03/10/08 12:19

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	715	1670	42.8%	898	1670	53.8%	22.7%
2-Methylnaphthalene	990	1670	59.3%	1170	1670	70.1%	16.7%
1-Methylnaphthalene	770	1670	46.1%	906	1670	54.3%	16.2%
Acenaphthylene	917	1670	54.9%	1010	1670	60.5%	9.7%
Acenaphthene	869	1670	52.0%	939	1670	56.2%	7.7%
Fluorene	1010	1670	60.5%	1050	1670	62.9%	3.9%
Phenanthrene	1010	1670	60.5%	1050	1670	62.9%	3.9%
Anthracene	1070	1670	64.1%	1100	1670	65.9%	2.8%
Fluoranthene	1290	1670	77.2%	1310	1670	78.4%	1.5%
Pyrene	979	1670	58.6%	1010	1670	60.5%	3.1%
Benzo(a)anthracene	1080	1670	64.7%	1110	1670	66.5%	2.7%
Chrysene	1120	1670	67.1%	1120	1670	67.1%	0.0%
Benzo(b)fluoranthene	1130	1670	67.7%	1200	1670	71.9%	6.0%
Benzo(k)fluoranthene	1250	1670	74.9%	1230	1670	73.7%	1.6%
Benzo(a)pyrene	1160	1670	69.5%	1190	1670	71.3%	2.6%
Indeno(1,2,3-cd)pyrene	768	1670	46.0%	773	1670	46.3%	0.6%
Dibenz(a,h)anthracene	923	1670	55.3%	929	1670	55.6%	0.6%
Benzo(g,h,i)perylene	827	1670	49.5%	845	1670	50.6%	2.2%
Dibenzofuran	930	1670	55.7%	993	1670	59.5%	6.6%

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	66.0%	67.6%
2-Fluorobiphenyl	51.6%	58.8%

Results reported in µg/kg

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B-21-20-23

SAMPLE

Lab Sample ID: ML02G

LIMS ID: 08-4126

Matrix: Solid/Product

Data Release Authorized: *[Signature]*

Reported: 03/12/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Extracted: 03/10/08

Date Analyzed: 03/11/08 13:11

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 1.08 g-as-rec

Final Extract Volume: 1.0 mL

Dilution Factor: 10.0

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	9,300	8,300,000 ES
91-57-6	2-Methylnaphthalene	9,300	5,400,000 ES
90-12-0	1-Methylnaphthalene	9,300	3,300,000 ES
208-96-8	Acenaphthylene	9,300	500,000
83-32-9	Acenaphthene	9,300	2,200,000 ES
86-73-7	Fluorene	9,300	1,900,000 ES
85-01-8	Phenanthrene	9,300	4,400,000 ES
120-12-7	Anthracene	9,300	1,200,000 E
206-44-0	Fluoranthene	9,300	2,500,000 ES
129-00-0	Pyrene	9,300	1,800,000 ES
56-55-3	Pyrene (a) anthracene	9,300	940,000 E
218-01-9	Chrysene	9,300	810,000 E
205-99-2	Benzo (b) fluoranthene	9,300	610,000
207-08-9	Benzo (k) fluoranthene	9,300	390,000
50-32-8	Benzo (a) pyrene	9,300	810,000 E
193-39-5	Indeno (1,2,3-cd) pyrene	9,300	280,000
53-70-3	Dibenz (a,h) anthracene	9,300	120,000
191-24-2	Benzo (g,h,i) perylene	9,300	270,000
132-64-9	Dibenzofuran	9,300	590,000

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	93.6%
2-Fluorobiphenyl	82.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B-21-20-23

DILUTION

Lab Sample ID: ML02G

LIMS ID: 08-4126

Matrix: Solid/Product

Data Release Authorized: *[Signature]*

Reported: 03/12/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Date Extracted: 03/10/08

Date Analyzed: 03/11/08 15:30

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 1.08 g-as-rec

Final Extract Volume: 1.0 mL

Dilution Factor: 500

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	460,000	19,000,000
91-57-6	2-Methylnaphthalene	460,000	7,300,000
90-12-0	1-Methylnaphthalene	460,000	3,800,000
208-96-8	Acenaphthylene	460,000	620,000
83-32-9	Acenaphthene	460,000	3,800,000
86-73-7	Fluorene	460,000	2,900,000
85-01-8	Phenanthrene	460,000	7,900,000
120-12-7	Anthracene	460,000	1,600,000
206-44-0	Fluoranthene	460,000	3,500,000
129-00-0	Pyrene	460,000	2,900,000
56-55-3	Benzo (a) anthracene	460,000	1,100,000
218-01-9	Chrysene	460,000	980,000
205-99-2	Benzo (b) fluoranthene	460,000	580,000
207-08-9	Benzo (k) fluoranthene	460,000	650,000
50-32-8	Benzo (a) pyrene	460,000	1,000,000
193-39-5	Indeno (1,2,3-cd) pyrene	460,000	< 460,000 U
53-70-3	Dibenz (a,h) anthracene	460,000	< 460,000 U
191-24-2	Benzo (g,h,i) perylene	460,000	< 460,000 U
132-64-9	Dibenzofuran	460,000	730,000

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1


Sample ID: MB-031008

METHOD BLANK

Lab Sample ID: MB-031008

LIMS ID: 08-4126

Matrix: Solid/Product

Data Release Authorized: 

Reported: 03/12/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

Date Extracted: 03/10/08

Date Analyzed: 03/11/08 10:17

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 15.0 g

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	78.4%
2-Fluorobiphenyl	74.4%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Solid/Product

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
MB-031008	78.4%	74.4%	0
LCS-031008	72.8%	70.0%	0
B-21-20-23	93.6%	82.4%	0
B-21-20-23 DL	D	D	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl (41-109) (39-111)
(FBP) = 2-Fluorobiphenyl (33-93) (32-94)

Prep Method: SW3550B
Log Number Range: 08-4126 to 08-4126

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-031008

LAB CONTROL

Lab Sample ID: LCS-031008

LIMS ID: 08-4126

Matrix: Solid/Product

Data Release Authorized:

Reported: 03/12/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: 02/29/08

Date Extracted: 03/10/08

Date Analyzed: 03/11/08 10:52

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Sample Amount: 15.0 g

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Alumina Cleanup: No

Analyte	Lab Control	Spike Added	Recovery
Naphthalene	1080	1670	64.7%
2-Methylnaphthalene	1390	1670	83.2%
1-Methylnaphthalene	1080	1670	64.7%
Acenaphthylene	1200	1670	71.9%
Acenaphthene	1080	1670	64.7%
Fluorene	1190	1670	71.3%
Phenanthrene	1150	1670	68.9%
Anthracene	1200	1670	71.9%
Fluoranthene	1400	1670	83.8%
Pyrene	1070	1670	64.1%
Benzo(a)anthracene	1180	1670	70.7%
Chrysene	1200	1670	71.9%
Benzo(b)fluoranthene	1350	1670	80.8%
Benzo(k)fluoranthene	1250	1670	74.9%
Benzo(a)pyrene	1280	1670	76.6%
Indeno(1,2,3-cd)pyrene	921	1670	55.1%
Dibenz(a,h)anthracene	1140	1670	68.3%
Benzo(g,h,i)perylene	1080	1670	64.7%
Dibenzofuran	1140	1670	68.3%

Semivolatile Surrogate Recovery

d14-p-Terphenyl	72.8%
2-Fluorobiphenyl	70.0%

Results reported in $\mu\text{g}/\text{kg}$

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-16-5-6

SAMPLE

Lab Sample ID: ML02A

LIMS ID: 08-4120

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Percent Total Solids: 90.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/10/08	7440-38-2	Arsenic	5	5	U
3050B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	0.5	19.5	
3050B	03/04/08	6010B	03/10/08	7439-92-1	Lead	2	2	U
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.04	0.16	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-17-5-6

SAMPLE

Lab Sample ID: ML02B

LIMS ID: 08-4121

Matrix: Soil

Data Release Authorized 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Percent Total Solids: 71.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/11/08	7440-38-2	Arsenic	20	20	U
3050B	03/04/08	6010B	03/11/08	7440-43-9	Cadmium	0.7	0.7	U
3050B	03/04/08	6010B	03/11/08	7440-47-3	Chromium	2	12	
3050B	03/04/08	6010B	03/11/08	7439-92-1	Lead	7	38	
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.08	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B-18-7-8

SAMPLE

Lab Sample ID: ML02C

LIMS ID: 08-4122

Matrix: Soil

Data Release Authorized 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Percent Total Solids: 72.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/11/08	7440-38-2	Arsenic	20	20	U
3050B	03/04/08	6010B	03/11/08	7440-43-9	Cadmium	0.7	0.7	U
3050B	03/04/08	6010B	03/11/08	7440-47-3	Chromium	2	11	
3050B	03/04/08	6010B	03/11/08	7439-92-1	Lead	7	18	
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.05	U


U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS
Page 1 of 1

Sample ID: B-19-6-6.75
SAMPLE

Lab Sample ID: ML02D
LIMS ID: 08-4123
Matrix: Soil
Data Release Authorized 
Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: 02/29/08
Date Received: 02/29/08

Percent Total Solids: 88.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/10/08	7440-38-2	Arsenic	5	5	U
3050B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	0.5	26.2	
3050B	03/04/08	6010B	03/10/08	7439-92-1	Lead	2	22	
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.04	0.07	

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

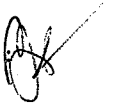
Page 1 of 1

Sample ID: B-20-6.5-8
SAMPLE

Lab Sample ID: ML02E

LIMS ID: 08-4124

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Percent Total Solids: 72.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/11/08	7440-38-2	Arsenic	20	20	U
3050B	03/04/08	6010B	03/11/08	7440-43-9	Cadmium	0.6	0.6	U
3050B	03/04/08	6010B	03/11/08	7440-47-3	Chromium	2	6	
3050B	03/04/08	6010B	03/11/08	7439-92-1	Lead	6	8	
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.06	0.06	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-21-19-20
SAMPLE

Lab Sample ID: ML02F

LIMS ID: 08-4125

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Percent Total Solids: 50.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/10/08	7440-38-2	Arsenic	10	10	U
3050B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	0.4	0.4	U
3050B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	1	11	
3050B	03/04/08	6010B	03/10/08	7439-92-1	Lead	4	5	
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.07	0.07	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B-21-20-23
SAMPLE

Lab Sample ID: ML02G

LIMS ID: 08-4126

Matrix: Solid/Product

Data Release Authorized: 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Percent Total Solids: 56.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/10/08	7440-38-2	Arsenic	8	8	U
3050B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	0.8	5.4	
3050B	03/04/08	6010B	03/10/08	7439-92-1	Lead	3	7	
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.07	0.07	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: ML02MB


QC Report No: ML02-Landau Associates, Inc.

LIMS ID: 08-4120

Project: Qwest Field North Lot

Matrix: Soil

1014001

Data Release Authorized: 

Date Sampled: NA

Reported: 03/13/08

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	03/04/08	6010B	03/10/08	7440-38-2	Arsenic	5	5	U
3050B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	0.5	0.5	U
3050B	03/04/08	6010B	03/10/08	7439-92-1	Lead	2	2	U
CLP	03/04/08	7471A	03/07/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ML02LCS

LIMS ID: 08-4120

Matrix: Soil

Data Release Authorized: 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	209	200	104%	
Cadmium	6010B	50.1	50.0	100%	
Chromium	6010B	49.0	50.0	98.0%	
Lead	6010B	202	200	101%	
Mercury	7471A	1.04	1.00	104%	

Reported in mg/kg-dry

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


Page 1 of 1

Sample ID: B-18-GW
SAMPLE

Lab Sample ID: ML02H

LIMS ID: 08-4127

Matrix: Water

Data Release Authorized: 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	2	3	
6010B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


Page 1 of 1

Sample ID: B-19-GW
SAMPLE

Lab Sample ID: ML02I

LIMS ID: 08-4128

Matrix: Water

Data Release Authorized: 

Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.

Project: Qwest Field North Lot

1014001

Date Sampled: 02/29/08

Date Received: 02/29/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	1	1	
6010B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL

RL-Reporting Limit

**INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS**

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: ML02MB


QC Report No: ML02-Landau Associates, Inc.

LIMS ID: 08-4127

Project: Qwest Field North Lot

Matrix: Water

1014001

Data Release Authorized: 

Date Sampled: NA

Reported: 03/13/08

Date Received: NA


Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
7000A	03/04/08	7060A	03/11/08	7440-38-2	Arsenic	1	1	U
6010B	03/04/08	6010B	03/10/08	7440-43-9	Cadmium	2	2	U
6010B	03/04/08	6010B	03/10/08	7440-47-3	Chromium	5	5	U
7000A	03/04/08	7421	03/04/08	7439-92-1	Lead	1	1	U
7470	03/04/08	7470A	03/06/08	7439-97-6	Mercury	0.1	0.1	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ML02LCS
LIMS ID: 08-4127
Matrix: Water
Data Release Authorized: 
Reported: 03/13/08

QC Report No: ML02-Landau Associates, Inc.
Project: Qwest Field North Lot
1014001
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	7060A	21	20	105%	
Cadmium	6010B	515	500	103%	
Chromium	6010B	496	500	99.2%	
Lead	7421	21	20	105%	
Mercury	7470A	2.2	2.0	110%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%



Analytical Resources, Incorporated

Analytical Chemists and Consultants

November 1, 2008

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest Field North Lot
ARI Job: NT61 and NT63

Dear Tim:

Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted several soil and water samples on October 9, 2008. The samples were received at cooler temperatures of 0.4° and 2.8°C. Total solids were not collected for the NWTPH-Gx plus BTEX analyses. The solids used to calculate the data were taken from the associated depths per Landau Associates.

The samples were analyzed for PAHs, PCBs, HCID with NWTPH-Dx follow ups, Total Metals, NWTPH-Gx plus BTEX and NWTPH-Dx, as requested on the COC.

The PAHs for NT61 and NT63 were batched. The associated QC for the PAHs is listed and included with NT61.

The PAHs matrix spike on sample **B31-0.3-4.0** is out of control high for several analytes with wide matrix spike duplicate RPDs. The matrix spike duplicate and all other associated QC is in control, therefore no further corrective action was taken.

No other analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

Date 10/7/08
Page 1 of _____

Chain-of-Custody Record

NT61

Project Information					Testing Parameters										Turnaround Time							
Project Name <u>Qwest N. Lot</u>		Project No. <u>1014001.020.022</u>													<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____							
Project Location/Event <u>Seattle, WA</u>																						
Sampler's Name <u>Nathan Moxley</u>																						
Project Contact <u>Tim Syverson</u>																						
Send Results To <u>Tim Syverson, Nathan Moxley, Anne Halverson</u>																						
Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-G-X	BTEX	PAH's	Metals*	NWTPH-HCID												Observations/Comments	
B32-0.2-2.0	10/7/08	0900	Soil	2		X	X	X													<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx: ___ run acid wash/silica gel cleanup ___ run samples standardized to _____ product ___ Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): ___ non-preserved ___ preserved w/methanol ___ preserved w/sodium bisulfate ___ Freeze upon receipt ___ Dissolved metal water samples field filtered Other *Metals include: <u>Arsenic, cadmium, chromium, lead, mercury</u>	
B32-8.0-10.5		0905	↓	2		X	X	X														
B31-0.3-4.0		0930		2		X	X	X														
B30-0.3-4.0		1015		2		X	X	X														
B30-8.0-10.5		1055		2		X	X	X														
B28-4.2-7.0		1120		1			X															
B28-5.0		1125		2	X	X																
B27-8.0		1210		2	X	X																
B27-8.0-8.3		1215		1			X															
B27-17.0		1230		2	X	X																
B27-16.5-17.5		1235		1			X															
B27-6W		1300		Water	2				X													
B24-2.2-3.0		1450		Soil	1			X														
B24-7.5		1505			2	X	X															
B24-7.0-8.0		1510			1			X														

Special Shipment/Handling or Storage Requirements		Method of Shipment <u>ART Pickup</u>	
Relinquished by Signature <u>Nathan Moxley</u> Printed Name <u>Landau</u> Company Date <u>10/8/08</u> Time <u>0530</u>	Received by Signature <u>Erik Kasarda</u> Printed Name <u>ART</u> Company Date <u>10/09/08</u> Time <u>11:23</u>	Relinquished by Signature Printed Name Company Date _____ Time _____	Received by Signature Printed Name Company Date _____ Time _____

Subject: RE: HCID NT61

From: "Tim Syverson" <TSyverson@landauinc.com>

Date: Mon, 13 Oct 2008 15:50:52 -0700

To: "Kelly Bottem" <kellyb@arilabs.com>

CC: "Kathryn Hartley" <khartley@landauinc.com>, "Nathan Moxley" <nmoxley@landauinc.com>, "Anne Halvorsen" <AHalvorsen@landauinc.com>, "Chris Young" <Cyoung@landauinc.com>

Kelly,

Please add NWTPH-Dx analysis to the three samples with detection of oil and/or diesel in the HCID analysis, per the attached revised COC.

Thanks,

Tim

Timothy L. Syverson, LG " Senior Associate
Landau Associates, Inc.
601 Union Street, Suite 1606, Seattle, WA 98101
206.631.8685 direct " fax 206.631.8697 " cell 206.605.9236
tsyverson@landauinc.com " www.landauinc.com

Email is a sustainable communications tool - please consider this before printing.

Notice: This communication may contain privileged or other confidential information. If you have received it in error, please advise the sender by reply email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you.

-----Original Message-----

From: Kelly Bottem [<mailto:kellyb@arilabs.com>]
Sent: Monday, October 13, 2008 2:10 PM
To: Tim Syverson
Subject: HCID NT61

--
Kelly Bottem, Client Services Manager
Analytical Resources, Inc.
4611 S. 134th Place, Suite 100
Tukwila, WA 98168-3240
Website: <http://www.arilabs.com>
Direct Phone: 206-695-6211
E-Mail: kellyb@arilabs.com
Fax: 206-695-6201
Cell: 206-228-1385

Rev100708_COC_add_Dx_101308.pdf	Content-Description: Rev100708_COC_add_Dx_101308.pdf Content-Type: application/octet-stream Content-Encoding: base64
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- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
-

10/10/09 - Please add PLB analysis as noted on Date 10/1/09 Page 1 of 1

Chain-of-Custody Record

Project Name: Quest W Lot Project No: 1014001.020.012 Testing Parameters

Project Location/Event: Seattle, WA

Sampler's Name: William Horley

Project Contact: Tim Sverson

Send Results To: Tim Sverson, William Horley, Anne Hulteen

Turnaround Time: Standard Accelerated

Sample ID	Date	Time	Matrix	No. of Containers	THX	BTEX	VOCs	MPH	PLBS	NWTPH-Dx	Observations/Comments
B32-0.2-2.0	10/7/09	0900	Soil	2		X	X	X		X	<p>Allow water samples to settle, collect aliquot from clear portion</p> <p>NWTPH-Dx: <input type="checkbox"/> run acid wash/silica gel cleanup <input type="checkbox"/> run samples standardized to product</p> <p>Analyze for EPH if no specific product identified</p> <p>VOC/BTEX/VPH (col): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt</p> <p>Dissolved metal water samples field filtered</p> <p>Other metals include: Arsenic, Cadmium, Chromium, Lead, Manganese</p>
B32-8.0-10.5		0905		2		X	X	X	X	X	
B31-0.3-4.0		0930		2		X	X	X	X	X	
B30-0.3-4.0		1015		2		X	X	X	X	X	
B30-8.0-10.5		1055		2		X	X	X	X	X	
B28-4.2-7.0		1130		1		X					
B28-5.0		1135		2	X	X					
B27-8.0		1210		2	X	X					
B27-8.0-8.3		1215		1		X					
B27-17.0		1230		2	X	X					
B27-16.5-17.5		1235		1		X			X		
B27-6W		1300	Water	2				X			
B24-0.2-3.0		1450	Soil	1		X					
B24-7.5		1505		2	X	X					
B24-7.0-8.0		1510		1		X			X		

please add - Dx analysis for these 3 tanks

Thanks CW to

Special Shipment/Handling or Storage Requirements: PLEASE TAKE CARE TO KEEP FROM OVERHEATING TO FURNACE

Method of Shipment: ART Pickup

Relinquished by Signature: <u>[Signature]</u> Printed Name: <u>William Horley</u> Company: <u>Landau Associates</u> Date: <u>10/1/09</u> Time: <u>0530</u>	Received by Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____	Relinquished by Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____	Received by Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____
---	--	--	--



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

10/10/09 - please wait
 PCB analysis as
 noted. *[Signature]*

Date 10/7/08
 Page 1 of _____

Chain-of-Custody Record

Project Name <u>Quest No. 101</u>					Project No. <u>1014001.020.022</u>					Testing Parameters					Turnaround Time				
Project Location/Event <u>Seattle, WA</u>					TPH-GX BTEX PAH's Metals NUTPH-ICED PCBs										<input type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____				
Sampler's Name <u>Nathan Moxley</u>																			
Project Contact <u>Tim Sverson</u>																			
Send Results To <u>Tim Sverson, Nathan Moxley, Anne Hahern</u>																			
Sample I.D.	Date	Time	Matrix	No. of Containers												Observations/Comments			
B32-0.2-2.0	10/7/08	0900	Soil	2			X	X	X							<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion NUTPH-Dx: <input type="checkbox"/> run acid wash/silica gel cleanup <input type="checkbox"/> run samples standardized to _____ product <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other <u>* Metals include: arsenic, calcium, chromium, lead, mercury</u>			
B32-2.0-10.5		0905		2			X	X	X										
B31-0.3-4.0		0930		2			X	X	X										
B30-0.3-4.0		1015		2			X	X	X										
B30-8.0-10.5		1055		2			X	X	X										
B28-4.2-7.0		1120		1			X												
B28-5.0		1125		2	X	X													
B27-8.0		1210		2	X	X													
B27-8.0-8.3		1215		1			X												
B27-17.0		1230		2	X	X													
B27-16.5-17.5		1235		1			X												
B27-6W		1300	Water	2					X										
B24-3.2-3.0		1450	Soil	1			X												
B24-7.5		1505		2	X	X													
B24-7.0-8.0		1510		1			X												
<p><i>→ Please take moisture reaching from overlying interval</i></p>																			
Special Shipment/Handling or Storage Requirements										Method of Shipment <u>ART Pickup</u>									
Relinquished by					Received by					Relinquished by					Received by				
Signature <i>[Signature]</i>					Signature _____					Signature _____					Signature _____				
Printed Name <u>Nathan Moxley</u>					Printed Name _____					Printed Name _____					Printed Name _____				
Company _____					Company _____					Company _____					Company _____				
Date <u>10/10/08</u> Time <u>0530</u>					Date _____ Time _____					Date _____ Time _____					Date _____ Time _____				



Cooler Receipt Form

ARI Client: Louise EDWARDS
COC No: _____
Assigned ARI Job No: NT61

Project Name: West N. Lot
Delivered by: Cobner
Tracking No: _____

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
 Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 2.6 °C

Cooler Accepted by: Eric Kasarda Date: 10/09/08 Time: 11:23

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? ICE
 Was sufficient ice used (if appropriate)? YES NO
 Were all bottles sealed in individual plastic bags? YES NO AB
 Did all bottle arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? 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 AB
 Do any of the analyses (bottles) require preservation? (attach preservation checklist) YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO

Samples Logged by: Bob Conliffe Date: 10/10/08 Time: 850


**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

AB NO TOTAL SILICOS JARS PROVIDED FOR GX/BETX SAMPLES.
 - SAMPLES BAGGED PER SAMPLE SET -

By: _____ Date: _____

Sample ID: B32-8.0-10.5
SAMPLE

Lab Sample ID: NT61B
LIMS ID: 08-27092
Matrix: Soil
Data Release Authorized: 
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: 10/07/08
Date Received: 10/09/08

Date Extracted: 10/20/08
Date Analyzed: 10/23/08 15:56
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 13.1 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 26.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	30	< 30 U
53469-21-9	Aroclor 1242	30	< 30 U
12672-29-6	Aroclor 1248	30	< 30 U
11097-69-1	Aroclor 1254	30	< 30 U
11096-82-5	Aroclor 1260	30	< 30 U
11104-28-2	Aroclor 1221	30	< 30 U
11141-16-5	Aroclor 1232	30	< 30 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.5%
Tetrachlorometaxylene	83.2%

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: B30-8.0-10.5
SAMPLE

Lab Sample ID: NT61E
LIMS ID: 08-27095
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: 10/07/08
Date Received: 10/09/08

Date Extracted: 10/20/08
Date Analyzed: 10/23/08 16:14
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 18.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	83.8%
Tetrachlorometaxylene	85.8%

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: B30-8.0-10.5
MATRIX SPIKE

Lab Sample ID: NT61E
LIMS ID: 08-27095
Matrix: Soil
Data Release Authorized:
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: 10/07/08
Date Received: 10/09/08

Date Extracted: 10/20/08
Date Analyzed: 10/23/08 16:31
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 18.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	---
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	---
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.5%
Tetrachlorometaxylene	90.0%

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: B30-8.0-10.5
MATRIX SPIKE DUP

Lab Sample ID: NT61E
LIMS ID: 08-27095
Matrix: Soil
Data Release Authorized:
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: 10/07/08
Date Received: 10/09/08

Date Extracted: 10/20/08
Date Analyzed: 10/23/08 16:48
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 18.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	---
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	---
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.0%
Tetrachlorometaxylene	93.0%

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: B27-16.5-17.5
SAMPLE

Lab Sample ID: NT61K
LIMS ID: 08-27101
Matrix: Soil
Data Release Authorized:
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: 10/07/08
Date Received: 10/09/08

Date Extracted: 10/20/08
Date Analyzed: 10/23/08 17:06
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 34.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.0%
Tetrachlorometaxylene	78.5%

Sample ID: B24-7.0-8.0
SAMPLE

Lab Sample ID: NT610
LIMS ID: 08-27105
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: 10/07/08
Date Received: 10/09/08

Date Extracted: 10/20/08
Date Analyzed: 10/23/08 17:23
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: 30.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	48	< 48 Y
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U


Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	76.8%
Tetrachlorometaxylene	73.8%

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: MB-102008
METHOD BLANK

Lab Sample ID: MB-102008
LIMS ID: 08-27095
Matrix: Soil
Data Release Authorized: 
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: NA
Date Received: NA

Date Extracted: 10/20/08
Date Analyzed: 10/23/08 12:46
Instrument/Analyst: ECD5/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: No
Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.0%
Tetrachlorometaxylene	82.0%

SW8082/PCB SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022

<u>Client ID</u>	<u>DCBP % REC</u>	<u>DCBP LCL-UCL</u>	<u>TCMX % REC</u>	<u>TCMX LCL-UCL</u>	<u>TOT OUT</u>
B32-8.0-10.5	82.5%	40-139	83.2%	49-120	0
MB-102008	86.0%	59-122	82.0%	61-118	0
LCS-102008	91.8%	59-122	88.5%	61-118	0
LCSD-102008	92.8%	59-122	86.0%	61-118	0
B30-8.0-10.5	83.8%	40-139	85.8%	49-120	0
B30-8.0-10.5 MS	85.5%	40-139	90.0%	49-120	0
B30-8.0-10.5 MSD	90.0%	40-139	93.0%	49-120	0
B27-16.5-17.5	79.0%	40-139	78.5%	49-120	0
B24-7.0-8.0	76.8%	40-139	73.8%	49-120	0

Standard Sonication Control Limits
Prep Method: SW3550B
Log Number Range: 08-27092 to 08-27105

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LCS-102008
LCS/LCSD

Lab Sample ID: LCS-102008
LIMS ID: 08-27095
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 10/20/08

Sample Amount LCS: 12.0 g-dry-wt
LCSD: 12.0 g-dry-wt

Date Analyzed LCS: 10/23/08 15:22
LCSD: 10/23/08 15:39

Final Extract Volume LCS: 4.0 mL
LCSD: 4.0 mL

Instrument/Analyst LCS: ECD5/JGR
LCSD: ECD5/JGR

Dilution Factor LCS: 1.00
LCSD: 1.00

GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Silica Gel: No

Percent Moisture: NA

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCS	LCS	Added-LCSD	Recovery	LCSD	
Aroclor 1016	144	167	86.4%	144	167	86.4%	0.0%		
Aroclor 1260	153	167	91.8%	157	167	94.2%	2.6%		

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	91.8%	92.8%
Tetrachlorometaxylene	88.5%	86.0%

Results reported in $\mu\text{g}/\text{kg}$ (ppb)
RPD calculated using sample concentrations per SW846.



ORGANICS ANALYSIS DATA SHEET
 PCB by GC/ECD Method SW8082
 Page 1 of 1

Sample ID: B30-8.0-10.5
 MS/MSD

Lab Sample ID: NT61E
 LIMS ID: 08-27095
 Matrix: Soil
 Data Release Authorized:
 Reported: 10/28/08

QC Report No: NT61-Landau Associates, Inc.
 Project: Qwest N. Lot
 1014001.020.022
 Date Sampled: 10/07/08
 Date Received: 10/09/08

Date Extracted MS/MSD: 10/20/08

Sample Amount MS: 12.5 g-dry-wt
 MSD: 12.6 g-dry-wt

Date Analyzed MS: 10/23/08 16:31
 MSD: 10/23/08 16:48

Final Extract Volume MS: 4.0 mL
 MSD: 4.0 mL

Instrument/Analyst MS: ECD5/JGR
 MSD: ECD5/JGR

Dilution Factor MS: 1.00
 MSD: 1.00

GPC Cleanup: No
 Sulfur Cleanup: Yes
 Acid Cleanup: Yes
 Florisil Cleanup: No

Silica Gel: No

Percent Moisture: 18.3%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 32.3 U	123	160	76.9%	137	159	86.2%	10.8%
Aroclor 1260	< 32.3 U	121	160	75.6%	131	159	82.4%	7.9%

Results reported in $\mu\text{g}/\text{kg}$ (ppb)
 RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID

Page 1 of 1

Matrix: Water

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Data Release Authorized: *WW*

Reported: 10/15/08

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-101308 08-27102	Method Blank	10/13/08	10/15/08	1.0	Gas	< 0.25 U
					Diesel	< 0.63 U
					Oil	< 0.63 U
					o-Terphenyl	64.2%
NT61L 08-27102	B27-GW HC ID: ---	10/13/08	10/15/08	1.0	Gas	< 0.25 U
					Diesel	< 0.63 U
					Oil	< 0.63 U
					o-Terphenyl	55.6%

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.

Diesel value based on the total peaks in the range from C12 to C24.

Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022

<u>Client ID</u>	<u>O-TER</u>	<u>TOT OUT</u>
MB-101308	64.2%	0
LCS-101308	76.8%	0
LCSD-101308	79.9%	0
B27-GW	55.6%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(55-110)	(50-150)

Prep Method: SW3510C
Log Number Range: 08-27102 to 08-27102

Sample ID: LCS-101308
 LCS/LCSD

Lab Sample ID: LCS-101308
 LIMS ID: 08-27102
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 10/15/08

QC Report No: NT61-Landau Associates, Inc.
 Project: Qwest N. Lot
 1014001.020.022
 Date Sampled: 10/07/08
 Date Received: 10/09/08

Date Extracted LCS/LCSD: 10/13/08

Sample Amount LCS: 500 mL

Date Analyzed LCS: 10/15/08 02:02
 LCSD: 10/15/08 02:17

Final Extract Volume LCS: 1.0 mL

Instrument/Analyst LCS: FID/MS
 LCSD: FID/MS

Dilution Factor LCS: 1.00

LCSD: 500 mL

LCSD: 1.0 mL

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.41	3.00	80.3%	2.27	3.00	75.7%	6.0%

HCID Surrogate Recovery

	LCS	LCSD
o-Terphenyl	76.8%	79.9%

Results reported in mg/L
 RPD calculated using sample concentrations per SW846.

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 10/09/08

ARI Job: NT61
Project: Qwest N. Lot
1014001.020.022

<u>ARI ID</u>	<u>Client ID</u>	<u>Sample Amt</u>	<u>Final Vol</u>	<u>Prep Date</u>
08-27102-101308MB	Method Blank	500 mL	1.00 mL	10/13/08
08-27102-101308LCS	Lab Control	500 mL	1.00 mL	10/13/08
08-27102-101308LCSD	Lab Control Dup	500 mL	1.00 mL	10/13/08
08-27102-NT61L	B27-GW	500 mL	1.00 mL	10/13/08

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID

Page 1 of 1

Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Data Release Authorized:

Reported: 10/13/08

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-101108 08-27091	Method Blank	10/11/08	10/12/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 83.9%
NT61A 08-27091	B32-0.2-2.0 HC ID: MOTOR OIL	10/11/08	10/12/08	10	Gas Diesel Oil o-Terphenyl	< 110 U < 280 U > 550 72.7%
NT61ADP 08-27091	B32-0.2-2.0 HC ID: MOTOR OIL	10/11/08	10/12/08	10	Gas Diesel Oil o-Terphenyl	< 110 U < 270 U > 550 72.0%
NT61B 08-27092	B32-8.0-10.5 HC ID: ---	10/11/08	10/12/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 88.3%
NT61C 08-27093	B31-0.3-4.0 HC ID: DRO/MOTOR OIL	10/11/08	10/12/08	5.0	Gas Diesel Oil o-Terphenyl	< 55 U > 140 > 270 92.8%
NT61D 08-27094	B30-0.3-4.0 HC ID: DRO/MOTOR OIL	10/11/08	10/12/08	5.0	Gas Diesel Oil o-Terphenyl	< 55 U > 140 > 280 99.9%
NT61E 08-27095	B30-8.0-10.5 HC ID: ---	10/11/08	10/12/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 96.0%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.

Diesel value based on the total peaks in the range from C12 to C24.

Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
101108MB	83.9%	0
B32-0.2-2.0	72.7%	0
B32-0.2-2.0 DP	72.0%	0
B32-8.0-10.5	88.3%	0
B31-0.3-4.0	92.8%	0
B30-0.3-4.0	99.9%	0
B30-8.0-10.5	96.0%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(68-122)	(50-150)

Prep Method: SW3550B
Log Number Range: 08-27091 to 08-27095

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 10/09/08

ARI Job: NT61
Project: Qwest N. Lot
1014001.020.022

ARI ID	Client ID	Sample Amt	Final Vol	Basis	Prep Date
08-27091-101108MB	Method Blank	10.0 g	5.00 mL	-	10/11/08
08-27091-NT61A	B32-0.2-2.0	9.04 g	5.00 mL	D	10/11/08
08-27091-NT61ADP	B32-0.2-2.0	9.13 g	5.00 mL	D	10/11/08
08-27092-NT61B	B32-8.0-10.5	7.36 g	5.00 mL	D	10/11/08
08-27093-NT61C	B31-0.3-4.0	9.14 g	5.00 mL	D	10/11/08
08-27094-NT61D	B30-0.3-4.0	9.10 g	5.00 mL	D	10/11/08
08-27095-NT61E	B30-8.0-10.5	8.22 g	5.00 mL	D	10/11/08

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Page 1 of 1
Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022
Date Received: 10/09/08



Data Release Authorized: **VTS**
Reported: 11/01/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-101708	Method Blank	10/17/08	10/24/08	1.00	Diesel	5.0	< 5.0 U
08-27091	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	10	< 10 U 87.1%
NT61A	B32-0.2-2.0	10/17/08	11/01/08	1.00	Diesel	110	160
08-27091	HC ID: DRO/MOTOR OIL		FID3A	20	Motor Oil o-Terphenyl	220	2,300 85.8%
NT61C	B31-0.3-4.0	10/17/08	10/31/08	1.00	Diesel	110	200
08-27093	HC ID: DRO/MOTOR OIL		FID3A	20	Motor Oil o-Terphenyl	220	1,200 90.7%
NT61E	B30-8.0-10.5	10/17/08	11/01/08	1.00	Diesel	29	49
08-27095	HC ID: DRO/MOTOR OIL		FID3A	5.0	Motor Oil o-Terphenyl	58	310 87.1%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
101708MBS	87.1%	0
101708LCS	90.9%	0
101708LCSD	92.9%	0
B32-0.2-2.0	85.8%	0
B31-0.3-4.0	90.7%	0
B30-8.0-10.5	87.1%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(52-121)	(48-119)

Prep Method: SW3546
Log Number Range: 08-27091 to 08-27095

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-101708
LCS/LCSD

Lab Sample ID: LCS-101708

LIMS ID: 08-27091

Matrix: Soil

Data Release Authorized: *VTS*

Reported: 11/01/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 10/17/08

Sample Amount LCS: 10.0 g

LCSD: 10.0 g

Date Analyzed LCS: 10/24/08 07:02

Final Extract Volume LCS: 1.0 mL

LCSD: 10/24/08 07:33

LCSD: 1.0 mL

Instrument/Analyst LCS: FID3A/PKC

Dilution Factor LCS: 1.00

LCSD: FID3A/PKC

LCSD: 1.00

Range	Spike		LCS	LCS	Spike		LCSD	RPD
	LCS	Added-LCS	Recovery		LCS	Added-LCSD	Recovery	
Diesel	128	150	85.3%	130	150	86.7%	1.6%	

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	90.9%	92.9%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 10/09/08

ARI Job: NT61
Project: Qwest N. Lot
1014001.020.022

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
08-27091-101708MB1	Method Blank	10.0 g	1.00 mL	-	10/17/08
08-27091-101708LCS1	Lab Control	10.0 g	1.00 mL	-	10/17/08
08-27091-101708LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	10/17/08
08-27091-NT61A	B32-0.2-2.0	9.05 g	1.00 mL	D	10/17/08
08-27093-NT61C	B31-0.3-4.0	9.23 g	1.00 mL	D	10/17/08
08-27095-NT61E	B30-8.0-10.5	8.55 g	1.00 mL	D	10/17/08

Basis: D=Dry Weight W=As Received
Diesel Extraction Report

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B28-5.0

SAMPLE

Lab Sample ID: NT61G

LIMS ID: 08-27097

Matrix: Soil

Data Release Authorized: *MMW*

Reported: 10/16/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Analyzed: 10/14/08 11:14

Instrument/Analyst: PID2/PKC

Purge Volume: 5.0 mL

Sample Amount: 58 mg-dry-wt

Percent Moisture: 28.6%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	21	160
108-88-3	Toluene	21	190
100-41-4	Ethylbenzene	21	< 21 U
	m,p-Xylene	43	410
95-47-6	o-Xylene	21	730

Gasoline Range Hydrocarbons	8.6	1,600	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	137%

Gasoline Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	140%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B27-8.0

SAMPLE

Lab Sample ID: NT61H

LIMS ID: 08-27098

Matrix: Soil

Data Release Authorized: *MMW*

Reported: 10/16/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Analyzed: 10/14/08 18:10

Instrument/Analyst: PID2/PKC

Purge Volume: 5.0 mL

Sample Amount: 84 mg-dry-wt

Percent Moisture: 24.9%

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	15	65	
108-88-3	Toluene	15	40	
100-41-4	Ethylbenzene	15	< 15 U	
	m,p-Xylene	30	100	
95-47-6	o-Xylene	15	52	
	Gasoline Range Hydrocarbons	6.0	140	GAS ID GRO

BETX Surrogate Recovery

Trifluorotoluene	105%
Bromobenzene	115%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	118%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B27-17.0
 SAMPLE

Lab Sample ID: NT61J
 LIMS ID: 08-27100
 Matrix: Soil
 Data Release Authorized: *MW*
 Reported: 10/16/08

QC Report No: NT61-Landau Associates, Inc.
 Project: Qwest N. Lot
 Event: 1014001.020.022
 Date Sampled: 10/07/08
 Date Received: 10/09/08

Date Analyzed: 10/14/08 12:10
 Instrument/Analyst: PID2/PKC

Purge Volume: 5.0 mL
 Sample Amount: 58 mg-dry-wt
 Percent Moisture: 34.5%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	22	< 22 U
108-88-3	Toluene	22	< 22 U
100-41-4	Ethylbenzene	22	< 22 U
	m,p-Xylene	43	< 43 U
95-47-6	o-Xylene	22	< 22 U

Gasoline Range Hydrocarbons	8.7	17	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	96.3%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B24-7.5
 SAMPLE

Lab Sample ID: NT61N
 LIMS ID: 08-27104
 Matrix: Soil
 Data Release Authorized: *MMW*
 Reported: 10/16/08

QC Report No: NT61-Landau Associates, Inc.
 Project: Qwest N. Lot
 Event: 1014001.020.022
 Date Sampled: 10/07/08
 Date Received: 10/09/08

Date Analyzed: 10/14/08 12:37
 Instrument/Analyst: PID2/PKC

Purge Volume: 5.0 mL
 Sample Amount: 43 mg-dry-wt
 Percent Moisture: 30.9%

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	29	350	
108-88-3	Toluene	29	390	
100-41-4	Ethylbenzene	29	< 29	U
	m,p-Xylene	58	2,200	
95-47-6	o-Xylene	29	1,100	
	Gasoline Range Hydrocarbons	12	1,400	GAS ID GAS/GRO

BETX Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	118%

Gasoline Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	132%

BETX values reported in µg/kg (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.
 Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.
 Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-101408

METHOD BLANK

Lab Sample ID: MB-101408

LIMS ID: 08-27097

Matrix: Soil

Data Release Authorized: *WWW*

Reported: 10/16/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed: 10/14/08 10:26

Instrument/Analyst: PID2/PKC

Purge Volume: 5.0 mL

Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	< 12 U
108-88-3	Toluene	12	< 12 U
100-41-4	Ethylbenzene	12	< 12 U
	m,p-Xylene	25	< 25 U
95-47-6	o-Xylene	12	< 12 U

Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	97.3%
Bromobenzene	96.0%

Gasoline Surrogate Recovery

Trifluorotoluene	96.9%
Bromobenzene	89.8%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NT61
Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
Event: 1014001.020.022

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT</u>	<u>OUT</u>
MB-101408	97.3%	96.0%		0
LCS-101408	103%	100%		0
LCSD-101408	95.2%	93.0%		0
B28-5.0	103%	137%		0
B27-8.0	105%	115%		0
B27-17.0	101%	102%		0
B24-7.5	103%	118%		0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(61-137)
(BBZ) = Bromobenzene	(80-120)	(58-139)

Log Number Range: 08-27097 to 08-27104

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NT61
Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.
Project: Qwest N. Lot
Event: 1014001.020.022

<u>Client ID</u>	<u>BFB</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT</u>	<u>OUT</u>
MB-101408	NA	96.9%	89.8%		0
LCS-101408	NA	102%	94.4%		0
LCSD-101408	NA	95.1%	88.4%		0
B28-5.0	NA	100%	140%		0
B27-8.0	NA	103%	118%		0
B27-17.0	NA	100%	96.3%		0
B24-7.5	NA	104%	132%		0

	LCS/MB LIMITS	QC LIMITS
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(65-137)
(BBZ) = Bromobenzene	(80-120)	(54-144)

Log Number Range: 08-27097 to 08-27104

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-101408

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101408

LIMS ID: 08-27097

Matrix: Soil

Data Release Authorized: *MMW*

Reported: 10/16/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/14/08 09:31

LCSD: 10/14/08 09:58

Instrument/Analyst LCS: PID2/PKC

LCSD: PID2/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike	LCS	LCSD	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Benzene	252	265	95.1%	260	265	98.1%	3.1%
Toluene	2030	2060	98.5%	2130	2060	103%	4.8%
Ethylbenzene	438	500	87.6%	453	500	90.6%	3.4%
m,p-Xylene	1950	2120	92.0%	2010	2120	94.8%	3.0%
o-Xylene	695	745	93.3%	722	745	96.9%	3.8%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	103%	95.2%
Bromobenzene	100%	93.0%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-101408

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101408

LIMS ID: 08-27097

Matrix: Soil

Data Release Authorized: *mmw*

Reported: 10/16/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/14/08 09:31

LCSD: 10/14/08 09:58

Instrument/Analyst LCS: PID2/PKC

LCSD: PID2/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike	LCS	LCSD	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Gasoline Range Hydrocarbons	51.5	50.0	103%	53.6	50.0	107%	4.0%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	102%	95.1%
Bromobenzene	94.4%	88.4%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B32-0.2-2.0

SAMPLE

Lab Sample ID: NT61A

LIMS ID: 08-27091

Matrix: Soil

Data Release Authorized 

Reported: 10/30/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Percent Total Solids: 89.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/13/08	7060A	10/22/08	7440-38-2	Arsenic	0.3	2.1	
3050B	10/13/08	6010B	10/30/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	10/13/08	6010B	10/30/08	7440-47-3	Chromium	0.5	31.2	
3050B	10/13/08	7421	10/17/08	7439-92-1	Lead	0.5	12.4	
CLP	10/13/08	7471A	10/17/08	7439-97-6	Mercury	0.05	0.34	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B32-8.0-10.5

SAMPLE

Lab Sample ID: NT61B

LIMS ID: 08-27092

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Percent Total Solids: 74.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/13/08	7060A	10/22/08	7440-38-2	Arsenic	0.3	2.3	
3050B	10/13/08	6010B	10/30/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	10/13/08	6010B	10/30/08	7440-47-3	Chromium	0.7	16.6	
3050B	10/13/08	7421	10/17/08	7439-92-1	Lead	0.6	9.2	
CLP	10/13/08	7471A	10/17/08	7439-97-6	Mercury	0.06	0.06	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B31-0.3-4.0
SAMPLE

Lab Sample ID: NT61C

LIMS ID: 08-27093

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Percent Total Solids: 89.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/13/08	7060A	10/22/08	7440-38-2	Arsenic	0.5	1.9	
3050B	10/13/08	6010B	10/30/08	7440-43-9	Cadmium	0.2	0.2	
3050B	10/13/08	6010B	10/30/08	7440-47-3	Chromium	0.5	31.5	
3050B	10/13/08	7421	10/27/08	7439-92-1	Lead	3	37	
CLP	10/13/08	7471A	10/17/08	7439-97-6	Mercury	0.04	0.08	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B30-0.3-4.0

SAMPLE

Lab Sample ID: NT61D

LIMS ID: 08-27094

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Percent Total Solids: 90.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/13/08	7060A	10/22/08	7440-38-2	Arsenic	0.5	2.4	
3050B	10/13/08	6010B	10/30/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	10/13/08	6010B	10/30/08	7440-47-3	Chromium	0.5	28.7	
3050B	10/13/08	7421	10/27/08	7439-92-1	Lead	3	24	
CLP	10/13/08	7471A	10/17/08	7439-97-6	Mercury	0.05	0.10	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B30-8.0-10.5

SAMPLE

Lab Sample ID: NT61E

LIMS ID: 08-27095

Matrix: Soil

Data Release Authorized: *JH*

Reported: 10/30/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Percent Total Solids: 80.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/13/08	7060A	10/22/08	7440-38-2	Arsenic	0.3	1.6	
3050B	10/13/08	6010B	10/30/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	10/13/08	6010B	10/30/08	7440-47-3	Chromium	0.6	21.7	
3050B	10/13/08	7421	10/27/08	7439-92-1	Lead	1	19	
CLP	10/13/08	7471A	10/17/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: NT61MB

LIMS ID: 08-27091

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/13/08	7060A	10/22/08	7440-38-2	Arsenic	0.1	0.1	U
3050B	10/13/08	6010B	10/30/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	10/13/08	6010B	10/30/08	7440-47-3	Chromium	0.5	0.5	U
3050B	10/13/08	7421	10/17/08	7439-92-1	Lead	0.1	0.1	U
CLP	10/13/08	7471A	10/17/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: NT61LCS

LIMS ID: 08-27091

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	7060A	9.7	10.0	97.0%	
Cadmium	6010B	54.1	50.0	108%	
Chromium	6010B	51.6	50.0	103%	
Lead	7421	9.6	10.0	96.0%	
Mercury	7471A	0.98	1.00	98.0%	

Reported in mg/kg-dry

N-Control limit not met

NA-Not Applicable, Analyte Not Spiked

Control Limits: 80-120%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B32-0.2-2.0

SAMPLE

Lab Sample ID: NT61A

LIMS ID: 08-27091

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/29/08 18:14

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.42 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 9.7%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180	< 180 U
91-57-6	2-Methylnaphthalene	180	< 180 U
90-12-0	1-Methylnaphthalene	180	< 180 U
208-96-8	Acenaphthylene	180	< 180 U
83-32-9	Acenaphthene	180	< 180 U
86-73-7	Fluorene	180	< 180 U
85-01-8	Phenanthrene	180	200
120-12-7	Anthracene	180	< 180 U
206-44-0	Fluoranthene	180	540
129-00-0	Pyrene	180	330
56-55-3	Benzo (a) anthracene	180	< 180 U
218-01-9	Chrysene	180	290
205-99-2	Benzo (b) fluoranthene	180	< 180 U
207-08-9	Benzo (k) fluoranthene	180	< 180 U
50-32-8	Benzo (a) pyrene	180	< 180 U
193-39-5	Indeno (1,2,3-cd) pyrene	180	< 180 U
53-70-3	Dibenz (a,h) anthracene	180	< 180 U
191-24-2	Benzo (g,h,i) perylene	180	< 180 U
132-64-9	Dibenzofuran	180	< 180 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	64.3%
2-Fluorobiphenyl	70.1%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B32-8.0-10.5

SAMPLE

Lab Sample ID: NT61B

LIMS ID: 08-27092

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/29/08 18:48

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.45 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 26.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	59	300
91-57-6	2-Methylnaphthalene	59	< 59 U
90-12-0	1-Methylnaphthalene	59	< 59 U
208-96-8	Acenaphthylene	59	< 59 U
83-32-9	Acenaphthene	59	< 59 U
86-73-7	Fluorene	59	< 59 U
85-01-8	Phenanthrene	59	< 59 U
120-12-7	Anthracene	59	< 59 U
206-44-0	Fluoranthene	59	< 59 U
129-00-0	Pyrene	59	< 59 U
56-55-3	Benzo (a) anthracene	59	< 59 U
218-01-9	Chrysene	59	< 59 U
205-99-2	Benzo (b) fluoranthene	59	< 59 U
207-08-9	Benzo (k) fluoranthene	59	< 59 U
50-32-8	Benzo (a) pyrene	59	< 59 U
193-39-5	Indeno (1,2,3-cd) pyrene	59	< 59 U
53-70-3	Dibenz (a,h) anthracene	59	< 59 U
191-24-2	Benzo (g,h,i) perylene	59	< 59 U
132-64-9	Dibenzofuran	59	< 59 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	59.2%
2-Fluorobiphenyl	62.0%



ORGANICS ANALYSIS DATA SHEET
 PNAs by SW8270D GC/MS
 Page 1 of 1

Sample ID: B31-0.3-4.0
 SAMPLE

Lab Sample ID: NT61C
 LIMS ID: 08-27093
 Matrix: Soil
 Data Release Authorized: *AB*
 Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.
 Project: Qwest N. Lot
 1014001.020.022
 Date Sampled: 10/07/08
 Date Received: 10/09/08

Date Extracted: 10/20/08
 Date Analyzed: 10/30/08 14:15
 Instrument/Analyst: NT4/PK
 GPC Cleanup: No
 Alumina: No
 Silica Gel: Yes

Sample Amount: 8.72 g-dry-wt
 Final Extract Volume: 0.5 mL
 Dilution Factor: 3.00
 Percent Moisture: 8.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	170	< 170 U
91-57-6	2-Methylnaphthalene	170	< 170 U
90-12-0	1-Methylnaphthalene	170	< 170 U
208-96-8	Acenaphthylene	170	< 170 U
83-32-9	Acenaphthene	170	< 170 U
86-73-7	Fluorene	170	< 170 U
85-01-8	Phenanthrene	170	1,100
120-12-7	Anthracene	170	250
206-44-0	Fluoranthene	170	1,300
129-00-0	Pyrene	170	1,400
56-55-3	Benzo (a) anthracene	170	580
218-01-9	Chrysene	170	660
205-99-2	Benzo (b) fluoranthene	170	430
207-08-9	Benzo (k) fluoranthene	170	460
50-32-8	Benzo (a) pyrene	170	610
193-39-5	Indeno (1,2,3-cd) pyrene	170	350
53-70-3	Dibenz (a,h) anthracene	170	< 170 U
191-24-2	Benzo (g,h,i) perylene	170	400
132-64-9	Dibenzofuran	170	< 170 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	75.2%
2-Fluorobiphenyl	64.8%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B31-0.3-4.0

MATRIX SPIKE

Lab Sample ID: NT61C

LIMS ID: 08-27093

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 14:49

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.54 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 8.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180	---
91-57-6	2-Methylnaphthalene	180	---
90-12-0	1-Methylnaphthalene	180	---
208-96-8	Acenaphthylene	180	---
83-32-9	Acenaphthene	180	---
86-73-7	Fluorene	180	---
85-01-8	Phenanthrene	180	---
120-12-7	Anthracene	180	---
206-44-0	Fluoranthene	180	---
129-00-0	Pyrene	180	---
56-55-3	Benzo (a) anthracene	180	---
218-01-9	Chrysene	180	---
205-99-2	Benzo (b) fluoranthene	180	---
207-08-9	Benzo (k) fluoranthene	180	---
50-32-8	Benzo (a) pyrene	180	---
193-39-5	Indeno (1,2,3-cd) pyrene	180	---
53-70-3	Dibenz (a,h) anthracene	180	---
191-24-2	Benzo (g,h,i) perylene	180	---
132-64-9	Dibenzofuran	180	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	62.9%
2-Fluorobiphenyl	58.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1


Sample ID: B31-0.3-4.0

MATRIX SPIKE DUPLICATE

Lab Sample ID: NT61C

LIMS ID: 08-27093

Matrix: Soil

Data Release Authorized: 

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 15:23

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.46 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 8.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180	---
91-57-6	2-Methylnaphthalene	180	---
90-12-0	1-Methylnaphthalene	180	---
208-96-8	Acenaphthylene	180	---
83-32-9	Acenaphthene	180	---
86-73-7	Fluorene	180	---
85-01-8	Phenanthrene	180	---
120-12-7	Anthracene	180	---
206-44-0	Fluoranthene	180	---
129-00-0	Pyrene	180	---
56-55-3	Benzo (a) anthracene	180	---
218-01-9	Chrysene	180	---
205-99-2	Benzo (b) fluoranthene	180	---
207-08-9	Benzo (k) fluoranthene	180	---
50-32-8	Benzo (a) pyrene	180	---
193-39-5	Indeno (1,2,3-cd) pyrene	180	---
53-70-3	Dibenz (a,h) anthracene	180	---
191-24-2	Benzo (g,h,i) perylene	180	---
132-64-9	Dibenzofuran	180	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	63.8%
2-Fluorobiphenyl	62.9%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B30-0.3-4.0

SAMPLE

Lab Sample ID: NT61D

LIMS ID: 08-27094

Matrix: Soil

Data Release Authorized: *AS*

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/29/08 19:22

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.31 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 9.3%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180	< 180 U
91-57-6	2-Methylnaphthalene	180	< 180 U
90-12-0	1-Methylnaphthalene	180	< 180 U
208-96-8	Acenaphthylene	180	< 180 U
83-32-9	Acenaphthene	180	280
86-73-7	Fluorene	180	320
85-01-8	Phenanthrene	180	4,000
120-12-7	Anthracene	180	1,100
206-44-0	Fluoranthene	180	12,000
129-00-0	Pyrene	180	6,600
56-55-3	Benzo (a) anthracene	180	3,100
218-01-9	Chrysene	180	3,800
205-99-2	Benzo (b) fluoranthene	180	2,900
207-08-9	Benzo (k) fluoranthene	180	3,200
50-32-8	Benzo (a) pyrene	180	3,100
193-39-5	Indeno (1,2,3-cd) pyrene	180	1,300
53-70-3	Dibenz (a,h) anthracene	180	450
191-24-2	Benzo (g,h,i) perylene	180	950
132-64-9	Dibenzofuran	180	180

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	58.9%
2-Fluorobiphenyl	68.5%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B30-8.0-10.5

SAMPLE

Lab Sample ID: NT61E

LIMS ID: 08-27095

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/29/08 19:56

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.64 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 18.3%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	58	< 58 U
91-57-6	2-Methylnaphthalene	58	< 58 U
90-12-0	1-Methylnaphthalene	58	< 58 U
208-96-8	Acenaphthylene	58	< 58 U
83-32-9	Acenaphthene	58	< 58 U
86-73-7	Fluorene	58	< 58 U
85-01-8	Phenanthrene	58	94
120-12-7	Anthracene	58	< 58 U
206-44-0	Fluoranthene	58	95
129-00-0	Pyrene	58	74
56-55-3	Benzo (a) anthracene	58	< 58 U
218-01-9	Chrysene	58	< 58 U
205-99-2	Benzo (b) fluoranthene	58	< 58 U
207-08-9	Benzo (k) fluoranthene	58	< 58 U
50-32-8	Benzo (a) pyrene	58	< 58 U
193-39-5	Indeno (1,2,3-cd) pyrene	58	< 58 U
53-70-3	Dibenz (a, h) anthracene	58	< 58 U
191-24-2	Benzo (g, h, i) perylene	58	< 58 U
132-64-9	Dibenzofuran	58	< 58 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	60.0%
2-Fluorobiphenyl	61.6%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B28-4.2-7.0

SAMPLE

Lab Sample ID: NT61F

LIMS ID: 08-27096

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/29/08 20:30

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.11 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 28.6%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	62	2,300
91-57-6	2-Methylnaphthalene	62	2,100
90-12-0	1-Methylnaphthalene	62	1,500
208-96-8	Acenaphthylene	62	< 62 U
83-32-9	Acenaphthene	62	< 62 U
86-73-7	Fluorene	62	< 62 U
85-01-8	Phenanthrene	62	270
120-12-7	Anthracene	62	< 62 U
206-44-0	Fluoranthene	62	< 62 U
129-00-0	Pyrene	62	< 62 U
56-55-3	Benzo (a) anthracene	62	< 62 U
218-01-9	Chrysene	62	< 62 U
205-99-2	Benzo (b) fluoranthene	62	< 62 U
207-08-9	Benzo (k) fluoranthene	62	< 62 U
50-32-8	Benzo (a) pyrene	62	< 62 U
193-39-5	Indeno (1,2,3-cd) pyrene	62	< 62 U
53-70-3	Dibenz (a,h) anthracene	62	< 62 U
191-24-2	Benzo (g,h,i) perylene	62	< 62 U
132-64-9	Dibenzofuran	62	120

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	52.8%
2-Fluorobiphenyl	68.8%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1



Sample ID: B27-8.0-8.3

SAMPLE

Lab Sample ID: NT61I

LIMS ID: 08-27099

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/29/08 21:04

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.69 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 24.9%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	65	360
91-57-6	2-Methylnaphthalene	65	1,200
90-12-0	1-Methylnaphthalene	65	880
208-96-8	Acenaphthylene	65	< 65 U
83-32-9	Acenaphthene	65	82
86-73-7	Fluorene	65	110
85-01-8	Phenanthrene	65	1,000
120-12-7	Anthracene	65	120
206-44-0	Fluoranthene	65	980
129-00-0	Pyrene	65	670
56-55-3	Benzo (a) anthracene	65	430
218-01-9	Chrysene	65	590
205-99-2	Benzo (b) fluoranthene	65	390
207-08-9	Benzo (k) fluoranthene	65	360
50-32-8	Benzo (a) pyrene	65	410
193-39-5	Indeno (1,2,3-cd) pyrene	65	150
53-70-3	Dibenz (a,h) anthracene	65	< 65 U
191-24-2	Benzo (g,h,i) perylene	65	140
132-64-9	Dibenzofuran	65	110

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	57.6%
2-Fluorobiphenyl	56.8%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B27-16.5-17.5

SAMPLE

Lab Sample ID: NT61K

LIMS ID: 08-27101

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/29/08 21:38

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.38 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 34.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	60	330
91-57-6	2-Methylnaphthalene	60	210
90-12-0	1-Methylnaphthalene	60	230
208-96-8	Acenaphthylene	60	100
83-32-9	Acenaphthene	60	93
86-73-7	Fluorene	60	240
85-01-8	Phenanthrene	60	1,300
120-12-7	Anthracene	60	260
206-44-0	Fluoranthene	60	650
129-00-0	Pyrene	60	420
56-55-3	Benzo(a)anthracene	60	170
218-01-9	Chrysene	60	270
205-99-2	Benzo(b)fluoranthene	60	130
207-08-9	Benzo(k)fluoranthene	60	110
50-32-8	Benzo(a)pyrene	60	180
193-39-5	Indeno(1,2,3-cd)pyrene	60	66
53-70-3	Dibenz(a,h)anthracene	60	< 60 U
191-24-2	Benzo(g,h,i)perylene	60	63
132-64-9	Dibenzofuran	60	200

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	65.6%
2-Fluorobiphenyl	66.8%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B24-2.2-3.0

SAMPLE

Lab Sample ID: NT61M

LIMS ID: 08-27103

Matrix: Soil

Data Release Authorized: *AB*

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 15:57

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.81 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 22.7%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	390
91-57-6	2-Methylnaphthalene	64	500
90-12-0	1-Methylnaphthalene	64	470
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	66
86-73-7	Fluorene	64	< 64 U
85-01-8	Phenanthrene	64	810
120-12-7	Anthracene	64	120
206-44-0	Fluoranthene	64	610
129-00-0	Pyrene	64	560
56-55-3	Benzo (a) anthracene	64	270
218-01-9	Chrysene	64	360
205-99-2	Benzo (b) fluoranthene	64	220
207-08-9	Benzo (k) fluoranthene	64	210
50-32-8	Benzo (a) pyrene	64	280
193-39-5	Indeno (1,2,3-cd) pyrene	64	200
53-70-3	Dibenz (a,h) anthracene	64	69
191-24-2	Benzo (g,h,i) perylene	64	230
132-64-9	Dibenzofuran	64	120

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	61.6%
2-Fluorobiphenyl	60.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B24-7.0-8.0

SAMPLE

Lab Sample ID: NT610

LIMS ID: 08-27105

Matrix: Soil

Data Release Authorized: *AB*

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 16:31

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.04 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 30.9%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	62	1,100
91-57-6	2-Methylnaphthalene	62	1,300
90-12-0	1-Methylnaphthalene	62	900
208-96-8	Acenaphthylene	62	< 62 U
83-32-9	Acenaphthene	62	64
86-73-7	Fluorene	62	74
85-01-8	Phenanthrene	62	940
120-12-7	Anthracene	62	100
206-44-0	Fluoranthene	62	610
129-00-0	Pyrene	62	440
56-55-3	Benzo (a) anthracene	62	130
218-01-9	Chrysene	62	320
205-99-2	Benzo (b) fluoranthene	62	160
207-08-9	Benzo (k) fluoranthene	62	190
50-32-8	Benzo (a) pyrene	62	220
193-39-5	Indeno (1,2,3-cd) pyrene	62	150
53-70-3	Dibenz (a,h) anthracene	62	< 62 U
191-24-2	Benzo (g,h,i) perylene	62	180
132-64-9	Dibenzofuran	62	240

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	54.4%
2-Fluorobiphenyl	59.2%



ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: MB-102008

METHOD BLANK

Lab Sample ID: MB-102008

LIMS ID: 08-27093

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: NA

Date Received: NA

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 11:25

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	82.4%
2-Fluorobiphenyl	66.4%

SW8270 PNA SURROGATE RECOVERY SUMMARY



Matrix: Soil

QC Report No: NT61-Landau Associates, Inc.
 Project: Qwest N. Lot
 1014001.020.022

Client ID	TER	FBP	TOT OUT
B32-0.2-2.0	64.3%	70.1%	0
B32-8.0-10.5	59.2%	62.0%	0
MB-102008	82.4%	66.4%	0
LCS-102008	88.4%	68.4%	0
LCSD-102008	68.0%	52.0%	0
B31-0.3-4.0	75.2%	64.8%	0
B31-0.3-4.0 MS	62.9%	58.4%	0
B31-0.3-4.0 MSD	63.8%	62.9%	0
B30-0.3-4.0	58.9%	68.5%	0
B30-8.0-10.5	60.0%	61.6%	0
B28-4.2-7.0	52.8%	68.8%	0
B27-8.0-8.3	57.6%	56.8%	0
B27-16.5-17.5	65.6%	66.8%	0
B24-2.2-3.0	61.6%	60.4%	0
B24-7.0-8.0	54.4%	59.2%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl
 (FBP) = 2-Fluorobiphenyl

(30-160) (30-160)
 (30-160) (30-160)

Prep Method: SW3546
 Log Number Range: 08-27091 to 08-27105

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-102008

LCS/LCSD

Lab Sample ID: LCS-102008

LIMS ID: 08-27093

Matrix: Soil

Data Release Authorized: *AS*

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: NA

Date Received: 10/09/08

Date Extracted LCS/LCSD: 10/20/08

Sample Amount LCS: 7.50 g

LCSD: 7.50 g

Date Analyzed LCS: 10/30/08 11:59

Final Extract Volume LCS: 0.50 mL

LCSD: 10/30/08 12:33

LCSD: 0.50 mL

Instrument/Analyst LCS: NT4/PK

Dilution Factor LCS: 1.00

LCSD: NT4/PK

LCSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	Spike		LCS		Spike		LCSD	
	LCS	Added-LCS	Recovery	LCS	Added-LCSD	Recovery	RPD	
Naphthalene	1210	1670	72.5%	897	1670	53.7%	29.7%	
2-Methylnaphthalene	1430	1670	85.6%	1070	1670	64.1%	28.8%	
1-Methylnaphthalene	1240	1670	74.3%	937	1670	56.1%	27.8%	
Acenaphthylene	1200	1670	71.9%	949	1670	56.8%	23.4%	
Acenaphthene	1100	1670	65.9%	894	1670	53.5%	20.7%	
Fluorene	1200	1670	71.9%	979	1670	58.6%	20.3%	
Phenanthrene	1220	1670	73.1%	1000	1670	59.9%	19.8%	
Anthracene	1290	1670	77.2%	1070	1670	64.1%	18.6%	
Fluoranthene	1230	1670	73.7%	1040	1670	62.3%	16.7%	
Pyrene	1520	1670	91.0%	1200	1670	71.9%	23.5%	
Benzo(a)anthracene	1310	1670	78.4%	1120	1670	67.1%	15.6%	
Chrysene	1320	1670	79.0%	1060	1670	63.5%	21.8%	
Benzo(b)fluoranthene	1340	1670	80.2%	1140	1670	68.3%	16.1%	
Benzo(k)fluoranthene	1270	1670	76.0%	1120	1670	67.1%	12.6%	
Benzo(a)pyrene	1310	1670	78.4%	1100	1670	65.9%	17.4%	
Indeno(1,2,3-cd)pyrene	1220	1670	73.1%	1020	1670	61.1%	17.9%	
Dibenz(a,h)anthracene	1270	1670	76.0%	1040	1670	62.3%	19.9%	
Benzo(g,h,i)perylene	1250	1670	74.9%	1050	1670	62.9%	17.4%	
Dibenzofuran	1070	1670	64.1%	863	1670	51.7%	21.4%	

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	88.4%	68.0%
2-Fluorobiphenyl	68.4%	52.0%

Results reported in $\mu\text{g}/\text{kg}$

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B31-0.3-4.0
MS/MSD

Lab Sample ID: NT61C

LIMS ID: 08-27093

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT61-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/07/08

Date Received: 10/09/08

Date Extracted MS/MSD: 10/20/08

Sample Amount MS: 8.54 g-dry-wt

MSD: 8.46 g-dry-wt

Date Analyzed MS: 10/30/08 14:49

Final Extract Volume MS: 0.5 mL

MSD: 10/30/08 15:23

MSD: 0.5 mL

Instrument/Analyst MS: NT4/PK

Dilution Factor MS: 3.00

MSD: NT4/PK

MSD: 3.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	< 172	1560	1460	107%	1030	1480	69.6%	40.9%
2-Methylnaphthalene	< 172	1790	1460	123%	1200	1480	81.1%	39.5%
1-Methylnaphthalene	< 172	1700	1460	116%	1080	1480	73.0%	44.6%
Acenaphthylene	< 172	915	1460	62.7%	1000	1480	67.6%	8.9%
Acenaphthene	< 172	2360	1460	162%	1030	1480	69.6%	78.5%
Fluorene	< 172	2420	1460	166%	1100	1480	74.3%	75.0%
Phenanthrene	1120	17000	1460	1090%	2120	1480	67.6%	156%
Anthracene	248	3740	1460	239%	1270	1480	69.1%	98.6%
Fluoranthene	1320	12600	1460	773%	2330	1480	68.2%	138%
Pyrene	1390	12400	1460	754%	2400	1480	68.2%	135%
Benzo(a)anthracene	580	4630	1460	277%	1650	1480	72.3%	94.9%
Chrysene	657	4970	1460	295%	1690	1480	69.8%	98.5%
Benzo(b)fluoranthene	433	4140	1460	254%	1760	1480	89.7%	80.7%
Benzo(k)fluoranthene	463	3240	1460	190%	1130	1480	45.1%	96.6%
Benzo(a)pyrene	606	4970	1460	299%	1630	1480	69.2%	101%
Indeno(1,2,3-cd)pyrene	353	3480	1460	214%	1360	1480	68.0%	87.6%
Dibenz(a,h)anthracene	< 172	1670	1460	114%	1120	1480	75.7%	39.4%
Benzo(g,h,i)perylene	404	3230	1460	194%	1310	1480	61.2%	84.6%
Dibenzofuran	< 172	1560	1460	107%	965	1480	65.2%	47.1%

Results reported in µg/kg

RPD calculated using sample concentrations per SW846.



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

NT63

Date 10/3/08
Page 1 of _____

Chain-of-Custody Record

Complete analysis before homogenize before archive

Project Name <u>Qwest N. Lot</u> Project No. <u>1014001.020.022</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____	
Project Location/Event <u>Seattle, WA</u>					<div style="display: flex; justify-content: space-around; font-size: small;"> TPH-GXBTEXPAHsTPH-HC/DTPH-DTPH-OMetals *Comp Homogenize before archive </div>											
Sampler's Name <u>Nathan Moxley</u>																
Project Contact <u>Tim Syverson</u>																
Send Results To <u>Nathan Moxley, Anne Halverson</u>																
Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-GX	BTEX	PAHs	TPH-HC/D	TPH-D	TPH-O	Metals *	Comp Homogenize before archive	Observations/Comments			
B23-5.0	10/3/08	0825	Soil	2	X	X								___ Allow water samples to settle, collect aliquot from clear portion		
B23-4.6-6.7		0830		1			X				X		NWTPH-Dx: ___ run acid wash/silica gel cleanup ___ run samples standardized to _____ product			
B23-16-20		0900		1			X						___ Analyze for EPH if no specific product identified			
B26-3.5		0930		2							X		VOC/BTEX/VPH (soil): ___ non-preserved ___ preserved w/methanol ___ preserved w/sodium bisulfate ___ Freeze upon receipt			
B26-7.5		0940		2	X	X							___ Dissolved metal water samples field filtered			
B26-4.0-7.6		0950		1			X		X	X			Other <u>*Metals include:</u>			
B40-24.5-26		1340		1			X									
B40-25.0		1345		2	X	X										

Special Shipment/Handling or Storage Requirements				Method of Shipment <u>ARI Pickup</u>			
Relinquished by Signature <u>[Signature]</u> Printed Name <u>Nathan Moxley</u> Company <u>CAI</u> Date <u>10/9/08</u> Time <u>05:05</u>		Received by Signature <u>[Signature]</u> Printed Name <u>ARI</u> Company <u>ARI</u> Date <u>10/09/08</u> Time <u>11:24</u>		Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____		Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	



Cooler Receipt Form

ARI Client: LAI
COC No: _____
Assigned ARI Job No: NT 63

Project Name: QWEST N. LOT
Delivered by: _____
Tracking No: _____

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
 Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 0.4 °C

Cooler Accepted by: E.K. Date: 10/9/08 Time: 1124

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? ICE
 Was sufficient ice used (if appropriate)? YES NO
 Were all bottles sealed in individual plastic bags? YES NO
 Did all bottle arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? 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 checklist) YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO

Samples Logged by: Bob Oglet Date: 10/10/08 Time: 1000

**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

SAMPLES BAGGED PER SAMPLE SET
 SAMPLES: B26-16-19
 B26-17.0
 B26-GW } NOT LISTED ON COC.
 NO TOTAL SOLIDS JARS PROVIDED FOR GX/BETX SAMPLES.
 By: _____ Date: _____

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID

Page 1 of 1

Matrix: Water

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Data Release Authorized: *[Signature]*

Reported: 10/15/08

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-101308 08-27129	Method Blank	10/13/08	10/15/08	1.0	Gas	< 0.25 U
					Diesel	< 0.63 U
					Oil	< 0.63 U
					o-Terphenyl	64.2%
NT63K 08-27129	B26-GW HC ID: GRO	10/13/08	10/15/08	1.0	Gas	> 0.25
					Diesel	< 0.63 U
					Oil	< 0.63 U
					o-Terphenyl	75.2%

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.

Diesel value based on the total peaks in the range from C12 to C24.

Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: NT63-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022

<u>Client ID</u>	<u>O-TER</u>	<u>TOT OUT</u>
MB-101308	64.2%	0
LCS-101308	76.8%	0
LCSD-101308	79.9%	0
B26-GW	75.2%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(O-TER) = o-Terphenyl	(55-110)	(50-150)

Prep Method: SW3510C
Log Number Range: 08-27129 to 08-27129



Sample ID: LCS-101308
 LCS/LCSD

Lab Sample ID: LCS-101308
 LIMS ID: 08-27129
 Matrix: Water
 Data Release Authorized: *MW*
 Reported: 10/15/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 1014001.020.022
 Date Sampled: 10/08/08
 Date Received: 10/09/08

Date Extracted LCS/LCSD: 10/13/08

Sample Amount LCS: 500 mL

Date Analyzed LCS: 10/15/08 02:02

LCSD: 500 mL

LCSD: 10/15/08 02:17

Final Extract Volume LCS: 1.0 mL

Instrument/Analyst LCS: FID/MS

LCSD: 1.0 mL

LCSD: FID/MS

Dilution Factor LCS: 1.00

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.41	3.00	80.3%	2.27	3.00	75.7%	6.0%

HCID Surrogate Recovery

	LCS	LCSD
o-Terphenyl	76.8%	79.9%

Results reported in mg/L
 RPD calculated using sample concentrations per SW846.

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 10/09/08

ARI Job: NT63
Project: Qwest N. Lot
1014001.020.022

ARI ID	Client ID	Sample Amt	Final Vol	Prep Date
08-27129-101308MB	Method Blank	500 mL	1.00 mL	10/13/08
08-27129-101308LCS	Lab Control	500 mL	1.00 mL	10/13/08
08-27129-101308LCSD	Lab Control Dup	500 mL	1.00 mL	10/13/08
08-27129-NT63K	B26-GW	500 mL	1.00 mL	10/13/08

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned


Page 1 of 1

Matrix: Soil

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Data Release Authorized: 

Reported: 10/23/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-101608	Method Blank	10/16/08	10/22/08	1.00	Diesel	5.0	< 5.0 U
08-27125	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	10	< 10 U 92.7%
NT63G	B40-24.5-26	10/16/08	10/22/08	1.00	Diesel	6.0	49
08-27125	HC ID: DRO/MOTOR OIL		FID3A	1.0	Motor Oil o-Terphenyl	12	150 82.9%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NT63-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-101608	92.7%	0
LCS-101608	92.4%	0
LCSD-101608	94.2%	0
B40-24.5-26	82.9%	0
B40-24.5-26 MS	87.6%	0
B40-24.5-26 MSD	83.6%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(62-118)

(49-125)

Prep Method: SW3546
Log Number Range: 08-27125 to 08-27125

ORGANICS ANALYSIS DATA SHEET
 NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1

Sample ID: B40-24.5-26
 MS/MSD

Lab Sample ID: NT63G
 LIMS ID: 08-27125
 Matrix: Soil
 Data Release Authorized: *[Signature]*
 Reported: 10/23/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 1014001.020.022
 Date Sampled: 10/08/08
 Date Received: 10/09/08

Date Extracted MS/MSD: 10/16/08
 Date Analyzed MS: 10/22/08 05:44
 MSD: 10/22/08 05:59
 Instrument/Analyst MS: FID/PKC
 MSD: FID/PKC

Sample Amount MS: 8.61 g-dry-wt
 MSD: 8.61 g-dry-wt
 Final Extract Volume MS: 1.0 mL
 MSD: 1.0 mL
 Dilution Factor MS: 1.0
 MSD: 1.0
 Percent Moisture: 20.1%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	49.2	186	174	78.6%	168	174	68.3%	10.2%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	87.6%	83.6%

Results reported in mg/kg
 RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned
 Page 1 of 1

Sample ID: LCS-101608
 LCS/LCSD

Lab Sample ID: LCS-101608
 LIMS ID: 08-27125
 Matrix: Soil
 Data Release Authorized:
 Reported: 10/23/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 1014001.020.022
 Date Sampled: 10/08/08
 Date Received: 10/09/08

Date Extracted LCS/LCSD: 10/16/08

Sample Amount LCS: 10.0 g
 LCSD: 10.0 g

Date Analyzed LCS: 10/22/08 04:58
 LCSD: 10/22/08 05:14

Final Extract Volume LCS: 1.0 mL
 LCSD: 1.0 mL

Instrument/Analyst LCS: FID/PKC
 LCSD: FID/PKC

Dilution Factor LCS: 1.0
 LCSD: 1.0

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	126	150	84.0%	127	150	84.7%	0.8%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	92.4%	94.2%

Results reported in mg/kg
 RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 10/09/08

ARI Job: NT63
Project: Qwest N. Lot
1014001.020.022

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
08-27125-101608MB1	Method Blank	10.0 g	1.00 mL	-	10/16/08
08-27125-101608LCS1	Lab Control	10.0 g	1.00 mL	-	10/16/08
08-27125-101608LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	10/16/08
08-27125-NT63G	B40-24.5-26	8.37 g	1.00 mL	D	10/16/08
08-27125-NT63GMS	B40-24.5-26	8.61 g	1.00 mL	D	10/16/08
08-27125-NT63GMSD	B40-24.5-26	8.61 g	1.00 mL	D	10/16/08



ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B23-5.0
 SAMPLE

Lab Sample ID: NT63A
 LIMS ID: 08-27119
 Matrix: Soil
 Data Release Authorized:
 Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 Event: 1014001.020.022
 Date Sampled: 10/08/08
 Date Received: 10/09/08

Date Analyzed: 10/15/08 14:30
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 0.55 mg-dry-wt
 Percent Moisture: 21.9%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	2,300	57,000
108-88-3	Toluene	2,300	34,000
100-41-4	Ethylbenzene	2,300	5,900
	m,p-Xylene	4,600	43,000
95-47-6	o-Xylene	2,300	18,000

Gasoline Range Hydrocarbons	910	6,100	GAS ID GAS/GRO
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BETX Surrogate Recovery

Trifluorotoluene	93.3%
Bromobenzene	88.6%

Gasoline Surrogate Recovery

Trifluorotoluene	92.5%
Bromobenzene	88.2%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B26-7.5
 SAMPLE

Lab Sample ID: NT63E
 LIMS ID: 08-27123
 Matrix: Soil
 Data Release Authorized:
 Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 Event: 1014001.020.022
 Date Sampled: 10/08/08
 Date Received: 10/09/08

Date Analyzed: 10/15/08 14:55
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 69 mg-dry-wt
 Percent Moisture: 29.1%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	18	6,400
108-88-3	Toluene	18	810
100-41-4	Ethylbenzene	18	2,600
	m,p-Xylene	36	1,200
95-47-6	o-Xylene	18	850

			GAS ID
	Gasoline Range Hydrocarbons	7.2	1,200 GAS/GRO

BETX Surrogate Recovery

Trifluorotoluene	106%
Bromobenzene	120%

Gasoline Surrogate Recovery

Trifluorotoluene	111%
Bromobenzene	79.1%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B40-25.0
 SAMPLE

Lab Sample ID: NT63H
 LIMS ID: 08-27126
 Matrix: Soil
 Data Release Authorized:
 Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 Event: 1014001.020.022
 Date Sampled: 10/08/08
 Date Received: 10/09/08

Date Analyzed: 10/16/08 12:28
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 110 mg-dry-wt
 Percent Moisture: 20.1%

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	11	< 11 U	
108-88-3	Toluene	11	< 11 U	
100-41-4	Ethylbenzene	11	< 11 U	
	m,p-Xylene	23	< 23 U	
95-47-6	o-Xylene	11	< 11 U	
	Gasoline Range Hydrocarbons	4.5	< 4.5 U	---

BETX Surrogate Recovery

Trifluorotoluene	95.2%
Bromobenzene	88.6%

Gasoline Surrogate Recovery

Trifluorotoluene	93.4%
Bromobenzene	87.5%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.



