DRAFT WEST DOANE LAKE
ENGINEERING EVALUATION/COST ANALYSIS
RP - PORTLAND SITE

September 11, 2007

Submitted to:

Oregon Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue
Portland, Oregon

Submitted for:

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Submitted by:

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0-61M-107030/Phase 65/T2

September 11, 2007

0-61M-107030/Phase 65/T2

Matt McClincy
Oregon Department of Environmental Quality
2020 SW 4th Avenue
Portland, Oregon 97201

Dear Mr. McClincy:

Re: Draft West Doane Lake Engineering Evaluation/Cost Analysis
RP - Portland Site

AMEC Earth & Environmental, Inc. (AMEC) is submitting this Draft West Doane Lake Engineering Evaluation/Cost Analysis (WDL EE/CA) to the Oregon Department of Environmental Quality (DEQ) on behalf of SLLI. This EE/CA analyzes two remedial alternatives: solidification/stabilization (S/S) and sediment removal and off-site disposal that may prevent constituents of concern in WDL sediment from leaching to groundwater. Balancing factors for each remedial alternative are presented, and a recommendation for the preferred alternative (S/S technology) is provided. In addition, the findings of the WDL Treatability Study, which evaluated the effectiveness of the S/S technology, are included in this EE/CA.

Please find enclosed two bound copies and a compact disc containing a Portable Document Format file (PDF) of this WDL EE/CA. If you should have any questions, please call Roger Gresh at 503-639-3400.

Sincerely,

AMEC Earth & Environmental, Inc.

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Encl: Draft West Doane Lake Engineering Evaluation/Cost Analysis

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Attachment 2 West Doane Lake Phase 4 Treatability Study

Attachment 3 Geotechnical Investigation Report for the Proposed West Doane Lake IRAM

LIST OF ACRONYMS AND ABBREVIATIONS

2,4-D	2,4-dichlorophenoxyacetic acid
2,4-DB	4-(2,4-dichlorophenoxy) butyric acid
4,4'-DDD	p,p'-dichlorodiphenyldichloroethylene
AMEC	AMEC Earth & Environmental, Inc.
ANSI	American National Standards Institute
ASTM	American Standard for Testing and Materials
BES	Bureau of Environmental Services
BNSF	BNSF Railway Company
bwsi	below water sediment interface
CAMU	Corrective Action Management Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMW	Chemical Waste Management
COC	constituent of concern
COP	City of Portland
CPT	cone penetration test
DDT	4,4'-dichloro-diphenyl-trichloroethane
DEQ	Oregon Department of Environmental Quality
DMT	flat plate dilatomer
DSL	Oregon Division of State Lands
EE/CA	Engineering Evaluation/Cost Analysis
ELT	elutriate leachate test
EPA	United States Environmental Protection Agency
ft/d	feet per day
ft^3/d	cubic feet per day
GAC	granular activated carbon
HA	Herbicide Area
HDD	Historical Drainage Ditch
IA	Insecticide Area
IHc	Heavy Industrial with environmental conservation overlay
IRAM	Interim Remedial Action Measure
LA	Lake Area

LDR	Land Disposal Restrictions
MCPA	2-methyl-4-chlorophenoxyacetic acid
mg/L	milligrams per liter
NAPL	non-aqueous phase liquid
NDL	North Doane Lake
NDP	Northwest Drainage Pond
NPDES	National Pollutant Discharge Elimination System
O&M	operation and maintenance
OAR	Oregon Administrative Rule
ORS	Oregon Revised Statute
PCBs	polychlorinated biphenyls
psi	pounds per square inch
%	percent
PVC	polyvinyl chloride
RAOs	Remedial Action Objectives
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	record of decision
RP	Rhône-Poulenc
SBLT	sequential batch leach test
S/S	Solidification/Stabilization
SVOC	semi-volatile organic compound
TCLP	Toxicity Characteristic Leaching Procedure
TS	Treatability Study
UCS	unconfined compressive strength
USACE	United States Army Corps of Engineers
WDL	West Doane Lake
WP	work plan
VOCs	volatile organic compounds

1.0 INTRODUCTION

AMEC Earth & Environmental, Inc. (AMEC) has prepared this Draft West Doane Lake (WDL) Engineering Evaluation/Cost Analysis (EE/CA) on behalf of SLLI to aid in the selection of an appropriate interim remedial action measure (IRAM) to mitigate direct contact with WDL surface water and sediment, and potential leaching of constituents of concern (COCs) to groundwater from WDL sediment at the Rhône-Poulenc (RP) Site (Site). This EE/CA presents and evaluates two remedial alternatives: solidification/stabilization (S/S) of WDL sediments in-place, and sediment removal and off-site disposal. Filling and capping is a similar component to both remedial alternatives, albeit at different magnitudes. The engineering components, however, of each alternative are the same (see Section 7.3.1). In evaluating each alternative, the following remedial technology balancing factors were utilized: effectiveness; long-term reliability; implementability; implementation risk, and reasonableness of cost. Based on evaluation of these balancing factors, AMEC is recommending S/S as the preferred remedial alternative for WDL sediment.

This EE/CA was prepared in general accordance with current Oregon environmental cleanup statutes (Oregon Revised Statute [ORS] 465.200 through 465.545 and 465.900) and rules (Oregon Administrative Rules [OAR] 340-122). Additionally, this EE/CA is generally consistent with United States Environmental Protection Agency (EPA) guidelines for preparing feasibility studies under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

This EE/CA also summarizes the findings of the WDL Treatability Study (TS) (Attachment 1) and WDL Phase 4 TS (Attachment 2). The WDL TS Work Plan (WDL TS WP; AMEC, 2005b) was approved by the Oregon Department of Environmental Quality (DEQ) on July 18, 2005 (DEQ, 2005). The first three phases of the TS evaluated the nature and extent of WDL sediment impacts as well as the effectiveness of the S/S technology to reduce COC leachability of WDL sediment. The Phase 4 TS was conducted to optimize the preferred mix design identified during the initial TS.

The remedial alternatives presented in this EE/CA are designed as IRAMs because implementation of the WDL remedy is proposed to occur before completion of RP Site remedial investigation/feasibility study (RI/FS) activities. However, the remedial technology recommended for this IRAM is intended to be final, and as such, final performance criteria (or risk-based concentrations [RBCs]) are proposed in this EE/CA as performance standards.

Report Organization

Section 2.0 provides WDL background information including a physical description of WDL and a summary of historical characterization activities. Section 3.0, S/S Evaluation, presents the site-specific information on S/S technology and WDL TS activities. The TS provided Site specific data that was incorporated with information obtained from a review of existing literature for use during the screening process. Section 4.0 describes the WDL IRAM remedial action objectives (RAOs) and cleanup criteria. Section 5.0 provides details of significant non-technical issues, such as permitting, that are applicable to the implementation of a remedial alternative. Section 6.0 summarizes geotechnical consideration with respect to WDL IRAM implementation. Section 7.0 details the remedial technology screening and selection process. Section 8.0 presents the recommended S/S remedial alternative for WDL.

2.0 SITE DESCRIPTION

The RP property is located at 6200 N.W. St. Helens Road in Section 13 of Range 1W, Township 1N (Figure 1). The RP Site is located in a heavily industrialized area of northwest Portland, southwest of the Willamette River. The area surrounding the RP Site once consisted of several lakes, including Kittridge and Doane lakes, which were interconnected through sloughs. As the area underwent industrial development, Kittridge and Doane lakes were filled (AMEC, 2003). To the southwest, the West Hills adjoin the industrially developed area and reach a maximum elevation of approximately 1,100 feet above mean sea level.

The RP property is a former chemical manufacturing and formulation facility and is no longer in use (AMEC, 2003). The former RP property manufacturing facility was operational from 1943 to 1991. Manufacturing of herbicides and formulation of insecticides occurred in the plant area. Products were stored in aboveground and underground storage tanks and in other storage areas.

Historically, the RP property has been separated into three areas identified as the Insecticide Area (IA), the Herbicide Area (HA), and the Lake Area (LA). The IA is located at the southern portion of the RP property and was used for formulation, manufacturing, storage, and handling of insecticides and its components. The HA is located adjacent to and northwest of the IA and was used for the formulation, manufacturing, storage, and handling of herbicides and its components. The LA is located north of the primary RP property. Adjacent to the LA is a remnant of Doane Lake known as WDL. An additional remnant of Doane Lake, North Doane Lake (NDL), is located in a triangular-shaped property northwest of the LA. Both WDL and NDL are located on property owned by BNSF Railway Company (BNSF) (Figure 1).

The RP Site is currently undergoing a Remedial Investigation (RI) under a 1999 Consent Order with DEQ. Extensive soil and groundwater sampling have been conducted at and in the vicinity of the RP property. Remedial actions to date include an ongoing groundwater extraction system and soil capping in the former plant area, and repair of a City of Portland storm sewer to mitigate groundwater infiltration.

The area of focus for this EE/CA is WDL (Figure 2). WDL has a surface area of approximately 1 acre. The maximum depth of surface water in WDL is 2.5 feet during the wet season. At the end of the dry season, the northern narrow portion of WDL contains little to no standing water; it is primarily saturated sediment. The BNSF embankment, which consists of imported fill material (circa 1905), borders WDL to the north and west.

2.1 Subsurface Conditions

Cores completed in and around WDL demonstrate a wide variety of subsurface material (predominately fill to 8 to 10 feet below water sediment interface [bwsi]). The southern portion of WDL consists of soft to very stiff, black to gray fill material composed of clayey silts with entrained organic material to a depth of approximately 20 feet bwsi. Lenses of medium dense, black, fine-grained sand are present within the clayey silt. WDL fill material includes broken concrete pieces, bricks, wood, metal, and wire cable. Non-aqueous phase liquid (NAPL) blebs were observed in silt from three of the cores collected at the southern end of WDL (WDL-101-S, WDL-102-S, and W002), at depths between 3 and 10 feet bwsi.

The bottom of the northern portion of WDL consists of fill material, lenses of soft, black to gray, clayey silts with organic material, and loose, brown silty sand with entrained organic material to varying depths up to 6.0 feet bwsi. Fill material in the northeast portion of WDL includes foundry sands from the ESCO property that have sloughed off from adjacent properties. Fill material along WDL's western boundary consists primarily of railroad ballast (large rock) from the BNSF railroad embankment. Soft, black to gray silts and medium dense silty sands with varying amounts of entrained organic material underlie these lenses.

Subsurface conditions observed during WDL investigation activities are presented in the boring logs generated during the TS. TS boring logs can be found in Attachment 1 of this document. Core locations within WDL are presented in Figure 2. A simplified cross section was constructed north to south through the long axis of WDL (see line of section in Figure 2) and is presented in Figure 3.

Subsurface conditions with respect to the BNSF railway embankment adjacent to WDL are currently unknown. No record that clearly identifies the embankment construction

materials, geometry, or depth of fill has been located. Based on historical construction techniques in the area; however, it is assumed that the general construction method for the BNSF embankment was to end-dump large quarry rock into the lake from railcars, trucks, or wagons. As a result, the rock would have become embedded in the soft lake sediment. Added layers of rock would cause the lower layers to settle farther beneath the water surface, depressing the elevation of the underlying sediment. Inclination of the embankment above WDL is approximately 1½H:1V (horizontal to vertical) or 34 degrees from the horizontal.

2.2 Hydrogeologic Setting of WDL

The general groundwater flow direction at the Site is southwest to northeast, from the West Hills toward the Willamette River. The general direction of groundwater flow and groundwater gradient does not significantly change seasonally. Groundwater elevation measurements collected from monitoring wells completed in the Fill/Shallow Alluvium Zone suggest that groundwater is influenced by nearby surface water features, including WDL, NDL, and the Northwest Drainage Pond (NDP). Groundwater near surface water features can discharge to surface water or the surface water feature can recharge the groundwater system, depending on water elevation in the surface water feature and seasonal changes in groundwater elevation. The primary recharge mechanism for WDL is from precipitation accrual in the wet season, typically November through April.

2.3 Summary of Historical WDL Sediment Sampling Events

Early investigations of the RP Site indicated that historical industrial activities have affected WDL. These studies also indicated that many of the target constituents were highly bound to the sediment and not particularly mobile.

WDL historical analytical data presented in the WDL Sediment Leachability Analysis Technical Memorandum (AMEC, 2004) are summarized in the following sections. The locations of historical WDL sediment samples are shown in Figure 2.