Sample ID: B26-17.0
 SAMPLE

Lab Sample ID: NT63I
 LIMS ID: 08-27127
 Matrix: Soil
 Data Release Authorized: *[Signature]*
 Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 Event: 1014001.020.022
 Date Sampled: 10/08/08
 Date Received: 10/09/08

Date Analyzed: 10/16/08 12:52
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 8.7 mg-dry-wt
 Percent Moisture: 21.9%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	140	730
108-88-3	Toluene	140	1,100
100-41-4	Ethylbenzene	140	3,600
	m,p-Xylene	290	1,800
95-47-6	o-Xylene	140	2,000

Gasoline Range Hydrocarbons 58 4,300 GAS ID GAS/GRO

BETX Surrogate Recovery

Trifluorotoluene	99.5%
Bromobenzene	109%

Gasoline Surrogate Recovery

Trifluorotoluene	99.0%
Bromobenzene	71.4%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.
 Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.
 Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-101508

METHOD BLANK

Lab Sample ID: MB-101508

LIMS ID: 08-27119

Matrix: Soil

Data Release Authorized:

Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed: 10/15/08 12:18

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	< 12 U
108-88-3	Toluene	12	< 12 U
100-41-4	Ethylbenzene	12	< 12 U
	m,p-Xylene	25	< 25 U
95-47-6	o-Xylene	12	< 12 U

Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	90.2%
Bromobenzene	84.9%

Gasoline Surrogate Recovery

Trifluorotoluene	89.5%
Bromobenzene	85.1%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MB-101608
 METHOD BLANK

Lab Sample ID: MB-101608
 LIMS ID: 08-27126
 Matrix: Soil
 Data Release Authorized:
 Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.
 Project: Qwest N. Lot
 Event: 1014001.020.022
 Date Sampled: NA
 Date Received: NA

Date Analyzed: 10/16/08 11:23
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	< 12 U
108-88-3	Toluene	12	< 12 U
100-41-4	Ethylbenzene	12	< 12 U
	m,p-Xylene	25	< 25 U
95-47-6	o-Xylene	12	< 12 U

Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	95.5%
Bromobenzene	90.5%

Gasoline Surrogate Recovery

Trifluorotoluene	94.9%
Bromobenzene	90.6%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.
 Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: LCS-101508

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101508

LIMS ID: 08-27119

Matrix: Soil

Data Release Authorized: 

Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/15/08 11:29

LCSD: 10/15/08 11:53

Instrument/Analyst LCS: PID3/PKC

LCSD: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	43.0	50.0	86.0%	43.0	50.0	86.0%	0.0%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	90.2%	90.0%
Bromobenzene	83.0%	84.3%

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NT63
Matrix: Soil

QC Report No: NT63-Landau Associates, Inc.
Project: Qwest N. Lot
Event: 1014001.020.022

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-101508	90.2%	84.9%	0
LCS-101508	90.3%	84.1%	0
LCSD-101508	90.3%	84.3%	0
B23-5.0	93.3%	88.6%	0
B26-7.5	106%	120%	0
MB-101608	95.5%	90.5%	0
LCS-101608	94.3%	87.1%	0
LCSD-101608	98.3%	91.4%	0
B40-25.0	95.2%	88.6%	0
B26-17.0	99.5%	109%	0

(TFT) = Trifluorotoluene	LCS/MB LIMITS (80-120)	QC LIMITS (61-137)
(BBZ) = Bromobenzene	(80-120)	(58-139)

Log Number Range: 08-27119 to 08-27127

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NT63
Matrix: Soil

QC Report No: NT63-Landau Associates, Inc.
Project: Qwest N. Lot
Event: 1014001.020.022

<u>Client ID</u>	<u>BFB</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-101508	NA	89.5%	85.1%	0
LCS-101508	NA	90.2%	83.0%	0
LCSD-101508	NA	90.0%	84.3%	0
B23-5.0	NA	92.5%	88.2%	0
B26-7.5	NA	111%	79.1%	0
MB-101608	NA	94.9%	90.6%	0
LCS-101608	NA	93.1%	87.0%	0
LCSD-101608	NA	98.6%	91.4%	0
B40-25.0	NA	93.4%	87.5%	0
B26-17.0	NA	99.0%	71.4%	0

LCS/MB LIMITS QC LIMITS

(BFB) = Bromofluorobenzene
(TFT) = Trifluorotoluene
(BBZ) = Bromobenzene

(70-130)
(80-120)
(80-120)

(70-130)
(65-137)
(54-144)

Log Number Range: 08-27119 to 08-27127

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-101508

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101508

LIMS ID: 08-27119

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/15/08 11:29

LCSD: 10/15/08 11:53

Instrument/Analyst LCS: PID3/PKC

LCSD: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	LCS		LCSD	LCSD		RPD
		Spike Added-LCS	Recovery		Spike Added-LCSD	Recovery	
Benzene	234	265	88.3%	252	265	95.1%	7.4%
Toluene	1720	2060	83.5%	1900	2060	92.2%	9.9%
Ethylbenzene	390	500	78.0%	436	500	87.2%	11.1%
m,p-Xylene	1750	2120	82.5%	1930	2120	91.0%	9.8%
o-Xylene	622	745	83.5%	689	745	92.5%	10.2%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	90.3%	90.3%
Bromobenzene	84.1%	84.3%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-101608

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101608

LIMS ID: 08-27126

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/16/08 10:34

LCSD: 10/16/08 10:58

Instrument/Analyst LCS: PID3/PKC

LCSD: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	46.2	50.0	92.4%	48.8	50.0	97.6%	5.5%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	93.1%	98.6%
Bromobenzene	87.0%	91.4%

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
Page 1 of 1

Sample ID: LCS-101608
LAB CONTROL SAMPLE

Lab Sample ID: LCS-101608
LIMS ID: 08-27126
Matrix: Soil
Data Release Authorized: *AS*
Reported: 10/17/08

QC Report No: NT63-Landau Associates, Inc.
Project: Qwest N. Lot
Event: 1014001.020.022
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 10/16/08 10:34
LCSD: 10/16/08 10:58
Instrument/Analyst LCS: PID3/PKC
LCSD: PID3/PKC

Purge Volume: 5.0 mL
Sample Amount LCS: 100 mg-dry-wt
LCSD: 100 mg-dry-wt

Analyte	LCS	Spike	LCS	LCSD	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Benzene	256	265	96.6%	270	265	102%	5.3%
Toluene	1890	2060	91.7%	1980	2060	96.1%	4.7%
Ethylbenzene	428	500	85.6%	452	500	90.4%	5.5%
m,p-Xylene	1910	2120	90.1%	2000	2120	94.3%	4.6%
o-Xylene	685	745	91.9%	716	745	96.1%	4.4%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	94.3%	98.3%
Bromobenzene	87.1%	91.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B23-4.6-6.7

SAMPLE

Lab Sample ID: NT63B

LIMS ID: 08-27120

Matrix: Soil

Data Release Authorized: 

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 17:05

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.29 g-dry-wt

Final Extract Volume: 50 mL

Dilution Factor: 3.00

Percent Moisture: 21.9%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	18,000	5,400,000 E
91-57-6	2-Methylnaphthalene	18,000	760,000
90-12-0	1-Methylnaphthalene	18,000	440,000
208-96-8	Acenaphthylene	18,000	1,600,000
83-32-9	Acenaphthene	18,000	300,000
86-73-7	Fluorene	18,000	1,200,000
85-01-8	Phenanthrene	18,000	7,800,000 E
120-12-7	Anthracene	18,000	1,600,000 E
206-44-0	Fluoranthene	18,000	5,000,000 E
129-00-0	Pyrene	18,000	5,400,000 E
56-55-3	Benzo (a) anthracene	18,000	1,400,000
218-01-9	Chrysene	18,000	1,600,000 E
205-99-2	Benzo (b) fluoranthene	18,000	1,200,000
207-08-9	Benzo (k) fluoranthene	18,000	1,000,000
50-32-8	Benzo (a) pyrene	18,000	1,900,000 E
193-39-5	Indeno (1,2,3-cd) pyrene	18,000	1,100,000
53-70-3	Dibenz (a,h) anthracene	18,000	260,000
191-24-2	Benzo (g,h,i) perylene	18,000	1,200,000
132-64-9	Dibenzofuran	18,000	810,000

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B23-4.6-6.7

DILUTION

Lab Sample ID: NT63B

LIMS ID: 08-27120

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/31/08 14:12

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.29 g-dry-wt

Final Extract Volume: 50 mL

Dilution Factor: 30.0

Percent Moisture: 21.9%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180,000	5,500,000
91-57-6	2-Methylnaphthalene	180,000	810,000
90-12-0	1-Methylnaphthalene	180,000	470,000
208-96-8	Acenaphthylene	180,000	1,500,000
83-32-9	Acenaphthene	180,000	320,000
86-73-7	Fluorene	180,000	1,200,000
85-01-8	Phenanthrene	180,000	7,400,000
120-12-7	Anthracene	180,000	1,600,000
206-44-0	Fluoranthene	180,000	5,000,000
129-00-0	Pyrene	180,000	5,300,000
56-55-3	Benzo (a) anthracene	180,000	1,400,000
218-01-9	Chrysene	180,000	1,600,000
205-99-2	Benzo (b) fluoranthene	180,000	1,100,000
207-08-9	Benzo (k) fluoranthene	180,000	880,000
50-32-8	Benzo (a) pyrene	180,000	1,700,000
193-39-5	Indeno (1,2,3-cd) pyrene	180,000	940,000
53-70-3	Dibenz (a,h) anthracene	180,000	< 180,000 U
191-24-2	Benzo (g,h,i) perylene	180,000	1,100,000
132-64-9	Dibenzofuran	180,000	770,000

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B23-16-20

SAMPLE

Lab Sample ID: NT63C

LIMS ID: 08-27121

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 17:40

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.37 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 22.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	60	120
91-57-6	2-Methylnaphthalene	60	74
90-12-0	1-Methylnaphthalene	60	90
208-96-8	Acenaphthylene	60	< 60 U
83-32-9	Acenaphthene	60	< 60 U
86-73-7	Fluorene	60	< 60 U
85-01-8	Phenanthrene	60	71
120-12-7	Anthracene	60	< 60 U
206-44-0	Fluoranthene	60	< 60 U
129-00-0	Pyrene	60	< 60 U
56-55-3	Benzo (a) anthracene	60	< 60 U
218-01-9	Chrysene	60	< 60 U
205-99-2	Benzo (b) fluoranthene	60	< 60 U
207-08-9	Benzo (k) fluoranthene	60	< 60 U
50-32-8	Benzo (a) pyrene	60	< 60 U
193-39-5	Indeno (1,2,3-cd) pyrene	60	< 60 U
53-70-3	Dibenz (a,h) anthracene	60	< 60 U
191-24-2	Benzo (g,h,i) perylene	60	< 60 U
132-64-9	Dibenzofuran	60	< 60 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.0%
2-Fluorobiphenyl	65.2%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B26-4.0-7.6

SAMPLE

Lab Sample ID: NT63F

LIMS ID: 08-27124

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 18:14

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.13 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 29.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	62	4,100
91-57-6	2-Methylnaphthalene	62	9,300 E
90-12-0	1-Methylnaphthalene	62	7,200 E
208-96-8	Acenaphthylene	62	< 62 U
83-32-9	Acenaphthene	62	100
86-73-7	Fluorene	62	100
85-01-8	Phenanthrene	62	1,700
120-12-7	Anthracene	62	280
206-44-0	Fluoranthene	62	780
129-00-0	Pyrene	62	680
56-55-3	Benzo (a) anthracene	62	500
218-01-9	Chrysene	62	700
205-99-2	Benzo (b) fluoranthene	62	390
207-08-9	Benzo (k) fluoranthene	62	410
50-32-8	Benzo (a) pyrene	62	540
193-39-5	Indeno (1,2,3-cd) pyrene	62	250
53-70-3	Dibenz (a,h) anthracene	62	94
191-24-2	Benzo (g,h,i) perylene	62	270
132-64-9	Dibenzofuran	62	470

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	49.6%
2-Fluorobiphenyl	60.0%



ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B26-4.0-7.6

DILUTION

Lab Sample ID: NT63F

LIMS ID: 08-27124

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/31/08 11:56

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.13 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 5.00

Percent Moisture: 29.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	310	3,800
91-57-6	2-Methylnaphthalene	310	9,500
90-12-0	1-Methylnaphthalene	310	7,300
208-96-8	Acenaphthylene	310	< 310 U
83-32-9	Acenaphthene	310	< 310 U
86-73-7	Fluorene	310	< 310 U
85-01-8	Phenanthrene	310	1,700
120-12-7	Anthracene	310	< 310 U
206-44-0	Fluoranthene	310	810
129-00-0	Pyrene	310	860
56-55-3	Benzo (a) anthracene	310	490
218-01-9	Chrysene	310	700
205-99-2	Benzo (b) fluoranthene	310	350
207-08-9	Benzo (k) fluoranthene	310	380
50-32-8	Benzo (a) pyrene	310	510
193-39-5	Indeno (1,2,3-cd) pyrene	310	< 310 U
53-70-3	Dibenz (a,h) anthracene	310	< 310 U
191-24-2	Benzo (g,h,i) perylene	310	340
132-64-9	Dibenzofuran	310	520

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	59.8%
2-Fluorobiphenyl	57.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1



Sample ID: B40-24.5-26

SAMPLE

Lab Sample ID: NT63G

LIMS ID: 08-27125

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 18:49

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.63 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 20.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	58	24,000 E
91-57-6	2-Methylnaphthalene	58	9,200 E
90-12-0	1-Methylnaphthalene	58	5,300 E
208-96-8	Acenaphthylene	58	1,600
83-32-9	Acenaphthene	58	4,800 E
86-73-7	Fluorene	58	4,100
85-01-8	Phenanthrene	58	15,000 E
120-12-7	Anthracene	58	2,400
206-44-0	Fluoranthene	58	5,600 E
129-00-0	Pyrene	58	6,000 E
56-55-3	Benzo (a) anthracene	58	2,200
218-01-9	Chrysene	58	2,000
205-99-2	Benzo (b) fluoranthene	58	1,300
207-08-9	Benzo (k) fluoranthene	58	1,200
50-32-8	Benzo (a) pyrene	58	2,200
193-39-5	Indeno (1,2,3-cd) pyrene	58	940
53-70-3	Dibenz (a,h) anthracene	58	230
191-24-2	Benzo (g,h,i) perylene	58	730
132-64-9	Dibenzofuran	58	900

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	58.4%
2-Fluorobiphenyl	62.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B40-24.5-26

DILUTION

Lab Sample ID: NT63G

LIMS ID: 08-27125

Matrix: Soil

Data Release Authorized:

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/31/08 12:30

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.63 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 10.0

Percent Moisture: 20.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	580	23,000
91-57-6	2-Methylnaphthalene	580	8,100
90-12-0	1-Methylnaphthalene	580	5,000
208-96-8	Acenaphthylene	580	1,600
83-32-9	Acenaphthene	580	4,100
86-73-7	Fluorene	580	4,000
85-01-8	Phenanthrene	580	12,000
120-12-7	Anthracene	580	2,300
206-44-0	Fluoranthene	580	4,900
129-00-0	Pyrene	580	5,900
56-55-3	Benzo(a)anthracene	580	2,000
218-01-9	Chrysene	580	1,900
205-99-2	Benzo(b)fluoranthene	580	1,000
207-08-9	Benzo(k)fluoranthene	580	1,200
50-32-8	Benzo(a)pyrene	580	1,900
193-39-5	Indeno(1,2,3-cd)pyrene	580	790
53-70-3	Dibenz(a,h)anthracene	580	< 580 U
191-24-2	Benzo(g,h,i)perylene	580	740
132-64-9	Dibenzofuran	580	880

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	62.4%
2-Fluorobiphenyl	56.8%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B26-16-19

SAMPLE

Lab Sample ID: NT63J

LIMS ID: 08-27128

Matrix: Soil

Data Release Authorized: 

Reported: 10/31/08

QC Report No: NT63-Landau Associates, Inc.

Project: Qwest N. Lot

1014001.020.022

Date Sampled: 10/08/08

Date Received: 10/09/08

Date Extracted: 10/20/08

Date Analyzed: 10/30/08 19:23

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.89 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 21.9%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	190	1,900
91-57-6	2-Methylnaphthalene	190	5,300
90-12-0	1-Methylnaphthalene	190	4,900
208-96-8	Acenaphthylene	190	< 190 U
83-32-9	Acenaphthene	190	< 190 U
86-73-7	Fluorene	190	< 190 U
85-01-8	Phenanthrene	190	380
120-12-7	Anthracene	190	< 190 U
206-44-0	Fluoranthene	190	< 190 U
129-00-0	Pyrene	190	210
56-55-3	Benzo (a) anthracene	190	< 190 U
218-01-9	Chrysene	190	< 190 U
205-99-2	Benzo (b) fluoranthene	190	< 190 U
207-08-9	Benzo (k) fluoranthene	190	< 190 U
50-32-8	Benzo (a) pyrene	190	< 190 U
193-39-5	Indeno (1,2,3-cd) pyrene	190	< 190 U
53-70-3	Dibenz (a,h) anthracene	190	< 190 U
191-24-2	Benzo (g,h,i) perylene	190	< 190 U
132-64-9	Dibenzofuran	190	< 190 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	62.5%
2-Fluorobiphenyl	67.8%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NT63-Landau Associates, Inc.
Project: Qwest N. Lot
1014001.020.022

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
B23-4.6-6.7	D	D	0
B23-4.6-6.7 DL	D	D	0
B23-16-20	68.0%	65.2%	0
B26-4.0-7.6	49.6%	60.0%	0
B26-4.0-7.6 DL	59.8%	57.0%	0
B40-24.5-26	58.4%	62.4%	0
B40-24.5-26 DL	62.4%	56.8%	0
B26-16-19	62.5%	67.8%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(TER) = d14-p-Terphenyl	(30-160)	(30-160)
(FBP) = 2-Fluorobiphenyl	(30-160)	(30-160)

Prep Method: SW3546
Log Number Range: 08-27120 to 08-27128



(8270) PNA-Soil/ Sediment

Sonication (3550B) (SOP # 357S)

Microwave (3546)

In-House

Preparation Test PNA # 1

ARI Job No(s) NT61, NT63

Batch set up by: JH

Bottle #	Extraction Requirements	Verify Client ID	Volume Extracted	KD	TurboVap	(REG) (Opt) Silica Gel Clean (1:1)	TurboVap	Final Effective Volume	Volume to Lab	Comments
	NT61 MBS	Date 10/20/08	7.50g		123	(Y) N	120	0.5mL	0.5mL	
	SBS		↓							
	SBS Dup.		↓							
	A	checked	9.32							
	B		11.48							
	C		9.54							
	CMS		9.34							
	CMSd		9.26							
	D		9.16							
	E		10.58							
	F		11.36							
	I		10.24							
	K		12.80							
	M		10.10							
	Q		11.64							
	NT63 B		10.62					50mL	1mL	See analyst notes
	C		10.76					0.5m	0.5m	
	F		11.46							
	G		10.80							
	J		10.10							

Analyst/Date: AR 10/20/08

TH 10/21/08 →

2703
27120

AC 10/20/08 (transfer to turbotubes)

Standard	Standard ID	Volume	Expiration Date	Analyst	Witness
BAN Surrogate	A2	125µL	3/13/09	AR	WC
PNA Spike	20	125µL	1/14/09	AR	WC

Extraction Time: 15:25

- SPECIAL INSTRUCTIONS: 1. Weigh into 100mL beakers. 2. Extract 2X with 1:1 DCM/Acetone. Plus 1X DCM only.
3. Collect into 150mL beaker with 5-10g sodium sulfate in the bottom + small funnel with pre-rinsed neutral glasswool.
4. KD (small drying column) to 8mL at 85-90°. 5. Exchange (2 X with 10mL) to Hexane at 100°. 6. TurboVap.
7. Silica Clean-up (Y) N. 8. TurboVap (if Silica Clean). 9. Vial.

A. Need Total Solids Y (N)

B. Archive/Freeze (Y) N

NT63 only



Analytical Resources, Incorporated

Analytical Chemists and Consultants

November 18, 2008

Kathryn Hartley
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest Field North Lot
ARI Job: NT85

Dear Kathryn:

Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted nine soil samples and two water samples on October 10, 2008. The samples were received at a cooler temperature of 12.8°C.

The samples were analyzed for NWTPH-Dx, NWTPH-Gx plus BTEX, PAHs and HCID with follow up analyses, as requested on the COC. At the request of Landau Associates, Inc, sample B41-20-21 was sent to Friedman and Bruya for requested analyses.

The matrix spike and matrix spike duplicate for PAHs on sample **B44-17.5-18.5** is out of control low for several analytes with wide RPDs. All other QC is in control, therefore no further corrective action was taken.

No other analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC


Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

N785

Date 10/9/08
Page 1 of 1

Chain-of-Custody Record

Project Name <u>Qwest N. Lot</u> Project No. <u>1014001.020.022</u>					Testing Parameters										Turnaround Time								
Project Location/Event <u>Seattle, WA</u>					<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-G-X</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-D</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-O</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PAH's</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">HCID</div> </div>										<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____								
Sampler's Name <u>Nathan Moxley</u>																							
Project Contact <u>Tim Syverson</u>																							
Send Results To <u>↓, Nathan Moxley, Anne Halverson</u>																							
Sample I.D.	Date	Time	Matrix	No. of Containers											Observations/Comments								
B41-16.5	10/9/08	0725	Soil	2	X	X																	X Allow water samples to settle, collect aliquot from clear portion
B41-20-21		0730	Soil	1			X	X	X														
B41-GW		0800	Water	2																			NWTPH-Dx:
B38-22.0		0940	Soil	2	X	X																	___ run acid wash/silica gel cleanup
B38-21.5-22.4		0945	Soil	1			X	X	X														___ run samples standardized to _____ product
B38-22.4-23.0		0950	Soil	1			X	X	X														___ Analyze for EPH if no specific product identified
B38-GW		1015	Water	3																			
B36-19.8		1115	Soil	2	X	X																	
B36-19.3-20.0		1120	Soil	1			X	X	X														
B39-21.0-22.3		1425	Soil	1			X	X	X														
B44-17.5-18.5		1515	Soil	1			X	X	X														

Special Shipment/Handling or Storage Requirements		Method of Shipment <u>ARI Pickup</u>	
Relinquished by <u>[Signature]</u> Signature <u>Nathan Moxley</u> Printed Name <u>LAE</u> Company Date <u>10/10/08</u> Time <u>0540</u>	Received by <u>[Signature]</u> Signature <u>Eric Kasarda</u> Printed Name <u>ARI</u> Company Date <u>10/10/08</u> Time <u>13:55</u>	Relinquished by Signature Printed Name Company Date _____ Time _____	Received by Signature Printed Name Company Date _____ Time _____

Eric Branson

From: "Kathryn Hartley" <khartley@landauinc.com>
To: "Kelly Bottem" <kellyb@arilabs.com>; "Nathan Moxley" <nmoxley@landauinc.com>
Cc: "Tim Syverson" <tsyverson@landauinc.com>
Sent: Tuesday, October 14, 2008 11:57 AM
Subject: RE: Qwest N. Lot, Additional Analysis Request

Kelly

This sample (Sample "B41-20-21"^{NT&SD} collected 10/9/08 at 0730, received at ARI 10/10/08) should have been delivered to Friedman & Bruya for "forensic" analysis. Can you send it to them with a request for the following analysis:

Hydrocarbon fuel scan (GC/FID)

Parent and Alkylated PAHs

Total sulfur (ASTM D-1552)

There address is 3012 16th Avenue W, Seattle, WA 98119 and the phone number is (206) 285-8282.

Let me know if you can't send it to them directly or if you have any questions.

Sorry for the confusion on this one.

Thanks,

Kathryn F. Hartley
 Senior Staff Scientist
 Landau Associates
 130 2nd Avenue South
 Edmonds, WA 98020
 (425) 329-0268

-----Original Message-----

From: Kelly Bottem [mailto:kellyb@arilabs.com]
Sent: Monday, October 13, 2008 11:44 AM
To: Nathan Moxley
Cc: Tim Syverson; Kathryn Hartley
Subject: Re: Qwest N. Lot, Additional Analysis Request

Hey All- Before I start calling other labs could you please confirm what I will be requesting from another lab.

*** Sue- Do you have an idea of where I should send the samples.

K

10/16/2008

Nathan Moxley wrote:

> Kelly,

>

>

>

> I need to add an analysis to a sample collected from the Qwest N. Lot:

>

>

>

> Sample "B41-20-21" collected 10/9/08 at 0730, received at ARI 10/10/08 -

> I collected (2) 16 oz. jars of soil for this particular sample, one of

> which should be used for "identification analysis" which was not

> requested on the COC. Please add this to the COC, and direct any

> questions for the exact requirements of this sample to Tim Syverson.

>

>

>

> Thanks,

>

> Nathan Moxley * Senior Technician II

> Landau Associates, Inc.

> 130 2nd Ave. S, Edmonds, WA 98020

> 425.778.0907 * direct 425.329.0293 * cell 206.786.3802

> nmoxley@landauinc.com * www.landauinc.com

>

> Email is a sustainable communications tool - please consider this before
> printing.

>

> Notice: This communication may contain privileged or other confidential
> information. If you have received it in error, please advise the sender
> by reply email and immediately delete the message and any attachments
> without copying or disclosing the contents. Thank you.

>

>

>

>

--

Kelly Bottem, Client Services Manager

10/16/2008



Cooler Receipt Form

ARI Client: Landaw Associates Project Name: Quest N. Lot

COC No: _____ Delivered by: Courier

Assigned ARI Job No: NT85 Tracking No: _____

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
- Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 12.8 °C

Cooler Accepted by: Eric Kasenda Date: 10/10/08 Time: 13:55

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? BW
- Was sufficient ice used (if appropriate)? YES NO
- Were all bottles sealed in individual plastic bags? YES NO
- Did all bottle arrive in good condition (unbroken)? YES NO
- Were all bottle labels complete and legible? 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 checklist) YES NO
- Were all VOC vials free of air bubbles? YES NO
- Was sufficient amount of sample sent in each bottle? YES NO

Samples Logged by: JL Date: 10/13/08 Time: 845

**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

Extra 16oz WMG for B41-20-21 ...
for forensic analysis

By: _____ Date: _____

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID
Page 1 of 1
Matrix: Water

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
1014001.020.022

Data Release Authorized: *(Signature)*
Reported: 10/17/08

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-101408 08-27352	Method Blank	10/14/08	10/16/08	1.0	Gas	< 0.25 U
					Diesel	< 0.63 U
					Oil	< 0.63 U
					o-Terphenyl	69.4%
NT85C 08-27352	B41-GW HC ID: DRO	10/14/08	10/16/08	5.0	Gas	< 1.0 U
					Diesel	> 2.5
					Oil	< 2.5 U
					o-Terphenyl	73.1%
NT85G 08-27356	B38-GW HC ID: GRO/DRO/RRO	10/14/08	10/16/08	50	Gas	> 50
					Diesel	> 120
					Oil	> 120
					o-Terphenyl	D

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
1014001.020.022

<u>Client ID</u>	<u>O-TER</u>	<u>TOT OUT</u>
MB-101408	69.4%	0
LCS-101408	84.4%	0
LCSD-101408	83.6%	0
B41-GW	73.1%	0
B38-GW	D	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(55-110)	(50-150)

Prep Method: SW3510C
Log Number Range: 08-27352 to 08-27356

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID

Page 1 of 1

Sample ID: LCS-101408

LCS/LCSD

Lab Sample ID: LCS-101408

LIMS ID: 08-27352

Matrix: Water

Data Release Authorized: *MMW*

Reported: 10/17/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted LCS/LCSD: 10/14/08

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 10/16/08 04:05

Final Extract Volume LCS: 1.0 mL

LCSD: 10/16/08 04:20

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/MS

Dilution Factor LCS: 1.00

LCSD: FID/MS

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.41	3.00	80.3%	2.32	3.00	77.3%	3.8%

HCID Surrogate Recovery

	LCS	LCSD
o-Terphenyl	84.4%	83.6%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT


Matrix: Water
Date Received: 10/10/08

ARI Job: NT85
Project: QWEST N.LOT
1014001.020.022

ARI ID	Client ID	Sample Amt	Final Vol	Prep Date
08-27352-101408MB	Method Blank	500 mL	1.00 mL	10/14/08
08-27352-101408LCS	Lab Control	500 mL	1.00 mL	10/14/08
08-27352-101408LCSD	Lab Control Dup	500 mL	1.00 mL	10/14/08
08-27352-NT85C	B41-GW	500 mL	1.00 mL	10/14/08
08-27356-NT85G	B38-GW	500 mL	5.00 mL	10/14/08

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Water

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
1014001.020.022
Date Received: 10/10/08

Data Release Authorized: 
Reported: 11/03/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
NT85C	B41-GW	10/14/08	10/16/08	1.00	Diesel	1.2	3.6
08-27352	HC ID: DRO		FID3A	5.0	Motor Oil o-Terphenyl	2.5	< 2.5 U 73.1%
MB-101408	Method Blank	10/14/08	10/16/08	1.00	Diesel	0.25	< 0.25 U
08-27356	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	0.50	< 0.50 U 69.3%
NT85G	B38-GW	10/14/08	10/16/08	5.00	Diesel	25	310
08-27356	HC ID: DRO/RRO		FID3A	50	Motor Oil o-Terphenyl	50	150 D

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
1014001.020.022

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
B41-GW	73.1%	0
MB-101408	69.3%	0
LCS-101408	84.4%	0
LCSD-101408	83.6%	0
B38-GW	D	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(63-115)

(64-111)

Prep Method: SW3510C
Log Number Range: 08-27352 to 08-27356

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1


Sample ID: LCS-101408

LCS/LCSD

Lab Sample ID: LCS-101408

LIMS ID: 08-27356

Matrix: Water

Data Release Authorized: 

Reported: 11/03/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 10/14/08

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 10/16/08 04:05

Final Extract Volume LCS: 1.0 mL

LCSD: 10/16/08 04:20

LCSD: 1.0 mL

Instrument/Analyst LCS: FID3A/MS

Dilution Factor LCS: 1.00

LCSD: FID3A/MS

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.41	3.00	80.3%	2.32	3.00	77.3%	3.8%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	84.4%	83.6%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 10/10/08

ARI Job: NT85
Project: QWEST N.LOT
1014001.020.022

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
08-27352-102008MB1	Method Blank	500 mL	1.00 mL	10/20/08
08-27352-102008LCS1	Lab Control	500 mL	1.00 mL	10/20/08
08-27352-102008LCSD1	Lab Control Dup	500 mL	1.00 mL	10/20/08
08-27352-NT85C	B41-GW	500 mL	1.00 mL	10/14/08
08-27356-101408MB1	Method Blank	500 mL	1.00 mL	10/14/08
08-27356-101408LCS1	Lab Control	500 mL	1.00 mL	10/14/08
08-27356-101408LCSD1	Lab Control Dup	500 mL	1.00 mL	10/14/08
08-27356-NT85G	B38-GW	500 mL	5.00 mL	10/14/08

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 10/10/08

ARI Job: NT85
Project: QWEST N.LOT
1014001.020.022

<u>ARI ID</u>	<u>Client ID</u>	<u>Client Amt</u>	<u>Final Vol</u>	<u>Basis</u>	<u>Prep Date</u>
08-27354-NT85E	B38-21.5-22.4	23.1 g	1.00 mL	D	10/16/08
08-27355-NT85F	B38-22.4-23.0	7.03 g	1.00 mL	D	10/16/08

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1
Matrix: Soil

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
1014001.020.022

Data Release Authorized:
Reported: 10/23/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-101608 08-27351	Method Blank HC ID: ---	10/16/08	10/22/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	5.0 10	< 5.0 U < 10 U 92.7%
NT85B 08-27351	B41-20-21 HC ID: DRO/RRO	10/16/08	10/22/08 FID3A	1.00 20	Diesel Motor Oil o-Terphenyl	120 250	2000 480 66.2%
NT85E 08-27354	B38-21.5-22.4 HC ID: DRO/RRO	10/16/08	10/22/08 FID3A	1.00 2.0	Diesel Motor Oil o-Terphenyl	10 20	940 E 220 54.2%
NT85E DL 08-27354	B38-21.5-22.4 HC ID: DRO	10/16/08	10/22/08 FID3A	1.00 40	Diesel Motor Oil o-Terphenyl	200 400	690 < 400 U D
NT85F 08-27355	B38-22.4-23.0 HC ID: DRO/RRO	10/16/08	10/22/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	7.1 14	59 42 78.7%
NT85I 08-27358	B36-19.3-20.0 HC ID: DRO/RRO	10/16/08	10/22/08 FID3A	1.00 20	Diesel Motor Oil o-Terphenyl	130 260	2900 690 60.9%
NT85J 08-27359	B36-21.0-22.3 HC ID: DRO/RRO	10/16/08	10/22/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	8.5 17	220 130 77.1%
NT85K 08-27360	B44-17.5-18.5 HC ID: DRO/RRO	10/16/08	10/22/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	8.3 16	130 130 77.8%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
1014001.020.022

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-101608	92.7%	0
LCS-101608	92.4%	0
LCSD-101608	94.2%	0
B41-20-21	66.2%	0
B38-21.5-22.4	54.2%	0
B38-21.5-22.4 DL	D	0
B38-22.4-23.0	78.7%	0
B36-19.3-20.0	60.9%	0
B36-21.0-22.3	77.1%	0
B44-17.5-18.5	77.8%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(62-118)

(49-125)

Prep Method: SW3546
Log Number Range: 08-27351 to 08-27360

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Sample ID: LCS-101608

Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-101608

QC Report No: NT85-Landau Associates, Inc.

LIMS ID: 08-27351

Project: QWEST N.LOT

Matrix: Soil

1014001.020.022

Data Release Authorized:

Date Sampled: 10/09/08

Reported: 10/23/08

Date Received: 10/10/08

Date Extracted LCS/LCSD: 10/16/08

Sample Amount LCS: 10.0 g

LCSD: 10.0 g

Date Analyzed LCS: 10/22/08 04:58

Final Extract Volume LCS: 1.0 mL

LCSD: 10/22/08 05:14

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/PKC

Dilution Factor LCS: 1.0

LCSD: FID/PKC

LCSD: 1.0

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	126	150	84.0%	127	150	84.7%	0.8%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	92.4%	94.2%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B41-16.5

SAMPLE

Lab Sample ID: NT85A

LIMS ID: 08-27350

Matrix: Soil

Data Release Authorized: *AS*

Reported: 10/17/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

Event: 1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Analyzed: 10/16/08 18:56

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 120 mg-as-rec

CAS Number	Analyte	RL	Result
71-43-2	Benzene	11	19
108-88-3	Toluene	11	93
100-41-4	Ethylbenzene	11	150
	m,p-Xylene	22	440
95-47-6	o-Xylene	11	230

Gasoline Range Hydrocarbons	4.3	32	GAS ID GAS/GRO
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BETX Surrogate Recovery

Trifluorotoluene	91.3%
Bromobenzene	87.3%

Gasoline Surrogate Recovery

Trifluorotoluene	94.2%
Bromobenzene	88.1%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B38-22.0
 SAMPLE

Lab Sample ID: NT85D
 LIMS ID: 08-27353
 Matrix: Soil
 Data Release Authorized:
 Reported: 10/17/08

QC Report No: NT85-Landau Associates, Inc.
 Project: QWEST N.LOT
 Event: 1014001.020.022
 Date Sampled: 10/09/08
 Date Received: 10/10/08

Date Analyzed: 10/16/08 19:21
 Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount: 4.5 mg-dry-wt
 Percent Moisture: 43.3%

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	280	5,200	
108-88-3	Toluene	280	6,100	
100-41-4	Ethylbenzene	280	35,000	
	m,p-Xylene	560	34,000	
95-47-6	o-Xylene	280	14,000	
	Gasoline Range Hydrocarbons	110	2,000	GAS ID GAS/GRO

BETX Surrogate Recovery

Trifluorotoluene	86.4%
Bromobenzene	86.8%

Gasoline Surrogate Recovery

Trifluorotoluene	89.4%
Bromobenzene	87.7%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: B36-19.8

SAMPLE

Lab Sample ID: NT85H

LIMS ID: 08-27357

Matrix: Soil

Data Release Authorized: 

Reported: 10/17/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

Event: 1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Analyzed: 10/16/08 19:46

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 45 mg-dry-wt

Percent Moisture: 29.5%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	28	< 28 U
108-88-3	Toluene	28	35
100-41-4	Ethylbenzene	28	170
	m,p-Xylene	55	180
95-47-6	o-Xylene	28	110

Gasoline Range Hydrocarbons	11	38	GAS ID GAS/GRO
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BETX Surrogate Recovery

Trifluorotoluene	94.7%
Bromobenzene	91.3%

Gasoline Surrogate Recovery

Trifluorotoluene	98.3%
Bromobenzene	91.8%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-101608

METHOD BLANK

Lab Sample ID: MB-101608

LIMS ID: 08-27350

Matrix: Soil

Data Release Authorized: *AS*

Reported: 10/17/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed: 10/16/08 11:23

Instrument/Analyst: PID3/PKC

Purge Volume: 5.0 mL

Sample Amount: 100 mg-as-rec

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	< 12 U
108-88-3	Toluene	12	< 12 U
100-41-4	Ethylbenzene	12	< 12 U
	m,p-Xylene	25	< 25 U
95-47-6	o-Xylene	12	< 12 U

Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	95.5%
Bromobenzene	90.5%

Gasoline Surrogate Recovery

Trifluorotoluene	94.9%
Bromobenzene	90.6%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NT85
Matrix: Soil

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
Event: 1014001.020.022

Client ID	TFT	BBZ	TOT OUT
MB-101608	95.5%	90.5%	0
LCS-101608	94.3%	87.1%	0
LCSD-101608	98.3%	91.4%	0
B41-16.5	91.3%	87.3%	0
B38-22.0	86.4%	86.8%	0
B36-19.8	94.7%	91.3%	0

LCS/MB LIMITS	QC LIMITS
(80-120)	(61-137)
(80-120)	(58-139)

(TFT) = Trifluorotoluene
(BBZ) = Bromobenzene

Log Number Range: 08-27350 to 08-27357

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NT85
Matrix: Soil

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
Event: 1014001.020.022

<u>Client ID</u>	<u>BFB</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT</u>	<u>OUT</u>
MB-101608	NA	94.9%	90.6%	0	
LCS-101608	NA	93.1%	87.0%	0	
LCSD-101608	NA	98.6%	91.4%	0	
B41-16.5	NA	94.2%	88.1%	0	
B38-22.0	NA	89.4%	87.7%	0	
B36-19.8	NA	98.3%	91.8%	0	

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(65-137)
(BBZ) = Bromobenzene	(80-120)	(54-144)

Log Number Range: 08-27350 to 08-27357

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: LCS-101608

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101608

LIMS ID: 08-27350

Matrix: Soil

Data Release Authorized: 

Reported: 10/17/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

Event: 1014001.020.022

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/16/08 10:34

Purge Volume: 5.0 mL

LCSD: 10/16/08 10:58

Instrument/Analyst LCS: PID3/PKC

Sample Amount LCS: 100 mg-as-rec

LCSD: PID3/PKC

LCSD: 100 mg-as-rec

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	46.2	50.0	92.4%	48.8	50.0	97.6%	5.5%

Reported in mg/kg (ppm)


RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	93.1%	98.6%
Bromobenzene	87.0%	91.4%

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
 Page 1 of 1

Sample ID: LCS-101608
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-101608
 LIMS ID: 08-27350
 Matrix: Soil
 Data Release Authorized: 
 Reported: 10/17/08

QC Report No: NT85-Landau Associates, Inc.
 Project: QWEST N.LOT
 Event: 1014001.020.022
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 10/16/08 10:34
 LCSD: 10/16/08 10:58
 Instrument/Analyst LCS: PID3/PKC
 LCSD: PID3/PKC

Purge Volume: 5.0 mL
 Sample Amount LCS: 100 mg-as-rec
 LCSD: 100 mg-as-rec

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	256	265	96.6%	270	265	102%	5.3%
Toluene	1890	2060	91.7%	1980	2060	96.1%	4.7%
Ethylbenzene	428	500	85.6%	452	500	90.4%	5.5%
m,p-Xylene	1910	2120	90.1%	2000	2120	94.3%	4.6%
o-Xylene	685	745	91.9%	716	745	96.1%	4.4%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	94.3%	98.3%
Bromobenzene	87.1%	91.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1


Sample ID: B41-20-21

SAMPLE

Lab Sample ID: NT85B

LIMS ID: 08-27351

Matrix: Soil

Data Release Authorized: 

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/29/08 12:29

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 6.26 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1000

Percent Moisture: 23.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	160,000	1,500,000
91-57-6	2-Methylnaphthalene	160,000	460,000
90-12-0	1-Methylnaphthalene	160,000	290,000
208-96-8	Acenaphthylene	160,000	< 160,000 U
83-32-9	Acenaphthene	160,000	260,000
86-73-7	Fluorene	160,000	180,000
85-01-8	Phenanthrene	160,000	570,000
120-12-7	Anthracene	160,000	< 160,000 U
206-44-0	Fluoranthene	160,000	200,000
129-00-0	Pyrene	160,000	220,000
56-55-3	Benzo (a) anthracene	160,000	< 160,000 U
218-01-9	Chrysene	160,000	< 160,000 U
205-99-2	Benzo (b) fluoranthene	160,000	< 160,000 U
207-08-9	Benzo (k) fluoranthene	160,000	< 160,000 U
50-32-8	Benzo (a) pyrene	160,000	< 160,000 U
193-39-5	Indeno (1,2,3-cd) pyrene	160,000	< 160,000 U
53-70-3	Dibenz (a,h) anthracene	160,000	< 160,000 U
191-24-2	Benzo (g,h,i) perylene	160,000	< 160,000 U
132-64-9	Dibenzofuran	160,000	< 160,000 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B38-21.5-22.4

SAMPLE

Lab Sample ID: NT85E

LIMS ID: 08-27354

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/28/08 17:10

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 1.94 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Percent Moisture: 43.3%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	520	960,000 ES
91-57-6	2-Methylnaphthalene	520	540,000 E
90-12-0	1-Methylnaphthalene	520	340,000 E
208-96-8	Acenaphthylene	520	30,000
83-32-9	Acenaphthene	520	360,000 E
86-73-7	Fluorene	520	280,000 E
85-01-8	Phenanthrene	520	630,000 ES
120-12-7	Anthracene	520	110,000 E
206-44-0	Fluoranthene	520	280,000 E
129-00-0	Pyrene	520	300,000 E
56-55-3	Benzo (a) anthracene	520	110,000 E
218-01-9	Chrysene	520	84,000 E
205-99-2	Benzo (b) fluoranthene	520	45,000 E
207-08-9	Benzo (k) fluoranthene	520	47,000 E
50-32-8	Benzo (a) pyrene	520	100,000 E
193-39-5	Indeno (1,2,3-cd) pyrene	520	41,000
53-70-3	Dibenz (a,h) anthracene	520	14,000
191-24-2	Benzo (g,h,i) perylene	520	32,000
132-64-9	Dibenzofuran	520	68,000 E

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatle Surrogate Recovery

d14-p-Terphenyl	64.3%
2-Fluorobiphenyl	60.5%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1


Sample ID: B38-21.5-22.4

DILUTION

Lab Sample ID: NT85E

LIMS ID: 08-27354

Matrix: Soil

Data Release Authorized: 

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/29/08 13:03

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 1.94 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 200

Percent Moisture: 43.3%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	100,000	1,700,000
91-57-6	2-Methylnaphthalene	100,000	590,000
90-12-0	1-Methylnaphthalene	100,000	360,000
208-96-8	Acenaphthylene	100,000	< 100,000 U
83-32-9	Acenaphthene	100,000	380,000
86-73-7	Fluorene	100,000	240,000
85-01-8	Phenanthrene	100,000	820,000
120-12-7	Anthracene	100,000	150,000
206-44-0	Fluoranthene	100,000	310,000
129-00-0	Pyrene	100,000	330,000
56-55-3	Benzo (a) anthracene	100,000	120,000
218-01-9	Chrysene	100,000	< 100,000 U
205-99-2	Benzo (b) fluoranthene	100,000	< 100,000 U
207-08-9	Benzo (k) fluoranthene	100,000	< 100,000 U
50-32-8	Benzo (a) pyrene	100,000	< 100,000 U
193-39-5	Indeno (1,2,3-cd) pyrene	100,000	< 100,000 U
53-70-3	Dibenz (a,h) anthracene	100,000	< 100,000 U
191-24-2	Benzo (g,h,i) perylene	100,000	< 100,000 U
132-64-9	Dibenzofuran	100,000	< 100,000 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1



Sample ID: B38-22.4-23.0

SAMPLE

Lab Sample ID: NT85F

LIMS ID: 08-27355

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/28/08 17:45

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.52 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 32.3%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	59	48,000 ES
91-57-6	2-Methylnaphthalene	59	11,000 E
90-12-0	1-Methylnaphthalene	59	7,700 E
208-96-8	Acenaphthylene	59	160
83-32-9	Acenaphthene	59	6,800 E
86-73-7	Fluorene	59	4,000
85-01-8	Phenanthrene	59	16,000 E
120-12-7	Anthracene	59	3,800
206-44-0	Fluoranthene	59	9,500 E
129-00-0	Pyrene	59	9,800 E
56-55-3	Benzo (a) anthracene	59	3,400
218-01-9	Chrysene	59	3,400
205-99-2	Benzo (b) fluoranthene	59	1,800
207-08-9	Benzo (k) fluoranthene	59	1,900
50-32-8	Benzo (a) pyrene	59	3,300
193-39-5	Indeno (1,2,3-cd) pyrene	59	1,400
53-70-3	Dibenz (a,h) anthracene	59	480
191-24-2	Benzo (g,h,i) perylene	59	1,200
132-64-9	Dibenzofuran	59	1,300

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatle Surrogate Recovery

d14-p-Terphenyl	69.6%
2-Fluorobiphenyl	61.2%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1



Sample ID: B38-22.4-23.0
DILUTION

Lab Sample ID: NT85F

LIMS ID: 08-27355

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/29/08 13:37

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.52 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 50.0

Percent Moisture: 32.3%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	2,900	49,000
91-57-6	2-Methylnaphthalene	2,900	9,100
90-12-0	1-Methylnaphthalene	2,900	6,400
208-96-8	Acenaphthylene	2,900	< 2,900 U
83-32-9	Acenaphthene	2,900	4,700
86-73-7	Fluorene	2,900	< 2,900 U
85-01-8	Phenanthrene	2,900	12,000
120-12-7	Anthracene	2,900	3,200
206-44-0	Fluoranthene	2,900	7,300
129-00-0	Pyrene	2,900	6,900
56-55-3	Benzo(a)anthracene	2,900	< 2,900 U
218-01-9	Chrysene	2,900	< 2,900 U
205-99-2	Benzo(b)fluoranthene	2,900	< 2,900 U
207-08-9	Benzo(k)fluoranthene	2,900	< 2,900 U
50-32-8	Benzo(a)pyrene	2,900	< 2,900 U
193-39-5	Indeno(1,2,3-cd)pyrene	2,900	< 2,900 U
53-70-3	Dibenz(a,h)anthracene	2,900	< 2,900 U
191-24-2	Benzo(g,h,i)perylene	2,900	< 2,900 U
132-64-9	Dibenzofuran	2,900	< 2,900 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B36-19.3-20.0

SAMPLE

Lab Sample ID: NT85I

LIMS ID: 08-27358

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/29/08 14:11

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 3.12 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1000

Percent Moisture: 29.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	320,000	1,400,000
91-57-6	2-Methylnaphthalene	320,000	500,000
90-12-0	1-Methylnaphthalene	320,000	< 320,000 U
208-96-8	Acenaphthylene	320,000	< 320,000 U
83-32-9	Acenaphthene	320,000	< 320,000 U
86-73-7	Fluorene	320,000	< 320,000 U
85-01-8	Phenanthrene	320,000	650,000
120-12-7	Anthracene	320,000	< 320,000 U
206-44-0	Fluoranthene	320,000	< 320,000 U
129-00-0	Pyrene	320,000	< 320,000 U
56-55-3	Benzo (a) anthracene	320,000	< 320,000 U
218-01-9	Chrysene	320,000	< 320,000 U
205-99-2	Benzo (b) fluoranthene	320,000	< 320,000 U
207-08-9	Benzo (k) fluoranthene	320,000	< 320,000 U
50-32-8	Benzo (a) pyrene	320,000	< 320,000 U
193-39-5	Indeno (1,2,3-cd) pyrene	320,000	< 320,000 U
53-70-3	Dibenz (a,h) anthracene	320,000	< 320,000 U
191-24-2	Benzo (g,h,i) perylene	320,000	< 320,000 U
132-64-9	Dibenzofuran	320,000	< 320,000 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B36-21.0-22.3

SAMPLE

Lab Sample ID: NT85J

LIMS ID: 08-27359

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/28/08 18:54

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.87 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 43.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	100,000 ES
91-57-6	2-Methylnaphthalene	64	49,000 ES
90-12-0	1-Methylnaphthalene	64	31,000 E
208-96-8	Acenaphthylene	64	1,000
83-32-9	Acenaphthene	64	31,000 E
86-73-7	Fluorene	64	18,000 E
85-01-8	Phenanthrene	64	36,000 ES
120-12-7	Anthracene	64	5,600 E
206-44-0	Fluoranthene	64	11,000 E
129-00-0	Pyrene	64	12,000 E
56-55-3	Benzo (a) anthracene	64	3,800
218-01-9	Chrysene	64	3,700
205-99-2	Benzo (b) fluoranthene	64	370
207-08-9	Benzo (k) fluoranthene	64	380
50-32-8	Benzo (a) pyrene	64	3,800
193-39-5	Indeno (1,2,3-cd) pyrene	64	1,700
53-70-3	Dibenz (a,h) anthracene	64	550
191-24-2	Benzo (g,h,i) perylene	64	1,400
132-64-9	Dibenzofuran	64	4,900

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	64.0%
2-Fluorobiphenyl	58.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B36-21.0-22.3

DILUTION

Lab Sample ID: NT85J

LIMS ID: 08-27359

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/29/08 14:46

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.87 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 200

Percent Moisture: 43.8%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	13,000	170,000
91-57-6	2-Methylnaphthalene	13,000	51,000
90-12-0	1-Methylnaphthalene	13,000	33,000
208-96-8	Acenaphthylene	13,000	< 13,000 U
83-32-9	Acenaphthene	13,000	28,000
86-73-7	Fluorene	13,000	16,000
85-01-8	Phenanthrene	13,000	38,000
120-12-7	Anthracene	13,000	< 13,000 U
206-44-0	Fluoranthene	13,000	< 13,000 U
129-00-0	Pyrene	13,000	< 13,000 U
56-55-3	Benzo (a) anthracene	13,000	< 13,000 U
218-01-9	Chrysene	13,000	< 13,000 U
205-99-2	Benzo (b) fluoranthene	13,000	< 13,000 U
207-08-9	Benzo (k) fluoranthene	13,000	< 13,000 U
50-32-8	Benzo (a) pyrene	13,000	< 13,000 U
193-39-5	Indeno (1,2,3-cd) pyrene	13,000	< 13,000 U
53-70-3	Dibenz (a,h) anthracene	13,000	< 13,000 U
191-24-2	Benzo (g,h,i) perylene	13,000	< 13,000 U
132-64-9	Dibenzofuran	13,000	< 13,000 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	D
2-Fluorobiphenyl	D

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B44-17.5-18.5

SAMPLE

Lab Sample ID: NT85K

LIMS ID: 08-27360

Matrix: Soil

Data Release Authorized: *16*

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/28/08 13:12

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.86 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 44.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	64	1,200
91-57-6	2-Methylnaphthalene	64	2,100
90-12-0	1-Methylnaphthalene	64	3,100
208-96-8	Acenaphthylene	64	< 64 U
83-32-9	Acenaphthene	64	170
86-73-7	Fluorene	64	290
85-01-8	Phenanthrene	64	2,000
120-12-7	Anthracene	64	230
206-44-0	Fluoranthene	64	830
129-00-0	Pyrene	64	700
56-55-3	Benzo (a) anthracene	64	380
218-01-9	Chrysene	64	530
205-99-2	Benzo (b) fluoranthene	64	200
207-08-9	Benzo (k) fluoranthene	64	290
50-32-8	Benzo (a) pyrene	64	380
193-39-5	Indeno (1,2,3-cd) pyrene	64	160
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	200
132-64-9	Dibenzofuran	64	510

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.4%
2-Fluorobiphenyl	62.8%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B44-17.5-18.5

MATRIX SPIKE

Lab Sample ID: NT85K

LIMS ID: 08-27360

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/28/08 13:46

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.31 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 44.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	60	---
91-57-6	2-Methylnaphthalene	60	---
90-12-0	1-Methylnaphthalene	60	---
208-96-8	Acenaphthylene	60	---
83-32-9	Acenaphthene	60	---
86-73-7	Fluorene	60	---
85-01-8	Phenanthrene	60	---
120-12-7	Anthracene	60	---
206-44-0	Fluoranthene	60	---
129-00-0	Pyrene	60	---
56-55-3	Benzo (a) anthracene	60	---
218-01-9	Chrysene	60	---
205-99-2	Benzo (b) fluoranthene	60	---
207-08-9	Benzo (k) fluoranthene	60	---
50-32-8	Benzo (a) pyrene	60	---
193-39-5	Indeno (1,2,3-cd) pyrene	60	---
53-70-3	Dibenz (a,h) anthracene	60	---
191-24-2	Benzo (g,h,i) perylene	60	---
132-64-9	Dibenzofuran	60	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	70.4%
2-Fluorobiphenyl	60.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B44-17.5-18.5

MATRIX SPIKE DUPLICATE

Lab Sample ID: NT85K

LIMS ID: 08-27360

Matrix: Soil

Data Release Authorized: 

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted: 10/21/08

Date Analyzed: 10/28/08 14:20

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.24 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 44.5%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	61	---
91-57-6	2-Methylnaphthalene	61	---
90-12-0	1-Methylnaphthalene	61	---
208-96-8	Acenaphthylene	61	---
83-32-9	Acenaphthene	61	---
86-73-7	Fluorene	61	---
85-01-8	Phenanthrene	61	---
120-12-7	Anthracene	61	---
206-44-0	Fluoranthene	61	---
129-00-0	Pyrene	61	---
56-55-3	Benzo (a) anthracene	61	---
218-01-9	Chrysene	61	---
205-99-2	Benzo (b) fluoranthene	61	---
207-08-9	Benzo (k) fluoranthene	61	---
50-32-8	Benzo (a) pyrene	61	---
193-39-5	Indeno (1,2,3-cd) pyrene	61	---
53-70-3	Dibenz (a,h) anthracene	61	---
191-24-2	Benzo (g,h,i) perylene	61	---
132-64-9	Dibenzofuran	61	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	69.2%
2-Fluorobiphenyl	58.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: MB-102108

METHOD BLANK

Lab Sample ID: MB-102108

LIMS ID: 08-27360

Matrix: Soil

Data Release Authorized: *B*

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: NA

Date Received: NA

Date Extracted: 10/21/08

Date Analyzed: 10/28/08 11:31

Instrument/Analyst: NT4/PK

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	84.8%
2-Fluorobiphenyl	55.2%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NT85-Landau Associates, Inc.
Project: QWEST N.LOT
1014001.020.022

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
B41-20-21	D	D	0
B38-21.5-22.4	64.3%	60.5%	0
B38-21.5-22.4 DL	D	D	0
B38-22.4-23.0	69.6%	61.2%	0
B38-22.4-23.0 DL	D	D	0
B36-19.3-20.0	D	D	0
B36-21.0-22.3	64.0%	58.4%	0
B36-21.0-22.3 DL	D	D	0
MB-102108	84.8%	55.2%	0
LCS-102108	83.6%	55.2%	0
LCS-102108	76.8%	50.4%	0
B44-17.5-18.5	68.4%	62.8%	0
B44-17.5-18.5 MS	70.4%	60.0%	0
B44-17.5-18.5 MSD	69.2%	58.4%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(TER) = d14-p-Terphenyl	(41-109)	(39-111)
(FBP) = 2-Fluorobiphenyl	(33-93)	(32-94)

Prep Method: SW3550B
Log Number Range: 08-27351 to 08-27360

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B44-17.5-18.5

MS/MSD

Lab Sample ID: NT85K

LIMS ID: 08-27360

Matrix: Soil

Data Release Authorized:

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: 10/09/08

Date Received: 10/10/08

Date Extracted MS/MSD: 10/21/08

Sample Amount MS: 8.31 g-dry-wt

MSD: 8.24 g-dry-wt

Date Analyzed MS: 10/28/08 13:46

Final Extract Volume MS: 0.5 mL

MSD: 10/28/08 14:20

MSD: 0.5 mL

Instrument/Analyst MS: NT4/PK

Dilution Factor MS: 1.00

MSD: NT4/PK

MSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	1220	1340	1500	8.0%	1380	1520	10.5%	2.9%
2-Methylnaphthalene	2120	1620	1500	NA	1620	1520	NA	0.0%
1-Methylnaphthalene	3070	1710	1500	NA	1720	1520	NA	0.6%
Acenaphthylene	< 63.6	978	1500	65.2%	979	1520	64.4%	0.1%
Acenaphthene	173	1060	1500	59.1%	1090	1520	60.3%	2.8%
Fluorene	293	1230	1500	62.5%	1290	1520	65.6%	4.8%
Phenanthrene	1990	2040	1500	3.3%	2670	1520	44.7%	26.8%
Anthracene	229	1150	1500	61.4%	1290	1520	69.8%	11.5%
Fluoranthene	828	1610	1500	52.1%	2750	1520	126%	52.3%
Pyrene	704	1520	1500	54.4%	2430	1520	114%	46.1%
Benzo(a)anthracene	383	1270	1500	59.1%	1690	1520	86.0%	28.4%
Chrysene	534	1190	1500	43.7%	1740	1520	79.3%	37.5%
Benzo(b)fluoranthene	198	862	1500	44.3%	1370	1520	77.1%	45.5%
Benzo(k)fluoranthene	286	1450	1500	77.6%	1720	1520	94.3%	17.0%
Benzo(a)pyrene	379	1170	1500	52.7%	1720	1520	88.2%	38.1%
Indeno(1,2,3-cd)pyrene	160	1020	1500	57.3%	1380	1520	80.3%	30.0%
Dibenz(a,h)anthracene	< 63.6	993	1500	66.2%	1140	1520	75.0%	13.8%
Benzo(g,h,i)perylene	200	983	1500	52.2%	1280	1520	71.1%	26.2%
Dibenzofuran	510	1080	1500	38.0%	1100	1520	38.8%	1.8%

Results reported in µg/kg

NA-No recovery due to high concentration of analyte in original sample OR calculated negative recovery OR the reporting of an unspiked analyte.

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-102108

LCS/LCSD

Lab Sample ID: LCS-102108

LIMS ID: 08-27360

Matrix: Soil

Data Release Authorized: *AB*

Reported: 10/29/08

QC Report No: NT85-Landau Associates, Inc.

Project: QWEST N.LOT

1014001.020.022

Date Sampled: NA

Date Received: 10/10/08

Date Extracted LCS/LCSD: 10/21/08

Sample Amount LCS: 7.50 g

LCSD: 7.50 g

Date Analyzed LCS: 10/28/08 12:05

Final Extract Volume LCS: 0.50 mL

LCSD: 10/28/08 12:38

LCSD: 0.50 mL

Instrument/Analyst LCS: NT4/PK

Dilution Factor LCS: 1.00

LCSD: NT4/PK

LCSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	971	1670	58.1%	907	1670	54.3%	6.8%
2-Methylnaphthalene	1180	1670	70.7%	1090	1670	65.3%	7.9%
1-Methylnaphthalene	1040	1670	62.3%	965	1670	57.8%	7.5%
Acenaphthylene	1040	1670	62.3%	950	1670	56.9%	9.0%
Acenaphthene	966	1670	57.8%	903	1670	54.1%	6.7%
Fluorene	1130	1670	67.7%	1070	1670	64.1%	5.5%
Phenanthrene	1240	1670	74.3%	1140	1670	68.3%	8.4%
Anthracene	1330	1670	79.6%	1230	1670	73.7%	7.8%
Fluoranthene	1420	1670	85.0%	1320	1670	79.0%	7.3%
Pyrene	1410	1670	84.4%	1340	1670	80.2%	5.1%
Benzo(a)anthracene	1340	1670	80.2%	1270	1670	76.0%	5.4%
Chrysene	1380	1670	82.6%	1290	1670	77.2%	6.7%
Benzo(b)fluoranthene	1340	1670	80.2%	1250	1670	74.9%	6.9%
Benzo(k)fluoranthene	1470	1670	88.0%	1370	1670	82.0%	7.0%
Benzo(a)pyrene	1350	1670	80.8%	1270	1670	76.0%	6.1%
Indeno(1,2,3-cd)pyrene	1200	1670	71.9%	1120	1670	67.1%	6.9%
Dibenz(a,h)anthracene	1220	1670	73.1%	1140	1670	68.3%	6.8%
Benzo(g,h,i)perylene	1190	1670	71.3%	1110	1670	66.5%	7.0%
Dibenzofuran	999	1670	59.8%	915	1670	54.8%	8.8%

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	83.6%	76.8%
2-Fluorobiphenyl	55.2%	50.4%

Results reported in $\mu\text{g}/\text{kg}$

RPD calculated using sample concentrations per SW846.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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November 12, 2008

Kelly Bottem, Project Manager
Analytical Resources Inc.
4611 South 134th Place, Suite 1
Tukwila, WA 98168

Dear Ms. Bottem:

Included are the results from the testing of material submitted on October 17, 2008 from the Qwest N. Lot, F&BI 810204 project. The soil sample submitted for forensic evaluation arrived in good condition. Upon arrival, the sample 08-27351-NT85B was placed in a refrigerator maintained at 4°C until removed for sample processing.

The sample 08-27351-NT85B was extracted and analyzed using a gas chromatograph with a flame ionization detector (GC/FID). The data generated yielded information on the boiling range and general chemical composition of the material present. The GC/FID traces are enclosed. A GC/FID trace of a standard consisting of normal alkanes is also provided for reference purposes.

In addition, the sample 08-27351-NT85B was analyzed for parent and alkylated polynuclear aromatic hydrocarbons (PNA's) using a GC fitted with a mass spectrometer (MS). The sample was also sent to Harris Testing Laboratories (HTL) for sulfur analysis. The results of this testing, including the charts depicting the relative abundance of the PNA's and report generated by HTL, are also enclosed.

Please contact us if additional consultation is needed by our firm in the interpretation of the analytical results provided. We appreciate this opportunity to be of service to you and hope you will call if you should have any questions. We will hold your samples for 30 days before disposal unless directed otherwise.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson
Chemist

Enclosures
mcp/KJ
NAA1112R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/08
Date Received: 10/17/08
Project: Qwest N. Lot, F&BI 810204
Date Extracted: 10/20/08
Date Analyzed: 10/20/08

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR FORENSIC EVALUATION
BY CAPILLARY GAS CHROMATOGRAPHY
USING A FLAME IONIZATION DETECTOR (FID)**

Sample ID

GC Characterization

08-27351-NT85B

The GC trace using the flame ionization detector (FID) showed the presence of medium to high boiling compounds. The patterns displayed by these peaks are indicative of coal tar or a coal tar based material such as creosote.

The medium to high boiling compounds appear as an irregular pattern of peaks on top of a slight hump or unresolved complex mixture (UCM). This material elutes from *n*-C₈ to *n*-C₂₈. This correlates with a temperature range of approximately 130°C to 430°C. Within this range, abundant peaks are present which are indicative of polycyclic aromatic hydrocarbons (PAHs).

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID: 08-27351-NT85B	Client: Analytical Resources Inc.
Date Received: 10/17/08	Project: Qwest N. Lot, F&BI 810204
Date Extracted: 10/20/08	Lab ID: 810204-01 1/500
Date Analyzed: 10/20/08	Data File: 102009.D
Matrix: Soil	Instrument: GCMS3
Units: mg/kg (ppm)	Operator: ya

Surrogates:	%Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	0 ds	45	119
2-Fluorobiphenyl	0 ds	50	118
Terphenyl-d14	0 ds	45	126

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Decalin	<20	Anthracene	160
C1-Decalins	<20	C1-phenanthrenes/anthracenes	260
C2-Decalins	<20	C2-phenanthrenes/anthracenes	78
C3-Decalins	<20	C3-phenanthrenes/anthracenes	23
C4-Decalins	<20	C4-phenanthrenes/anthracenes	<20
Naphthalene	1,500	Fluoranthene	330
C1-naphthalenes	730	Pyrene	330
C2-naphthalenes	330	C1-fluoranthenes/pyrenes	190
C3-naphthalenes	84	C2-fluoranthenes/pyrenes	48
C4-naphthalenes	<20	C3-fluoranthenes/pyrenes	<20
Biphenyl	130	Benz(a)anthracene	110
Acenaphthylene	63	Chrysene	99
Acenaphthene	400	C1-benz(a)anthracenes/chrysenes	61
Dibenzofuran	78	C2-benz(a)anthracenes/chrysenes	<20
Fluorene	270	C3-benz(a)anthracenes/chrysenes	<20
C1-fluorenes	110	C4-benz(a)anthracenes/chrysenes	<20
C2-fluorenes	27	Benzo(e)pyrene	49
C3-fluorenes	<20	Benzo(a)pyrene	110
Dibenzothiophene	43	Perylene	24
C1-dibenzothiophenes	27	Benzo(b)fluoranthene	79
C2-dibenzothiophenes	<20	Benzo(k)fluoranthene	36
C3-dibenzothiophenes	<20	Indeno(1,2,3-cd)pyrene	48
C4-dibenzothiophenes	<20	Dibenz(a,h)anthracene	<20
Phenanthrene	760	Benzo(g,h,i)perylene	49

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C

Client Sample ID:	Method Blank	Client:	Analytical Resources Inc.
Date Received:	Not Applicable	Project:	Qwest N. Lot, F&BI 810204
Date Extracted:	10/20/08	Lab ID:	081676mb rr
Date Analyzed:	10/21/08	Data File:	102104.D
Matrix:	Soil	Instrument:	GCMS3
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	%Recovery:	Lower Limit	Upper Limit
Nitrobenzene-d5	123 vo	45	119
2-Fluorobiphenyl	128 vo	50	118
Terphenyl-d14	116	45	126

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Decalin	<0.04	Anthracene	<0.04
C1-Decalins	<0.04	C1-phenanthrenes/anthracenes	<0.04
C2-Decalins	<0.04	C2-phenanthrenes/anthracenes	<0.04
C3-Decalins	<0.04	C3-phenanthrenes/anthracenes	<0.04
C4-Decalins	<0.04	C4-phenanthrenes/anthracenes	<0.04
Naphthalene	<0.04	Fluoranthene	<0.04
C1-naphthalenes	<0.04	Pyrene	<0.04
C2-naphthalenes	<0.04	C1-fluoranthenes/pyrenes	<0.04
C3-naphthalenes	<0.04	C2-fluoranthenes/pyrenes	<0.04
C4-naphthalenes	<0.04	C3-fluoranthenes/pyrenes	<0.04
Biphenyl	<0.04	Benz(a)anthracene	<0.04
Acenaphthylene	<0.04	Chrysene	<0.04
Acenaphthene	<0.04	C1-benz(a)anthracenes/chrysenes	<0.04
Dibenzofuran	<0.04	C2-benz(a)anthracenes/chrysenes	<0.04
Fluorene	<0.04	C3-benz(a)anthracenes/chrysenes	<0.04
C1-fluorenes	<0.04	C4-benz(a)anthracenes/chrysenes	<0.04
C2-fluorenes	<0.04	Benzo(e)pyrene	<0.04
C3-fluorenes	<0.04	Benzo(a)pyrene	<0.04
Dibenzothiophene	<0.04	Perylene	<0.04
C1-dibenzothiophenes	<0.04	Benzo(b)fluoranthene	<0.04
C2-dibenzothiophenes	<0.04	Benzo(k)fluoranthene	<0.04
C3-dibenzothiophenes	<0.04	Indeno(1,2,3-cd)pyrene	<0.04
C4-dibenzothiophenes	<0.04	Dibenz(a,h)anthracene	<0.04
Phenanthrene	<0.04	Benzo(g,h,i)perylene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

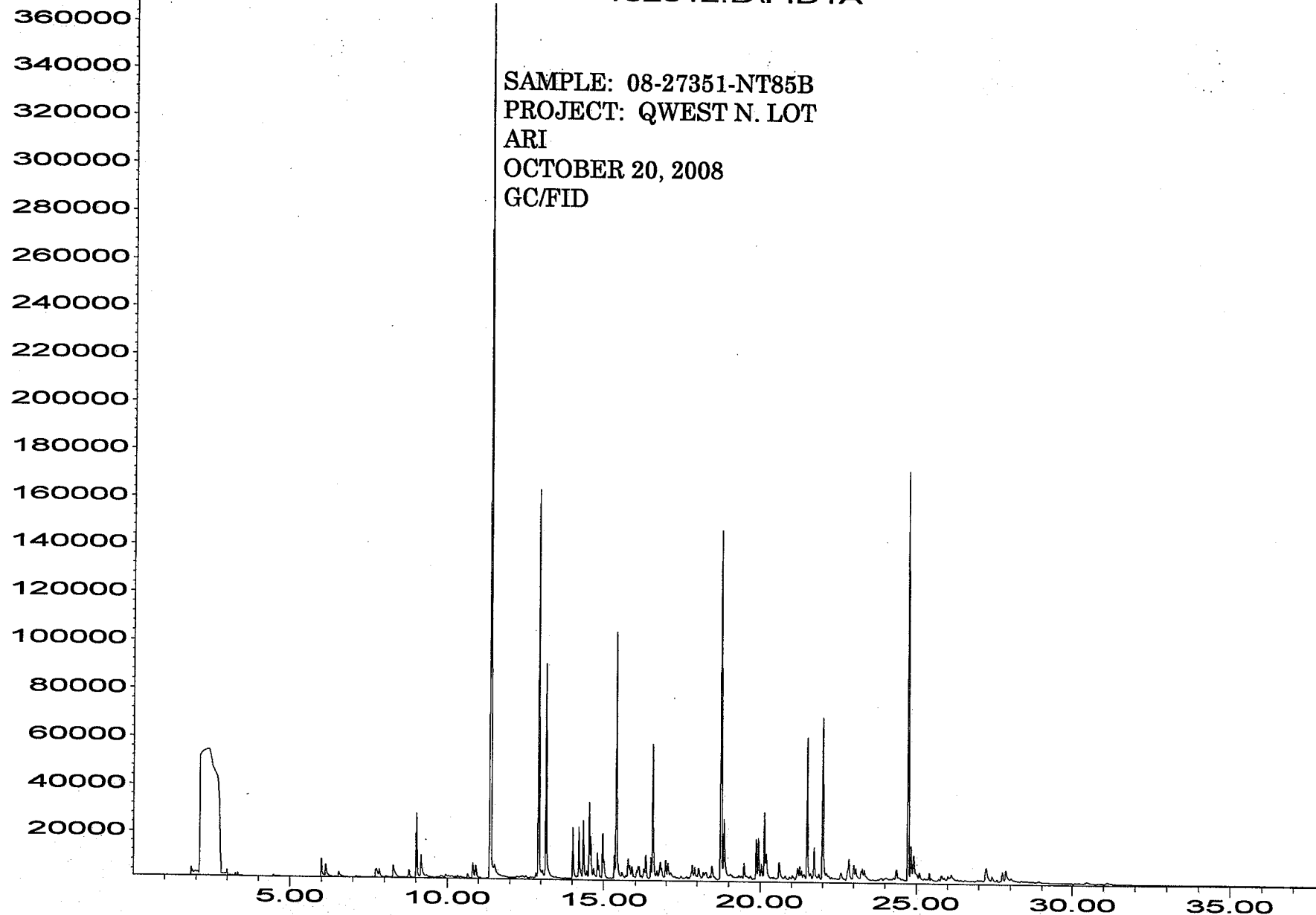
Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 - More than one compound of similar molecule structure was identified with equal probability.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte indicated may be due to carryover from previous sample injections.
- d - The sample was diluted. Detection limits may be raised due to dilution.
- ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb - The analyte indicated was found in the method blank. The result should be considered an estimate.
- 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 - The sample was extracted outside of holding time. Results should be considered estimates.
- 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 - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The pattern of peaks present is not indicative of diesel.
- y - The pattern of peaks present is not indicative of motor oil.

Response_

102012.D\FID1A

SAMPLE: 08-27351-NT85B
PROJECT: QWEST N. LOT
ARI
OCTOBER 20, 2008
GC/FID

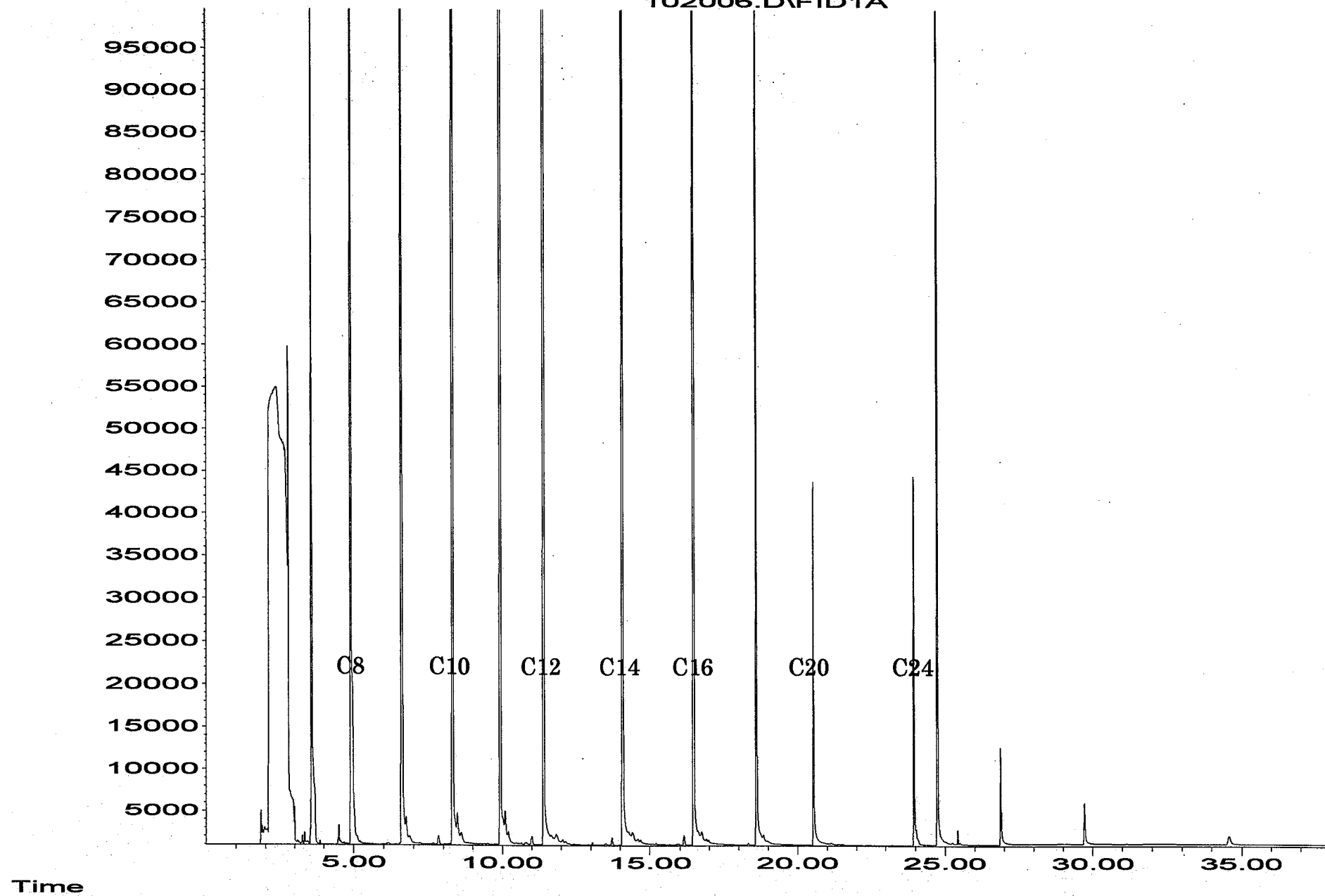


Time

Response_

N-ALKANE STANDARD
GC/FID

102006.D\FID1A

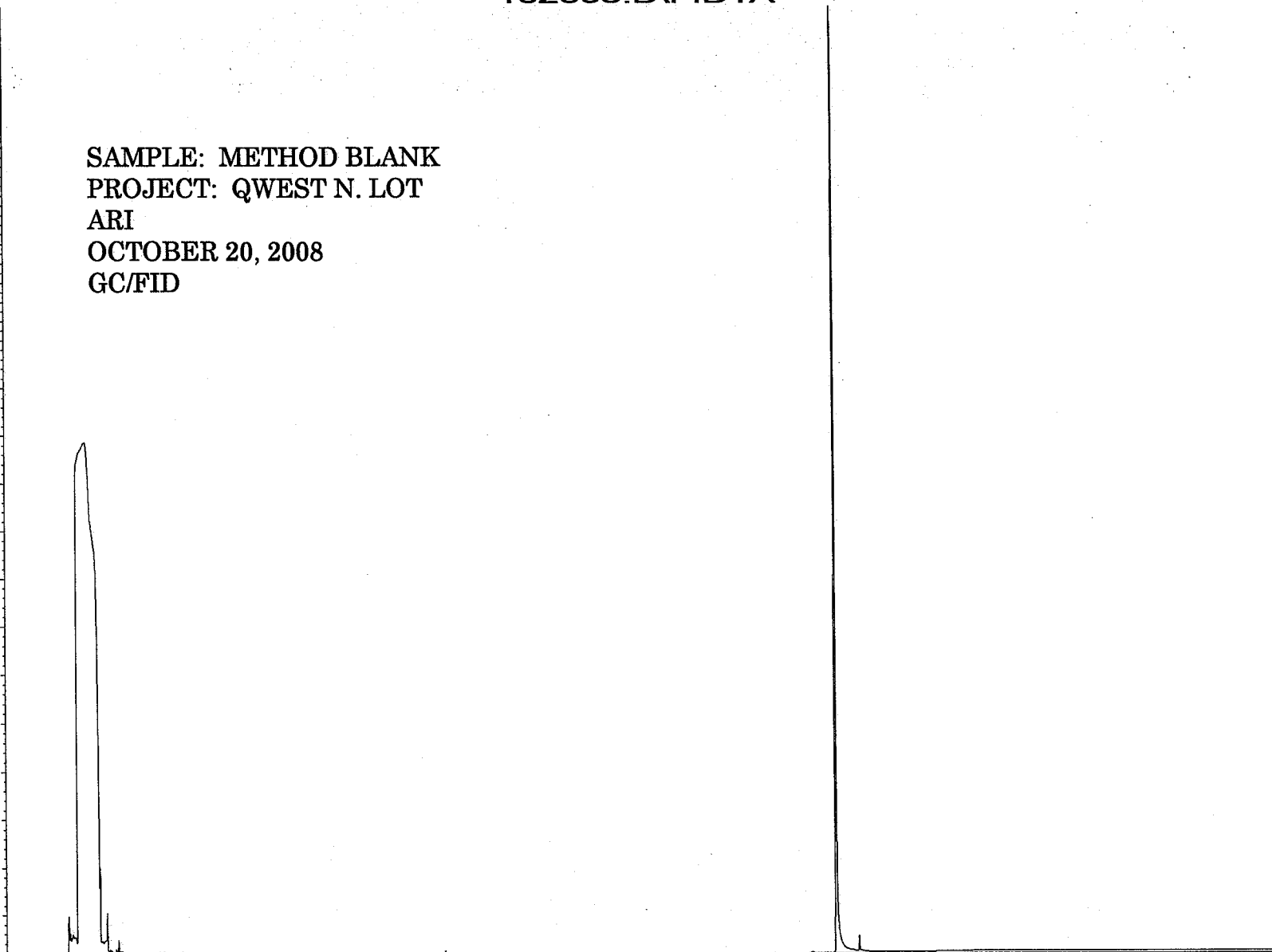


Response_

102008.D\FID1A

95000
90000
85000
80000
75000
70000
65000
60000
55000
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000

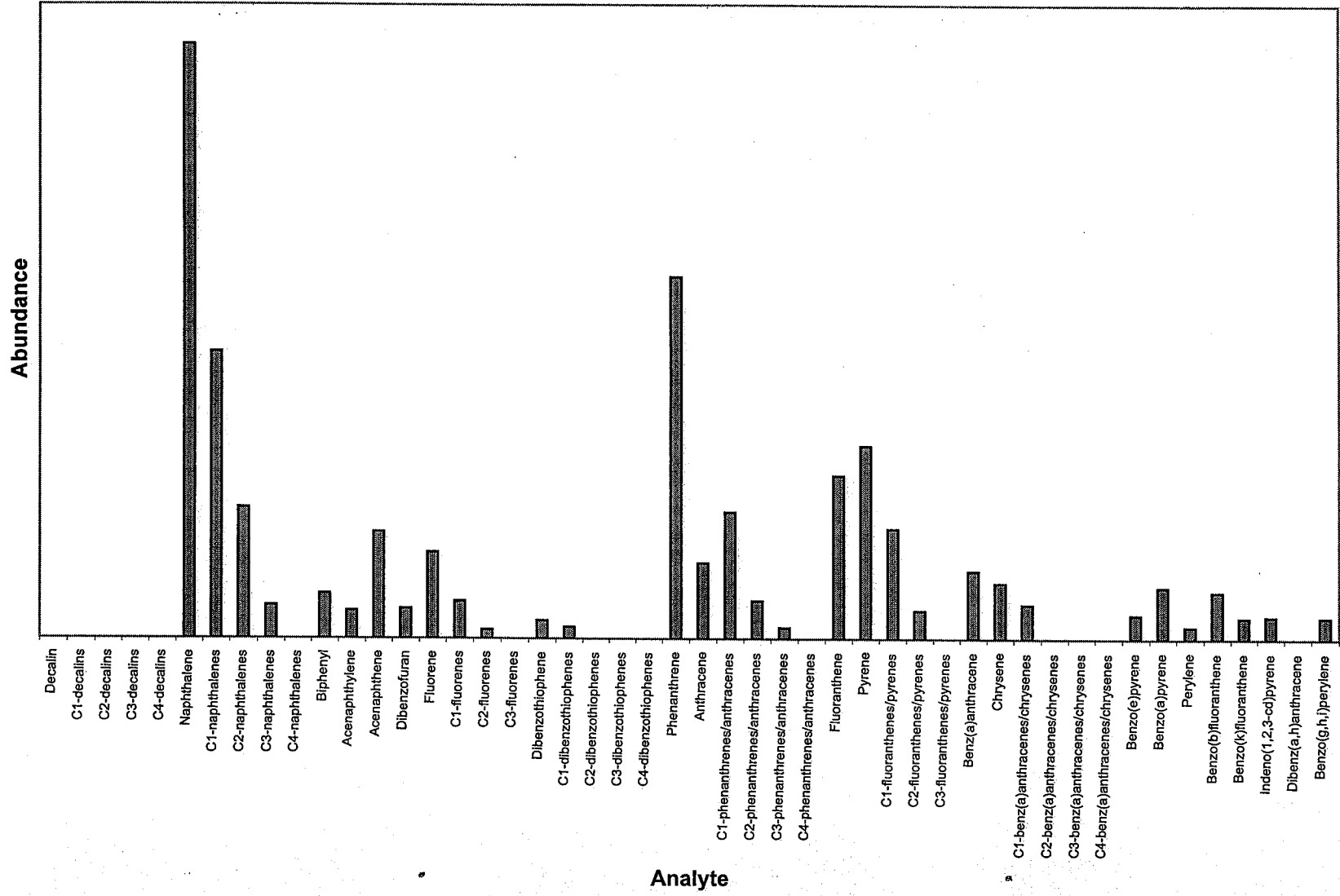
SAMPLE: METHOD BLANK
PROJECT: QWEST N. LOT
ARI
OCTOBER 20, 2008
GC/FID

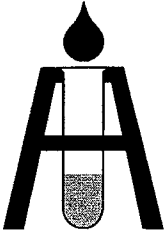


5.00 10.00 15.00 20.00 25.00 30.00 35.00

Time

Sample ID: 08-27351-NT85B





RECEIVED
NOV 12 2008

HARRIS TESTING LABORATORIES, INC.

CERTIFICATE OF ANALYSIS

CLIENT

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

PRODUCT: Unknown

MARKS: B-41-20-21, 10/09/08 7:30

DATE RECEIVED: 10/21/2008

LAB NO: HH0810-2101

SUBMITTED BY: Friedman & Bruya, Inc.

METHOD	TEST	RESULT	SPECIFICATIONS	
			MIN.	MAX.
D-1552	Sulfur, wt%	0.64	XXX	XXX

Comments:

Date issued:
10/27/2008



Chemist

810204

MP ME 1017108

C02

SUBCONTRACTOR ANALYSIS REQUEST
CUSTODY TRANSFER 10/16/08

**ANALYTICAL
RESOURCES
INCORPORATED**

ARI Project: NT85

Laboratory: Friedman & Bruya Lab
Lab Contact: Todd Crawford
Lab Address: 3012 16th West
Seattle, WA 98119
Phone: 206-285-8282
Fax: 206-283-5044

ARI Client: Landau Associates, Inc.
Project ID: QWEST N.LOT
ARI PM: Kelly Bottem
Phone: 206-695-6211
Fax: 206-695-6201

Analytical Protocol: In-house
Special Instructions:

Requested Turn Around:
Fax Results (Y/N): **Yes**

Limits of Liability. Subcontractor is expected to perform all requested services in accordance with appropriate methodology following Standard Operating Procedures that meet standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the negotiated amount for said services. The agreement by the Subcontractor to perform services requested by ARI releases ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Subcontractor.

ARI ID	Client ID/ Add'l ID	Lab ID	Sampled	Matrix	Bottles	Analyses
08-27351-NT85B	B41-20-21	01	10/09/08 07:30	Soil	1	TOT S PAR&ALK PAH

Special Instructions: HYDROCARBON FUEL SCAN

Samples received at 6 °C

Carrier <u>UPS</u>	Airbill <u>128326950343360468</u>	Date <u>10/16/08</u>
Relinquished by <u>Spencer Watts</u>	Company <u>ARI</u>	Date <u>10/16/08</u>
Received by <u>mta/ann</u>	Company <u>FEBI</u>	Date <u>10/17/08</u>
		Time <u>1600</u>
		Time <u>14:00</u>



Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 4, 2008

Kathryn Hartley
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest Field North Lot
ARI Job: NU11

Dear Kathryn:

Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted seven soil samples on October 13, 2008. The samples were received at a cooler temperature of 2.2°C.

The samples were analyzed for NWTPH-Dx, NWTPH-Gx plus BTEX, PAHs, Total Metals and HCID with follow up analyses, as requested on the COC.

The matrix spike and matrix spike duplicate for PAHs on sample **B33-17.5-18.5** is out of control high for phenanthrene and fluoranthene. All other QC is in control, therefore no further corrective action was taken.

The matrix spike on sample **B47-21.5-21.9** is out of control low for diesel with wide RPDs. All other QC is in control, therefore no further corrective action was taken.

No other analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

Date 10/10/08
Page 1 of 1

Chain-of-Custody Record

Project Name Quest N. Lot Project No. 1014001.020.022

Project Location/Event Seattle, WA

Sampler's Name Nathan Moxley

Project Contact Tim Syverson

Send Results To ↓, Nathan Moxley, Anne Halverson

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters										Observations/Comments		
					TPH-D	TPH-O	PAH's	TPH-A-CED	Metals *	TPH-GX	BTEX						
B44-21.5-22.5	10/10/08	0740	Soil	1	X	X	X										
B33-17.5-18.5	↓	0920	↓	1	X	X	X	X	X	X	X	X	X	X	X	X	NWTPH-Dx: <input type="checkbox"/> run acid wash/silica gel cleanup <input type="checkbox"/> run samples standardized to _____ product <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other * Metals include: <u>As, Cd, Cr, Pb, Hg</u>
B31-8.0-10.0		1030		1		X	X	X									
B45-8.5		1100		3						X	X						
B45-8.0-10.0		1105		1			X										
B47-21.8		1320		3							X	X					
B47-21.5-21.9		1325		1			X	X	X								

Special Shipment/Handling or Storage Requirements _____

Method of Shipment ARI Pickup

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Nathan Moxley</u> Company <u>Landau</u> Date <u>10/12/08</u> Time <u>2000</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Erin Kasarda</u> Company <u>ARI</u> Date <u>10/13/08</u> Time <u>16:40</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
---	--	---	---



Cooler Receipt Form

ARI Client: Landau Associates
COC No: _____
Assigned ARI Job No: NULL

Project Name: QUEST N. LOT
Delivered by: CARRIER
Tracking No: _____

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
- Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 2.2 °C

Cooler Accepted by: Erick Kasarda Date: 10/13/08 Time: 16:40

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? ICE/BW
- Was sufficient ice used (if appropriate)? YES NO
- Were all bottles sealed in individual plastic bags? YES NO
- Did all bottle arrive in good condition (unbroken)? YES NO
- Were all bottle labels complete and legible? 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 checklist) YES NO
- Were all VOC vials free of air bubbles? NA YES NO
- Was sufficient amount of sample sent in each bottle? YES NO

Samples Logged by: JW Date: 10/14/08 Time: 1040

**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

By: _____

Date: _____

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1


Sample ID: B44-21.5-22.5

SAMPLE

Lab Sample ID: NU11A

LIMS ID: 08-27569

Matrix: Soil

Data Release Authorized: 

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 10/29/08 20:14

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.96 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 56.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	190	5,000
91-57-6	2-Methylnaphthalene	190	1,100
90-12-0	1-Methylnaphthalene	190	850
208-96-8	Acenaphthylene	190	320
83-32-9	Acenaphthene	190	2,000
86-73-7	Fluorene	190	2,400
85-01-8	Phenanthrene	190	16,000 E
120-12-7	Anthracene	190	3,800
206-44-0	Fluoranthene	190	18,000 E
129-00-0	Pyrene	190	15,000 E
56-55-3	Benzo (a) anthracene	190	7,800
218-01-9	Chrysene	190	7,800
205-99-2	Benzo (b) fluoranthene	190	7,200
207-08-9	Benzo (k) fluoranthene	190	7,300
50-32-8	Benzo (a) pyrene	190	9,700
193-39-5	Indeno (1,2,3-cd) pyrene	190	2,900
53-70-3	Dibenz (a,h) anthracene	190	890
191-24-2	Benzo (g,h,i) perylene	190	3,000
132-64-9	Dibenzofuran	190	1,700

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	68.8%
2-Fluorobiphenyl	76.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B44-21.5-22.5

DILUTION

Lab Sample ID: NU11A

LIMS ID: 08-27569

Matrix: Soil

Data Release Authorized: *AB*

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 11/01/08 15:43

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.96 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 10.0

Percent Moisture: 56.0%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	630	6,100
91-57-6	2-Methylnaphthalene	630	1,300
90-12-0	1-Methylnaphthalene	630	1,200
208-96-8	Acenaphthylene	630	< 630 U
83-32-9	Acenaphthene	630	2,800
86-73-7	Fluorene	630	3,200
85-01-8	Phenanthrene	630	19,000
120-12-7	Anthracene	630	4,700
206-44-0	Fluoranthene	630	20,000
129-00-0	Pyrene	630	17,000
56-55-3	Benzo (a) anthracene	630	9,400
218-01-9	Chrysene	630	9,400
205-99-2	Benzo (b) fluoranthene	630	6,800
207-08-9	Benzo (k) fluoranthene	630	8,000
50-32-8	Benzo (a) pyrene	630	10,000
193-39-5	Indeno (1,2,3-cd) pyrene	630	5,000
53-70-3	Dibenz (a,h) anthracene	630	1,500
191-24-2	Benzo (g,h,i) perylene	630	5,600
132-64-9	Dibenzofuran	630	2,200

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	95.2%
2-Fluorobiphenyl	94.8%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B33-17.5-18.5

SAMPLE

Lab Sample ID: NU11B

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized:

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 10/29/08 20:48

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.15 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 27.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180	360
91-57-6	2-Methylnaphthalene	180	< 180 U
90-12-0	1-Methylnaphthalene	180	< 180 U
208-96-8	Acenaphthylene	180	< 180 U
83-32-9	Acenaphthene	180	320
86-73-7	Fluorene	180	470
85-01-8	Phenanthrene	180	3,700
120-12-7	Anthracene	180	820
206-44-0	Fluoranthene	180	2,400
129-00-0	Pyrene	180	3,000
56-55-3	Benzo (a) anthracene	180	1,100
218-01-9	Chrysene	180	1,200
205-99-2	Benzo (b) fluoranthene	180	820
207-08-9	Benzo (k) fluoranthene	180	970
50-32-8	Benzo (a) pyrene	180	1,200
193-39-5	Indeno (1,2,3-cd) pyrene	180	390
53-70-3	Dibenz (a, h) anthracene	180	< 180 U
191-24-2	Benzo (g, h, i) perylene	180	390
132-64-9	Dibenzofuran	180	210

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	79.2%
2-Fluorobiphenyl	67.3%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B33-17.5-18.5

MATRIX SPIKE

Lab Sample ID: NU11B

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized:

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 10/29/08 21:21

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.39 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 27.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180	---
91-57-6	2-Methylnaphthalene	180	---
90-12-0	1-Methylnaphthalene	180	---
208-96-8	Acenaphthylene	180	---
83-32-9	Acenaphthene	180	---
86-73-7	Fluorene	180	---
85-01-8	Phenanthrene	180	---
120-12-7	Anthracene	180	---
206-44-0	Fluoranthene	180	---
129-00-0	Pyrene	180	---
56-55-3	Benzo (a) anthracene	180	---
218-01-9	Chrysene	180	---
205-99-2	Benzo (b) fluoranthene	180	---
207-08-9	Benzo (k) fluoranthene	180	---
50-32-8	Benzo (a) pyrene	180	---
193-39-5	Indeno (1,2,3-cd) pyrene	180	---
53-70-3	Dibenz (a,h) anthracene	180	---
191-24-2	Benzo (g,h,i) perylene	180	---
132-64-9	Dibenzofuran	180	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	63.1%
2-Fluorobiphenyl	69.6%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B33-17.5-18.5

MATRIX SPIKE DUPLICATE

Lab Sample ID: NU11B

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 10/29/08 21:54

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.11 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 27.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	180	---
91-57-6	2-Methylnaphthalene	180	---
90-12-0	1-Methylnaphthalene	180	---
208-96-8	Acenaphthylene	180	---
83-32-9	Acenaphthene	180	---
86-73-7	Fluorene	180	---
85-01-8	Phenanthrene	180	---
120-12-7	Anthracene	180	---
206-44-0	Fluoranthene	180	---
129-00-0	Pyrene	180	---
56-55-3	Benzo(a)anthracene	180	---
218-01-9	Chrysene	180	---
205-99-2	Benzo(b)fluoranthene	180	---
207-08-9	Benzo(k)fluoranthene	180	---
50-32-8	Benzo(a)pyrene	180	---
193-39-5	Indeno(1,2,3-cd)pyrene	180	---
53-70-3	Dibenz(a,h)anthracene	180	---
191-24-2	Benzo(g,h,i)perylene	180	---
132-64-9	Dibenzofuran	180	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	63.5%
2-Fluorobiphenyl	74.0%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1


Sample ID: B31-8.0-10.0
SAMPLE

Lab Sample ID: NU11C

LIMS ID: 08-27571

Matrix: Soil

Data Release Authorized:

Reported: 11/03/08 

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 10/29/08 22:28

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.90 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

Percent Moisture: 16.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	190	< 190 U
91-57-6	2-Methylnaphthalene	190	< 190 U
90-12-0	1-Methylnaphthalene	190	< 190 U
208-96-8	Acenaphthylene	190	< 190 U
83-32-9	Acenaphthene	190	230
86-73-7	Fluorene	190	420
85-01-8	Phenanthrene	190	3,700
120-12-7	Anthracene	190	1,300
206-44-0	Fluoranthene	190	3,500
129-00-0	Pyrene	190	3,700
56-55-3	Benzo (a) anthracene	190	1,600
218-01-9	Chrysene	190	1,600
205-99-2	Benzo (b) fluoranthene	190	830
207-08-9	Benzo (k) fluoranthene	190	1,100
50-32-8	Benzo (a) pyrene	190	1,400
193-39-5	Indeno (1,2,3-cd) pyrene	190	350
53-70-3	Dibenz (a,h) anthracene	190	< 190 U
191-24-2	Benzo (g,h,i) perylene	190	340
132-64-9	Dibenzofuran	190	< 190 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatiles Surrogate Recovery

d14-p-Terphenyl	73.0%
2-Fluorobiphenyl	71.4%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D GC/MS

Page 1 of 1

Sample ID: B45-8.0-10.0

SAMPLE

Lab Sample ID: NU11E

LIMS ID: 08-27573

Matrix: Soil

Data Release Authorized: *AS*

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 11/01/08 16:17

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.27 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 20.9%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	60	< 60 U
91-57-6	2-Methylnaphthalene	60	< 60 U
90-12-0	1-Methylnaphthalene	60	< 60 U
208-96-8	Acenaphthylene	60	< 60 U
83-32-9	Acenaphthene	60	< 60 U
86-73-7	Fluorene	60	< 60 U
85-01-8	Phenanthrene	60	73
120-12-7	Anthracene	60	< 60 U
206-44-0	Fluoranthene	60	280
129-00-0	Pyrene	60	230
56-55-3	Benzo (a) anthracene	60	97
218-01-9	Chrysene	60	100
205-99-2	Benzo (b) fluoranthene	60	64
207-08-9	Benzo (k) fluoranthene	60	71
50-32-8	Benzo (a) pyrene	60	78
193-39-5	Indeno (1,2,3-cd) pyrene	60	< 60 U
53-70-3	Dibenz (a,h) anthracene	60	< 60 U
191-24-2	Benzo (g,h,i) perylene	60	< 60 U
132-64-9	Dibenzofuran	60	< 60 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	84.4%
2-Fluorobiphenyl	81.6%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1



Sample ID: B47-21.5-21.9
SAMPLE

Lab Sample ID: NU11G

LIMS ID: 08-27575

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted: 10/23/08

Date Analyzed: 11/01/08 16:52

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 8.03 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 38.7%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	62	500
91-57-6	2-Methylnaphthalene	62	150
90-12-0	1-Methylnaphthalene	62	170
208-96-8	Acenaphthylene	62	110
83-32-9	Acenaphthene	62	480
86-73-7	Fluorene	62	320
85-01-8	Phenanthrene	62	1,200
120-12-7	Anthracene	62	580
206-44-0	Fluoranthene	62	1,900
129-00-0	Pyrene	62	1,600
56-55-3	Benzo (a) anthracene	62	1,000
218-01-9	Chrysene	62	1,100
205-99-2	Benzo (b) fluoranthene	62	490
207-08-9	Benzo (k) fluoranthene	62	850
50-32-8	Benzo (a) pyrene	62	1,000
193-39-5	Indeno (1,2,3-cd) pyrene	62	370
53-70-3	Dibenz (a,h) anthracene	62	91
191-24-2	Benzo (g,h,i) perylene	62	370
132-64-9	Dibenzofuran	62	130

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	82.4%
2-Fluorobiphenyl	82.4%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1



Sample ID: MB-102308

METHOD BLANK

Lab Sample ID: MB-102308

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized:

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: NA

Date Received: NA

Date Extracted: 10/23/08

Date Analyzed: 10/29/08 16:17

Instrument/Analyst: NT6/LJR

GPC Cleanup: No

Alumina: No

Silica Gel: Yes

Sample Amount: 7.50 g

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	67	< 67 U
91-57-6	2-Methylnaphthalene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
83-32-9	Acenaphthene	67	< 67 U
86-73-7	Fluorene	67	< 67 U
85-01-8	Phenanthrene	67	< 67 U
120-12-7	Anthracene	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
56-55-3	Benzo (a) anthracene	67	< 67 U
218-01-9	Chrysene	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1, 2, 3 -cd) pyrene	67	< 67 U
53-70-3	Dibenz (a, h) anthracene	67	< 67 U
191-24-2	Benzo (g, h, i) perylene	67	< 67 U
132-64-9	Dibenzofuran	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d14-p-Terphenyl	93.6%
2-Fluorobiphenyl	77.6%

SW8270 PNA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NU11-Landau Associates, Inc.
Project: QWEST N. LOT

<u>Client ID</u>	<u>TER</u>	<u>FBP</u>	<u>TOT OUT</u>
B44-21.5-22.5	68.8%	76.3%	0
B44-21.5-22.5 DL	95.2%	94.8%	0
MB-102308	93.6%	77.6%	0
LCS-102308	102%	70.0%	0
LCSD-102308	97.6%	71.6%	0
B33-17.5-18.5	79.2%	67.3%	0
B33-17.5-18.5 MS	63.1%	69.6%	0
B33-17.5-18.5 MSD	63.5%	74.0%	0
B31-8.0-10.0	73.0%	71.4%	0
B45-8.0-10.0	84.4%	81.6%	0
B47-21.5-21.9	82.4%	82.4%	0

LCS/MB LIMITS QC LIMITS

(TER) = d14-p-Terphenyl (30-160) (30-160)
(FBP) = 2-Fluorobiphenyl (30-160) (30-160)

Prep Method: SW3546
Log Number Range: 08-27569 to 08-27575

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: LCS-102308

LCS/LCSD

Lab Sample ID: LCS-102308

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized:

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: NA

Date Received: 10/13/08

Date Extracted LCS/LCSD: 10/23/08

Sample Amount LCS: 7.50 g

LCSD: 7.50 g

Date Analyzed LCS: 10/29/08 16:51

Final Extract Volume LCS: 0.50 mL

LCSD: 10/29/08 17:26

LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/LJR

Dilution Factor LCS: 1.00

LCSD: NT6/LJR

LCSD: 1.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCS	Added-LCSD	Recovery	LCSD		
Naphthalene	1290	1670	77.2%	1280	1670	76.6%	0.8%		
2-Methylnaphthalene	1510	1670	90.4%	1490	1670	89.2%	1.3%		
1-Methylnaphthalene	1250	1670	74.9%	1210	1670	72.5%	3.3%		
Acenaphthylene	1290	1670	77.2%	1270	1670	76.0%	1.6%		
Acenaphthene	1210	1670	72.5%	1180	1670	70.7%	2.5%		
Fluorene	1300	1670	77.8%	1280	1670	76.6%	1.6%		
Phenanthrene	1470	1670	88.0%	1440	1670	86.2%	2.1%		
Anthracene	1340	1670	80.2%	1310	1670	78.4%	2.3%		
Fluoranthene	1190	1670	71.3%	1170	1670	70.1%	1.7%		
Pyrene	1950	1670	117%	1830	1670	110%	6.3%		
Benzo(a)anthracene	1470	1670	88.0%	1490	1670	89.2%	1.4%		
Chrysene	1490	1670	89.2%	1460	1670	87.4%	2.0%		
Benzo(b)fluoranthene	1450	1670	86.8%	1400	1670	83.8%	3.5%		
Benzo(k)fluoranthene	1610	1670	96.4%	1650	1670	98.8%	2.5%		
Benzo(a)pyrene	1520	1670	91.0%	1520	1670	91.0%	0.0%		
Indeno(1,2,3-cd)pyrene	1430	1670	85.6%	1420	1670	85.0%	0.7%		
Dibenz(a,h)anthracene	1740	1670	104%	1690	1670	101%	2.9%		
Benzo(g,h,i)perylene	1700	1670	102%	1640	1670	98.2%	3.6%		
Dibenzofuran	1140	1670	68.3%	1130	1670	67.7%	0.9%		

Semivolatile Surrogate Recovery

	LCS	LCSD
d14-p-Terphenyl	102%	97.6%
2-Fluorobiphenyl	70.0%	71.6%

Results reported in $\mu\text{g}/\text{kg}$

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D GC/MS

Page 1 of 1

Sample ID: B33-17.5-18.5
MS/MSD

Lab Sample ID: NU11B

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 11/03/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted MS/MSD: 10/23/08

Sample Amount MS: 8.39 g-dry-wt

MSD: 8.11 g-dry-wt

Date Analyzed MS: 10/29/08 21:21

Final Extract Volume MS: 0.5 mL

MSD: 10/29/08 21:54

MSD: 0.5 mL

Instrument/Analyst MS: NT6/LJR

Dilution Factor MS: 3.00

MSD: NT6/LJR

MSD: 3.00

GPC Cleanup: No

Alumina Cleanup: No

Silica Gel Cleanup: Yes

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	361	1350	1490	66.4%	1450	1540	70.7%	7.1%
2-Methylnaphthalene	< 184	1290	1490	86.6%	1410	1540	91.6%	8.9%
1-Methylnaphthalene	< 184	1090	1490	73.2%	1230	1540	79.9%	12.1%
Acenaphthylene	< 184	1080	1490	72.5%	1210	1540	78.6%	11.4%
Acenaphthene	324	1270	1490	63.5%	1470	1540	74.4%	14.6%
Fluorene	471	1400	1490	62.3%	1630	1540	75.3%	15.2%
Phenanthrene	3660	5000	1490	89.9%	6590	1540	190%	27.4%
Anthracene	817	2010	1490	80.1%	2420	1540	104%	18.5%
Fluoranthene	2390	4460	1490	139%	5540	1540	205%	21.6%
Pyrene	3000	4180	1490	79.2%	4800	1540	117%	13.8%
Benzo(a)anthracene	1130	2470	1490	89.9%	2660	1540	99.4%	7.4%
Chrysene	1180	2340	1490	77.9%	2820	1540	106%	18.6%
Benzo(b)fluoranthene	821	2190	1490	91.9%	2450	1540	106%	11.2%
Benzo(k)fluoranthene	972	2350	1490	92.5%	2670	1540	110%	12.7%
Benzo(a)pyrene	1150	2470	1490	88.6%	2760	1540	105%	11.1%
Indeno(1,2,3-cd)pyrene	394	1060	1490	44.7%	1140	1540	48.4%	7.3%
Dibenz(a,h)anthracene	< 184	956	1490	64.2%	1100	1540	71.4%	14.0%
Benzo(g,h,i)perylene	388	1090	1490	47.1%	1160	1540	50.1%	6.2%
Dibenzofuran	212	1120	1490	60.9%	1270	1540	68.7%	12.6%

Results reported in µg/kg

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID

Page 1 of 1

Matrix: Soil

QC Report No: NU11-Landau Associates, Inc.
Project: QWEST N. LOT

Data Release Authorized: *VTS*
Reported: 10/18/08

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-101508 08-27570	Method Blank	10/15/08	10/16/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 93.0%
NU11B 08-27570	B33-17.5-18.5 HC ID: ---	10/15/08	10/16/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 94.8%
NU11C 08-27571	B31-8.0-10.0 HC ID: ---	10/15/08	10/16/08	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 94.9%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NU11-Landau Associates, Inc.
Project: QWEST N. LOT

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
101508MB	93.0%	0
B33-17.5-18.5	94.8%	0
B31-8.0-10.0	94.9%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(O-TER) = o-Terphenyl	(68-122)	(50-150)

Prep Method: SW3550B
Log Number Range: 08-27570 to 08-27571

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 10/13/08

ARI Job: NU11
Project: QWEST N. LOT

<u>ARI ID</u>	<u>Client ID</u>	<u>Sample Amt</u>	<u>Final Vol</u>	<u>Basis</u>	<u>Prep Date</u>
08-27570-101508MB	Method Blank	10.0 g	5.00 mL	-	10/15/08
08-27570-NU11B	B33-17.5-18.5	7.28 g	5.00 mL	D	10/15/08
08-27571-NU11C	B31-8.0-10.0	8.41 g	5.00 mL	D	10/15/08

Basis: D=Dry Weight W=As Received
HCID Extraction Report

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B45-8.5

SAMPLE

Lab Sample ID: NU11D

LIMS ID: 08-27572

Matrix: Soil

Data Release Authorized: *VTS*

Reported: 10/18/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Event: NA

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Analyzed: 10/16/08 20:11

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 110 mg-dry-wt

Percent Moisture: 16.8%

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	11	< 11 U	
108-88-3	Toluene	11	< 11 U	
100-41-4	Ethylbenzene	11	< 11 U	
	m,p-Xylene	22	< 22 U	
95-47-6	o-Xylene	11	< 11 U	
	Gasoline Range Hydrocarbons	4.4	< 4.4 U	---

BETX Surrogate Recovery

Trifluorotoluene	95.0%
Bromobenzene	91.6%

Gasoline Surrogate Recovery

Trifluorotoluene	98.3%
Bromobenzene	94.0%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B47-21.8

SAMPLE

Lab Sample ID: NU11F

LIMS ID: 08-27574

Matrix: Soil

Data Release Authorized: VTS

Reported: 10/18/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Event: NA

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Analyzed: 10/16/08 20:36

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 46 mg-dry-wt

Percent Moisture: 41.5%

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	27	32	
108-88-3	Toluene	27	48	
100-41-4	Ethylbenzene	27	< 27 U	
	m,p-Xylene	55	< 55 U	
95-47-6	o-Xylene	27	< 27 U	
	Gasoline Range Hydrocarbons	11	< 11 U	---

BETX Surrogate Recovery

Trifluorotoluene	93.0%
Bromobenzene	90.8%

Gasoline Surrogate Recovery

Trifluorotoluene	96.0%
Bromobenzene	93.3%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-101608

METHOD BLANK

Lab Sample ID: MB-101608

LIMS ID: 08-27572

Matrix: Soil

Data Release Authorized: **VTS**

Reported: 10/18/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed: 10/16/08 11:23

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	12	< 12 U	
108-88-3	Toluene	12	< 12 U	
100-41-4	Ethylbenzene	12	< 12 U	
	m,p-Xylene	25	< 25 U	
95-47-6	o-Xylene	12	< 12 U	
	Gasoline Range Hydrocarbons	5.0	< 5.0 U	---
BETX Surrogate Recovery				
	Trifluorotoluene	95.5%		
	Bromobenzene	90.5%		
Gasoline Surrogate Recovery				
	Trifluorotoluene	94.9%		
	Bromobenzene	90.6%		

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NU11
Matrix: Soil

QC Report No: NU11-Landau Associates, Inc.
Project: QWEST N. LOT
Event: NA

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-101608	95.5%	90.5%	0
LCS-101608	94.3%	87.1%	0
LCSD-101608	98.3%	91.4%	0
B45-8.5	95.0%	91.6%	0
B47-21.8	93.0%	90.8%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(61-137)
(BBZ) = Bromobenzene	(80-120)	(58-139)

Log Number Range: 08-27572 to 08-27574

FORM II BETX

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: NU11
Matrix: Soil

QC Report No: NU11-Landau Associates, Inc.
Project: QWEST N. LOT
Event: NA

Client ID	BFB	TFT	BBZ	TOT OUT
MB-101608	NA	94.9%	90.6%	0
LCS-101608	NA	93.1%	87.0%	0
LCSD-101608	NA	98.6%	91.4%	0
B45-8.5	NA	98.3%	94.0%	0
B47-21.8	NA	96.0%	93.3%	0

LCS/MB LIMITS QC LIMITS

(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(65-137)
(BBZ) = Bromobenzene	(80-120)	(54-144)

Log Number Range: 08-27572 to 08-27574

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-101608

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101608

LIMS ID: 08-27572

Matrix: Soil

Data Release Authorized: *VTS*

Reported: 10/18/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/16/08 10:34

LCSD: 10/16/08 10:58

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike	LCS	LCSD	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Benzene	256	265	96.6%	270	265	102%	5.3%
Toluene	1890	2060	91.7%	1980	2060	96.1%	4.7%
Ethylbenzene	428	500	85.6%	452	500	90.4%	5.5%
m,p-Xylene	1910	2120	90.1%	2000	2120	94.3%	4.6%
o-Xylene	685	745	91.9%	716	745	96.1%	4.4%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	94.3%	98.3%
Bromobenzene	87.1%	91.4%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-101608

LAB CONTROL SAMPLE

Lab Sample ID: LCS-101608

LIMS ID: 08-27572

Matrix: Soil

Data Release Authorized: *VTS*

Reported: 10/18/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 10/16/08 10:34

LCSD: 10/16/08 10:58

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike	LCS	LCSD	Spike	LCSD	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Gasoline Range Hydrocarbons	46.2	50.0	92.4%	48.8	50.0	97.6%	5.5%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	93.1%	98.6%
Bromobenzene	87.0%	91.4%

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Soil

QC Report No: NU11-Landau Associates, Inc.
Project: QWEST N. LOT

Date Received: 10/13/08

Data Release Authorized: *MW*
Reported: 10/29/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
NU11A 08-27569	B44-21.5-22.5 HC ID: DRO/RRO	10/17/08	10/28/08 FID3A	1.00 20	Diesel Motor Oil o-Terphenyl	220 440	400 860 80.9%
MB-101708 08-27575	Method Blank HC ID: ---	10/17/08	10/24/08 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	5.0 10	< 5.0 U < 10 U 87.1%
NU11G 08-27575	B47-21.5-21.9 HC ID: DRO/RRO	10/17/08	10/28/08 FID3A	1.00 5.0	Diesel Motor Oil o-Terphenyl	38 75	140 310 80.6%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: NU11-Landau Associates, Inc.
Project: QWEST N. LOT

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
B44-21.5-22.5	80.9%	0
101708MBS	87.1%	0
101708LCS	90.9%	0
101708LCSD	92.9%	0
B47-21.5-21.9	80.6%	0
B47-21.5-21.9 MS	87.8%	0
B47-21.5-21.9 MSD	88.7%	0

(OTER) = o-Terphenyl

LCS/MB LIMITS **QC LIMITS**
(52-121) (48-119)

Prep Method: SW3546
Log Number Range: 08-27569 to 08-27575

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1



Sample ID: B47-21.5-21.9

MS/MSD

Lab Sample ID: NU11G

LIMS ID: 08-27575

Matrix: Soil

Data Release Authorized: *WVW*

Reported: 10/29/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Date Extracted MS/MSD: 10/17/08

Sample Amount MS: 6.64 g-dry-wt

MSD: 6.33 g-dry-wt

Date Analyzed MS: 10/28/08 19:36

Final Extract Volume MS: 1.0 mL

MSD: 10/28/08 19:51

MSD: 1.0 mL

Instrument/Analyst MS: FID3A/PKC

Dilution Factor MS: 1.00

MSD: FID3A/PKC

MSD: 1.00

Percent Moisture: 38.7%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	143	212	226	30.5%	321	237	75.1%	40.9%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	87.8%	88.7%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1



Sample ID: LCS-101708
LCS/LCSD

Lab Sample ID: LCS-101708

LIMS ID: 08-27575

Matrix: Soil

Data Release Authorized: *MM*

Reported: 10/29/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 10/17/08

Sample Amount LCS: 10.0 g

LCSD: 10.0 g

Date Analyzed LCS: 10/24/08 07:02

Final Extract Volume LCS: 1.0 mL

LCSD: 10/24/08 07:33

LCSD: 1.0 mL

Instrument/Analyst LCS: FID3A/PKC

Dilution Factor LCS: 1.00

LCSD: FID3A/PKC

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	128	150	85.3%	130	150	86.7%	1.6%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	90.9%	92.9%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B33-17.5-18.5
SAMPLE

Lab Sample ID: NU11B

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Percent Total Solids: 70.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/15/08	7060A	10/22/08	7440-38-2	Arsenic	0.7	5.0	
3050B	10/15/08	6010B	10/20/08	7440-43-9	Cadmium	0.3	0.3	U
3050B	10/15/08	6010B	10/20/08	7440-47-3	Chromium	0.7	22.9	
3050B	10/15/08	7421	10/27/08	7439-92-1	Lead	1	33	
CLP	10/15/08	7471A	10/17/08	7439-97-6	Mercury	0.07	1.88	

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B31-8.0-10.0
SAMPLE

Lab Sample ID: NU11C

LIMS ID: 08-27571

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: 10/10/08

Date Received: 10/13/08

Percent Total Solids: 85.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/15/08	7060A	10/22/08	7440-38-2	Arsenic	0.6	9.6	
3050B	10/15/08	6010B	10/20/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	10/15/08	6010B	10/20/08	7440-47-3	Chromium	0.6	26.7	
3050B	10/15/08	7421	10/27/08	7439-92-1	Lead	1	22	
CLP	10/15/08	7471A	10/17/08	7439-97-6	Mercury	0.04	0.05	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: NU11MB

LIMS ID: 08-27570

Matrix: Soil

Data Release Authorized: 

Reported: 10/30/08

QC Report No: NU11-Landau Associates, Inc.

Project: QWEST N. LOT

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	10/15/08	7060A	10/22/08	7440-38-2	Arsenic	0.1	0.1	U
3050B	10/15/08	6010B	10/29/08	7440-43-9	Cadmium	0.2	0.2	U
3050B	10/15/08	6010B	10/29/08	7440-47-3	Chromium	0.5	0.5	U
3050B	10/15/08	7421	10/17/08	7439-92-1	Lead	0.1	0.1	U
CLP	10/15/08	7471A	10/17/08	7439-97-6	Mercury	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: NU11LCS

QC Report No: NU11-Landau Associates, Inc.

LIMS ID: 08-27570

Project: QWEST N. LOT

Matrix: Soil

Data Release Authorized: *OPM*

Date Sampled: NA

Reported: 10/30/08

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	7060A	9.8	10.0	98.0%	
Cadmium	6010B	47.7	50.0	95.4%	
Chromium	6010B	47.4	50.0	94.8%	
Lead	7421	10.0	10.0	100%	
Mercury	7471A	1.03	1.00	103%	

Reported in mg/kg-dry

N-Control limit not met

NA-Not Applicable, Analyte Not Spiked

Control Limits: 80-120%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

December 17, 2008

Kathryn Hartley
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest Field North Lot
ARI Job: OB80

Dear Kathryn:

Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted eleven water samples on November 26, 2008. The samples were received at cooler temperatures between 1.8 and 2.2°C.

The samples were analyzed for NWTPH-Dx, NWTPH-Gx, VOCs, SIM PAHs, and Dissolved Metals, as requested on the COC.

The 12/1/08 VOCs method blank contained methylene chloride. All associated sample concentrations were non detect, therefore no further corrective action was taken.

No other analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.



Sincerely,
ANALYTICAL RESOURCES, INC


Kelly Bottem

Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 0880		Turn-around Requested: Standard			Page: 1 of 2		 <p>Analytical Resources, Incorporated Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)</p>					
ARI Client Company: Landau			Phone: (425) 778 0907		Date: 11/26/08				Ice Present? <input type="checkbox"/>			
Client Contact: Kathryn Hartley or Tim Syverson					No. of Coolers:				Cooler Temps:			
Client Project Name: Quest Field NORTH LOT												
Client Project #: 1014001.020.033		Samplers: Alan Starr <small>(425) 422 2980</small>			Analysis Requested					Notes/Comments		
Sample ID	Date	Time	Matrix	No. Containers	TPH-D	TPH-G	VOCs	8270-SIM PAHs	dissolved metals (MICA)			
MW-1	11/25/8	1200	W	10	X	X	X	X	X			dissolved metal samples are "Field Filtered" 
MW-2	11/25/8	0950	W	10	X	X	X	X	X			
MW-3	11/24/8	1125	W	10	X	X	X	X	X			
MW-4	11/24/8	1035	W	10	X	X	X	X	X			
MW-5	11/24/8	1225	W	10	X	X	X	X	X			
MW-6	11/25/8	1125	W	10	X	X	X	X	X			
MW-7D	11/24/8	1330	W	10	X	X	X	X	X			
MW-7s	11/24/8	1430	W	10	X	X	X	X	X			
MW-8	11/25/8	1040	W	10	X	X	X	X	X			
MW-9D	11/25/8	1325	W	10	X	X	X	X	X			
Comments/Special Instructions		Relinquished by: (Signature) Alan Starr			Received by: (Signature) Jami Hayes			Relinquished by: (Signature)			Received by: (Signature)	
		Printed Name: Alan Starr			Printed Name: Jami Hayes			Printed Name:			Printed Name:	
		Company: Landau			Company: ARI			Company:			Company:	
		Date & Time: 11/24/8 1058			Date & Time: 11/26/08 1058			Date & Time:			Date & Time:	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request



Analytical Resources, Incorporated
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested:	Page: <u>2</u> of <u>2</u>
ARI Client Company: <u>Landau</u>	Phone: <u>425 778 0907</u>	Date: <u>11/26/08</u> Ice Present?
Client Contact: <u>Kathryn Hartley or Tim Syverson</u>	No. of Coolers:	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested						Notes/Comments
					TPH-D	TPH-G	VOCs	8270-SIM	PATs	dissoved metals (MTEA)	
<u>MW-9s</u>	<u>11/25/08</u>	<u>1235</u>	<u>W</u>	<u>10</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u></u>	<u>metal sample field filtered</u>

Comments/Special Instructions	Relinquished by: (Signature) <u>Alan Starr</u>	Received by: (Signature) <u>Jami Hayes</u>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <u>Alan Starr</u>	Printed Name: <u>Jami Hayes</u>	Printed Name:	Printed Name:
	Company: <u>Landau</u>	Company: <u>ARI</u>	Company:	Company:
	Date & Time: <u>11/26/08 1058</u>	Date & Time: <u>11-26-08 1058</u>	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: MW-1
SAMPLE

Lab Sample ID: OB80A


QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32030

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: 

Date Sampled: 11/25/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/01/08 21:43

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.3	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-1

Page 2 of 2

SAMPLE

Lab Sample ID: OB80A

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32030

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/01/08 21:43

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	97.2%
Bromofluorobenzene	89.2%
d4-1,2-Dichlorobenzene	107%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: MW-2
SAMPLE

Lab Sample ID: OB80B

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32031

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: *[Signature]*

Date Sampled: 11/25/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/01/08 22:11

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	6.2	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: MW-2
SAMPLE

Lab Sample ID: OB80B
LIMS ID: 08-32031
Matrix: Water
Date Analyzed: 12/01/08 22:11

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	7.2	
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	95.2%
Bromofluorobenzene	94.8%
d4-1,2-Dichlorobenzene	95.8%


ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2Sample ID: MW-3
SAMPLE

Lab Sample ID: OB80C

LIMS ID: 08-32032

Matrix: Water

Data Release Authorized: 

Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/24/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Date Analyzed: 12/01/08 22:38

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	27	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	7.4	
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.9	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Page 2 of 2

Sample ID: MW-3

SAMPLE

Lab Sample ID: OB80C

LIMS ID: 08-32032

Matrix: Water

Date Analyzed: 12/01/08 22:38

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	110	ES
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	100%
Bromofluorobenzene	98.5%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: MW-3
REANALYSIS

Lab Sample ID: OB80C
LIMS ID: 08-32032
Matrix: Water
Data Release Authorized:
Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/24/08
Date Received: 11/26/08

Instrument/Analyst: NT3/JZ
Date Analyzed: 12/04/08 20:25

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	33	
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	11	
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	1.0	
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
1330-20-7	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	10	< 10	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-3

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REANALYSIS

Lab Sample ID: OB80C

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32032

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/04/08 20:25

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	130	
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	100%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	99.3%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-4

Page 1 of 2

SAMPLE

Lab Sample ID: OB80D

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32033

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized:

Date Sampled: 11/24/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/03/08 18:53

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	10	
75-15-0	Carbon Disulfide	0.2	0.3	
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.3	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-4

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SAMPLE

Lab Sample ID: OB80D

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32033

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/03/08 18:53

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	0.4	
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	100%
Bromofluorobenzene	89.0%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-5

Page 1 of 2

SAMPLE

Lab Sample ID: OB80E

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32034

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized:

Date Sampled: 11/24/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/03/08 19:20

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	3.6	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-5

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SAMPLE

Lab Sample ID: OB80E

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32034

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/03/08 19:20

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	98.8%
Bromofluorobenzene	87.2%
d4-1,2-Dichlorobenzene	108%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: MW-6
SAMPLE

Lab Sample ID: OB80F
LIMS ID: 08-32035
Matrix: Water
Data Release Authorized:
Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Instrument/Analyst: NT5/JZ
Date Analyzed: 12/03/08 19:47

Sample Amount: 20.0 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	3.4	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-6

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SAMPLE

Lab Sample ID: OB80F

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32035

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/03/08 19:47

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	0.4	
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	92.2%
Bromofluorobenzene	84.8%
d4-1,2-Dichlorobenzene	102%


ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2Sample ID: MW-7D
SAMPLE

Lab Sample ID: OB80G

LIMS ID: 08-32036

Matrix: Water

Data Release Authorized: 

Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/24/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/02/08 00:28

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	4.1	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	0.5	
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.5	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: MW-7D
SAMPLE

Lab Sample ID: OB80G
LIMS ID: 08-32036
Matrix: Water
Date Analyzed: 12/02/08 00:28

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	99.8%
Bromofluorobenzene	90.8%
d4-1,2-Dichlorobenzene	105%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-7S

Page 1 of 2

SAMPLE

Lab Sample ID: OB80H

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32037

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized:

Date Sampled: 11/24/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/02/08 00:55

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	8.4	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: MW-7S
SAMPLE

Lab Sample ID: OB80H
LIMS ID: 08-32037
Matrix: Water
Date Analyzed: 12/02/08 00:55

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	94.0%
Bromofluorobenzene	88.0%
d4-1,2-Dichlorobenzene	105%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-8

Page 1 of 2

SAMPLE

Lab Sample ID: OB80I

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32038

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized:

Date Sampled: 11/25/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/02/08 01:22

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	7.5	
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	0.4	
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.9	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	0.4	
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	1.8	
95-47-6	o-Xylene	0.2	0.5	
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-8

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SAMPLE

Lab Sample ID: OB80I

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32038

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/02/08 01:22

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	28	E
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	96.2%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	96.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: MW-8
DILUTION

Lab Sample ID: OB80I
LIMS ID: 08-32038
Matrix: Water
Data Release Authorized:
Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Instrument/Analyst: NT5/JZ
Date Analyzed: 12/04/08 19:25

Sample Amount: 6.67 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.6	< 0.6	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	0.6	< 0.6	U
75-00-3	Chloroethane	0.6	< 0.6	U
75-09-2	Methylene Chloride	1.5	2.0	
67-64-1	Acetone	9.0	13	
75-15-0	Carbon Disulfide	0.6	< 0.6	U
75-35-4	1,1-Dichloroethene	0.6	< 0.6	U
75-34-3	1,1-Dichloroethane	0.6	< 0.6	U
156-60-5	trans-1,2-Dichloroethene	0.6	< 0.6	U
156-59-2	cis-1,2-Dichloroethene	0.6	< 0.6	U
67-66-3	Chloroform	0.6	< 0.6	U
107-06-2	1,2-Dichloroethane	0.6	< 0.6	U
78-93-3	2-Butanone	7.5	< 7.5	U
71-55-6	1,1,1-Trichloroethane	0.6	< 0.6	U
56-23-5	Carbon Tetrachloride	0.6	< 0.6	U
108-05-4	Vinyl Acetate	3.0	< 3.0	U
75-27-4	Bromodichloromethane	0.6	< 0.6	U
78-87-5	1,2-Dichloropropane	0.6	< 0.6	U
10061-01-5	cis-1,3-Dichloropropene	0.6	< 0.6	U
79-01-6	Trichloroethene	0.6	< 0.6	U
124-48-1	Dibromochloromethane	0.6	< 0.6	U
79-00-5	1,1,2-Trichloroethane	0.6	< 0.6	U
71-43-2	Benzene	0.6	< 0.6	U
10061-02-6	trans-1,3-Dichloropropene	0.6	< 0.6	U
110-75-8	2-Chloroethylvinylether	3.0	< 3.0	U
75-25-2	Bromoform	0.6	< 0.6	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.5	< 7.5	U
591-78-6	2-Hexanone	7.5	< 7.5	U
127-18-4	Tetrachloroethene	0.6	< 0.6	U
79-34-5	1,1,2,2-Tetrachloroethane	0.6	< 0.6	U
108-88-3	Toluene	0.6	1.0	
108-90-7	Chlorobenzene	0.6	< 0.6	U
100-41-4	Ethylbenzene	0.6	< 0.6	U
100-42-5	Styrene	0.6	< 0.6	U
75-69-4	Trichlorofluoromethane	0.6	< 0.6	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.6	< 0.6	U
1330-20-7	m,p-Xylene	1.2	1.6	
95-47-6	o-Xylene	0.6	< 0.6	U
95-50-1	1,2-Dichlorobenzene	0.6	< 0.6	U
541-73-1	1,3-Dichlorobenzene	0.6	< 0.6	U
106-46-7	1,4-Dichlorobenzene	0.6	< 0.6	U
107-02-8	Acrolein	15	< 15	U
74-88-4	Methyl Iodide	3.0	< 3.0	U
74-96-4	Bromoethane	0.6	< 0.6	U
107-13-1	Acrylonitrile	3.0	< 3.0	U
563-58-6	1,1-Dichloropropene	0.6	< 0.6	U
74-95-3	Dibromomethane	0.6	< 0.6	U
630-20-6	1,1,1,2-Tetrachloroethane	0.6	< 0.6	U
96-12-8	1,2-Dibromo-3-chloropropane	1.5	< 1.5	U
96-18-4	1,2,3-Trichloropropane	1.5	< 1.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-8

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DILUTION

Lab Sample ID: OB80I

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32038

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/04/08 19:25

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	3.0	< 3.0	U
108-67-8	1,3,5-Trimethylbenzene	0.6	< 0.6	U
95-63-6	1,2,4-Trimethylbenzene	0.6	< 0.6	U
87-68-3	Hexachlorobutadiene	1.5	< 1.5	U
106-93-4	Ethylene Dibromide	0.6	< 0.6	U
74-97-5	Bromochloromethane	0.6	< 0.6	U
594-20-7	2,2-Dichloropropane	0.6	< 0.6	U
142-28-9	1,3-Dichloropropane	0.6	< 0.6	U
98-82-8	Isopropylbenzene	0.6	< 0.6	U
103-65-1	n-Propylbenzene	0.6	< 0.6	U
108-86-1	Bromobenzene	0.6	< 0.6	U
95-49-8	2-Chlorotoluene	0.6	< 0.6	U
106-43-4	4-Chlorotoluene	0.6	< 0.6	U
98-06-6	tert-Butylbenzene	0.6	< 0.6	U
135-98-8	sec-Butylbenzene	0.6	< 0.6	U
99-87-6	4-Isopropyltoluene	0.6	36	
104-51-8	n-Butylbenzene	0.6	< 0.6	U
120-82-1	1,2,4-Trichlorobenzene	1.5	< 1.5	U
91-20-3	Naphthalene	1.5	< 1.5	U
87-61-6	1,2,3-Trichlorobenzene	1.5	< 1.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	98.0%
Bromofluorobenzene	92.2%
d4-1,2-Dichlorobenzene	93.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: MW-9D
SAMPLE

Lab Sample ID: OB80J

LIMS ID: 08-32039

Matrix: Water

Data Release Authorized:

Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/02/08 01:50

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	0.2	
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	0.2	
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	100	ES
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	60	E
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	150	ES
100-42-5	Styrene	0.2	0.9	
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	220	ES
95-47-6	o-Xylene	0.2	160	ES
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-9D

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SAMPLE

Lab Sample ID: OB80J

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32039

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/02/08 01:50

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	58	E
95-63-6	1,2,4-Trimethylbenzene	0.2	110	ES
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	20	E
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	160	ES
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.8%
d8-Toluene	99.0%
Bromofluorobenzene	111%
d4-1,2-Dichlorobenzene	99.5%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-9D

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REANALYSIS

Lab Sample ID: OB80J


QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32039

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: 

Date Sampled: 11/25/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT3/JZ

Sample Amount: 0.0500 mL

Date Analyzed: 12/04/08 21:12

Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	100	< 100	U
74-83-9	Bromomethane	100	< 100	U
75-01-4	Vinyl Chloride	100	< 100	U
75-00-3	Chloroethane	100	< 100	U
75-09-2	Methylene Chloride	200	< 200	U
67-64-1	Acetone	500	< 500	U
75-15-0	Carbon Disulfide	100	< 100	U
75-35-4	1,1-Dichloroethene	100	< 100	U
75-34-3	1,1-Dichloroethane	100	< 100	U
156-60-5	trans-1,2-Dichloroethene	100	< 100	U
156-59-2	cis-1,2-Dichloroethene	100	< 100	U
67-66-3	Chloroform	100	< 100	U
107-06-2	1,2-Dichloroethane	100	< 100	U
78-93-3	2-Butanone	500	< 500	U
71-55-6	1,1,1-Trichloroethane	100	< 100	U
56-23-5	Carbon Tetrachloride	100	< 100	U
108-05-4	Vinyl Acetate	500	< 500	U
75-27-4	Bromodichloromethane	100	< 100	U
78-87-5	1,2-Dichloropropane	100	< 100	U
10061-01-5	cis-1,3-Dichloropropene	100	< 100	U
79-01-6	Trichloroethene	100	< 100	U
124-48-1	Dibromochloromethane	100	< 100	U
79-00-5	1,1,2-Trichloroethane	100	< 100	U
71-43-2	Benzene	100	120	
10061-02-6	trans-1,3-Dichloropropene	100	< 100	U
110-75-8	2-Chloroethylvinylether	500	< 500	U
75-25-2	Bromoform	100	< 100	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	500	< 500	U
591-78-6	2-Hexanone	500	< 500	U
127-18-4	Tetrachloroethene	100	< 100	U
79-34-5	1,1,2,2-Tetrachloroethane	100	< 100	U
108-88-3	Toluene	100	< 100	U
108-90-7	Chlorobenzene	100	< 100	U
100-41-4	Ethylbenzene	100	370	
100-42-5	Styrene	100	< 100	U
75-69-4	Trichlorofluoromethane	100	< 100	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	200	< 200	U
1330-20-7	m,p-Xylene	200	310	
95-47-6	o-Xylene	100	150	
95-50-1	1,2-Dichlorobenzene	100	< 100	U
541-73-1	1,3-Dichlorobenzene	100	< 100	U
106-46-7	1,4-Dichlorobenzene	100	< 100	U
107-02-8	Acrolein	1,000	< 1,000	U
74-88-4	Methyl Iodide	100	< 100	U
74-96-4	Bromoethane	200	< 200	U
107-13-1	Acrylonitrile	500	< 500	U
563-58-6	1,1-Dichloropropene	100	< 100	U
74-95-3	Dibromomethane	100	< 100	U
630-20-6	1,1,1,2-Tetrachloroethane	100	< 100	U
96-12-8	1,2-Dibromo-3-chloropropane	500	< 500	U
96-18-4	1,2,3-Trichloropropane	200	< 200	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
 Page 2 of 2



Sample ID: MW-9D
 REANALYSIS

Lab Sample ID: OB80J
 LIMS ID: 08-32039
 Matrix: Water
 Date Analyzed: 12/04/08 21:12

QC Report No: OB80-Landau Associates, Inc.
 Project: QUEST FIELD NORTH LOT
 1014001.020.033

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	500	< 500	U
108-67-8	1,3,5-Trimethylbenzene	100	< 100	U
95-63-6	1,2,4-Trimethylbenzene	100	110	
87-68-3	Hexachlorobutadiene	500	< 500	U
106-93-4	Ethylene Dibromide	100	< 100	U
74-97-5	Bromochloromethane	100	< 100	U
594-20-7	2,2-Dichloropropane	100	< 100	U
142-28-9	1,3-Dichloropropane	100	< 100	U
98-82-8	Isopropylbenzene	100	< 100	U
103-65-1	n-Propylbenzene	100	< 100	U
108-86-1	Bromobenzene	100	< 100	U
95-49-8	2-Chlorotoluene	100	< 100	U
106-43-4	4-Chlorotoluene	100	< 100	U
98-06-6	tert-Butylbenzene	100	< 100	U
135-98-8	sec-Butylbenzene	100	< 100	U
99-87-6	4-Isopropyltoluene	100	< 100	U
104-51-8	n-Butylbenzene	100	< 100	U
120-82-1	1,2,4-Trichlorobenzene	500	< 500	U
91-20-3	Naphthalene	500	7,400	
87-61-6	1,2,3-Trichlorobenzene	500	< 500	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-9S

Page 1 of 2

SAMPLE

Lab Sample ID: OB80K

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32040

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: *[Signature]*

Date Sampled: 11/25/08

Reported: 12/05/08

Date Received: 11/26/08

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/04/08 15:21

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	0.3	
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MW-9S

Page 2 of 2

SAMPLE

Lab Sample ID: OB80K

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32040

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/04/08 15:21

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	0.6	
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	98.0%
Bromofluorobenzene	88.0%
d4-1,2-Dichlorobenzene	109%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: TRIP BLANKS
SAMPLE

Lab Sample ID: OB80L
LIMS ID: 08-32042
Matrix: Water
Data Release Authorized:
Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Instrument/Analyst: NT5/JZ
Date Analyzed: 12/01/08 20:21

Sample Amount: 20.0 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: TRIP BLANKS
SAMPLE

Page 2 of 2

Lab Sample ID: OB80L

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32042

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/01/08 20:21

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)


Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	100%
Bromofluorobenzene	93.0%
d4-1,2-Dichlorobenzene	106%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2

Sample ID: MB-120108
METHOD BLANK

Lab Sample ID: MB-120108
LIMS ID: 08-32030
Matrix: Water
Data Release Authorized: 
Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/JZ
Date Analyzed: 12/01/08 19:26

Sample Amount: 20.0 mL
Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	0.7	
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-120108

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METHOD BLANK

Lab Sample ID: MB-120108

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32030

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/01/08 19:26

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	99.5%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	106%


ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 1 of 2Sample ID: MB-120308
METHOD BLANK

Lab Sample ID: MB-120308

LIMS ID: 08-32033

Matrix: Water

Data Release Authorized: 

Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/03/08 11:11

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-120308

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METHOD BLANK

Lab Sample ID: MB-120308

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32033

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/03/08 11:11

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	100%
Bromofluorobenzene	90.5%
d4-1,2-Dichlorobenzene	105%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-120408

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-120408


QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32040

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: 

Date Sampled: NA

Reported: 12/05/08

Date Received: NA

Instrument/Analyst: NT5/JZ

Sample Amount: 20.0 mL

Date Analyzed: 12/04/08 13:39

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.2	< 0.2	U
74-83-9	Bromomethane	0.5	< 0.5	U
75-01-4	Vinyl Chloride	0.2	< 0.2	U
75-00-3	Chloroethane	0.2	< 0.2	U
75-09-2	Methylene Chloride	0.5	< 0.5	U
67-64-1	Acetone	3.0	< 3.0	U
75-15-0	Carbon Disulfide	0.2	< 0.2	U
75-35-4	1,1-Dichloroethene	0.2	< 0.2	U
75-34-3	1,1-Dichloroethane	0.2	< 0.2	U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2	U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2	U
67-66-3	Chloroform	0.2	< 0.2	U
107-06-2	1,2-Dichloroethane	0.2	< 0.2	U
78-93-3	2-Butanone	2.5	< 2.5	U
71-55-6	1,1,1-Trichloroethane	0.2	< 0.2	U
56-23-5	Carbon Tetrachloride	0.2	< 0.2	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	0.2	< 0.2	U
78-87-5	1,2-Dichloropropane	0.2	< 0.2	U
10061-01-5	cis-1,3-Dichloropropene	0.2	< 0.2	U
79-01-6	Trichloroethene	0.2	< 0.2	U
124-48-1	Dibromochloromethane	0.2	< 0.2	U
79-00-5	1,1,2-Trichloroethane	0.2	< 0.2	U
71-43-2	Benzene	0.2	< 0.2	U
10061-02-6	trans-1,3-Dichloropropene	0.2	< 0.2	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.2	< 0.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	2.5	< 2.5	U
591-78-6	2-Hexanone	2.5	< 2.5	U
127-18-4	Tetrachloroethene	0.2	< 0.2	U
79-34-5	1,1,2,2-Tetrachloroethane	0.2	< 0.2	U
108-88-3	Toluene	0.2	< 0.2	U
108-90-7	Chlorobenzene	0.2	< 0.2	U
100-41-4	Ethylbenzene	0.2	< 0.2	U
100-42-5	Styrene	0.2	< 0.2	U
75-69-4	Trichlorofluoromethane	0.2	< 0.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	< 0.2	U
1330-20-7	m,p-Xylene	0.4	< 0.4	U
95-47-6	o-Xylene	0.2	< 0.2	U
95-50-1	1,2-Dichlorobenzene	0.2	< 0.2	U
541-73-1	1,3-Dichlorobenzene	0.2	< 0.2	U
106-46-7	1,4-Dichlorobenzene	0.2	< 0.2	U
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	0.2	< 0.2	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.2	< 0.2	U
74-95-3	Dibromomethane	0.2	< 0.2	U
630-20-6	1,1,1,2-Tetrachloroethane	0.2	< 0.2	U
96-12-8	1,2-Dibromo-3-chloropropane	0.5	< 0.5	U
96-18-4	1,2,3-Trichloropropane	0.5	< 0.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: MB-120408
METHOD BLANK

Lab Sample ID: MB-120408

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32040

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Date Analyzed: 12/04/08 13:39

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.2	< 0.2	U
95-63-6	1,2,4-Trimethylbenzene	0.2	< 0.2	U
87-68-3	Hexachlorobutadiene	0.5	< 0.5	U
106-93-4	Ethylene Dibromide	0.2	< 0.2	U
74-97-5	Bromochloromethane	0.2	< 0.2	U
594-20-7	2,2-Dichloropropane	0.2	< 0.2	U
142-28-9	1,3-Dichloropropane	0.2	< 0.2	U
98-82-8	Isopropylbenzene	0.2	< 0.2	U
103-65-1	n-Propylbenzene	0.2	< 0.2	U
108-86-1	Bromobenzene	0.2	< 0.2	U
95-49-8	2-Chlorotoluene	0.2	< 0.2	U
106-43-4	4-Chlorotoluene	0.2	< 0.2	U
98-06-6	tert-Butylbenzene	0.2	< 0.2	U
135-98-8	sec-Butylbenzene	0.2	< 0.2	U
99-87-6	4-Isopropyltoluene	0.2	< 0.2	U
104-51-8	n-Butylbenzene	0.2	< 0.2	U
120-82-1	1,2,4-Trichlorobenzene	0.5	< 0.5	U
91-20-3	Naphthalene	0.5	< 0.5	U
87-61-6	1,2,3-Trichlorobenzene	0.5	< 0.5	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	102%
Bromofluorobenzene	93.8%
d4-1,2-Dichlorobenzene	107%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: MB-120408

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-120408

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32032

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 12/05/08

Date Received: NA

Instrument/Analyst: NT3/JZ

Sample Amount: 5.00 mL

Date Analyzed: 12/04/08 20:49

Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
1330-20-7	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	10	< 10	U
74-88-4	Methyl Iodide	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
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Sample ID: MB-120408
METHOD BLANK

Lab Sample ID: MB-120408
LIMS ID: 08-32032
Matrix: Water
Date Analyzed: 12/04/08 20:49

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

CAS Number	Analyte	RL	Result	Q
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	Ethylene Dibromide	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in $\mu\text{g/L}$ (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	100%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	101%

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-120108	Method Blank	20	100%	99.5%	91.5%	106%	0
LCS-120108	Lab Control	20	96.2%	99.5%	100%	101%	0
LCSD-120108	Lab Control Dup	20	95.0%	99.8%	104%	99.2%	0
OB80A	MW-1	20	105%	97.2%	89.2%	107%	0
OB80B	MW-2	20	110%	95.2%	94.8%	95.8%	0
OB80C	MW-3	20	102%	100%	98.5%	103%	0
MB-120308	Method Blank	20	101%	100%	90.5%	105%	0
LCS-120308	Lab Control	20	96.8%	98.5%	100%	99.8%	0
LCSD-120308	Lab Control Dup	20	96.0%	99.2%	100%	99.2%	0
OB80D	MW-4	20	116%	100%	89.0%	103%	0
OB80E	MW-5	20	120%	98.8%	87.2%	108%	0
OB80F	MW-6	20	122%	92.2%	84.8%	102%	0
OB80G	MW-7D	20	110%	99.8%	90.8%	105%	0
OB80H	MW-7S	20	113%	94.0%	88.0%	105%	0
OB80I	MW-8	20	103%	96.2%	102%	96.2%	0
OB80IRE	MW-8	20	122%	98.0%	92.2%	93.2%	0
OB80J	MW-9D	20	98.8%	99.0%	111%	99.5%	0
MB-120408	Method Blank	20	113%	102%	93.8%	107%	0
LCS-120408	Lab Control	20	104%	97.8%	99.5%	98.8%	0
LCSD-120408	Lab Control Dup	20	105%	98.2%	97.8%	99.2%	0
OB80K	MW-9S	20	113%	98.0%	88.0%	109%	0
OB80L	TRIP BLANKS	20	102%	100%	93.0%	106%	0

LCS/MB LIMITS

QC LIMITS

SW8260B

(DCE) = d4-1,2-Dichloroethane
(TOL) = d8-Toluene
(BFB) = Bromofluorobenzene
(DCB) = d4-1,2-Dichlorobenzene

70-131
80-120
74-121
80-120

64-146
78-125
71-120
80-121

Prep Method: SW5030B
Log Number Range: 08-32030 to 08-32042

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
 Project: QUEST FIELD NORTH LOT
 1014001.020.033

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-120408	Method Blank	5	107%	100%	98.2%	101%	0
LCS-120408	Lab Control	5	105%	101%	101%	100%	0
LCSD-120408	Lab Control Dup	5	103%	101%	101%	100%	0
OB80CRE	MW-3	5	104%	100%	98.9%	99.3%	0
OB80JDL	MW-9D	5	112%	103%	103%	102%	0

LCS/MB LIMITS

QC LIMITS

SW8260B

(DCE) = d4-1,2-Dichloroethane	79-120	80-120
(TOL) = d8-Toluene	80-120	80-120
(BFB) = Bromofluorobenzene	80-120	72-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-124

Prep Method: SW5030B
 Log Number Range: 08-32030 to 08-32042

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-120108

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LAB CONTROL SAMPLE

Lab Sample ID: LCS-120108

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32030

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized:

Date Sampled: NA

Reported: 12/05/08

Date Received: NA

Instrument/Analyst LCS: NT5/JZ

Sample Amount LCS: 20.0 mL

LCS: NT5/JZ

LCS: 20.0 mL

Date Analyzed LCS: 12/01/08 18:24

Purge Volume LCS: 20.0 mL

LCS: 12/01/08 18:58

LCS: 20.0 mL

Analyte	LCS	Spike		LCSD	Spike		RPD
		Added-LCS	Recovery		Added-LCS	Recovery	
Chloromethane	3.1	4.0	77.5%	3.0	4.0	75.0%	3.3%
Bromomethane	3.9	4.0	97.5%	3.7	4.0	92.5%	5.3%
Vinyl Chloride	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
Chloroethane	3.4	4.0	85.0%	3.2	4.0	80.0%	6.1%
Methylene Chloride	3.8	4.0	95.0%	3.8	4.0	95.0%	0.0%
Acetone	18.4	20.0	92.0%	17.8	20.0	89.0%	3.3%
Carbon Disulfide	3.8	4.0	95.0%	3.6	4.0	90.0%	5.4%
1,1-Dichloroethene	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
1,1-Dichloroethane	3.2	4.0	80.0%	3.1	4.0	77.5%	3.2%
trans-1,2-Dichloroethene	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
cis-1,2-Dichloroethene	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
Chloroform	3.2	4.0	80.0%	3.1	4.0	77.5%	3.2%
1,2-Dichloroethane	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
2-Butanone	19.4	20.0	97.0%	19.5	20.0	97.5%	0.5%
1,1,1-Trichloroethane	3.2	4.0	80.0%	3.1	4.0	77.5%	3.2%
Carbon Tetrachloride	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
Vinyl Acetate	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Bromodichloromethane	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
1,2-Dichloropropane	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
cis-1,3-Dichloropropene	3.5	4.0	87.5%	3.5	4.0	87.5%	0.0%
Trichloroethene	3.4	4.0	85.0%	3.3	4.0	82.5%	3.0%
Dibromochloromethane	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
1,1,2-Trichloroethane	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
Benzene	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
trans-1,3-Dichloropropene	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
2-Chloroethylvinylether	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromoform	3.2	4.0	80.0%	3.2	4.0	80.0%	0.0%
4-Methyl-2-Pentanone (MIBK)	20.7	20.0	104%	21.1	20.0	106%	1.9%
2-Hexanone	19.4	20.0	97.0%	20.1	20.0	100%	3.5%
Tetrachloroethene	3.4	4.0	85.0%	3.3	4.0	82.5%	3.0%
1,1,2,2-Tetrachloroethane	3.1	4.0	77.5%	3.2	4.0	80.0%	3.2%
Toluene	3.4	4.0	85.0%	3.3	4.0	82.5%	3.0%
Chlorobenzene	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
Ethylbenzene	3.4	4.0	85.0%	3.3	4.0	82.5%	3.0%
Styrene	3.7	4.0	92.5%	3.7	4.0	92.5%	0.0%
Trichlorofluoromethane	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
1,1,2-Trichloro-1,2,2-trifluoroethane	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
m,p-Xylene	7.0	8.0	87.5%	6.9	8.0	86.2%	1.4%
o-Xylene	3.5	4.0	87.5%	3.5	4.0	87.5%	0.0%
1,2-Dichlorobenzene	3.2	4.0	80.0%	3.1	4.0	77.5%	3.2%
1,3-Dichlorobenzene	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
1,4-Dichlorobenzene	3.2	4.0	80.0%	3.2	4.0	80.0%	0.0%
Acrolein	18.4	20.0	92.0%	18.2	20.0	91.0%	1.1%
Methyl Iodide	4.1	4.0	102%	3.9	4.0	97.5%	5.0%
Bromoethane	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-120108

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LAB CONTROL SAMPLE

Lab Sample ID: LCS-120108

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32030

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Analyte	LCS	Spike		LCSD	Spike		RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Acrylonitrile	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
1,1-Dichloropropene	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
Dibromomethane	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
1,1,1,2-Tetrachloroethane	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
1,2-Dibromo-3-chloropropane	3.2	4.0	80.0%	3.2	4.0	80.0%	0.0%
1,2,3-Trichloropropane	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
trans-1,4-Dichloro-2-butene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
1,3,5-Trimethylbenzene	3.5	4.0	87.5%	3.4	4.0	85.0%	2.9%
1,2,4-Trimethylbenzene	3.5	4.0	87.5%	3.4	4.0	85.0%	2.9%
Hexachlorobutadiene	3.5	4.0	87.5%	3.3	4.0	82.5%	5.9%
Ethylene Dibromide	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
Bromochloromethane	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
2,2-Dichloropropane	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
1,3-Dichloropropane	3.2	4.0	80.0%	3.3	4.0	82.5%	3.1%
Isopropylbenzene	3.5	4.0	87.5%	3.4	4.0	85.0%	2.9%
n-Propylbenzene	3.4	4.0	85.0%	3.3	4.0	82.5%	3.0%
Bromobenzene	3.2	4.0	80.0%	3.2	4.0	80.0%	0.0%
2-Chlorotoluene	3.3	4.0	82.5%	3.2	4.0	80.0%	3.1%
4-Chlorotoluene	3.3	4.0	82.5%	3.3	4.0	82.5%	0.0%
tert-Butylbenzene	3.5	4.0	87.5%	3.4	4.0	85.0%	2.9%
sec-Butylbenzene	3.5	4.0	87.5%	3.4	4.0	85.0%	2.9%
4-Isopropyltoluene	3.6	4.0	90.0%	3.5	4.0	87.5%	2.8%
n-Butylbenzene	3.5	4.0	87.5%	3.4	4.0	85.0%	2.9%
1,2,4-Trichlorobenzene	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
Naphthalene	3.5	4.0	87.5%	3.6	4.0	90.0%	2.8%
1,2,3-Trichlorobenzene	3.5	4.0	87.5%	3.5	4.0	87.5%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.2%	95.0%
d8-Toluene	99.5%	99.8%
Bromofluorobenzene	100%	104%
d4-1,2-Dichlorobenzene	101%	99.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Page 1 of 2