WDL Sediment Leachability Analysis Technical Memorandum

The focus of the WDL Sediment Leachability Analysis evaluated leaching potential of RP Site target constituents from sediment. Four sediment samples (WDL-201, WDL-202, WDL-203, and WDL-204) collected from WDL were tested for bulk chemistry using standard EPA test methods and leachability characteristics by Toxicity Characteristic Leaching Procedure (TCLP) and a modified Elutriate Leachate Test (ELT). NAPL blebs were identified at sediment sample location WDL-201 and sheen

was observed at sediment sample locations WDL-203 and WDL-204. The WDL Sediment Leachability Analysis (AMEC, 2004) concluded the following:

- WDL sediments did not significantly affect the leachate pH during ELT procedures.
- With few exceptions, the TCLP leachate and ELT leachate concentrations were greatest at sediment sampling location WDL-201 at 5 to 7 feet bwsi, where trace amounts of residual NAPL were observed.
- The relative concentrations of COCs detected during the TCLP and ELT leachate analyses indicate COCs did not easily leach from WDL sediments when compared to the total sediment results. This phenomenon is likely a function of the total organic carbon (TOC) concentrations detected in WDL sediment samples. The mean and median TOC concentration present in WDL sediment at the time of sampling was 40,809 milligrams per kilogram (mg/kg) and 35,550 mg/kg, respectively. At this high TOC concentration, equilibrium partitioning predicts that constituents with relatively high organic partitioning coefficients (such as DDT, 2,4-D, endrin, etc.) will become less mobile as TOC concentrations increase.

3.0 SOLIDIFICATION/STABILIZATION EVALUATION

S/S was selected as a potentially appropriate remedial technology based on available literature and the characteristics of WDL sediment. S/S technology involves the mixing of impacted sediment with a binder material to enhance the sediment's physical and chemical properties (Channell, 2000). Specifically, solidification alters the physical characteristics of the waste material by cementing it into a structurally sound solid mass, while stabilization causes a chemical and/or physical reaction between waste constituents and the S/S admixtures to immobilize or contain certain chemicals

Common S/S admixtures include portland cement and pozzolans. Pozzolans are typically siliceous materials like fly ash, blast furnace slag, or kiln dust. Pozzolans are typically introduced to enhance the reaction process when a contaminated host material lacks adequate siliceous material to allow cement formation. Bentonite clay is also a common admixture because it decreases a material's permeability, and in certain cases adsorbs chemicals.

The TS focused on portland cement, bentonite, and fly ash as candidates for S/S admixture evaluation (summarized in Section 4.1). These admixtures were selected based on a review of S/S literature, local availability, and cost. In addition to the TS admixture evaluation, mix optimization was performed during Phase 4 of the TS using granular activated carbon (GAC) as an additional ingredient (see Section 4.2).

3.1 WDL Treatability Study

The WDL TS was conducted to evaluate the effectiveness of S/S technology in reducing WDL sediment leachability. To accomplish this, four mix designs (Mixes A through D) were created each with a distinct admixture to sediment ratio.

The WDL TS was conducted in four phases. Phase 1 of the TS characterized WDL sediment and assessed bulk sediment chemistry. Phase 2 included the collection of three representative WDL samples, TS-1, TS-2, and TS-3, which characterized one worst case (TS-1) and two average case (TS-2 and TS-3) sediment locations, with respect to COC concentrations. Prior to the addition of Phase 3 admixtures, Phase 2 sediments (referred to as untreated sediments) were analyzed for bulk and TCLP characteristics to ensure sediments were truly representative of WDL conditions identified in Phase 1. Phase 3 of the study included treatment of the TS samples using the above-mentioned mix designs, and assessment of the physical and chemical properties of treated sediments. Four mix designs (Mixes A through D) were created, each with distinct admixture to sediment ratio. The admixture ratios tested are shown in the table below.

Mix Design	Portland Cement (% by volume)	Bentonite (% by volume)	Fly Ash (% by volume)
A	10	5	0
B	10	5	10
C	10	10	0
D	20	10	10

% = percent

As a result of the TS, Mix A was identified as the preferred TS mix design.

A series of bench-scale physical and chemical laboratory tests were completed on each of the treated samples. These tests included unconfined compressive strength (UCS), hydraulic conductivity, wet/dry durability, TCLP metals, TCLP chlorinated herbicides, TCLP pesticides, TCLP polychlorinated biphenyls (PCBs), TCLP volatile organic compounds (VOCs), TCLP semivolatile organic compounds (SVOCs), and TCLP dioxins and furans.

An evaluation of the bench scale testing indicated that each mix design successfully passed the physical parameter performance criteria established in the WDL TS WP.

Performance criteria (RBCs) established for chemical testing parameters were calculated using excavation worker exposure parameters. The RBCs were presented in the work plan and subsequently approved by DEQ (DEQ, 2005). Evaluation of the

chemical data indicated that SVOCs, VOCs, dioxins/furans, PCBs, and pesticides passed the performance criteria. Some metals and herbicides leached from treated samples at concentrations that exceeded the performance criteria (Attachment 1 Tables 10, 11, and 12).

The leaching of herbicides and some metals may be partially attributed to the use of typical TCLP sample preparation. TCLP was employed for this bench-scale test because it is a commonly utilized and accepted test procedure in evaluating S/S technology. TCLP involves crushing a sample sufficiently to allow it to pass a 9.5-millimeter sieve. Crushing the sample, however, exposes a larger surface area to the extraction fluid and is not truly representative of WDL conditions after S/S technology is implemented. Under field conditions, only the exterior surface area of the solidified mass (monolith) would be in contact with groundwater. Additionally, the TCLP procedure exposes the treated material to a highly acidic environment, typically around a pH value of three. These conditions are not considered representative of WDL conditions. Surface water pH measurements taken during the TS sampling event ranged from approximately 7.2 to 10.2.

As a result of the TCLP findings and its limitations, two modified sequential batch leach tests (SBLTs) were proposed to more closely simulate anticipated field conditions. These evaluations were completed in Phase 4 of the TS.

3.2 WDL Phase 4 Treatability Study

Phase 4, which was completed as a separate TS, is summarized below and presented in its entirety in Attachment 2.

Phase 4 of the TS was designed to assess whether or not there would be a reduction of WDL COCs leaching from the solidified mass through the addition of GAC to the preferred solidification mix (Mix A; 10% portland cement, no fly ash, and 5% bentonite). Phase 4 test procedures also were designed to simulate anticipated field conditions in the laboratory through the use of a modified SBLT on all five mix designs. These tests evaluated the effectiveness of activated carbon on mix performance, and simulated the relationship between the solidified monolith and groundwater.

GAC was selected based on a literature review (Arafat, Hassan A., et. al., 1999) suggesting that its use would likely reduce leaching potential of target WDL COCs (e.g., herbicides). One percent GAC by volume was added to Mix A to create Mix E. Mix E was tested for UCS and hydraulic conductivity, and passed both of these tests based on established performance criteria. The TS-1 sediment sample treated with Mix E was subjected to TCLP, as were Mixes A through D in Phase 3 of the TS.

TCLP Testing for Mix E

Metals, VOCs, SVOCs, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) were detected in the treated sediment sample; however, the concentrations were less than the RBCs. MCPA and p,p-dichlorodiphenyldichloroethylene (4,4-DDD) leached at concentrations above the respective RBCs. A summary of the TCLP analytical results is presented in Attachment 2, Table 4.

Modified SBLT Procedure

The modified SBLT procedure selected was the Modified ANSI (American National Standards Institute) Test ANSI/ANS-16.1-1986, which provides a standardized method for measuring the ability of a solidified mass to impede the release of COCs. Two versions of the ANSI test, stagnant and flush, were selected to simulate potential leaching of COCs in solidified and stabilized WDL sediment. The stagnant and flush procedures are provided in Appendix B. A summary of analytical results from SBLT is provided in the following sections.

Stagnant Testing

Evaluation of 2,4-D stagnant SBLT analytical results indicated that concentrations were below the site-specific RBC (72.1 milligrams per liter [mg/L]) for each testing interval and each mix design. Evaluation of MCPA stagnant analytical results indicated that concentrations exceeded the site-specific RBC (1.62 mg/L) for each testing interval and each mix design. Evaluation of arsenic stagnant analytical results indicated that concentrations were below the site-specific RBC (5.81 mg/L) for each testing interval and each mix design.

Flush Testing

Evaluation of 2,4-D flush analytical results indicated concentrations were below the site-specific RBC for each testing interval and mix design. Overall, the 2,4-D concentrations showed a decrease in concentration over the 30-day test interval. Evaluation of MCPA flush analytical results indicated concentrations for each mix design, except Mix D, were below the site-specific RBC for each testing interval and mix design, except for the 5-day sample. Mix D concentrations were below the RBCs throughout the testing duration. Evaluation of arsenic flush analytical results indicated that concentrations were below the site-specific RBC for each testing interval and mix design. Overall, the arsenic concentrations showed little change with time.

4.0 REMEDIAL ACTION OBJECTIVES AND WDL CLEANUP CRITERIA

The purpose of this EE/CA is to evaluate applicable remedial technologies that could be used as an IRAM for WDL sediment and to ultimately recommend a technology or technologies that would satisfy WDL RAOs.

4.1 Remedial Action Objectives

RAOs are site-specific goals established to protect human health and the environment. The RAOs provide a framework for developing and evaluating remedial action technologies (DEQ, 1998).

Five RAOs have been identified for this WDL EE/CA:

1. Minimize or eliminate direct human exposure to WDL COCs in surface water/sediment.

2. Minimize or eliminate direct ecological receptor exposure to WDL COCs in surface water/sediment.

3. Reduce the potential for WDL COCs to migrate from sediment to groundwater at concentrations greater than the RBCs (Section 5.2), where human receptors, such as a future excavation worker, may potentially be exposed.

4. Reduce the potential for WDL sediment to serve as a source of COCs that potentially could leach to groundwater above the RBCs and discharge to the Willamette River, where potential exposures to human and ecological receptors may occur.

5. Reduce the potential for WDL sediment to serve as a source of COCs that potentially could leach to groundwater above the RBCs and discharge into NDL, where potential exposure to human and ecological receptors may occur.

4.2 Human Health Risk Assessment

A human health risk screen was developed for WDL sediment to demonstrate that the completed WDL IRAM will result in COCs in groundwater at concentrations that are protective of human health and the environment. As documented in the DEQ-approved WDL TS WP, the appropriate screening values are those calculated for excavation worker exposure to groundwater (DEQ, 2005). Excavation worker exposure parameters used in calculating screening values are based on the RP Site's *Final Deterministic Baseline Human Health Risk Assessment* (AMEC, 2006b).

More than 100 analytes were detected in TCLP analytical results obtained from both historical and recent sediment characterization activities at WDL. Excavation worker performance criteria for groundwater were calculated for each detected analyte for which toxicological information is available. RBCs for these analytes are summarized in Table 1. Equations, exposure parameters, and toxicity information used in the calculations are presented in the TS (Attachment 1).

5.0 PERMIT REQUIREMENTS

AMEC classified WDL as a palustrine unconsolidated bottom wetland (AMEC, 2006c). The WDL IRAM, which will permanently remove WDL, is therefore subject to permitting requirements of the Oregon Division of State Lands (DSL) and the US Army Corps of Engineers (USACE). Because WDL is located within an "environmental conservation" overlay zone as designated by the City of Portland (COP) Bureau of Environmental Services (BES), the WDL IRAM will require a Type II Environmental Review. The final stages of WDL IRAM implementation involves clearing and grading activities that require a Site Development Permit from the COP, as well as a general construction National Pollutant Discharge Elimination System (NPDES) permit (1200-C) from the DEQ.

Through preliminary permitting processes, the DEQ has issued an exemption for WDL from state and local permitting requirements per ORS 465.315(3). Though state and local permits are not required, the WDL IRAM must still meet the substantive requirements of each permit. Additional discussion of each permitting agency's process and requirements is presented below.

Local Requirements - COP Zoning, (City Charter, Chapters 10, 24, 33)

WDL is zoned IHc (Heavy Industrial with Environmental Conservation Overlay). The "c" or environmental conservation overlay requires a Type II Environmental Review, which indicates an impact analysis, alternatives analysis, description of the project, construction plans, mitigation plan, and responses to approval criteria.

In addition to the Type II Environmental Review, a Site Development Permit is required for grading, clearing, and/or filling activities within the COP. This permit requires submittal of a grading, clearing, and erosion control plan with the permit application package.