Sample ID: LCS-120308

LAB CONTROL SAMPLE

Lab Sample ID: LCS-120308

LIMS ID: 08-32033

Matrix: Water

Data Release Authorized:

Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT5/JZ

LCSD: NT5/JZ

Date Analyzed LCS: 12/03/08 10:14

LCSD: 12/03/08 10:44

Sample Amount LCS: 20.0 mL

LCSD: 20.0 mL

Purge Volume LCS: 20.0 mL

LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%
Bromomethane	3.4	4.0	85.0%	3.4	4.0	85.0%	0.0%
Vinyl Chloride	4.0	4.0	100%	3.8	4.0	95.0%	5.1%
Chloroethane	4.2	4.0	105%	4.0	4.0	100%	4.9%
Methylene Chloride	4.4	4.0	110%	3.8	4.0	95.0%	14.6%
Acetone	17.6	20.0	88.0%	18.2	20.0	91.0%	3.4%
Carbon Disulfide	3.9	4.0	97.5%	3.9	4.0	97.5%	0.0%
1,1-Dichloroethene	4.0	4.0	100%	3.8	4.0	95.0%	5.1%
1,1-Dichloroethane	3.9	4.0	97.5%	3.7	4.0	92.5%	5.3%
trans-1,2-Dichloroethene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
cis-1,2-Dichloroethene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Chloroform	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
1,2-Dichloroethane	4.0	4.0	100%	3.7	4.0	92.5%	7.8%
2-Butanone	19.3	20.0	96.5%	19.3	20.0	96.5%	0.0%
1,1,1-Trichloroethane	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Carbon Tetrachloride	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
Vinyl Acetate	3.5	4.0	87.5%	3.6	4.0	90.0%	2.8%
Bromodichloromethane	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
1,2-Dichloropropane	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%
cis-1,3-Dichloropropene	4.1	4.0	102%	4.0	4.0	100%	2.5%
Trichloroethene	4.1	4.0	102%	3.9	4.0	97.5%	5.0%
Dibromochloromethane	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
1,1,2-Trichloroethane	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Benzene	4.0	4.0	100%	3.8	4.0	95.0%	5.1%
trans-1,3-Dichloropropene	4.1	4.0	102%	3.9	4.0	97.5%	5.0%
2-Chloroethylvinylether	3.6	4.0	90.0%	3.7	4.0	92.5%	2.7%
Bromoform	3.7	4.0	92.5%	3.6	4.0	90.0%	2.7%
4-Methyl-2-Pentanone (MIBK)	19.7	20.0	98.5%	19.8	20.0	99.0%	0.5%
2-Hexanone	18.4	20.0	92.0%	18.4	20.0	92.0%	0.0%
Tetrachloroethene	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
1,1,2,2-Tetrachloroethane	3.7	4.0	92.5%	3.5	4.0	87.5%	5.6%
Toluene	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
Chlorobenzene	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
Ethylbenzene	4.0	4.0	100%	4.2	4.0	105%	4.9%
Styrene	4.5	4.0	112%	4.3	4.0	108%	4.5%
Trichlorofluoromethane	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
1,1,2-Trichloro-1,2,2-trifluoroethane	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
m,p-Xylene	8.5	8.0	106%	8.3	8.0	104%	2.4%
o-Xylene	4.2	4.0	105%	4.1	4.0	102%	2.4%
1,2-Dichlorobenzene	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%
1,3-Dichlorobenzene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
1,4-Dichlorobenzene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Acrolein	17.5	20.0	87.5%	17.8	20.0	89.0%	1.7%
Methyl Iodide	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
Bromoethane	4.0	4.0	100%	4.1	4.0	102%	2.5%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-120308

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LAB CONTROL SAMPLE

Lab Sample ID: LCS-120308

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32033

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Acrylonitrile	3.7	4.0	92.5%	3.8	4.0	95.0%	2.7%
1,1-Dichloropropene	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
Dibromomethane	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
1,1,1,2-Tetrachloroethane	4.0	4.0	100%	3.8	4.0	95.0%	5.1%
1,2-Dibromo-3-chloropropane	3.7	4.0	92.5%	3.5	4.0	87.5%	5.6%
1,2,3-Trichloropropane	3.8	4.0	95.0%	3.5	4.0	87.5%	8.2%
trans-1,4-Dichloro-2-butene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
1,3,5-Trimethylbenzene	4.2	4.0	105%	4.1	4.0	102%	2.4%
1,2,4-Trimethylbenzene	4.3	4.0	108%	4.2	4.0	105%	2.4%
Hexachlorobutadiene	4.1	4.0	102%	4.0	4.0	100%	2.5%
Ethylene Dibromide	4.0	4.0	100%	3.8	4.0	95.0%	5.1%
Bromochloromethane	3.9	4.0	97.5%	3.7	4.0	92.5%	5.3%
2,2-Dichloropropane	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
1,3-Dichloropropane	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%
Isopropylbenzene	4.2	4.0	105%	4.0	4.0	100%	4.9%
n-Propylbenzene	4.1	4.0	102%	4.0	4.0	100%	2.5%
Bromobenzene	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%
2-Chlorotoluene	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
4-Chlorotoluene	4.1	4.0	102%	3.9	4.0	97.5%	5.0%
tert-Butylbenzene	4.2	4.0	105%	4.0	4.0	100%	4.9%
sec-Butylbenzene	4.3	4.0	108%	4.1	4.0	102%	4.8%
4-Isopropyltoluene	4.3	4.0	108%	4.2	4.0	105%	2.4%
n-Butylbenzene	4.4	4.0	110%	4.2	4.0	105%	4.7%
1,2,4-Trichlorobenzene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Naphthalene	4.0	4.0	100%	3.8	4.0	95.0%	5.1%
1,2,3-Trichlorobenzene	4.0	4.0	100%	3.9	4.0	97.5%	2.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.8%	96.0%
d8-Toluene	98.5%	99.2%
Bromofluorobenzene	100%	100%
d4-1,2-Dichlorobenzene	99.8%	99.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-120408

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LAB CONTROL SAMPLE

Lab Sample ID: LCS-120408

QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32040

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 12/05/08

Date Received: NA

Instrument/Analyst LCS: NT5/JZ

Sample Amount LCS: 20.0 mL

LCS D: NT5/JZ

LCS D: 20.0 mL

Date Analyzed LCS: 12/04/08 12:45

Purge Volume LCS: 20.0 mL

LCS D: 12/04/08 13:12

LCS D: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCS D	Spike Added-LCS D	LCS D Recovery	RPD
Chloromethane	4.0	4.0	100%	4.2	4.0	105%	4.9%
Bromomethane	4.0	4.0	100%	4.5	4.0	112%	11.8%
Vinyl Chloride	4.0	4.0	100%	4.1	4.0	102%	2.5%
Chloroethane	4.4	4.0	110%	4.6	4.0	115%	4.4%
Methylene Chloride	4.1	4.0	102%	4.2	4.0	105%	2.4%
Acetone	18.6	20.0	93.0%	18.6	20.0	93.0%	0.0%
Carbon Disulfide	4.1	4.0	102%	4.2	4.0	105%	2.4%
1,1-Dichloroethene	4.0	4.0	100%	4.2	4.0	105%	4.9%
1,1-Dichloroethane	4.0	4.0	100%	4.1	4.0	102%	2.5%
trans-1,2-Dichloroethene	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
cis-1,2-Dichloroethene	3.8	4.0	95.0%	4.0	4.0	100%	5.1%
Chloroform	4.0	4.0	100%	4.1	4.0	102%	2.5%
1,2-Dichloroethane	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
2-Butanone	19.3	20.0	96.5%	19.6	20.0	98.0%	1.5%
1,1,1-Trichloroethane	4.0	4.0	100%	4.2	4.0	105%	4.9%
Carbon Tetrachloride	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Vinyl Acetate	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
Bromodichloromethane	3.8	4.0	95.0%	4.0	4.0	100%	5.1%
1,2-Dichloropropane	3.8	4.0	95.0%	3.9	4.0	97.5%	2.6%
cis-1,3-Dichloropropene	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
Trichloroethene	4.0	4.0	100%	4.2	4.0	105%	4.9%
Dibromochloromethane	3.8	4.0	95.0%	4.0	4.0	100%	5.1%
1,1,2-Trichloroethane	3.7	4.0	92.5%	3.8	4.0	95.0%	2.7%
Benzene	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
trans-1,3-Dichloropropene	4.0	4.0	100%	4.0	4.0	100%	0.0%
2-Chloroethylvinylether	3.2	4.0	80.0%	3.4	4.0	85.0%	6.1%
Bromoform	3.6	4.0	90.0%	3.9	4.0	97.5%	8.0%
4-Methyl-2-Pentanone (MIBK)	19.0	20.0	95.0%	19.0	20.0	95.0%	0.0%
2-Hexanone	17.3	20.0	86.5%	18.2	20.0	91.0%	5.1%
Tetrachloroethene	3.8	4.0	95.0%	4.0	4.0	100%	5.1%
1,1,2,2-Tetrachloroethane	3.6	4.0	90.0%	3.9	4.0	97.5%	8.0%
Toluene	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
Chlorobenzene	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Ethylbenzene	4.0	4.0	100%	4.4	4.0	110%	9.5%
Styrene	4.3	4.0	108%	4.4	4.0	110%	2.3%
Trichlorofluoromethane	4.2	4.0	105%	4.2	4.0	105%	0.0%
1,1,2-Trichloro-1,2,2-trifluoroethane	4.1	4.0	102%	4.2	4.0	105%	2.4%
m,p-Xylene	8.3	8.0	104%	8.7	8.0	109%	4.7%
o-Xylene	4.1	4.0	102%	4.2	4.0	105%	2.4%
1,2-Dichlorobenzene	3.6	4.0	90.0%	4.0	4.0	100%	10.5%
1,3-Dichlorobenzene	3.8	4.0	95.0%	4.2	4.0	105%	10.0%
1,4-Dichlorobenzene	3.8	4.0	95.0%	4.1	4.0	102%	7.6%
Acrolein	17.5	20.0	87.5%	17.6	20.0	88.0%	0.6%
Methyl Iodide	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
Bromoethane	4.1	4.0	102%	4.3	4.0	108%	4.8%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: LCS-120408
LAB CONTROL SAMPLE

Lab Sample ID: LCS-120408
LIMS ID: 08-32040
Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

Analyte	LCS			LCSD			RPD
	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	
Acrylonitrile	3.7	4.0	92.5%	3.9	4.0	97.5%	5.3%
1,1-Dichloropropene	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
Dibromomethane	3.8	4.0	95.0%	3.8	4.0	95.0%	0.0%
1,1,1,2-Tetrachloroethane	3.9	4.0	97.5%	4.1	4.0	102%	5.0%
1,2-Dibromo-3-chloropropane	3.5	4.0	87.5%	4.0	4.0	100%	13.3%
1,2,3-Trichloropropane	3.7	4.0	92.5%	3.9	4.0	97.5%	5.3%
trans-1,4-Dichloro-2-butene	3.5	4.0	87.5%	3.9	4.0	97.5%	10.8%
1,3,5-Trimethylbenzene	4.2	4.0	105%	4.6	4.0	115%	9.1%
1,2,4-Trimethylbenzene	4.2	4.0	105%	4.6	4.0	115%	9.1%
Hexachlorobutadiene	4.1	4.0	102%	4.3	4.0	108%	4.8%
Ethylene Dibromide	3.7	4.0	92.5%	3.8	4.0	95.0%	2.7%
Bromochloromethane	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
2,2-Dichloropropane	4.1	4.0	102%	4.2	4.0	105%	2.4%
1,3-Dichloropropane	3.7	4.0	92.5%	3.9	4.0	97.5%	5.3%
Isopropylbenzene	4.0	4.0	100%	4.4	4.0	110%	9.5%
n-Propylbenzene	4.0	4.0	100%	4.4	4.0	110%	9.5%
Bromobenzene	3.6	4.0	90.0%	4.0	4.0	100%	10.5%
2-Chlorotoluene	4.0	4.0	100%	4.3	4.0	108%	7.2%
4-Chlorotoluene	4.0	4.0	100%	4.4	4.0	110%	9.5%
tert-Butylbenzene	4.1	4.0	102%	4.5	4.0	112%	9.3%
sec-Butylbenzene	4.2	4.0	105%	4.6	4.0	115%	9.1%
4-Isopropyltoluene	4.2	4.0	105%	4.6	4.0	115%	9.1%
n-Butylbenzene	4.2	4.0	105%	4.7	4.0	118%	11.2%
1,2,4-Trichlorobenzene	3.6	4.0	90.0%	3.9	4.0	97.5%	8.0%
Naphthalene	3.4	4.0	85.0%	3.8	4.0	95.0%	11.1%
1,2,3-Trichlorobenzene	3.7	4.0	92.5%	4.1	4.0	102%	10.3%

Reported in $\mu\text{g/L}$ (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	104%	105%
d8-Toluene	97.8%	98.2%
Bromofluorobenzene	99.5%	97.8%
d4-1,2-Dichlorobenzene	98.8%	99.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B

Sample ID: LCS-120408

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-120408


QC Report No: OB80-Landau Associates, Inc.

LIMS ID: 08-32032

Project: QUEST FIELD NORTH LOT

Matrix: Water

1014001.020.033

Data Release Authorized: 

Date Sampled: NA

Reported: 12/05/08

Date Received: NA

Instrument/Analyst LCS: NT3/JZ

Sample Amount LCS: 5.00 mL

LCSD: NT3/JZ

LCSD: 5.00 mL

Date Analyzed LCS: 12/04/08 18:52

Purge Volume LCS: 5.0 mL

LCSD: 12/04/08 20:02

LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	50.2	50.0	100%	50.9	50.0	102%	1.4%
Bromomethane	49.8	50.0	99.6%	51.1	50.0	102%	2.6%
Vinyl Chloride	51.0	50.0	102%	52.0	50.0	104%	1.9%
Chloroethane	51.6	50.0	103%	58.0	50.0	116%	11.7%
Methylene Chloride	50.7	50.0	101%	50.7	50.0	101%	0.0%
Acetone	268	250	107%	243	250	97.2%	9.8%
Carbon Disulfide	49.2	50.0	98.4%	47.4	50.0	94.8%	3.7%
1,1-Dichloroethene	50.6	50.0	101%	51.4	50.0	103%	1.6%
1,1-Dichloroethane	51.0	50.0	102%	51.7	50.0	103%	1.4%
trans-1,2-Dichloroethene	50.2	50.0	100%	50.2	50.0	100%	0.0%
cis-1,2-Dichloroethene	50.4	50.0	101%	51.6	50.0	103%	2.4%
Chloroform	50.1	50.0	100%	51.5	50.0	103%	2.8%
1,2-Dichloroethane	50.0	50.0	100%	51.2	50.0	102%	2.4%
2-Butanone	280	250	112%	260	250	104%	7.4%
1,1,1-Trichloroethane	52.2	50.0	104%	52.8	50.0	106%	1.1%
Carbon Tetrachloride	50.2	50.0	100%	51.1	50.0	102%	1.8%
Vinyl Acetate	59.2	50.0	118%	56.8	50.0	114%	4.1%
Bromodichloromethane	50.6	50.0	101%	51.8	50.0	104%	2.3%
1,2-Dichloropropane	50.4	50.0	101%	52.2	50.0	104%	3.5%
cis-1,3-Dichloropropene	53.6	50.0	107%	54.4	50.0	109%	1.5%
Trichloroethene	49.4	50.0	98.8%	51.6	50.0	103%	4.4%
Dibromochloromethane	50.7	50.0	101%	50.9	50.0	102%	0.4%
1,1,2-Trichloroethane	48.2	50.0	96.4%	49.5	50.0	99.0%	2.7%
Benzene	49.4	50.0	98.8%	50.7	50.0	101%	2.6%
trans-1,3-Dichloropropene	52.3	50.0	105%	52.7	50.0	105%	0.8%
2-Chloroethylvinylether	47.1	50.0	94.2%	46.5	50.0	93.0%	1.3%
Bromoform	49.5	50.0	99.0%	49.3	50.0	98.6%	0.4%
4-Methyl-2-Pentanone (MIBK)	288	250	115%	275	250	110%	4.6%
2-Hexanone	282	250	113%	262	250	105%	7.4%
Tetrachloroethene	48.4	50.0	96.8%	49.6	50.0	99.2%	2.4%
1,1,2,2-Tetrachloroethane	48.9	50.0	97.8%	48.6	50.0	97.2%	0.6%
Toluene	49.2	50.0	98.4%	50.6	50.0	101%	2.8%
Chlorobenzene	47.8	50.0	95.6%	49.1	50.0	98.2%	2.7%
Ethylbenzene	50.3	50.0	101%	51.4	50.0	103%	2.2%
Styrene	46.1	50.0	92.2%	47.5	50.0	95.0%	3.0%
Trichlorofluoromethane	54.5	50.0	109%	55.3	50.0	111%	1.5%
1,1,2-Trichloro-1,2,2-trifluoroethane	51.8	50.0	104%	50.4	50.0	101%	2.7%
m,p-Xylene	104	100	104%	107	100	107%	2.8%
o-Xylene	54.0	50.0	108%	55.6	50.0	111%	2.9%
1,2-Dichlorobenzene	47.5	50.0	95.0%	47.8	50.0	95.6%	0.6%
1,3-Dichlorobenzene	48.8	50.0	97.6%	49.3	50.0	98.6%	1.0%
1,4-Dichlorobenzene	47.4	50.0	94.8%	48.3	50.0	96.6%	1.9%
Acrolein	262	250	105%	220	250	88.0%	17.4%
Methyl Iodide	58.8	50.0	118%	61.2	50.0	122%	4.0%
Bromoethane	51.6	50.0	103%	50.5	50.0	101%	2.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260B
Page 2 of 2

Sample ID: LCS-120408
LAB CONTROL SAMPLE

Lab Sample ID: LCS-120408
LIMS ID: 08-32032
Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

Analyte	LCS			LCSD			RPD
	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	
Acrylonitrile	56.9	50.0	114%	52.4	50.0	105%	8.2%
1,1-Dichloropropene	53.0	50.0	106%	53.8	50.0	108%	1.5%
Dibromomethane	48.7	50.0	97.4%	49.6	50.0	99.2%	1.8%
1,1,1,2-Tetrachloroethane	48.1	50.0	96.2%	49.7	50.0	99.4%	3.3%
1,2-Dibromo-3-chloropropane	51.0	50.0	102%	48.9	50.0	97.8%	4.2%
1,2,3-Trichloropropane	48.1	50.0	96.2%	47.5	50.0	95.0%	1.3%
trans-1,4-Dichloro-2-butene	57.3	50.0	115%	53.7	50.0	107%	6.5%
1,3,5-Trimethylbenzene	54.5	50.0	109%	56.2	50.0	112%	3.1%
1,2,4-Trimethylbenzene	55.1	50.0	110%	56.4	50.0	113%	2.3%
Hexachlorobutadiene	50.0	50.0	100%	50.9	50.0	102%	1.8%
Ethylene Dibromide	49.7	50.0	99.4%	50.9	50.0	102%	2.4%
Bromochloromethane	51.0	50.0	102%	50.9	50.0	102%	0.2%
2,2-Dichloropropane	52.2	50.0	104%	52.7	50.0	105%	1.0%
1,3-Dichloropropane	49.9	50.0	99.8%	51.0	50.0	102%	2.2%
Isopropylbenzene	54.0	50.0	108%	55.5	50.0	111%	2.7%
n-Propylbenzene	53.6	50.0	107%	54.8	50.0	110%	2.2%
Bromobenzene	48.6	50.0	97.2%	49.5	50.0	99.0%	1.8%
2-Chlorotoluene	51.2	50.0	102%	52.3	50.0	105%	2.1%
4-Chlorotoluene	52.1	50.0	104%	53.2	50.0	106%	2.1%
tert-Butylbenzene	55.1	50.0	110%	55.8	50.0	112%	1.3%
sec-Butylbenzene	55.3	50.0	111%	56.8	50.0	114%	2.7%
4-Isopropyltoluene	56.7	50.0	113%	58.1	50.0	116%	2.4%
n-Butylbenzene	57.4	50.0	115%	59.1	50.0	118%	2.9%
1,2,4-Trichlorobenzene	52.4	50.0	105%	52.9	50.0	106%	0.9%
Naphthalene	44.3	50.0	88.6%	43.9	50.0	87.8%	0.9%
1,2,3-Trichlorobenzene	50.5	50.0	101%	51.1	50.0	102%	1.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	105%	103%
d8-Toluene	101%	101%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	100%	100%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Water

Data Release Authorized: *MMW*
 Reported: 12/02/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08



ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-120108 08-32030	Method Blank	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 97.2% 96.7%
OB80A 08-32030	MW-1	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 103% 100%
OB80B 08-32031	MW-2	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 101% 100%
OB80C 08-32032	MW-3	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	0.37 GRO 103% 101%
OB80D 08-32033	MW-4	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 99.7% 100%
OB80E 08-32034	MW-5	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 99.2% 98.0%
OB80F 08-32035	MW-6	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 98.1% 96.2%
OB80G 08-32036	MW-7D	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 96.3% 95.2%
OB80H 08-32037	MW-7S	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 99.0% 99.8%
OB80I 08-32038	MW-8	12/01/08 PID3	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 100% 100%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Water

Data Release Authorized: *mmw*
 Reported: 12/02/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08



ARI ID	Client ID	Analysis Date	DL	Range	Result
OB80J 08-32039	MW-9D	12/01/08 PID3	1.0	Gasoline	9.7
				HC ID	GAS/GRO
				Trifluorotoluene	102%
				Bromobenzene	101%
OB80K 08-32040	MW-9S	12/01/08 PID3	1.0	Gasoline	0.54
				HC ID	GRO
				Trifluorotoluene	99.5%
				Bromobenzene	99.8%
OB80L 08-32042	TRIP BLANKS	12/01/08 PID3	1.0	Gasoline	< 0.25 U
				HC ID	---
				Trifluorotoluene	98.6%
				Bromobenzene	99.1%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-120108

LAB CONTROL SAMPLE

Lab Sample ID: LCS-120108

LIMS ID: 08-32030

Matrix: Water

Data Release Authorized: *mm*

Reported: 12/02/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 12/01/08 10:06

LCSD: 12/01/08 10:31

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.10	1.00	110%	1.11	1.00	111%	0.9%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.7%	100%
Bromobenzene	97.5%	97.6%

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: OB80
Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
Event: 1014001.020.033

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-120108	97.2%	96.7%	0
LCS-120108	98.7%	97.5%	0
LCSD-120108	100%	97.6%	0
MW-1	103%	100%	0
MW-2	101%	100%	0
MW-3	103%	101%	0
MW-4	99.7%	100%	0
MW-5	99.2%	98.0%	0
MW-6	98.1%	96.2%	0
MW-7D	96.3%	95.2%	0
MW-7S	99.0%	99.8%	0
MW-8	100%	100%	0
MW-9D	102%	101%	0
MW-9S	99.5%	99.8%	0
TRIP BLANKS	98.6%	99.1%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 08-32030 to 08-32042

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 2

Matrix: Water

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Data Release Authorized: *BB*

Reported: 12/05/08


ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-112808 08-32030	Method Blank HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 88.0%
OB80A 08-32030	MW-1 HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 100%
OB80B 08-32031	MW-2 HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 105%
OB80C 08-32032	MW-3 HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 107%
OB80D 08-32033	MW-4 HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 102%
OB80E 08-32034	MW-5 HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 98.2%
OB80F 08-32035	MW-6 HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 103%
OB80G 08-32036	MW-7D HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 108%
OB80H 08-32037	MW-7S HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 70.7%
OB80I 08-32038	MW-8 HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 98.7%
OB80J 08-32039	MW-9D HC ID: DRO	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	2.0 < 0.50 U 108%
OB80K 08-32040	MW-9S HC ID: ---	11/28/08	12/04/08 FID3B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 98.9%

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned
Page 2 of 2
Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

Data Release Authorized: 
Reported: 12/05/08

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
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Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in
ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-112808	88.0%	0
LCS-112808	106%	0
LCSD-112808	101%	0
MW-1	100%	0
MW-2	105%	0
MW-3	107%	0
MW-4	102%	0
MW-5	98.2%	0
MW-6	103%	0
MW-7D	108%	0
MW-7S	70.7%	0
MW-8	98.7%	0
MW-9D	108%	0
MW-9S	98.9%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(49-118)

(45-112)

Prep Method: SW3510C
Log Number Range: 08-32030 to 08-32040

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

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Sample ID: LCS-112808

LCS/LCSD

Lab Sample ID: LCS-112808

LIMS ID: 08-32030

Matrix: Water

Data Release Authorized: *AS*

Reported: 12/05/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Date Extracted LCS/LCSD: 11/28/08

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 12/04/08 00:53

Final Extract Volume LCS: 1.0 mL

LCSD: 12/04/08 01:09

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/PKC

Dilution Factor LCS: 1.00

LCSD: FID/PKC

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.62	3.00	87.3%	2.55	3.00	85.0%	2.7%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	106%	101%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: OB80
Project: QUEST FIELD NORTH LOT
1014001.020.033

Matrix: Water
Date Received: 11/26/08

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
08-32030-112808MB1	Method Blank	500 mL	1.00 mL	11/28/08
08-32030-112808LCS1	Lab Control	500 mL	1.00 mL	11/28/08
08-32030-112808LCSD1	Lab Control Dup	500 mL	1.00 mL	11/28/08
08-32030-OB80A	MW-1	500 mL	1.00 mL	11/28/08
08-32031-OB80B	MW-2	500 mL	1.00 mL	11/28/08
08-32032-OB80C	MW-3	500 mL	1.00 mL	11/28/08
08-32033-OB80D	MW-4	500 mL	1.00 mL	11/28/08
08-32034-OB80E	MW-5	500 mL	1.00 mL	11/28/08
08-32035-OB80F	MW-6	500 mL	1.00 mL	11/28/08
08-32036-OB80G	MW-7D	500 mL	1.00 mL	11/28/08
08-32037-OB80H	MW-7S	500 mL	1.00 mL	11/28/08
08-32038-OB80I	MW-8	500 mL	1.00 mL	11/28/08
08-32039-OB80J	MW-9D	500 mL	1.00 mL	11/28/08
08-32040-OB80K	MW-9S	500 mL	1.00 mL	11/28/08

Sample ID: MW-1
SAMPLE

Lab Sample ID: OB80A
LIMS ID: 08-32030
Matrix: Water
Data Release Authorized: *WVW*
Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
Event: 1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Date Extracted: 12/01/08
Date Analyzed: 12/04/08 13:02
Instrument/Analyst: NT1/PK

Sample Amount: 410 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.12	5.6
91-57-6	2-Methylnaphthalene	0.12	0.61
90-12-0	1-Methylnaphthalene	0.12	0.32
208-96-8	Acenaphthylene	0.12	< 0.12 U
83-32-9	Acenaphthene	0.12	0.15
86-73-7	Fluorene	0.12	< 0.12 U
85-01-8	Phenanthrene	0.12	< 0.12 U
120-12-7	Anthracene	0.12	< 0.12 U
206-44-0	Fluoranthene	0.12	< 0.12 U
129-00-0	Pyrene	0.12	< 0.12 U
56-55-3	Benzo (a) anthracene	0.12	< 0.12 U
218-01-9	Chrysene	0.12	< 0.12 U
205-99-2	Benzo (b) fluoranthene	0.12	< 0.12 U
207-08-9	Benzo (k) fluoranthene	0.12	< 0.12 U
50-32-8	Benzo (a) pyrene	0.12	< 0.12 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.12	< 0.12 U
53-70-3	Dibenz (a,h) anthracene	0.12	< 0.12 U
191-24-2	Benzo (g,h,i) perylene	0.12	< 0.12 U
132-64-9	Dibenzofuran	0.12	< 0.12 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 61.0%
d14-Dibenzo (a,h) anthracene 69.3%

Sample ID: MW-2
 SAMPLE

Lab Sample ID: OB80B
 LIMS ID: 08-32031
 Matrix: Water
 Data Release Authorized: *MW*
 Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
 Project: QUEST FIELD NORTH LOT
 Event: 1014001.020.033
 Date Sampled: 11/25/08
 Date Received: 11/26/08

Date Extracted: 12/01/08
 Date Analyzed: 12/04/08 13:27
 Instrument/Analyst: NT1/PK

Sample Amount: 410 mL
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.12	7.8
91-57-6	2-Methylnaphthalene	0.12	0.85
90-12-0	1-Methylnaphthalene	0.12	0.44
208-96-8	Acenaphthylene	0.12	< 0.12 U
83-32-9	Acenaphthene	0.12	0.20
86-73-7	Fluorene	0.12	< 0.12 U
85-01-8	Phenanthrene	0.12	< 0.12 U
120-12-7	Anthracene	0.12	< 0.12 U
206-44-0	Fluoranthene	0.12	< 0.12 U
129-00-0	Pyrene	0.12	< 0.12 U
56-55-3	Benzo (a) anthracene	0.12	< 0.12 U
218-01-9	Chrysene	0.12	< 0.12 U
205-99-2	Benzo (b) fluoranthene	0.12	< 0.12 U
207-08-9	Benzo (k) fluoranthene	0.12	< 0.12 U
50-32-8	Benzo (a) pyrene	0.12	< 0.12 U
193-39-5	Indeno (1, 2, 3-cd) pyrene	0.12	< 0.12 U
53-70-3	Dibenz (a, h) anthracene	0.12	< 0.12 U
191-24-2	Benzo (g, h, i) perylene	0.12	< 0.12 U
132-64-9	Dibenzofuran	0.12	< 0.12 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 66.7%
 d14-Dibenzo (a, h) anthracene 68.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-3

SAMPLE

Lab Sample ID: OB80C

LIMS ID: 08-32032

Matrix: Water

Data Release Authorized: *MW*

Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: 11/24/08

Date Received: 11/26/08

Date Extracted: 12/01/08

Date Analyzed: 12/04/08 13:51

Instrument/Analyst: NT1/PK

Sample Amount: 410 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.12	9.3
91-57-6	2-Methylnaphthalene	0.12	1.1
90-12-0	1-Methylnaphthalene	0.12	0.57
208-96-8	Acenaphthylene	0.12	< 0.12 U
83-32-9	Acenaphthene	0.12	0.30
86-73-7	Fluorene	0.12	< 0.12 U
85-01-8	Phenanthrene	0.12	0.17
120-12-7	Anthracene	0.12	< 0.12 U
206-44-0	Fluoranthene	0.12	< 0.12 U
129-00-0	Pyrene	0.12	< 0.12 U
56-55-3	Benzo(a)anthracene	0.12	< 0.12 U
218-01-9	Chrysene	0.12	< 0.12 U
205-99-2	Benzo(b)fluoranthene	0.12	< 0.12 U
207-08-9	Benzo(k)fluoranthene	0.12	< 0.12 U
50-32-8	Benzo(a)pyrene	0.12	< 0.12 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.12	< 0.12 U
53-70-3	Dibenz(a,h)anthracene	0.12	< 0.12 U
191-24-2	Benzo(g,h,i)perylene	0.12	< 0.12 U
132-64-9	Dibenzofuran	0.12	< 0.12 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 66.0%
 d14-Dibenzo(a,h)anthracene 23.3%

Sample ID: MW-4
 SAMPLE

Lab Sample ID: OB80D
 LIMS ID: 08-32033
 Matrix: Water
 Data Release Authorized: *MMW*
 Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
 Project: QUEST FIELD NORTH LOT
 Event: 1014001.020.033
 Date Sampled: 11/24/08
 Date Received: 11/26/08

Date Extracted: 12/01/08
 Date Analyzed: 12/04/08 14:16
 Instrument/Analyst: NT1/PK

Sample Amount: 425 mL
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.12	4.4
91-57-6	2-Methylnaphthalene	0.12	0.45
90-12-0	1-Methylnaphthalene	0.12	0.29
208-96-8	Acenaphthylene	0.12	< 0.12 U
83-32-9	Acenaphthene	0.12	0.39
86-73-7	Fluorene	0.12	< 0.12 U
85-01-8	Phenanthrene	0.12	0.27
120-12-7	Anthracene	0.12	< 0.12 U
206-44-0	Fluoranthene	0.12	< 0.12 U
129-00-0	Pyrene	0.12	< 0.12 U
56-55-3	Benzo (a) anthracene	0.12	< 0.12 U
218-01-9	Chrysene	0.12	< 0.12 U
205-99-2	Benzo (b) fluoranthene	0.12	< 0.12 U
207-08-9	Benzo (k) fluoranthene	0.12	< 0.12 U
50-32-8	Benzo (a) pyrene	0.12	< 0.12 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.12	< 0.12 U
53-70-3	Dibenz (a, h) anthracene	0.12	< 0.12 U
191-24-2	Benzo (g, h, i) perylene	0.12	< 0.12 U
132-64-9	Dibenzofuran	0.12	< 0.12 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 62.0%
 d14-Dibenzo (a, h) anthracene 79.0%

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PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-5
SAMPLE

Lab Sample ID: OB80E
LIMS ID: 08-32034
Matrix: Water
Data Release Authorized: *MMW*
Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
Event: 1014001.020.033
Date Sampled: 11/24/08
Date Received: 11/26/08

Date Extracted: 12/01/08
Date Analyzed: 12/04/08 14:41
Instrument/Analyst: NT1/PK

Sample Amount: 450 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.11	1.7
91-57-6	2-Methylnaphthalene	0.11	0.18
90-12-0	1-Methylnaphthalene	0.11	0.11
208-96-8	Acenaphthylene	0.11	< 0.11 U
83-32-9	Acenaphthene	0.11	< 0.11 U
86-73-7	Fluorene	0.11	< 0.11 U
85-01-8	Phenanthrene	0.11	< 0.11 U
120-12-7	Anthracene	0.11	< 0.11 U
206-44-0	Fluoranthene	0.11	< 0.11 U
129-00-0	Pyrene	0.11	< 0.11 U
56-55-3	Benzo (a) anthracene	0.11	< 0.11 U
218-01-9	Chrysene	0.11	< 0.11 U
205-99-2	Benzo (b) fluoranthene	0.11	< 0.11 U
207-08-9	Benzo (k) fluoranthene	0.11	< 0.11 U
50-32-8	Benzo (a) pyrene	0.11	< 0.11 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.11	< 0.11 U
53-70-3	Dibenz (a, h) anthracene	0.11	< 0.11 U
191-24-2	Benzo (g, h, i) perylene	0.11	< 0.11 U
132-64-9	Dibenzofuran	0.11	< 0.11 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 58.0%
d14-Dibenzo (a, h) anthracene 54.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-6

SAMPLE

Lab Sample ID: OB80F

LIMS ID: 08-32035

Matrix: Water

Data Release Authorized: *MMW*

Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Date Extracted: 12/01/08

Date Analyzed: 12/04/08 15:05

Instrument/Analyst: NT1/PK

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	1.1
91-57-6	2-Methylnaphthalene	0.10	0.13
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 59.3%
 d14-Dibenzo (a,h) anthracene 71.7%

Sample ID: MW-7D
SAMPLE

Lab Sample ID: OB80G
LIMS ID: 08-32036
Matrix: Water
Data Release Authorized: *MW*
Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
Event: 1014001.020.033
Date Sampled: 11/24/08
Date Received: 11/26/08

Date Extracted: 12/01/08
Date Analyzed: 12/04/08 15:30
Instrument/Analyst: NT1/PK

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.58
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 63.0%
d14-Dibenzo (a,h) anthracene 77.3%

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PNA's by SW8270D-SIM GC/MS

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Sample ID: MW-7S

SAMPLE

Lab Sample ID: OB80H

LIMS ID: 08-32037

Matrix: Water

Data Release Authorized: *MW*

Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: 11/24/08

Date Received: 11/26/08

Date Extracted: 12/01/08

Date Analyzed: 12/04/08 15:55

Instrument/Analyst: NT1/PK

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.40
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a) pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 58.0%

d14-Dibenzo(a,h)anthracene 70.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-8
SAMPLE

Lab Sample ID: OB80I
LIMS ID: 08-32038
Matrix: Water
Data Release Authorized: *MW*
Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
Event: 1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Date Extracted: 12/01/08
Date Analyzed: 12/04/08 16:19
Instrument/Analyst: NT1/PK

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	4.0
91-57-6	2-Methylnaphthalene	0.10	0.47
90-12-0	1-Methylnaphthalene	0.10	0.28
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.11
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 64.3%
d14-Dibenzo (a,h) anthracene 49.0%

Sample ID: MW-9D
 SAMPLE

Lab Sample ID: OB80J
 LIMS ID: 08-32039
 Matrix: Water
 Data Release Authorized: *MW*
 Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
 Project: QUEST FIELD NORTH LOT
 Event: 1014001.020.033
 Date Sampled: 11/25/08
 Date Received: 11/26/08

Date Extracted: 12/01/08
 Date Analyzed: 12/06/08 19:05
 Instrument/Analyst: NT1/PK

Sample Amount: 500 mL
 Final Extract Volume: 0.5 mL
 Dilution Factor: 10.0

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	1.0	990 ES
91-57-6	2-Methylnaphthalene	1.0	460 E
90-12-0	1-Methylnaphthalene	1.0	300 E
208-96-8	Acenaphthylene	1.0	13
83-32-9	Acenaphthene	1.0	160 E
86-73-7	Fluorene	1.0	70
85-01-8	Phenanthrene	1.0	95
120-12-7	Anthracene	1.0	17
206-44-0	Fluoranthene	1.0	20
129-00-0	Pyrene	1.0	23
56-55-3	Benzo (a) anthracene	1.0	6.2
218-01-9	Chrysene	1.0	5.7
205-99-2	Benzo (b) fluoranthene	1.0	2.6
207-08-9	Benzo (k) fluoranthene	1.0	3.1
50-32-8	Benzo (a) pyrene	1.0	5.5
193-39-5	Indeno (1,2,3-cd) pyrene	1.0	2.3
53-70-3	Dibenz (a,h) anthracene	1.0	< 1.0 U
191-24-2	Benzo (g,h,i) perylene	1.0	2.4
132-64-9	Dibenzofuran	1.0	24

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 73.3%
 d14-Dibenzo (a,h) anthracene 56.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-9D
DILUTION

Lab Sample ID: OB80J

LIMS ID: 08-32039

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Date Extracted: 12/01/08

Date Analyzed: 12/05/08 17:33

Instrument/Analyst: NT1/VTS

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 500

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	50	4,800
91-57-6	2-Methylnaphthalene	50	660
90-12-0	1-Methylnaphthalene	50	360
208-96-8	Acenaphthylene	50	< 50 U
83-32-9	Acenaphthene	50	240
86-73-7	Fluorene	50	110
85-01-8	Phenanthrene	50	120
120-12-7	Anthracene	50	< 50 U
206-44-0	Fluoranthene	50	< 50 U
129-00-0	Pyrene	50	< 50 U
56-55-3	Benzo (a) anthracene	50	< 50 U
218-01-9	Chrysene	50	< 50 U
205-99-2	Benzo (b) fluoranthene	50	< 50 U
207-08-9	Benzo (k) fluoranthene	50	< 50 U
50-32-8	Benzo (a) pyrene	50	< 50 U
193-39-5	Indeno (1,2,3-cd) pyrene	50	< 50 U
53-70-3	Dibenz (a,h) anthracene	50	< 50 U
191-24-2	Benzo (g,h,i) perylene	50	< 50 U
132-64-9	Dibenzofuran	50	< 50 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene D
d14-Dibenzo (a,h) anthracene D

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1



Sample ID: MW-9S
SAMPLE

Lab Sample ID: OB80K

LIMS ID: 08-32040

Matrix: Water

Data Release Authorized: *MW*

Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
Event: 1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Date Extracted: 12/01/08

Date Analyzed: 12/04/08 17:09

Instrument/Analyst: NT1/PK

Sample Amount: 425 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.12	15 E
91-57-6	2-Methylnaphthalene	0.12	1.9
90-12-0	1-Methylnaphthalene	0.12	1.1
208-96-8	Acenaphthylene	0.12	< 0.12 U
83-32-9	Acenaphthene	0.12	0.67
86-73-7	Fluorene	0.12	0.19
85-01-8	Phenanthrene	0.12	0.27
120-12-7	Anthracene	0.12	< 0.12 U
206-44-0	Fluoranthene	0.12	< 0.12 U
129-00-0	Pyrene	0.12	< 0.12 U
56-55-3	Benzo (a) anthracene	0.12	< 0.12 U
218-01-9	Chrysene	0.12	< 0.12 U
205-99-2	Benzo (b) fluoranthene	0.12	< 0.12 U
207-08-9	Benzo (k) fluoranthene	0.12	< 0.12 U
50-32-8	Benzo (a) pyrene	0.12	< 0.12 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.12	< 0.12 U
53-70-3	Dibenz (a,h) anthracene	0.12	< 0.12 U
191-24-2	Benzo (g,h,i) perylene	0.12	< 0.12 U
132-64-9	Dibenzofuran	0.12	< 0.12 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 64.3%
d14-Dibenzo (a,h) anthracene 77.0%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D-SIM GC/MS

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Sample ID: MW-9S
DILUTION

Lab Sample ID: OB80K

LIMS ID: 08-32040

Matrix: Water

Data Release Authorized: *MW*

Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Date Extracted: 12/01/08

Date Analyzed: 12/05/08 17:08

Instrument/Analyst: NT1/VTS

Sample Amount: 425 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 3.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.35	16
91-57-6	2-Methylnaphthalene	0.35	1.8
90-12-0	1-Methylnaphthalene	0.35	0.95
208-96-8	Acenaphthylene	0.35	< 0.35 U
83-32-9	Acenaphthene	0.35	0.67
86-73-7	Fluorene	0.35	< 0.35 U
85-01-8	Phenanthrene	0.35	< 0.35 U
120-12-7	Anthracene	0.35	< 0.35 U
206-44-0	Fluoranthene	0.35	< 0.35 U
129-00-0	Pyrene	0.35	< 0.35 U
56-55-3	Benzo (a) anthracene	0.35	< 0.35 U
218-01-9	Chrysene	0.35	< 0.35 U
205-99-2	Benzo (b) fluoranthene	0.35	< 0.35 U
207-08-9	Benzo (k) fluoranthene	0.35	< 0.35 U
50-32-8	Benzo (a) pyrene	0.35	< 0.35 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.35	< 0.35 U
53-70-3	Dibenz (a,h) anthracene	0.35	< 0.35 U
191-24-2	Benzo (g,h,i) perylene	0.35	< 0.35 U
132-64-9	Dibenzofuran	0.35	< 0.35 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 61.0%
d14-Dibenzo (a,h) anthracene 67.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1



Sample ID: MB-120108

METHOD BLANK

Lab Sample ID: MB-120108

LIMS ID: 08-32030

Matrix: Water

Data Release Authorized: *MW*

Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

Event: 1014001.020.033

Date Sampled: NA

Date Received: NA

Date Extracted: 12/01/08

Date Analyzed: 12/04/08 11:48

Instrument/Analyst: NT1/PK

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a, h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g, h, i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 59.3%
d14-Dibenzo (a, h) anthracene 71.0%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MB-120108	59.3%	71.0%	0
LCS-120108	57.0%	71.3%	0
LCSD-120108	60.7%	78.3%	0
MW-1	61.0%	69.3%	0
MW-2	66.7%	68.7%	0
MW-3	66.0%	23.3%	0
MW-4	62.0%	79.0%	0
MW-5	58.0%	54.3%	0
MW-6	59.3%	71.7%	0
MW-7D	63.0%	77.3%	0
MW-7S	58.0%	70.3%	0
MW-8	64.3%	49.0%	0
MW-9D	73.3%	56.7%	0
MW-9D DL	D	D	0
MW-9S	64.3%	77.0%	0
MW-9S DL	61.0%	67.0%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(MNP) = d10-2-Methylnaphthalene	(49-113)	(44-112)
(DBA) = d14-Dibenzo (a, h) anthracene	(49-132)	(10-138)

Prep Method: SW3520C
Log Number Range: 08-32030 to 08-32040

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LCS-120108
LAB CONTROL SAMPLE

Lab Sample ID: LCS-120108
LIMS ID: 08-32030
Matrix: Water
Data Release Authorized: *WV*
Reported: 12/09/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
Event: 1014001.020.033
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/01/08

Sample Amount LCS: 500 mL
LCSD: 500 mL

Date Analyzed LCS: 12/04/08 12:13
LCSD: 12/04/08 12:37

Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL

Instrument/Analyst LCS: NT1/PK
LCSD: NT1/PK

Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	1.71	3.00	57.0%	1.81	3.00	60.3%	5.7%
2-Methylnaphthalene	1.74	3.00	58.0%	1.85	3.00	61.7%	6.1%
1-Methylnaphthalene	1.67	3.00	55.7%	1.74	3.00	58.0%	4.1%
Acenaphthylene	1.78	3.00	59.3%	1.90	3.00	63.3%	6.5%
Acenaphthene	1.78	3.00	59.3%	1.91	3.00	63.7%	7.0%
Fluorene	1.92	3.00	64.0%	1.99	3.00	66.3%	3.6%
Phenanthrene	1.94	3.00	64.7%	2.15	3.00	71.7%	10.3%
Anthracene	1.97	3.00	65.7%	2.12	3.00	70.7%	7.3%
Fluoranthene	2.24	3.00	74.7%	2.48	3.00	82.7%	10.2%
Pyrene	2.31	3.00	77.0%	2.45	3.00	81.7%	5.9%
Benzo(a)anthracene	2.08	3.00	69.3%	2.24	3.00	74.7%	7.4%
Chrysene	2.12	3.00	70.7%	2.28	3.00	76.0%	7.3%
Benzo(b)fluoranthene	2.07	3.00	69.0%	2.21	3.00	73.7%	6.5%
Benzo(k)fluoranthene	2.08	3.00	69.3%	2.37	3.00	79.0%	13.0%
Benzo(a)pyrene	2.06	3.00	68.7%	2.19	3.00	73.0%	6.1%
Indeno(1,2,3-cd)pyrene	1.92	3.00	64.0%	2.14	3.00	71.3%	10.8%
Dibenz(a,h)anthracene	2.01	3.00	67.0%	2.24	3.00	74.7%	10.8%
Benzo(g,h,i)perylene	1.88	3.00	62.7%	2.17	3.00	72.3%	14.3%
Dibenzofuran	1.79	3.00	59.7%	1.96	3.00	65.3%	9.1%

Reported in µg/L (ppb)


RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	57.0%	60.7%
d14-Dibenzo(a,h)anthracene	71.3%	78.3%

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
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Sample ID: MW-1
SAMPLE

Lab Sample ID: OB80A
LIMS ID: 08-32030
Matrix: Water
Data Release Authorized 
Reported: 12/16/08


QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.007	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/09/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
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Sample ID: MW-1
DUPLICATE

Lab Sample ID: OB80A
LIMS ID: 08-32030
Matrix: Water
Data Release Authorized: 
Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	7060A	0.007	0.007	0.0%	+/- 20%	
Cadmium	6010B	0.002 U	0.002 U	0.0%	+/- 0.002	L
Chromium	6010B	0.005 U	0.005 U	0.0%	+/- 0.005	L
Lead	7421	0.001 U	0.001 U	0.0%	+/- 0.001	L
Mercury	7470A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L

Reported in mg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS

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Sample ID: MW-1

MATRIX SPIKE

Lab Sample ID: OB80A

LIMS ID: 08-32030

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	7060A	0.007	0.028	0.020	105%	
Cadmium	6010B	0.002 U	0.516	0.500	103%	
Chromium	6010B	0.005 U	0.481	0.500	96.2%	
Lead	7421	0.001 U	0.023	0.020	115%	
Mercury	7470A	0.0001 U	0.0012	0.001	120%	

Reported in mg/L

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

**INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS**


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Sample ID: MW-2
SAMPLE

Lab Sample ID: OB80B

LIMS ID: 08-32031

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.003	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/09/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS

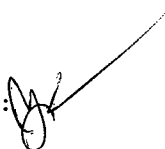
Page 1 of 1

Sample ID: MW-3
SAMPLE

Lab Sample ID: OB80C

LIMS ID: 08-32032

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/24/08


Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.005	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.002	0.002	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
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Sample ID: MW-4
SAMPLE

Lab Sample ID: OB80D
LIMS ID: 08-32033
Matrix: Water
Data Release Authorized: 
Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/24/08
Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.006	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.002	0.002	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS

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Sample ID: MW-5

SAMPLE

Lab Sample ID: OB80E

LIMS ID: 08-32034

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/24/08

Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/15/08	7440-38-2	Arsenic	0.005	0.058	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS

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Sample ID: MW-6

SAMPLE

Lab Sample ID: OB80F

LIMS ID: 08-32035

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.006	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS

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Sample ID: MW-7D

SAMPLE

Lab Sample ID: OB80G

LIMS ID: 08-32036

Matrix: Water

Data Release Authorized 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/24/08

Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.004	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


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Sample ID: MW-7S
SAMPLE

Lab Sample ID: OB80H

LIMS ID: 08-32037

Matrix: Water

Data Release Authorized 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/24/08

Date Received: 11/26/08


Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.007	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: MW-8
SAMPLE

Lab Sample ID: OB80I
LIMS ID: 08-32038
Matrix: Water
Data Release Authorized: 
Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.
Project: QUEST FIELD NORTH LOT
1014001.020.033
Date Sampled: 11/25/08
Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.007	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


Page 1 of 1

Sample ID: MW-9D
SAMPLE

Lab Sample ID: OB80J

LIMS ID: 08-32039

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.008	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


Page 1 of 1

Sample ID: MW-9S
SAMPLE

Lab Sample ID: OB80K

LIMS ID: 08-32040

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: 11/25/08

Date Received: 11/26/08

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.006	
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/10/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: OB80MB

LIMS ID: 08-32031

Matrix: Water

Data Release Authorized 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
7000A	12/01/08	7060A	12/09/08	7440-38-2	Arsenic	0.001	0.001	U
6010B	12/01/08	6010B	12/11/08	7440-43-9	Cadmium	0.002	0.002	U
6010B	12/01/08	6010B	12/11/08	7440-47-3	Chromium	0.005	0.005	U
7000A	12/01/08	7421	12/09/08	7439-92-1	Lead	0.001	0.001	U
7470A	12/01/08	7470A	12/04/08	7439-97-6	Mercury	0.0001	0.0001	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

DISSOLVED METALS

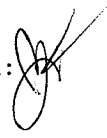
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: OB80LCS

LIMS ID: 08-32031

Matrix: Water

Data Release Authorized: 

Reported: 12/16/08

QC Report No: OB80-Landau Associates, Inc.

Project: QUEST FIELD NORTH LOT

1014001.020.033

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	7060A	0.021	0.020	105%	
Cadmium	6010B	0.531	0.500	106%	
Chromium	6010B	0.491	0.500	98.2%	
Lead	7421	0.021	0.020	105%	
Mercury	7470A	0.0022	0.0020	110%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%



Analytical Resources, Incorporated

Analytical Chemists and Consultants

August 31, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest North Lot
ARI Job: PI16 & PI54

Dear Tim:

Please find enclosed a copy of the Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted twelve soil samples July 27, 2009. The samples were received with a cooler temperature of 3.8°C. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for SVOCs, PAHs, NWTPH-HCID, NWTPH-Dx, and Total Metals, as requested. Please note that Dioxin/Furan analyses were subcontracted to SGS Laboratories in Wilmington, NC.

The SVOC matrix spike percent recovery of Benzo(g,h,i)perylene, and the matrix spike and matrix spike duplicate percent recoveries of Nitrobenzene, Benzoic Acid, Hexachlorocyclopentadiene, and 4,6-Dinitro-2-Methylphenol were outside the current ARI advisory control limits for sample **B58-(1-2)**. No corrective action is required for matrix QC.

The SVOC LCS and LCSD percent recoveries of Nitrobenzene were outside the current ARI control limits high for **LCS-072909**. All associated samples were undetected for this compound. No corrective action was required.

Several PAH matrix spike and matrix spike duplicate percent recoveries were outside the current ARI advisory control limits for sample **B58-(15-16)**. No corrective action is required for matrix QC.

Several PAH LCS and LCSD percent recoveries for **LCS-073009** were outside the current ARI control limits. The outliers were allowed as marginal exceedances. No corrective action was required.

The duplicate RPD of lead was outside the control limit for sample **B57-(1-2)**. Lead was flagged with a "*" qualifier on the Form VI. All other quality control parameters for lead were with control limits. No further corrective action was required.

Page 1 of 74



Analytical Resources, Incorporated
Analytical Chemists and Consultants

There were no other analytical complications were noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

eFile: PI16 and PI54

KB/co



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

PI16

Date 7/27/09
Page 1 of 1

Chain-of-Custody Record

Project Name <u>West North Lot</u>		Project No. <u>014040-043</u>		Testing Parameters						Turnaround Time	
Project Location/Event <u>Seattle/Additional Investigation</u>				<u>Metals 2007/6010/777</u> <u>SVOCs 8276D</u> <u>Dioxins/Furans 8276D</u> <u>PAHs 8276D</u> <u>HCID</u>						<input checked="" type="checkbox"/> Standard	
Sampler's Name <u>Elizabeth Poole</u>										<input type="checkbox"/> Accelerated	
Project Contact <u>Tim Sverson</u>										<input type="checkbox"/> _____	
Send Results To <u>Tim Sverson, Anne Halverson</u>										<u>* HCL follow ups</u>	
Sample I.D.	Date	Time	Matrix	No. of Containers							Observations/Comments
<u>B57-(1-2)</u>	<u>7/27/09</u>	<u>1120</u>	<u>S</u>	<u>2</u>	<u>XX</u>						<u>Allow water samples to settle, collect aliquot from clear portion</u>
<u>B57-(15-15)</u>		<u>1130</u>		<u>1</u>							NWTPH-Dx:
<u>B57-(15-16)</u>		<u>1130</u>		<u>1</u>			<u>X</u>				<u>run acid wash/silica gel cleanup</u>
<u>B58-(1-2)</u>		<u>1300</u>		<u>2</u>	<u>XX</u>						<u>run samples standardized to _____ product</u>
<u>B58-(15-16)</u>		<u>1310</u>		<u>1</u>			<u>X</u>				<u>Analyze for EPH if no specific product identified</u>
<u>B60-(1-2)</u>		<u>1030</u>		<u>2</u>	<u>XX</u>						VOC/BTEX/VPH (soil):
<u>B60-(15-16)</u>		<u>1040</u>		<u>1</u>			<u>X</u>				<u>non-preserved</u>
<u>B61-(1-2)</u>		<u>1220</u>		<u>2</u>	<u>XX</u>						<u>preserved w/methanol</u>
<u>B65-(1-2)</u>		<u>840</u>		<u>2</u>	<u>XX</u>	<u>X</u>					<u>preserved w/sodium bisulfate</u>
<u>B67-(1-2)</u>		<u>925</u>		<u>2</u>	<u>XX</u>						<u>Freeze upon receipt</u>
<u>B59-(1-2)</u>		<u>1345</u>		<u>2</u>	<u>XX</u>						<u>Dissolved metal water samples field filtered</u>
<u>B64-(1-2)</u>		<u>430</u>		<u>2</u>	<u>XX</u>						<u>other: <u>Metals - Arsenic</u></u> <u>Cadmium, Chromium</u> <u>Copper, Lead, Mercury</u> <u>Zinc</u>
Special Shipment/Handling or Storage Requirements <u>Store @ 6°C</u>								Method of Shipment <u>Drop off</u>			
Relinquished by <u>[Signature]</u> Signature <u>Elizabeth Poole</u> Printed Name <u>EA</u> Company Date <u>7/27/09</u> Time <u>1345</u>				Received by <u>[Signature]</u> Signature <u>A. Volgardsen</u> Printed Name <u>ARI</u> Company Date <u>7/27/09</u> Time <u>1545</u>				Relinquished by _____ Signature Printed Name Company Date _____ Time _____			
Received by _____ Signature Printed Name Company Date _____ Time _____											

PI16 : 00003



Cooler Receipt Form

ARI Client: Landau

Project Name: Quest North Lot

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier (Hand Delivered Other: _____)

Assigned ARI Job No: PI16

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)..... 3.8

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 487405

Cooler Accepted by: AV Date: 7/27/09 Time: 1545

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

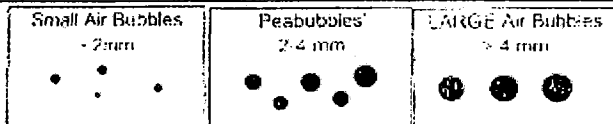
Samples Logged by: AV Date: 7/27/09 Time: 1636

**** 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"

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B57-(1-2)
SAMPLE

Lab Sample ID: PI16A
LIMS ID: 09-17546
Matrix: Soil
Data Release Authorized:
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 15:55
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.89 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 22.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	63	< 63 U
111-44-4	Bis-(2-Chloroethyl) Ether	63	< 63 U
95-57-8	2-Chlorophenol	63	< 63 U
541-73-1	1,3-Dichlorobenzene	63	< 63 U
106-46-7	1,4-Dichlorobenzene	63	< 63 U
100-51-6	Benzyl Alcohol	320	< 320 U
95-50-1	1,2-Dichlorobenzene	63	< 63 U
95-48-7	2-Methylphenol	63	< 63 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	63	< 63 U
106-44-5	4-Methylphenol	63	< 63 U
621-64-7	N-Nitroso-Di-N-Propylamine	320	< 320 U
67-72-1	Hexachloroethane	63	< 63 U
98-95-3	Nitrobenzene	63	< 63 U
78-59-1	Isophorone	63	< 63 U
88-75-5	2-Nitrophenol	63	< 63 U
105-67-9	2,4-Dimethylphenol	63	< 63 U
65-85-0	Benzoic Acid	630	< 630 U
111-91-1	bis(2-Chloroethoxy) Methane	63	< 63 U
120-83-2	2,4-Dichlorophenol	320	< 320 U
120-82-1	1,2,4-Trichlorobenzene	63	< 63 U
91-20-3	Naphthalene	63	1,300
106-47-8	4-Chloroaniline	320	< 320 U
87-68-3	Hexachlorobutadiene	63	< 63 U
59-50-7	4-Chloro-3-methylphenol	320	< 320 U
91-57-6	2-Methylnaphthalene	63	2,800
77-47-4	Hexachlorocyclopentadiene	320	< 320 U
88-06-2	2,4,6-Trichlorophenol	320	< 320 U
95-95-4	2,4,5-Trichlorophenol	320	< 320 U
91-58-7	2-Chloronaphthalene	63	< 63 U
88-74-4	2-Nitroaniline	320	< 320 U
131-11-3	Dimethylphthalate	63	< 63 U
208-96-8	Acenaphthylene	63	< 63 U
99-09-2	3-Nitroaniline	320	< 320 U
83-32-9	Acenaphthene	63	< 63 U
51-28-5	2,4-Dinitrophenol	630	< 630 U
100-02-7	4-Nitrophenol	320	< 320 U
132-64-9	Dibenzofuran	63	580
606-20-2	2,6-Dinitrotoluene	320	< 320 U
121-14-2	2,4-Dinitrotoluene	320	< 320 U
84-66-2	Diethylphthalate	63	< 63 U
7005-72-3	4-Chlorophenyl-phenylether	63	< 63 U
86-73-7	Fluorene	63	150
100-01-6	4-Nitroaniline	320	< 320 U
534-52-1	4,6-Dinitro-2-Methylphenol	630	< 630 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B57-(1-2)
SAMPLE

Lab Sample ID: PI16A
LIMS ID: 09-17546
Matrix: Soil
Date Analyzed: 07/30/09 15:55

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	340	< 340 Y
101-55-3	4-Bromophenyl-phenylether	63	< 63 U
118-74-1	Hexachlorobenzene	63	< 63 U
87-86-5	Pentachlorophenol	320	< 320 U
85-01-8	Phenanthrene	63	1,900
86-74-8	Carbazole	63	140
120-12-7	Anthracene	63	130
84-74-2	Di-n-Butylphthalate	63	72
206-44-0	Fluoranthene	63	230
129-00-0	Pyrene	63	300
85-68-7	Butylbenzylphthalate	63	< 63 U
91-94-1	3,3'-Dichlorobenzidine	320	< 320 U
56-55-3	Benzo (a) anthracene	63	260
117-81-7	bis(2-Ethylhexyl)phthalate	63	< 63 U
218-01-9	Chrysene	63	420
117-84-0	Di-n-Octyl phthalate	63	< 63 U
205-99-2	Benzo (b) fluoranthene	63	130
207-08-9	Benzo (k) fluoranthene	63	130
50-32-8	Benzo (a) pyrene	63	120
193-39-5	Indeno (1,2,3-cd) pyrene	63	< 63 U
53-70-3	Dibenz (a,h) anthracene	63	< 63 U
191-24-2	Benzo (g,h,i) perylene	63	< 63 U
90-12-0	1-Methylnaphthalene	63	2,900

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	62.8%	2-Fluorobiphenyl	66.4%
d14-p-Terphenyl	72.8%	d4-1,2-Dichlorobenzene	58.4%
d5-Phenol	41.6%	2-Fluorophenol	40.3%
2,4,6-Tribromophenol	71.5%	d4-2-Chlorophenol	48.5%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B58-(1-2)
SAMPLE

Lab Sample ID: PI16D
LIMS ID: 09-17549
Matrix: Soil
Data Release Authorized: *B*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 20:16
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.44 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 7.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	59	< 59 U
111-44-4	Bis-(2-Chloroethyl) Ether	59	< 59 U
95-57-8	2-Chlorophenol	59	< 59 U
541-73-1	1,3-Dichlorobenzene	59	< 59 U
106-46-7	1,4-Dichlorobenzene	59	< 59 U
100-51-6	Benzyl Alcohol	300	< 300 U
95-50-1	1,2-Dichlorobenzene	59	< 59 U
95-48-7	2-Methylphenol	59	< 59 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	59	< 59 U
106-44-5	4-Methylphenol	59	< 59 U
621-64-7	N-Nitroso-Di-N-Propylamine	300	< 300 U
67-72-1	Hexachloroethane	59	< 59 U
98-95-3	Nitrobenzene	59	< 59 U
78-59-1	Isophorone	59	< 59 U
88-75-5	2-Nitrophenol	59	< 59 U
105-67-9	2,4-Dimethylphenol	59	< 59 U
65-85-0	Benzoic Acid	590	< 590 U
111-91-1	bis(2-Chloroethoxy) Methane	59	< 59 U
120-83-2	2,4-Dichlorophenol	300	< 300 U
120-82-1	1,2,4-Trichlorobenzene	59	< 59 U
91-20-3	Naphthalene	59	< 59 U
106-47-8	4-Chloroaniline	300	< 300 U
87-68-3	Hexachlorobutadiene	59	< 59 U
59-50-7	4-Chloro-3-methylphenol	300	< 300 U
91-57-6	2-Methylnaphthalene	59	< 59 U
77-47-4	Hexachlorocyclopentadiene	300	< 300 U
88-06-2	2,4,6-Trichlorophenol	300	< 300 U
95-95-4	2,4,5-Trichlorophenol	300	< 300 U
91-58-7	2-Chloronaphthalene	59	< 59 U
88-74-4	2-Nitroaniline	300	< 300 U
131-11-3	Dimethylphthalate	59	< 59 U
208-96-8	Acenaphthylene	59	< 59 U
99-09-2	3-Nitroaniline	300	< 300 U
83-32-9	Acenaphthene	59	< 59 U
51-28-5	2,4-Dinitrophenol	590	< 590 U
100-02-7	4-Nitrophenol	300	< 300 U
132-64-9	Dibenzofuran	59	< 59 U
606-20-2	2,6-Dinitrotoluene	300	< 300 U
121-14-2	2,4-Dinitrotoluene	300	< 300 U
84-66-2	Diethylphthalate	59	< 59 U
7005-72-3	4-Chlorophenyl-phenylether	59	< 59 U
86-73-7	Fluorene	59	< 59 U
100-01-6	4-Nitroaniline	300	< 300 U
534-52-1	4,6-Dinitro-2-Methylphenol	590	< 590 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B58-(1-2)
SAMPLE

Lab Sample ID: PI16D
LIMS ID: 09-17549
Matrix: Soil
Date Analyzed: 07/30/09 20:16

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	59	< 59 U
101-55-3	4-Bromophenyl-phenylether	59	< 59 U
118-74-1	Hexachlorobenzene	59	< 59 U
87-86-5	Pentachlorophenol	300	< 300 U
85-01-8	Phenanthrene	59	120
86-74-8	Carbazole	59	< 59 U
120-12-7	Anthracene	59	< 59 U
84-74-2	Di-n-Butylphthalate	59	< 59 U
206-44-0	Fluoranthene	59	110
129-00-0	Pyrene	59	110
85-68-7	Butylbenzylphthalate	59	< 59 U
91-94-1	3,3'-Dichlorobenzidine	300	< 300 U
56-55-3	Benzo(a)anthracene	59	< 59 U
117-81-7	bis(2-Ethylhexyl)phthalate	59	< 59 U
218-01-9	Chrysene	59	< 59 U
117-84-0	Di-n-Octyl phthalate	59	< 59 U
205-99-2	Benzo(b)fluoranthene	59	< 59 U
207-08-9	Benzo(k)fluoranthene	59	< 59 U
50-32-8	Benzo(a)pyrene	59	< 59 U
193-39-5	Indeno(1,2,3-cd)pyrene	59	< 59 U
53-70-3	Dibenz(a,h)anthracene	59	< 59 U
191-24-2	Benzo(g,h,i)perylene	59	< 59 U
90-12-0	1-Methylnaphthalene	59	< 59 U


Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	61.6%	2-Fluorobiphenyl	69.2%
d14-p-Terphenyl	78.4%	d4-1,2-Dichlorobenzene	59.6%
d5-Phenol	60.3%	2-Fluorophenol	54.4%
2,4,6-Tribromophenol	77.9%	d4-2-Chlorophenol	61.3%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B60-(1-2)
SAMPLE

Lab Sample ID: PI16F
LIMS ID: 09-17551
Matrix: Soil
Data Release Authorized: 
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 16:32
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.94 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 13.3%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	63	< 63 U
111-44-4	Bis-(2-Chloroethyl) Ether	63	< 63 U
95-57-8	2-Chlorophenol	63	< 63 U
541-73-1	1,3-Dichlorobenzene	63	< 63 U
106-46-7	1,4-Dichlorobenzene	63	< 63 U
100-51-6	Benzyl Alcohol	320	< 320 U
95-50-1	1,2-Dichlorobenzene	63	< 63 U
95-48-7	2-Methylphenol	63	< 63 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	63	< 63 U
106-44-5	4-Methylphenol	63	< 63 U
621-64-7	N-Nitroso-Di-N-Propylamine	320	< 320 U
67-72-1	Hexachloroethane	63	< 63 U
98-95-3	Nitrobenzene	63	< 63 U
78-59-1	Isophorone	63	< 63 U
88-75-5	2-Nitrophenol	63	< 63 U
105-67-9	2,4-Dimethylphenol	63	< 63 U
65-85-0	Benzoic Acid	630	< 630 U
111-91-1	bis(2-Chloroethoxy) Methane	63	< 63 U
120-83-2	2,4-Dichlorophenol	320	< 320 U
120-82-1	1,2,4-Trichlorobenzene	63	< 63 U
91-20-3	Naphthalene	63	69
106-47-8	4-Chloroaniline	320	< 320 U
87-68-3	Hexachlorobutadiene	63	< 63 U
59-50-7	4-Chloro-3-methylphenol	320	< 320 U
91-57-6	2-Methylnaphthalene	63	< 63 U
77-47-4	Hexachlorocyclopentadiene	320	< 320 U
88-06-2	2,4,6-Trichlorophenol	320	< 320 U
95-95-4	2,4,5-Trichlorophenol	320	< 320 U
91-58-7	2-Chloronaphthalene	63	< 63 U
88-74-4	2-Nitroaniline	320	< 320 U
131-11-3	Dimethylphthalate	63	< 63 U
208-96-8	Acenaphthylene	63	180
99-09-2	3-Nitroaniline	320	< 320 U
83-32-9	Acenaphthene	63	< 63 U
51-28-5	2,4-Dinitrophenol	630	< 630 U
100-02-7	4-Nitrophenol	320	< 320 U
132-64-9	Dibenzofuran	63	< 63 U
606-20-2	2,6-Dinitrotoluene	320	< 320 U
121-14-2	2,4-Dinitrotoluene	320	< 320 U
84-66-2	Diethylphthalate	63	< 63 U
7005-72-3	4-Chlorophenyl-phenylether	63	< 63 U
86-73-7	Fluorene	63	< 63 U
100-01-6	4-Nitroaniline	320	< 320 U
534-52-1	4,6-Dinitro-2-Methylphenol	630	< 630 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B60-(1-2)
SAMPLE

Lab Sample ID: PI16F
LIMS ID: 09-17551
Matrix: Soil
Date Analyzed: 07/30/09 16:32

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	63	< 63 U
101-55-3	4-Bromophenyl-phenylether	63	< 63 U
118-74-1	Hexachlorobenzene	63	< 63 U
87-86-5	Pentachlorophenol	320	< 320 U
85-01-8	Phenanthrene	63	340
86-74-8	Carbazole	63	< 63 U
120-12-7	Anthracene	63	94
84-74-2	Di-n-Butylphthalate	63	< 63 U
206-44-0	Fluoranthene	63	1,300
129-00-0	Pyrene	63	1,500
85-68-7	Butylbenzylphthalate	63	< 63 U
91-94-1	3,3'-Dichlorobenzidine	320	< 320 U
56-55-3	Benzo (a) anthracene	63	720
117-81-7	bis(2-Ethylhexyl)phthalate	63	< 63 U
218-01-9	Chrysene	63	920
117-84-0	Di-n-Octyl phthalate	63	< 63 U
205-99-2	Benzo (b) fluoranthene	63	500
207-08-9	Benzo (k) fluoranthene	63	840
50-32-8	Benzo (a) pyrene	63	680
193-39-5	Indeno (1,2,3-cd) pyrene	63	320
53-70-3	Dibenz (a,h) anthracene	63	120
191-24-2	Benzo (g,h,i) perylene	63	320
90-12-0	1-Methylnaphthalene	63	< 63 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	61.6%	2-Fluorobiphenyl	69.6%
d14-p-Terphenyl	81.2%	d4-1,2-Dichlorobenzene	62.8%
d5-Phenol	61.9%	2-Fluorophenol	58.1%
2,4,6-Tribromophenol	90.7%	d4-2-Chlorophenol	62.9%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B61-(1-2)
SAMPLE

Lab Sample ID: PI16H
LIMS ID: 09-17553
Matrix: Soil
Data Release Authorized: *AS*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 17:10
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.03 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 13.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	62	< 62 U
111-44-4	Bis-(2-Chloroethyl) Ether	62	< 62 U
95-57-8	2-Chlorophenol	62	< 62 U
541-73-1	1,3-Dichlorobenzene	62	< 62 U
106-46-7	1,4-Dichlorobenzene	62	< 62 U
100-51-6	Benzyl Alcohol	310	< 310 U
95-50-1	1,2-Dichlorobenzene	62	< 62 U
95-48-7	2-Methylphenol	62	< 62 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	62	< 62 U
106-44-5	4-Methylphenol	62	< 62 U
621-64-7	N-Nitroso-Di-N-Propylamine	310	< 310 U
67-72-1	Hexachloroethane	62	< 62 U
98-95-3	Nitrobenzene	62	< 62 U
78-59-1	Isophorone	62	< 62 U
88-75-5	2-Nitrophenol	62	< 62 U
105-67-9	2,4-Dimethylphenol	62	< 62 U
65-85-0	Benzoic Acid	620	< 620 U
111-91-1	bis(2-Chloroethoxy) Methane	62	< 62 U
120-83-2	2,4-Dichlorophenol	310	< 310 U
120-82-1	1,2,4-Trichlorobenzene	62	< 62 U
91-20-3	Naphthalene	62	130
106-47-8	4-Chloroaniline	310	< 310 U
87-68-3	Hexachlorobutadiene	62	< 62 U
59-50-7	4-Chloro-3-methylphenol	310	< 310 U
91-57-6	2-Methylnaphthalene	62	410
77-47-4	Hexachlorocyclopentadiene	310	< 310 U
88-06-2	2,4,6-Trichlorophenol	310	< 310 U
95-95-4	2,4,5-Trichlorophenol	310	< 310 U
91-58-7	2-Chloronaphthalene	62	< 62 U
88-74-4	2-Nitroaniline	310	< 310 U
131-11-3	Dimethylphthalate	62	< 62 U
208-96-8	Acenaphthylene	62	< 62 U
99-09-2	3-Nitroaniline	310	< 310 U
83-32-9	Acenaphthene	62	< 62 U
51-28-5	2,4-Dinitrophenol	620	< 620 U
100-02-7	4-Nitrophenol	310	< 310 U
132-64-9	Dibenzofuran	62	< 62 U
606-20-2	2,6-Dinitrotoluene	310	< 310 U
121-14-2	2,4-Dinitrotoluene	310	< 310 U
84-66-2	Diethylphthalate	62	< 62 U
7005-72-3	4-Chlorophenyl-phenylether	62	< 62 U
86-73-7	Fluorene	62	< 62 U
100-01-6	4-Nitroaniline	310	< 310 U
534-52-1	4,6-Dinitro-2-Methylphenol	620	< 620 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B61-(1-2)
SAMPLE

Lab Sample ID: PI16H
LIMS ID: 09-17553
Matrix: Soil
Date Analyzed: 07/30/09 17:10

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	62	< 62 U
101-55-3	4-Bromophenyl-phenylether	62	< 62 U
118-74-1	Hexachlorobenzene	62	< 62 U
87-86-5	Pentachlorophenol	310	< 310 U
85-01-8	Phenanthrene	62	350
86-74-8	Carbazole	62	< 62 U
120-12-7	Anthracene	62	< 62 U
84-74-2	Di-n-Butylphthalate	62	< 62 U
206-44-0	Fluoranthene	62	150
129-00-0	Pyrene	62	160
85-68-7	Butylbenzylphthalate	62	< 62 U
91-94-1	3,3'-Dichlorobenzidine	310	< 310 U
56-55-3	Benzo (a) anthracene	62	98
117-81-7	bis(2-Ethylhexyl)phthalate	62	< 62 U
218-01-9	Chrysene	62	160
117-84-0	Di-n-Octyl phthalate	62	< 62 U
205-99-2	Benzo (b) fluoranthene	62	85
207-08-9	Benzo (k) fluoranthene	62	75
50-32-8	Benzo (a) pyrene	62	90
193-39-5	Indeno (1,2,3-cd) pyrene	62	< 62 U
53-70-3	Dibenz (a,h) anthracene	62	< 62 U
191-24-2	Benzo (g,h,i) perylene	62	< 62 U
90-12-0	1-Methylnaphthalene	62	270

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	58.8%	2-Fluorobiphenyl	70.8%
d14-p-Terphenyl	81.6%	d4-1,2-Dichlorobenzene	58.0%
d5-Phenol	55.7%	2-Fluorophenol	53.9%
2,4,6-Tribromophenol	82.7%	d4-2-Chlorophenol	59.5%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B65-(1-2)
SAMPLE

Lab Sample ID: PI16I
LIMS ID: 09-17554
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 17:47
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.67 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 8.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	58	< 58 U
111-44-4	Bis-(2-Chloroethyl) Ether	58	< 58 U
95-57-8	2-Chlorophenol	58	< 58 U
541-73-1	1,3-Dichlorobenzene	58	< 58 U
106-46-7	1,4-Dichlorobenzene	58	< 58 U
100-51-6	Benzyl Alcohol	290	< 290 U
95-50-1	1,2-Dichlorobenzene	58	< 58 U
95-48-7	2-Methylphenol	58	< 58 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	58	< 58 U
106-44-5	4-Methylphenol	58	< 58 U
621-64-7	N-Nitroso-Di-N-Propylamine	290	< 290 U
67-72-1	Hexachloroethane	58	< 58 U
98-95-3	Nitrobenzene	58	< 58 U
78-59-1	Isophorone	58	< 58 U
88-75-5	2-Nitrophenol	58	< 58 U
105-67-9	2,4-Dimethylphenol	58	< 58 U
65-85-0	Benzoic Acid	580	< 580 U
111-91-1	bis(2-Chloroethoxy) Methane	58	< 58 U
120-83-2	2,4-Dichlorophenol	290	< 290 U
120-82-1	1,2,4-Trichlorobenzene	58	< 58 U
91-20-3	Naphthalene	58	< 58 U
106-47-8	4-Chloroaniline	290	< 290 U
87-68-3	Hexachlorobutadiene	58	< 58 U
59-50-7	4-Chloro-3-methylphenol	290	< 290 U
91-57-6	2-Methylnaphthalene	58	< 58 U
77-47-4	Hexachlorocyclopentadiene	290	< 290 U
88-06-2	2,4,6-Trichlorophenol	290	< 290 U
95-95-4	2,4,5-Trichlorophenol	290	< 290 U
91-58-7	2-Chloronaphthalene	58	< 58 U
88-74-4	2-Nitroaniline	290	< 290 U
131-11-3	Dimethylphthalate	58	< 58 U
208-96-8	Acenaphthylene	58	< 58 U
99-09-2	3-Nitroaniline	290	< 290 U
83-32-9	Acenaphthene	58	< 58 U
51-28-5	2,4-Dinitrophenol	580	< 580 U
100-02-7	4-Nitrophenol	290	< 290 U
132-64-9	Dibenzofuran	58	< 58 U
606-20-2	2,6-Dinitrotoluene	290	< 290 U
121-14-2	2,4-Dinitrotoluene	290	< 290 U
84-66-2	Diethylphthalate	58	< 58 U
7005-72-3	4-Chlorophenyl-phenylether	58	< 58 U
86-73-7	Fluorene	58	< 58 U
100-01-6	4-Nitroaniline	290	< 290 U
534-52-1	4,6-Dinitro-2-Methylphenol	580	< 580 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B65-(1-2)
SAMPLE