Because the proposed IRAM is exempt from the COP's procedural requirements, but not exempt from the substantive requirements, the COP's review process did not include public notification, public review, or the issuance of a public decision.

The Type II Environmental Review and Site Development Permit application packages were submitted to the COP on March 28, 2006. Supplemental information to complete the package, including information on roads, stormwater management, and a mitigation plan, was submitted on July 28, 2006. COP issued their decision that substantive requirements have been met for the Type II Environmental Review on July 18, 2007. COP issued their decision that substantive requirements have been met for the Site Development Permit on July 25, 2007.

State Requirements - DEQ - NPDES Program

The EPA regulates the discharge of stormwater into surface water bodies (40 Code of Federal Regulations [CFR] 122). The regulations require that NPDES permits be obtained for construction activities that disturb one or more acres of land including clearing, grading, and excavation. DEQ administers the NPDES program for the EPA within the State of Oregon. DEQ issues the NPDES Stormwater Discharge Permit 1200-C to cover these activities. The NDPES Permit 1200-C lists requirements for implementing sediment and erosion controls at the project site. The NDPES 1200-C was issued on August 25, 2007.

State Requirements - Oregon DSL Removal/Fill Permit

Oregon's Removal-Fill Law (ORS 196.795-990) requires those who plan to remove or place 50 cubic yards or more of fill material in waters of the state to obtain a permit from the DSL.

Although the WDL IRAM is exempt from DSL's procedural requirements, a Joint DSL/USACE Permit Application Package, including a Wetland Delineation Report, was submitted to DSL on July 24, 2006, to meet substantive requirements. The DSL issued its concurrence with the Wetland Delineation Report on October 6, 2006. DSL has found that the project meets DSL's substantive requirements and issued their decision on June 7, 2007.

Federal Requirements - USACE

The USACE evaluates applications for permits for proposed activities in "Waters of the United States" (including wetlands) under the authorities of Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and the Marine Protection, Research and Sanctuaries Act.

The Joint Permit Application Package was submitted on July 24, 2006 (AMEC, 2006c). USACE determined WDL an isolated water body and not under jurisdiction of the USACE on October 11, 2006. No additional Federal permits are required at this time.

6.0 GEOTECHNICAL CONSIDERATIONS

A geotechnical investigation was conducted to evaluate the potential short and long-term effects of the WDL remedial technologies considered on the BNSF railroad embankment. Following WDL IRAM implementation the total fill thickness is estimated to be approximately 11 to 22 feet at the north and south ends, respectively. The Geotechnical Investigation Report is provided as Attachment 3.

The geotechnical investigation included a review of historical Site documents, reconnaissance of WDL, and subsurface exploration. AMEC's review of historical documents included aerial photographs, railway documents, and previous environmental and geotechnical reports for the RP Site and nearby properties. The WDL reconnaissance included a visual evaluation of RP Site surface features, including grades and slopes, vegetation, WDL water level, and the BNSF embankment. Subsurface explorations consisted of a geophysical investigation, 2 flat plate dilatometer (DMT) soundings, 4 subsurface borings, and 8 cone penetration test (CPT) soundings. All subsurface borings and soundings were conducted along the eastern bank of WDL, on either the RP or ESCO properties.

Subsurface conditions adjacent to WDL consisted of approximately 19 to 25 feet of silty sand and sandy silt fill overlying approximately 26 to 98 feet of alluvial soil composed of highly compressible silt, clay, and loose silty sand. Relatively incompressible gravel or bedrock underlies the alluvial soil at depths ranging from 55 to 123 feet.

Review of historical Site photographs and railway documents indicated that cracks and skewed utility poles were present in the BNSF embankment between 1994 and 1997. Recent reconnaissance revealed that tension cracks are still visible on the east slope of the embankment. The actual cause of the tension cracks is unknown; however, these cracks may be caused and/or exacerbated by differential settlement between the crest and toe of the embankment, seismic ground accelerations, or liquefaction induced lateral spreading. The findings of the geotechnical investigation suggest that altering WDL with the placement of remediation fill will act as a buttress at the toe of the embankment slope, increasing both static and seismic slope stability in the direction of WDL.

The geotechnical investigation also evaluated the potential long-term deformation of the BNSF embankment. The maximum cumulative settlement under the crest of the BNSF embankment was calculated to be between 3 and 5 inches. Settlements at the ground surface are not expected to be larger than those calculated at points underlying the embankment. Lateral displacement analysis of the embankment could not be accurately estimated with the limited information available regarding the BNSF

embankment fill and construction technique utilized. Maximum differential settlements below the crest of the embankment were calculated to be approximately 1 inch per 100 lateral feet. This settlement would likely occur as consolidation settlement and within the first three to six months following construction of the WDL IRAM.

7.0 IDENTIFICATION AND ANALYSIS OF REMEDIAL TECHNOLOGIES

Criteria used to evaluate the feasibility of select remedial technologies are discussed in Section 7.1. A preliminary screen of remedial technologies also is included (Section 7.2); however, not all of these technologies were included for further evaluation in the EE/CA because preliminary screening indicated that the RAOs were not satisfied by some of those technologies. The two remedial alternatives selected for further evaluation are discussed in detail in Section 7.3 and are compared against one another using the established evaluation criteria in Section 7.4.

7.1 Evaluation Criteria

In this subsection, evaluation criteria used to qualitatively evaluate the remedial technologies presented in this EE/CA are identified and described. Each remedial technology is evaluated in general accordance with DEQ's *Guidance for Conducting Feasibility Studies* (DEQ, 1998). The principal evaluation criteria include 1) protectiveness; and 2) feasibility of the remedial technology based on the balancing factors detailed in OAR 340-122-0090.

7.1.1 Protectiveness

According to Oregon's environmental cleanup law, remedial technologies must be protective of human health and the environment as demonstrated through completion of a residual risk assessment (DEQ, 1998). Protectiveness considers the present and future public health, safety and welfare, and the environment. RAOs must achieve the standards of protectiveness stipulated in OAR 340-122-0040.

7.1.2 Balancing Factors

Balancing factors are used to qualitatively evaluate remedial technologies. The feasibility of a remedial technology is assessed based on the balancing of five remedy selection factors, including effectiveness, long-term reliability, implementability, implementation risk, and reasonableness of cost. Each balancing factor is briefly defined below.

Effectiveness. Effectiveness measures the performance of the technology in achieving protectiveness up to the time when RAOs are achieved and remedy implementation is complete.

Long-Term Reliability. A remedy's long-term reliability is based on the reliability of treatment technology to remain protective and, if using engineering or institutional controls, on its reliability in managing residual risks. Long-term reliability also is influenced by uncertainties associated with potential long-term risk management.

Implementability. Implementability is a measure of whether it is easy or difficult to implement a remedy considering practical, technical, or legal difficulties that may be associated with construction and implementation, including scheduling delays. Implementability also depends on the ability to measure the effectiveness of the remedy and its consistency with regulatory requirements.

Implementation Risk. Implementation risk evaluates the risk posed by the remedy during implementation (including construction and operation), based on potential impacts to the community, workers, and the environment, and the effectiveness and reliability of protective or mitigative measures. Implementation risk also considers the time needed to implement the remedy.

Reasonableness of Cost. A remedy's reasonableness of cost is based on the following, as appropriate:

- Cost of remedial action including: 1) capital cost; 2) annual operation and maintenance (O&M) cost; 3) periodic review requirement costs (e.g., DEQ oversight, reporting, etc.); and 4) net present value of capital, O&M, and review costs;
- The degree to which the costs are proportionate to the benefits to human health and the environment created by risk reduction;
- The degree to which the costs are proportionate to the benefits created through restoration or protection of groundwater for beneficial use;
- The degree of sensitivity and uncertainty of the costs; and
- Any other information relevant to cost-reasonableness.

7.2 Identification of Potential Remedial Technologies and Alternatives

An initial list of 10 possible remedial technologies was screened using the evaluation criteria listed in Section 7.1. The remedial technologies immediately eliminated were chemical oxidation, vitrification, incineration, biotreatment, and soil washing. Soil washing, chemical oxidation, and biotreatment were eliminated as remedial technology

options because of these technologies ineffectiveness in treating WDL COCs in fine-grained soils. Vitrification and incineration were eliminated because of the prohibitive cost associated with these technologies. These technologies were several orders of magnitude higher in cost than other retained technologies.

Technologies evaluated were consolidated for consideration as remedial alternatives. The five remedial alternatives retained for additional consideration and a more thorough evaluation are listed and briefly described below.

1. Fence and cover;
2. Dewater and cap;
3. Fill entire lake (no sediment removal) and cap;
4. Solidify/stabilize sediments in-place and cap; and
5. Remove sediment with off-site disposal, fill, and cap.

The ranking scheme prescribed for these five remedial alternative options is presented in Table 2. The fence and cover alternative, fill entire lake alternative, and dewater and cap alternative initially were “screened-in” based on their potential to achieve all the required RAOs. However, a more thorough evaluation revealed cause to eliminate the three alternatives because they do not adequately protect human health and the environment (Section 4.1 and Section 7.1.1).

A fence and cover remedy would comprise the placement of steel fencing with a bottom barrier around the perimeter of WDL and placing a small mesh netting over the top of WDL. Although this remedial technology could be easily implemented, it only fulfills the RAO related to direct contact with sediment. It does not address the potential for COCs to leach from WDL sediments and impact groundwater. As a result, this alternative was eliminated as a possible WDL IRAM.

Dewatering and capping WDL would comprise removing lake surface water and placing a permanent protective cap over sediment in the lake. Similar to the fence and cover alternative, dewatering and capping only fulfills the RAO related to direct exposure to the sediments. As a result, this option was eliminated from consideration as a possible WDL IRAM.

Filling the entire lake with no sediment removal would effectively achieve two of the stated RAOs. Filling the lake would not address RAOs related to WDL COCs leaching to groundwater and it is not a protective remedial alternative.

7.3 Remedial Alternatives Evaluation

Two remedial alternatives were retained for a detailed evaluation using the aforementioned evaluation criteria and achievement of the RAOs as a result of the initial screening presented above. These remedial alternatives include Option A: solidify/stabilize sediments in-place and cap, and Option B: remove sediment with off-site disposal and cap. The sections that follow provide a detailed assessment of the two remedial alternatives using the aforementioned evaluation criteria.

7.3.1 Fill and Cap

Filling and capping of WDL is common to each remedial alternative presented in this EE/CA. Surface water removal, temporary access road construction, and cap construction described below would be carried out for each remedial alternative option (Options A and B) and is discussed in detail below.

In order to implement a cap, the construction of an approximately 500-foot temporary access road would be required to provide adequate access for heavy equipment.

Surface water would be removed from WDL by installing two sump pumps in the lake. Centrifugal pumps would be used to transfer surface water from the lake, through hard piping, and into on-property holding tanks. This water would either be treated by the on-site water treatment system or in the case of S/S, would be reincorporated as hydration water during stabilization.

The cap would be constructed with five layers comprised of 1 foot of impervious clay, high-density polyethylene, a geosynthetic clay liner, 1 foot of sand, and a top soil layer with a minimum thickness of 1 foot and a maximum grade of 0.5%. Each fill material used for the cap would be subject to the project engineer's approval. The clay and sand would each be placed in a single lift and compacted to 90% as specified in ASTM D1557-02e1.

Stormwater would be redirected around the cap through a drainage network. In addition, a drainage network would be constructed within the sand layer to capture infiltration through the cap and minimize, if not eliminate, infiltration to the impacted sediments below. It would consist of 4-inch diameter perforated polyvinyl chloride (PVC) piping. Initially, the stormwater drainage piping would discharge at a suitable downgradient location and 100% of stormwater would be captured and diverted for treatment at the on-Site water treatment plant. Once adequate stormwater analytical data has been collected, treatment of cap stormwater will likely not be required. The top cap layer would be placed in lifts of up to 1 foot, to the specified grade lines,

compacted to 85% maximum dry density (ASTM D1557-02e1) and hydroseeded with native grasses to provide erosion protection.

7.3.2 Option A: Solidification and Stabilization of Sediment In-Situ

Option A consists of mixing S/S admixtures with WDL sediment and covering it with a low permeability cap. S/S assumes the utilization of Mix E, as discussed in Section 4.0.

Protectiveness and RAO Achievement

Option A achieves all five RAOs established in this EE/CA (Section 5.1). Table 3 presents the WDL EE/CA RAOs screened against the two remedial alternatives selected for further consideration.

Effectiveness

Effectiveness of S/S is achieved at 28 days when the solidifying agents are considered to have adequately cured. As evidenced by Phase 4 of the TS, S/S of WDL would effectively bind COCs making contaminants less available for leaching into the surrounding groundwater.

Residual untreated WDL sediment is expected to be approximately 10% of the total proposed lake sediment requiring treatment. Untreated sediment will generally be located beneath the designed mixing depth of 12 feet bwsi and around the edges of the lake. Sediment in these areas, especially below approximately 7 to 9 feet bwsi, contain COCs below WDL RBCs, and are considered a low risk to human and/or ecological receptors.

Subsequent RP Site remedies would address the residual risk associated with untreated sediment and its potential impacts to groundwater (if any). In the interim, residual contamination to groundwater would be closely monitored.

Long-Term Reliability

As evidenced by physical testing conducted during the TS, the solidified sediment has good strength characteristics. UCSs of one to two times the recommended 50 pounds per square inch (psi) were achieved. Furthermore, because solidified WDL sediment will be buried beneath several feet of fill and cap, physical or chemical weathering will have little to no long-term impact on the monolith created in Option A. Moreover, due to the monoliths low hydraulic conductivity, any chemical weathering that does take place will be relegated to the exterior of the solidified mass and thus have little affect on its overall durability.

Current bench scale tests using representative SBLTs show decreasing chemical COC concentrations as observed during flush and TCLP testing. These concentrations would continue to decrease as the cementitious reaction continues with time, further enhancing the encapsulation of contaminants with the monolith.

Implementability

S/S would be relatively easy to implement at WDL. It is a widely applied technology that has been executed at a variety of sites around the world. Implementation of S/S in WDL would require the use of commonly available construction equipment, such as a large diameter auger attached to a crane to perform deep soil mixing. Specialized contractors are available to implement this technology. The admixture materials are generally available. Admixture materials would be portland cement, bentonite, and GAC.

The admixtures would be applied in WDL in slurry batches, starting at one end of the lake and working toward the other. S/S technology implementation is accomplished using a series of overlapping columns that are 3 to 12 feet in diameter. As the mixing shafts are placed in the lake, the admixture slurry is pumped through the center of the mixing shaft and injected into the lake at the bottom of the shaft. The mixing shaft, which also acts as a mixing blade, is rotated to blend the sediment and admixture slurry. The shafts are typically positioned so that the solidified columns overlap one another and form a continuously mixed column. When the targeted treatment depth is achieved, the mixing shafts are withdrawn and the mixing process is repeated on the way to the surface or sediment water interface. This whole process is repeated along the entire width and length of WDL.

Once the lake has been solidified and stabilized, and has cured (approximately seven days), the fill and cap would be placed as described above in Section 8.3.1.

Implementation Risk

Implementing Option A presents low risk with respect to personnel, community, operations, and construction. Proper health and safety programs during construction would mitigate risk to personnel associated with implementation.

The potential effects of Option A on the BNSF railroad embankment were evaluated. At the time of implementation, the effect of construction on the BNSF embankment stability would be monitored through several surveys (e.g., a baseline survey, deformation monitoring, and a post-construction survey). Prior to implementation, a mitigation plan will be developed in consultation with BNSF. Mitigation will be initiated if dictated by the post-construction survey.

Reasonableness of Cost

The cost of Option A is dependent on the volume of sediment to be treated, the quantity of S/S admixtures necessary to meet mix design specifications, and the source of fill material. The total cost of implementing Option A is approximately $5 to $6 million. O&M cost includes maintenance of the cap and associated drainage layer, and long-term groundwater monitoring. O&M, including groundwater monitoring, is estimated at $30,000 to $40,000 per year.

7.3.3 Option B: Off-site Sediment Disposal

Option B consists of excavating the sediments, disposing of excavated sediments off-site and capping.

RAO Achievement

Option B achieves all five of the RAOs established in this EE/CA (Section 5.1). Table 3 presents the WDL EE/CA RAOs screened against the two selected remedial technologies.

Effectiveness

Removing sediment from the lake side (east) of the sheet pile wall and subsequent capping of WDL would effectively remove direct exposure pathways at implementation. Residual untreated WDL sediment; however, is expected to be approximately 15% to 20% of the total proposed lake sediment requiring treatment. Untreated sediment will generally be located beneath the designed mixing depth of 12 feet bwsi, around the edges of the lake, and behind the railroad side of the sheet pile wall. Sediment at the bottom and on the edges of WDL, especially below approximately 7 to 9 feet bwsi, contain COCs below WDL RBCs, and are considered a low risk to human and/or ecological receptors. Sediment behind the sheet pile wall will likely have higher COC concentrations. Furthermore, clean fill material placed subsequent to the removal action will likely be recontaminated by residually impacted groundwater.

Residual risk associated with untreated sediment and its potential impacts to groundwater would be addressed by subsequent RP Site remedies. In the interim, residual contamination to groundwater would be monitored.

Long-Term Reliability

Long-term reliability of Option B is moderate to low because although a significant amount of impacted sediment would be removed, clean fill placed in the excavation will likely be recontaminated below seasonal high groundwater (approximately 11 to 13

feet of fill). Additionally, sediment disposal would be contingent on its CAMU-eligibility status, and the ability to manage the sediment in an offsite CAMU.

Implementability

Sediment removal from WDL would be considered straightforward and conducted with normal construction and excavation equipment. However, to accomplish excavation, a complicated sheet pile wall utilizing grouted tie backs would need to be installed to protect the active rail line embankment. The sheet pile wall would be difficult to implement because of the railroad embankment geometry. Furthermore, BNSF and Amtrak rail service would be delayed or canceled during construction activities to ensure public safety.

Filling and capping would require a construction schedule, engineering plans, and several weeks to implement. In addition, landfilling WDL sediment requires permission from DEQ under the Corrective Action Management Unit (CAMU)-eligibility option.

Once sediment has been removed from the lake, filling and capping would be conducted as described above in Section 7.3.1.

Option B is dependent on impacted WDL sediment qualifying as acceptable waste for transport and land disposal using the CAMU-Eligible Rule. In instances where wastes do not meet land disposal restrictions (LDRs) or qualify for incineration (40 CFR 264/265 Subpart O - Incinerators), disposal using the CAMU-eligible rule may apply.

Implementation Risk

Implementation of Option B presents moderate to high risk to personnel, community, operations, construction, and the BNSF railroad embankment. Proper health and safety programs during construction would mitigate risk to personnel associated with implementation.

Existing tension cracks, and historical documents and photographs, suggest the adjacent BNSF embankment slope is not stable in its current configuration. Any excavation near the toe of the embankment would require additional support to avoid potential slope failures. Prior to removing sediment from WDL, a steel sheet pile wall with tie backs would be constructed to a depth of 30 feet along WDL's shoreline, between the lake and the BNSF embankment. This wall would be left permanently in place during sediment removal and subsequent filling.

At the time of implementation, several surveys would need to be completed to monitor any effects the remedy may have on BNSF embankment stability (e.g., baseline survey, deformation monitoring program, and post construction survey).

Reasonableness of Cost

The highest cost associated with Option B would be sediment transportation and tipping fees. Approximately 110,000 tons of sediment would be removed from WDL. This option is also dependent upon obtaining CAMU-eligibility for WDL sediment.

The cost of implementing Option B is approximately $25 to $30 million. O&M costs for Option B include maintenance of the cap and associated drainage layer and long-term groundwater monitoring. O&M, including long-term groundwater monitoring, is estimated at $30,000 to $40,000 per year.

7.4 Comparison of Remedial Alternatives

Prior to recommending a remedial technology as an IRAM for WDL, the remedial technologies discussed in detail in the previous sections were assessed using the evaluation criteria of protectiveness, effectiveness, implementability, long-term reliability, implementation risk; and reasonableness of cost (See Section 7.1). Selection criteria and a comparative analysis between Option A and Option B are presented below. The selection of Option A as the preferred remedial alternative is discussed in Section 8.0.

Protectiveness

Options A and B are considered protective, as they both achieve each of the five RAOs identified for the RP Site.

Effectiveness

Option A and B are considered equally effective in eliminating direct contact with impacted sediments. For Option A, elimination of direct contact is accomplished through solidification and capping. For Option B, elimination of direct contact is accomplished through sediment removal and capping.

Initially, Option A is considered slightly less effective than Option B in addressing the potential for sediment to leach to groundwater because the S/S technology may not be 100% effective in stabilizing all COCs that might leach from sediment to groundwater (Table 4). With the exception of sediment left behind the sheet pile wall, Option B removes the majority of impacted sediment from WDL.

Overall however, Option A is significantly more effective than Option B because of Option A' s ability to treat a greater percentage of the sediment requiring management and to prevent or minimize clean fill recontamination. Conversely, Option B could potentially cause up to 13 vertical feet of clean sand to be recontaminated.

Implementability

Option B is considered less implementable than Option A for the following reasons:

- The CAMU eligibility and waste handling increases implementation time;
- The need to install sheet piling between the BNSF railroad embankment and WDL would be equipment and time intensive;
- Additional heavy equipment would be required for off-Site waste transportation; and
- During construction of a sheet pile wall Amtrak and BNSF rail service will be delayed and/or cancelled at the direction of the Engineer or Record (see implementation risk below).

Long-Term Reliability

Although Option A has greater potential for WDL sediment COCs to leach to groundwater, Option B is considered less reliable because of the significant fill recontamination potential. Furthermore, there is little concern that S/S treated soil will become more leachable with time. In fact, the ongoing cementitious reaction is expected to improve the strength characteristics and decrease the hydraulic conductivity of treated sediments, thereby, further reducing COC leachability.

Implementation Risk

Option B is considered to have more implementation risk than Option A for the following reasons:

- The removal of WDL sediments would effectively “unload” the sediments from the BNSF railroad embankment, potentially causing a slope failure. Installation of a sheet pile, or other engineered control/wall, would prevent such a failure. However, installation of a sheet pile wall between the BNSF railroad embankment would not be feasible given the embankment geometry and proximity to the work area.
- The off-site transportation of impacted sediment presents risk to the general public should the sediment be released during transport, through either small incidental releases, or an acute release if a truck were to be involved in a traffic accident.

Reasonableness of Cost

The estimated net present value costs for Option A and Option B are $5 to $6 million and $25 to $30 million, respectively. In addition, Option B costs are considered more

sensitive and uncertain due to variability in fuel and tipping fee costs. Furthermore, recontamination of Option B fill negates many of the potential benefits associated with sediment removal therefore reducing its cost to benefit ratio.

8.0 RECOMMENDED REMEDIAL ALTERNATIVE

Based on the evaluation criteria discussed above, Option A is the recommended remedial alternative. A conceptual schematic of the recommended WDL IRAM is provided in Figure 4. This option had the highest overall score for evaluation criteria (39 points out of a possible 50). S/S has been identified by the EPA as an acceptable remedial approach and has been used in numerous applications to effectively treat a variety of hazardous and non-hazardous wastes (Conner, 1997). The WDL TS demonstrated that the S/S technology is effective in solidifying and stabilizing WDL sediments. Although there is the potential for some limited amount of leaching, as demonstrated by leachate testing, continued chemical reactions likely will reduce, if not eliminate, the risk of leaching over time. Groundwater monitoring would evaluate whether any leaching occurs during remedy implementation. Subsequent Site remedies would address potential residual impacts.

Construction activities are scheduled for the summer of 2008. Prior to remedy implementation, a WDL S/S WP will be prepared and submitted to DEQ for approval. The following design specifics will be included in the WP:

- 95% design specifications;
- Implementation preparation and staging;
- Temporary stormwater management during the construction phase;
- Surface water removal management;
- Worker health and safety;
- In-situ sediment mixing field procedures;
- Fill and cap field procedures;
- Habitat restoration;
- Long-term stormwater management; and
- Long-term O&M.

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LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Draft West Doane Lake Engineering Evaluation/Cost Analysis is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

AMEC services have been performed in accordance with the normal and reasonable standard of care exercised by similar professionals performing services under similar conditions and geographic locations. Except for our stated standard of care, no other warranties or guarantees are offered as part of AMEC's contracted services.

Finally, it should be noted that no subsurface exploration can be thorough enough to exclude the possible presence of hazardous materials or wastes at a given site. In cases where contaminants have not been discovered through exploration, this should not be construed as a guarantee that contaminants do not exist. Where sample collection and testing have been performed, AMEC's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at unsampled locations.