Lab Sample ID: PI16I
LIMS ID: 09-17554
Matrix: Soil
Date Analyzed: 07/30/09 17:47

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	58	< 58 U
101-55-3	4-Bromophenyl-phenylether	58	< 58 U
118-74-1	Hexachlorobenzene	58	< 58 U
87-86-5	Pentachlorophenol	290	< 290 U
85-01-8	Phenanthrene	58	< 58 U
86-74-8	Carbazole	58	< 58 U
120-12-7	Anthracene	58	< 58 U
84-74-2	Di-n-Butylphthalate	58	< 58 U
206-44-0	Fluoranthene	58	< 58 U
129-00-0	Pyrene	58	< 58 U
85-68-7	Butylbenzylphthalate	58	< 58 U
91-94-1	3,3'-Dichlorobenzidine	290	< 290 U
56-55-3	Benzo(a)anthracene	58	< 58 U
117-81-7	bis(2-Ethylhexyl)phthalate	58	< 58 U
218-01-9	Chrysene	58	< 58 U
117-84-0	Di-n-Octyl phthalate	58	< 58 U
205-99-2	Benzo(b)fluoranthene	58	< 58 U
207-08-9	Benzo(k)fluoranthene	58	< 58 U
50-32-8	Benzo(a)pyrene	58	< 58 U
193-39-5	Indeno(1,2,3-cd)pyrene	58	< 58 U
53-70-3	Dibenz(a,h)anthracene	58	< 58 U
191-24-2	Benzo(g,h,i)perylene	58	< 58 U
90-12-0	1-Methylnaphthalene	58	< 58 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.8%	2-Fluorobiphenyl	70.0%
d14-p-Terphenyl	81.2%	d4-1,2-Dichlorobenzene	68.0%
d5-Phenol	63.2%	2-Fluorophenol	61.9%
2,4,6-Tribromophenol	90.7%	d4-2-Chlorophenol	66.9%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B67-(1-2)
SAMPLE

Lab Sample ID: PI16J
LIMS ID: 09-17555
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 18:24
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.35 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 13.3%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	60	< 60 U
111-44-4	Bis-(2-Chloroethyl) Ether	60	< 60 U
95-57-8	2-Chlorophenol	60	< 60 U
541-73-1	1,3-Dichlorobenzene	60	< 60 U
106-46-7	1,4-Dichlorobenzene	60	< 60 U
100-51-6	Benzyl Alcohol	300	< 300 U
95-50-1	1,2-Dichlorobenzene	60	< 60 U
95-48-7	2-Methylphenol	60	< 60 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	60	< 60 U
106-44-5	4-Methylphenol	60	< 60 U
621-64-7	N-Nitroso-Di-N-Propylamine	300	< 300 U
67-72-1	Hexachloroethane	60	< 60 U
98-95-3	Nitrobenzene	60	< 60 U
78-59-1	Isophorone	60	< 60 U
88-75-5	2-Nitrophenol	60	< 60 U
105-67-9	2,4-Dimethylphenol	60	< 60 U
65-85-0	Benzoic Acid	600	< 600 U
111-91-1	bis(2-Chloroethoxy) Methane	60	< 60 U
120-83-2	2,4-Dichlorophenol	300	< 300 U
120-82-1	1,2,4-Trichlorobenzene	60	< 60 U
91-20-3	Naphthalene	60	71
106-47-8	4-Chloroaniline	300	< 300 U
87-68-3	Hexachlorobutadiene	60	< 60 U
59-50-7	4-Chloro-3-methylphenol	300	< 300 U
91-57-6	2-Methylnaphthalene	60	83
77-47-4	Hexachlorocyclopentadiene	300	< 300 U
88-06-2	2,4,6-Trichlorophenol	300	< 300 U
95-95-4	2,4,5-Trichlorophenol	300	< 300 U
91-58-7	2-Chloronaphthalene	60	< 60 U
88-74-4	2-Nitroaniline	300	< 300 U
131-11-3	Dimethylphthalate	60	< 60 U
208-96-8	Acenaphthylene	60	< 60 U
99-09-2	3-Nitroaniline	300	< 300 U
83-32-9	Acenaphthene	60	< 60 U
51-28-5	2,4-Dinitrophenol	600	< 600 U
100-02-7	4-Nitrophenol	300	< 300 U
132-64-9	Dibenzofuran	60	< 60 U
606-20-2	2,6-Dinitrotoluene	300	< 300 U
121-14-2	2,4-Dinitrotoluene	300	< 300 U
84-66-2	Diethylphthalate	60	< 60 U
7005-72-3	4-Chlorophenyl-phenylether	60	< 60 U
86-73-7	Fluorene	60	< 60 U
100-01-6	4-Nitroaniline	300	< 300 U
534-52-1	4,6-Dinitro-2-Methylphenol	600	< 600 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B67-(1-2)
SAMPLE

Lab Sample ID: PI16J
LIMS ID: 09-17555
Matrix: Soil
Date Analyzed: 07/30/09 18:24

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	60	< 60 U
101-55-3	4-Bromophenyl-phenylether	60	< 60 U
118-74-1	Hexachlorobenzene	60	< 60 U
87-86-5	Pentachlorophenol	300	< 300 U
85-01-8	Phenanthrene	60	100
86-74-8	Carbazole	60	< 60 U
120-12-7	Anthracene	60	< 60 U
84-74-2	Di-n-Butylphthalate	60	< 60 U
206-44-0	Fluoranthene	60	260
129-00-0	Pyrene	60	310
85-68-7	Butylbenzylphthalate	60	< 60 U
91-94-1	3,3'-Dichlorobenzidine	300	< 300 U
56-55-3	Benzo (a) anthracene	60	180
117-81-7	bis(2-Ethylhexyl)phthalate	60	< 60 U
218-01-9	Chrysene	60	190
117-84-0	Di-n-Octyl phthalate	60	< 60 U
205-99-2	Benzo (b) fluoranthene	60	140
207-08-9	Benzo (k) fluoranthene	60	180
50-32-8	Benzo (a) pyrene	60	220
193-39-5	Indeno (1,2,3-cd) pyrene	60	64
53-70-3	Dibenz (a, h) anthracene	60	< 60 U
191-24-2	Benzo (g, h, i) perylene	60	62
90-12-0	1-Methylnaphthalene	60	< 60 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	62.8%	2-Fluorobiphenyl	72.4%
d14-p-Terphenyl	88.0%	d4-1,2-Dichlorobenzene	64.0%
d5-Phenol	61.6%	2-Fluorophenol	56.3%
2,4,6-Tribromophenol	99.2%	d4-2-Chlorophenol	64.5%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B59-(1-2)
SAMPLE

Lab Sample ID: PI16K
LIMS ID: 09-17556
Matrix: Soil
Data Release Authorized: *SS*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 19:02
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.81 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 15.9%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	64	< 64 U
111-44-4	Bis-(2-Chloroethyl) Ether	64	< 64 U
95-57-8	2-Chlorophenol	64	< 64 U
541-73-1	1,3-Dichlorobenzene	64	< 64 U
106-46-7	1,4-Dichlorobenzene	64	< 64 U
100-51-6	Benzyl Alcohol	320	< 320 U
95-50-1	1,2-Dichlorobenzene	64	< 64 U
95-48-7	2-Methylphenol	64	< 64 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	64	< 64 U
106-44-5	4-Methylphenol	64	< 64 U
621-64-7	N-Nitroso-Di-N-Propylamine	320	< 320 U
67-72-1	Hexachloroethane	64	< 64 U
98-95-3	Nitrobenzene	64	< 64 U
78-59-1	Isophorone	64	< 64 U
88-75-5	2-Nitrophenol	64	< 64 U
105-67-9	2,4-Dimethylphenol	64	< 64 U
65-85-0	Benzoic Acid	640	< 640 U
111-91-1	bis(2-Chloroethoxy) Methane	64	< 64 U
120-83-2	2,4-Dichlorophenol	320	< 320 U
120-82-1	1,2,4-Trichlorobenzene	64	< 64 U
91-20-3	Naphthalene	64	270
106-47-8	4-Chloroaniline	320	< 320 U
87-68-3	Hexachlorobutadiene	64	< 64 U
59-50-7	4-Chloro-3-methylphenol	320	< 320 U
91-57-6	2-Methylnaphthalene	64	< 64 U
77-47-4	Hexachlorocyclopentadiene	320	< 320 U
88-06-2	2,4,6-Trichlorophenol	320	< 320 U
95-95-4	2,4,5-Trichlorophenol	320	< 320 U
91-58-7	2-Chloronaphthalene	64	< 64 U
88-74-4	2-Nitroaniline	320	< 320 U
131-11-3	Dimethylphthalate	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
99-09-2	3-Nitroaniline	320	< 320 U
83-32-9	Acenaphthene	64	100
51-28-5	2,4-Dinitrophenol	640	< 640 U
100-02-7	4-Nitrophenol	320	< 320 U
132-64-9	Dibenzofuran	64	< 64 U
606-20-2	2,6-Dinitrotoluene	320	< 320 U
121-14-2	2,4-Dinitrotoluene	320	< 320 U
84-66-2	Diethylphthalate	64	< 64 U
7005-72-3	4-Chlorophenyl-phenylether	64	< 64 U
86-73-7	Fluorene	64	70
100-01-6	4-Nitroaniline	320	< 320 U
534-52-1	4,6-Dinitro-2-Methylphenol	640	< 640 U

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Semivolatiles by SW8270D GC/MS
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Sample ID: B59-(1-2)
SAMPLE

Lab Sample ID: PI16K
LIMS ID: 09-17556
Matrix: Soil
Date Analyzed: 07/30/09 19:02

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	64	< 64 U
101-55-3	4-Bromophenyl-phenylether	64	< 64 U
118-74-1	Hexachlorobenzene	64	< 64 U
87-86-5	Pentachlorophenol	320	< 320 U
85-01-8	Phenanthrene	64	170
86-74-8	Carbazole	64	< 64 U
120-12-7	Anthracene	64	< 64 U
84-74-2	Di-n-Butylphthalate	64	< 64 U
206-44-0	Fluoranthene	64	67
129-00-0	Pyrene	64	< 64 U
85-68-7	Butylbenzylphthalate	64	< 64 U
91-94-1	3,3'-Dichlorobenzidine	320	< 320 U
56-55-3	Benzo(a)anthracene	64	< 64 U
117-81-7	bis(2-Ethylhexyl)phthalate	64	< 64 U
218-01-9	Chrysene	64	< 64 U
117-84-0	Di-n-Octyl phthalate	64	< 64 U
205-99-2	Benzo(b)fluoranthene	64	< 64 U
207-08-9	Benzo(k)fluoranthene	64	< 64 U
50-32-8	Benzo(a)pyrene	64	< 64 U
193-39-5	Indeno(1,2,3-cd)pyrene	64	< 64 U
53-70-3	Dibenz(a,h)anthracene	64	< 64 U
191-24-2	Benzo(g,h,i)perylene	64	< 64 U
90-12-0	1-Methylnaphthalene	64	97

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.0%	2-Fluorobiphenyl	72.0%
d14-p-Terphenyl	83.6%	d4-1,2-Dichlorobenzene	70.4%
d5-Phenol	65.6%	2-Fluorophenol	64.5%
2,4,6-Tribromophenol	95.5%	d4-2-Chlorophenol	69.9%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B64-(1-2)
SAMPLE

Lab Sample ID: PI16L
LIMS ID: 09-17557
Matrix: Soil
Data Release Authorized: *AB*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 19:39
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.45 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 25.5%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	59	< 59 U
111-44-4	Bis-(2-Chloroethyl) Ether	59	< 59 U
95-57-8	2-Chlorophenol	59	< 59 U
541-73-1	1,3-Dichlorobenzene	59	< 59 U
106-46-7	1,4-Dichlorobenzene	59	< 59 U
100-51-6	Benzyl Alcohol	300	< 300 U
95-50-1	1,2-Dichlorobenzene	59	< 59 U
95-48-7	2-Methylphenol	59	< 59 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	59	< 59 U
106-44-5	4-Methylphenol	59	< 59 U
621-64-7	N-Nitroso-Di-N-Propylamine	300	< 300 U
67-72-1	Hexachloroethane	59	< 59 U
98-95-3	Nitrobenzene	59	< 59 U
78-59-1	Isophorone	59	< 59 U
88-75-5	2-Nitrophenol	59	< 59 U
105-67-9	2,4-Dimethylphenol	59	< 59 U
65-85-0	Benzoic Acid	590	< 590 U
111-91-1	bis(2-Chloroethoxy) Methane	59	< 59 U
120-83-2	2,4-Dichlorophenol	300	< 300 U
120-82-1	1,2,4-Trichlorobenzene	59	< 59 U
91-20-3	Naphthalene	59	< 59 U
106-47-8	4-Chloroaniline	300	< 300 U
87-68-3	Hexachlorobutadiene	59	< 59 U
59-50-7	4-Chloro-3-methylphenol	300	< 300 U
91-57-6	2-Methylnaphthalene	59	< 59 U
77-47-4	Hexachlorocyclopentadiene	300	< 300 U
88-06-2	2,4,6-Trichlorophenol	300	< 300 U
95-95-4	2,4,5-Trichlorophenol	300	< 300 U
91-58-7	2-Chloronaphthalene	59	< 59 U
88-74-4	2-Nitroaniline	300	< 300 U
131-11-3	Dimethylphthalate	59	< 59 U
208-96-8	Acenaphthylene	59	< 59 U
99-09-2	3-Nitroaniline	300	< 300 U
83-32-9	Acenaphthene	59	< 59 U
51-28-5	2,4-Dinitrophenol	590	< 590 U
100-02-7	4-Nitrophenol	300	< 300 U
132-64-9	Dibenzofuran	59	< 59 U
606-20-2	2,6-Dinitrotoluene	300	< 300 U
121-14-2	2,4-Dinitrotoluene	300	< 300 U
84-66-2	Diethylphthalate	59	< 59 U
7005-72-3	4-Chlorophenyl-phenylether	59	< 59 U
86-73-7	Fluorene	59	< 59 U
100-01-6	4-Nitroaniline	300	< 300 U
534-52-1	4,6-Dinitro-2-Methylphenol	590	< 590 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: B64-(1-2)
SAMPLE

Lab Sample ID: PI16L
LIMS ID: 09-17557
Matrix: Soil
Date Analyzed: 07/30/09 19:39

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	59	< 59 U
101-55-3	4-Bromophenyl-phenylether	59	< 59 U
118-74-1	Hexachlorobenzene	59	< 59 U
87-86-5	Pentachlorophenol	300	< 300 U
85-01-8	Phenanthrene	59	< 59 U
86-74-8	Carbazole	59	< 59 U
120-12-7	Anthracene	59	< 59 U
84-74-2	Di-n-Butylphthalate	59	< 59 U
206-44-0	Fluoranthene	59	< 59 U
129-00-0	Pyrene	59	< 59 U
85-68-7	Butylbenzylphthalate	59	< 59 U
91-94-1	3,3'-Dichlorobenzidine	300	< 300 U
56-55-3	Benzo(a)anthracene	59	< 59 U
117-81-7	bis(2-Ethylhexyl)phthalate	59	< 59 U
218-01-9	Chrysene	59	< 59 U
117-84-0	Di-n-Octyl phthalate	59	< 59 U
205-99-2	Benzo(b)fluoranthene	59	< 59 U
207-08-9	Benzo(k)fluoranthene	59	< 59 U
50-32-8	Benzo(a)pyrene	59	< 59 U
193-39-5	Indeno(1,2,3-cd)pyrene	59	< 59 U
53-70-3	Dibenz(a,h)anthracene	59	< 59 U
191-24-2	Benzo(g,h,i)perylene	59	< 59 U
90-12-0	1-Methylnaphthalene	59	< 59 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.2%	2-Fluorobiphenyl	69.6%
d14-p-Terphenyl	80.0%	d4-1,2-Dichlorobenzene	67.2%
d5-Phenol	61.9%	2-Fluorophenol	61.3%
2,4,6-Tribromophenol	90.9%	d4-2-Chlorophenol	67.2%

SW8270 SEMIVOLATILES SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT	OUT
B57-(1-2)	62.8%	66.4%	72.8%	58.4%	41.6%	40.3%	71.5%	48.5%	0	
MB-072909	70.0%	73.6%	92.4%	73.2%	67.2%	66.9%	100%	70.1%	0	
LCS-072909	76.0%	80.4%	91.2%	77.6%	76.8%	76.3%	100%	81.6%	0	
LCSD-072909	74.4%	78.4%	86.4%	75.2%	74.7%	76.3%	96.0%	79.2%	0	
B58-(1-2)	61.6%	69.2%	78.4%	59.6%	60.3%	54.4%	77.9%	61.3%	0	
B58-(1-2) MS	72.0%	78.8%	87.2%	68.8%	72.5%	71.5%	94.4%	75.5%	0	
B58-(1-2) MSD	71.2%	80.0%	88.4%	70.0%	73.6%	69.1%	98.1%	75.5%	0	
B60-(1-2)	61.6%	69.6%	81.2%	62.8%	61.9%	58.1%	90.7%	62.9%	0	
B61-(1-2)	58.8%	70.8%	81.6%	58.0%	55.7%	53.9%	82.7%	59.5%	0	
B65-(1-2)	64.8%	70.0%	81.2%	68.0%	63.2%	61.9%	90.7%	66.9%	0	
B67-(1-2)	62.8%	72.4%	88.0%	64.0%	61.6%	56.3%	99.2%	64.5%	0	
B59-(1-2)	68.0%	72.0%	83.6%	70.4%	65.6%	64.5%	95.5%	69.9%	0	
B64-(1-2)	65.2%	69.6%	80.0%	67.2%	61.9%	61.3%	90.9%	67.2%	0	

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(46-102)	(32-106)
(FBP) = 2-Fluorobiphenyl	(51-105)	(39-107)
(TPH) = d14-p-Terphenyl	(55-124)	(31-130)
(DCB) = d4-1,2-Dichlorobenzene	(48-104)	(38-102)
(PHL) = d5-Phenol	(44-110)	(27-112)
(2FP) = 2-Fluorophenol	(38-112)	(22-108)
(TBP) = 2,4,6-Tribromophenol	(54-120)	(31-131)
(2CP) = d4-2-Chlorophenol	(50-103)	(36-104)

Prep Method: SW3546
Log Number Range: 09-17546 to 09-17557

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Semivolatiles by SW8270D GC/MS
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Sample ID: B58-(1-2)
MS/MSD

Lab Sample ID: PI16D
LIMS ID: 09-17549
Matrix: Soil
Data Release Authorized: *AB*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted MS/MSD: 07/29/09
Date Analyzed MS: 07/30/09 20:53
MSD: 07/30/09 21:30
Instrument/Analyst MS: NT4/JZ
MSD: NT4/JZ
GPC Cleanup: NO

Sample Amount MS: 8.47 g-dry-wt
MSD: 8.49 g-dry-wt
Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL
Dilution Factor MS: 1.00
MSD: 1.00
Percent Moisture: 7.1 %

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenol	< 59.2	1040	1480	70.3%	1070	1470	72.8%	2.8%
Bis-(2-Chloroethyl) Ether	< 59.2	901	1480	60.9%	889	1470	60.5%	1.3%
2-Chlorophenol	< 59.2	1040	1480	70.3%	1070	1470	72.8%	2.8%
1,3-Dichlorobenzene	< 59.2	963	1480	65.1%	958	1470	65.2%	0.5%
1,4-Dichlorobenzene	< 59.2	972	1480	65.7%	973	1470	66.2%	0.1%
Benzyl Alcohol	< 296	1990	2950	67.5%	2030	2940	69.0%	2.0%
1,2-Dichlorobenzene	< 59.2	959	1480	64.8%	979	1470	66.6%	2.1%
2-Methylphenol	< 59.2	1020	1480	68.9%	1050	1470	71.4%	2.9%
2,2'-Oxybis(1-Chloropropane)	< 59.2	853	1480	57.6%	865	1470	58.8%	1.4%
4-Methylphenol	< 59.2	2060	2950	69.8%	2080	2940	70.7%	1.0%
N-Nitroso-Di-N-Propylamine	< 296	975	1480	65.9%	975	1470	66.3%	0.0%
Hexachloroethane	< 59.2	901	1480	60.9%	863	1470	58.7%	4.3%
Nitrobenzene	< 59.2	1530	1480	103%	1570	1470	107%	2.6%
Isophorone	< 59.2	1010	1480	68.2%	1030	1470	70.1%	2.0%
2-Nitrophenol	< 59.2	955	1480	64.5%	984	1470	66.9%	3.0%
2,4-Dimethylphenol	< 59.2	1020	1480	68.9%	1070	1470	72.8%	4.8%
Benzoic Acid	< 592	< 590 U	4430	NA	< 589 U	4420	NA	NA
bis(2-Chloroethoxy) Methane	< 59.2	977	1480	66.0%	991	1470	67.4%	1.4%
2,4-Dichlorophenol	< 296	1090	1480	73.6%	1140	1470	77.6%	4.5%
1,2,4-Trichlorobenzene	< 59.2	1030	1480	69.6%	1050	1470	71.4%	1.9%
Naphthalene	< 59.2	1050	1480	70.9%	1080	1470	73.5%	2.8%
4-Chloroaniline	< 296	3150	3540	89.0%	3290	3530	93.2%	4.3%
Hexachlorobutadiene	< 59.2	1060	1480	71.6%	1070	1470	72.8%	0.9%
4-Chloro-3-methylphenol	< 296	1140	1480	77.0%	1170	1470	79.6%	2.6%
2-Methylnaphthalene	< 59.2	1110	1480	75.0%	1150	1470	78.2%	3.5%
Hexachlorocyclopentadiene	< 296	541	4430	12.2%	355	4420	8.0%	41.5%
2,4,6-Trichlorophenol	< 296	1050	1480	70.9%	1150	1470	78.2%	9.1%
2,4,5-Trichlorophenol	< 296	1150	1480	77.7%	1230	1470	83.7%	6.7%
2-Chloronaphthalene	< 59.2	1090	1480	73.6%	1140	1470	77.6%	4.5%
2-Nitroaniline	< 296	1100	1480	74.3%	1140	1470	77.6%	3.6%
Dimethylphthalate	< 59.2	1110	1480	75.0%	1160	1470	78.9%	4.4%
Acenaphthylene	< 59.2	1150	1480	77.7%	1180	1470	80.3%	2.6%
3-Nitroaniline	< 296	3790	3780	100%	4040	3770	107%	6.4%
Acenaphthene	< 59.2	1130	1480	76.4%	1200	1470	81.6%	6.0%
2,4-Dinitrophenol	< 592	608	4430	13.7%	615	4420	13.9%	1.1%
4-Nitrophenol	< 296	1240	1480	83.8%	1330	1470	90.5%	7.0%
Dibenzofuran	< 59.2	1130	1480	76.4%	1180	1470	80.3%	4.3%
2,6-Dinitrotoluene	< 296	1120	1480	75.7%	1180	1470	80.3%	5.2%
2,4-Dinitrotoluene	< 296	1200	1480	81.1%	1260	1470	85.7%	4.9%
Diethylphthalate	< 59.2	1120	1480	75.7%	1180	1470	80.3%	5.2%
4-Chlorophenyl-phenylether	< 59.2	1140	1480	77.0%	1200	1470	81.6%	5.1%
Fluorene	< 59.2	1220	1480	82.4%	1270	1470	86.4%	4.0%
4-Nitroaniline	< 296	1250	1480	84.5%	1330	1470	90.5%	6.2%
4,6-Dinitro-2-Methylphenol	< 592	< 590 U	4430	NA	< 589 U	4420	NA	NA
N-Nitrosodiphenylamine	< 59.2	1110	1480	75.0%	1160	1470	78.9%	4.4%

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Semivolatiles by SW8270D GC/MS
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Sample ID: B58-(1-2)
MS/MSD

Lab Sample ID: PI16D
LIMS ID: 09-17549
Matrix: Soil
Date Analyzed MS: 07/30/09 20:53
MSD: 07/30/09 21:30

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
4-Bromophenyl-phenylether	< 59.2	1100	1480	74.3%	1150	1470	78.2%	4.4%
Hexachlorobenzene	< 59.2	1120	1480	75.7%	1170	1470	79.6%	4.4%
Pentachlorophenol	< 296	963	1480	65.1%	1030	1470	70.1%	6.7%
Phenanthrene	124	1290	1480	78.8%	1410	1470	87.5%	8.9%
Carbazole	< 59.2	1200	1480	81.1%	1270	1470	86.4%	5.7%
Anthracene	< 59.2	1140	1480	77.0%	1210	1470	82.3%	6.0%
Di-n-Butylphthalate	< 59.2	1070	1480	72.3%	1150	1470	78.2%	7.2%
Fluoranthene	110	1320	1480	81.8%	1460	1470	91.8%	10.1%
Pyrene	111	1260	1480	77.6%	1370	1470	85.6%	8.4%
Butylbenzylphthalate	< 59.2	1070	1480	72.3%	1130	1470	76.9%	5.5%
3,3'-Dichlorobenzidine	< 296	1960	3780	51.9%	3220	3770	85.4%	48.6%
Benzo(a)anthracene	< 59.2	1210	1480	81.8%	1280	1470	87.1%	5.6%
bis(2-Ethylhexyl)phthalate	< 59.2	1180	1480	79.7%	1210	1470	82.3%	2.5%
Chrysene	< 59.2	1250	1480	84.5%	1320	1470	89.8%	5.4%
Di-n-Octyl phthalate	< 59.2	1110	1480	75.0%	1150	1470	78.2%	3.5%
Benzo(b)fluoranthene	< 59.2	1370	1480	92.6%	1640	1470	112%	17.9%
Benzo(k)fluoranthene	< 59.2	1480	1480	100%	1470	1470	100%	0.7%
Benzo(a)pyrene	< 59.2	1250	1480	84.5%	1320	1470	89.8%	5.4%
Indeno(1,2,3-cd)pyrene	< 59.2	634	1480	42.8%	639	1470	43.5%	0.8%
Dibenz(a,h)anthracene	< 59.2	652	1480	44.1%	657	1470	44.7%	0.8%
Benzo(g,h,i)perylene	< 59.2	515	1480	34.8%	532	1470	36.2%	3.2%
1-Methylnaphthalene	< 59.2	1150	1480	77.7%	1190	1470	81.0%	3.4%

Results reported in µg/kg

RPD calculated using sample concentrations per SW846.

NA-No recovery due to high concentration of analyte in original sample and/or calculated negative recovery.

ORGANICS ANALYSIS DATA SHEET

Semivolatiles by SW8270D GC/MS

Page 1 of 2


Sample ID: B58-(1-2)

MATRIX SPIKE

Lab Sample ID: PI16D

LIMS ID: 09-17549

Matrix: Soil

Data Release Authorized: 

Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Date Extracted: 07/29/09

Date Analyzed: 07/30/09 20:53

Instrument/Analyst: NT4/JZ

GPC Cleanup: No

Sample Amount: 8.47 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 7.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	59	---
111-44-4	Bis-(2-Chloroethyl) Ether	59	---
95-57-8	2-Chlorophenol	59	---
541-73-1	1,3-Dichlorobenzene	59	---
106-46-7	1,4-Dichlorobenzene	59	---
100-51-6	Benzyl Alcohol	300	---
95-50-1	1,2-Dichlorobenzene	59	---
95-48-7	2-Methylphenol	59	---
108-60-1	2,2'-Oxybis(1-Chloropropane)	59	---
106-44-5	4-Methylphenol	59	---
621-64-7	N-Nitroso-Di-N-Propylamine	300	---
67-72-1	Hexachloroethane	59	---
98-95-3	Nitrobenzene	59	---
78-59-1	Isophorone	59	---
88-75-5	2-Nitrophenol	59	---
105-67-9	2,4-Dimethylphenol	59	---
65-85-0	Benzoic Acid	590	---
111-91-1	bis(2-Chloroethoxy) Methane	59	---
120-83-2	2,4-Dichlorophenol	300	---
120-82-1	1,2,4-Trichlorobenzene	59	---
91-20-3	Naphthalene	59	---
106-47-8	4-Chloroaniline	300	---
87-68-3	Hexachlorobutadiene	59	---
59-50-7	4-Chloro-3-methylphenol	300	---
91-57-6	2-Methylnaphthalene	59	---
77-47-4	Hexachlorocyclopentadiene	300	---
88-06-2	2,4,6-Trichlorophenol	300	---
95-95-4	2,4,5-Trichlorophenol	300	---
91-58-7	2-Chloronaphthalene	59	---
88-74-4	2-Nitroaniline	300	---
131-11-3	Dimethylphthalate	59	---
208-96-8	Acenaphthylene	59	---
99-09-2	3-Nitroaniline	300	---
83-32-9	Acenaphthene	59	---
51-28-5	2,4-Dinitrophenol	590	---
100-02-7	4-Nitrophenol	300	---
132-64-9	Dibenzofuran	59	---
606-20-2	2,6-Dinitrotoluene	300	---
121-14-2	2,4-Dinitrotoluene	300	---
84-66-2	Diethylphthalate	59	---
7005-72-3	4-Chlorophenyl-phenylether	59	---
86-73-7	Fluorene	59	---
100-01-6	4-Nitroaniline	300	---
534-52-1	4,6-Dinitro-2-Methylphenol	590	---

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B58-(1-2)
MATRIX SPIKE

Lab Sample ID: PI16D
LIMS ID: 09-17549
Matrix: Soil
Date Analyzed: 07/30/09 20:53

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	59	---
101-55-3	4-Bromophenyl-phenylether	59	---
118-74-1	Hexachlorobenzene	59	---
87-86-5	Pentachlorophenol	300	---
85-01-8	Phenanthrene	59	---
86-74-8	Carbazole	59	---
120-12-7	Anthracene	59	---
84-74-2	Di-n-Butylphthalate	59	---
206-44-0	Fluoranthene	59	---
129-00-0	Pyrene	59	---
85-68-7	Butylbenzylphthalate	59	---
91-94-1	3,3'-Dichlorobenzidine	300	---
56-55-3	Benzo(a)anthracene	59	---
117-81-7	bis(2-Ethylhexyl)phthalate	59	---
218-01-9	Chrysene	59	---
117-84-0	Di-n-Octyl phthalate	59	---
205-99-2	Benzo(b)fluoranthene	59	---
207-08-9	Benzo(k)fluoranthene	59	---
50-32-8	Benzo(a)pyrene	59	---
193-39-5	Indeno(1,2,3-cd)pyrene	59	---
53-70-3	Dibenz(a,h)anthracene	59	---
191-24-2	Benzo(g,h,i)perylene	59	---
90-12-0	1-Methylnaphthalene	59	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.0%	2-Fluorobiphenyl	78.8%
d14-p-Terphenyl	87.2%	d4-1,2-Dichlorobenzene	68.8%
d5-Phenol	72.5%	2-Fluorophenol	71.5%
2,4,6-Tribromophenol	94.4%	d4-2-Chlorophenol	75.5%

ORGANICS ANALYSIS DATA SHEET

Semivolatiles by SW8270D GC/MS

Page 1 of 2

Sample ID: B58-(1-2)

MATRIX SPIKE DUPLICATE

Lab Sample ID: PI16D

LIMS ID: 09-17549

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Date Extracted: 07/29/09

Date Analyzed: 07/30/09 21:30

Instrument/Analyst: NT4/JZ

GPC Cleanup: No

Sample Amount: 8.49 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: 7.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	59	---
111-44-4	Bis-(2-Chloroethyl) Ether	59	---
95-57-8	2-Chlorophenol	59	---
541-73-1	1,3-Dichlorobenzene	59	---
106-46-7	1,4-Dichlorobenzene	59	---
100-51-6	Benzyl Alcohol	290	---
95-50-1	1,2-Dichlorobenzene	59	---
95-48-7	2-Methylphenol	59	---
108-60-1	2,2'-Oxybis(1-Chloropropane)	59	---
106-44-5	4-Methylphenol	59	---
621-64-7	N-Nitroso-Di-N-Propylamine	290	---
67-72-1	Hexachloroethane	59	---
98-95-3	Nitrobenzene	59	---
78-59-1	Isophorone	59	---
88-75-5	2-Nitrophenol	59	---
105-67-9	2,4-Dimethylphenol	59	---
65-85-0	Benzoic Acid	590	---
111-91-1	bis(2-Chloroethoxy) Methane	59	---
120-83-2	2,4-Dichlorophenol	290	---
120-82-1	1,2,4-Trichlorobenzene	59	---
91-20-3	Naphthalene	59	---
106-47-8	4-Chloroaniline	290	---
87-68-3	Hexachlorobutadiene	59	---
59-50-7	4-Chloro-3-methylphenol	290	---
91-57-6	2-Methylnaphthalene	59	---
77-47-4	Hexachlorocyclopentadiene	290	---
88-06-2	2,4,6-Trichlorophenol	290	---
95-95-4	2,4,5-Trichlorophenol	290	---
91-58-7	2-Chloronaphthalene	59	---
88-74-4	2-Nitroaniline	290	---
131-11-3	Dimethylphthalate	59	---
208-96-8	Acenaphthylene	59	---
99-09-2	3-Nitroaniline	290	---
83-32-9	Acenaphthene	59	---
51-28-5	2,4-Dinitrophenol	590	---
100-02-7	4-Nitrophenol	290	---
132-64-9	Dibenzofuran	59	---
606-20-2	2,6-Dinitrotoluene	290	---
121-14-2	2,4-Dinitrotoluene	290	---
84-66-2	Diethylphthalate	59	---
7005-72-3	4-Chlorophenyl-phenylether	59	---
86-73-7	Fluorene	59	---
100-01-6	4-Nitroaniline	290	---
534-52-1	4,6-Dinitro-2-Methylphenol	590	---

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B58-(1-2)
MATRIX SPIKE DUPLICATE

Lab Sample ID: PI16D
LIMS ID: 09-17549
Matrix: Soil
Date Analyzed: 07/30/09 21:30

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	59	---
101-55-3	4-Bromophenyl-phenylether	59	---
118-74-1	Hexachlorobenzene	59	---
87-86-5	Pentachlorophenol	290	---
85-01-8	Phenanthrene	59	---
86-74-8	Carbazole	59	---
120-12-7	Anthracene	59	---
84-74-2	Di-n-Butylphthalate	59	---
206-44-0	Fluoranthene	59	---
129-00-0	Pyrene	59	---
85-68-7	Butylbenzylphthalate	59	---
91-94-1	3,3'-Dichlorobenzidine	290	---
56-55-3	Benzo(a)anthracene	59	---
117-81-7	bis(2-Ethylhexyl)phthalate	59	---
218-01-9	Chrysene	59	---
117-84-0	Di-n-Octyl phthalate	59	---
205-99-2	Benzo(b)fluoranthene	59	---
207-08-9	Benzo(k)fluoranthene	59	---
50-32-8	Benzo(a)pyrene	59	---
193-39-5	Indeno(1,2,3-cd)pyrene	59	---
53-70-3	Dibenz(a,h)anthracene	59	---
191-24-2	Benzo(g,h,i)perylene	59	---
90-12-0	1-Methylnaphthalene	59	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	71.2%	2-Fluorobiphenyl	80.0%
d14-p-Terphenyl	88.4%	d4-1,2-Dichlorobenzene	70.0%
d5-Phenol	73.6%	2-Fluorophenol	69.1%
2,4,6-Tribromophenol	98.1%	d4-2-Chlorophenol	75.5%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: LCS-072909
LCS/LCSD

Lab Sample ID: LCS-072909
LIMS ID: 09-17549
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted LCS/LCSD: 07/29/09
Date Analyzed LCS: 07/30/09 14:41
LCSD: 07/30/09 15:18
Instrument/Analyst LCS: NT4/JZ
LCSD: NT4/JZ
GPC Cleanup: NO

Sample Amount LCS: 7.50 g
LCSD: 7.50 g
Final Extract Volume LCS: 0.5 mL
LCSD: 0.5 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Percent Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Phenol	1260	1670	75.4%	1260	1670	75.4%	0.0%
Bis-(2-Chloroethyl) Ether	1090	1670	65.3%	1110	1670	66.5%	1.8%
2-Chlorophenol	1270	1670	76.0%	1280	1670	76.6%	0.8%
1,3-Dichlorobenzene	1180	1670	70.7%	1180	1670	70.7%	0.0%
1,4-Dichlorobenzene	1180	1670	70.7%	1190	1670	71.3%	0.8%
Benzyl Alcohol	2410	3330	72.4%	2430	3330	73.0%	0.8%
1,2-Dichlorobenzene	1190	1670	71.3%	1200	1670	71.9%	0.8%
2-Methylphenol	1210	1670	72.5%	1210	1670	72.5%	0.0%
2,2'-Oxybis(1-Chloropropane)	1020	1670	61.1%	1040	1670	62.3%	1.9%
4-Methylphenol	2390	3330	71.8%	2410	3330	72.4%	0.8%
N-Nitroso-Di-N-Propylamine	1160	1670	69.5%	1170	1670	70.1%	0.9%
Hexachloroethane	1170	1670	70.1%	1170	1670	70.1%	0.0%
Nitrobenzene	1810	1670	108%	1830	1670	110%	1.1%
Isophorone	1220	1670	73.1%	1240	1670	74.3%	1.6%
2-Nitrophenol	1180	1670	70.7%	1210	1670	72.5%	2.5%
2,4-Dimethylphenol	1190	1670	71.3%	1200	1670	71.9%	0.8%
Benzoic Acid	3920	5000	78.4%	3960	5000	79.2%	1.0%
bis(2-Chloroethoxy) Methane	1170	1670	70.1%	1180	1670	70.7%	0.9%
2,4-Dichlorophenol	1270	1670	76.0%	1290	1670	77.2%	1.6%
1,2,4-Trichlorobenzene	1230	1670	73.7%	1240	1670	74.3%	0.8%
Naphthalene	1210	1670	72.5%	1220	1670	73.1%	0.8%
4-Chloroaniline	3740	4000	93.5%	3770	4000	94.2%	0.8%
Hexachlorobutadiene	1250	1670	74.9%	1260	1670	75.4%	0.8%
4-Chloro-3-methylphenol	1280	1670	76.6%	1290	1670	77.2%	0.8%
2-Methylnaphthalene	1250	1670	74.9%	1260	1670	75.4%	0.8%
Hexachlorocyclopentadiene	2380	5000	47.6%	2310	5000	46.2%	3.0%
2,4,6-Trichlorophenol	1300	1670	77.8%	1310	1670	78.4%	0.8%
2,4,5-Trichlorophenol	1330	1670	79.6%	1340	1670	80.2%	0.7%
2-Chloronaphthalene	1250	1670	74.9%	1270	1670	76.0%	1.6%
2-Nitroaniline	1260	1670	75.4%	1240	1670	74.3%	1.6%
Dimethylphthalate	1320	1670	79.0%	1310	1670	78.4%	0.8%
Acenaphthylene	1310	1670	78.4%	1310	1670	78.4%	0.0%
3-Nitroaniline	4400	4270	103%	4360	4270	102%	0.9%
Acenaphthene	1290	1670	77.2%	1300	1670	77.8%	0.8%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: LCSD-072909
LCS/LCSD

Lab Sample ID: LCS-072909
LIMS ID: 09-17549
Matrix: Soil
Date Analyzed LCS: 07/30/09 14:41
LCSD: 07/30/09 15:18

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
2,4-Dinitrophenol	3110	5000	62.2%	3150	5000	63.0%	1.3%
4-Nitrophenol	1660	1670	99.4%	1640	1670	98.2%	1.2%
Dibenzofuran	1280	1670	76.6%	1280	1670	76.6%	0.0%
2,6-Dinitrotoluene	1340	1670	80.2%	1350	1670	80.8%	0.7%
2,4-Dinitrotoluene	1430	1670	85.6%	1420	1670	85.0%	0.7%
Diethylphthalate	1330	1670	79.6%	1330	1670	79.6%	0.0%
4-Chlorophenyl-phenylether	1320	1670	79.0%	1330	1670	79.6%	0.8%
Fluorene	1360	1670	81.4%	1370	1670	82.0%	0.7%
4-Nitroaniline	1430	1670	85.6%	1430	1670	85.6%	0.0%
4,6-Dinitro-2-Methylphenol	3000	5000	60.0%	3110	5000	62.2%	3.6%
N-Nitrosodiphenylamine	1280	1670	76.6%	1260	1670	75.4%	1.6%
4-Bromophenyl-phenylether	1270	1670	76.0%	1240	1670	74.3%	2.4%
Hexachlorobenzene	1320	1670	79.0%	1290	1670	77.2%	2.3%
Pentachlorophenol	1270	1670	76.0%	1270	1670	76.0%	0.0%
Phenanthrene	1320	1670	79.0%	1320	1670	79.0%	0.0%
Carbazole	1380	1670	82.6%	1340	1670	80.2%	2.9%
Anthracene	1300	1670	77.8%	1290	1670	77.2%	0.8%
Di-n-Butylphthalate	1340	1670	80.2%	1320	1670	79.0%	1.5%
Fluoranthene	1430	1670	85.6%	1420	1670	85.0%	0.7%
Pyrene	1330	1670	79.6%	1300	1670	77.8%	2.3%
Butylbenzylphthalate	1290	1670	77.2%	1260	1670	75.4%	2.4%
3,3'-Dichlorobenzidine	3950	4270	92.5%	3900	4270	91.3%	1.3%
Benzo(a)anthracene	1380	1670	82.6%	1360	1670	81.4%	1.5%
bis(2-Ethylhexyl)phthalate	1180	1670	70.7%	1200	1670	71.9%	1.7%
Chrysene	1380	1670	82.6%	1360	1670	81.4%	1.5%
Di-n-Octyl phthalate	1190	1670	71.3%	1190	1670	71.3%	0.0%
Benzo(b)fluoranthene	1490	1670	89.2%	1480	1670	88.6%	0.7%
Benzo(k)fluoranthene	1420	1670	85.0%	1390	1670	83.2%	2.1%
Benzo(a)pyrene	1380	1670	82.6%	1360	1670	81.4%	1.5%
Indeno(1,2,3-cd)pyrene	1130	1670	67.7%	1160	1670	69.5%	2.6%
Dibenz(a,h)anthracene	1110	1670	66.5%	1130	1670	67.7%	1.8%
Benzo(g,h,i)perylene	993	1670	59.5%	1030	1670	61.7%	3.7%
1-Methylnaphthalene	1290	1670	77.2%	1310	1670	78.4%	1.5%

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	76.0%	74.4%
2-Fluorobiphenyl	80.4%	78.4%
d14-p-Terphenyl	91.2%	86.4%
d4-1,2-Dichlorobenzene	77.6%	75.2%
d5-Phenol	76.8%	74.7%
2-Fluorophenol	76.3%	76.3%
2,4,6-Tribromophenol	100%	96.0%
d4-2-Chlorophenol	81.6%	79.2%

Results reported in µg/kg
RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: MB-072909
METHOD BLANK

Lab Sample ID: MB-072909
LIMS ID: 09-17549
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/04/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: NA
Date Received: NA

Date Extracted: 07/29/09
Date Analyzed: 07/30/09 14:04
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.50 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
108-95-2	Phenol	67	< 67 U
111-44-4	Bis-(2-Chloroethyl) Ether	67	< 67 U
95-57-8	2-Chlorophenol	67	< 67 U
541-73-1	1,3-Dichlorobenzene	67	< 67 U
106-46-7	1,4-Dichlorobenzene	67	< 67 U
100-51-6	Benzyl Alcohol	330	< 330 U
95-50-1	1,2-Dichlorobenzene	67	< 67 U
95-48-7	2-Methylphenol	67	< 67 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	67	< 67 U
106-44-5	4-Methylphenol	67	< 67 U
621-64-7	N-Nitroso-Di-N-Propylamine	330	< 330 U
67-72-1	Hexachloroethane	67	< 67 U
98-95-3	Nitrobenzene	67	< 67 U
78-59-1	Isophorone	67	< 67 U
88-75-5	2-Nitrophenol	67	< 67 U
105-67-9	2,4-Dimethylphenol	67	< 67 U
65-85-0	Benzoic Acid	670	< 670 U
111-91-1	bis(2-Chloroethoxy) Methane	67	< 67 U
120-83-2	2,4-Dichlorophenol	330	< 330 U
120-82-1	1,2,4-Trichlorobenzene	67	< 67 U
91-20-3	Naphthalene	67	< 67 U
106-47-8	4-Chloroaniline	330	< 330 U
87-68-3	Hexachlorobutadiene	67	< 67 U
59-50-7	4-Chloro-3-methylphenol	330	< 330 U
91-57-6	2-Methylnaphthalene	67	< 67 U
77-47-4	Hexachlorocyclopentadiene	330	< 330 U
88-06-2	2,4,6-Trichlorophenol	330	< 330 U
95-95-4	2,4,5-Trichlorophenol	330	< 330 U
91-58-7	2-Chloronaphthalene	67	< 67 U
88-74-4	2-Nitroaniline	330	< 330 U
131-11-3	Dimethylphthalate	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
99-09-2	3-Nitroaniline	330	< 330 U
83-32-9	Acenaphthene	67	< 67 U
51-28-5	2,4-Dinitrophenol	670	< 670 U
100-02-7	4-Nitrophenol	330	< 330 U
132-64-9	Dibenzofuran	67	< 67 U
606-20-2	2,6-Dinitrotoluene	330	< 330 U
121-14-2	2,4-Dinitrotoluene	330	< 330 U
84-66-2	Diethylphthalate	67	< 67 U
7005-72-3	4-Chlorophenyl-phenylether	67	< 67 U
86-73-7	Fluorene	67	< 67 U
100-01-6	4-Nitroaniline	330	< 330 U
534-52-1	4,6-Dinitro-2-Methylphenol	670	< 670 U

Sample ID: MB-072909
 METHOD BLANK

Lab Sample ID: MB-072909
 LIMS ID: 09-17549
 Matrix: Soil
 Date Analyzed: 07/30/09 14:04

QC Report No: PI16-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	67	< 67 U
101-55-3	4-Bromophenyl-phenylether	67	< 67 U
118-74-1	Hexachlorobenzene	67	< 67 U
87-86-5	Pentachlorophenol	330	< 330 U
85-01-8	Phenanthrene	67	< 67 U
86-74-8	Carbazole	67	< 67 U
120-12-7	Anthracene	67	< 67 U
84-74-2	Di-n-Butylphthalate	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
85-68-7	Butylbenzylphthalate	67	< 67 U
91-94-1	3,3'-Dichlorobenzidine	330	< 330 U
56-55-3	Benzo(a)anthracene	67	< 67 U
117-81-7	bis(2-Ethylhexyl)phthalate	67	< 67 U
218-01-9	Chrysene	67	< 67 U
117-84-0	Di-n-Octyl phthalate	67	< 67 U
205-99-2	Benzo(b)fluoranthene	67	< 67 U
207-08-9	Benzo(k)fluoranthene	67	< 67 U
50-32-8	Benzo(a)pyrene	67	< 67 U
193-39-5	Indeno(1,2,3-cd)pyrene	67	< 67 U
53-70-3	Dibenz(a,h)anthracene	67	< 67 U
191-24-2	Benzo(g,h,i)perylene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U


Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	70.0%	2-Fluorobiphenyl	73.6%
d14-p-Terphenyl	92.4%	d4-1,2-Dichlorobenzene	73.2%
d5-Phenol	67.2%	2-Fluorophenol	66.9%
2,4,6-Tribromophenol	100%	d4-2-Chlorophenol	70.1%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: B57-(15-16)
SAMPLE

Lab Sample ID: PI16C
LIMS ID: 09-17548
Matrix: Soil
Data Release Authorized: 
Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/30/09
Date Analyzed: 08/03/09 16:15
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.2 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 62.3%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.9	100
91-57-6	2-Methylnaphthalene	4.9	180
90-12-0	1-Methylnaphthalene	4.9	220
208-96-8	Acenaphthylene	4.9	12
83-32-9	Acenaphthene	4.9	19
86-73-7	Fluorene	4.9	48
85-01-8	Phenanthrene	4.9	260
120-12-7	Anthracene	4.9	39
206-44-0	Fluoranthene	4.9	120
129-00-0	Pyrene	4.9	130
56-55-3	Benzo (a) anthracene	4.9	82
218-01-9	Chrysene	4.9	120
205-99-2	Benzo (b) fluoranthene	4.9	55
207-08-9	Benzo (k) fluoranthene	4.9	73
50-32-8	Benzo (a) pyrene	4.9	96
193-39-5	Indeno (1,2,3-cd) pyrene	4.9	43
53-70-3	Dibenz (a,h) anthracene	4.9	29
191-24-2	Benzo (g,h,i) perylene	4.9	43
132-64-9	Dibenzofuran	4.9	50

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 78.0%
d14-Dibenzo (a,h) anthracen 69.3%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: B58-(15-16)
SAMPLE

Lab Sample ID: PI16E
LIMS ID: 09-17550
Matrix: Soil
Data Release Authorized:
Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/30/09
Date Analyzed: 08/03/09 16:40
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.6 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 39.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.7	210
91-57-6	2-Methylnaphthalene	4.7	150
90-12-0	1-Methylnaphthalene	4.7	130
208-96-8	Acenaphthylene	4.7	150
83-32-9	Acenaphthene	4.7	140
86-73-7	Fluorene	4.7	370
85-01-8	Phenanthrene	4.7	1,800 E
120-12-7	Anthracene	4.7	520 E
206-44-0	Fluoranthene	4.7	1,800 E
129-00-0	Pyrene	4.7	1,500 E
56-55-3	Benzo (a) anthracene	4.7	810 E
218-01-9	Chrysene	4.7	800 E
205-99-2	Benzo (b) fluoranthene	4.7	660 E
207-08-9	Benzo (k) fluoranthene	4.7	660 E
50-32-8	Benzo (a) pyrene	4.7	810 E
193-39-5	Indeno (1,2,3-cd) pyrene	4.7	260
53-70-3	Dibenz (a,h) anthracene	4.7	130
191-24-2	Benzo (g,h,i) perylene	4.7	210
132-64-9	Dibenzofuran	4.7	170

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 93.7%
d14-Dibenzo (a,h) anthracen 97.3%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: B58-(15-16)
DILUTION

Lab Sample ID: PI16E
LIMS ID: 09-17550
Matrix: Soil
Data Release Authorized: *B*
Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/30/09
Date Analyzed: 08/07/09 12:58
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.6 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 10.0
Percent Moisture: 39.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	47	210
91-57-6	2-Methylnaphthalene	47	140
90-12-0	1-Methylnaphthalene	47	110
208-96-8	Acenaphthylene	47	150
83-32-9	Acenaphthene	47	150
86-73-7	Fluorene	47	360
85-01-8	Phenanthrene	47	1,800
120-12-7	Anthracene	47	500
206-44-0	Fluoranthene	47	2,000
129-00-0	Pyrene	47	1,600
56-55-3	Benzo (a) anthracene	47	840
218-01-9	Chrysene	47	800
205-99-2	Benzo (b) fluoranthene	47	610
207-08-9	Benzo (k) fluoranthene	47	570
50-32-8	Benzo (a) pyrene	47	790
193-39-5	Indeno (1,2,3-cd) pyrene	47	400
53-70-3	Dibenz (a,h) anthracene	47	160
191-24-2	Benzo (g,h,i) perylene	47	420
132-64-9	Dibenzofuran	47	180


Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 80.0%
d14-Dibenzo (a,h) anthracen 117%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: B60-(15-16)
SAMPLE

Lab Sample ID: PI16G
LIMS ID: 09-17552
Matrix: Soil
Data Release Authorized: 
Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/30/09
Date Analyzed: 08/07/09 13:23
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 49.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.8	28
91-57-6	2-Methylnaphthalene	4.8	12
90-12-0	1-Methylnaphthalene	4.8	7.2
208-96-8	Acenaphthylene	4.8	37
83-32-9	Acenaphthene	4.8	5.8
86-73-7	Fluorene	4.8	19
85-01-8	Phenanthrene	4.8	260
120-12-7	Anthracene	4.8	210
206-44-0	Fluoranthene	4.8	1,500 E
129-00-0	Pyrene	4.8	1,400 E
56-55-3	Benzo (a) anthracene	4.8	1,200 E
218-01-9	Chrysene	4.8	1,200 E
205-99-2	Benzo (b) fluoranthene	4.8	800 E
207-08-9	Benzo (k) fluoranthene	4.8	800 E
50-32-8	Benzo (a) pyrene	4.8	1,300 E
193-39-5	Indeno (1,2,3-cd) pyrene	4.8	500 E
53-70-3	Dibenz (a,h) anthracene	4.8	320
191-24-2	Benzo (g,h,i) perylene	4.8	410
132-64-9	Dibenzofuran	4.8	8.6


Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 87.7%
d14-Dibenzo (a,h) anthracen 105%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: B60-(15-16)
DILUTION

Lab Sample ID: PI16G
LIMS ID: 09-17552
Matrix: Soil
Data Release Authorized: 
Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/30/09
Date Analyzed: 08/07/09 14:38
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 10.0
Percent Moisture: 49.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	48	< 48 U
91-57-6	2-Methylnaphthalene	48	< 48 U
90-12-0	1-Methylnaphthalene	48	< 48 U
208-96-8	Acenaphthylene	48	< 48 U
83-32-9	Acenaphthene	48	< 48 U
86-73-7	Fluorene	48	< 48 U
85-01-8	Phenanthrene	48	220
120-12-7	Anthracene	48	170
206-44-0	Fluoranthene	48	1,400
129-00-0	Pyrene	48	1,400
56-55-3	Benzo (a) anthracene	48	1,100
218-01-9	Chrysene	48	1,100
205-99-2	Benzo (b) fluoranthene	48	720
207-08-9	Benzo (k) fluoranthene	48	720
50-32-8	Benzo (a) pyrene	48	1,100
193-39-5	Indeno (1,2,3-cd) pyrene	48	360
53-70-3	Dibenz (a,h) anthracene	48	260
191-24-2	Benzo (g,h,i) perylene	48	270
132-64-9	Dibenzofuran	48	< 48 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 73.3%
d14-Dibenzo (a,h) anthracen 90.0%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
B57-(15-16)	78.0%	69.3%	0
MB-073009	72.3%	119%	0
LCS-073009	79.3%	120%	0
LCSD-073009	69.3%	110%	0
B58-(15-16)	93.7%	97.3%	0
B58-(15-16) DL	80.0%	117%	0
B58-(15-16) MS	91.3%	104%	0
B58-(15-16) MSD	86.0%	68.3%	0
B60-(15-16)	87.7%	105%	0
B60-(15-16) DL	73.3%	90.0%	0

LCS/MB LIMITS QC LIMITS

(MNP) = d10-2-Methylnaphthalene (35-100) (34-100)
(DBA) = d14-Dibenzo(a,h)anthracene (37-120) (10-117)

Prep Method: SW3550B
Log Number Range: 09-17548 to 09-17552

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: B58-(15-16)

MATRIX SPIKE

Lab Sample ID: PI16E

LIMS ID: 09-17550

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Date Extracted MS/MSD: 07/30/09

Sample Amount MS: 10.6 g-dry-wt

MSD: 10.6 g-dry-wt

Date Analyzed MS: 08/07/09 13:48

Final Extract Volume MS: 0.50 mL

MSD: 08/07/09 14:13

MSD: 0.50 mL

Instrument/Analyst MS: NT1/YZ

Dilution Factor MS: 1.00

MSD: NT1/YZ

MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	209	320	142	78.2%	310	142	71.1%	3.2%
2-Methylnaphthalene	149	273	142	87.3%	262	142	79.6%	4.1%
1-Methylnaphthalene	127	247	142	84.5%	237	142	77.5%	4.1%
Acenaphthylene	148	298	142	106%	283	142	95.1%	5.2%
Acenaphthene	139	309	142	120%	324	142	130%	4.7%
Fluorene	368	545 E	142	125%	549 E	142	127%	0.7%
Phenanthrene	1750 E	1720 E	142	NA	2080 E	142	NA	NA
Anthracene	519 E	703 E	142	130%	942 E	142	298%	29.1%
Fluoranthene	1840 E	1910 E	142	NA	2860 E	142	NA	NA
Pyrene	1490 E	1680 E	142	NA	2240 E	142	NA	NA
Benzo(a)anthracene	813 E	1070 E	142	NA	1570 E	142	NA	NA
Chrysene	802 E	1060 E	142	NA	1490 E	142	NA	NA
Benzo(b)fluoranthene	657 E	696 E	142	NA	1200 E	142	NA	NA
Benzo(k)fluoranthene	656 E	975 E	142	NA	1420 E	142	NA	NA
Benzo(a)pyrene	807 E	1040 E	142	NA	1410 E	142	NA	NA
Indeno(1,2,3-cd)pyrene	258	439	142	127%	419	142	113%	4.7%
Dibenz(a,h)anthracene	130	306	142	124%	275	142	102%	10.7%
Benzo(g,h,i)perylene	208	368	142	113%	325	142	82.4%	12.4%
Dibenzofuran	166	315	142	105%	325	142	112%	3.1%


Reported in µg/kg (ppb)

NA-No recovery due to high concentration of analyte in original sample, calculated negative recovery, or undetected spike.

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
 Page 1 of 1

Sample ID: B58-(15-16)
MATRIX SPIKE

Lab Sample ID: PI16E
 LIMS ID: 09-17550
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: 07/27/09
 Date Received: 07/27/09

Date Extracted: 07/30/09
 Date Analyzed: 08/07/09 13:48
 Instrument/Analyst: NT1/YZ
 GPC Cleanup: No
 Silica Gel Cleanup: Yes
 Alumina Cleanup: No

Sample Amount: 10.6 g-dry-wt
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00
 Percent Moisture: 39.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.7	---
91-57-6	2-Methylnaphthalene	4.7	---
90-12-0	1-Methylnaphthalene	4.7	---
208-96-8	Acenaphthylene	4.7	---
83-32-9	Acenaphthene	4.7	---
86-73-7	Fluorene	4.7	---
85-01-8	Phenanthrene	4.7	---
120-12-7	Anthracene	4.7	---
206-44-0	Fluoranthene	4.7	---
129-00-0	Pyrene	4.7	---
56-55-3	Benzo(a)anthracene	4.7	---
218-01-9	Chrysene	4.7	---
205-99-2	Benzo(b)fluoranthene	4.7	---
207-08-9	Benzo(k)fluoranthene	4.7	---
50-32-8	Benzo(a)pyrene	4.7	---
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	---
53-70-3	Dibenz(a,h)anthracene	4.7	---
191-24-2	Benzo(g,h,i)perylene	4.7	---
132-64-9	Dibenzofuran	4.7	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 91.3%
 d14-Dibenzo(a,h)anthracen 104%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: B58-(15-16)
MATRIX SPIKE DUPLICATE

Lab Sample ID: PI16E
LIMS ID: 09-17550
Matrix: Soil
Data Release Authorized: *AB*
Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043
Date Sampled: 07/27/09
Date Received: 07/27/09

Date Extracted: 07/30/09
Date Analyzed: 08/07/09 14:13
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.6 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 39.2%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	4.7	---
91-57-6	2-Methylnaphthalene	4.7	---
90-12-0	1-Methylnaphthalene	4.7	---
208-96-8	Acenaphthylene	4.7	---
83-32-9	Acenaphthene	4.7	---
86-73-7	Fluorene	4.7	---
85-01-8	Phenanthrene	4.7	---
120-12-7	Anthracene	4.7	---
206-44-0	Fluoranthene	4.7	---
129-00-0	Pyrene	4.7	---
56-55-3	Benzo(a)anthracene	4.7	---
218-01-9	Chrysene	4.7	---
205-99-2	Benzo(b)fluoranthene	4.7	---
207-08-9	Benzo(k)fluoranthene	4.7	---
50-32-8	Benzo(a)pyrene	4.7	---
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	---
53-70-3	Dibenz(a,h)anthracene	4.7	---
191-24-2	Benzo(g,h,i)perylene	4.7	---
132-64-9	Dibenzofuran	4.7	---

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 86.0%
d14-Dibenzo(a,h)anthracen 68.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: LCS-073009

LAB CONTROL SAMPLE

Lab Sample ID: LCS-073009

LIMS ID: 09-17550

Matrix: Soil

Data Release Authorized:

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: NA

Date Received: NA

Date Extracted: 07/30/09

Sample Amount LCS: 10.0 g-dry-wt

LCS D: 10.0 g-dry-wt

Date Analyzed LCS: 08/03/09 15:25

Final Extract Volume LCS: 0.50 mL

LCS D: 08/03/09 15:50

LCS D: 0.50 mL

Instrument/Analyst LCS: NT1/YZ

Dilution Factor LCS: 1.00

LCS D: NT1/YZ

LCS D: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCS D	Spike Added-LCS D	LCS D Recovery	RPD
Naphthalene	122	150	81.3%	108	150	72.0%	12.2%
2-Methylnaphthalene	118	150	78.7%	107	150	71.3%	9.8%
1-Methylnaphthalene	117	150	78.0%	106	150	70.7%	9.9%
Acenaphthylene	126	150	84.0%	120	150	80.0%	4.9%
Acenaphthene	122	150	81.3%	116	150	77.3%	5.0%
Fluorene	134	150	89.3%	132	150	88.0%	1.5%
Phenanthrene	148	150	98.7%	154	150	103%	4.0%
Anthracene	151	150	101%	150	150	100%	0.7%
Fluoranthene	166	150	111%	170	150	113%	2.4%
Pyrene	144	150	96.0%	150	150	100%	4.1%
Benzo(a)anthracene	158	150	105%	162	150	108%	2.5%
Chrysene	149	150	99.3%	154	150	103%	3.3%
Benzo(b)fluoranthene	173	150	115%	168	150	112%	2.9%
Benzo(k)fluoranthene	161	150	107%	152	150	101%	5.8%
Benzo(a)pyrene	152	150	101%	148	150	98.7%	2.7%
Indeno(1,2,3-cd)pyrene	162	150	108%	157	150	105%	3.1%
Dibenz(a,h)anthracene	180	150	120%	174	150	116%	3.4%
Benzo(g,h,i)perylene	144	150	96.0%	138	150	92.0%	4.3%
Dibenzofuran	120	150	80.0%	118	150	78.7%	1.7%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCS D
d10-2-Methylnaphthalene	79.3%	69.3%
d14-Dibenzo(a,h)anthracen	120%	110%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
 Page 1 of 1

Sample ID: MB-073009
METHOD BLANK

Lab Sample ID: MB-073009
 LIMS ID: 09-17550
 Matrix: Soil
 Data Release Authorized:
 Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: NA
 Date Received: NA

Date Extracted: 07/30/09
 Date Analyzed: 08/03/09 14:59
 Instrument/Analyst: NT1/YZ
 GPC Cleanup: No
 Silica Gel Cleanup: Yes
 Alumina Cleanup: No

Sample Amount: 10.0 g-dry-wt
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00
 Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	< 5.0 U
91-57-6	2-Methylnaphthalene	5.0	< 5.0 U
90-12-0	1-Methylnaphthalene	5.0	< 5.0 U
208-96-8	Acenaphthylene	5.0	< 5.0 U
83-32-9	Acenaphthene	5.0	< 5.0 U
86-73-7	Fluorene	5.0	< 5.0 U
85-01-8	Phenanthrene	5.0	< 5.0 U
120-12-7	Anthracene	5.0	< 5.0 U
206-44-0	Fluoranthene	5.0	< 5.0 U
129-00-0	Pyrene	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	5.0	< 5.0 U
218-01-9	Chrysene	5.0	< 5.0 U
205-99-2	Benzo(b)fluoranthene	5.0	< 5.0 U
207-08-9	Benzo(k)fluoranthene	5.0	< 5.0 U
50-32-8	Benzo(a)pyrene	5.0	< 5.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	< 5.0 U
53-70-3	Dibenz(a,h)anthracene	5.0	< 5.0 U
191-24-2	Benzo(g,h,i)perylene	5.0	< 5.0 U
132-64-9	Dibenzofuran	5.0	< 5.0 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 72.3%
 d14-Dibenzo(a,h)anthracen 119%

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID


Page 1 of 1

Matrix: Soil

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Data Release Authorized: 

Reported: 07/29/09

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-072809 09-17547	Method Blank	07/28/09	07/28/09	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 104%
PI16B 09-17547	B57-(10-15) HC ID: GRO/DRO/MOTOR OIL	07/28/09	07/28/09	1.0	Gas Diesel Oil o-Terphenyl	> 20 > 50 > 100 98.6%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.

Diesel value based on the total peaks in the range from C12 to C24.

Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PI16-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
072809MB	104%	0
B57-(10-15)	98.6%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(O-TER) = o-Terphenyl	(68-122)	(50-150)

Prep Method: SW3550B
Log Number Range: 09-17547 to 09-17547

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 07/27/09

ARI Job: PI16
Project: QWEST NORTH LOT
1014040.043

<u>ARI ID</u>	<u>Client ID</u>	<u>Sample Amt</u>	<u>Final Vol</u>	<u>Basis</u>	<u>Prep Date</u>
09-17547-072809MB	Method Blank	10.0 g	5.00 mL	-	07/28/09
09-17547-PI16B	B57-(10-15)	7.18 g	5.00 mL	D	07/28/09

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Matrix: Soil

QC Report No: PI54-Landau Associates, Inc.

Project: Qwest North Lot

1014040.043

Data Release Authorized: *VTS*

Reported: 08/01/09

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-072909	Method Blank	07/29/09	07/30/09	1.00	Diesel	5.0	< 5.0 U
09-17829	HC ID: ---		FID4B	1.0	Motor Oil	10	< 10 U
					o-Terphenyl		85.8%
PI54A	B57-(10-15)	07/29/09	07/30/09	1.00	Diesel	14	100
09-17829	HC ID: DRO/MOTOR OIL		FID4B	2.0	Motor Oil	27	470
					o-Terphenyl		84.0%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PI54-Landau Associates, Inc.
Project: Qwest North Lot
1014040.043

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-072909	85.8%	0
LCS-072909	91.8%	0
LCSD-072909	87.4%	0
B57-(10-15)	84.0%	0

(OTER) = o-Terphenyl

LCS/MB LIMITS **QC LIMITS**
(63-115) (49-120)

Prep Method: SW3546
Log Number Range: 09-17829 to 09-17829

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Sample ID: LCS-072909

LCS/LCSD

Lab Sample ID: LCS-072909

LIMS ID: 09-17829

Matrix: Soil

Data Release Authorized: *VTS*

Reported: 08/01/09

QC Report No: PI54-Landau Associates, Inc.

Project: Qwest North Lot

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Date Extracted LCS/LCSD: 07/29/09

Sample Amount LCS: 10.0 g

LCSD: 10.0 g

Date Analyzed LCS: 07/30/09 19:47

Final Extract Volume LCS: 1.0 mL

LCSD: 07/30/09 20:00

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/MS

Dilution Factor LCS: 1.0

LCSD: FID/MS

LCSD: 1.0

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	128	150	85.3%	124	150	82.7%	3.2%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	91.8%	87.4%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 07/27/09

ARI Job: PI54
Project: Qwest North Lot
1014040.043

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
09-17829-072909MB1	Method Blank	10.0 g	1.00 mL	-	07/29/09
09-17829-072909LCS1	Lab Control	10.0 g	1.00 mL	-	07/29/09
09-17829-072909LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	07/29/09
09-17829-PI54A	B57-(10-15)	7.30 g	1.00 mL	D	07/29/09

Basis: D=Dry Weight W=As Received
Diesel Extraction Report

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B57-(1-2)

SAMPLE

Lab Sample ID: PI16A

LIMS ID: 09-17546

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 77.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	6	7	
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.6	13.2	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	75.5	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	59	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.03	0.05	
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	74	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B58-(1-2)
SAMPLE

Lab Sample ID: PI16D

LIMS ID: 09-17549

Matrix: Soil

Data Release Authorized:

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 91.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	5	5	U
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.5	31.9	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	26.9	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	25	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.59	
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	58	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B60-(1-2)
SAMPLE

Lab Sample ID: PI16F

LIMS ID: 09-17551

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 88.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	5	7	
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.5	28.5	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	29.8	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	37	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.05	
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	56	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B61-(1-2)
SAMPLE

Lab Sample ID: PI16H

LIMS ID: 09-17553

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 86.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	5	6	
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.5	10.8	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	49.1	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	17	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.02	U
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	31	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B65-(1-2)
SAMPLE

Lab Sample ID: PI16I

LIMS ID: 09-17554

Matrix: Soil

Data Release Authorized:

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 91.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	5	30	
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.4	
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.5	42.1	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	64.3	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	132	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.05	
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	104	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B67-(1-2)
SAMPLE

Lab Sample ID: PI16J

LIMS ID: 09-17555

Matrix: Soil

Data Release Authorized:

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 90.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	5	7	
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.5	26.2	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	25.1	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	12	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.02	
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	41	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B59-(1-2)
SAMPLE

Lab Sample ID: PI16K

LIMS ID: 09-17556

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 88.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	5	7	
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.5	38.5	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	33.5	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	67	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.12	
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	82	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B64-(1-2)
SAMPLE

Lab Sample ID: PI16L

LIMS ID: 09-17557

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

Percent Total Solids: 75.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	6	8	
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.6	18.0	
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	34.9	
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	6	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.03	0.06	
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	42	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B57-(1-2)

MATRIX SPIKE

Lab Sample ID: PI16A

LIMS ID: 09-17546

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010B	7	241	244	95.9%	
Cadmium	6010B	0.2 U	59.7	60.9	98.0%	
Chromium	6010B	13.2	71.7	60.9	96.1%	
Copper	6010B	75.5	135	60.9	97.7%	
Lead	6010B	59	294	244	96.3%	
Mercury	7471A	0.05	0.38	0.298	111%	
Zinc	6010B	74	120	60.9	75.5%	

Reported in mg/kg-dry

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: B57-(1-2)
DUPLICATE

Lab Sample ID: PI16A

LIMS ID: 09-17546

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/27/09

Date Received: 07/27/09

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010B	7	7	0.0%	+/- 6	L
Cadmium	6010B	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	6010B	13.2	12.6	4.7%	+/- 20%	
Copper	6010B	75.5	68.8	9.3%	+/- 20%	
Lead	6010B	59	43	31.4%	+/- 20%	*
Mercury	7471A	0.05	0.08	46.2%	+/- 0.03	L
Zinc	6010B	74	61	19.3%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: PI16LCS

LIMS ID: 09-17549

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI16-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	211	200	106%	
Cadmium	6010B	51.3	50.0	103%	
Chromium	6010B	52.8	50.0	106%	
Copper	6010B	52.4	50.0	105%	
Lead	6010B	203	200	102%	
Mercury	7471A	0.49	0.50	98.0%	
Zinc	6010B	50	50	100%	

Reported in mg/kg-dry

N-Control limit not met

NA-Not Applicable, Analyte Not Spiked

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: PI16MB

QC Report No: PI16-Landau Associates, Inc.

LIMS ID: 09-17549

Project: QWEST NORTH LOT

Matrix: Soil

1014040.043

Data Release Authorized: 

Date Sampled: NA

Reported: 08/07/09

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/05/09	7440-38-2	Arsenic	5	5	U
3050B	08/03/09	6010B	08/05/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7440-47-3	Chromium	0.5	0.5	U
3050B	08/03/09	6010B	08/05/09	7440-50-8	Copper	0.2	0.2	U
3050B	08/03/09	6010B	08/05/09	7439-92-1	Lead	2	2	U
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.02	U
3050B	08/03/09	6010B	08/05/09	7440-66-6	Zinc	1	1	U

U-Analyte undetected at given RL

RL-Reporting Limit



Kelly Bottem
Analytical Resources, Inc.
4611 S. 134th Place
Tukwila, WA 98168-3240

Report Number: G1040-10

Client Project: QWEST NORTH LOT

Dear Kelly Bottem,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Linda McWhirter at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America, Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America, Inc.

A handwritten signature in black ink, appearing to read 'Linda McWhirter', written over a horizontal line.

9/13/05

Project Manager
Linda McWhirter

Date



List of Qualifiers: Dioxin's

- B Analyte was detected in the Lab Method Blank at a level above the Reporting Limit.
 - EDL "Estimated Detection Limit"
 - EMPC "Estimated Maximum Possible Concentration"
 - RL Report Limit
 - CL Control Limit
 - U Undetected
 - ppt Parts-per-trillion (pg/g; ng/L)
 - V Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit.
 - # Outside quality control limits
 - * Indicates that the ion-ratio fails high or low; analyte reported as an EMPC
- An average uncertainty of 30% can be routinely achieved as concluded from the evaluation of HRGC-HRMS standard operating procedures. The following flags warn the data user of situations where the uncertainty may be greater than stated.
- A Amount detected is less than the Lower Method Calibration Limit.
 - J Amount detected is between the Method Detection Limit and the Lower Calibration Limit.
 - O The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high.
 - E Amount detected is greater than the Upper Calibration Limit.
 - S The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s).
 - Q Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s).
 - I Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).
 - DPE Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).