TABLES

TABLE 1
Summary of Risk-Based Concentrations for WDL IRAM
Draft WDL EE/CA
RP - Portland Site

Analyte	Risk-Based Concentration (mg/L)
Dioxins	
2,3,7,8-TCDD	1.41E-08
Dioxin TEQ	1.41E-08
Inorganics	
Aluminum	1.25E+05
Antimony	4.98E+01
Arsenic	5.81E+00
Barium	2.49E+04
Beryllium	2.49E+02
Boron	2.49E+04
Cadmium	6.23E+01
Chromium, Total	3.74E+02
Cobalt	6.23E+03
Copper	4.98E+03
Iron	3.74E+04
Manganese	2.99E+03
Mercury	3.74E+01
Molybdenum	6.23E+02
Nickel	1.25E+04
Selenium	6.23E+02
Silver	1.04E+03
Thallium	8.22E+00
Vanadium	1.25E+02
Zinc	6.23E+04
Herbicides	
2,4,5-T	4.21E+01
2,4,5-TP (Silvex)	1.75E+01
2,4-D	7.21E+01
2,4-DB	4.41E+01
MCPA	1.62E+00
MCPP	4.25E+00
Pesticides	
4,4'-DDD	4.00E-02
4,4'-DDE	3.22E-02
4,4'-DDT	1.50E-02
alpha-BHC	2.79E-02
alpha-Chlordane	8.13E-02
beta-BHC	8.39E-02
Dieldrin	6.07E-03
Endosulfan I	3.04E+01
Endosulfan II	3.04E+01
Endrin	4.17E-01
gamma-BHC (Lindane)	1.46E-01
gamma-Chlordane	8.13E-02
Heptachlor	3.16E-02
Heptachlor epoxide	6.07E-03
Semivolatiles	
1-Methylnaphthalene	3.40E+00
2,3,4,6-Tetrachlorophenol	1.92E+01
2,3,5,6-Tetrachlorophenol	4.56E+01
2,4,5-Trichlorophenol	1.55E+02
2,4,6-Trichlorophenol	9.86E+00
2,4-Dichlorophenol	9.76E+00
2,4-Dimethylphenol	1.49E+02

TABLE 1
Summary of Risk-Based Concentrations for WDL IRAM
Draft WDL EE/CA
RP - Portland Site

Analyte	Risk-Based Concentration (mg/L)
Semivolatiles-Cont'd	
2-Chloronaphthalene	7.55E+01
2-Chlorophenol	4.99E+01
2-Methylnaphthalene	3.45E+00
2-Methylphenol (o-cresol)	5.65E+02
4-Methylphenol (p-cresol, 3/4 cresol)	5.65E+01
Benzoic acid	5.79E+04
Benzyl alcohol	1.26E+04
Bis(2-Ethylhexyl) pthalate	7.42E-02
Butylbenzylphthalate	1.40E+02
Diethylphthalate	9.56E+03
Di-n-butylphthalate	1.35E+02
Hexachlorobutadiene	4.02E-01
Naphthalene	3.53E+01
Nitrobenzene	3.09E+00
N-Nitrosodi-n-propyl amine	3.42E-01
Pentachlorophenol	5.22E-02
Phenol	6.39E+03
Volatiles	
1,1-Dichloroethane	1.07E+02
1,2,3-Trichlorobenzene	7.43E-01
1,2,4-Trichlorobenzene	7.45E-01
1,2,4-Trimethylbenzene	1.34E+00
1,2-Dibromo-3-chloropropane	3.17E-01
1,2-Dichlorobenzene (o-Dichlorobenzene)	3.61E+01
1,3,5-Trimethylbenzene	1.34E+00
1,3-Dichlorobenzene (m-Dichlorobenzene)	1.49E+01
1,4-Dichlorobenzene (p-Dichlorobenzene)	1.72E+00
2-Butanone (MEK)	1.14E+03
Acetone	7.27E+02
Benzene	1.67E+00
Bromomethane	1.13E+00
Carbon Disulfide	1.27E+02
Chlorobenzene	1.13E+01
Chloroethane	1.87E+01
Chloroform	7.05E-01
Chloromethane	2.03E+01
Ethylbenzene	1.05E+02
Isobutyl alcohol	2.40E+02
iso-Propylbenzene	4.85E+01
m,p-Xylene	2.18E+01
n-Butylbenzene	1.03E+01
n-Propylbenzene	1.77E+01
o-Xylene	2.18E+01
Toluene	2.05E+02

Notes:
IRAM = Interim Remedial Action Measure
mg/L = milligrams per liter
WDL = West Doane Lake
EE/CA = Engineering Evaluation/Cost Analysis

TABLE 2
Ranking of Top Five WDL Remedial Alternatives
Draft WDL EE/CA
RP - Portland Site

Remedial Option Status	Remedial Technology[1]	Effectiveness[2] 5 = high effectiveness		Reliability[3] 5 = high reliability		Implementability[4] 5 = high implementability		Implementation Risk[5] 5 = low risk		Cost[6] 5 = low cost		Potential for Integration into Final Remedy[7] 5= likely		Unknowns[8]	Overall[9]		Total Score[10]
															Advantages	Disadvantages	
Remedial Options Initially Retained	Fence and Cover	2	Chain link fence with mesh cover would limit risk exposure pathway. Some small animals may get in under fence etc.	2	Fence would reliably keep larger mammals out of WDL. Does not eliminte leaching to GW	2	Implementability is okay, RR slope will be challenging to fence	3	Risk of worker falling into water	4	Relatively low cost option	1	Not a long term reduction of COC concentrations. Does not eliminate sediments leaching to GW	BNSF acceptance of fence on railroad ballast slope	Quick to implement, satisfies limiting direct exposure pathway	Short-term solution does not reduce long-term liability	18
	Dewater and Cap	2	WDL capped is effective for direct exposure only	2	Cap and pump technology is reliable. Does not eliminate leaching to GW	3	Solution is implementable with access, and facilities	3	Some risk from capping sediment but very low overall. Long-term still includes sediments in contact w/ GW	4	Relatively low cost option	1	Not a long-term reduction of COC concentrations. Does not eliminate sediments leaching to GW	BNSF perspective and view	Quick to implement, satisfies elimination of direct exposure pathway	Long-term O&M on pumps to keep cap area drained and WDL sediments dry	15
	No Sediment Removal, Fill and Cap	2	Effective means to limit direct exposure pathway if filled above GW/SW elevation	2	Reliable way to eliminate exposure pathway. Does not eliminate leaching to GW	4	Very implementable, source of fill within 5 miles	2	Risk could come from RR ballast destabilization	1	High cost due to volume of fill needed	4	Most cost due to volume of fill needed. Does not eliminate sediments leaching to GW	BNSF concerns with ballast stability	Quick and easy means to eliminate direct exposure pathway	Fill could become contaminated, more difficult to treat buried sediment	15
	Option A: In-situ Solidification and Stabilization, Fill and Cap	5	Effective means to limit direct exposure and leaching to GW pathway if appropriate admixture is used	5	Reliable way to eliminate direct exposure and leaching to GW pathways	4	Very Implementable, source of fill within 5 miles. Uncertainty until mix for S/S is determined.	5	Minimal risk associated with technology	3	Average cost	5	Satisfies both direct exposure pathway and leaching to GW	BNSF concerns with ballast stability	May prevent migration of COCs.	If material is leachable, serves as source, requires long term monitoring	27
	Option B: Off-Site Sediment Disposal, Fill and Cap	4	Effective means to limit risk exposure pathway if filled above GW/SW elevation	5	Reliable way to eliminate exposure pathway and leaching to GW pathways	3	Source of fill within 5 miles, volume may destabilize track	4	Risk could come from worker exposure to impacted sediment	1	High cost of sediment disposal	4	High cost of sediment disposal and fill. Satisfies both direct exposure pathway and leaching to GW	BNSF concerns with ballast stability	Removal of source material, part of long term solution	Costly, requires long term waste disposal decision	21

Notes:

1 Remedial technology considered
2 Adequacy of treatment technology to meet treatment goal
3 Nature and degree of uncertainty
4 Practical and technical difficulties in implementation of a technology
5 Potential impacts on the community, workers and environment during implementation
6 Cost reasonableness
7 Likelihood technology will fit into the final remedy
8 Unknowns are geochemical, physical, or chemical factors that are not fully understood from a remedial design perspective. Previous data collected for assessment not remedial design.
9 How does this technology fit with the overall project objectives?
10 Technology with highest score is best candidate IRAM for WDL

BNSF = BNSF Railway Company
COC = constituent of concern
GW = Groundwater
IRAM = Interim Remedial Action Measure
O&M = operation and maintenance
RR = railroad
SW = surface water
WDL = West Doane Lake
EE/CA = Engineering Evaluation/Cost Analysis

TABLE 3
WDL EE/CA RAOs and Remedial Alternatives
Draft WDL EE/CA
RP - Portland Site

WDL EE/CA Remedial Action Objectives	Remedial Alternative	
	Option A: In-Situ Solidification and Stabilization, Fill and Cap	Option B: Off-Site Sediment Disposal, Fill and Cap
1. Mitigate pathway for direct human exposure to WDL COCs in surface water/sediment	Yes	Yes
2. Mitigate pathways for direct ecological receptor exposure to WDL COCs in surface water/sediment.	Yes	Yes
3. Reduce the potential for WDL COCs to migrate from sediment to groundwater at concentrations greater than the RBCs, where human receptors, such as an excavation worker, may be exposed.	Yes	Yes
4. Reduce the potential for WDL sediment to serve as a source of COCs that could leach to groundwater at concentrations greater than the RBCs and discharge into the Willamette River, where potential exposures to human and ecological receptors may occur.	Yes	Yes
5. Reduce the potential for WDL sediment to serve as a source of COCs that could leach to groundwater at concentrations greater than the RBCs and discharge into NDL, where potential exposure to human and ecological receptors may occur.	Yes	Yes

Notes:
COC = Constituent of concern
EE/CA = Engineering Evaluation/Cost Analysis
NDL = North Doane Lake
RAO = Remedial Action Objective
RBC = Risk-based concentration
WDL = West Doane Lake

TABLE 4
Remedial Action Objectives and Remedial Alternative Options A and B
Draft WDL EE/CA
RP - Portland Site

Evaluation Criteria	Option A: In-situ Solidification and Stabilization, Fill and Cap	Option B: Off-Site Sediment Disposal, Fill and Cap
Effectiveness 10 = high effectiveness	7	4
Implementability 10 = high implementability	8	6
Long-Term Reliability 10 = high reliability	7	4
Implementation Risk 10 = low risk	7	5
Reasonableness of Cost 10 = low cost	10	2
TOTAL SCORE	**39**	**21**

Notes:

RAO = remedial action objective

Higher score is the preferred remedial alternative

EE/CA = Engineering Evaluation/Cost Analysis

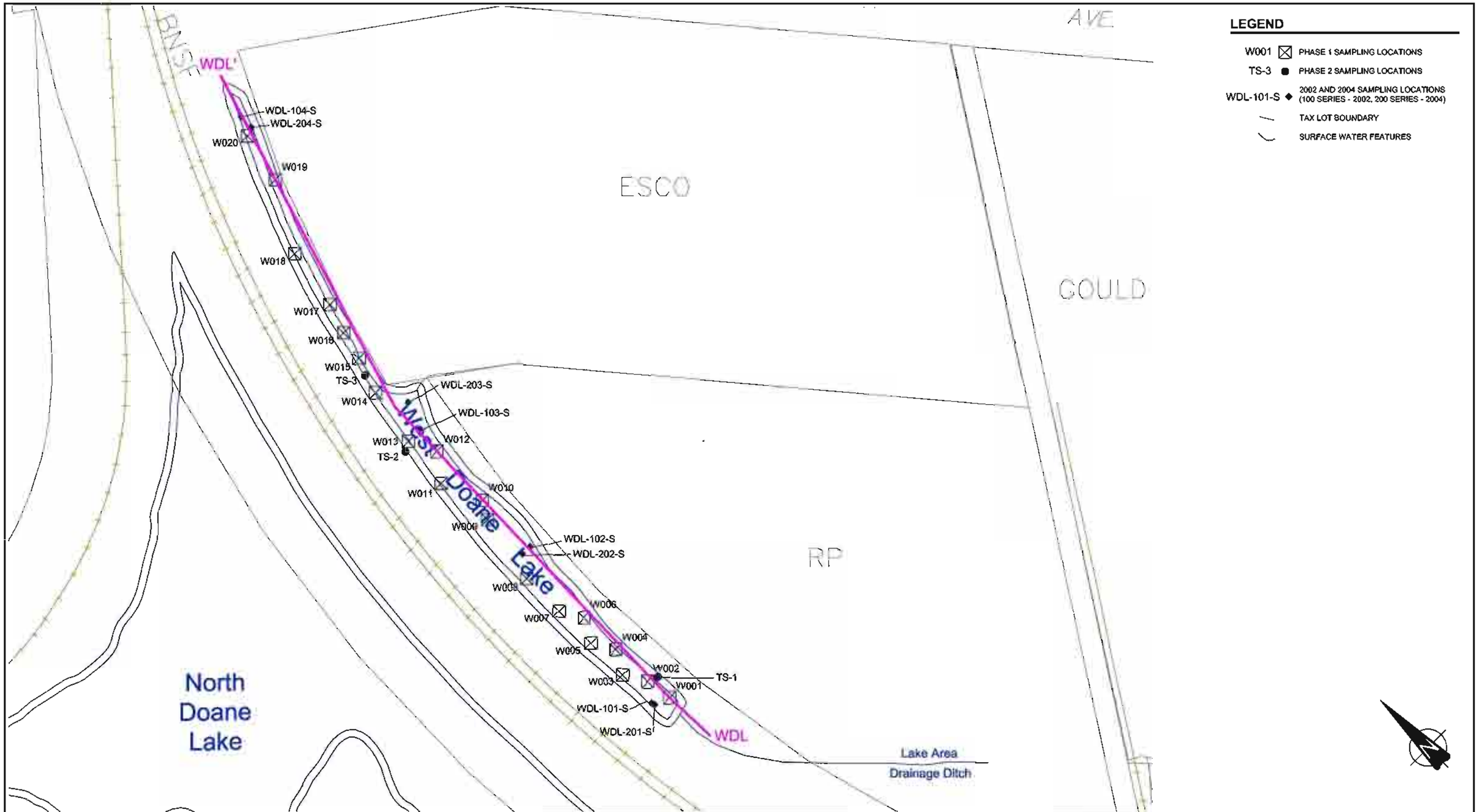
WDL - West Doane Lake

FIGURES

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT: SLLI	DWN BY: LM	PROJECT: RP - PORTLAND SITE	DATE: JULY 2007
	CHK'D BY: CJ/BL		PROJECT NO: 0-61M-10703-0 P-65
	DATUM: NAD83	TITLE: WEST DOANE LAKE SITE AND VICINITY MAP	REV. NO.: 1
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR. U.S.A. 97224	PROJECTION: OR SP N. Int Ft.		FIGURE No. 1
	SCALE: = 1"=350'		

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\EECA figures\Figure_01_Site&Vicinity_Map.dwg – Layout2 – Jun. 28, 2007 11:13am – laura.mccoy

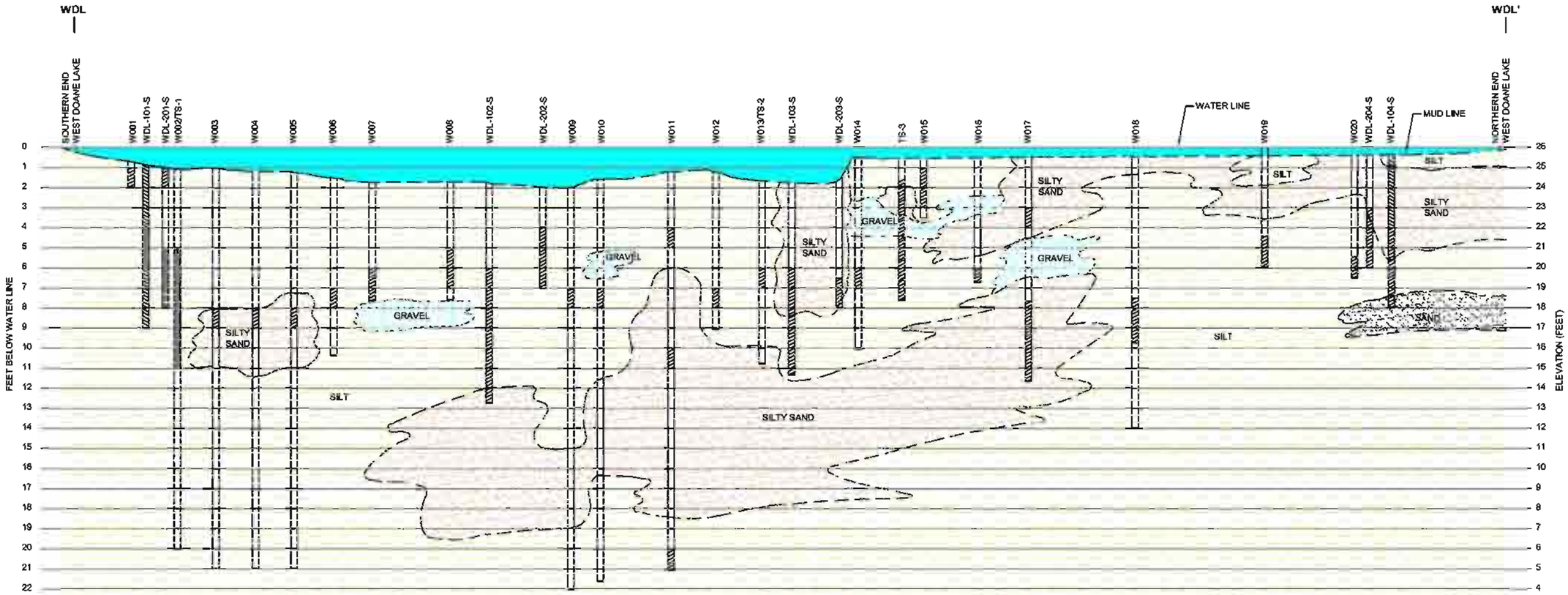


NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	JR/BL
DATUM:	-
PROJECTION:	-
SCALE:	1" = 125'
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SEDIMENT SAMPLING LOCATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	2

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\EECA figures\Figure_02_Sediment_Sampling_Locations.dwg - Layout2 - Jun. 28, 2007 11:14am - laura.mccoy



LEGEND

NAPL OBSERVED IN SOIL

SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS

INFERRED LITHOLOGIC CONTACT

VERTICAL SCALE 0' 2.5' 5.0' 7.5' 1" = 5'

HORIZONTAL SCALE 0' 42.5' 85' 127.5' 1" =85'

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT: SLLI	DWN BY: DD	PROJECT: RP - PORTLAND SITE	DATE: JULY 2007
	CHK'D BY: CJ		PROJECT NO: 0-61M-10703-0 P-65
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR. U.S.A. 97224	DATUM: City of Portland	TITLE: WEST DOANE LAKE SIMPLIFIED CROSS SECTION	REV. NO.: 2
	PROJECTION: -		FIGURE No. 3
	SCALE: AS NOTED		

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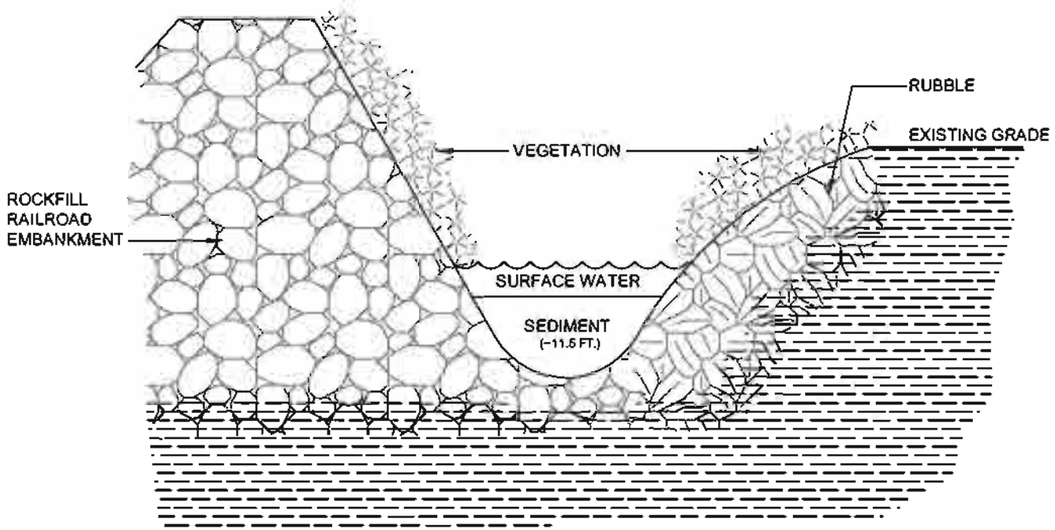
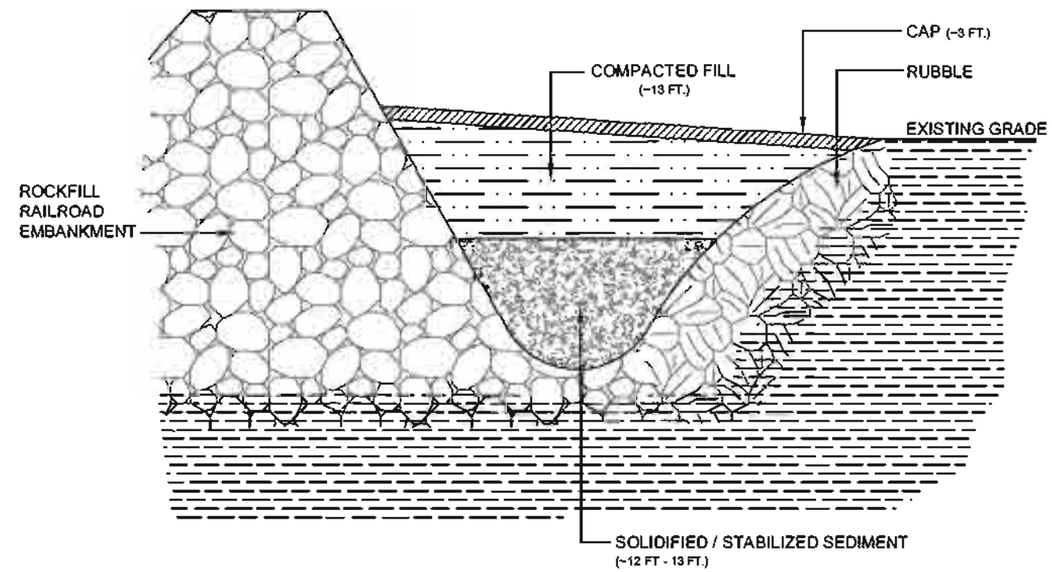


WDL BEFORE REMEDIATION



WDL AFTER RECOMMENDED REMEDIATION

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY:	DD
CHK'D BY:	JLE
DATUM:	-
PROJECTION:	-
SCALE:	NOT TO SCALE

PROJECT: RP - PORTLAND SITE

TITLE: CONCEPTUAL SCHEMATIC OF RECOMMENDED WDL IRAM

DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4

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ATTACHMENT 1

West Doane Lake Treatability Study

ATTACHMENT 1

WEST DOANE LAKE
TREATABILITY STUDY
RP - PORTLAND SITE

September 11, 2007

Submitted to:

Oregon Department of Environmental Quality
Northwest Region
2020 S.W. 4th Avenue
Portland, Oregon 97201

Submitted for:

SLLI
One Copely Parkway, Suite 309
Morrisville, North Carolina 27560

Submitted by:

AMEC Earth & Environmental, Inc.
7376 S.W. Durham Road
Portland, Oregon 97224

0-61M-107030/Phase 65/T2

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LIST OF ACRONYMS/ABBREVIATIONS

%	percent
2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
2,4-D	2,4-dichlorophenoxyacetic acid
2,4-DB	4-(2,4-dichlorophenoxy) butyric acid
AMEC	AMEC Earth & Environmental, Inc.
ASTM	American Society for Testing and Materials
AVS	acid volatile sulfide
bwsi	below water sediment interface
CD	compact disk
cm/sec	centimeters per second
COCs	constituents of concern
DDT	4,4'-dichloro-diphenyl-trichloroethane
DEQ	Oregon Department of Environmental Quality
Dioxins	polychlorinated dibenzo-p-dioxins
EE/CA	Engineering Evaluation/Cost Analysis
EPA	United States Environmental Protection Agency
Furans	polychlorinated dibenzofurans
GAC	granular activated carbon
GPS	Global Positioning System
IRAM	Interim Remedial Action Measure
MCPA	2-methyl-4-chlorophenoxyacetic acid
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliters
NAPL	non-aqueous phase liquid
NWTPH-Dx	Northwest Total Petroleum Hydrocarbons, Diesel, and Residual Range Organics
NWTPH-HCID	Northwest Total Petroleum Hydrocarbon Identification
PCB	polychlorinated biphenyl

PCDD	polychlorinated dibenzo-p-dioxins or dioxins
PCDF	polychlorinated dibenzofurans or furans
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
psi	pounds per square inch
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RBC	risk-based concentration
RP	Rhône-Poulenc
RRI	Remaining Remedial Investigation
SBLT	sequential batch leach test
Soil Technology	Soil Technology, Inc.
SOP	standard operating procedure
S/S	solidification/stabilization
STL	Severn Trent Laboratories
SU	standard units
SVOC	semivolatile organic compound
TCLP	toxicity characteristic leaching procedure
TEG	TEG Oceanographic Services
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TS	Treatability Study
TVS	total volatile solids
UCS	unconfined compressive strength
USACE	United States Army Corps of Engineers
VOC	volatile organic compound
WDL	West Doane Lake
WP	Work Plan

1.0 INTRODUCTION

The initial three phases of the West Doane Lake (WDL) Treatability Study (TS) were conducted in accordance with the WDL TS Work Plan (WP) dated June 27, 2005 (AMEC Earth & Environmental, Inc. [AMEC], 2005). The WDL TS WP approval by the Oregon Department of Environmental Quality (DEQ) was received in a letter dated July 18, 2005 (DEQ, 2005b). Sediment sampling activities associated with the WDL TS were conducted in two distinct field events (Phase 1 and Phase 2) at the Rhône-Poulenc (RP) Portland Site (Site). The WDL area is located adjacent to the RP property at 6200 N.W. St. Helens Road in Portland, Oregon (Figure 1). Field activities associated with Phase 1 were conducted November 18 through 21, 2005. Phase 2 field activities were conducted January 30 through February 1, 2006. Phase 3 consisted of laboratory mix design testing on bulk sediments to assess mixture options for Solidification/Stabilization (S/S) of WDL sediments. A mix design optimization phase, Phase 4, was presented in the WDL TS WP but is not included in this study. Phase 4 was designed to optimize the Phase 3 mix ratios and, in order to select an appropriate stabilization agent, such as granular activated carbon (GAC), zeolites, or organophilic clay the first three phases needed to be complete. Phase 4 also included modified sequential batch leach testing that simulates anticipated field conditions. A Phase 4 TS was conducted upon completion of this WDL TS and its findings are presented as Attachment 2 of the Draft WDL Engineering Evaluation/Cost Analysis (WDL EE/CA).

The focus of the WDL TS is to provide quantitative information that can be used to evaluate the effectiveness of the S/S technology as an Interim Remedial Action Measure (IRAM) at WDL. This WDL TS should be used in conjunction with, and as supporting material to, the WDL EE/CA. The scope of work completed during the WDL TS field sampling events consisted of the following:

- Collection and analysis of Phase 1 sediment samples from 20 locations in WDL (W001 through W020; Figure 2) for bulk and leachable (by Toxicity Characteristic Leaching Procedure [TCLP]) constituent analyses including organochlorine pesticides (pesticides), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), chlorinated herbicides, polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (dioxins/furans or PCDDs/PCDFs), semivolatile organic compounds (SVOCs) including phenols, metals, total petroleum hydrocarbons (TPH), geochemical parameters, and particle size. In addition, the presence or absence of non-aqueous phase liquids (NAPL) were noted in accordance with the WDL TS WP;

- Identification of three representative sampling locations (TS-1, TS-2, and TS-3), based on observations made during the Phase 1 sampling event, and collection of three representative composite sediment samples;
- Chemical and physical analysis of untreated (no S/S reagents) Phase 2 samples to evaluate baseline conditions of in-situ WDL sediment;
- Mixing of Phase 2 representative composite sediment samples with the S/S reagents using recommended Phase 3 mix ratios and test mold preparation for each sediment/mix ratio combination;
- Test mold monitoring during curing, and documentation of observations and physical test results (Phase 3);
- Determination of unconfined compressive strength (UCS), permeability, wet/dry durability, and cured material submittal for TCLP preparation and analysis of the WDL chemical suite; and
- Data reporting of chemical and physical test results.

All tasks listed above were completed in accordance with the WDL TS WP. Deviations from the WDL TS WP are discussed in the appropriate sections of this report.

Report Organization

This report includes: a brief description of S/S technology and its application at WDL (Section 2.0); the development of site-specific risk-based screening criteria (Section 3.0); Phase 1 baseline sediment sampling and discussion of WDL hydrogeologic conditions (Section 4.0); Phase 2 representative sediment sampling (Section 5.0); a discussion of the initial mix design screening test (Section 6.0); a discussion of Phase 3 mix design physical testing and chemical analysis (Section 7.0); and conclusions and recommendations (Section 8.0).

Also included in this report are several appendices which provide material to support physical and chemical data presented herein. Appendix A provides calculated site-specific risk-based concentration (RBC) tables and toxicity parameters used for calculating WDL specific screening criteria. Appendix B provides a copy of the completed field sampling forms and boring logs from the Phase 1 and Phase 2 sampling events. Appendix C provides summary tables of WDL sediment sample data. Tables provided in Appendix C include Remaining Remedial Investigation (RRI) and leachability analysis analytical results from past sampling events (AMEC, 2003 and 2004, respectively) as well as recent sampling events associated with Phase 1 of the TS. Severn Trent Laboratories (STL) located in Seattle, Washington and Sacramento, California conducted all bulk chemical and TCLP analyses of WDL TS sediment. AMEC's Data Quality Review Reports are provided in Appendix D. Original

laboratory reports from STL are provided in Appendix E (on compact disk [CD]). Appendix F provides results of physical testing conducted on Phase 1, Phase 2, and Phase 3 WDL TS sediments. Physical testing was conducted by Soil Technology, Inc. (Soil Technology) located in Bainbridge Island, Washington.

2.0 SOLIDIFICATION/STABILIZATION TECHNOLOGY

S/S technology involves the mixing of contaminated sediment with a binder material to enhance the sediment's physical and chemical properties (Channell, 2000). Specifically, solidification enhances the physical characteristics of the waste material by binding it into a structurally sound solid mass, while stabilization causes a chemical and/or physical reaction between waste constituents and the S/S reagents to immobilize or contain contaminants. The purpose of utilizing S/S technology is to reduce, if not eliminate, leaching to groundwater of WDL constituents of concern (COCs).

Common S/S binders, reagents, or admixtures include portland cement, quicklime (CaO), and pozzolans. Pozzolans are typically siliceous materials like fly ash, blast furnace slag, or kiln dust. Bentonite clay is also a common admixture because it generally decreases a material's permeability.

Based on available literature and the characteristics of WDL sediment, the TS focused on portland cement, bentonite, and fly ash as candidates for S/S admixture evaluation. These admixtures were selected based on local availability and cost considerations. Based on analyses from the first three phases, appropriate Phase 4 mix optimization reagent(s) will be evaluated. Potential optimization reagents include GAC, zeolites, or organophilic clay.

3.0 WDL RISK SCREENING CRITERIA

Phase 1, Phase 2, and Phase 3 of the WDL TS were designed to delineate the physical and chemical nature of WDL sediment. Data obtained from the three phases were compared to site-specific screening criteria to help evaluate the overall effectiveness of S/S. Phase 1 consisted of physical and chemical characterization of WDL sediment in an attempt to assess baseline conditions and to develop a data set from which representative sediment samples could be identified for collection during Phase 2. Phase 2 representative samples were then used as the source material for Phase 3 mix design testing.

A human health risk screening procedure was developed for WDL sediment to demonstrate that the completed WDL IRAM will result in COC concentrations in groundwater that are protective of human health. As documented in the

DEQ-approved WDL TS WP, the appropriate screening values are those calculated for the excavation worker exposure to groundwater. Excavation worker exposure parameters used in calculating RBC screening values are based on the RP Site's *Final Deterministic Baseline Human Health Risk Assessment* (AMEC, 2006).

More than 100 analytes were detected in sediment TCLP analytical results from both historical and recent samples collected at WDL. Excavation worker screening values for groundwater were calculated for each detected analyte that had readily available toxicological information. Calculated RBCs for these analytes are summarized in Table 1. Equations, exposure parameters, and toxicity information used in the calculations are presented in Appendix A Tables A-1, A-2, and A-3.

RBCs were not calculated for the following detected analytes because toxicological information was not readily available, or in the case of bis(2-chloroisopropyl)ether, physical property data required to complete the calculations were not readily available:

- Herbicides: dichlorprop
- Pesticides: delta BHC, endosulfan sulfate, endrin aldehyde, and endrin ketone
- PCBs
- Semivolatiles: 2-nitrophenol, 4-chloro-3-methylphenol, 4-nitrophenol, and bis(2-chloroisopropyl)ether
- Volatiles: 2-ethyl-1-hexanol, bromochloromethane, and iodomethane
- Inorganics: calcium, lead, magnesium, potassium, and sodium.

The lack of RBCs for these analytes represents an uncertainty in risk characterization. However, toxicological studies have focused on the most toxic substances, so analytes without toxicological information are generally less toxic than those with toxicological information.

4.0 CHARACTERIZATION SEDIMENT SAMPLING (Phase 1)

The purpose of Phase 1 of the TS was to understand the COC distribution in WDL sediment and to identify locations where representative sediment could be collected (Phase 2) for use in mix design testing (Phase 3) associated with S/S analysis. Phase 1 also was designed to gain greater understanding of subsurface lithologic conditions in WDL and to better assess sediment homogeneity or heterogeneity. Subsurface lithologic and chemical conditions are represented graphically in simplified cross sections illustrated in Figure 3 and Figures 4A through 4G. The line of section for the cross sections is shown in Figure 2. A detailed discussion of lithologic subsurface conditions also is provided in Section 4.6.

Twenty sediment cores (W001 through W020) were extracted, logged, and sampled for chemical and physical characterization during Phase 1 field work conducted November 18 through 21, 2005. A total of 23 samples were collected from the 20 core locations. A single sample was collected from each core, except WO11, where samples were collected at three depths, and WO17, where samples were collected at two depths (discussed in Section 4.1.1). Sediment samples were collected using a variable frequency vibracore system provided by TEG Oceanographic Services (Santa Cruz, California) (TEG) in conjunction with Campbell Crane (Portland, Oregon). WDL vibracore sampling locations were identified in the WDL TS WP. Initially, 24 core locations were selected; however, four WDL samples (WDL-201-S through WDL-204-S) collected in 2004 provided sufficient sediment data to reduce the number of necessary Phase 1 sample locations from 24 to 20. Historical and Phase 1 sample locations are provided in Figure 2. Historical samples include samples collected in 2002 (WDL-101-S through WDL-104-S) and 2004 (WDL-201-S through WDL-204-S). The 2002 and 2004 samples are further discussed in Section 4.5 when comparing Phase 1 TCLPs results to site-specific RBCs.

4.1 Sampling Procedures

Sediment sampling was conducted in accordance with the WDL TS WP and the applicable standard operating procedures (SOPs). A summary of field activities, as well as sample collection and handling procedures, are provided in the sections below.

4.1.1 Field Procedure

Sediment cores extracted from WDL were obtained using a vibracore sampling system suspended over the sample location by a crane. Prior to vibracore sediment sampling, a reconnaissance of WDL was completed in an aluminum rowboat on November 16, 2005. Each predetermined sediment core location was found using a hand held Global Positioning System (GPS) instrument and was marked with a wooden stake. Information collected at each sample location included the water depth above the water/sediment interface (mudline), latitude and longitude of the core location (accuracy of +/- 3 meters), and the following water quality parameters: temperature, pH, specific conductivity, dissolved oxygen, oxidation reduction potential, and turbidity. This reconnaissance aided in efficient sample collection during the Phase 1 field event. Field forms containing information collected during the WDL reconnaissance are provided in Appendix B.