DC250.081908.1



Toxic Equivalency Factors

<u>Analyte</u>	<u>WHO* 1998</u>	<u>WHO* 2005</u>	<u>International-89</u>	<u>MADEP*</u>
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	1	1	0.5	0.5
1,2,3,4,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.01	0.1
OCDD	0.0001	0.0003	0.001	0.001
2,3,7,8-TCDF	0.1	0.1	0.1	0.1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.5
2,3,4,7,8-PeCDF	0.5	0.3	0.5	0.5
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01	0.1
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.1
OCDF	0.0001	0.0003	0.001	0.001

* World Health Organization

* Massachusetts Department of Environmental Protection

Method 8290
09-17554-PI161 B65-(1-2)
Analytical Resources, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	27.3	12.4				
1,2,3,7,8-PeCDD	ND	8.19	62.2				
1,2,3,4,7,8-HxCDD	ND	14.6	62.2				
1,2,3,6,7,8-HxCDD	EMPC	14.0	62.2	16.4	35:16	0.94 *	A
1,2,3,7,8,9-HxCDD	ND	14.3	62.2				Q
1,2,3,4,6,7,8-HpCDD	131		62.2		38:04	1.09	A
OCDD	1020		124		41:46	0.88	
2,3,7,8-TCDF	ND	32.1	12.4				
1,2,3,7,8-PeCDF	ND	6.81	62.2				
2,3,4,7,8-PeCDF	92.1		62.2		32:36	1.61	A
1,2,3,4,7,8-HxCDF	EMPC	10.1	62.2	11.4	34:34	1.43 *	A
1,2,3,6,7,8-HxCDF	19.3		62.2		34:40	1.22	A
2,3,4,6,7,8-HxCDF	19.8		62.2		35:07	1.31	A
1,2,3,7,8,9-HxCDF	ND	11.5	62.2				Q
1,2,3,4,6,7,8-HpCDF	115		62.2		37:01	1.04	QA
1,2,3,4,7,8,9-HpCDF	ND	21.4	62.2				
OCDF	198		124		41:58	0.90	A
Total TCDDs	ND	27.3	12.4				
Total PeCDDs	ND	8.19	62.2	13.2			Q
Total HxCDDs	76.0		62.2	92.4			Q
Total HpCDDs	214		62.2				Q
Total TCDFs	110		12.4				
Total PeCDFs	795		62.2				Q
Total HxCDFs	583		62.2	594			Q
Total HpCDFs	315		62.2				Q
WHO-2005 TEQ (ND=0)	34.4			37.1			
WHO-2005 TEQ (ND=½)	57.1			58.7			

Client Information		Sample Information	
Project Name:	QWEST NORTH LOT	Report Basis:	Dry
Sample ID:	09-17554-PI161 B65-(1-2)	Matrix:	Soil
		Weight / Volume:	1.080 g
		Solids / Lipids:	74.5 %
		Original pH :	NA
Laboratory Information		Batch ID:	WG17269
Project ID:	G1040-10	Instrument:	HRMS1
Sample ID:	G1040-10-1J D5	Filename:	a02sep09c-7
Collection Date/Time:	07/27/09 8:40	Retchk:	a02sep09c-1
Receipt Date/Time:	07/29/09 10:20	Begin ConCal:	a02sep09c-1
Extraction Date:	08/30/09	End ConCal:	a02sep09c-8
Analysis Date/Time:	09/02/09 12:31	Initial Cal:	m8290-100708a

Method 8290
09-17554-PI161 B65-(1-2)
Analytical Resources, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.27		63.4	28:21	0.79	
13C12-1,2,3,7,8-PeCDD	2	2.07		104	32:46	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.97		98.4	35:16	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.14		107	38:04	1.06	
13C12-OCDD	4.0	4.12		103	41:46	0.90	
13C12-2,3,7,8-TCDF	2	0.840		42.0	27:25	0.80	
13C12-1,2,3,7,8-PeCDF	2	2.10		105	32:01	1.58	
13C12-1,2,3,6,7,8-HxCDF	2	1.90		94.9	34:39	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.14		56.9	37:01	0.45	Q
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.275		68.8	28:22	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.449		112	32:37	1.58	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.549		137 #	35:12	1.30	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.462		115	34:34	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.452		113	38:34	0.46	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	27:34	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	35:30	1.26	Q

Client Information		Sample Information	
Project Name:	QWEST NORTH LOT	Report Basis:	Dry
Sample ID:	09-17554-PI161 B65-(1-2)	Matrix:	Soil
		Weight / Volume:	1.080 g
		Solids / Lipids:	74.5 %
		Original pH :	NA
Laboratory Information		Batch ID:	WG17269
Project ID:	G1040-10	Instrument:	HRMS1
Sample ID:	G1040-10-1J D5	Filename:	a02sep09c-7
Collection Date/Time:	07/27/09 8:40	Retchk:	a02sep09c-1
Receipt Date/Time:	07/29/09 10:20	Begin ConCal:	a02sep09c-1
Extraction Date:	08/30/09	End ConCal:	a02sep09c-8
Analysis Date/Time:	09/02/09 12:31	Initial Cal:	m8290-100708a

Form Version: [8290]Report

Analyzed by: OS
Date: 9-3-09

Reviewed by: Jm
Date: 9-3-09

Method 8290
Lab Method Blank

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	0.482		1.00		28:22	0.67	A
1,2,3,7,8-PeCDD	ND	0.500	5.00				
1,2,3,4,7,8-HxCDD	ND	0.500	5.00				
1,2,3,6,7,8-HxCDD	ND	0.500	5.00				
1,2,3,7,8,9-HxCDD	ND	0.500	5.00				
1,2,3,4,6,7,8-HpCDD	0.318		5.00		37:57	1.14	A
OCDD	2.07		10.0		41:33	0.86	A
2,3,7,8-TCDF	0.268		1.00		27:27	0.79	A
1,2,3,7,8-PeCDF	ND	0.500	5.00				
2,3,4,7,8-PeCDF	ND	0.500	5.00				
1,2,3,4,7,8-HxCDF	ND	0.500	5.00				
1,2,3,6,7,8-HxCDF	ND	0.500	5.00				
2,3,4,6,7,8-HxCDF	ND	0.500	5.00				
1,2,3,7,8,9-HxCDF	ND	0.500	5.00				
1,2,3,4,6,7,8-HpCDF	ND	0.500	5.00				
1,2,3,4,7,8,9-HpCDF	ND	0.500	5.00				
OCDF	EMPC	1.00	10.0	0.444	41:46	0.71	* A
Total TCDDs	0.482		1.00				
Total PeCDDs	ND	0.500	5.00				
Total HxCDDs	ND	0.500	5.00				
Total HpCDDs	0.658		5.00				
Total TCDFs	0.268		1.00				
Total PeCDFs	ND	0.500	5.00				
Total HxCDFs	ND	0.500	5.00				
Total HpCDFs	ND	0.500	5.00	0.230			
WHO-2005 TEQ (ND=0)	0.513			0.513			
WHO-2005 TEQ (ND=1/2)	1.03			1.03			

Client Information		Sample Information	
Project Name:		Report Basis:	Wet
Sample ID:	Lab Method Blank	Matrix:	Soil
		Weight / Volume:	10.00 g
		Solids / Lipids:	NA %
		Original pH :	NA
Laboratory Information		Batch ID:	WG17269
Project ID:		Instrument:	HRMS1
Sample ID:		Filename:	a31aug09a-4
Collection Date/Time:		Retchk:	a31aug09a-1
Receipt Date/Time:		Begin ConCal:	a31aug09a-1
Extraction Date:	08/30/09	End ConCal:	a31aug09a-15
Analysis Date/Time:	08/31/09 22:30	Initial Cal:	m8290-100708a

Method 8290
Lab Method Blank

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards						
13C12-2,3,7,8-TCDD	2	1.76	87.8	28:19	0.79	
13C12-1,2,3,7,8-PeCDD	2	2.04	102	32:45	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.93	96.4	35:07	1.24	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.09	104	37:57	1.05	
13C12-OCDD	4.0	4.58	115	41:33	0.90	
13C12-2,3,7,8-TCDF	2	1.82	90.8	27:25	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.86	92.8	32:01	1.54	
13C12-1,2,3,6,7,8-HxCDF	2	1.71	85.7	34:30	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.84	92.0	36:54	0.45	
Cleanup Standards						
37C14-2,3,7,8-TCDD	0.4	0.397	99.3	28:22	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.409	102	32:34	1.54	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.350	87.4	35:01	1.26	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.343	85.8	34:25	0.47	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.417	104	38:30	0.45	
Injection Standards						
13C12-1,2,3,4-TCDD	2.0	-	-	27:34	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-	-	35:19	1.24	

Client Information		Sample Information	
Project Name:		Report Basis:	Wet
Sample ID:	Lab Method Blank	Matrix:	Soil
		Weight / Volume:	10.00 g
		Solids / Lipids:	NA %
		Original pH :	NA
Laboratory Information		Batch ID:	WG17269
Project ID:		Instrument:	HRMS1
Sample ID:		Filename:	a31aug09a-4
Collection Date/Time:		Retchk:	a31aug09a-1
Receipt Date/Time:		Begin ConCal:	a31aug09a-1
Extraction Date:	08/30/09	End ConCal:	a31aug09a-15
Analysis Date/Time:	08/31/09 22:30	Initial Cal:	m8290-100708a

Form Version [8290] Report

Analyzed by: OS
Date: 9-2-09

Reviewed by: Jm
Date: 9-2-09

Analytical Results
for
Ongoing Precision Result (OPR)

Analyte	Spiked (pg/μL)	AMT (pg/μL)	REC %	Range %		Qualifier
				Lower	Upper	
2,3,7,8-TCDD	10	9.70	97.0	70.0	130	
1,2,3,7,8-PeCDD	50	45.2	90.4	70.0	130	
1,2,3,4,7,8-HxCDD	50	44.8	89.6	70.0	130	
1,2,3,6,7,8-HxCDD	50	46.7	93.4	70.0	130	
1,2,3,7,8,9-HxCDD	50	46.5	92.9	70.0	130	
1,2,3,4,6,7,8-HpCDD	50	45.2	90.4	70.0	130	
OCDD	100	90.2	90.2	70.0	130	
2,3,7,8-TCDF	10	8.65	86.5	70.0	130	
1,2,3,7,8-PeCDF	50	45.1	90.2	70.0	130	
2,3,4,7,8-PeCDF	50	44.4	88.8	70.0	130	
1,2,3,4,7,8-HxCDF	50	43.2	86.3	70.0	130	
1,2,3,6,7,8-HxCDF	50	47.8	95.7	70.0	130	
2,3,4,6,7,8-HxCDF	50	46.2	92.3	70.0	130	
1,2,3,7,8,9-HxCDF	50	46.7	93.5	70.0	130	
1,2,3,4,6,7,8-HpCDF	50	44.5	89.0	70.0	130	
1,2,3,4,7,8,9-HpCDF	50	44.4	88.8	70.0	130	
OCDF	100	84.5	84.5	70.0	130	

= Outside range limits
* = Ion Ratio Out

<u>QC Information</u>		<u>File Information</u>	
OPR Project No:	OPR17269	OPR Filename:	a31aug09a-2
Extraction Date:	30-Aug-09	Retchk:	a31aug09a-1
Analysis Date:	31-Aug-09	Begin ConCal:	a31aug09a-1
Method:	8290	End ConCal:	a31aug09a-15
		Initial Cal:	m8290-100708a
<u>Sample Information</u>			
Matrix:	Soil		

Analytical Results
for
Ongoing Precision Result (OPR)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards						
13C12-2,3,7,8-TCDD	2	1.66	83.0	28:19	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.98	99.0	32:45	1.59	
13C12-1,2,3,6,7,8-HxCDD	2	1.88	94.0	35:07	1.24	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.08	104	37:57	1.05	
13C12-OCDD	4	4.69	117	41:31	0.90	
13C12-2,3,7,8-TCDF	2	1.71	85.5	27:25	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.80	90.0	32:01	1.56	
13C12-1,2,3,6,7,8-HxCDF	2	1.68	84.0	34:30	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.82	91.0	36:54	0.45	
Cleanup Standards						
37Cl4-2,3,7,8-TCDD	0.4	0.359	89.8	28:22	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.387	96.8	32:34	1.53	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.362	90.5	35:01	1.26	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.327	81.8	34:25	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.406	102	38:28	0.45	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	27:34	0.80	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	35:19	1.24	

<u>QC Information</u>		<u>File Information</u>	
OPR Project No:	OPR17269	OPR Filename :	a31aug09a-2
Extraction Date:	30-Aug-09	Retchk:	a31aug09a-1
Analysis Date:	31-Aug-09	Begin ConCal:	a31aug09a-1
Method:	8290	End ConCal:	a31aug09a-15
		Initial Cal:	m8290-100708a
<u>Sample Information</u>			
Matrix:	Soil		

Form Version: [8290]OPR

Reviewed By: gm

Date Reviewed: 9-2-09

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	Recovery		Range		OPR		RPD (±20%)	Qualifier
			%	#	Lower	Upper	Rec(%)	#		
2,3,7,8-TCDD	10.0	9.56	95.6		70.0	130	97.0		1.50	
1,2,3,7,8-PeCDD	50.0	44.6	89.1		70.0	130	90.4		1.43	
1,2,3,4,7,8-HxCDD	50.0	44.2	88.5		70.0	130	89.6		1.27	
1,2,3,6,7,8-HxCDD	50.0	45.5	91.1		70.0	130	93.4		2.58	
1,2,3,7,8,9-HxCDD	50.0	45.2	90.3		70.0	130	92.9		2.83	
1,2,3,4,6,7,8-HpCDD	50.0	43.9	87.8		70.0	130	90.4		2.98	
OCDD	100	88.0	88.0		70.0	130	90.2		2.51	
2,3,7,8-TCDF	10.0	8.50	85.0		70.0	130	86.5		1.75	
1,2,3,7,8-PeCDF	50.0	44.0	87.9		70.0	130	90.2		2.58	
2,3,4,7,8-PeCDF	50.0	44.4	88.9		70.0	130	88.8		0.0788	
1,2,3,4,7,8-HxCDF	50.0	43.0	86.0		70.0	130	86.3		0.375	
1,2,3,6,7,8-HxCDF	50.0	46.7	93.4		70.0	130	95.7		2.43	
2,3,4,6,7,8-HxCDF	50.0	45.8	91.6		70.0	130	92.3		0.725	
1,2,3,7,8,9-HxCDF	50.0	45.8	91.6		70.0	130	93.5		2.04	
1,2,3,4,6,7,8-HpCDF	50.0	41.7	83.5		70.0	130	89.0		6.64	
1,2,3,4,7,8,9-HpCDF	50.0	43.3	86.6		70.0	130	88.8		2.52	
OCDF	100	83.7	83.7		70.0	130	84.5		0.908	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No: OPRD17269
Extraction Date: 30-Aug-09
Analysis Date: 31-Aug-09
Method: 8290

Sample Information

Matrix: Soil

File Information

OPRD Filename : a31aug09a-3
Retchk: a31aug09a-1
Begin ConCal: a31aug09a-1
End ConCal: a31aug09a-15
Initial Cal: m8290-100708a

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards			(40-135%)			
13C12-2,3,7,8-TCDD	2	1.63	81.6	28:19	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.92	96.0	32:45	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.80	90.0	35:06	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.96	97.8	37:57	1.05	
13C12-OCDD	4	4.37	109	41:31	0.90	
13C12-2,3,7,8-TCDF	2	1.71	85.3	27:25	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.76	87.8	32:01	1.56	
13C12-1,2,3,6,7,8-HxCDF	2	1.62	80.9	34:30	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.72	86.1	36:54	0.45	
Cleanup Standards			(70-130%)			
37Cl4-2,3,7,8-TCDD	0.4	0.352	88.1	28:22	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.377	94.3	32:34	1.57	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.349	87.3	35:01	1.26	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.312	77.9	34:25	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.371	92.8	38:28	0.44	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	27:34	0.79	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	35:19	1.24	

<u>QC Information</u>		<u>File Information</u>	
OPR Project No:	OPRD17269	OPRD Filename :	a31aug09a-3
Extraction Date:	30-Aug-09	Retchk:	a31aug09a-1
Analysis Date:	31-Aug-09	Begin ConCal:	a31aug09a-1
Method:	8290	End ConCal:	a31aug09a-15
<u>Sample Information</u>		Initial Cal:	m8290-100708a
Matrix:	Soil		

Form Version: [8290]OPRD

Reviewed By: TM

Date Reviewed: 9-2-09

SUBCONTRACTOR ANALYSIS REQUEST
CUSTODY TRANSFER 07/27/09

SGS North America Inc. *61040-10*
ANALYTICAL RESOURCES INCORPORATED

ARI Project: PI16

Laboratory: SGS ENVIROMENTAL SERVICES INC.
Lab Contact: TRENT TEMPERLY
Lab Address: 5500 BUSINESS DR.
WILMINGTON, NC 28405
Phone: 910-350-1903
Fax: 910-350-1557

ARI Client: Landau Associates, Inc.
Project ID: WEST NORTH LOT
ARI PM: Kelly Bottem
Phone: 206-695-6211
Fax: 206-695-6201

Analytical Protocol: In-house
Special Instructions:

Requested Turn Around:
Fax Results (Y/N): Yes

Limits of Liability. Subcontractor is expected to perform all requested services in accordance with appropriate methodology following Standard Operating Procedures that meet standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the negotiated amount for said services. The agreement by the Subcontractor to perform services requested by ARI releases ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Subcontractor.

ARI ID	Client ID/ Add'l ID	Sampled	Matrix	Bottles	Analyses
09-17554-PI16I	B65-(1-2)	07/27/09 08:40	Soil	1	Dioxins/Furans 8290 (Su
Special Instructions: None					

Carrier	<i>VPS</i>	Airbill	<i>12832695014483648</i>	Date	<i>7/28/09</i>
Relinquished by	<i>[Signature]</i>	Company	<i>ARI</i>	Date	<i>7/28/09</i>
Received by	<i>[Signature]</i>	Company	<i>SGS</i>	Date	<i>7/29/09</i>
	<i>5.9 no seal</i>			Time	<i>10:20</i>



Analytical Resources, Incorporated

Analytical Chemists and Consultants

August 31, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest North Lot
ARI Job: PI35

Dear Tim:

Please find enclosed a copy of the Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted twelve soil samples July 28, 2009. The samples were received with a cooler temperature of 1.4°C. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for SVOCs, BETX, NWTPH-Gx, and Total Metals, as requested on the COC. Please note that Dioxin/Furan analyses were subcontracted to SGS Laboratories in Wilmington, NC.

No analytical complications were noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

eFile: PI35

KB/co



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

Date 7/28/09
 Page 1 of 1

Chain-of-Custody Record

PI35

Project Name West North Lt Project No. 1014040.013
 Project Location/Event Seattle / Additional Investigation
 Sampler's Name Elizabeth Poole
 Project Contact Tim Sverson
 Send Results To Tim Sverson / Anne Halverson

Testing Parameters

- Turnaround Time
 Standard
 Accelerated

Sample I.D.	Date	Time	Matrix	No. of Containers	VPH-GX	BTEX	THAL	SPCS	DIKUNFURNMS
B50A-(15-16)	7/28/09	1110	S	3	X	X			
B51-(15-16)		1025		3	X	X			
B51-51		1010		3	X	X			
B52-(15-16)		1130			X	X			
B52-6.5'		1140			X	X			
B53-(15-16)		1235			X	X			
B54-(15-16)		936			X	X			
B54-4'		925		1	X				
B62-(1-2)		645		3			X	X	X
B63-(1-2)		715		2			X	X	
B66-(1-2)		800					X	X	
B68-(1-2)		835					X	X	

Observations/Comments

___ Allow water samples to settle, collect aliquot from clear portion

NWTPH-Dx:
 ___ run acid wash/silica gel cleanup
 ___ run samples standardized to _____ product

___ Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
 ___ non-preserved
 ___ preserved w/methanol
 ___ preserved w/sodium bisulfate
 ___ Freeze upon receipt

___ Dissolved metal water samples field filtered

Other _____

Special Shipment/Handling or Storage Requirements Store @ 6°C

Method of Shipment Drop off

Relinquished by [Signature]
 Signature
Elizabeth Poole
 Printed Name
EL
 Company
 Date 7/28/09 Time 1505

Received by [Signature]
 Signature
A. Volgardsen
 Printed Name
ARI
 Company
 Date 7/28/09 Time 1505

Relinquished by
 Signature
 Printed Name
 Company
 Date _____ Time _____

Received by
 Signature
 Printed Name
 Company
 Date _____ Time _____



Cooler Receipt Form

ARI Client: Landau

Project Name: Qwest North lot

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: PI35

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)..... 1.4

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 487405

Cooler Accepted by: AV Date: 7/28/09 Time: 1505

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

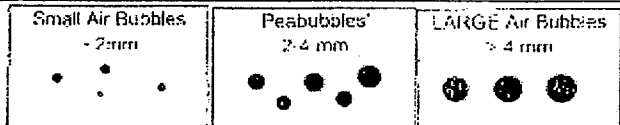
Samples Logged by: AV Date: 7/28/09 Time: 1535

**** 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"

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B62-(1-2)
SAMPLE

Lab Sample ID: PI35I
LIMS ID: 09-17710
Matrix: Soil
Data Release Authorized: 
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/28/09
Date Received: 07/28/09

Date Extracted: 07/30/09
Date Analyzed: 08/03/09 23:42
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.18 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 12.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	61	< 61 U
111-44-4	Bis-(2-Chloroethyl) Ether	61	< 61 U
95-57-8	2-Chlorophenol	61	< 61 U
541-73-1	1,3-Dichlorobenzene	61	< 61 U
106-46-7	1,4-Dichlorobenzene	61	< 61 U
100-51-6	Benzyl Alcohol	310	< 310 U
95-50-1	1,2-Dichlorobenzene	61	< 61 U
95-48-7	2-Methylphenol	61	< 61 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	61	< 61 U
106-44-5	4-Methylphenol	61	< 61 U
621-64-7	N-Nitroso-Di-N-Propylamine	310	< 310 U
67-72-1	Hexachloroethane	61	< 61 U
98-95-3	Nitrobenzene	61	< 61 U
78-59-1	Isophorone	61	< 61 U
88-75-5	2-Nitrophenol	61	< 61 U
105-67-9	2,4-Dimethylphenol	61	< 61 U
65-85-0	Benzoic Acid	610	< 610 U
111-91-1	bis(2-Chloroethoxy) Methane	61	< 61 U
120-83-2	2,4-Dichlorophenol	310	< 310 U
120-82-1	1,2,4-Trichlorobenzene	61	< 61 U
91-20-3	Naphthalene	61	< 61 U
106-47-8	4-Chloroaniline	310	< 310 U
87-68-3	Hexachlorobutadiene	61	< 61 U
59-50-7	4-Chloro-3-methylphenol	310	< 310 U
91-57-6	2-Methylnaphthalene	61	< 61 U
77-47-4	Hexachlorocyclopentadiene	310	< 310 U
88-06-2	2,4,6-Trichlorophenol	310	< 310 U
95-95-4	2,4,5-Trichlorophenol	310	< 310 U
91-58-7	2-Chloronaphthalene	61	< 61 U
88-74-4	2-Nitroaniline	310	< 310 U
131-11-3	Dimethylphthalate	61	< 61 U
208-96-8	Acenaphthylene	61	< 61 U
99-09-2	3-Nitroaniline	310	< 310 U
83-32-9	Acenaphthene	61	< 61 U
51-28-5	2,4-Dinitrophenol	610	< 610 U
100-02-7	4-Nitrophenol	310	< 310 U
132-64-9	Dibenzofuran	61	< 61 U
606-20-2	2,6-Dinitrotoluene	310	< 310 U
121-14-2	2,4-Dinitrotoluene	310	< 310 U
84-66-2	Diethylphthalate	61	< 61 U
7005-72-3	4-Chlorophenyl-phenylether	61	< 61 U
86-73-7	Fluorene	61	< 61 U
100-01-6	4-Nitroaniline	310	< 310 U
534-52-1	4,6-Dinitro-2-Methylphenol	610	< 610 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B62-(1-2)
SAMPLE

Lab Sample ID: PI35I
LIMS ID: 09-17710
Matrix: Soil
Date Analyzed: 08/03/09 23:42

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	61	< 61 U
101-55-3	4-Bromophenyl-phenylether	61	< 61 U
118-74-1	Hexachlorobenzene	61	< 61 U
87-86-5	Pentachlorophenol	310	< 310 U
85-01-8	Phenanthrene	61	250
86-74-8	Carbazole	61	< 61 U
120-12-7	Anthracene	61	< 61 U
84-74-2	Di-n-Butylphthalate	61	< 61 U
206-44-0	Fluoranthene	61	390
129-00-0	Pyrene	61	300
85-68-7	Butylbenzylphthalate	61	< 61 U
91-94-1	3,3'-Dichlorobenzidine	310	< 310 U
56-55-3	Benzo (a) anthracene	61	160
117-81-7	bis(2-Ethylhexyl) phthalate	61	< 61 U
218-01-9	Chrysene	61	180
117-84-0	Di-n-Octyl phthalate	61	< 61 U
205-99-2	Benzo (b) fluoranthene	61	160
207-08-9	Benzo (k) fluoranthene	61	150
50-32-8	Benzo (a) pyrene	61	160
193-39-5	Indeno (1,2,3-cd) pyrene	61	100
53-70-3	Dibenz (a,h) anthracene	61	< 61 U
191-24-2	Benzo (g,h,i) perylene	61	120
90-12-0	1-Methylnaphthalene	61	< 61 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.6%	2-Fluorobiphenyl	72.8%
d14-p-Terphenyl	76.0%	d4-1,2-Dichlorobenzene	65.6%
d5-Phenol	60.8%	2-Fluorophenol	61.6%
2,4,6-Tribromophenol	84.5%	d4-2-Chlorophenol	64.8%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B63-(1-2)
SAMPLE

Lab Sample ID: PI35J
LIMS ID: 09-17711
Matrix: Soil
Data Release Authorized: *AS*
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/28/09
Date Received: 07/28/09

Date Extracted: 07/30/09
Date Analyzed: 08/04/09 00:18
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.54 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 8.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	58	< 58 U
111-44-4	Bis-(2-Chloroethyl) Ether	58	< 58 U
95-57-8	2-Chlorophenol	58	< 58 U
541-73-1	1,3-Dichlorobenzene	58	< 58 U
106-46-7	1,4-Dichlorobenzene	58	< 58 U
100-51-6	Benzyl Alcohol	290	< 290 U
95-50-1	1,2-Dichlorobenzene	58	< 58 U
95-48-7	2-Methylphenol	58	< 58 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	58	< 58 U
106-44-5	4-Methylphenol	58	< 58 U
621-64-7	N-Nitroso-Di-N-Propylamine	290	< 290 U
67-72-1	Hexachloroethane	58	< 58 U
98-95-3	Nitrobenzene	58	< 58 U
78-59-1	Isophorone	58	< 58 U
88-75-5	2-Nitrophenol	58	< 58 U
105-67-9	2,4-Dimethylphenol	58	< 58 U
65-85-0	Benzoic Acid	580	< 580 U
111-91-1	bis(2-Chloroethoxy) Methane	58	< 58 U
120-83-2	2,4-Dichlorophenol	290	< 290 U
120-82-1	1,2,4-Trichlorobenzene	58	< 58 U
91-20-3	Naphthalene	58	130
106-47-8	4-Chloroaniline	290	< 290 U
87-68-3	Hexachlorobutadiene	58	< 58 U
59-50-7	4-Chloro-3-methylphenol	290	< 290 U
91-57-6	2-Methylnaphthalene	58	180
77-47-4	Hexachlorocyclopentadiene	290	< 290 U
88-06-2	2,4,6-Trichlorophenol	290	< 290 U
95-95-4	2,4,5-Trichlorophenol	290	< 290 U
91-58-7	2-Chloronaphthalene	58	< 58 U
88-74-4	2-Nitroaniline	290	< 290 U
131-11-3	Dimethylphthalate	58	< 58 U
208-96-8	Acenaphthylene	58	< 58 U
99-09-2	3-Nitroaniline	290	< 290 U
83-32-9	Acenaphthene	58	370
51-28-5	2,4-Dinitrophenol	580	< 580 U
100-02-7	4-Nitrophenol	290	< 290 U
132-64-9	Dibenzofuran	58	210
606-20-2	2,6-Dinitrotoluene	290	< 290 U
121-14-2	2,4-Dinitrotoluene	290	< 290 U
84-66-2	Diethylphthalate	58	< 58 U
7005-72-3	4-Chlorophenyl-phenylether	58	< 58 U
86-73-7	Fluorene	58	520
100-01-6	4-Nitroaniline	290	< 290 U
534-52-1	4,6-Dinitro-2-Methylphenol	580	< 580 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B63-(1-2)
SAMPLE

Lab Sample ID: PI35J
LIMS ID: 09-17711
Matrix: Soil
Date Analyzed: 08/04/09 00:18

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	58	< 58 U
101-55-3	4-Bromophenyl-phenylether	58	< 58 U
118-74-1	Hexachlorobenzene	58	< 58 U
87-86-5	Pentachlorophenol	290	< 290 U
85-01-8	Phenanthrene	58	3,600
86-74-8	Carbazole	58	300
120-12-7	Anthracene	58	750
84-74-2	Di-n-Butylphthalate	58	< 58 U
206-44-0	Fluoranthene	58	2,900
129-00-0	Pyrene	58	2,700
85-68-7	Butylbenzylphthalate	58	< 58 U
91-94-1	3,3'-Dichlorobenzidine	290	< 290 U
56-55-3	Benzo (a) anthracene	58	1,100
117-81-7	bis (2-Ethylhexyl) phthalate	58	< 58 U
218-01-9	Chrysene	58	1,100
117-84-0	Di-n-Octyl phthalate	58	< 58 U
205-99-2	Benzo (b) fluoranthene	58	890
207-08-9	Benzo (k) fluoranthene	58	700
50-32-8	Benzo (a) pyrene	58	1,200
193-39-5	Indeno (1,2,3-cd) pyrene	58	570
53-70-3	Dibenz (a,h) anthracene	58	220
191-24-2	Benzo (g,h,i) perylene	58	680
90-12-0	1-Methylnaphthalene	58	180

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.2%	2-Fluorobiphenyl	72.0%
d14-p-Terphenyl	66.8%	d4-1,2-Dichlorobenzene	64.4%
d5-Phenol	60.0%	2-Fluorophenol	59.5%
2,4,6-Tribromophenol	82.4%	d4-2-Chlorophenol	63.7%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B66-(1-2)
SAMPLE

Lab Sample ID: PI35K
LIMS ID: 09-17712
Matrix: Soil
Data Release Authorized: *B*
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/28/09
Date Received: 07/28/09

Date Extracted: 07/30/09
Date Analyzed: 08/04/09 00:54
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.88 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.8%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	64	< 64 U
111-44-4	Bis-(2-Chloroethyl) Ether	64	< 64 U
95-57-8	2-Chlorophenol	64	< 64 U
541-73-1	1,3-Dichlorobenzene	64	< 64 U
106-46-7	1,4-Dichlorobenzene	64	< 64 U
100-51-6	Benzyl Alcohol	320	< 320 U
95-50-1	1,2-Dichlorobenzene	64	< 64 U
95-48-7	2-Methylphenol	64	< 64 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	64	< 64 U
106-44-5	4-Methylphenol	64	< 64 U
621-64-7	N-Nitroso-Di-N-Propylamine	320	< 320 U
67-72-1	Hexachloroethane	64	< 64 U
98-95-3	Nitrobenzene	64	< 64 U
78-59-1	Isophorone	64	< 64 U
88-75-5	2-Nitrophenol	64	< 64 U
105-67-9	2,4-Dimethylphenol	64	< 64 U
65-85-0	Benzoic Acid	640	< 640 U
111-91-1	bis(2-Chloroethoxy) Methane	64	< 64 U
120-83-2	2,4-Dichlorophenol	320	< 320 U
120-82-1	1,2,4-Trichlorobenzene	64	< 64 U
91-20-3	Naphthalene	64	180
106-47-8	4-Chloroaniline	320	< 320 U
87-68-3	Hexachlorobutadiene	64	< 64 U
59-50-7	4-Chloro-3-methylphenol	320	< 320 U
91-57-6	2-Methylnaphthalene	64	200
77-47-4	Hexachlorocyclopentadiene	320	< 320 U
88-06-2	2,4,6-Trichlorophenol	320	< 320 U
95-95-4	2,4,5-Trichlorophenol	320	< 320 U
91-58-7	2-Chloronaphthalene	64	< 64 U
88-74-4	2-Nitroaniline	320	< 320 U
131-11-3	Dimethylphthalate	64	< 64 U
208-96-8	Acenaphthylene	64	< 64 U
99-09-2	3-Nitroaniline	320	< 320 U
83-32-9	Acenaphthene	64	< 64 U
51-28-5	2,4-Dinitrophenol	640	< 640 U
100-02-7	4-Nitrophenol	320	< 320 U
132-64-9	Dibenzofuran	64	< 64 U
606-20-2	2,6-Dinitrotoluene	320	< 320 U
121-14-2	2,4-Dinitrotoluene	320	< 320 U
84-66-2	Diethylphthalate	64	< 64 U
7005-72-3	4-Chlorophenyl-phenylether	64	< 64 U
86-73-7	Fluorene	64	< 64 U
100-01-6	4-Nitroaniline	320	< 320 U
534-52-1	4,6-Dinitro-2-Methylphenol	640	< 640 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B66-(1-2)
SAMPLE

Lab Sample ID: PI35K
LIMS ID: 09-17712
Matrix: Soil
Date Analyzed: 08/04/09 00:54

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	64	< 64 U
101-55-3	4-Bromophenyl-phenylether	64	< 64 U
118-74-1	Hexachlorobenzene	64	< 64 U
87-86-5	Pentachlorophenol	320	< 320 U
85-01-8	Phenanthrene	64	190
86-74-8	Carbazole	64	< 64 U
120-12-7	Anthracene	64	< 64 U
84-74-2	Di-n-Butylphthalate	64	< 64 U
206-44-0	Fluoranthene	64	160
129-00-0	Pyrene	64	150
85-68-7	Butylbenzylphthalate	64	< 64 U
91-94-1	3,3'-Dichlorobenzidine	320	< 320 U
56-55-3	Benzo (a) anthracene	64	91
117-81-7	bis(2-Ethylhexyl)phthalate	64	< 64 U
218-01-9	Chrysene	64	140
117-84-0	Di-n-Octyl phthalate	64	< 64 U
205-99-2	Benzo (b) fluoranthene	64	140
207-08-9	Benzo (k) fluoranthene	64	120
50-32-8	Benzo (a) pyrene	64	120
193-39-5	Indeno (1,2,3-cd) pyrene	64	93
53-70-3	Dibenz (a,h) anthracene	64	< 64 U
191-24-2	Benzo (g,h,i) perylene	64	120
90-12-0	1-Methylnaphthalene	64	120

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.8%	2-Fluorobiphenyl	72.8%
d14-p-Terphenyl	72.4%	d4-1,2-Dichlorobenzene	66.0%
d5-Phenol	61.6%	2-Fluorophenol	59.5%
2,4,6-Tribromophenol	84.5%	d4-2-Chlorophenol	64.8%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B68-(1-2)
SAMPLE

Lab Sample ID: PI35L
LIMS ID: 09-17713
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/28/09
Date Received: 07/28/09

Date Extracted: 07/30/09
Date Analyzed: 08/04/09 02:40
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.72 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 16.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	65	< 65 U
111-44-4	Bis-(2-Chloroethyl) Ether	65	< 65 U
95-57-8	2-Chlorophenol	65	< 65 U
541-73-1	1,3-Dichlorobenzene	65	< 65 U
106-46-7	1,4-Dichlorobenzene	65	< 65 U
100-51-6	Benzyl Alcohol	320	< 320 U
95-50-1	1,2-Dichlorobenzene	65	< 65 U
95-48-7	2-Methylphenol	65	< 65 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	65	< 65 U
106-44-5	4-Methylphenol	65	< 65 U
621-64-7	N-Nitroso-Di-N-Propylamine	320	< 320 U
67-72-1	Hexachloroethane	65	< 65 U
98-95-3	Nitrobenzene	65	< 65 U
78-59-1	Isophorone	65	< 65 U
88-75-5	2-Nitrophenol	65	< 65 U
105-67-9	2,4-Dimethylphenol	65	< 65 U
65-85-0	Benzoic Acid	650	< 650 U
111-91-1	bis(2-Chloroethoxy) Methane	65	< 65 U
120-83-2	2,4-Dichlorophenol	320	< 320 U
120-82-1	1,2,4-Trichlorobenzene	65	< 65 U
91-20-3	Naphthalene	65	< 65 U
106-47-8	4-Chloroaniline	320	< 320 U
87-68-3	Hexachlorobutadiene	65	< 65 U
59-50-7	4-Chloro-3-methylphenol	320	< 320 U
91-57-6	2-Methylnaphthalene	65	< 65 U
77-47-4	Hexachlorocyclopentadiene	320	< 320 U
88-06-2	2,4,6-Trichlorophenol	320	< 320 U
95-95-4	2,4,5-Trichlorophenol	320	< 320 U
91-58-7	2-Chloronaphthalene	65	< 65 U
88-74-4	2-Nitroaniline	320	< 320 U
131-11-3	Dimethylphthalate	65	< 65 U
208-96-8	Acenaphthylene	65	< 65 U
99-09-2	3-Nitroaniline	320	< 320 U
83-32-9	Acenaphthene	65	< 65 U
51-28-5	2,4-Dinitrophenol	650	< 650 U
100-02-7	4-Nitrophenol	320	< 320 U
132-64-9	Dibenzofuran	65	< 65 U
606-20-2	2,6-Dinitrotoluene	320	< 320 U
121-14-2	2,4-Dinitrotoluene	320	< 320 U
84-66-2	Diethylphthalate	65	< 65 U
7005-72-3	4-Chlorophenyl-phenylether	65	< 65 U
86-73-7	Fluorene	65	< 65 U
100-01-6	4-Nitroaniline	320	< 320 U
534-52-1	4,6-Dinitro-2-Methylphenol	650	< 650 U

Sample ID: B68-(1-2)
 SAMPLE

Lab Sample ID: PI35L
 LIMS ID: 09-17713
 Matrix: Soil
 Date Analyzed: 08/04/09 02:40

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	65	< 65 U
101-55-3	4-Bromophenyl-phenylether	65	< 65 U
118-74-1	Hexachlorobenzene	65	< 65 U
87-86-5	Pentachlorophenol	320	< 320 U
85-01-8	Phenanthrene	65	< 65 U
86-74-8	Carbazole	65	< 65 U
120-12-7	Anthracene	65	< 65 U
84-74-2	Di-n-Butylphthalate	65	< 65 U
206-44-0	Fluoranthene	65	< 65 U
129-00-0	Pyrene	65	< 65 U
85-68-7	Butylbenzylphthalate	65	< 65 U
91-94-1	3,3'-Dichlorobenzidine	320	< 320 U
56-55-3	Benzo(a)anthracene	65	< 65 U
117-81-7	bis(2-Ethylhexyl)phthalate	65	< 65 U
218-01-9	Chrysene	65	< 65 U
117-84-0	Di-n-Octyl phthalate	65	< 65 U
205-99-2	Benzo(b)fluoranthene	65	< 65 U
207-08-9	Benzo(k)fluoranthene	65	< 65 U
50-32-8	Benzo(a)pyrene	65	< 65 U
193-39-5	Indeno(1,2,3-cd)pyrene	65	< 65 U
53-70-3	Dibenz(a,h)anthracene	65	< 65 U
191-24-2	Benzo(g,h,i)perylene	65	< 65 U
90-12-0	1-Methylnaphthalene	65	< 65 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.2%	2-Fluorobiphenyl	72.0%
d14-p-Terphenyl	70.8%	d4-1,2-Dichlorobenzene	65.2%
d5-Phenol	58.7%	2-Fluorophenol	57.3%
2,4,6-Tribromophenol	88.0%	d4-2-Chlorophenol	61.9%

SW8270 SEMIVOLATILES SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT	OUT
B62-(1-2)	65.6%	72.8%	76.0%	65.6%	60.8%	61.6%	84.5%	64.8%	0	
B63-(1-2)	65.2%	72.0%	66.8%	64.4%	60.0%	59.5%	82.4%	63.7%	0	
MB-073009	69.2%	74.4%	80.4%	71.6%	65.9%	66.4%	84.3%	70.4%	0	
LCS-073009	78.0%	83.2%	83.6%	78.8%	78.1%	78.9%	91.7%	80.5%	0	
LCSD-073009	78.4%	83.2%	81.2%	78.4%	77.3%	78.9%	92.5%	80.8%	0	
B66-(1-2)	66.8%	72.8%	72.4%	66.0%	61.6%	59.5%	84.5%	64.8%	0	
B66-(1-2) MS	67.2%	70.0%	64.8%	66.4%	64.0%	61.3%	79.2%	66.9%	0	
B66-(1-2) MSD	70.4%	74.0%	68.0%	68.8%	67.7%	64.3%	83.5%	71.2%	0	
B68-(1-2)	65.2%	72.0%	70.8%	65.2%	58.7%	57.3%	88.0%	61.9%	0	

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(46-102)	(32-106)
(FBP) = 2-Fluorobiphenyl	(51-105)	(39-107)
(TPH) = d14-p-Terphenyl	(55-124)	(31-130)
(DCB) = d4-1,2-Dichlorobenzene	(48-104)	(38-102)
(PHL) = d5-Phenol	(44-110)	(27-112)
(2FP) = 2-Fluorophenol	(38-112)	(22-108)
(TBP) = 2,4,6-Tribromophenol	(54-120)	(31-131)
(2CP) = d4-2-Chlorophenol	(50-103)	(36-104)

Prep Method: SW3546
Log Number Range: 09-17710 to 09-17713

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B66-(1-2)
MS/MSD

Lab Sample ID: PI35K

QC Report No: PI35-Landau Associates, Inc.

LIMS ID: 09-17712

Project: QWEST NORTH LOT

Matrix: Soil

1014040.043

Data Release Authorized:

Date Sampled: 07/28/09

Reported: 08/05/09

Date Received: 07/28/09

Date Extracted MS/MSD: 07/30/09

Sample Amount MS: 8.01 g-dry-wt

MSD: 7.95 g-dry-wt

Date Analyzed MS: 08/04/09 01:29

Final Extract Volume MS: 0.5 mL

MSD: 08/04/09 02:05

MSD: 0.5 mL

Instrument/Analyst MS: NT4/JZ

Dilution Factor MS: 1.00

MSD: NT4/JZ

MSD: 1.00

GPC Cleanup: NO

Percent Moisture: 4.8 %

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenol	< 63.5	979	1560	62.8%	1040	1570	66.2%	6.0%
Bis-(2-Chloroethyl) Ether	< 63.5	855	1560	54.8%	906	1570	57.7%	5.8%
2-Chlorophenol	< 63.5	1010	1560	64.7%	1080	1570	68.8%	6.7%
1,3-Dichlorobenzene	< 63.5	976	1560	62.6%	1020	1570	65.0%	4.4%
1,4-Dichlorobenzene	< 63.5	994	1560	63.7%	1030	1570	65.6%	3.6%
Benzyl Alcohol	< 317	1850	3120	59.3%	1970	3140	62.7%	6.3%
1,2-Dichlorobenzene	< 63.5	977	1560	62.6%	1020	1570	65.0%	4.3%
2-Methylphenol	< 63.5	924	1560	59.2%	998	1570	63.6%	7.7%
2,2'-Oxybis(1-Chloropropane)	< 63.5	847	1560	54.3%	897	1570	57.1%	5.7%
4-Methylphenol	< 63.5	1860	3120	59.6%	1990	3140	63.4%	6.8%
N-Nitroso-Di-N-Propylamine	< 317	925	1560	59.3%	986	1570	62.8%	6.4%
Hexachloroethane	< 63.5	977	1560	62.6%	1020	1570	65.0%	4.3%
Nitrobenzene	< 63.5	1000	1560	64.1%	1090	1570	69.4%	8.6%
Isophorone	< 63.5	968	1560	62.1%	1020	1570	65.0%	5.2%
2-Nitrophenol	< 63.5	947	1560	60.7%	1000	1570	63.7%	5.4%
2,4-Dimethylphenol	< 63.5	969	1560	62.1%	1030	1570	65.6%	6.1%
Benzoic Acid	< 635	1020	4680	21.8%	1180	4720	25.0%	14.5%
bis(2-Chloroethoxy) Methane	< 63.5	930	1560	59.6%	979	1570	62.4%	5.1%
2,4-Dichlorophenol	< 317	991	1560	63.5%	1050	1570	66.9%	5.8%
1,2,4-Trichlorobenzene	< 63.5	1010	1560	64.7%	1060	1570	67.5%	4.8%
Naphthalene	180	1210	1560	66.0%	1230	1570	66.9%	1.6%
4-Chloroaniline	< 317	2850	3750	76.0%	3070	3770	81.4%	7.4%
Hexachlorobutadiene	< 63.5	1070	1560	68.6%	1110	1570	70.7%	3.7%
4-Chloro-3-methylphenol	< 317	1010	1560	64.7%	1080	1570	68.8%	6.7%
2-Methylnaphthalene	202	1240	1560	66.5%	1290	1570	69.3%	4.0%
Hexachlorocyclopentadiene	< 317	1640	4680	35.0%	1700	4720	36.0%	3.6%
2,4,6-Trichlorophenol	< 317	999	1560	64.0%	1050	1570	66.9%	5.0%
2,4,5-Trichlorophenol	< 317	1010	1560	64.7%	1100	1570	70.1%	8.5%
2-Chloronaphthalene	< 63.5	1020	1560	65.4%	1080	1570	68.8%	5.7%
2-Nitroaniline	< 317	983	1560	63.0%	1020	1570	65.0%	3.7%
Dimethylphthalate	< 63.5	1020	1560	65.4%	1090	1570	69.4%	6.6%
Acenaphthylene	< 63.5	1090	1560	69.9%	1170	1570	74.5%	7.1%
3-Nitroaniline	< 317	3110	4000	77.8%	3440	4030	85.4%	10.1%
Acenaphthene	< 63.5	1080	1560	69.2%	1160	1570	73.9%	7.1%
2,4-Dinitrophenol	< 635	1590	4680	34.0%	1820	4720	38.6%	13.5%
4-Nitrophenol	< 317	920	1560	59.0%	1010	1570	64.3%	9.3%
Dibenzofuran	< 63.5	1050	1560	67.3%	1110	1570	70.7%	5.6%
2,6-Dinitrotoluene	< 317	994	1560	63.7%	1070	1570	68.2%	7.4%
2,4-Dinitrotoluene	< 317	1050	1560	67.3%	1140	1570	72.6%	8.2%
Diethylphthalate	< 63.5	1030	1560	66.0%	1100	1570	70.1%	6.6%
4-Chlorophenyl-phenylether	< 63.5	1030	1560	66.0%	1100	1570	70.1%	6.6%
Fluorene	< 63.5	1080	1560	69.2%	1170	1570	74.5%	8.0%
4-Nitroaniline	< 317	935	1560	59.9%	913	1570	58.2%	2.4%
4,6-Dinitro-2-Methylphenol	< 635	2160	4680	46.2%	2300	4720	48.7%	6.3%
N-Nitrosodiphenylamine	< 63.5	981	1560	62.9%	990	1570	63.1%	0.9%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B66-(1-2)
MS/MSD

Lab Sample ID: PI35K
LIMS ID: 09-17712
Matrix: Soil
Date Analyzed MS: 08/04/09 01:29
MSD: 08/04/09 02:05

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
4-Bromophenyl-phenylether	< 63.5	991	1560	63.5%	1050	1570	66.9%	5.8%
Hexachlorobenzene	< 63.5	1030	1560	66.0%	1080	1570	68.8%	4.7%
Pentachlorophenol	< 317	875	1560	56.1%	962	1570	61.3%	9.5%
Phenanthrene	191	1250	1560	67.9%	1430	1570	78.9%	13.4%
Carbazole	< 63.5	1050	1560	67.3%	1080	1570	68.8%	2.8%
Anthracene	< 63.5	1030	1560	66.0%	1100	1570	70.1%	6.6%
Di-n-Butylphthalate	< 63.5	1030	1560	66.0%	1090	1570	69.4%	5.7%
Fluoranthene	162	1250	1560	69.7%	1440	1570	81.4%	14.1%
Pyrene	147	1070	1560	59.2%	1230	1570	69.0%	13.9%
Butylbenzylphthalate	< 63.5	882	1560	56.5%	936	1570	59.6%	5.9%
3,3'-Dichlorobenzidine	< 317	2390	4000	59.8%	2630	4030	65.3%	9.6%
Benzo(a)anthracene	91.4	1080	1560	63.4%	1210	1570	71.2%	11.4%
bis(2-Ethylhexyl)phthalate	< 63.5	979	1560	62.8%	1020	1570	65.0%	4.1%
Chrysene	139	1240	1560	70.6%	1350	1570	77.1%	8.5%
Di-n-Octyl phthalate	< 63.5	1010	1560	64.7%	1060	1570	67.5%	4.8%
Benzo(b)fluoranthene	141	1120	1560	62.8%	1290	1570	73.2%	14.1%
Benzo(k)fluoranthene	122	1260	1560	72.9%	1350	1570	78.2%	6.9%
Benzo(a)pyrene	119	1110	1560	63.5%	1250	1570	72.0%	11.9%
Indeno(1,2,3-cd)pyrene	92.6	923	1560	53.2%	950	1570	54.6%	2.9%
Dibenz(a,h)anthracene	< 63.5	898	1560	57.6%	918	1570	58.5%	2.2%
Benzo(g,h,i)perylene	121	838	1560	46.0%	849	1570	46.4%	1.3%
1-Methylnaphthalene	120	1170	1560	67.3%	1240	1570	71.3%	5.8%

Results reported in $\mu\text{g}/\text{kg}$
RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B66-(1-2)
MATRIX SPIKE

Lab Sample ID: PI35K
LIMS ID: 09-17712
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/28/09
Date Received: 07/28/09

Date Extracted: 07/30/09
Date Analyzed: 08/04/09 01:29
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 8.01 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.8%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	62	---
111-44-4	Bis-(2-Chloroethyl) Ether	62	---
95-57-8	2-Chlorophenol	62	---
541-73-1	1,3-Dichlorobenzene	62	---
106-46-7	1,4-Dichlorobenzene	62	---
100-51-6	Benzyl Alcohol	310	---
95-50-1	1,2-Dichlorobenzene	62	---
95-48-7	2-Methylphenol	62	---
108-60-1	2,2'-Oxybis(1-Chloropropane)	62	---
106-44-5	4-Methylphenol	62	---
621-64-7	N-Nitroso-Di-N-Propylamine	310	---
67-72-1	Hexachloroethane	62	---
98-95-3	Nitrobenzene	62	---
78-59-1	Isophorone	62	---
88-75-5	2-Nitrophenol	62	---
105-67-9	2,4-Dimethylphenol	62	---
65-85-0	Benzoic Acid	620	---
111-91-1	bis(2-Chloroethoxy) Methane	62	---
120-83-2	2,4-Dichlorophenol	310	---
120-82-1	1,2,4-Trichlorobenzene	62	---
91-20-3	Naphthalene	62	---
106-47-8	4-Chloroaniline	310	---
87-68-3	Hexachlorobutadiene	62	---
59-50-7	4-Chloro-3-methylphenol	310	---
91-57-6	2-Methylnaphthalene	62	---
77-47-4	Hexachlorocyclopentadiene	310	---
88-06-2	2,4,6-Trichlorophenol	310	---
95-95-4	2,4,5-Trichlorophenol	310	---
91-58-7	2-Chloronaphthalene	62	---
88-74-4	2-Nitroaniline	310	---
131-11-3	Dimethylphthalate	62	---
208-96-8	Acenaphthylene	62	---
99-09-2	3-Nitroaniline	310	---
83-32-9	Acenaphthene	62	---
51-28-5	2,4-Dinitrophenol	620	---
100-02-7	4-Nitrophenol	310	---
132-64-9	Dibenzofuran	62	---
606-20-2	2,6-Dinitrotoluene	310	---
121-14-2	2,4-Dinitrotoluene	310	---
84-66-2	Diethylphthalate	62	---
7005-72-3	4-Chlorophenyl-phenylether	62	---
86-73-7	Fluorene	62	---
100-01-6	4-Nitroaniline	310	---
534-52-1	4,6-Dinitro-2-Methylphenol	620	---

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: B66-(1-2)
MATRIX SPIKE

Lab Sample ID: PI35K
LIMS ID: 09-17712
Matrix: Soil
Date Analyzed: 08/04/09 01:29

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	62	---
101-55-3	4-Bromophenyl-phenylether	62	---
118-74-1	Hexachlorobenzene	62	---
87-86-5	Pentachlorophenol	310	---
85-01-8	Phenanthrene	62	---
86-74-8	Carbazole	62	---
120-12-7	Anthracene	62	---
84-74-2	Di-n-Butylphthalate	62	---
206-44-0	Fluoranthene	62	---
129-00-0	Pyrene	62	---
85-68-7	Butylbenzylphthalate	62	---
91-94-1	3,3'-Dichlorobenzidine	310	---
56-55-3	Benzo(a)anthracene	62	---
117-81-7	bis(2-Ethylhexyl)phthalate	62	---
218-01-9	Chrysene	62	---
117-84-0	Di-n-Octyl phthalate	62	---
205-99-2	Benzo(b)fluoranthene	62	---
207-08-9	Benzo(k)fluoranthene	62	---
50-32-8	Benzo(a)pyrene	62	---
193-39-5	Indeno(1,2,3-cd)pyrene	62	---
53-70-3	Dibenz(a,h)anthracene	62	---
191-24-2	Benzo(g,h,i)perylene	62	---
90-12-0	1-Methylnaphthalene	62	---


Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.2%	2-Fluorobiphenyl	70.0%
d14-p-Terphenyl	64.8%	d4-1,2-Dichlorobenzene	66.4%
d5-Phenol	64.0%	2-Fluorophenol	61.3%
2,4,6-Tribromophenol	79.2%	d4-2-Chlorophenol	66.9%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: B66-(1-2)
MATRIX SPIKE DUPLICATE

Lab Sample ID: PI35K
LIMS ID: 09-17712
Matrix: Soil
Data Release Authorized: 
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/28/09
Date Received: 07/28/09

Date Extracted: 07/30/09
Date Analyzed: 08/04/09 02:05
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.95 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: 4.8%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	63	---
111-44-4	Bis-(2-Chloroethyl) Ether	63	---
95-57-8	2-Chlorophenol	63	---
541-73-1	1,3-Dichlorobenzene	63	---
106-46-7	1,4-Dichlorobenzene	63	---
100-51-6	Benzyl Alcohol	310	---
95-50-1	1,2-Dichlorobenzene	63	---
95-48-7	2-Methylphenol	63	---
108-60-1	2,2'-Oxybis(1-Chloropropane)	63	---
106-44-5	4-Methylphenol	63	---
621-64-7	N-Nitroso-Di-N-Propylamine	310	---
67-72-1	Hexachloroethane	63	---
98-95-3	Nitrobenzene	63	---
78-59-1	Isophorone	63	---
88-75-5	2-Nitrophenol	63	---
105-67-9	2,4-Dimethylphenol	63	---
65-85-0	Benzoic Acid	630	---
111-91-1	bis(2-Chloroethoxy) Methane	63	---
120-83-2	2,4-Dichlorophenol	310	---
120-82-1	1,2,4-Trichlorobenzene	63	---
91-20-3	Naphthalene	63	---
106-47-8	4-Chloroaniline	310	---
87-68-3	Hexachlorobutadiene	63	---
59-50-7	4-Chloro-3-methylphenol	310	---
91-57-6	2-Methylnaphthalene	63	---
77-47-4	Hexachlorocyclopentadiene	310	---
88-06-2	2,4,6-Trichlorophenol	310	---
95-95-4	2,4,5-Trichlorophenol	310	---
91-58-7	2-Chloronaphthalene	63	---
88-74-4	2-Nitroaniline	310	---
131-11-3	Dimethylphthalate	63	---
208-96-8	Acenaphthylene	63	---
99-09-2	3-Nitroaniline	310	---
83-32-9	Acenaphthene	63	---
51-28-5	2,4-Dinitrophenol	630	---
100-02-7	4-Nitrophenol	310	---
132-64-9	Dibenzofuran	63	---
606-20-2	2,6-Dinitrotoluene	310	---
121-14-2	2,4-Dinitrotoluene	310	---
84-66-2	Diethylphthalate	63	---
7005-72-3	4-Chlorophenyl-phenylether	63	---
86-73-7	Fluorene	63	---
100-01-6	4-Nitroaniline	310	---
534-52-1	4,6-Dinitro-2-Methylphenol	630	---

Sample ID: B66-(1-2)
 MATRIX SPIKE DUPLICATE

Lab Sample ID: PI35K
 LIMS ID: 09-17712
 Matrix: Soil
 Date Analyzed: 08/04/09 02:05

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	63	---
101-55-3	4-Bromophenyl-phenylether	63	---
118-74-1	Hexachlorobenzene	63	---
87-86-5	Pentachlorophenol	310	---
85-01-8	Phenanthrene	63	---
86-74-8	Carbazole	63	---
120-12-7	Anthracene	63	---
84-74-2	Di-n-Butylphthalate	63	---
206-44-0	Fluoranthene	63	---
129-00-0	Pyrene	63	---
85-68-7	Butylbenzylphthalate	63	---
91-94-1	3,3'-Dichlorobenzidine	310	---
56-55-3	Benzo(a)anthracene	63	---
117-81-7	bis(2-Ethylhexyl)phthalate	63	---
218-01-9	Chrysene	63	---
117-84-0	Di-n-Octyl phthalate	63	---
205-99-2	Benzo(b)fluoranthene	63	---
207-08-9	Benzo(k)fluoranthene	63	---
50-32-8	Benzo(a)pyrene	63	---
193-39-5	Indeno(1,2,3-cd)pyrene	63	---
53-70-3	Dibenz(a,h)anthracene	63	---
191-24-2	Benzo(g,h,i)perylene	63	---
90-12-0	1-Methylnaphthalene	63	---


Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	70.4%	2-Fluorobiphenyl	74.0%
d14-p-Terphenyl	68.0%	d4-1,2-Dichlorobenzene	68.8%
d5-Phenol	67.7%	2-Fluorophenol	64.3%
2,4,6-Tribromophenol	83.5%	d4-2-Chlorophenol	71.2%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: LCS-073009
LCS/LCSD

Lab Sample ID: LCS-073009
LIMS ID: 09-17712
Matrix: Soil
Data Release Authorized: 
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: 07/28/09
Date Received: 07/28/09

Date Extracted LCS/LCSD: 07/30/09

Sample Amount LCS: 7.50 g
LCSD: 7.50 g

Date Analyzed LCS: 08/03/09 22:31
LCSD: 08/03/09 23:07

Final Extract Volume LCS: 0.5 mL
LCSD: 0.5 mL

Instrument/Analyst LCS: NT4/JZ
LCSD: NT4/JZ

Dilution Factor LCS: 1.00
LCSD: 1.00

GPC Cleanup: NO

Percent Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Phenol	1240	1670	74.3%	1240	1670	74.3%	0.0%
Bis-(2-Chloroethyl) Ether	1060	1670	63.5%	1070	1670	64.1%	0.9%
2-Chlorophenol	1270	1670	76.0%	1290	1670	77.2%	1.6%
1,3-Dichlorobenzene	1200	1670	71.9%	1230	1670	73.7%	2.5%
1,4-Dichlorobenzene	1210	1670	72.5%	1250	1670	74.9%	3.3%
Benzyl Alcohol	2270	3330	68.2%	2300	3330	69.1%	1.3%
1,2-Dichlorobenzene	1210	1670	72.5%	1240	1670	74.3%	2.4%
2-Methylphenol	1150	1670	68.9%	1160	1670	69.5%	0.9%
2,2'-Oxybis(1-Chloropropane)	1040	1670	62.3%	1050	1670	62.9%	1.0%
4-Methylphenol	2340	3330	70.3%	2350	3330	70.6%	0.4%
N-Nitroso-Di-N-Propylamine	1130	1670	67.7%	1150	1670	68.9%	1.8%
Hexachloroethane	1230	1670	73.7%	1250	1670	74.9%	1.6%
Nitrobenzene	1290	1670	77.2%	1250	1670	74.9%	3.1%
Isophorone	1190	1670	71.3%	1220	1670	73.1%	2.5%
2-Nitrophenol	1180	1670	70.7%	1210	1670	72.5%	2.5%
2,4-Dimethylphenol	1170	1670	70.1%	1200	1670	71.9%	2.5%
Benzoic Acid	3570	5000	71.4%	3680	5000	73.6%	3.0%
bis(2-Chloroethoxy) Methane	1130	1670	67.7%	1150	1670	68.9%	1.8%
2,4-Dichlorophenol	1240	1670	74.3%	1250	1670	74.9%	0.8%
1,2,4-Trichlorobenzene	1250	1670	74.9%	1260	1670	75.4%	0.8%
Naphthalene	1230	1670	73.7%	1260	1670	75.4%	2.4%
4-Chloroaniline	3730	4000	93.2%	3810	4000	95.2%	2.1%
Hexachlorobutadiene	1290	1670	77.2%	1330	1670	79.6%	3.1%
4-Chloro-3-methylphenol	1250	1670	74.9%	1270	1670	76.0%	1.6%
2-Methylnaphthalene	1250	1670	74.9%	1270	1670	76.0%	1.6%
Hexachlorocyclopentadiene	3610	5000	72.2%	3740	5000	74.8%	3.5%
2,4,6-Trichlorophenol	1240	1670	74.3%	1270	1670	76.0%	2.4%
2,4,5-Trichlorophenol	1300	1670	77.8%	1310	1670	78.4%	0.8%
2-Chloronaphthalene	1250	1670	74.9%	1290	1670	77.2%	3.1%
2-Nitroaniline	1190	1670	71.3%	1220	1670	73.1%	2.5%
Dimethylphthalate	1230	1670	73.7%	1270	1670	76.0%	3.2%
Acenaphthylene	1330	1670	79.6%	1360	1670	81.4%	2.2%
3-Nitroaniline	4000	4270	93.7%	4140	4270	97.0%	3.4%
Acenaphthene	1300	1670	77.8%	1340	1670	80.2%	3.0%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: LCSD-073009
LCS/LCSD

Lab Sample ID: LCS-073009
LIMS ID: 09-17712
Matrix: Soil
Date Analyzed LCS: 08/03/09 22:31
LCSD: 08/03/09 23:07

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
2,4-Dinitrophenol	5410	5000	108%	5260	5000	105%	2.8%
4-Nitrophenol	1260	1670	75.4%	1310	1670	78.4%	3.9%
Dibenzofuran	1220	1670	73.1%	1250	1670	74.9%	2.4%
2,6-Dinitrotoluene	1230	1670	73.7%	1250	1670	74.9%	1.6%
2,4-Dinitrotoluene	1270	1670	76.0%	1290	1670	77.2%	1.6%
Diethylphthalate	1240	1670	74.3%	1270	1670	76.0%	2.4%
4-Chlorophenyl-phenylether	1250	1670	74.9%	1300	1670	77.8%	3.9%
Fluorene	1300	1670	77.8%	1330	1670	79.6%	2.3%
4-Nitroaniline	1220	1670	73.1%	1240	1670	74.3%	1.6%
4,6-Dinitro-2-Methylphenol	4340	5000	86.8%	4340	5000	86.8%	0.0%
N-Nitrosodiphenylamine	1190	1670	71.3%	1220	1670	73.1%	2.5%
4-Bromophenyl-phenylether	1210	1670	72.5%	1230	1670	73.7%	1.6%
Hexachlorobenzene	1260	1670	75.4%	1280	1670	76.6%	1.6%
Pentachlorophenol	1070	1670	64.1%	1080	1670	64.7%	0.9%
Phenanthrene	1260	1670	75.4%	1270	1670	76.0%	0.8%
Carbazole	1240	1670	74.3%	1270	1670	76.0%	2.4%
Anthracene	1220	1670	73.1%	1250	1670	74.9%	2.4%
Di-n-Butylphthalate	1250	1670	74.9%	1280	1670	76.6%	2.4%
Fluoranthene	1290	1670	77.2%	1330	1670	79.6%	3.1%
Pyrene	1220	1670	73.1%	1230	1670	73.7%	0.8%
Butylbenzylphthalate	1170	1670	70.1%	1170	1670	70.1%	0.0%
3,3'-Dichlorobenzidine	3950	4270	92.5%	4010	4270	93.9%	1.5%
Benzo (a) anthracene	1240	1670	74.3%	1250	1670	74.9%	0.8%
bis(2-Ethylhexyl)phthalate	1210	1670	72.5%	1240	1670	74.3%	2.4%
Chrysene	1350	1670	80.8%	1370	1670	82.0%	1.5%
Di-n-Octyl phthalate	1230	1670	73.7%	1250	1670	74.9%	1.6%
Benzo (b) fluoranthene	1270	1670	76.0%	1300	1670	77.8%	2.3%
Benzo (k) fluoranthene	1270	1670	76.0%	1310	1670	78.4%	3.1%
Benzo (a) pyrene	1250	1670	74.9%	1290	1670	77.2%	3.1%
Indeno (1,2,3-cd) pyrene	1370	1670	82.0%	1400	1670	83.8%	2.2%
Dibenz (a,h) anthracene	1340	1670	80.2%	1390	1670	83.2%	3.7%
Benzo (g,h,i) perylene	1280	1670	76.6%	1320	1670	79.0%	3.1%
1-Methylnaphthalene	1280	1670	76.6%	1300	1670	77.8%	1.6%


Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	78.0%	78.4%
2-Fluorobiphenyl	83.2%	83.2%
d14-p-Terphenyl	83.6%	81.2%
d4-1,2-Dichlorobenzene	78.8%	78.4%
d5-Phenol	78.1%	77.3%
2-Fluorophenol	78.9%	78.9%
2,4,6-Tribromophenol	91.7%	92.5%
d4-2-Chlorophenol	80.5%	80.8%

Results reported in $\mu\text{g}/\text{kg}$
RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: MB-073009
METHOD BLANK

Lab Sample ID: MB-073009
LIMS ID: 09-17712
Matrix: Soil
Data Release Authorized: 
Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043
Date Sampled: NA
Date Received: NA

Date Extracted: 07/30/09
Date Analyzed: 08/03/09 21:55
Instrument/Analyst: NT4/JZ
GPC Cleanup: No

Sample Amount: 7.50 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
108-95-2	Phenol	67	< 67 U
111-44-4	Bis-(2-Chloroethyl) Ether	67	< 67 U
95-57-8	2-Chlorophenol	67	< 67 U
541-73-1	1,3-Dichlorobenzene	67	< 67 U
106-46-7	1,4-Dichlorobenzene	67	< 67 U
100-51-6	Benzyl Alcohol	330	< 330 U
95-50-1	1,2-Dichlorobenzene	67	< 67 U
95-48-7	2-Methylphenol	67	< 67 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	67	< 67 U
106-44-5	4-Methylphenol	67	< 67 U
621-64-7	N-Nitroso-Di-N-Propylamine	330	< 330 U
67-72-1	Hexachloroethane	67	< 67 U
98-95-3	Nitrobenzene	67	< 67 U
78-59-1	Isophorone	67	< 67 U
88-75-5	2-Nitrophenol	67	< 67 U
105-67-9	2,4-Dimethylphenol	67	< 67 U
65-85-0	Benzoic Acid	670	< 670 U
111-91-1	bis(2-Chloroethoxy) Methane	67	< 67 U
120-83-2	2,4-Dichlorophenol	330	< 330 U
120-82-1	1,2,4-Trichlorobenzene	67	< 67 U
91-20-3	Naphthalene	67	< 67 U
106-47-8	4-Chloroaniline	330	< 330 U
87-68-3	Hexachlorobutadiene	67	< 67 U
59-50-7	4-Chloro-3-methylphenol	330	< 330 U
91-57-6	2-Methylnaphthalene	67	< 67 U
77-47-4	Hexachlorocyclopentadiene	330	< 330 U
88-06-2	2,4,6-Trichlorophenol	330	< 330 U
95-95-4	2,4,5-Trichlorophenol	330	< 330 U
91-58-7	2-Chloronaphthalene	67	< 67 U
88-74-4	2-Nitroaniline	330	< 330 U
131-11-3	Dimethylphthalate	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
99-09-2	3-Nitroaniline	330	< 330 U
83-32-9	Acenaphthene	67	< 67 U
51-28-5	2,4-Dinitrophenol	670	< 670 U
100-02-7	4-Nitrophenol	330	< 330 U
132-64-9	Dibenzofuran	67	< 67 U
606-20-2	2,6-Dinitrotoluene	330	< 330 U
121-14-2	2,4-Dinitrotoluene	330	< 330 U
84-66-2	Diethylphthalate	67	< 67 U
7005-72-3	4-Chlorophenyl-phenylether	67	< 67 U
86-73-7	Fluorene	67	< 67 U
100-01-6	4-Nitroaniline	330	< 330 U
534-52-1	4,6-Dinitro-2-Methylphenol	670	< 670 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: MB-073009
METHOD BLANK

Lab Sample ID: MB-073009
LIMS ID: 09-17712
Matrix: Soil
Date Analyzed: 08/03/09 21:55

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014040.043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	67	< 67 U
101-55-3	4-Bromophenyl-phenylether	67	< 67 U
118-74-1	Hexachlorobenzene	67	< 67 U
87-86-5	Pentachlorophenol	330	< 330 U
85-01-8	Phenanthrene	67	< 67 U
86-74-8	Carbazole	67	< 67 U
120-12-7	Anthracene	67	< 67 U
84-74-2	Di-n-Butylphthalate	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
85-68-7	Butylbenzylphthalate	67	< 67 U
91-94-1	3,3'-Dichlorobenzidine	330	< 330 U
56-55-3	Benzo (a) anthracene	67	< 67 U
117-81-7	bis (2-Ethylhexyl) phthalate	67	< 67 U
218-01-9	Chrysene	67	< 67 U
117-84-0	Di-n-Octyl phthalate	67	< 67 U
205-99-2	Benzo (b) fluoranthene	67	< 67 U
207-08-9	Benzo (k) fluoranthene	67	< 67 U
50-32-8	Benzo (a) pyrene	67	< 67 U
193-39-5	Indeno (1,2,3-cd) pyrene	67	< 67 U
53-70-3	Dibenz (a,h) anthracene	67	< 67 U
191-24-2	Benzo (g,h,i) perylene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.2%	2-Fluorobiphenyl	74.4%
d14-p-Terphenyl	80.4%	d4-1,2-Dichlorobenzene	71.6%
d5-Phenol	65.9%	2-Fluorophenol	66.4%
2,4,6-Tribromophenol	84.3%	d4-2-Chlorophenol	70.4%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: B50A-(15-16)

SAMPLE

Lab Sample ID: PI35A

LIMS ID: 09-17702

Matrix: Soil

Data Release Authorized: 

Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Date Analyzed: 07/30/09 17:59

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 58 mg-dry-wt

Percent Moisture: 32.9%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	22	< 22 U
108-88-3	Toluene	22	81
100-41-4	Ethylbenzene	22	55
179601-23-1	m,p-Xylene	43	170
95-47-6	o-Xylene	22	< 22 U

	RL	Result	GAS ID
Gasoline Range Hydrocarbons	8.6	60	GRO

BETX Surrogate Recovery

Trifluorotoluene	95.1%
Bromobenzene	97.0%

Gasoline Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	104%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B51-(15-16)

SAMPLE

Lab Sample ID: PI35B

LIMS ID: 09-17703

Matrix: Soil

Data Release Authorized:

Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Date Analyzed: 07/30/09 13:52

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 10 mg-dry-wt

Percent Moisture: 27.4%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	120	< 120 U
108-88-3	Toluene	120	700
100-41-4	Ethylbenzene	120	510
179601-23-1	m,p-Xylene	250	1,200
95-47-6	o-Xylene	120	640

Gasoline Range Hydrocarbons

50

1,600

GAS ID
GRO

BETX Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	106%

Gasoline Surrogate Recovery

Trifluorotoluene	109%
Bromobenzene	121%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.


GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B51-5'
 SAMPLE

Lab Sample ID: PI35C
 LIMS ID: 09-17704
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: 07/28/09
 Date Received: 07/28/09

Date Analyzed: 07/30/09 14:17
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 10 mg-dry-wt
 Percent Moisture: 12.0%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	120	460
108-88-3	Toluene	120	2,200
100-41-4	Ethylbenzene	120	1,400
179601-23-1	m,p-Xylene	250	3,800
95-47-6	o-Xylene	120	1,700

	RL	Result	GAS ID
Gasoline Range Hydrocarbons	50	3,200	GRO

BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	113%

Gasoline Surrogate Recovery

Trifluorotoluene	105%
Bromobenzene	89.6%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B52-(15-16)
 SAMPLE

Lab Sample ID: PI35D
 LIMS ID: 09-17705
 Matrix: Soil
 Data Release Authorized: *[Signature]*
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: 07/28/09
 Date Received: 07/28/09

Date Analyzed: 07/30/09 15:56
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 110 mg-dry-wt
 Percent Moisture: 23.9%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	53
108-88-3	Toluene	12	26
100-41-4	Ethylbenzene	12	20
179601-23-1	m,p-Xylene	23	62
95-47-6	o-Xylene	12	180

	RL	Result	GAS ID
Gasoline Range Hydrocarbons	4.7	12	GAS

BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	98.0%

Gasoline Surrogate Recovery

Trifluorotoluene	107%
Bromobenzene	104%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)


GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B52-6.5'
 SAMPLE

Lab Sample ID: PI35E
 LIMS ID: 09-17706
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: 07/28/09
 Date Received: 07/28/09

Date Analyzed: 07/31/09 13:05
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 48 mg-dry-wt
 Percent Moisture: 43.1%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	26	79
108-88-3	Toluene	26	110
100-41-4	Ethylbenzene	26	430
179601-23-1	m,p-Xylene	52	530
95-47-6	o-Xylene	26	440

	RL	Result	GAS ID GAS/GRO
Gasoline Range Hydrocarbons	10	760	

BETX Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	116%

Gasoline Surrogate Recovery

Trifluorotoluene	107%
Bromobenzene	112%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: B53-(15-16)

SAMPLE

Lab Sample ID: PI35F

LIMS ID: 09-17707

Matrix: Soil

Data Release Authorized: 

Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Date Analyzed: 07/30/09 16:20

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 91 mg-dry-wt

Percent Moisture: 24.9%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	14	< 14 U
108-88-3	Toluene	14	18
100-41-4	Ethylbenzene	14	< 14 U
179601-23-1	m,p-Xylene	27	< 27 U
95-47-6	o-Xylene	14	< 14 U

			GAS ID
Gasoline Range Hydrocarbons	5.5	< 5.5 U	---

BETX Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	98.9%

Gasoline Surrogate Recovery

Trifluorotoluene	109%
Bromobenzene	105%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.


GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: B54-(15-16)
 SAMPLE

Lab Sample ID: PI35G
 LIMS ID: 09-17708
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: 07/28/09
 Date Received: 07/28/09

Date Analyzed: 07/30/09 16:45
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 75 mg-dry-wt
 Percent Moisture: 28.7%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	17	< 17 U
108-88-3	Toluene	17	< 17 U
100-41-4	Ethylbenzene	17	< 17 U
179601-23-1	m,p-Xylene	33	< 33 U
95-47-6	o-Xylene	17	< 17 U

Gasoline Range Hydrocarbons 6.7 11 GAS ID GRO

BETX Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	104%

Gasoline Surrogate Recovery

Trifluorotoluene	110%
Bromobenzene	110%

BETX values reported in µg/kg (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.
 Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.
 Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Matrix: Soil


QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Data Release Authorized: 

Reported: 08/05/09

ARI ID	Client ID	Analysis			Result
		Date	Basis	Range	
PI35H 09-17709	B54-4'	07/30/09	Dry	Gasoline	180
		PID3		HC ID	GRO
				Trifluorotoluene	110%
				Bromobenzene	91.3%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: PI35
Matrix: Soil

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043

<u>Client ID</u>	<u>BFB</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT</u>	<u>OUT</u>
MB-073009	NA	104%	104%	0	
LCS-073009	NA	108%	106%	0	
LCSD-073009	NA	112%	110%	0	
B50A-(15-16)	NA	101%	104%	0	
B51-(15-16)	NA	109%	121%	0	
B51-5'	NA	105%	89.6%	0	
B52-(15-16)	NA	107%	104%	0	
MB-073109	NA	97.0%	101%	0	
LCS-073109	NA	99.6%	98.8%	0	
LCSD-073109	NA	98.1%	97.8%	0	
B52-6.5'	NA	107%	112%	0	
B53-(15-16)	NA	109%	105%	0	
B54-(15-16)	NA	110%	110%	0	
B54-4'	NA	110%	91.3%	0	

	LCS/MB LIMITS	QC LIMITS
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(66-123)
(BBZ) = Bromobenzene	(80-120)	(62-130)

Log Number Range: 09-17702 to 09-17709

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: PI35
Matrix: Soil

QC Report No: PI35-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-073009	100%	100%	0
LCS-073009	105%	102%	0
LCSD-073009	109%	108%	0
B50A-(15-16)	95.1%	97.0%	0
B51-(15-16)	104%	106%	0
B51-5'	100%	113%	0
B52-(15-16)	100%	98.0%	0
MB-073109	91.7%	94.7%	0
LCS-073109	94.5%	94.4%	0
LCSD-073109	92.8%	93.0%	0
B52-6.5'	102%	116%	0
B53-(15-16)	103%	98.9%	0
B54-(15-16)	104%	104%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(68-124)
(BBZ) = Bromobenzene	(77-120)	(62-134)

Log Number Range: 09-17702 to 09-17708

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-073009

LAB CONTROL SAMPLE

Lab Sample ID: LCS-073009

LIMS ID: 09-17702

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 07/30/09 09:41

LCSD: 07/30/09 10:06

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	51.8	50.0	104%	51.2	50.0	102%	1.2%

Reported in mg/kg (ppm)


RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	108%	112%
Bromobenzene	106%	110%

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 Page 1 of 1

Sample ID: LCS-073009
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-073009
 LIMS ID: 09-17702
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 07/30/09 09:41
 LCSD: 07/30/09 10:06
 Instrument/Analyst LCS: PID3/MH
 LCSD: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount LCS: 100 mg-dry-wt
 LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	250	265	94.3%	254	265	95.8%	1.6%
Toluene	1920	2060	93.2%	1940	2060	94.2%	1.0%
Ethylbenzene	458	500	91.6%	458	500	91.6%	0.0%
m,p-Xylene	2020	2120	95.3%	2010	2120	94.8%	0.5%
o-Xylene	728	745	97.7%	728	745	97.7%	0.0%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	105%	109%
Bromobenzene	102%	108%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: LCS-073109

LAB CONTROL SAMPLE

Lab Sample ID: LCS-073109

LIMS ID: 09-17706

Matrix: Soil

Data Release Authorized: 

Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 07/31/09 10:56

LCSD: 07/31/09 11:20

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	48.6	50.0	97.2%	48.4	50.0	96.8%	0.4%

Reported in mg/kg (ppm)


RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	99.6%	98.1%
Bromobenzene	98.8%	97.8%

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 Page 1 of 1

Sample ID: LCS-073109
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-073109
 LIMS ID: 09-17706
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 07/31/09 10:56
 LCSD: 07/31/09 11:20
 Instrument/Analyst LCS: PID3/MH
 LCSD: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount LCS: 100 mg-dry-wt
 LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	230	265	86.8%	224	265	84.5%	2.6%
Toluene	1730	2060	84.0%	1730	2060	84.0%	0.0%
Ethylbenzene	420	500	84.0%	416	500	83.2%	1.0%
m,p-Xylene	1830	2120	86.3%	1810	2120	85.4%	1.1%
o-Xylene	662	745	88.9%	666	745	89.4%	0.6%

Reported in $\mu\text{g}/\text{kg}$ (ppb)


RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	94.5%	92.8%
Bromobenzene	94.4%	93.0%

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MB-073009
 METHOD BLANK

Lab Sample ID: MB-073009
 LIMS ID: 09-17702
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: NA
 Date Received: NA

Date Analyzed: 07/30/09 10:30
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	< 12 U
108-88-3	Toluene	12	< 12 U
100-41-4	Ethylbenzene	12	< 12 U
179601-23-1	m,p-Xylene	25	< 25 U
95-47-6	o-Xylene	12	< 12 U

Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	100%

Gasoline Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	104%


BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MB-073109
 METHOD BLANK

Lab Sample ID: MB-073109
 LIMS ID: 09-17706
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/05/09

QC Report No: PI35-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: NA
 Date Received: NA

Date Analyzed: 07/31/09 11:45
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result
71-43-2	Benzene	12	< 12 U
108-88-3	Toluene	12	< 12 U
100-41-4	Ethylbenzene	12	< 12 U
179601-23-1	m,p-Xylene	25	< 25 U
95-47-6	o-Xylene	12	< 12 U

Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	91.7%
Bromobenzene	94.7%

Gasoline Surrogate Recovery

Trifluorotoluene	97.0%
Bromobenzene	101%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: B62-(1-2)
SAMPLE

Lab Sample ID: PI35I

LIMS ID: 09-17710

Matrix: Soil

Data Release Authorized. 

Reported: 08/07/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Percent Total Solids: 89.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/04/09	7440-38-2	Arsenic	10	10	U
3050B	08/03/09	6010B	08/04/09	7440-43-9	Cadmium	0.5	0.5	U
3050B	08/03/09	6010B	08/04/09	7440-47-3	Chromium	1	26	
3050B	08/03/09	6010B	08/04/09	7440-50-8	Copper	0.5	36.3	
3050B	08/03/09	6010B	08/04/09	7439-92-1	Lead	5	53	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.04	
3050B	08/03/09	6010B	08/04/09	7440-66-6	Zinc	3	94	

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B63-(1-2)

SAMPLE

Lab Sample ID: PI35J

LIMS ID: 09-17711

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Percent Total Solids: 93.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/04/09	7440-38-2	Arsenic	5	5	U
3050B	08/03/09	6010B	08/04/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/04/09	7440-47-3	Chromium	0.5	32.7	
3050B	08/03/09	6010B	08/04/09	7440-50-8	Copper	0.2	23.4	
3050B	08/03/09	6010B	08/04/09	7439-92-1	Lead	2	39	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.05	
3050B	08/03/09	6010B	08/04/09	7440-66-6	Zinc	1	57	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B66-(1-2)

SAMPLE

Lab Sample ID: PI35K

LIMS ID: 09-17712

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Percent Total Solids: 86.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/04/09	7440-38-2	Arsenic	5	5	
3050B	08/03/09	6010B	08/04/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/04/09	7440-47-3	Chromium	0.5	22.2	
3050B	08/03/09	6010B	08/04/09	7440-50-8	Copper	0.2	47.7	
3050B	08/03/09	6010B	08/04/09	7439-92-1	Lead	2	6	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.02	
3050B	08/03/09	6010B	08/04/09	7440-66-6	Zinc	1	47	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: B68-(1-2)

SAMPLE

Lab Sample ID: PI35L

LIMS ID: 09-17713

Matrix: Soil

Data Release Authorized 

Reported: 08/07/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: 07/28/09

Date Received: 07/28/09

Percent Total Solids: 88.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/04/09	7440-38-2	Arsenic	5	6	
3050B	08/03/09	6010B	08/04/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/04/09	7440-47-3	Chromium	0.5	25.9	
3050B	08/03/09	6010B	08/04/09	7440-50-8	Copper	0.2	38.9	
3050B	08/03/09	6010B	08/04/09	7439-92-1	Lead	2	41	
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.08	
3050B	08/03/09	6010B	08/04/09	7440-66-6	Zinc	1	71	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

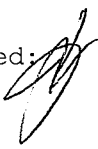
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: PI35LCS

LIMS ID: 09-17710

Matrix: Soil

Data Release Authorized: 

Reported: 08/07/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	219	200	110%	
Cadmium	6010B	50.7	50.0	101%	
Chromium	6010B	52.4	50.0	105%	
Copper	6010B	50.5	50.0	101%	
Lead	6010B	207	200	104%	
Mercury	7471A	0.48	0.50	96.0%	
Zinc	6010B	51	50	102%	

Reported in mg/kg-dry

N-Control limit not met

NA-Not Applicable, Analyte Not Spiked

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: PI35MB

LIMS ID: 09-17710

Matrix: Soil

Data Release Authorized 

Reported: 08/07/09

QC Report No: PI35-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014040.043

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/03/09	6010B	08/04/09	7440-38-2	Arsenic	5	5	U
3050B	08/03/09	6010B	08/04/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/03/09	6010B	08/04/09	7440-47-3	Chromium	0.5	0.5	U
3050B	08/03/09	6010B	08/04/09	7440-50-8	Copper	0.2	0.2	U
3050B	08/03/09	6010B	08/04/09	7439-92-1	Lead	2	2	U
CLP	08/03/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.02	U
3050B	08/03/09	6010B	08/04/09	7440-66-6	Zinc	1	1	U

U-Analyte undetected at given RL

RL-Reporting Limit



Analytical Resources, Incorporated

Analytical Chemists and Consultants

August 10, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

**RE: Project: Qwest North Lot
ARI Job: PI99**

Dear Tim:

Please find enclosed a copy of the chain of custody (COC) records and analytical results for the above referenced project. Analytical Resources, Inc. accepted one soil sample August 3, 2009. The sample was received at a cooler temperature of 1.0°C.

The sample was analyzed for NWTPH-Gx plus BTEX, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

A handwritten signature in black ink, appearing to read "Kelly Bottem".

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

PI99

Date 8/3/09
 Page 1 of 1

Chain-of-Custody Record

Project Name <u>QWEST North Lot</u> Project No. <u>1014040.043</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____				
Project Location/Event <u>Seattle / Additional Investigation</u>					<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 2em;">G/BTEX</div>														
Sampler's Name <u>Elizabeth Rode</u>																			
Project Contact <u>Tim Syverson</u>																			
Send Results To <u>Tim Syverson Anne Halverson</u>																			
Sample I.D.	Date	Time	Matrix	No. of Containers											Observations/Comments				
<u>MN-11(4.5-5)</u>	<u>8/3/09</u>	<u>1210</u>	<u>S</u>	<u>3</u>											___ Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx: ___ run acid wash/silica gel cleanup ___ run samples standardized to _____ product ___ Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): ___ non-preserved ___ preserved w/methanol ___ preserved w/sodium bisulfate ___ Freeze upon receipt ___ Dissolved metal water samples field filtered Other _____ _____ _____				
Special Shipment/Handling or Storage Requirements <u>Store @ 6°C</u>										Method of Shipment <u>Drop off</u>									
Relinquished by Signature <u>[Signature]</u> Printed Name <u>Daniel Feuer</u> Company <u>Landau</u> Date <u>8/3/09</u> Time <u>3 PM</u>					Received by Signature <u>[Signature]</u> Printed Name <u>A. Peterson</u> Company <u>ART</u> Date <u>8/3/09</u> Time <u>1500</u>					Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____					Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____				



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: Quest North Lot

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: PI99

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)..... 1.0

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 487405

Cooler Accepted by: JP Date: 3/8/09 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

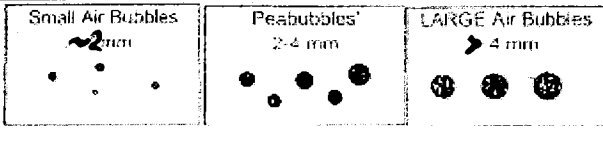
Samples Logged by: AV Date: 8/3/09 Time: 1500

**** 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"

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-11(4.5-5)
 SAMPLE

Lab Sample ID: PI99A
 LIMS ID: 09-18146
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/10/09

QC Report No: PI99-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: 08/03/09
 Date Received: 08/03/09

Date Analyzed: 08/04/09 16:57
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 120 mg-dry-wt
 Percent Moisture: 17.9%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	11	20
108-88-3	Toluene	11	48
100-41-4	Ethylbenzene	11	170
179601-23-1	m,p-Xylene	21	140
95-47-6	o-Xylene	11	200

Gasoline Range Hydrocarbons	4.3	250	GAS ID GAS/GRO
------------------------------------	------------	------------	-------------------

BETX Surrogate Recovery

Trifluorotoluene	113%
Bromobenzene	118%

Gasoline Surrogate Recovery

Trifluorotoluene	114%
Bromobenzene	82.1%

BETX values reported in µg/kg (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.
 Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.
 Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MB-080409
 METHOD BLANK

Lab Sample ID: MB-080409
 LIMS ID: 09-18146
 Matrix: Soil
 Data Release Authorized: *AB*
 Reported: 08/10/09

QC Report No: PI99-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: NA
 Date Received: NA

Date Analyzed: 08/04/09 15:54
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	12	< 12 U	
108-88-3	Toluene	12	< 12 U	
100-41-4	Ethylbenzene	12	< 12 U	
179601-23-1	m,p-Xylene	25	< 25 U	
95-47-6	o-Xylene	12	< 12 U	
	Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---

BETX Surrogate Recovery

Trifluorotoluene	110%
Bromobenzene	106%

Gasoline Surrogate Recovery

Trifluorotoluene	114%
Bromobenzene	109%

BETX values reported in µg/kg (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.
 Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: PI99
Matrix: Soil

QC Report No: PI99-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-080409	110%	106%	0
LCS-080409	117%	109%	0
LCSD-080409	112%	104%	0
MW-11(4.5-5)	113%	118%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(68-124)
(BBZ) = Bromobenzene	(77-120)	(62-134)

Log Number Range: 09-18146 to 09-18146

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: PI99
Matrix: Soil

QC Report No: PI99-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014040.043


<u>Client ID</u>	<u>BFB</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-080409	NA	114%	109%	0
LCS-080409	NA	120%	110%	0
LCSD-080409	NA	113%	106%	0
MW-11(4.5-5)	NA	114%	82.1%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(66-123)
(BBZ) = Bromobenzene	(80-120)	(62-130)

Log Number Range: 09-18146 to 09-18146

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
 Page 1 of 1

Sample ID: LCS-080409
LAB CONTROL SAMPLE

Lab Sample ID: LCS-080409
 LIMS ID: 09-18146
 Matrix: Soil
 Data Release Authorized: 
 Reported: 08/10/09

QC Report No: PI99-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014040.043
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 08/04/09 15:05
 LCSD: 08/04/09 15:29
 Instrument/Analyst LCS: PID3/MH
 LCSD: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount LCS: 100 mg-dry-wt
 LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	280	265	106%	270	265	102%	3.6%
Toluene	2130	2060	103%	2010	2060	97.6%	5.8%
Ethylbenzene	516	500	103%	485	500	97.0%	6.2%
m,p-Xylene	2280	2120	108%	2120	2120	100%	7.3%
o-Xylene	816	745	110%	766	745	103%	6.3%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	117%	112%
Bromobenzene	109%	104%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-080409

LAB CONTROL SAMPLE

Lab Sample ID: LCS-080409

LIMS ID: 09-18146

Matrix: Soil

Data Release Authorized: *AS*

Reported: 08/10/09

QC Report No: PI99-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014040.043

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/04/09 15:05

LCSD: 08/04/09 15:29

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	61.0	50.0	122%	55.6	50.0	111%	9.3%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	120%	113%
Bromobenzene	110%	106%



Analytical Resources, Incorporated

Analytical Chemists and Consultants

August 18, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest North Lot
ARI Job: PJ11 & PJ23

Dear Tim:

Please find enclosed a copy of the Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted two soil samples August 4, 2009. The samples were received with a cooler temperature of 5.2°C. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for SVOCs, PAHs, NWTPH-HCID, NWTPH-Dx, and Total Metals, as requested.

The SVOC LCSD percent recoveries of Dibenzofuran, 4-Bromophenyl-phenylether, Pentachlorophenol, bis (2-Ethylhexyl) phthalate, and Di-n-Octyl phthalate fell outside the current ARI control limits for **LCS-080509**. All LCS percent recoveries were within control limits. No corrective action was required.

The SIM PNAs 8/10/09 CCAL is out of control high for Dibenzo (g,h,i)perylene. All associated that contain Dibenzo (g,h,i)perylene have been flagged with a "Q" qualifier.

Several LCS/LCSD SIM PNAs compounds are outside of the current control limits high. No further corrective action was taken.

There were no other analytical complications were noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

Date 8/21/09
Page 1 of 1

Chain-of-Custody Record

Project Name <u>Qwest North Lot</u> Project No. <u>1014040043</u>					Testing Parameters					Turnaround Time									
Project Location/Event <u>Seattle/Additional Sampling</u>					<u>PAH 8270D</u> <u>TPH-14CID</u> <u>SVOCs 8270D</u> <u>Metals 8270D</u> <u>8/21/09</u>					<input checked="" type="checkbox"/> Standard									
Sampler's Name <u>Elizabeth Poole</u>										<input type="checkbox"/> Accelerated									
Project Contact <u>Tim Syverson</u>										<input type="checkbox"/> _____									
Send Results To <u>Tim Syverson Anne Halverson</u>																			
Sample I.D.	Date	Time	Matrix	No. of Containers							Observations/Comments								
<u>MW-14-(15')</u>	<u>8/21/09</u>	<u>850</u>	<u>S</u>	<u>1</u>	<u>X</u>						<u>Allow water samples to settle, collect aliquot from clear portion</u>								
<u>MW-17d-(15.5-16.5)</u>	<u>8/21/09</u>	<u>1490</u>	<u>S</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>8/21/09</u>	<u>NWTPH-Dx:</u> <u>run acid wash/silica gel cleanup</u> <u>run samples standardized to _____ product</u> <u>Analyze for EPH if no specific product identified</u> <u>VOC/BTEX/VPH (soil):</u> <u>non-preserved</u> <u>preserved w/methanol</u> <u>preserved w/sodium bisulfate</u> <u>Freeze upon receipt</u> <u>Dissolved metal water samples field filtered</u> <u>Other: <u>Hold for Cu follow up</u></u> <u>Run TPH if detections for ACID</u> <u>Metals = Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Zinc</u>								
Special Shipment/Handling or Storage Requirements <u>Store @ 6°C</u>										Method of Shipment <u>Drop Off</u>									
Relinquished by <u>Elizabeth Poole</u> Signature <u>Elizabeth Poole</u> Printed Name <u>ELI</u> Company <u>CAI</u> Date <u>8/21/09</u> Time <u>1610</u>					Received by <u>D. Peterson</u> Signature <u>D. Peterson</u> Printed Name <u>ARI</u> Company <u>ARI</u> Date <u>8/24/09</u> Time <u>1010</u>					Relinquished by _____ Signature _____ Printed Name _____ Company _____ Date _____ Time _____					Received by _____ Signature _____ Printed Name _____ Company _____ Date _____ Time _____				



Cooler Receipt Form

ARI Client: Landaw

Project Name: West North Lot

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: PJ11

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)..... 5.2

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 101886

Cooler Accepted by: JP Date: 8/4/09 Time: 17:20 1/10

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

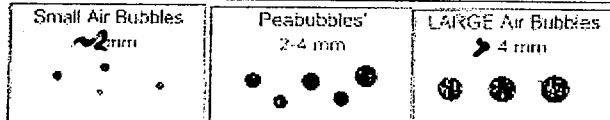
Samples Logged by: JP Date: 8/4/09 Time: 17:20

**** 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"

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: MW-17d-(15.5-16.5)
SAMPLE

Lab Sample ID: PJ11B
LIMS ID: 09-18242
Matrix: Soil
Data Release Authorized: 
Reported: 08/11/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043
Date Sampled: 08/04/09
Date Received: 08/04/09

Date Extracted: 08/05/09
Date Analyzed: 08/10/09 15:11
Instrument/Analyst: NT4/JZ
GPC Cleanup: Yes

Sample Amount: 8.39 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 38.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	180	460
111-44-4	Bis-(2-Chloroethyl) Ether	180	< 180 U
95-57-8	2-Chlorophenol	180	< 180 U
541-73-1	1,3-Dichlorobenzene	180	< 180 U
106-46-7	1,4-Dichlorobenzene	180	< 180 U
100-51-6	Benzyl Alcohol	890	< 890 U
95-50-1	1,2-Dichlorobenzene	180	< 180 U
95-48-7	2-Methylphenol	180	< 180 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	180	< 180 U
106-44-5	4-Methylphenol	180	400
621-64-7	N-Nitroso-Di-N-Propylamine	890	< 890 U
67-72-1	Hexachloroethane	180	< 180 U
98-95-3	Nitrobenzene	180	< 180 U
78-59-1	Isophorone	180	< 180 U
88-75-5	2-Nitrophenol	180	< 180 U
105-67-9	2,4-Dimethylphenol	180	< 180 U
65-85-0	Benzoic Acid	1,800	< 1,800 U
111-91-1	bis(2-Chloroethoxy) Methane	180	< 180 U
120-83-2	2,4-Dichlorophenol	890	< 890 U
120-82-1	1,2,4-Trichlorobenzene	180	< 180 U
91-20-3	Naphthalene	180	10,000
106-47-8	4-Chloroaniline	890	< 890 U
87-68-3	Hexachlorobutadiene	180	< 180 U
59-50-7	4-Chloro-3-methylphenol	890	< 890 U
91-57-6	2-Methylnaphthalene	180	6,700
77-47-4	Hexachlorocyclopentadiene	890	< 890 U
88-06-2	2,4,6-Trichlorophenol	890	< 890 U
95-95-4	2,4,5-Trichlorophenol	890	< 890 U
91-58-7	2-Chloronaphthalene	180	< 180 U
88-74-4	2-Nitroaniline	890	< 890 U
131-11-3	Dimethylphthalate	180	< 180 U
208-96-8	Acenaphthylene	180	1,100
99-09-2	3-Nitroaniline	890	< 890 U
83-32-9	Acenaphthene	180	15,000 E
51-28-5	2,4-Dinitrophenol	1,800	< 1,800 U
100-02-7	4-Nitrophenol	890	< 890 U
132-64-9	Dibenzofuran	180	7,600
606-20-2	2,6-Dinitrotoluene	890	< 890 U
121-14-2	2,4-Dinitrotoluene	890	< 890 U
84-66-2	Diethylphthalate	180	< 180 U
7005-72-3	4-Chlorophenyl-phenylether	180	< 180 U
86-73-7	Fluorene	180	14,000
100-01-6	4-Nitroaniline	890	< 890 U
534-52-1	4,6-Dinitro-2-Methylphenol	1,800	< 1,800 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: MW-17d-(15.5-16.5)
SAMPLE

Lab Sample ID: PJ11B
LIMS ID: 09-18242
Matrix: Soil
Date Analyzed: 08/10/09 15:11

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	180	< 180 U
101-55-3	4-Bromophenyl-phenylether	180	< 180 U
118-74-1	Hexachlorobenzene	180	< 180 U
87-86-5	Pentachlorophenol	890	< 890 U
85-01-8	Phenanthrene	180	44,000 ES
86-74-8	Carbazole	180	3,400
120-12-7	Anthracene	180	18,000 E
84-74-2	Di-n-Butylphthalate	180	< 180 U
206-44-0	Fluoranthene	180	32,000 ES
129-00-0	Pyrene	180	26,000 ES
85-68-7	Butylbenzylphthalate	180	< 180 U
91-94-1	3,3'-Dichlorobenzidine	890	< 890 U
56-55-3	Benzo (a) anthracene	180	16,000 E
117-81-7	bis(2-Ethylhexyl)phthalate	180	< 180 U
218-01-9	Chrysene	180	17,000 E
117-84-0	Di-n-Octyl phthalate	180	< 180 U
205-99-2	Benzo (b) fluoranthene	180	13,000
207-08-9	Benzo (k) fluoranthene	180	7,200
50-32-8	Benzo (a) pyrene	180	16,000 E
193-39-5	Indeno (1,2,3-cd) pyrene	180	5,600
53-70-3	Dibenz (a,h) anthracene	180	2,700
191-24-2	Benzo (g,h,i) perylene	180	4,800
90-12-0	1-Methylnaphthalene	180	5,500


Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	41.6%	2-Fluorobiphenyl	47.2%
d14-p-Terphenyl	48.4%	d4-1,2-Dichlorobenzene	40.8%
d5-Phenol	38.4%	2-Fluorophenol	35.8%
2,4,6-Tribromophenol	50.3%	d4-2-Chlorophenol	40.6%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: MW-17d-(15.5-16.5)
DILUTION

Lab Sample ID: PJ11B
LIMS ID: 09-18242
Matrix: Soil
Data Release Authorized: 
Reported: 08/11/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043
Date Sampled: 08/04/09
Date Received: 08/04/09

Date Extracted: 08/05/09
Date Analyzed: 08/10/09 19:55
Instrument/Analyst: NT4/JZ
GPC Cleanup: Yes

Sample Amount: 8.39 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 30.0
Percent Moisture: 38.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	1,800	< 1,800 U
111-44-4	Bis-(2-Chloroethyl) Ether	1,800	< 1,800 U
95-57-8	2-Chlorophenol	1,800	< 1,800 U
541-73-1	1,3-Dichlorobenzene	1,800	< 1,800 U
106-46-7	1,4-Dichlorobenzene	1,800	< 1,800 U
100-51-6	Benzyl Alcohol	8,900	< 8,900 U
95-50-1	1,2-Dichlorobenzene	1,800	< 1,800 U
95-48-7	2-Methylphenol	1,800	< 1,800 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1,800	< 1,800 U
106-44-5	4-Methylphenol	1,800	< 1,800 U
621-64-7	N-Nitroso-Di-N-Propylamine	8,900	< 8,900 U
67-72-1	Hexachloroethane	1,800	< 1,800 U
98-95-3	Nitrobenzene	1,800	< 1,800 U
78-59-1	Isophorone	1,800	< 1,800 U
88-75-5	2-Nitrophenol	1,800	< 1,800 U
105-67-9	2,4-Dimethylphenol	1,800	< 1,800 U
65-85-0	Benzoic Acid	18,000	< 18,000 U
111-91-1	bis(2-Chloroethoxy) Methane	1,800	< 1,800 U
120-83-2	2,4-Dichlorophenol	8,900	< 8,900 U
120-82-1	1,2,4-Trichlorobenzene	1,800	< 1,800 U
91-20-3	Naphthalene	1,800	12,000
106-47-8	4-Chloroaniline	8,900	< 8,900 U
87-68-3	Hexachlorobutadiene	1,800	< 1,800 U
59-50-7	4-Chloro-3-methylphenol	8,900	< 8,900 U
91-57-6	2-Methylnaphthalene	1,800	7,700
77-47-4	Hexachlorocyclopentadiene	8,900	< 8,900 U
88-06-2	2,4,6-Trichlorophenol	8,900	< 8,900 U
95-95-4	2,4,5-Trichlorophenol	8,900	< 8,900 U
91-58-7	2-Chloronaphthalene	1,800	< 1,800 U
88-74-4	2-Nitroaniline	8,900	< 8,900 U
131-11-3	Dimethylphthalate	1,800	< 1,800 U
208-96-8	Acenaphthylene	1,800	< 1,800 U
99-09-2	3-Nitroaniline	8,900	< 8,900 U
83-32-9	Acenaphthene	1,800	17,000
51-28-5	2,4-Dinitrophenol	18,000	< 18,000 U
100-02-7	4-Nitrophenol	8,900	< 8,900 U
132-64-9	Dibenzofuran	1,800	8,100
606-20-2	2,6-Dinitrotoluene	8,900	< 8,900 U
121-14-2	2,4-Dinitrotoluene	8,900	< 8,900 U
84-66-2	Diethylphthalate	1,800	< 1,800 U
7005-72-3	4-Chlorophenyl-phenylether	1,800	< 1,800 U
86-73-7	Fluorene	1,800	15,000
100-01-6	4-Nitroaniline	8,900	< 8,900 U
534-52-1	4,6-Dinitro-2-Methylphenol	18,000	< 18,000 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
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Sample ID: MW-17d-(15.5-16.5)
DILUTION

Lab Sample ID: PJ11B
LIMS ID: 09-18242
Matrix: Soil
Date Analyzed: 08/10/09 19:55

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	1,800	< 1,800 U
101-55-3	4-Bromophenyl-phenylether	1,800	< 1,800 U
118-74-1	Hexachlorobenzene	1,800	< 1,800 U
87-86-5	Pentachlorophenol	8,900	< 8,900 U
85-01-8	Phenanthrene	1,800	69,000
86-74-8	Carbazole	1,800	3,400
120-12-7	Anthracene	1,800	22,000
84-74-2	Di-n-Butylphthalate	1,800	< 1,800 U
206-44-0	Fluoranthene	1,800	45,000
129-00-0	Pyrene	1,800	40,000
85-68-7	Butylbenzylphthalate	1,800	< 1,800 U
91-94-1	3,3'-Dichlorobenzidine	8,900	< 8,900 U
56-55-3	Benzo (a) anthracene	1,800	18,000
117-81-7	bis(2-Ethylhexyl) phthalate	1,800	< 1,800 U
218-01-9	Chrysene	1,800	21,000
117-84-0	Di-n-Octyl phthalate	1,800	< 1,800 U
205-99-2	Benzo (b) fluoranthene	1,800	13,000
207-08-9	Benzo (k) fluoranthene	1,800	11,000
50-32-8	Benzo (a) pyrene	1,800	18,000
193-39-5	Indeno (1,2,3-cd) pyrene	1,800	4,000
53-70-3	Dibenz (a,h) anthracene	1,800	2,000
191-24-2	Benzo (g,h,i) perylene	1,800	3,400
90-12-0	1-Methylnaphthalene	1,800	6,500

Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	43.2%	2-Fluorobiphenyl	48.0%
d14-p-Terphenyl	55.2%	d4-1,2-Dichlorobenzene	42.0%
d5-Phenol	32.0%	2-Fluorophenol	31.2%
2,4,6-Tribromophenol	54.4%	d4-2-Chlorophenol	35.2%

SW8270 SEMIVOLATILES SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT	OUT
MB-080509	52.4%	54.0%	64.8%	55.2%	47.7%	48.5%	67.5%	52.5%		0
LCS-080509	67.6%	69.2%	74.8%	68.0%	65.6%	62.1%	84.5%	66.4%		0
LCSD-080509	53.2%	55.2%	59.6%	54.8%	52.3%	49.3%	67.7%	53.1%		0
MW-17d- (15.5-16.5)	41.6%	47.2%	48.4%	40.8%	38.4%	35.8%	50.3%	40.6%		0
MW-17d- (15.5-16.5) DL	43.2%	48.0%	55.2%	42.0%	32.0%	31.2%	54.4%	35.2%*		1

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(46-102)	(32-106)
(FBP) = 2-Fluorobiphenyl	(51-105)	(39-107)
(TPH) = d14-p-Terphenyl	(55-124)	(31-130)
(DCB) = d4-1,2-Dichlorobenzene	(48-104)	(38-102)
(PHL) = d5-Phenol	(44-110)	(27-112)
(2FP) = 2-Fluorophenol	(38-112)	(22-108)
(TBP) = 2,4,6-Tribromophenol	(54-120)	(31-131)
(2CP) = d4-2-Chlorophenol	(50-103)	(36-104)

Prep Method: SW3546
Log Number Range: 09-18242 to 09-18242

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 1 of 2

Sample ID: LCS-080509
LCS/LCSD

Lab Sample ID: LCS-080509
LIMS ID: 09-18242
Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/11/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043
Date Sampled: 08/04/09
Date Received: 08/04/09

Date Extracted LCS/LCSD: 08/05/09

Sample Amount LCS: 7.50 g
LCSD: 7.50 g

Date Analyzed LCS: 08/10/09 14:00
LCSD: 08/10/09 14:35

Final Extract Volume LCS: 0.5 mL
LCSD: 0.5 mL

Instrument/Analyst LCS: NT4/JZ
LCSD: NT4/JZ

Dilution Factor LCS: 1.00
LCSD: 1.00

GPC Cleanup: YES

Percent Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Phenol	1040	1670	62.3%	825	1670	49.4%	23.1%
Bis-(2-Chloroethyl) Ether	900	1670	53.9%	714	1670	42.8%	23.0%
2-Chlorophenol	1070	1670	64.1%	873	1670	52.3%	20.3%
1,3-Dichlorobenzene	1050	1670	62.9%	839	1670	50.2%	22.3%
1,4-Dichlorobenzene	1070	1670	64.1%	859	1670	51.4%	21.9%
Benzyl Alcohol	2070	3330	62.2%	1650	3330	49.5%	22.6%
1,2-Dichlorobenzene	1070	1670	64.1%	869	1670	52.0%	20.7%
2-Methylphenol	991	1670	59.3%	815	1670	48.8%	19.5%
2,2'-Oxybis(1-Chloropropane)	896	1670	53.7%	721	1670	43.2%	21.6%
4-Methylphenol	2040	3330	61.3%	1670	3330	50.2%	19.9%
N-Nitroso-Di-N-Propylamine	997	1670	59.7%	813	1670	48.7%	20.3%
Hexachloroethane	1070	1670	64.1%	881	1670	52.8%	19.4%
Nitrobenzene	1030	1670	61.7%	859	1670	51.4%	18.1%
Isophorone	1080	1670	64.7%	844	1670	50.5%	24.5%
2-Nitrophenol	1010	1670	60.5%	795	1670	47.6%	23.8%
2,4-Dimethylphenol	905	1670	54.2%	713	1670	42.7%	23.7%
Benzoic Acid	2530	5000	50.6%	2080	5000	41.6%	19.5%
bis(2-Chloroethoxy) Methane	983	1670	58.9%	783	1670	46.9%	22.7%
2,4-Dichlorophenol	1050	1670	62.9%	837	1670	50.1%	22.6%
1,2,4-Trichlorobenzene	1090	1670	65.3%	887	1670	53.1%	20.5%
Naphthalene	1080	1670	64.7%	851	1670	51.0%	23.7%
4-Chloroaniline	3220	4000	80.5%	2540	4000	63.5%	23.6%
Hexachlorobutadiene	1130	1670	67.7%	885	1670	53.0%	24.3%
4-Chloro-3-methylphenol	1130	1670	67.7%	878	1670	52.6%	25.1%
2-Methylnaphthalene	1100	1670	65.9%	855	1670	51.2%	25.1%
Hexachlorocyclopentadiene	2670	5000	53.4%	2110	5000	42.2%	23.4%
2,4,6-Trichlorophenol	1100	1670	65.9%	872	1670	52.2%	23.1%
2,4,5-Trichlorophenol	1110	1670	66.5%	863	1670	51.7%	25.0%
2-Chloronaphthalene	1090	1670	65.3%	872	1670	52.2%	22.2%
2-Nitroaniline	1080	1670	64.7%	887	1670	53.1%	19.6%
Dimethylphthalate	1170	1670	70.1%	936	1670	56.0%	22.2%
Acenaphthylene	1160	1670	69.5%	933	1670	55.9%	21.7%
3-Nitroaniline	3970	4270	93.0%	3280	4270	76.8%	19.0%
Acenaphthene	1160	1670	69.5%	926	1670	55.4%	22.4%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: LCSD-080509
LCS/LCSD

Lab Sample ID: LCS-080509
LIMS ID: 09-18242
Matrix: Soil
Date Analyzed LCS: 08/10/09 14:00
LCSD: 08/10/09 14:35

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
2,4-Dinitrophenol	3520	5000	70.4%	2930	5000	58.6%	18.3%
4-Nitrophenol	1220	1670	73.1%	985	1670	59.0%	21.3%
Dibenzofuran	1110	1670	66.5%	878	1670	52.6%	23.3%
2,6-Dinitrotoluene	1130	1670	67.7%	913	1670	54.7%	21.2%
2,4-Dinitrotoluene	1220	1670	73.1%	990	1670	59.3%	20.8%
Diethylphthalate	1250	1670	74.9%	1020	1670	61.1%	20.3%
4-Chlorophenyl-phenylether	1150	1670	68.9%	929	1670	55.6%	21.3%
Fluorene	1180	1670	70.7%	955	1670	57.2%	21.1%
4-Nitroaniline	1200	1670	71.9%	943	1670	56.5%	24.0%
4,6-Dinitro-2-Methylphenol	3720	5000	74.4%	2990	5000	59.8%	21.8%
N-Nitrosodiphenylamine	1070	1670	64.1%	853	1670	51.1%	22.6%
4-Bromophenyl-phenylether	1070	1670	64.1%	863	1670	51.7%	21.4%
Hexachlorobenzene	1090	1670	65.3%	884	1670	52.9%	20.9%
Pentachlorophenol	940	1670	56.3%	738	1670	44.2%	24.1%
Phenanthrene	1130	1670	67.7%	920	1670	55.1%	20.5%
Carbazole	1160	1670	69.5%	927	1670	55.5%	22.3%
Anthracene	1100	1670	65.9%	887	1670	53.1%	21.4%
Di-n-Butylphthalate	1180	1670	70.7%	947	1670	56.7%	21.9%
Fluoranthene	1220	1670	73.1%	980	1670	58.7%	21.8%
Pyrene	1140	1670	68.3%	901	1670	54.0%	23.4%
Butylbenzylphthalate	1060	1670	63.5%	853	1670	51.1%	21.6%
3,3'-Dichlorobenzidine	3460	4270	81.0%	2830	4270	66.3%	20.0%
Benzo(a)anthracene	1130	1670	67.7%	923	1670	55.3%	20.2%
bis(2-Ethylhexyl)phthalate	1120	1670	67.1%	923	1670	55.3%	19.3%
Chrysene	1260	1670	75.4%	1010	1670	60.5%	22.0%
Di-n-Octyl phthalate	1090	1670	65.3%	931	1670	55.7%	15.7%
Benzo(b)fluoranthene	1220	1670	73.1%	929	1670	55.6%	27.1%
Benzo(k)fluoranthene	1220	1670	73.1%	1030	1670	61.7%	16.9%
Benzo(a)pyrene	1160	1670	69.5%	928	1670	55.6%	22.2%
Indeno(1,2,3-cd)pyrene	1250	1670	74.9%	989	1670	59.2%	23.3%
Dibenz(a,h)anthracene	1230	1670	73.7%	977	1670	58.5%	22.9%
Benzo(g,h,i)perylene	1210	1670	72.5%	951	1670	56.9%	24.0%
1-Methylnaphthalene	1130	1670	67.7%	881	1670	52.8%	24.8%

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	67.6%	53.2%
2-Fluorobiphenyl	69.2%	55.2%
d14-p-Terphenyl	74.8%	59.6%
d4-1,2-Dichlorobenzene	68.0%	54.8%
d5-Phenol	65.6%	52.3%
2-Fluorophenol	62.1%	49.3%
2,4,6-Tribromophenol	84.5%	67.7%
d4-2-Chlorophenol	66.4%	53.1%

Results reported in µg/kg
RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

Semivolatiles by SW8270D GC/MS

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Sample ID: MB-080509

METHOD BLANK

Lab Sample ID: MB-080509

LIMS ID: 09-18242

Matrix: Soil

Data Release Authorized: 

Reported: 08/11/09

QC Report No: PJ11-Landau Associates, Inc.

Project: Qwest North Lot

1014040043

Date Sampled: NA

Date Received: NA

Date Extracted: 08/05/09

Date Analyzed: 08/10/09 13:25

Instrument/Analyst: NT4/JZ

GPC Cleanup: Yes

Sample Amount: 7.50 g-dry-wt

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

Percent Moisture: NA

CAS Number	Analyte	RL	Result
108-95-2	Phenol	67	< 67 U
111-44-4	Bis-(2-Chloroethyl) Ether	67	< 67 U
95-57-8	2-Chlorophenol	67	< 67 U
541-73-1	1,3-Dichlorobenzene	67	< 67 U
106-46-7	1,4-Dichlorobenzene	67	< 67 U
100-51-6	Benzyl Alcohol	330	< 330 U
95-50-1	1,2-Dichlorobenzene	67	< 67 U
95-48-7	2-Methylphenol	67	< 67 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	67	< 67 U
106-44-5	4-Methylphenol	67	< 67 U
621-64-7	N-Nitroso-Di-N-Propylamine	330	< 330 U
67-72-1	Hexachloroethane	67	< 67 U
98-95-3	Nitrobenzene	67	< 67 U
78-59-1	Isophorone	67	< 67 U
88-75-5	2-Nitrophenol	67	< 67 U
105-67-9	2,4-Dimethylphenol	67	< 67 U
65-85-0	Benzoic Acid	670	< 670 U
111-91-1	bis(2-Chloroethoxy) Methane	67	< 67 U
120-83-2	2,4-Dichlorophenol	330	< 330 U
120-82-1	1,2,4-Trichlorobenzene	67	< 67 U
91-20-3	Naphthalene	67	< 67 U
106-47-8	4-Chloroaniline	330	< 330 U
87-68-3	Hexachlorobutadiene	67	< 67 U
59-50-7	4-Chloro-3-methylphenol	330	< 330 U
91-57-6	2-Methylnaphthalene	67	< 67 U
77-47-4	Hexachlorocyclopentadiene	330	< 330 U
88-06-2	2,4,6-Trichlorophenol	330	< 330 U
95-95-4	2,4,5-Trichlorophenol	330	< 330 U
91-58-7	2-Chloronaphthalene	67	< 67 U
88-74-4	2-Nitroaniline	330	< 330 U
131-11-3	Dimethylphthalate	67	< 67 U
208-96-8	Acenaphthylene	67	< 67 U
99-09-2	3-Nitroaniline	330	< 330 U
83-32-9	Acenaphthene	67	< 67 U
51-28-5	2,4-Dinitrophenol	670	< 670 U
100-02-7	4-Nitrophenol	330	< 330 U
132-64-9	Dibenzofuran	67	< 67 U
606-20-2	2,6-Dinitrotoluene	330	< 330 U
121-14-2	2,4-Dinitrotoluene	330	< 330 U
84-66-2	Diethylphthalate	67	< 67 U
7005-72-3	4-Chlorophenyl-phenylether	67	< 67 U
86-73-7	Fluorene	67	< 67 U
100-01-6	4-Nitroaniline	330	< 330 U
534-52-1	4,6-Dinitro-2-Methylphenol	670	< 670 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Page 2 of 2

Sample ID: MB-080509
METHOD BLANK

Lab Sample ID: MB-080509
LIMS ID: 09-18242
Matrix: Soil
Date Analyzed: 08/10/09 13:25

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

CAS Number	Analyte	RL	Result
86-30-6	N-Nitrosodiphenylamine	67	< 67 U
101-55-3	4-Bromophenyl-phenylether	67	< 67 U
118-74-1	Hexachlorobenzene	67	< 67 U
87-86-5	Pentachlorophenol	330	< 330 U
85-01-8	Phenanthrene	67	< 67 U
86-74-8	Carbazole	67	< 67 U
120-12-7	Anthracene	67	< 67 U
84-74-2	Di-n-Butylphthalate	67	< 67 U
206-44-0	Fluoranthene	67	< 67 U
129-00-0	Pyrene	67	< 67 U
85-68-7	Butylbenzylphthalate	67	< 67 U
91-94-1	3,3'-Dichlorobenzidine	330	< 330 U
56-55-3	Benzo(a)anthracene	67	< 67 U
117-81-7	bis(2-Ethylhexyl)phthalate	67	< 67 U
218-01-9	Chrysene	67	< 67 U
117-84-0	Di-n-Octyl phthalate	67	< 67 U
205-99-2	Benzo(b)fluoranthene	67	< 67 U
207-08-9	Benzo(k)fluoranthene	67	< 67 U
50-32-8	Benzo(a)pyrene	67	< 67 U
193-39-5	Indeno(1,2,3-cd)pyrene	67	< 67 U
53-70-3	Dibenz(a,h)anthracene	67	< 67 U
191-24-2	Benzo(g,h,i)perylene	67	< 67 U
90-12-0	1-Methylnaphthalene	67	< 67 U


Reported in $\mu\text{g}/\text{kg}$ (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	52.4%	2-Fluorobiphenyl	54.0%
d14-p-Terphenyl	64.8%	d4-1,2-Dichlorobenzene	55.2%
d5-Phenol	47.7%	2-Fluorophenol	48.5%
2,4,6-Tribromophenol	67.5%	d4-2-Chlorophenol	52.5%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: MW-14-(15')
SAMPLE

Lab Sample ID: PJ11A
LIMS ID: 09-18241
Matrix: Soil
Data Release Authorized: 
Reported: 08/17/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
Event: 1014040043
Date Sampled: 08/04/09
Date Received: 08/04/09

Date Extracted: 08/06/09
Date Analyzed: 08/10/09 15:54
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.5 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 3.00
Percent Moisture: 34.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	14	160
91-57-6	2-Methylnaphthalene	14	81
90-12-0	1-Methylnaphthalene	14	69
208-96-8	Acenaphthylene	14	36
83-32-9	Acenaphthene	14	74
86-73-7	Fluorene	14	100
85-01-8	Phenanthrene	14	1,100
120-12-7	Anthracene	14	250
206-44-0	Fluoranthene	14	2,100 E
129-00-0	Pyrene	14	1,600 E
56-55-3	Benzo (a) anthracene	14	780
218-01-9	Chrysene	14	820
205-99-2	Benzo (b) fluoranthene	14	620
207-08-9	Benzo (k) fluoranthene	14	770
50-32-8	Benzo (a) pyrene	14	700
193-39-5	Indeno (1,2,3-cd) pyrene	14	310
53-70-3	Dibenz (a,h) anthracene	14	130 Q
191-24-2	Benzo (g,h,i) perylene	14	280
132-64-9	Dibenzofuran	14	90


Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 85.0%
d14-Dibenzo (a,h) anthracen 87.0%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: MW-14-(15')
DILUTION

Lab Sample ID: PJ11A
LIMS ID: 09-18241
Matrix: Soil
Data Release Authorized: 
Reported: 08/17/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
Event: 1014040043
Date Sampled: 08/04/09
Date Received: 08/04/09

Date Extracted: 08/06/09
Date Analyzed: 08/10/09 16:44
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.5 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 6.00
Percent Moisture: 34.4%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	29	170
91-57-6	2-Methylnaphthalene	29	91
90-12-0	1-Methylnaphthalene	29	77
208-96-8	Acenaphthylene	29	31
83-32-9	Acenaphthene	29	63
86-73-7	Fluorene	29	94
85-01-8	Phenanthrene	29	1,200
120-12-7	Anthracene	29	270
206-44-0	Fluoranthene	29	2,200
129-00-0	Pyrene	29	1,600
56-55-3	Benzo (a) anthracene	29	780
218-01-9	Chrysene	29	850
205-99-2	Benzo (b) fluoranthene	29	730
207-08-9	Benzo (k) fluoranthene	29	720
50-32-8	Benzo (a) pyrene	29	720
193-39-5	Indeno (1,2,3-cd) pyrene	29	370
53-70-3	Dibenz (a,h) anthracene	29	130 Q
191-24-2	Benzo (g,h,i) perylene	29	290
132-64-9	Dibenzofuran	29	83

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 100%
d14-Dibenzo(a,h)anthracen 90.0%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: MW-17d-(15.5-16.5)
SAMPLE

Lab Sample ID: PJ11B
LIMS ID: 09-18242
Matrix: Soil
Data Release Authorized: *AB*
Reported: 08/17/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
Event: 1014040043
Date Sampled: 08/04/09
Date Received: 08/04/09

Date Extracted: 08/06/09
Date Analyzed: 08/10/09 16:19
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 11.1 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 10.0
Percent Moisture: 38.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	45	1,900
91-57-6	2-Methylnaphthalene	45	1,400
90-12-0	1-Methylnaphthalene	45	1,100
208-96-8	Acenaphthylene	45	180
83-32-9	Acenaphthene	45	3,300
86-73-7	Fluorene	45	2,900
85-01-8	Phenanthrene	45	14,000 E
120-12-7	Anthracene	45	4,800 E
206-44-0	Fluoranthene	45	9,900 E
129-00-0	Pyrene	45	7,800 E
56-55-3	Benzo (a) anthracene	45	4,200
218-01-9	Chrysene	45	4,700 E
205-99-2	Benzo (b) fluoranthene	45	2,000
207-08-9	Benzo (k) fluoranthene	45	3,100
50-32-8	Benzo (a) pyrene	45	4,200
193-39-5	Indeno (1,2,3-cd) pyrene	45	1,700
53-70-3	Dibenz (a,h) anthracene	45	810 Q
191-24-2	Benzo (g,h,i) perylene	45	1,500
132-64-9	Dibenzofuran	45	1,400


Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 80.0%
d14-Dibenzo (a,h) anthracene 103%

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: MW-17d-(15.5-16.5)
DILUTION

Lab Sample ID: PJ11B
LIMS ID: 09-18242
Matrix: Soil
Data Release Authorized: 
Reported: 08/17/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
Event: 1014040043
Date Sampled: 08/04/09
Date Received: 08/04/09

Date Extracted: 08/06/09
Date Analyzed: 08/12/09 12:04
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 11.1 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 50.0
Percent Moisture: 38.1%

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	220	1,800
91-57-6	2-Methylnaphthalene	220	1,300
90-12-0	1-Methylnaphthalene	220	990
208-96-8	Acenaphthylene	220	< 220 U
83-32-9	Acenaphthene	220	3,000
86-73-7	Fluorene	220	2,600
85-01-8	Phenanthrene	220	14,000
120-12-7	Anthracene	220	4,200
206-44-0	Fluoranthene	220	8,900
129-00-0	Pyrene	220	7,700
56-55-3	Benzo (a) anthracene	220	3,800
218-01-9	Chrysene	220	4,400
205-99-2	Benzo (b) fluoranthene	220	2,300
207-08-9	Benzo (k) fluoranthene	220	2,600
50-32-8	Benzo (a) pyrene	220	3,900
193-39-5	Indeno (1,2,3-cd) pyrene	220	1,300
53-70-3	Dibenz (a,h) anthracene	220	740
191-24-2	Benzo (g,h,i) perylene	220	1,400
132-64-9	Dibenzofuran	220	1,200


Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene D
d14-Dibenzo (a,h) anthracen D

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: MB-080609
METHOD BLANK

Lab Sample ID: MB-080609
LIMS ID: 09-18241
Matrix: Soil
Data Release Authorized: 
Reported: 08/17/09

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
Event: 1014040043
Date Sampled: NA
Date Received: NA

Date Extracted: 08/06/09
Date Analyzed: 08/10/09 14:38
Instrument/Analyst: NT1/YZ
GPC Cleanup: No
Silica Gel Cleanup: Yes
Alumina Cleanup: No

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	5.0	< 5.0 U
91-57-6	2-Methylnaphthalene	5.0	< 5.0 U
90-12-0	1-Methylnaphthalene	5.0	< 5.0 U
208-96-8	Acenaphthylene	5.0	< 5.0 U
83-32-9	Acenaphthene	5.0	< 5.0 U
86-73-7	Fluorene	5.0	< 5.0 U
85-01-8	Phenanthrene	5.0	< 5.0 U
120-12-7	Anthracene	5.0	< 5.0 U
206-44-0	Fluoranthene	5.0	< 5.0 U
129-00-0	Pyrene	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	5.0	< 5.0 U
218-01-9	Chrysene	5.0	< 5.0 U
205-99-2	Benzo(b)fluoranthene	5.0	< 5.0 U
207-08-9	Benzo(k)fluoranthene	5.0	< 5.0 U
50-32-8	Benzo(a)pyrene	5.0	< 5.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	< 5.0 U
53-70-3	Dibenz(a,h)anthracene	5.0	< 5.0 U
191-24-2	Benzo(g,h,i)perylene	5.0	< 5.0 U
132-64-9	Dibenzofuran	5.0	< 5.0 U

Reported in $\mu\text{g}/\text{kg}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 82.7%
d14-Dibenzo(a,h)anthracen 119%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MB-080609	82.7%	119%	0
LCS-080609	89.0%	119%	0
LCSD-080609	80.7%	120%	0
MW-14-(15')	85.0%	87.0%	0
MW-14-(15') DL	100%	90.0%	0
MW-17d-(15.5-16.5)	80.0%	103%	0
MW-17d-(15.5-16.5) DL	D	D	0

	LCS/MB LIMITS	QC LIMITS
(MNP) = d10-2-Methylnaphthalene	(35-100)	(34-100)
(DBA) = d14-Dibenzo(a,h)anthracene	(37-120)	(10-117)

Prep Method: SW3546
Log Number Range: 09-18241 to 09-18242

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: LCS-080609

LAB CONTROL SAMPLE

Lab Sample ID: LCS-080609

LIMS ID: 09-18241

Matrix: Soil

Data Release Authorized: *AB*

Reported: 08/17/09

QC Report No: PJ11-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014040043

Date Sampled: NA

Date Received: NA

Date Extracted: 08/06/09

Sample Amount LCS: 10.0 g-dry-wt

LCSD: 10.0 g-dry-wt

Date Analyzed LCS: 08/10/09 15:04

Final Extract Volume LCS: 0.50 mL

LCSD: 08/10/09 15:29

LCSD: 0.50 mL

Instrument/Analyst LCS: NT1/YZ

Dilution Factor LCS: 1.00

LCSD: NT1/YZ

LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	132	150	88.0%	125	150	83.3%	5.4%
2-Methylnaphthalene	130	150	86.7%	124	150	82.7%	4.7%
1-Methylnaphthalene	132	150	88.0%	122	150	81.3%	7.9%
Acenaphthylene	146	150	97.3%	131	150	87.3%	10.8%
Acenaphthene	138	150	92.0%	127	150	84.7%	8.3%
Fluorene	148	150	98.7%	136	150	90.7%	8.5%
Phenanthrene	160	150	107%	148	150	98.7%	7.8%
Anthracene	167	150	111%	153	150	102%	8.8%
Fluoranthene	164	150	109%	151	150	101%	8.3%
Pyrene	149	150	99.3%	137	150	91.3%	8.4%
Benzo(a)anthracene	162	150	108%	146	150	97.3%	10.4%
Chrysene	151	150	101%	145	150	96.7%	4.1%
Benzo(b)fluoranthene	163	150	109%	162	150	108%	0.6%
Benzo(k)fluoranthene	168	150	112%	154	150	103%	8.7%
Benzo(a)pyrene	164	150	109%	155	150	103%	5.6%
Indeno(1,2,3-cd)pyrene	178	150	119%	164	150	109%	8.2%
Dibenz(a,h)anthracene	194 Q	150	129%	179 Q	150	119%	8.0%
Benzo(g,h,i)perylene	156	150	104%	160	150	107%	2.5%
Dibenzofuran	138	150	92.0%	128	150	85.3%	7.5%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	89.0%	80.7%
d14-Dibenzo(a,h)anthracene	119%	120%

ORGANICS ANALYSIS DATA SHEET

NWTPH-HCID Method by GC/FID


Page 1 of 1

Matrix: Soil

QC Report No: PJ11-Landau Associates, Inc.

Project: Qwest North Lot

1014040043

Data Release Authorized: 

Reported: 08/06/09

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-080509 09-18242	Method Blank	08/05/09	08/05/09	1.0	Gas Diesel Oil o-Terphenyl	< 20 U < 50 U < 100 U 101%
PJ11B 09-18242	MW-17d-(15.5-16.5) HC ID: DRO/RRO	08/05/09	08/05/09	1.0	Gas Diesel Oil o-Terphenyl	< 20 U > 50 > 100 96.8%

Reported in mg/kg (ppm)

Gas value based on total peaks in the range from Toluene to C12.

Diesel value based on the total peaks in the range from C12 to C24.

Oil value based on the total peaks in the range from C24 to C38.

HCID SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PJ11-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

<u>Client ID</u>	<u>O-TER TOT OUT</u>	
080509MB	101%	0
MW-17d-(15.5-16.5)	96.8%	0

LCS/MB LIMITS QC LIMITS

(O-TER) = o-Terphenyl

(68-122)

(50-150)

Prep Method: SW3550B
Log Number Range: 09-18242 to 09-18242

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 08/04/09

ARI Job: PJ11
Project: Qwest North Lot
1014040043

<u>ARI ID</u>	<u>Client ID</u>	<u>Sample Amt</u>	<u>Final Vol</u>	<u>Basis</u>	<u>Prep Date</u>
09-18242-080509MB	Method Blank	10.0 g	5.00 mL	-	08/05/09
09-18242-PJ11B	MW-17d-(15.5-16.5)	6.29 g	5.00 mL	D	08/05/09

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Matrix: Soil

QC Report No: PJ23-Landau Associates, Inc.

Project: Qwest North Lot

1014040043

Data Release Authorized: **VTS**

Reported: 08/08/09

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-080609	Method Blank	08/06/09	08/06/09	1.00	Diesel	5.0	< 5.0 U
09-18290	HC ID: ---		FID3A	1.0	Motor Oil o-Terphenyl	10	< 10 U 88.5%
PJ23A	MW-17d-(15.5-16.5)	08/06/09	08/06/09	1.00	Diesel	16	400
09-18290	HC ID: DRO/RRO		FID3A	2.0	Motor Oil o-Terphenyl	32	160 77.4%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: PJ23-Landau Associates, Inc.
Project: Qwest North Lot
1014040043

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-080609	88.5%	0
LCS-080609	79.4%	0
LCSD-080609	76.6%	0
MW-17d-(15.5-16.5)	77.4%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(63-115)	(49-120)

Prep Method: SW3546
Log Number Range: 09-18290 to 09-18290

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Sample ID: LCS-080609

Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-080609

QC Report No: PJ23-Landau Associates, Inc.

LIMS ID: 09-18290

Project: Qwest North Lot

Matrix: Soil

1014040043

Data Release Authorized: *VTS*

Date Sampled: 08/04/09

Reported: 08/08/09

Date Received: 08/04/09

Date Extracted LCS/LCSD: 08/06/09

Sample Amount LCS: 10.0 g

LCSD: 10.0 g

Date Analyzed LCS: 08/06/09 21:08

Final Extract Volume LCS: 1.0 mL

LCSD: 08/06/09 21:26

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/AAR

Dilution Factor LCS: 1.0

LCSD: FID/AAR

LCSD: 1.0

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	107	150	71.3%	105	150	70.0%	1.9%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	79.4%	76.6%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 08/04/09

ARI Job: PJ23
Project: Qwest North Lot
1014040043

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
09-18290-080609MB1	Method Blank	10.0 g	1.00 mL	-	08/06/09
09-18290-080609LCS1	Lab Control	10.0 g	1.00 mL	-	08/06/09
09-18290-080609LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	08/06/09
09-18290-PJ23A	MW-17d-(15.5-16.5)	6.34 g	1.00 mL	D	08/06/09

Basis: D=Dry Weight W=As Received
Diesel Extraction Report

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-17d-(15.5-16.5)

SAMPLE

Lab Sample ID: PJ11B

LIMS ID: 09-18242

Matrix: Soil

Data Release Authorized: 

Reported: 08/11/09

QC Report No: PJ11-Landau Associates, Inc.

Project: Qwest North Lot

1014040043

Date Sampled: 08/04/09

Date Received: 08/04/09

Percent Total Solids: 61.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/06/09	6010B	08/10/09	7440-38-2	Arsenic	8	8	
3050B	08/06/09	6010B	08/10/09	7440-43-9	Cadmium	0.3	0.3	U
3050B	08/06/09	6010B	08/10/09	7440-47-3	Chromium	0.8	41.6	
3050B	08/06/09	6010B	08/10/09	7440-50-8	Copper	0.3	35.8	
3050B	08/06/09	6010B	08/10/09	7439-92-1	Lead	3	24	
CLP	08/06/09	7471A	08/06/09	7439-97-6	Mercury	0.03	0.48	
3050B	08/06/09	6010B	08/10/09	7440-66-6	Zinc	2	61	

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: PJ11LCS

LIMS ID: 09-18242

Matrix: Soil

Data Release Authorized: 

Reported: 08/11/09

QC Report No: PJ11-Landau Associates, Inc.

Project: Qwest North Lot

1014040043

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010B	206	200	103%	
Cadmium	6010B	49.2	50.0	98.4%	
Chromium	6010B	51.7	50.0	103%	
Copper	6010B	50.2	50.0	100%	
Lead	6010B	196	200	98.0%	
Mercury	7471A	0.52	0.50	104%	
Zinc	6010B	50	50	100%	

Reported in mg/kg-dry

N-Control limit not met

NA-Not Applicable, Analyte Not Spiked

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: PJ11MB


QC Report No: PJ11-Landau Associates, Inc.

LIMS ID: 09-18242

Project: Qwest North Lot

Matrix: Soil

1014040043

Data Release Authorized: 

Date Sampled: NA

Reported: 08/11/09

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/kg-dry	Q
3050B	08/06/09	6010B	08/10/09	7440-38-2	Arsenic	5	5	U
3050B	08/06/09	6010B	08/10/09	7440-43-9	Cadmium	0.2	0.2	U
3050B	08/06/09	6010B	08/10/09	7440-47-3	Chromium	0.5	0.5	U
3050B	08/06/09	6010B	08/10/09	7440-50-8	Copper	0.2	0.2	U
3050B	08/06/09	6010B	08/10/09	7439-92-1	Lead	2	2	U
CLP	08/06/09	7471A	08/06/09	7439-97-6	Mercury	0.02	0.02	U
3050B	08/06/09	6010B	08/10/09	7440-66-6	Zinc	1	1	U

U-Analyte undetected at given RL

RL-Reporting Limit



Analytical Resources, Incorporated
Analytical Chemists and Consultants

August 13, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest North Lot
ARI Job: PJ46

Dear Tim:

Please find enclosed a copy of the Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted two soil samples August 6, 2009. The samples were received with a cooler temperature of 1.4°C. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for BETX and NWTPH-Gx, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC

Kelly Bøttem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

eFile: PJ46

KB/co



- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Tigard) (503) 443-6010
- _____

PJ46

Date 8/6/09
 Page 1 of 1

Chain-of-Custody Record

Project Name <u>Quest North Lot</u> Project No. <u>1014001.040043</u>					Testing Parameters					Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____	
Project Location/Event <u>Seattle / Additional Investigation</u>					TAN-6 BTEX						
Sampler's Name <u>Elizabeth Poole</u>											
Project Contact <u>Tim Sverson</u>											
Send Results To <u>Tim Sverson Anne Halverson</u>											
Sample I.D.	Date	Time	Matrix	No. of Containers	Observations/Comments						
<u>B-55-(8-9)</u>	<u>8/6/09</u>	<u>1145</u>	<u>S</u>	<u>3</u>	___ Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx: ___ run acid wash/silica gel cleanup ___ run samples standardized to _____ product ___ Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): ___ non-preserved ___ preserved w/methanol ___ preserved w/sodium bisulfate ___ Freeze upon receipt ___ Dissolved metal water samples field filtered Other _____ _____ _____						
<u>B-56-(9-10)</u>	<u>8/6/09</u>	<u>1105</u>	<u>S</u>	<u>3</u>							
Special Shipment/Handling or Storage Requirements <u>Store @ 20°C 1.4°C</u>					Method of Shipment <u>Drop off</u>						
Relinquished by Signature <u>[Signature]</u> Printed Name <u>Elizabeth Poole</u> Company _____ Date <u>8/6/09</u> Time <u>1245</u>			Received by Signature <u>[Signature]</u> Printed Name <u>A. Volgardsen</u> Company _____ Date <u>8/6/09</u> Time <u>1245</u>			Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____			Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____		



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: Qwest North lot

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier (Hand) Delivered Other: _____

Assigned ARI Job No: P146

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)..... 1.4

Temp Gun ID#: 48740S

If cooler temperature is out of compliance fill out form 00070F

Cooler Accepted by: AV Date: 8/6/09 Time: 1245

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

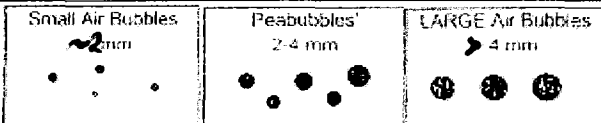
Samples Logged by: AV Date: 8/6/09 Time: 1305

**** 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"

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B-55-(8-9)

SAMPLE

Lab Sample ID: PJ46A

LIMS ID: 09-18441

Matrix: Soil

Data Release Authorized: **VTS**

Reported: 08/13/09

QC Report No: PJ46-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040043

Date Sampled: 08/06/09

Date Received: 08/06/09

Date Analyzed: 08/06/09 15:15

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 120 mg-dry-wt

Percent Moisture: 17.8%

CAS Number	Analyte	RL	Result
71-43-2	Benzene	11	< 11 U
108-88-3	Toluene	11	< 11 U
100-41-4	Ethylbenzene	11	< 11 U
179601-23-1	m,p-Xylene	22	< 22 U
95-47-6	o-Xylene	11	160

Gasoline Range Hydrocarbons	4.4	< 4.4 U	GAS ID ---
-----------------------------	-----	---------	---------------

BETX Surrogate Recovery

Trifluorotoluene	111%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	116%
Bromobenzene	108%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: B-56-(9-10)

SAMPLE

Lab Sample ID: PJ46B

LIMS ID: 09-18442

Matrix: Soil

Data Release Authorized: *VIS*

Reported: 08/13/09

QC Report No: PJ46-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040043

Date Sampled: 08/06/09

Date Received: 08/06/09

Date Analyzed: 08/06/09 15:40

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Sample Amount: 130 mg-dry-wt

Percent Moisture: 17.9%

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	9.5	< 9.5 U	
108-88-3	Toluene	9.5	< 9.5 U	
100-41-4	Ethylbenzene	9.5	< 9.5 U	
179601-23-1	m,p-Xylene	19	< 19 U	
95-47-6	o-Xylene	9.5	< 9.5 U	
	Gasoline Range Hydrocarbons	3.8	< 3.8 U	---

BETX Surrogate Recovery

Trifluorotoluene	109%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	115%
Bromobenzene	109%

BETX values reported in $\mu\text{g}/\text{kg}$ (ppb)
Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: PJ46
Matrix: Soil

QC Report No: PJ46-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014001.040043

Client ID	BFB	TFT	BBZ	TOT	OUT
MB-080609	NA	103%	102%		0
LCS-080609	NA	100%	96.8%		0
LCSD-080609	NA	104%	101%		0
B-55-(8-9)	NA	116%	108%		0
B-56-(9-10)	NA	115%	109%		0

	LCS/MB LIMITS	QC LIMITS
(BFB) = Bromofluorobenzene	(70-130)	(70-130)
(TFT) = Trifluorotoluene	(80-120)	(66-123)
(BBZ) = Bromobenzene	(80-120)	(62-130)

Log Number Range: 09-18441 to 09-18442

BETX SOIL SURROGATE RECOVERY SUMMARY

ARI Job: PJ46
Matrix: Soil

QC Report No: PJ46-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014001.040043

Client ID	TFT	BBZ	TOT OUT
MB-080609	97.9%	96.8%	0
LCS-080609	95.4%	92.0%	0
LCSD-080609	98.1%	96.5%	0
B-55-(8-9)	111%	102%	0
B-56-(9-10)	109%	102%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(68-124)
(BBZ) = Bromobenzene	(77-120)	(62-134)

Log Number Range: 09-18441 to 09-18442

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-080609

LAB CONTROL SAMPLE

Lab Sample ID: LCS-080609

LIMS ID: 09-18441

Matrix: Soil

Data Release Authorized: *VTS*

Reported: 08/13/09

QC Report No: PJ46-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040043

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/06/09 10:24

LCSD: 08/06/09 10:48

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike	LCS	LCSD	Spike	LCSD	RPD
		Added-LCS	Recovery		Added-LCS	Recovery	
Gasoline Range Hydrocarbons	48.8	50.0	97.6%	51.1	50.0	102%	4.6%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	100%	104%
Bromobenzene	96.8%	101%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-080609

LAB CONTROL SAMPLE

Lab Sample ID: LCS-080609

LIMS ID: 09-18441

Matrix: Soil

Data Release Authorized: *VTS*

Reported: 08/13/09

QC Report No: PJ46-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040043

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/06/09 10:24

Purge Volume: 5.0 mL

LCSD: 08/06/09 10:48

Instrument/Analyst LCS: PID3/MH

Sample Amount LCS: 100 mg-dry-wt

LCSD: PID3/MH

LCSD: 100 mg-dry-wt

Analyte	LCS	Spike	LCS	LCS	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCS	Recovery	
Benzene	230	265	86.8%	244	265	92.1%	5.9%
Toluene	1710	2060	83.0%	1800	2060	87.4%	5.1%
Ethylbenzene	414	500	82.8%	438	500	87.6%	5.6%
m,p-Xylene	1820	2120	85.8%	1920	2120	90.6%	5.3%
o-Xylene	662	745	88.9%	685	745	91.9%	3.4%

Reported in $\mu\text{g}/\text{kg}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	95.4%	98.1%
Bromobenzene	92.0%	96.5%

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MB-080609
METHOD BLANK

Lab Sample ID: MB-080609
 LIMS ID: 09-18441
 Matrix: Soil
 Data Release Authorized: **UTS**
 Reported: 08/13/09

QC Report No: PJ46-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040043
 Date Sampled: NA
 Date Received: NA

Date Analyzed: 08/06/09 11:13
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Sample Amount: 100 mg-dry-wt

CAS Number	Analyte	RL	Result	
71-43-2	Benzene	12	< 12 U	
108-88-3	Toluene	12	< 12 U	
100-41-4	Ethylbenzene	12	< 12 U	
179601-23-1	m,p-Xylene	25	< 25 U	
95-47-6	o-Xylene	12	< 12 U	
	Gasoline Range Hydrocarbons	5.0	< 5.0 U	GAS ID ---

BETX Surrogate Recovery

Trifluorotoluene	97.9%
Bromobenzene	96.8%

Gasoline Surrogate Recovery

Trifluorotoluene	103%
Bromobenzene	102%

BETX values reported in µg/kg (ppb)
 Gasoline values reported in mg/kg (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.
 Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.



Analytical Resources, Incorporated

Analytical Chemists and Consultants

August 25, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest North Lot
ARI Job: PK15

Dear Tim:

Please find enclosed a copy of the Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted three water samples August 11, 2009. The samples were received with a cooler temperature of 5.6°C. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for BETX and NWTPH-Gx, Sim PAHs and Total Metals, as requested on the COC.

The SIM PAH LCS is out of control high for several analytes. The associated samples were non-detect, therefore no further corrective action was taken.

No other analytical complications were noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC


Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

eFile: PK15

KB/kb



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: Qwest North Lot

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: PK15

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 Temp Gun ID#: 101826

Cooler Accepted by: JP Date: 8/11/09 Time: 1720

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

Samples Logged by: JP Date: 8/12/09 Time: 9:50

**** 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:

"Pb" in 1 of 2 Hcl vial vials, sample ID is MW-5-081109.
Requested all analyses for Trip Blank - just logged for TPH/BTEX.

By: JP Date: 8/12/09

Small Air Bubbles 	Peabubbles' 2-4 mm 	LARGE Air Bubbles 4 mm
-----------------------	---------------------------	-------------------------------

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1


Sample ID: MW-5-081109

SAMPLE

Lab Sample ID: PK15A

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: 

Reported: 08/19/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Date Extracted: 08/13/09

Date Analyzed: 08/15/09 17:29

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 72.3%
d14-Dibenzo (a,h) anthracene 88.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1


Sample ID: MW-8-081109

SAMPLE

Lab Sample ID: PK15B

LIMS ID: 09-18801

Matrix: Water

Data Release Authorized: 

Reported: 08/19/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Date Extracted: 08/13/09

Date Analyzed: 08/15/09 17:50

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 78.7%
d14-Dibenzo (a,h) anthracene 91.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1


Sample ID: MW-88-081109

SAMPLE

Lab Sample ID: PK15C

LIMS ID: 09-18802

Matrix: Water

Data Release Authorized: 

Reported: 08/19/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Date Extracted: 08/13/09

Date Analyzed: 08/15/09 18:10

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 75.3%
d14-Dibenzo (a,h) anthracene 97.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MB-081309

METHOD BLANK

Lab Sample ID: MB-081309

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 08/19/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Extracted: 08/13/09

Date Analyzed: 08/15/09 16:49

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 69.0%
d14-Dibenzo (a,h) anthracene 77.0%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: PK15-Landau Associates, Inc.
Project: Qwest North Lot
1014001.040

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MB-081309	69.0%	77.0%	0
LCS-081309	82.7%	108%	0
MW-5-081109	72.3%	88.0%	0
MW-8-081109	78.7%	91.7%	0
MW-88-081109	75.3%	97.0%	0

LCS/MB LIMITS QC LIMITS

(MNP) = d10-2-Methylnaphthalene (36-101) (30-106)
(DBA) = d14-Dibenzo(a,h)anthracene (42-121) (10-130)

Prep Method: SW3510C
Log Number Range: 09-18800 to 09-18802

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: LCS-081309

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081309

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: *BS*

Reported: 08/19/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 08/13/09

Date Analyzed LCS: 08/15/09 17:09

Instrument/Analyst LCS: NT2/YZ

Sample Amount LCS: 500 mL

Final Extract Volume LCS: 0.50 mL

Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Naphthalene	2.39	3.00	79.7%
2-Methylnaphthalene	2.35	3.00	78.3%
1-Methylnaphthalene	2.42	3.00	80.7%
Acenaphthylene	2.63	3.00	87.7%
Acenaphthene	2.49	3.00	83.0%
Fluorene	2.78	3.00	92.7%
Phenanthrene	3.19	3.00	106%
Anthracene	3.14	3.00	105%
Fluoranthene	2.94	3.00	98.0%
Pyrene	3.33	3.00	111%
Benzo(a)anthracene	3.17	3.00	106%
Chrysene	3.22	3.00	107%
Benzo(b)fluoranthene	3.38	3.00	113%
Benzo(k)fluoranthene	2.90	3.00	96.7%
Benzo(a)pyrene	3.28	3.00	109%
Indeno(1,2,3-cd)pyrene	2.78	3.00	92.7%
Dibenz(a,h)anthracene	3.13	3.00	104%
Benzo(g,h,i)perylene	3.40	3.00	113%
Dibenzofuran	2.67	3.00	89.0%

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	82.7%
d14-Dibenzo(a,h)anthracene	108%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MW-5-081109

SAMPLE

Lab Sample ID: PK15A

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: 

Reported: 08/17/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Date Analyzed: 08/12/09 15:49

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.9%
Bromobenzene	93.0%

Gasoline Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	98.9%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-8-081109

SAMPLE

Lab Sample ID: PK15B

LIMS ID: 09-18801

Matrix: Water

Data Release Authorized:

Reported: 08/17/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Date Analyzed: 08/12/09 16:14

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	1.1
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID

BETX Surrogate Recovery

Trifluorotoluene	104%
Bromobenzene	102%

Gasoline Surrogate Recovery

Trifluorotoluene	109%
Bromobenzene	106%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)


GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-88-081109
 SAMPLE

Lab Sample ID: PK15C
 LIMS ID: 09-18802
 Matrix: Water
 Data Release Authorized: 
 Reported: 08/17/09

QC Report No: PK15-Landau Associates, Inc.
 Project: Qwest North Lot
 Event: 1014001.040
 Date Sampled: 08/11/09
 Date Received: 08/11/09

Date Analyzed: 08/12/09 16:38
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	1.2
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	0.25	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	97.4%
Bromobenzene	96.3%

Gasoline Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	101%

BETX values reported in $\mu\text{g/L}$ (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG


Page 1 of 1

Sample ID: Trip Blank
SAMPLE

Lab Sample ID: PK15D

LIMS ID: 09-18803

Matrix: Water

Data Release Authorized: 

Reported: 08/17/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Date Analyzed: 08/12/09 14:36

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	96.2%

Gasoline Surrogate Recovery

Trifluorotoluene	105%
Bromobenzene	99.9%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-081209

METHOD BLANK

Lab Sample ID: MB-081209

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: *AS*

Reported: 08/17/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed: 08/12/09 13:23

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	97.9%
Bromobenzene	95.0%

Gasoline Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	98.7%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: PK15
Matrix: Water

QC Report No: PK15-Landau Associates, Inc.
Project: Qwest North Lot
Event: 1014001.040

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-081209	97.9%	95.0%	0
LCS-081209	100%	94.5%	0
LCSD-081209	96.5%	94.2%	0
MW-5-081109	96.9%	93.0%	0
MW-8-081109	104%	102%	0
MW-88-081109	97.4%	96.3%	0
Trip Blank	101%	96.2%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(79-120)	(80-120)
(BBZ) = Bromobenzene	(79-120)	(80-120)

Log Number Range: 09-18800 to 09-18803

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: PK15
Matrix: Water

QC Report No: PK15-Landau Associates, Inc.
Project: Qwest North Lot
Event: 1014001.040

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-081209	102%	98.7%	0
LCS-081209	104%	98.5%	0
LCSD-081209	101%	96.1%	0
MW-5-081109	102%	98.9%	0
MW-8-081109	109%	106%	0
MW-88-081109	102%	101%	0
Trip Blank	105%	99.9%	0

LCS/MB LIMITS QC LIMITS

(TFT) = Trifluorotoluene (80-120) (80-120)
(BBZ) = Bromobenzene (80-120) (80-120)

Log Number Range: 09-18800 to 09-18803

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1


Sample ID: LCS-081209

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081209

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: 

Reported: 08/17/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/12/09 12:34

LCSD: 08/12/09 12:58

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike	LCS	LCSD	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Benzene	4.90	5.30	92.5%	4.43	5.30	83.6%	10.1%
Toluene	35.7	41.2	86.7%	32.9	41.2	79.9%	8.2%
Ethylbenzene	8.43	10.0	84.3%	7.94	10.0	79.4%	6.0%
m,p-Xylene	37.2	42.3	87.9%	35.1	42.3	83.0%	5.8%
o-Xylene	13.4	14.9	89.9%	12.7	14.9	85.2%	5.4%

Reported in $\mu\text{g/L}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	100%	96.5%
Bromobenzene	94.5%	94.2%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: LCS-081209

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081209

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: 

Reported: 08/17/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/12/09 12:34

LCSD: 08/12/09 12:58

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.05	1.00	105%	0.90	1.00	90.0%	15.4%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	104%	101%
Bromobenzene	98.5%	96.1%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: MW-5-081109
SAMPLE

Lab Sample ID: PK15A

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized 

Reported: 08/25/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/13/09	200.8	08/24/09	7440-38-2	Arsenic	0.5	17.0	
3010A	08/12/09	6010B	08/17/09	7440-43-9	Cadmium	2	2	U
3010A	08/12/09	6010B	08/17/09	7440-47-3	Chromium	5	5	U
3010A	08/12/09	6010B	08/17/09	7440-50-8	Copper	2	2	U
200.8	08/13/09	200.8	08/24/09	7439-92-1	Lead	1	1	U
7470A	08/12/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/12/09	6010B	08/17/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

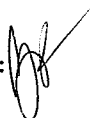
Sample ID: MW-8-081109

SAMPLE

Lab Sample ID: PK15B

LIMS ID: 09-18801

Matrix: Water

Data Release Authorized: 

Reported: 08/25/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/13/09	200.8	08/24/09	7440-38-2	Arsenic	0.2	2.0	
3010A	08/12/09	6010B	08/17/09	7440-43-9	Cadmium	2	2	U
3010A	08/12/09	6010B	08/17/09	7440-47-3	Chromium	5	5	U
3010A	08/12/09	6010B	08/17/09	7440-50-8	Copper	2	2	U
200.8	08/13/09	200.8	08/24/09	7439-92-1	Lead	1	1	U
7470A	08/12/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/12/09	6010B	08/17/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-88-081109

SAMPLE

Lab Sample ID: PK15C

LIMS ID: 09-18802

Matrix: Water

Data Release Authorized: 

Reported: 08/25/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

1014001.040

Date Sampled: 08/11/09

Date Received: 08/11/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/13/09	200.8	08/24/09	7440-38-2	Arsenic	0.2	1.8	
3010A	08/12/09	6010B	08/17/09	7440-43-9	Cadmium	2	2	U
3010A	08/12/09	6010B	08/17/09	7440-47-3	Chromium	5	5	U
3010A	08/12/09	6010B	08/17/09	7440-50-8	Copper	2	2	U
200.8	08/13/09	200.8	08/24/09	7439-92-1	Lead	1	1	U
7470A	08/12/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/12/09	6010B	08/17/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: PK15MB

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized: 

Reported: 08/25/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

1014001.040

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/13/09	200.8	08/24/09	7440-38-2	Arsenic	0.2	0.2	U
3010A	08/12/09	6010B	08/17/09	7440-43-9	Cadmium	2	2	U
3010A	08/12/09	6010B	08/17/09	7440-47-3	Chromium	5	5	U
3010A	08/12/09	6010B	08/17/09	7440-50-8	Copper	2	2	U
200.8	08/13/09	200.8	08/24/09	7439-92-1	Lead	1	1	U
7470A	08/12/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/12/09	6010B	08/17/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: PK15LCS

LIMS ID: 09-18800

Matrix: Water

Data Release Authorized 

Reported: 08/25/09

QC Report No: PK15-Landau Associates, Inc.

Project: Qwest North Lot

1014001.040

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.6	25.0	106%	
Cadmium	6010B	448	500	89.6%	
Chromium	6010B	412	500	82.4%	
Copper	6010B	437	500	87.4%	
Lead	200.8	27	25	108%	
Mercury	7470A	2.1	2.0	105%	
Zinc	6010B	420	500	84.0%	

Reported in µg/L

N-Control limit not met

Control Limits: 80-120%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

August 26, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest North Lot, 1014001.040
ARI Job: PK34

Dear Tim:

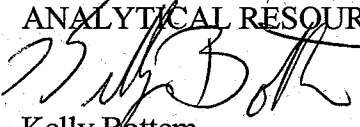
Please find enclosed a copy of the Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted ten water samples and a trip blank August 12, 2009. The samples were received with cooler temperatures of 2.2, 3.0, and 5.2°C. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for BETX, SIM PAH, NWTPH-Gx, NWTPH-Gx, and Total Metals, as requested on the COC.

No analytical complications were noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC


Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

eFile: PK34

KB/co

- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Lake Oswego) (503) 443-6010
- _____



Date 8/12/09
Page 1 of _____

Chain-of-Custody Record

Project Name Quest North Lot Project No. 1014001.040

Project Location/Event " "

Sampler's Name Mark Brunner / Dan Feuer

Project Contact Tim Syverson

Send Results To " "

Testing Parameters

Turnaround Time
 Standard
 Accelerated

Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-G	BTEX	PAH (5017)	TPH-Ax	Metals	Observations/Comments
MW-2-081209	8/12/09	1530	Water	7	X	X	X	X	X	
MW-1-081209	8/12/09	1025			X	X	X	X	X	
MW-4-081209		0956			X	X	X	X	X	
MW-6-081209		1400			X	X	X	X	X	
MW-7s-081209		1140			X	X	X	X	X	
MW-7d-081209		1117			X	X	X	X	X	
MW-9d-081209		0850			X	X	X	X	X	
MW-9s-081209		0805			X	X	X	X	X	
MW-16d-081209		1342			X	X	X	X	X	
MW-17d-081209		1518			X	X	X	X	X	
Trip Blank				1	X	X	X	X	X	Murb

Special Shipment/Handling or Storage Requirements _____ Method of Shipment _____

Relinquished by
[Signature]
 Signature
Daniel Feuer
 Printed Name
Landau Assoc
 Company
 Date 8/12/09 Time 5:21

Received by
[Signature]
 Signature
D. Peterson
 Printed Name
AEI
 Company
 Date 8/12/09 Time 1720

Relinquished by

 Signature

 Printed Name

 Company
 Date _____ Time _____

Received by

 Signature

 Printed Name

 Company
 Date _____ Time _____



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

Cooler Receipt Form

ARI Client: Landaw

Project Name: Quest North Lot

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: PR34

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)..... 22 5.2 3.0

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 101886

Cooler Accepted by: JP Date: 8/12/09 Time: 1720

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

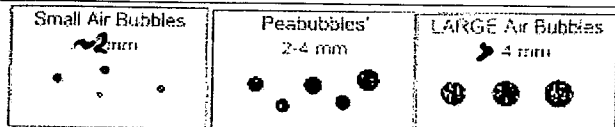
Samples Logged by: W Date: 8/13/09 Time: 048

**** 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"



ARI Job No: PK34

PC: Kelly
VTSR: 08/12/09

Inquiry Number: NONE
Analysis Requested: 08/13/09
Contact: Syverson, Tim
Client: Landau Associates, Inc.
Logged by: MM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

Project #: 1014001.040
Project: QWEST NORTH LOT
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY	
09-18937 PK34A	MW-2-081209						TOT OK																
09-18938 PK34B	MW-1-081209						TDT																
09-18939 PK34C	MW-4-081209						TDT																
09-18940 PK34D	MW-6-081209						TOT																
09-18941 PK34E	MW-7s-081209						TOT																
09-18942 PK34F	MW-7d-081209						TOT																
09-18943 PK34G	MW-9d-081209						TOT																
09-18944 PK34H	MW-9s-081209						TOT																
09-18945 PK34I	MW-16d-081209						TOT																
09-18946 PK34J	MW-17d-081209						TOT ▽																

Checked By MM Date 8/13/09

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-2-081209

SAMPLE

Lab Sample ID: PK34A

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: 

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 15:10

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 69.7%
d14-Dibenzo(a,h)anthracene 84.0%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D-SIM GC/MS

Page 1 of 1


Sample ID: MW-1-081209

SAMPLE

Lab Sample ID: PK34B

LIMS ID: 09-18938

Matrix: Water

Data Release Authorized: 

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 15:30

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.13
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 65.7%
d14-Dibenzo (a,h) anthracene 71.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-4-081209

SAMPLE

Lab Sample ID: PK34C

QC Report No: PK34-Landau Associates, Inc.

LIMS ID: 09-18939

Project: QWEST NORTH LOT

Matrix: Water

Event: 1014001.040

Data Release Authorized:

Date Sampled: 08/12/09

Reported: 08/24/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Sample Amount: 500 mL

Date Analyzed: 08/21/09 15:50

Final Extract Volume: 0.5 mL

Instrument/Analyst: NT2/YZ

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.29
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.26
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	0.32
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 66.7%
d14-Dibenzo (a,h) anthracene 71.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-6-081209

SAMPLE

Lab Sample ID: PK34D

LIMS ID: 09-18940

Matrix: Water

Data Release Authorized: 

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 16:10

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.32
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 64.0%
d14-Dibenzo (a,h) anthracene 64.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-7s-081209

SAMPLE

Lab Sample ID: PK34E

QC Report No: PK34-Landau Associates, Inc.

LIMS ID: 09-18941

Project: QWEST NORTH LOT

Matrix: Water

Event: 1014001.040

Data Release Authorized: *AB*

Date Sampled: 08/12/09

Reported: 08/24/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Sample Amount: 500 mL

Date Analyzed: 08/21/09 16:30

Final Extract Volume: 0.5 mL

Instrument/Analyst: NT2/YZ


Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.73
91-57-6	2-Methylnaphthalene	0.10	0.19
90-12-0	1-Methylnaphthalene	0.10	0.10
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 68.3%
d14-Dibenzo (a,h) anthracene 74.0%

Lab Sample ID: PK34F
LIMS ID: 09-18942
Matrix: Water
Data Release Authorized: 
Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014001.040
Date Sampled: 08/12/09
Date Received: 08/12/09

Date Extracted: 08/17/09
Date Analyzed: 08/21/09 16:50
Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	1.9
91-57-6	2-Methylnaphthalene	0.10	0.39
90-12-0	1-Methylnaphthalene	0.10	0.25
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.15
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 65.7%
d14-Dibenzo (a,h) anthracene 70.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-9d-081209

SAMPLE

Lab Sample ID: PK34G

LIMS ID: 09-18943

Matrix: Water

Data Release Authorized:

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 17:11

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	180 ES
91-57-6	2-Methylnaphthalene	0.10	130 ES
90-12-0	1-Methylnaphthalene	0.10	92 ES
208-96-8	Acenaphthylene	0.10	2.6
83-32-9	Acenaphthene	0.10	82 ES
86-73-7	Fluorene	0.10	44 ES
85-01-8	Phenanthrene	0.10	66 ES
120-12-7	Anthracene	0.10	7.9
206-44-0	Fluoranthene	0.10	4.7
129-00-0	Pyrene	0.10	6.6
56-55-3	Benzo (a) anthracene	0.10	0.36
218-01-9	Chrysene	0.10	0.31
205-99-2	Benzo (b) fluoranthene	0.10	0.10
207-08-9	Benzo (k) fluoranthene	0.10	0.10
50-32-8	Benzo (a) pyrene	0.10	0.15
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	11 E

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 58.0%
d14-Dibenzo (a,h) anthracene 77.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-9d-081209

DILUTION

Lab Sample ID: PK34G

LIMS ID: 09-18943

Matrix: Water

Data Release Authorized: 

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Date Analyzed: 08/22/09 13:33

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL


Dilution Factor: 100

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	10	880
91-57-6	2-Methylnaphthalene	10	230
90-12-0	1-Methylnaphthalene	10	130
208-96-8	Acenaphthylene	10	< 10 U
83-32-9	Acenaphthene	10	120
86-73-7	Fluorene	10	56
85-01-8	Phenanthrene	10	73
120-12-7	Anthracene	10	10
206-44-0	Fluoranthene	10	< 10 U
129-00-0	Pyrene	10	< 10 U
56-55-3	Benzo (a) anthracene	10	< 10 U
218-01-9	Chrysene	10	< 10 U
205-99-2	Benzo (b) fluoranthene	10	< 10 U
207-08-9	Benzo (k) fluoranthene	10	< 10 U
50-32-8	Benzo (a) pyrene	10	< 10 U
193-39-5	Indeno (1,2,3-cd) pyrene	10	< 10 U
53-70-3	Dibenz (a,h) anthracene	10	< 10 U
191-24-2	Benzo (g,h,i) perylene	10	< 10 U
132-64-9	Dibenzofuran	10	15

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene D
d14-Dibenzo (a,h) anthracene D

Lab Sample ID: PK34H
 LIMS ID: 09-18944
 Matrix: Water
 Data Release Authorized: 
 Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/12/09
 Date Received: 08/12/09

Date Extracted: 08/17/09
 Date Analyzed: 08/21/09 17:31
 Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL
 Final Extract Volume: 0.5 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.99
91-57-6	2-Methylnaphthalene	0.10	0.23
90-12-0	1-Methylnaphthalene	0.10	0.15
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.16
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 69.7%
 d14-Dibenzo (a,h) anthracene 69.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1


Sample ID: MW-16d-081209

SAMPLE

Lab Sample ID: PK34I

LIMS ID: 09-18945

Matrix: Water

Data Release Authorized: 

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 17:51

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	0.28
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.27
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	0.16
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a, h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g, h, i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 64.7%
d14-Dibenzo (a, h) anthracene 75.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1


Sample ID: MW-17d-081209

SAMPLE

Lab Sample ID: PK34J

LIMS ID: 09-18946

Matrix: Water

Data Release Authorized: 

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 18:11

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	8.3
91-57-6	2-Methylnaphthalene	0.10	3.1
90-12-0	1-Methylnaphthalene	0.10	4.2
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	6.5
86-73-7	Fluorene	0.10	3.9
85-01-8	Phenanthrene	0.10	10
120-12-7	Anthracene	0.10	1.8
206-44-0	Fluoranthene	0.10	1.6
129-00-0	Pyrene	0.10	1.8
56-55-3	Benzo (a) anthracene	0.10	0.16
218-01-9	Chrysene	0.10	0.15
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	2.0

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 69.0%
d14-Dibenzo (a,h) anthracene 66.7%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: PK34-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014001.040

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MB-081709	62.3%	76.7%	0
LCS-081709	65.0%	63.3%	0
LCSD-081709	65.0%	82.7%	0
MW-2-081209	69.7%	84.0%	0
MW-1-081209	65.7%	71.3%	0
MW-4-081209	66.7%	71.0%	0
MW-6-081209	64.0%	64.3%	0
MW-7s-081209	68.3%	74.0%	0
MW-7d-081209	65.7%	70.7%	0
MW-9d-081209	58.0%	77.0%	0
MW-9d-081209 DL	D	D	0
MW-9s-081209	69.7%	69.7%	0
MW-16d-081209	64.7%	75.0%	0
MW-17d-081209	69.0%	66.7%	0

LCS/MB LIMITS QC LIMITS

(MNP) = d10-2-Methylnaphthalene (36-101) (30-106)
(DBA) = d14-Dibenzo (a,h)anthracene (42-121) (10-130)

Prep Method: SW3510C
Log Number Range: 09-18937 to 09-18946

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: LCS-081709

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081709

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 08/17/09

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 08/21/09 14:29

Final Extract Volume LCS: 0.50 mL

LCSD: 08/21/09 14:50

LCSD: 0.50 mL

Instrument/Analyst LCS: NT2/YZ

Dilution Factor LCS: 1.00

LCSD: NT2/YZ

LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	1.86	3.00	62.0%	1.94	3.00	64.7%	4.2%
2-Methylnaphthalene	1.95	3.00	65.0%	2.00	3.00	66.7%	2.5%
1-Methylnaphthalene	2.08	3.00	69.3%	2.13	3.00	71.0%	2.4%
Acenaphthylene	2.02	3.00	67.3%	2.03	3.00	67.7%	0.5%
Acenaphthene	1.90	3.00	63.3%	2.00	3.00	66.7%	5.1%
Fluorene	2.13	3.00	71.0%	2.23	3.00	74.3%	4.6%
Phenanthrene	2.57	3.00	85.7%	2.60	3.00	86.7%	1.2%
Anthracene	2.59	3.00	86.3%	2.57	3.00	85.7%	0.8%
Fluoranthene	2.32	3.00	77.3%	2.37	3.00	79.0%	2.1%
Pyrene	2.90	3.00	96.7%	3.10	3.00	103%	6.7%
Benzo(a)anthracene	2.71	3.00	90.3%	2.93	3.00	97.7%	7.8%
Chrysene	2.63	3.00	87.7%	2.83	3.00	94.3%	7.3%
Benzo(b)fluoranthene	2.37	3.00	79.0%	2.45	3.00	81.7%	3.3%
Benzo(k)fluoranthene	2.66	3.00	88.7%	2.70	3.00	90.0%	1.5%
Benzo(a)pyrene	2.56	3.00	85.3%	2.51	3.00	83.7%	2.0%
Indeno(1,2,3-cd)pyrene	2.66	3.00	88.7%	2.78	3.00	92.7%	4.4%
Dibenz(a,h)anthracene	2.14	3.00	71.3%	2.71	3.00	90.3%	23.5%
Benzo(g,h,i)perylene	2.82	3.00	94.0%	3.05	3.00	102%	7.8%
Dibenzofuran	2.03	3.00	67.7%	2.10	3.00	70.0%	3.4%

Reported in $\mu\text{g/L}$ (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	65.0%	65.0%
d14-Dibenzo(a,h)anthracene	63.3%	82.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1


Sample ID: MB-081709

METHOD BLANK

Lab Sample ID: MB-081709

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: 

Reported: 08/24/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 14:09

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo (a) anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo (b) fluoranthene	0.10	< 0.10 U
207-08-9	Benzo (k) fluoranthene	0.10	< 0.10 U
50-32-8	Benzo (a) pyrene	0.10	< 0.10 U
193-39-5	Indeno (1,2,3-cd) pyrene	0.10	< 0.10 U
53-70-3	Dibenz (a,h) anthracene	0.10	< 0.10 U
191-24-2	Benzo (g,h,i) perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 62.3%
d14-Dibenzo (a,h) anthracene 76.7%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-2-081209

SAMPLE

Lab Sample ID: PK34A

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Analyzed: 08/17/09 11:15

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	94.6%
Bromobenzene	94.0%

Gasoline Surrogate Recovery

Trifluorotoluene	97.2%
Bromobenzene	96.8%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-1-081209
SAMPLE

Lab Sample ID: PK34B
 LIMS ID: 09-18938
 Matrix: Water
 Data Release Authorized: **VTS**
 Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/12/09
 Date Received: 08/12/09

Date Analyzed: 08/17/09 11:39
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.3%
Bromobenzene	96.0%

Gasoline Surrogate Recovery

Trifluorotoluene	99.9%
Bromobenzene	99.0%

BETX values reported in µg/L (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-4-081209

SAMPLE

Lab Sample ID: PK34C

LIMS ID: 09-18939

Matrix: Water

Data Release Authorized: **VTS**

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Analyzed: 08/17/09 12:04

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	95.8%
Bromobenzene	93.5%

Gasoline Surrogate Recovery

Trifluorotoluene	98.8%
Bromobenzene	97.0%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-6-081209
SAMPLE

Lab Sample ID: PK34D
 LIMS ID: 09-18940
 Matrix: Water
 Data Release Authorized: **VTS**
 Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/12/09
 Date Received: 08/12/09

Date Analyzed: 08/17/09 12:29
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	93.5%
Bromobenzene	93.7%

Gasoline Surrogate Recovery

Trifluorotoluene	96.1%
Bromobenzene	97.4%

BETX values reported in $\mu\text{g/L}$ (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-7s-081209

SAMPLE

Lab Sample ID: PK34E

LIMS ID: 09-18941

Matrix: Water

Data Release Authorized: *VIS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Analyzed: 08/17/09 12:53

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	95.9%
Bromobenzene	94.7%

Gasoline Surrogate Recovery

Trifluorotoluene	98.8%
Bromobenzene	99.1%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-7d-081209

SAMPLE

Lab Sample ID: PK34F

LIMS ID: 09-18942

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Analyzed: 08/17/09 15:21

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	91.5%
Bromobenzene	92.6%

Gasoline Surrogate Recovery

Trifluorotoluene	94.3%
Bromobenzene	96.1%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-9d-081209
SAMPLE

Lab Sample ID: PK34G
 LIMS ID: 09-18943
 Matrix: Water
 Data Release Authorized: **VTS**
 Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/12/09
 Date Received: 08/12/09

Date Analyzed: 08/17/09 15:45
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	13
108-88-3	Toluene	1.0	3.1
100-41-4	Ethylbenzene	1.0	37
179601-23-1	m,p-Xylene	1.0	28
95-47-6	o-Xylene	1.0	16

Gasoline Range Hydrocarbons	0.25	2.2	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	91.8%
Bromobenzene	95.1%

Gasoline Surrogate Recovery

Trifluorotoluene	93.8%
Bromobenzene	96.5%

BETX values reported in $\mu\text{g/L}$ (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-9s-081209
SAMPLE

Lab Sample ID: PK34H
 LIMS ID: 09-18944
 Matrix: Water
 Data Release Authorized: **VTS**
 Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/12/09
 Date Received: 08/12/09

Date Analyzed: 08/18/09 13:19
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result	GAS ID
71-43-2	Benzene	1.0	< 1.0 U	
108-88-3	Toluene	1.0	< 1.0 U	
100-41-4	Ethylbenzene	1.0	< 1.0 U	
179601-23-1	m,p-Xylene	1.0	< 1.0 U	
95-47-6	o-Xylene	1.0	< 1.0 U	
	Gasoline Range Hydrocarbons	0.25	< 0.25 U	---

BETX Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	96.4%

Gasoline Surrogate Recovery

Trifluorotoluene	106%
Bromobenzene	102%

BETX values reported in µg/L (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-16d-081209

SAMPLE

Lab Sample ID: PK34I

LIMS ID: 09-18945

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Analyzed: 08/17/09 16:35

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	93.0%
Bromobenzene	94.8%

Gasoline Surrogate Recovery

Trifluorotoluene	95.9%
Bromobenzene	97.7%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-17d-081209
SAMPLE

Lab Sample ID: PK34J
 LIMS ID: 09-18946
 Matrix: Water
 Data Release Authorized: **VTS**
 Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/12/09
 Date Received: 08/12/09

Date Analyzed: 08/17/09 16:59
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons 0.25 < 0.25 U GAS ID ---

BETX Surrogate Recovery

Trifluorotoluene	92.1%
Bromobenzene	94.7%

Gasoline Surrogate Recovery

Trifluorotoluene	95.1%
Bromobenzene	97.8%

BETX values reported in $\mu\text{g/L}$ (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: TRIP BLANK
SAMPLE

Lab Sample ID: PK34K

LIMS ID: 09-18947

Matrix: Water

Data Release Authorized: *VBS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Date Analyzed: 08/17/09 10:50

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	97.8%
Bromobenzene	94.2%

Gasoline Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	96.4%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: PK34
Matrix: Water

QC Report No: PK34-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014001.040

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-081709	97.2%	98.0%	0
LCS-081709	101%	99.9%	0
LCSD-081709	103%	102%	0
MW-2-081209	97.2%	96.8%	0
MW-1-081209	99.9%	99.0%	0
MW-4-081209	98.8%	97.0%	0
MW-6-081209	96.1%	97.4%	0
MW-7s-081209	98.8%	99.1%	0
MW-7d-081209	94.3%	96.1%	0
MW-9d-081209	93.8%	96.5%	0
MB-081809	98.6%	99.4%	0
LCS-081809	105%	103%	0
LCSD-081809	100%	97.2%	0
MW-9s-081209	106%	102%	0
MW-16d-081209	95.9%	97.7%	0
MW-17d-081209	95.1%	97.8%	0
TRIP BLANK	100%	96.4%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 09-18937 to 09-18947

BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: PK34
Matrix: Water

QC Report No: PK34-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014001.040

Client ID	TFT	BBZ	TOT OUT
MB-081709	94.3%	95.3%	0
LCS-081709	98.4%	97.2%	0
LCSD-081709	100%	99.6%	0
MW-2-081209	94.6%	94.0%	0
MW-1-081209	96.3%	96.0%	0
MW-4-081209	95.8%	93.5%	0
MW-6-081209	93.5%	93.7%	0
MW-7s-081209	95.9%	94.7%	0
MW-7d-081209	91.5%	92.6%	0
MW-9d-081209	91.8%	95.1%	0
MB-081809	95.4%	95.3%	0
LCS-081809	102%	99.0%	0
LCSD-081809	97.6%	94.2%	0
MW-9s-081209	102%	96.4%	0
MW-16d-081209	93.0%	94.8%	0
MW-17d-081209	92.1%	94.7%	0
TRIP BLANK	97.8%	94.2%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(79-120)	(80-120)
(BBZ) = Bromobenzene	(79-120)	(80-120)

Log Number Range: 09-18937 to 09-18947

FORM II BETX

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: LCS-081709
LAB CONTROL SAMPLE

Lab Sample ID: LCS-081709
 LIMS ID: 09-18937
 Matrix: Water
 Data Release Authorized: **VTS**
 Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 08/17/09 09:10
 LCSD: 08/17/09 09:35
 Instrument/Analyst LCS: PID3/MH
 LCSD: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor LCS: 1.0
 LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.00	1.00	100%	1.00	1.00	100%	0.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	101%	103%
Bromobenzene	99.9%	102%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-081709

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081709

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/17/09 09:10

LCSD: 08/17/09 09:35

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike	LCS	LCSD	Spike	LCSD	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Benzene	4.84	5.30	91.3%	4.96	5.30	93.6%	2.4%
Toluene	35.5	41.2	86.2%	37.5	41.2	91.0%	5.5%
Ethylbenzene	8.56	10.0	85.6%	8.95	10.0	89.5%	4.5%
m,p-Xylene	37.4	42.3	88.4%	39.3	42.3	92.9%	5.0%
o-Xylene	13.6	14.9	91.3%	14.2	14.9	95.3%	4.3%

Reported in $\mu\text{g/L}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.4%	100%
Bromobenzene	97.2%	99.6%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-081809

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081809

LIMS ID: 09-18944

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/18/09 09:26

Purge Volume: 5.0 mL

LCSD: 08/18/09 09:51

Instrument/Analyst LCS: PID3/MH

Dilution Factor LCS: 1.0

LCSD: PID3/MH

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.00	1.00	100%	0.95	1.00	95.0%	5.1%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	105%	100%
Bromobenzene	103%	97.2%

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
 Page 1 of 1

Sample ID: LCS-081809
LAB CONTROL SAMPLE

Lab Sample ID: LCS-081809
 LIMS ID: 09-18944
 Matrix: Water
 Data Release Authorized: **VTS**
 Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 08/18/09 09:26
 LCSD: 08/18/09 09:51
 Instrument/Analyst LCS: PID3/MH
 LCSD: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor LCS: 1.0
 LCSD: 1.0

Analyte	LCS	Spike	LCS	LCS	Spike	LCS	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Benzene	4.86	5.30	91.7%	4.59	5.30	86.6%	5.7%
Toluene	35.7	41.2	86.7%	34.1	41.2	82.8%	4.6%
Ethylbenzene	8.58	10.0	85.8%	8.14	10.0	81.4%	5.3%
m,p-Xylene	37.6	42.3	88.9%	35.7	42.3	84.4%	5.2%
o-Xylene	13.6	14.9	91.3%	12.9	14.9	86.6%	5.3%

Reported in $\mu\text{g/L}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	102%	97.6%
Bromobenzene	99.0%	94.2%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-081709

METHOD BLANK

Lab Sample ID: MB-081709

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: **VTS**

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed: 08/17/09 09:59

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	94.3%
Bromobenzene	95.3%

Gasoline Surrogate Recovery

Trifluorotoluene	97.2%
Bromobenzene	98.0%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-081809

METHOD BLANK

Lab Sample ID: MB-081809

LIMS ID: 09-18944

Matrix: Water

Data Release Authorized: *VJS*

Reported: 08/21/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed: 08/18/09 10:15

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	95.4%
Bromobenzene	95.3%

Gasoline Surrogate Recovery

Trifluorotoluene	98.6%
Bromobenzene	99.4%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned


Page 1 of 2

Matrix: Water

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Data Release Authorized: 

Reported: 08/19/09

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-081409 09-18937	Method Blank HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 64.1%
PK34A 09-18937	MW-2-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 68.3%
PK34B 09-18938	MW-1-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 69.4%
PK34C 09-18939	MW-4-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 65.1%
PK34D 09-18940	MW-6-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 61.7%
PK34E 09-18941	MW-7s-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 70.0%
PK34F 09-18942	MW-7d-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 67.2%
PK34G 09-18943	MW-9d-081209 HC ID: DRO	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	0.77 < 0.50 U 69.5%
PK34H 09-18944	MW-9s-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 68.1%
PK34I 09-18945	MW-16d-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 70.0%
PK34J 09-18946	MW-17d-081209 HC ID: ---	08/14/09	08/17/09 FID4B	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 67.7%

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned


Page 2 of 2

Matrix: Water

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Data Release Authorized: 

Reported: 08/19/09

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
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Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: PK34-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014001.040

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-081409	64.1%	0
LCS-081409	67.2%	0
LCSD-081409	66.4%	0
MW-2-081209	68.3%	0
MW-1-081209	69.4%	0
MW-4-081209	65.1%	0
MW-6-081209	61.7%	0
MW-7s-081209	70.0%	0
MW-7d-081209	67.2%	0
MW-9d-081209	69.5%	0
MW-9s-081209	68.1%	0
MW-16d-081209	70.0%	0
MW-17d-081209	67.7%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(51-120)

(41-121)

Prep Method: SW3510C
Log Number Range: 09-18937 to 09-18946

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 08/12/09

ARI Job: PK34
Project: QWEST NORTH LOT
1014001.040

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
09-18937-081409MB1	Method Blank	500 mL	1.00 mL	08/14/09
09-18937-081409LCS1	Lab Control	500 mL	1.00 mL	08/14/09
09-18937-081409LCSD1	Lab Control Dup	500 mL	1.00 mL	08/14/09
09-18937-PK34A	MW-2-081209	500 mL	1.00 mL	08/14/09
09-18938-PK34B	MW-1-081209	500 mL	1.00 mL	08/14/09
09-18939-PK34C	MW-4-081209	500 mL	1.00 mL	08/14/09
09-18940-PK34D	MW-6-081209	500 mL	1.00 mL	08/14/09
09-18941-PK34E	MW-7s-081209	500 mL	1.00 mL	08/14/09
09-18942-PK34F	MW-7d-081209	500 mL	1.00 mL	08/14/09
09-18943-PK34G	MW-9d-081209	500 mL	1.00 mL	08/14/09
09-18944-PK34H	MW-9s-081209	500 mL	1.00 mL	08/14/09
09-18945-PK34I	MW-16d-081209	500 mL	1.00 mL	08/14/09
09-18946-PK34J	MW-17d-081209	500 mL	1.00 mL	08/14/09

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-2-081209

SAMPLE

Lab Sample ID: PK34A

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	1.2	
3010A	08/14/09	6010B	08/18/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/18/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/18/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/18/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: MW-1-081209
SAMPLE

Lab Sample ID: PK34B

LIMS ID: 09-18938

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	2.4	
3010A	08/14/09	6010B	08/18/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/18/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/18/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/18/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-4-081209
SAMPLE

Lab Sample ID: PK34C


QC Report No: PK34-Landau Associates, Inc.

LIMS ID: 09-18939

Project: QWEST NORTH LOT

Matrix: Water

1014001.040

Data Release Authorized: 

Date Sampled: 08/12/09

Reported: 08/26/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	4.6	
3010A	08/14/09	6010B	08/18/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/18/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/18/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/18/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: MW-6-081209
SAMPLE

Lab Sample ID: PK34D

LIMS ID: 09-18940

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	1.2	
3010A	08/14/09	6010B	08/18/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/18/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/18/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/18/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-7s-081209

SAMPLE

Lab Sample ID: PK34E

LIMS ID: 09-18941

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	3.9	
3010A	08/14/09	6010B	08/18/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/18/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/18/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/18/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-7d-081209

SAMPLE

Lab Sample ID: PK34F

LIMS ID: 09-18942

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.5	2.0	
3010A	08/14/09	6010B	08/18/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/18/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/18/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/18/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-9d-081209

SAMPLE

Lab Sample ID: PK34G

LIMS ID: 09-18943

Matrix: Water

Data Release Authorized 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.5	3.8	
3010A	08/14/09	6010B	08/19/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/19/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/19/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/19/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

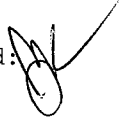
Sample ID: MW-9s-081209

SAMPLE

Lab Sample ID: PK34H

LIMS ID: 09-18944

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	5.0	
3010A	08/14/09	6010B	08/19/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/19/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/19/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/19/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-16d-081209

SAMPLE

Lab Sample ID: PK34I

LIMS ID: 09-18945

Matrix: Water

Data Release Authorized 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.5	7.2	
3010A	08/14/09	6010B	08/19/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/19/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/19/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/19/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-17d-081209

SAMPLE

Lab Sample ID: PK34J

LIMS ID: 09-18946

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.5	13.5	
3010A	08/14/09	6010B	08/19/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/19/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/19/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/19/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

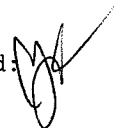
Sample ID: MW-2-081209

MATRIX SPIKE

Lab Sample ID: PK34A

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	1.18	27.5	25.0	105%	
Cadmium	6010B	2.00 U	494	500	98.8%	
Chromium	6010B	5.00 U	490	500	98.0%	
Copper	6010B	2.00 U	473	500	94.6%	
Lead	200.8	1.00 U	25.8	25.0	103%	
Mercury	7470A	0.100 U	1.24	1.00	124%	
Zinc	6010B	10.0 U	478	500	95.6%	

Reported in µg/L

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

NR-Not Recovered

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-2-081209

DUPLICATE

Lab Sample ID: PK34A

LIMS ID: 09-18937

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/12/09

Date Received: 08/12/09

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	1.2	1.2	0.0%	+/- 20%	
Cadmium	6010B	2 U	2 U	0.0%	+/- 2	L
Chromium	6010B	5 U	5 U	0.0%	+/- 5	L
Copper	6010B	2 U	2 U	0.0%	+/- 2	L
Lead	200.8	1 U	1 U	0.0%	+/- 1	L
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L
Zinc	6010B	10 U	10 U	0.0%	+/- 10	L

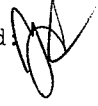
Reported in µg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: PK34LCS
LIMS ID: 09-18938
Matrix: Water
Data Release Authorized: 
Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014001.040
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.0	25.0	104%	
Cadmium	6010B	458	500	91.6%	
Chromium	6010B	483	500	96.6%	
Copper	6010B	460	500	92.0%	
Lead	200.8	26	25	104%	
Mercury	7470A	2.4	2.0	120%	
Zinc	6010B	450	500	90.0%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS


Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: PK34MB

LIMS ID: 09-18938

Matrix: Water

Data Release Authorized 

Reported: 08/26/09

QC Report No: PK34-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	0.2	U
3010A	08/14/09	6010B	08/18/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/18/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/18/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/18/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit



Analytical Resources, Incorporated
Analytical Chemists and Consultants

August 26, 2009

Tim Syverson
Landau Associates, Inc.
130 Second Ave
Edmonds, WA 98020

RE: Project: Qwest North Lot, 1014001.040
ARI Job: PK44

Dear Tim:

Please find enclosed a copy of the Chain-of-Custody (COC) record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. (ARI) accepted seven water samples and a trip blank August 13, 2009. The samples were received with cooler temperatures of 2.6, 5.0, and 5.4°C. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

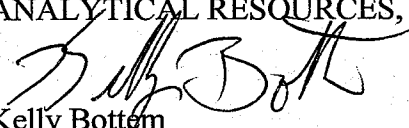
The samples were analyzed for BETX, SIM PAH, NWTPH-Gx, NWTPH-Gx, and Total Metals, as requested on the COC.

The LCS for mercury was outside the control limits high. The matrix spike percent recovery of mercury was within the LCS control limits. No corrective action was required.

No other analytical complications were noted.

Quality control analysis results are included for your review. An electronic copy of this report and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC


Kelly Bottom
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

Enclosures

eFile: PK44

KB/co

- Seattle (Edmonds) (425) 778-0907
- Tacoma (253) 926-2493
- Spokane (509) 327-9737
- Portland (Lake Oswego) (503) 443-6010
- _____



Date 8/13/09
Page 1 of _____

Chain-of-Custody Record

Project Name <u>Qwest North Lot</u> Project No. ^{AWS} 1014001.010 <u>1014001.010</u>					Testing Parameters										Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____
Project Location/Event <u>" " "</u>					<div style="display: flex; justify-content: space-around; font-size: 2em; transform: rotate(-45deg);"> TPH-C BTEX TPH-DX PAH (Sims) Metals </div>										
Sampler's Name <u>Mark Brunner/Dan Feuer</u>															
Project Contact <u>Tim Syverson</u>															
Send Results To <u>" "</u>															Observations/Comments
Sample I.D.	Date	Time	Matrix	No. of Containers	TPH-C	BTEX	TPH-DX	PAH (Sims)	Metals						
MW-3-081309	8/13/09	0825	Water	7	X	X	X	X	X						
MW-10-081309		1128			X	X	X	X	X						
MW-11-081309		1130			X	X	X	X	X						
MW-12-081309		1038			X	X	X	X	X						
MW-13-081309		0807			X	X	X	X	X						
MW-14-081309		1000			X	X	X	X	X						
MW-15-081309		0923			X	X	X	X	X						
Trip Blank		—		1	X	X									

Special Shipment/Handling or Storage Requirements _____ Method of Shipment _____

Relinquished by

 Signature
Daniel Feuer
 Printed Name
Landau Assoc
 Company
 Date 8/13/09 Time 1:14

Received by
Kelly Bollen
 Signature
Kelly Bollen
 Printed Name
AST
 Company
 Date 8/13/09 Time 1:14

Relinquished by

 Signature

 Printed Name

 Company

 Date _____ Time _____

Received by

 Signature

 Printed Name

 Company

 Date _____ Time _____



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

Cooler Receipt Form

ARI Client: Lordau

Project Name: Qwest

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: _____

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)..... 5.0 5.4 26

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 487405

Cooler Accepted by: JP Date: 8/13/09 Time: 13:20

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

Samples Logged by: M Date: 8/13/09 Time: 14:12

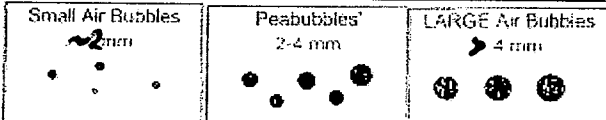
**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

One extra Trip blank was found in cooler at receipt.

By: _____ Date: _____



Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"



ARI Job No: PK44

PC: Kelly
VTSR: 08/13/09

Inquiry Number: NONE
Analysis Requested: 08/13/09
Contact: Syverson, Tim
Client: Landau Associates, Inc.
Logged by: MM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

Project #: 1014001.040
Project: QWEST NORTH LOT
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	AK102 <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY	
09-19006 PK44A	MW-3-081309						TOT 02																
09-19007 PK44B	MW-10-081309						TOT																
09-19008 PK44C	MW-11-081309						TOT																
09-19009 PK44D	MW-12-081309						TOT																
09-19010 PK44E	MW-13-081309						TOT																
09-19011 PK44F	MW-14-081309						TOT																
09-19012 PK44G	MW-15d-081309						TOT																

Checked By MM Date 8/13/09

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-3-081309

SAMPLE

Lab Sample ID: PK44A

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: **UTS**

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 18:32

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 59.7%
d14-Dibenzo(a,h)anthracene 73.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-10-081309

SAMPLE

Lab Sample ID: PK44B

QC Report No: PK44-Landau Associates, Inc.

LIMS ID: 09-19007

Project: QWEST NORTH LOT

Matrix: Water

Event: 1014001.040

Data Release Authorized: **VTS**

Date Sampled: 08/13/09

Reported: 08/22/09

Date Received: 08/13/09

Date Extracted: 08/17/09

Sample Amount: 500 mL

Date Analyzed: 08/21/09 18:52

Final Extract Volume: 0.5 mL

Instrument/Analyst: NT2/YZ

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 49.3%
d14-Dibenzo(a,h)anthracene 54.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-11-081309

SAMPLE

Lab Sample ID: PK44C

LIMS ID: 09-19008

Matrix: Water

Data Release Authorized: **VTS**

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 19:12

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	0.14
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 57.3%
d14-Dibenzo(a,h)anthracene 68.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-12-081309

SAMPLE

Lab Sample ID: PK44D

LIMS ID: 09-19009

Matrix: Water

Data Release Authorized: *VR*

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 19:32

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 49.7%
d14-Dibenzo(a,h)anthracene 66.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-13-081309

SAMPLE

Lab Sample ID: PK44E

LIMS ID: 09-19010

Matrix: Water

Data Release Authorized: *VIS*

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 19:53

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 61.0%
d14-Dibenzo(a,h)anthracene 80.3%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-14-081309

SAMPLE

Lab Sample ID: PK44F

LIMS ID: 09-19011

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 20:13

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 58.7%
d14-Dibenzo(a,h)anthracene 76.7%

ORGANICS ANALYSIS DATA SHEET

PNA's by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-15d-081309

SAMPLE

Lab Sample ID: PK44G

LIMS ID: 09-19012

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 20:33

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	1.8
91-57-6	2-Methylnaphthalene	0.10	0.23
90-12-0	1-Methylnaphthalene	0.10	0.20
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	0.31
86-73-7	Fluorene	0.10	0.19
85-01-8	Phenanthrene	0.10	0.54
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	0.13
129-00-0	Pyrene	0.10	0.15
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	0.11

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 53.7%
d14-Dibenzo(a,h)anthracene 67.0%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: PK44-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014001.040

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MB-081709	62.3%	76.7%	0
LCS-081709	65.0%	63.3%	0
LCSD-081709	65.0%	82.7%	0
MW-3-081309	59.7%	73.7%	0
MW-10-081309	49.3%	54.3%	0
MW-11-081309	57.3%	68.7%	0
MW-12-081309	49.7%	66.7%	0
MW-13-081309	61.0%	80.3%	0
MW-14-081309	58.7%	76.7%	0
MW-15d-081309	53.7%	67.0%	0

LCS/MB LIMITS QC LIMITS

(MNP) = d10-2-Methylnaphthalene (36-101) (30-106)
(DBA) = d14-Dibenzo(a,h)anthracene (42-121) (10-130)

Prep Method: SW3510C
Log Number Range: 09-19006 to 09-19012

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: LCS-081709

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081709

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 08/17/09

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 08/21/09 14:29

Final Extract Volume LCS: 0.50 mL

LCSD: 08/21/09 14:50

LCSD: 0.50 mL

Instrument/Analyst LCS: NT2/YZ

Dilution Factor LCS: 1.00

LCSD: NT2/YZ

LCSD: 1.00

Analyte	LCS	Spike		LCSD	Spike		RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Naphthalene	1.86	3.00	62.0%	1.94	3.00	64.7%	4.2%
2-Methylnaphthalene	1.95	3.00	65.0%	2.00	3.00	66.7%	2.5%
1-Methylnaphthalene	2.08	3.00	69.3%	2.13	3.00	71.0%	2.4%
Acenaphthylene	2.02	3.00	67.3%	2.03	3.00	67.7%	0.5%
Acenaphthene	1.90	3.00	63.3%	2.00	3.00	66.7%	5.1%
Fluorene	2.13	3.00	71.0%	2.23	3.00	74.3%	4.6%
Phenanthrene	2.57	3.00	85.7%	2.60	3.00	86.7%	1.2%
Anthracene	2.59	3.00	86.3%	2.57	3.00	85.7%	0.8%
Fluoranthene	2.32	3.00	77.3%	2.37	3.00	79.0%	2.1%
Pyrene	2.90	3.00	96.7%	3.10	3.00	103%	6.7%
Benzo(a)anthracene	2.71	3.00	90.3%	2.93	3.00	97.7%	7.8%
Chrysene	2.63	3.00	87.7%	2.83	3.00	94.3%	7.3%
Benzo(b)fluoranthene	2.37	3.00	79.0%	2.45	3.00	81.7%	3.3%
Benzo(k)fluoranthene	2.66	3.00	88.7%	2.70	3.00	90.0%	1.5%
Benzo(a)pyrene	2.56	3.00	85.3%	2.51	3.00	83.7%	2.0%
Indeno(1,2,3-cd)pyrene	2.66	3.00	88.7%	2.78	3.00	92.7%	4.4%
Dibenz(a,h)anthracene	2.14	3.00	71.3%	2.71	3.00	90.3%	23.5%
Benzo(g,h,i)perylene	2.82	3.00	94.0%	3.05	3.00	102%	7.8%
Dibenzofuran	2.03	3.00	67.7%	2.10	3.00	70.0%	3.4%

Reported in $\mu\text{g/L}$ (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	65.0%	65.0%
d14-Dibenzo(a,h)anthracene	63.3%	82.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MB-081709

METHOD BLANK

Lab Sample ID: MB-081709

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: *VTS*

Reported: 08/22/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Extracted: 08/17/09

Date Analyzed: 08/21/09 14:09

Instrument/Analyst: NT2/YZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.10	< 0.10 U

Reported in $\mu\text{g/L}$ (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 62.3%
d14-Dibenzo(a,h)anthracene 76.7%

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-3-081309
 SAMPLE

Lab Sample ID: PK44A
 LIMS ID: 09-19006
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/13/09
 Date Received: 08/13/09

Date Analyzed: 08/14/09 20:22
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	22
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	0.28	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	93.9%
Bromobenzene	93.3%

Gasoline Surrogate Recovery

Trifluorotoluene	98.7%
Bromobenzene	99.3%

BETX values reported in $\mu\text{g/L}$ (ppb)
 Gasoline values reported in mg/L (ppm)


GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-10-081309
 SAMPLE

Lab Sample ID: PK44B
 LIMS ID: 09-19007
 Matrix: Water
 Data Release Authorized: 
 Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/13/09
 Date Received: 08/13/09

Date Analyzed: 08/14/09 20:46
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons 0.25 < 0.25 U GAS ID ---

BETX Surrogate Recovery

Trifluorotoluene	89.7%
Bromobenzene	89.1%

Gasoline Surrogate Recovery

Trifluorotoluene	96.0%
Bromobenzene	96.0%

BETX values reported in µg/L (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MW-11-081309

SAMPLE

Lab Sample ID: PK44C

LIMS ID: 09-19008

Matrix: Water

Data Release Authorized: 

Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Analyzed: 08/14/09 21:11

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	90.9%
Bromobenzene	90.9%

Gasoline Surrogate Recovery

Trifluorotoluene	96.3%
Bromobenzene	96.3%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)


GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MW-12-081309
 SAMPLE

Lab Sample ID: PK44D
 LIMS ID: 09-19009
 Matrix: Water
 Data Release Authorized: 
 Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.040
 Date Sampled: 08/13/09
 Date Received: 08/13/09

Date Analyzed: 08/14/09 21:35
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	0.30	GAS ID GRO
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BETX Surrogate Recovery

Trifluorotoluene	92.4%
Bromobenzene	92.8%

Gasoline Surrogate Recovery

Trifluorotoluene	98.2%
Bromobenzene	96.8%

BETX values reported in µg/L (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MW-13-081309

SAMPLE

Lab Sample ID: PK44E

LIMS ID: 09-19010

Matrix: Water

Data Release Authorized: 

Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Analyzed: 08/14/09 22:00

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	90.0%
Bromobenzene	90.7%

Gasoline Surrogate Recovery

Trifluorotoluene	95.9%
Bromobenzene	97.1%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MW-14-081309

SAMPLE

Lab Sample ID: PK44F

LIMS ID: 09-19011

Matrix: Water

Data Release Authorized: 

Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Analyzed: 08/14/09 22:24

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	89.0%
Bromobenzene	90.5%

Gasoline Surrogate Recovery

Trifluorotoluene	94.9%
Bromobenzene	96.2%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MW-15d-081309

SAMPLE

Lab Sample ID: PK44G

LIMS ID: 09-19012

Matrix: Water

Data Release Authorized: 

Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Analyzed: 08/14/09 22:49

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	91.0%
Bromobenzene	92.6%

Gasoline Surrogate Recovery

Trifluorotoluene	97.2%
Bromobenzene	98.7%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET
 BETX by Method SW8021BMod
 TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: TRIP BLANK
 SAMPLE

Lab Sample ID: PK44H
 LIMS ID: 09-19013
 Matrix: Water
 Data Release Authorized: *AB*
 Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 Event: 1014001.010
 Date Sampled: 08/13/09
 Date Received: 08/13/09

Date Analyzed: 08/14/09 19:57
 Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.1%
Bromobenzene	92.8%

Gasoline Surrogate Recovery

Trifluorotoluene	98.1%
Bromobenzene	97.9%

BETX values reported in $\mu\text{g/L}$ (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: PK44
Matrix: Water

QC Report No: PK44-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014001.040

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-081409	94.7%	96.3%	0
LCS-081409	97.9%	96.0%	0
LCSD-081409	103%	102%	0
MW-3-081309	98.7%	99.3%	0
MW-10-081309	96.0%	96.0%	0
MW-11-081309	96.3%	96.3%	0
MW-12-081309	98.2%	96.8%	0
MW-13-081309	95.9%	97.1%	0
MW-14-081309	94.9%	96.2%	0
MW-15d-081309	97.2%	98.7%	0
TRIP BLANK	98.1%	97.9%	0

(TFT) = Trifluorotoluene	LCS/MB LIMITS (80-120)	QC LIMITS (80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 09-19006 to 09-19013

BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: PK44
Matrix: Water

QC Report No: PK44-Landau Associates, Inc.
Project: QWEST NORTH LOT
Event: 1014001.040

<u>Client ID</u>	<u>TFT</u>	<u>BBZ</u>	<u>TOT OUT</u>
MB-081409	92.1%	93.5%	0
LCS-081409	96.2%	94.7%	0
LCSD-081409	101%	99.1%	0
MW-3-081309	93.9%	93.3%	0
MW-10-081309	89.7%	89.1%	0
MW-11-081309	90.9%	90.9%	0
MW-12-081309	92.4%	92.8%	0
MW-13-081309	90.0%	90.7%	0
MW-14-081309	89.0%	90.5%	0
MW-15d-081309	91.0%	92.6%	0
TRIP BLANK	92.1%	92.8%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(79-120)	(80-120)
(BBZ) = Bromobenzene	(79-120)	(80-120)

Log Number Range: 09-19006 to 09-19013

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: LCS-081409

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081409

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: 

Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/14/09 10:35

LCS D: 08/14/09 11:00

Instrument/Analyst LCS: PID3/MH

LCS D: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCS D: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCS D	Spike Added-LCS D	LCS D Recovery	RPD
Gasoline Range Hydrocarbons	1.01	1.00	101%	1.01	1.00	101%	0.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCS D
Trifluorotoluene	97.9%	103%
Bromobenzene	96.0%	102%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-081409

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081409

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 08/14/09 10:35

LCSD: 08/14/09 11:00

Instrument/Analyst LCS: PID3/MH

LCSD: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	4.97	5.30	93.8%	5.11	5.30	96.4%	2.8%
Toluene	36.6	41.2	88.8%	38.2	41.2	92.7%	4.3%
Ethylbenzene	8.84	10.0	88.4%	9.16	10.0	91.6%	3.6%
m,p-Xylene	38.5	42.3	91.0%	40.5	42.3	95.7%	5.1%
o-Xylene	14.0	14.9	94.0%	14.7	14.9	98.7%	4.9%

Reported in $\mu\text{g/L}$ (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	96.2%	101%
Bromobenzene	94.7%	99.1%

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1


Sample ID: MB-081409

METHOD BLANK

Lab Sample ID: MB-081409

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: 

Reported: 08/18/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

Event: 1014001.040

Date Sampled: NA

Date Received: NA

Date Analyzed: 08/14/09 11:25

Instrument/Analyst: PID3/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	92.1%
Bromobenzene	93.5%

Gasoline Surrogate Recovery

Trifluorotoluene	94.7%
Bromobenzene	96.3%

BETX values reported in $\mu\text{g/L}$ (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

ORGANICS ANALYSIS DATA SHEET

TOTAL DIESEL RANGE HYDROCARBONS

NWTPHD by GC/FID-Silica and Acid Cleaned


Page 1 of 1

Matrix: Water

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Data Release Authorized: 

Reported: 08/20/09

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range	RL	Result
MB-081709 09-19006	Method Blank HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 67.2%
PK44A 09-19006	MW-3-081309 HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 63.5%
PK44B 09-19007	MW-10-081309 HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 56.4%
PK44C 09-19008	MW-11-081309 HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 70.3%
PK44D 09-19009	MW-12-081309 HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 50.4%
PK44E 09-19010	MW-13-081309 HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 67.0%
PK44F 09-19011	MW-14-081309 HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 68.0%
PK44G 09-19012	MW-15d-081309 HC ID: ---	08/17/09	08/18/09 FID3A	1.00 1.0	Diesel Motor Oil o-Terphenyl	0.25 0.50	< 0.25 U < 0.50 U 54.4%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel quantitation on total peaks in the range from C12 to C24.

Motor Oil quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: PK44-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014001.040

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-081709	67.2%	0
LCS-081709	72.3%	0
LCSD-081709	69.8%	0
MW-3-081309	63.5%	0
MW-10-081309	56.4%	0
MW-11-081309	70.3%	0
MW-12-081309	50.4%	0
MW-13-081309	67.0%	0
MW-14-081309	68.0%	0
MW-15d-081309	54.4%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(51-120)	(41-121)

Prep Method: SW3510C
Log Number Range: 09-19006 to 09-19012

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Page 1 of 1

Sample ID: LCS-081709

LCS/LCSD

Lab Sample ID: LCS-081709

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: *AS*

Reported: 08/20/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Date Extracted LCS/LCSD: 08/17/09

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 08/18/09 17:26

Final Extract Volume LCS: 1.0 mL

LCSD: 08/18/09 17:45

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/MS

Dilution Factor LCS: 1.00

LCSD: FID/MS

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	1.66	3.00	55.3%	1.64	3.00	54.7%	1.2%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	72.3%	69.8%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 08/13/09

ARI Job: PK44
Project: QWEST NORTH LOT
1014001.040


ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
09-19006-081709MB1	Method Blank	500 mL	1.00 mL	08/17/09
09-19006-081709LCS1	Lab Control	500 mL	1.00 mL	08/17/09
09-19006-081709LCSD1	Lab Control Dup	500 mL	1.00 mL	08/17/09
09-19006-PK44A	MW-3-081309	500 mL	1.00 mL	08/17/09
09-19007-PK44B	MW-10-081309	500 mL	1.00 mL	08/17/09
09-19008-PK44C	MW-11-081309	500 mL	1.00 mL	08/17/09
09-19009-PK44D	MW-12-081309	500 mL	1.00 mL	08/17/09
09-19010-PK44E	MW-13-081309	500 mL	1.00 mL	08/17/09
09-19011-PK44F	MW-14-081309	500 mL	1.00 mL	08/17/09
09-19012-PK44G	MW-15d-081309	500 mL	1.00 mL	08/17/09

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-3-081309
SAMPLE

Lab Sample ID: PK44A
LIMS ID: 09-19006
Matrix: Water
Data Release Authorized: 
Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014001.040
Date Sampled: 08/13/09
Date Received: 08/13/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	1.3	
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

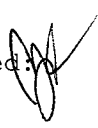
Page 1 of 1

Sample ID: MW-10-081309
SAMPLE

Lab Sample ID: PK44B

LIMS ID: 09-19007

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.5	4.9	
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

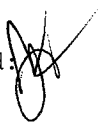
Sample ID: MW-11-081309

SAMPLE

Lab Sample ID: PK44C

LIMS ID: 09-19008

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	2.6	
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	2	
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-12-081309

SAMPLE

Lab Sample ID: PK44D


QC Report No: PK44-Landau Associates, Inc.

LIMS ID: 09-19009

Project: QWEST NORTH LOT

Matrix: Water

1014001.040

Data Release Authorized: 

Date Sampled: 08/13/09

Reported: 08/26/09


Date Received: 08/13/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	1.8	
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
 Page 1 of 1

Sample ID: MW-13-081309
 SAMPLE

Lab Sample ID: PK44E
 LIMS ID: 09-19010
 Matrix: Water
 Data Release Authorized 
 Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.
 Project: QWEST NORTH LOT
 1014001.040
 Date Sampled: 08/13/09
 Date Received: 08/13/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	2.2	
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL
 RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-14-081309

SAMPLE

Lab Sample ID: PK44F

LIMS ID: 09-19011

Matrix: Water

Data Release Authorized 

Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	2.5	
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-15d-081309

SAMPLE

Lab Sample ID: PK44G

LIMS ID: 09-19012

Matrix: Water

Data Release Authorized 

Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	16.8	
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1


Sample ID: MW-3-081309

MATRIX SPIKE

Lab Sample ID: PK44A

LIMS ID: 09-19006

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: 08/13/09

Date Received: 08/13/09

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	1.30	27.5	25.0	105%	
Cadmium	6010B	2.00 U	468	500	93.6%	
Chromium	6010B	5.00 U	452	500	90.4%	
Copper	6010B	2.00 U	480	500	96.0%	
Lead	200.8	1.00 U	25.6	25.0	102%	
Mercury	7470A	0.100 U	1.09	1.00	109%	
Zinc	6010B	10.0 U	448	500	89.6%	

Reported in µg/L

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High


NA-Not Applicable, Analyte Not Spiked

NR-Not Recovered

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-3-081309
DUPLICATE

Lab Sample ID: PK44A
LIMS ID: 09-19006
Matrix: Water
Data Release Authorized 
Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.
Project: QWEST NORTH LOT
1014001.040
Date Sampled: 08/13/09
Date Received: 08/13/09

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	1.3	1.3	0.0%	+/- 20%	
Cadmium	6010B	2 U	2 U	0.0%	+/- 2	L
Chromium	6010B	5 U	5 U	0.0%	+/- 5	L
Copper	6010B	2 U	2 U	0.0%	+/- 2	L
Lead	200.8	1 U	1 U	0.0%	+/- 1	L
Mercury	7470A	0.1 U	0.1 U	0.0%	+/- 0.1	L
Zinc	6010B	10 U	10 U	0.0%	+/- 10	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

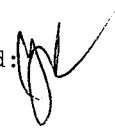
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: PK44LCS

LIMS ID: 09-19007

Matrix: Water

Data Release Authorized: 

Reported: 08/26/09

QC Report No: PK44-Landau Associates, Inc.

Project: QWEST NORTH LOT

1014001.040

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.2	25.0	105%	
Cadmium	6010B	449	500	89.8%	
Chromium	6010B	438	500	87.6%	
Copper	6010B	448	500	89.6%	
Lead	200.8	26	25	104%	
Mercury	7470A	2.6	2.0	130%	N
Zinc	6010B	440	500	88.0%	

Reported in µg/L

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: PK44MB


QC Report No: PK44-Landau Associates, Inc.

LIMS ID: 09-19007

Project: QWEST NORTH LOT

Matrix: Water

1014001.040

Data Release Authorized: 

Date Sampled: NA

Reported: 08/26/09

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	µg/L	Q
200.8	08/17/09	200.8	08/25/09	7440-38-2	Arsenic	0.2	0.2	U
3010A	08/14/09	6010B	08/20/09	7440-43-9	Cadmium	2	2	U
3010A	08/14/09	6010B	08/20/09	7440-47-3	Chromium	5	5	U
3010A	08/14/09	6010B	08/20/09	7440-50-8	Copper	2	2	U
200.8	08/17/09	200.8	08/25/09	7439-92-1	Lead	1	1	U
7470A	08/14/09	7470A	08/17/09	7439-97-6	Mercury	0.1	0.1	U
3010A	08/14/09	6010B	08/20/09	7440-66-6	Zinc	10	10	U

U-Analyte undetected at given RL

RL-Reporting Limit

Development of Cleanup Levels

APPENDIX G DEVELOPMENT OF CLEANUP STANDARDS

This appendix develops preliminary cleanup standards for chemical constituents that were detected in affected media at the North Lot Property (Property) in Seattle, Washington. Preliminary cleanup standards consist of: 1) cleanup levels defined by regulatory criteria that are adequately protective of human health and the environment and; 2) the point of compliance at which the cleanup levels must be met. The preliminary cleanup levels are used in Section 3.0 of the main text of this report as the basis for identifying the nature and extent of contamination and will be used in the Feasibility Study as the basis for developing media-specific remedial action objectives (RAOs) for the cleanup action.

DEVELOPMENT OF CLEANUP LEVELS

Cleanup levels for affected media developed under the Washington State Model Toxics Control Act (MTCA) represent the concentration of constituents of concern that are protective of human health and the environment for identified potential exposure pathways, based on the highest beneficial use (HBU) and the reasonable maximum exposure (RME) for each affected medium. The process for developing cleanup levels consists of identifying the HBU and RME for affected media, and determining the cleanup levels for the constituents of concern detected in affected media.

Numerical cleanup levels are developed only for Property soil and groundwater because these are the only media that appear to be affected by releases due to historical operations at the Property or on surrounding properties.

Exposure Pathways

Potential exposure pathways must be identified for both human and environmental impacts. The potential exposure pathways are presented below by medium. No surface water or sediments are present at the Property; therefore, only groundwater and soil are discussed in this appendix.

Groundwater

Groundwater at or potentially affected by the Property is not currently used for drinking water and is not a reasonable future source of drinking water. The Property is located in a commercial/industrial area with no hydraulically downgradient areas to the west and northwest, based on area and regional groundwater flow information, that have the potential to be used as sources of drinking water. Groundwater quality in the downtown Seattle area is generally poor because groundwater has been impacted by a number of industrial/commercial sources. In addition, municipal water for domestic purposes is provided from other sources. However, groundwater at Safeco Field, located approximately

0.35 mile south of the Property, is reportedly used for irrigation purposes and, depending on the pumping rate, this use may influence groundwater at the Property; therefore, there is potential for exposure to groundwater. Therefore, the potential exposure pathways for Property groundwater are:

- Human ingestion of constituents from the Property in groundwater
- Human or aquatic life contact with or ingestion of constituents from the Property transported to marine surface water.

Soil

The potential exposure pathways for Property soil are:

- Human contact (dermal, incidental ingestion, or inhalation) with constituents in soil at the Property
- Human ingestion of constituents leached from Property soil to groundwater
- Contact by terrestrial plants and animals with contamination from the Property in soil or groundwater.

The Property is currently approximately 95 percent paved. Trees are located in the northwestern portion of the Property and along the northern and western Property boundaries. A limited area of exposed soil [a circular area approximately 4 feet (ft) in diameter] is present around each of the trees. The remainder of the Property is paved. After redevelopment, the Property will be almost entirely covered with buildings and pavement.

There is less than 1.5 acres of contiguous undeveloped area contained within the Property and within 500 ft of the Property. Therefore, the Property meets the exclusion criterion for a terrestrial ecological evaluation in accordance with WAC 173-340-7491(c)(1) and human contact and ingestion are the only applicable pathways for Property soil.

Identification of Property Highest Beneficial Use and Reasonable Maximum Exposure

MTCA specifies the development of cleanup levels based on the HBU for the affected media (soil and groundwater) and the RME that may occur for each affected medium. For example, under MTCA the HBU for soil is assumed to be unrestricted unless it can be demonstrated that industrial use is the present and expected future Property use. Similarly, the RME associated with soil is typically either direct ingestion of soil or the ingestion of groundwater affected by constituents leached from soil, whichever represents the greatest potential exposure.

The HBU and RME provide the basis for establishing media-specific cleanup levels under MTCA regulations. The HBU establishes the use scenario for the affected media, such as the use of groundwater for domestic purposes. The RME then establishes the most conservative exposure scenario that is reasonable for the identified HBU, such as ingestion of drinking water for affected groundwater, which

provides the basis for calculating a cleanup level for a given contaminant in a given medium. The remainder of this section identifies the HBU and RME for Property soil and groundwater.

Groundwater

The HBU for groundwater is considered to be drinking water [WAC 173-340-720(1)(a)]. Groundwater at the Property is not used as drinking water; however, preliminary cleanup levels were developed based on drinking water in order to provide a conservative evaluation of the detected constituents. At Ecology's request, discharge to marine surface water was also considered, due to the proximity of the site to Elliott Bay and the potential for groundwater capture in local storm and sewer drains. The RME for groundwater is the more conservative of ingestion of drinking water, ingestion of marine organisms, and exposure of marine organisms affected by constituents from the Property.

Soil

The HBU for soil is considered to be unrestricted land use. Redevelopment plans for the Property include upper story residential use. Based on a soil HBU of unrestricted use, the RME for soil is the more conservative of: 1) direct ingestion of soil, 2) protection of groundwater as drinking water, or 3) protection of groundwater as marine surface water and the associated exposures described in the preceding section.

Determination of Preliminary Cleanup Levels

Preliminary cleanup levels were developed for constituents detected in soil and/or groundwater as discussed in the Remedial Investigation report. For the reasons previously discussed, numerical criteria are not developed for sediment, surface water, or air.

Groundwater

Groundwater screening criteria were developed for detected constituents using standard MTCA Method B [WAC 173-340-720(4)] requirements. Under MTCA Method B, potable groundwater cleanup levels must be at least as stringent as all of the following:

- Concentrations established under state and federal laws
- Concentrations protective of surface water beneficial uses unless hazardous substances are not likely to reach surface water
- Concentrations determined using MTCA equation 720-1 or 720-2 if sufficiently protective, health-based criteria have not been established under applicable state and federal laws.

Preliminary cleanup levels were established for constituents detected in groundwater based on these requirements. In addition, preliminary groundwater cleanup levels were developed for constituents

that were detected in soil but that were not detected in groundwater for use in the calculation of a contaminant concentration in soil protective of groundwater. Although MTCA allows for a maximum carcinogenic risk of 10^{-5} for constituents for which health-based criteria, such as maximum contaminant levels (MCLs) or National Recommended Water Quality Criteria for protection of human health, have been established under applicable state or federal laws, preliminary cleanup levels were based on a maximum carcinogenic risk of 10^{-6} . For drinking water, preliminary cleanup levels were set at the lowest of the federal and state MCLs, federal MCLGs if applicable, state secondary MCLs, and the MTCA Method B formula values (calculated using MTCA equation 720-1 for non-carcinogens and equation 720-2 for carcinogens). For marine surface water, preliminary cleanup levels were set at the lowest of state and federal water quality criteria promulgated under Chapter 173-201A WAC, Section 304 of the Clean Water Act, the National Toxics Rule, and the MTCA Method B formula values (calculated using MTCA equation 730-1 for non-carcinogens and equation 730-2 for carcinogens). If no federal or state criteria were available, the MTCA Method B formula value was used as the preliminary cleanup level. Because total petroleum hydrocarbons (TPH) and lead do not have health-based criteria, MTCA Method A cleanup levels for groundwater were used for these constituents. Preliminary cleanup levels for non-carcinogenic constituents were evaluated based on total site risk and were adjusted downward, as necessary, to achieve a hazard index less than or equal to 1. Criteria used to establish total site risk for non-carcinogenic constituents are presented in Table G-1 (for soil) and Table G-2 (for groundwater). Preliminary cleanup levels for carcinogenic constituents were also evaluated for total site risk and were adjusted downward, as necessary, to achieve a total carcinogenic risk of less than or equal to 10^{-6} ; criteria used to establish total carcinogenic risk are presented in Table G-3. Preliminary cleanup levels were adjusted up to established natural background concentrations, where appropriate. The preliminary cleanup level for arsenic was adjusted upward to the area background level based on the background level calculated at the nearby Union Station site. Preliminary groundwater cleanup levels and the basis for their development are presented in Table 9.

Soil

Soil screening criteria were developed for unrestricted land uses in accordance with WAC-173-340-740 using MTCA Method B soil cleanup levels. Under MTCA Method B, soil cleanup levels must be at least as stringent as all of the following:

- Concentrations established under applicable state and federal laws
- Concentrations protective of terrestrial ecological receptors
- Concentrations protective of direct human contact with soil
- Concentrations protective of groundwater.

These criteria were considered during development of preliminary soil cleanup levels, which were developed for all constituents detected in soil.

There are no detected constituents for which concentrations have been established under applicable state and federal laws. As previously described, the Property qualifies for an exclusion from a terrestrial ecological evaluation. Therefore, the preliminary cleanup levels were set at the lower of the concentration protective of direct human contact and the concentration protective of groundwater, and then, if appropriate, adjusted for natural background (Ecology 1994¹). For most constituents, standard MTCA Method B formula values protective of direct human contact were determined in accordance with WAC 173-340-740(3) using MTCA equations 740-1 and 740-2. For lead and for TPH results from methods NWTPH-Gx and NWTPH-Dx, preliminary cleanup levels were set at the Method A soil cleanup levels for unrestricted land uses because no Method B value exists. Soil screening criteria protective of groundwater were determined using the fixed parameter, three-phase partitioning model in accordance with WAC 173-340-747(4) for all constituents except TPH. The three-phase model provides a conservative estimate of the concentration of a constituent in soil that is protective of groundwater. MTCA also allows an empirical demonstration that contaminant concentrations in soil are protective of groundwater [WAC 173-340-747(a)]. An empirical demonstration of groundwater protection was performed for copper and zinc in soil, as presented in Appendix H. The preliminary soil cleanup levels for non-carcinogenic constituents were evaluated based on total site risk and were adjusted downward, where necessary, in order to achieve a hazard index less than or equal to 1. Criteria used to establish total site risk for non-carcinogenic constituents are presented in Table E-2. Preliminary cleanup levels for carcinogenic constituents were also evaluated for total site risk and were adjusted downward, as necessary, to achieve a total carcinogenic risk of less than or equal to 10⁻⁶; criteria used to establish total carcinogenic risk are presented in Table G-3. The preliminary soil cleanup levels for metals were adjusted to be no less than natural background in accordance with WAC 173-340-740(5)(c). Soil screening criteria and the basis for their development are presented in Table 5.

POINTS OF COMPLIANCE

Under MTCA, the point of compliance is the point or location on the site where the cleanup levels must be attained. The point(s) of compliance for affected media will be selected by the Washington State Department of Ecology and presented in the Property cleanup action plan. However, it is necessary to identify proposed point(s) of compliance to develop, and evaluate the effectiveness of, cleanup action alternatives in the Feasibility Study. As a result, the anticipated points of compliance for

¹ Ecology. 1994. *Natural Background Soil Metals Concentrations in Washington State*. Publication No. 94-115. Toxics Cleanup Program, Washington State Department of Ecology. October.

soil and groundwater are identified in this section. Points of compliance for sediment, surface water, and air are not discussed because these are not media of concern based on existing Property conditions.

Soil

The point of compliance for soil in WAC 173-340-740(6) is throughout the site. MTCA recognizes that for those cleanup actions that involve containment of hazardous substances, the soil cleanup levels will typically not be met throughout the site [WAC 173-340-740(6)(f)], however, such cleanup actions comply with cleanup standards if they meet the specific criteria including permanence to the maximum extent practicable, protection of human health, protection of terrestrial ecological receptors, provision of institutional controls, compliance monitoring, and specification of containment measures in a draft cleanup action plan. Specific actions will be proposed and described in the Feasibility Study.

Groundwater

The standard point of compliance for potable groundwater is throughout the site when the HBU is drinking water [WAC 173-340-720(8)(b)]. However, MTCA allows for a conditional point of compliance when it is not practicable to meet the cleanup level throughout the site within a reasonable restoration time frame [WAC 173-340-720(8)(c)]. It is anticipated that the Property boundary will be the conditional point of compliance for Property groundwater. The achievement of cleanup levels in groundwater will be measured at the conditional point of compliance using a network of monitoring wells at the boundaries of the Property. Specific actions will be proposed and described in the Feasibility Study. The compliance monitoring locations and duration will be determined during development of the cleanup action plan and/or remedial design.

**TABLE G-1
TOTAL NON-CARCINOGENIC SITE RISK: SOIL
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

Analyte (a)	Preliminary Soil Cleanup Level	Adjusted Preliminary Soil Cleanup Level	Constituent Concentration in Soil at HQ = 1 (b)	HQ at Adjusted Preliminary Cleanup Level (c)	Toxic Effects									
					Hepatotoxicity: HQ Risk at CUL	Hemotoxicity: HQ Risk at CUL	Nephrotoxicity: HQ Risk at CUL	Skin Lesions: HQ Risk at CUL	Neurotoxicity: HQ Risk at CUL	Developmental Toxicity: HQ Risk at CUL	Proteinuria: HQ Risk at CUL	Mortality: HQ Risk at CUL	Gastrointestinal Toxicity: HQ Risk at CUL	Weight: HQ Risk at CUL
PAHs (µg/kg)														
Naphthalene	4.5	4.5	1,600	2.81E-03										2.81E-03
Acenaphthene	98	25	4,800	5.21E-03	5.21E-03									
Fluorene	100	79	3,200	2.47E-02		2.47E-02								
Fluoranthene	630	49	3,200	1.53E-02	1.53E-02	1.53E-02								
Pyrene	660	140	2,400	5.83E-02		5.83E-02								
TOTAL METALS (mg/L)														
Arsenic	0.034	0.034	24	1.42E-03				1.42E-03						
Lead (d)														
Mercury	0.07	0.07	24	2.92E-03		2.92E-03			2.92E-03					
Cadmium	1	1	80	1.25E-02						1.25E-02				
Copper	24,000	80	24,000	3.33E-03									3.33E-03	
Zinc	3,000	105	3,000	3.50E-02	3.50E-02									
BTEX (µg/kg)														
Toluene	4.60	0.58	6,400	9.06E-05	9.06E-05		9.06E-05		9.06E-05					
Ethylbenzene	6.10	2.38	8,000	2.98E-04	2.98E-04		2.98E-04							
SEMIVOLATILES (µg/kg)														
Di-n-butylphthalate	57	57	8,000	7.13E-03									7.13E-03	
Phenol	22	22	48,000	4.58E-04					4.58E-04					
Total HI at Soil CUL					5.59E-02	4.00E-02	7.70E-02	1.42E-03	3.01E-03	4.58E-04	1.25E-02	7.13E-03	3.33E-03	2.81E-03

TOTAL SITE RISK SUMMARY FOR SOIL AND GROUNDWATER

Total HI at Soil CUL	0.0559	0.0400	0.0770	0.00142	0.00301	0.000458	0.0125	0.00713	0.00333	0.00281
Total HI at Groundwater CUL (e)	0.948	0.860	0.799	0.0121	0.125	0.438	(f)	(f)	(f)	1.00
Total HI for Soil and Groundwater	1.00	0.90	0.88	0.014	0.13	0.44	0.013	0.007	0.0033	1.00

Notes:

HQ = Hazard Quotient.

HI = Hazard Index.

CUL = Cleanup Level.

µg/kg = Micrograms per kilogram.

mg/L = Milligrams per liter.

(a) Non-carcinogenic analyte detected in soil.

(b) Constituent concentration in soil at HQ = 1 is equal to the direct contact soil cleanup level.

(c) HQ at Adjusted Preliminary Cleanup Level = adjusted preliminary soil cleanup level divided by the constituent concentration in soil at HQ = 1.

(d) No toxicity data available; Method A Unrestricted Soil Cleanup Level used.

(e) Total HI at Groundwater CUL calculated in Table G-2.

(f) No associated HQ risk for groundwater under this toxic effect.

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TABLE G-2
TOTAL NON-CARCINOGENIC SITE RISK: GROUNDWATER
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON

Analyte (a)	Preliminary Groundwater Cleanup Level	Adjusted Preliminary Groundwater Cleanup Level	Constituent Concentration in Groundwater at HQ = 1 (b)	HQ at Adjusted Preliminary Cleanup Level (c)	Toxic Effects							
					Hepatotoxicity: HQ Risk at CUL	Hemotoxicity: HQ Risk at CUL	Nephrotoxicity: HQ Risk at CUL	Skin Lesions: HQ Risk at CUL	Neurotoxicity: HQ Risk at CUL	Developmental Toxicity: HQ Risk at CUL	Weight: HQ Risk at CUL	
PAHs (µg/L)												
Naphthalene	160	160	160	1.00E+00								1.00E+00
Acenaphthene	640	250	960	2.60E-01	2.60E-01							
Fluorene	640	500	640	7.81E-01		7.81E-01						
Fluoranthene	90	50	640	7.81E-02	7.81E-02	7.81E-02	7.81E-02					
Pyrene	480	100	480	2.08E-01			2.08E-01					
DISSOLVED METALS (µg/L)												
Arsenic	0.058	0.058	4.8	1.21E-02				1.21E-02				
Lead (d)												
BTEX (µg/L)												
Toluene	640	80	640	1.25E-01	1.25E-01		1.25E-01		1.25E-01			
Ethylbenzene	700	275	800	3.44E-01	3.44E-01		3.44E-01					
VOLATILES (µg/L)												
Methylene Chloride	5	3	480	6.25E-03	6.25E-03							
Acetone	800	35	800	4.38E-02	4.38E-02		4.38E-02					
Carbon Disulfide	800	350	800	4.38E-01							4.38E-01	
Chloroform	7.2	7.2	80	9.00E-02	9.00E-02							
Styrene	1.5	1.5	1600	9.38E-04	9.38E-04	9.38E-04						
Total HI at Groundwater CUL (e)					9.48E-01	8.60E-01	7.99E-01	1.21E-02	1.25E-01	4.38E-01	1.00E+00	

Notes:

HQ = Hazard Quotient.

HI = Hazard Index.

CUL = Cleanup Level.

µg/L = Micrograms per liter.

(a) Non-carcinogenic analyte detected in groundwater.

(b) Constituent concentration in groundwater at HQ = 1 is equal to the direct contact groundwater cleanup level.

(c) HQ at Adjusted Preliminary Cleanup Level = adjusted preliminary groundwater cleanup level divided by the constituent concentration in groundwater at HQ = 1.

(d) No toxicity data available; Method A Unrestricted Soil Cleanup Level used.

(e) See Table G-1 for summary of soil and groundwater total site risk.

**TABLE G-3
TOTAL CARCINOGENIC SITE RISK: SOIL AND GROUNDWATER
NORTH LOT DEVELOPMENT
SEATTLE, WASHINGTON**

	Analyte (a)	Preliminary Cleanup Level (b)	Concentration at Carcinogenic Risk = 1×10^{-6} (b)(c)	Carcinogenic Risk at Preliminary Cleanup Level (d)
SOIL	Benzene	0.0045	18	2.5E-10
	cPAHs (TEQ)	0.14	0.14	1.0E-06
	Arsenic	0.034	0.67	5.1E-08
	Carbazole	0.32	50	6.4E-09
	Dioxins/Furans (TEQ)	2.7E-07	1.1E-05	2.5E-08
GROUNDWATER	Benzene	0.8	0.8	1.0E-06
	cPAHs (TEQ)	0.012	0.012	1.0E-06
	Arsenic	0.058	0.058	1.0E-06
	Chloromethane	3	3	1.0E-06
	Methylene Chloride	3	6	5.0E-07
	Chloroform	7.2	7.2	1.0E-06
TOTAL RISK				6.58E-06

Notes:

TEQ = Toxicity Equivalency Quotient.

(a) Carcinogenic analyte detected in soil or groundwater.

(b) Units for soil analytes are mg/kg ; units for groundwater analytes are µg/L.

(c) Concentration at carcinogenic risk = 1×10^{-6} is equal to the direct contact cleanup level for a carcinogen.

(d) Carcinogenic risk at preliminary cleanup level = (preliminary cleanup level divided by the concentration at which the risk is 1×10^{-6}) x 1×10^{-6} .

Empirical Demonstration

APPENDIX H EMPIRICAL DEMONSTRATION OF PROTECTION OF GROUNDWATER

Concentrations of copper and zinc at some locations exceeded soil cleanup levels protective of groundwater calculated using the fixed-parameter three-phase partitioning model described in WAC 173-340-747(4). However, the concentrations of these constituents in groundwater at wells throughout the Property during the groundwater monitoring event were non-detect, indicating that the existing concentrations in soil are protective of groundwater. An empirical demonstration that soil concentrations are protective of groundwater is provided below.

The Model Toxics Control Act (MTCA) regulations [WAC 173-340-747(9)] identify requirements for demonstrating that constituent concentrations in soil will not cause an exceedance of groundwater cleanup levels as follows:

- Measured constituent concentrations in groundwater must be less than or equal to the groundwater cleanup level.
- Sufficient time must have elapsed for migration of the hazardous substance from soil to groundwater to have occurred.
- Characteristics of the site that would impact migration of contaminants to groundwater must be representative of future site conditions.

CONSTITUENT CONCENTRATIONS IN GROUNDWATER

Copper and zinc were not detected in groundwater in any of the 17 Property wells during the August 2009 groundwater sampling event (copper and zinc were not analyzed for during the previous groundwater sampling event). Copper and zinc concentrations in groundwater were also not detected in the two off-Property wells (MW-16D and MW-17D) during the August 2009 groundwater sampling event. Laboratory reporting limits for copper and zinc were 2 micrograms per liter ($\mu\text{g/L}$) and 10 $\mu\text{g/L}$, respectively, which are below the preliminary cleanup levels in groundwater for these two constituents of 20 $\mu\text{g/L}$ and 160 $\mu\text{g/L}$, respectively. Given that copper and zinc were not detected above the laboratory reporting limits for groundwater across the Property, and at the two off-Property well locations (outside of the anticipated groundwater point of compliance), the first MTCA requirement above is met.

SUFFICIENT TIME

Sufficient time has elapsed for the constituents identified above (copper and zinc) to have migrated to groundwater. Historical activities at the Property occurred prior to King County purchasing the Property in the 1970s to facilitate construction of the Kingdome stadium to the south of the Property. The Property has been paved and used as a parking lot since that time. The minimum time available for migration of contaminants to groundwater, based on termination of historical Property activities and

purchase of the Property by King County more than 30 years ago, is expected to be adequate for contaminants to have reached the groundwater; therefore, the second MTCA requirement above is met.

FUTURE SITE CONDITIONS

Physical conditions at the Property that would impact migration of soil contaminants to groundwater are not likely to change significantly. The Property is currently approximately 95 percent paved, with only limited areas that are unpaved. Similarly, after development, the Property will be almost entirely covered with buildings and pavement. Therefore, development is not expected to increase migration of soil contaminants to groundwater. The current characteristics of the Property that would impact migration of contaminants to groundwater are considered to be representative of future conditions, meeting the third MTCA requirement.

CONCLUSIONS

As described above, although copper and zinc are present in Property soil at concentrations exceeding the concentrations calculated to be protective of groundwater using the three-phase partitioning model, based on an empirical demonstration the existing concentrations of copper and zinc in soil are protective of groundwater. Therefore, Method B soil standard formula values for unrestricted land use will be used as the preliminary soil cleanup levels for copper and zinc at the Property.