The vibracore utilized a 4-inch diameter, polyethylene-lined, aluminum core barrel connected to a stainless steel cutter. The sampler was lowered by the crane and vibrated into the sediment from the water/sediment interface to the TS project depth of 20 feet below the water/sediment interface (bwsi) or refusal. Twenty-foot core depths

were attempted at each location, but shallow coarse or dense materials prevented several cores from extending to 20 feet bwsi. Cores extended to between 3.0 and 6.5 feet bwsi at core locations W007, W008, W013, W015, W016, W019, and W020. Cores extended to between 6.5 and 9.5 feet bwsi at core locations W006, W012, and W014. Finally, core attempts at sample locations W017 and W018 extended to 11.0 and 13.5 feet bwsi, respectively. To measure core penetration depth, the core barrel was marked in 1-foot increments from the cutter (0 feet) to the vibrating head (20 feet). Actual core penetration depths were calculated by subtracting water depths obtained during the WDL reconnaissance from the water line measured on the core barrel during sampling. Core penetration depth was then verified by measuring the length of core recovered. After the vibracore head was turned off, cores were extracted by the crane and lifted to shore for processing.

Once on shore, cores were extruded onto clean, polyethylene-lined trays, photographed, and logged. Depth-discrete samples were then collected and placed into new, laboratory supplied, glass jars (8-ounce) with Teflon®-lined lids for chemical and physical laboratory analyses. A portion of the sample also was placed in a sealed plastic bag to obtain VOC headspace vapor readings using a photoionization detector (PID). Lithologic descriptions, PID readings, sample locations and identifications, water depths, weather, and other pertinent observations were recorded for each core location on both a boring log and a WDL sampling form. Both forms are provided in Appendix B.

Generally, one sediment sample was collected from each boring and submitted to the laboratory for analysis. At boring W011 there appeared to be three distinct soil types; therefore, a sample from each layer was submitted for analysis. At boring location W017, a layer of silt overlying sand that exhibited a strong odor was identified. Therefore, each distinct layer was sampled and submitted for analysis.

Disposable materials were used whenever possible during sample collection and staging. The non-disposable sampling equipment was decontaminated prior to use and between each new sample interval. Investigation derived waste generated during the Phase I sampling event, including personal protective equipment (PPE), was handled in accordance with the SOPs included in the WDL TS WP.

Sampling containers were labeled in accordance with labeling procedures described in the WDL TS WP.

4.1.2 Sample Handling and Analysis

Filled sample jars were capped, labeled, and placed in coolers with “blue ice” and packing material immediately following sample collection for transport to the

laboratory. Temperature blanks were kept in each cooler. Chain-of-custody forms were completed on each day of sample collection and were placed inside each cooler.

All sediment samples were collected and submitted to the contract laboratories in accordance with the procedures described in the WDL TS WP, Revised Quality Assurance Project Plan (QAPP; AMEC, 2001) and Draft QAPP Addendum (AMEC, 2002).

Sediment samples were submitted to STL for the bulk sediment and TCLP analyses listed below. Analytical data are summarized in Appendix C and original laboratory reports are provided in Appendix E (CD format).

Bulk Sediment and TCLP Analysis:

- SVOCs, including phenols, by United States Environmental Protection Agency (EPA) Method 8270C;
- TPH by Northwest Total Petroleum Hydrocarbon Identification (NWTPH-HCID) Method (bulk sediment only);
- Dioxins/furans by EPA Method 1613B, 8290, or 8280A;
- Metals by EPA Methods 6000/7000 Series Methods (specifically aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc);
- VOCs by EPA Method 8260B;
- Chlorinated herbicides by EPA Method 8151A; and
- Pesticides and PCBs by EPA Methods 8081A/8082.

Bulk Sediment Analysis Only:

- Total solids and total volatile solids (TVS) by EPA Methods 160.3 and 160.4, respectively;
- Ammonia by EPA Method 350.3;
- Anions (sulfate, nitrate, and chloride) by EPA Method 300.0;
- Total organic carbon (TOC) by EPA Method 9060;
- pH by EPA Method 150.1/9040;
- Specific conductivity by EPA Method 120.1/9050; and
- Acid volatile sulfide (AVS) by EPA Draft Method 821R91100.

In addition to chemical testing, the physical tests listed below were completed by Soil Technology. Physical testing reports are provided in Appendix F.

- Particle size, including silt/clay fraction, by American Society for Testing and Materials (ASTM) Method D422-63 (ASTM, 2002); and
- Moisture Content by ASTM Method 2216-05 (ASTM, 2005a).

4.2 QA/QC Requirements

Quality assurance and quality control (QA/QC) sediment samples were collected in accordance with the WDL TS WP, except as noted below. Laboratory QC procedures such as duplicate or matrix spike analysis were only completed on the volume of sediment submitted to STL. Four trip blanks were submitted for the sampling event and analyzed for VOCs by EPA Method 8260B. Additional sediment volume was not collected for QA/QC purposes as originally stated in the WDL TS WP. This minor deviation from the WDL TS WP did not significantly impact data usability.

A data quality review was conducted on all WDL TS sediment samples and is provided in Appendix D. Identified data qualifiers are presented in the data quality review as well as at the bottom of the Appendix C tables.

4.3 Phase 1 Field Observations

Residual NAPL blebs were observed from 5 to 11 feet bwsi at sampling location W002. NAPL blebs also were observed in 200-series sample WDL-201-S. A sheen and a strong odor were observed at sediment sampling locations W003 through W012, W013, W018, W019, and W020. An odor only, ranging from slight to strong, was noted in sediment from W014, W016, and W017. Odor and sheen were not noted in cores W001 and W015.

The most elevated PID headspace reading was detected at sample location W002 from 5 to 8 feet bwsi, with a reading of 221 parts per million (ppm). This was the sample location where NAPL blebs were noted in the sediment from 5 to 11 feet bwsi. PID readings at other core locations generally were less than 10 ppm.

The Oil-n-Soil® test, a test that turns soil red if petroleum is present, was conducted on samples W018, W019, and W020. For each sample, the soil did not turn red indicating the absence of petroleum products. The Oil-n-Soil® test was undertaken on W017; however, the color of the soil was too dark to distinguish the red dye. No other samples were tested utilizing the Oil-n-Soil® test kit due to the dark color of the soils.

4.4 Phase 1 Chemistry Results

WDL bulk and TCLP sediment sample results from Phase 1 (core locations W001 through W020) field and laboratory testing are summarized below. W001 through W020 are referred to in the following sections as W-series samples. In addition to WDL Phase 1 bulk and TCLP data, bulk and TCLP data from the RRI (samples WDL-101-S through WDL-104-S) and the leachability analysis (samples WDL-201-S through WDL-204-S) also are included in this section for comparison with established site-specific RBCs and for a more thorough understanding of subsurface conditions. Throughout the text, WDL-101-S through WDL-104-S and WDL-201-S through WDL-204-S samples are referred to as 100- and 200-series data, respectively. Bulk and TCLP analytical results for the above mentioned sampling events are presented in Appendix C Tables C-1 through C-8. Graphical representations of WDL lithologic and chemical conditions are illustrated in simplified cross sections provided in Figure 3 and Figures 4A through 4G.

The purpose of Phase 1 bulk and TCLP sediment chemistry analysis was to further delineate the subsurface conditions of WDL and to better understand the distribution of chemicals, both laterally and vertically, so as to determine locations, if any, within WDL that may be problematic to the overall goal of S/S implementation. Because the purpose of Phase 1 bulk sediment analysis was not to compare detected chemical concentrations to a particular screening criterion (unlike TCLP data), the data summarized below are discussed as a function of chemical class distribution throughout WDL. Data from 28 core locations (20 W-series, 4 100-series, and 4 200-series) were used to delineate chemical distribution throughout WDL. To help simplify the abundant amount of data collected during Phase 1 sampling, individual constituents (i.e., indicator chemicals) have been selected to represent the overall chemical class to which they belong (e.g., 1,2-dichlorobenzene represents the VOC chemical class) and will be discussed accordingly. Indicator chemicals and their representative chemical classes (in parentheses) are as follows: 2,4-dichlorophenol (SVOCs), 2,3,7,8-tetrachlorodobenzo-p-dioxin [2,3,7,8 TCDD] (dioxins and furans), arsenic (metals), 2,4-dichlorophenoxyacetic acid [2,4-D] (chlorinated herbicides), and total 4,4'-dichloro-diphenyl-trichloroethane [DDT] (pesticides). Indicator chemical concentration distributions are presented separately in Figures 4A through 4G. Phase 1 bulk sediment data is presented in Appendix C.

Bulk, TCLP results, and site-specific RBCs are provided in Appendix C Tables C-1 through C-8. The tables show detections with bold text and RBC exceedances with bolded text and shaded cells.

4.4.1 SVOCs

2,4-Dichlorophenol was detected at 27 of 28 WDL core locations. The highest concentrations appear to be clustered in the southern portion of WDL (at and between sample locations W001 and W007). Concentrations at the south end of WDL range from 5.9 milligrams per kilogram (mg/kg) in sample W001 (1-foot bwsi) to 718 mg/kg in sample W007 (4 feet bwsi). Samples collected north of W007 yielded concentrations of less than 40 mg/kg, with the exception of sample location W014, which yielded a concentration of 94 mg/kg at 6 feet bwsi.

Of the 69 SVOCs analyzed, RBCs were calculated for 25. Fourteen of the 69 analytes were detected at concentrations at or above the laboratory method detection limit (MDL). SVOC concentrations detected in TCLP sample leachate did not exceed RBCs. 2,4-dichlorophenol concentrations are shown in Figure 4A. SVOC results are summarized in Appendix C, Table C-1.

4.4.2 Total Petroleum Hydrocarbons

At the laboratory, sediments initially were screened for TPH presence using NWTPH-HCID Method. If gasoline, diesel, or heavy oil organics were detected, the appropriate test method (NWTPH-Dx for diesel and heavy oil-range hydrocarbons or NWTPH-Gx for gasoline range hydrocarbons) was used to quantify the concentration of hydrocarbons in the sample.

Petroleum hydrocarbons were detected at each W-series sample location, with the majority of the higher concentrations in sediment clustered near the south end of WDL. Diesel-range hydrocarbons were detected at concentrations ranging from 28 to 18,000 mg/kg and heavy oil-range hydrocarbons were detected at concentrations ranging from 23 to 11,000 mg/kg. Petroleum hydrocarbons were not detected in sediment samples W011 and W017 at 9.0 and 7.0 feet bwsi, respectively. 100- and 200-series samples were not analyzed for petroleum hydrocarbons. Of the sediment samples in which TPH was detected, concentrations of gasoline-range hydrocarbons ranged from 13 to 10,000 mg/kg. Diesel-range concentrations are shown in Figure 4B and are presented in Appendix C, Table C-8.

4.4.3 Dioxins/Furans

2,3,7,8-TCDD was detected at 15 of the 28 core locations and although the highest concentrations occur in the southern portion of the WDL, overall concentrations appear to be relatively evenly distributed throughout WDL. The highest concentration detected in the W-series samples was 0.044 mg/kg at core location W002. The highest overall concentration of 2,3,7,8-TCDD was 0.51 mg/kg detected in 2002

sample WDL-101-S collected at 5 feet bwsi. Both detections were collected from the south end of WDL.

The calculated RBC for 2,3,7,8 TCDD is 1.41 x 10^{-8} milligrams per liter (mg/L). Dioxins from TCLP testing were detected at concentrations above the RBC in 6 of 24 sediment samples (W002, W003, W004, W006, W008, and WDL-201-S), all of which were collected from the south end of WDL. TCLP concentrations of 2,3,7,8-TCDD above the RBC ranged from 1.7 x10^{-8} to 3.4 x10^{-7} mg/L. Concentrations of 2,3,7,8-TCDD are shown in Figure 4C and dioxins/furans are summarized in Appendix C, Table C-2.

4.4.4 Metals

Arsenic was detected at all 28 WDL core locations, with the highest detected concentrations occurring at the south end of WDL between 5 to 7 feet bwsi. Concentrations of arsenic ranged from 2.8 mg/kg at sample location W011 (18.5 feet bwsi) to 402 mg/kg at sample location WDL-101-S (7.0 feet bwsi).

Of the 25 metals analyzed, 20 have been assigned RBCs. No metals leached during TCLP analysis at concentrations exceeding their respective RBCs. Arsenic concentrations are shown in Figure 4D and metals analytical results are summarized in Appendix C, Table C-3.

4.4.5 VOCs

1,2-Dichlorobenzene was detected in 23 of 28 WDL core locations. Similar to the SVOCs described above, the highest detected VOC concentrations appear to be grouped at the south end of WDL (at and between core locations W001 and W007). The highest 1,2-dichlorobenzene concentration was 1,150 mg/kg in sample WDL-101-S at 5 feet bwsi. In recent samples, the most elevated detection (470 mg/kg) of 1,2-dichlorobenzene was collected from W002 at 5 feet bwsi.

RBCs were calculated for 28 of the 66 VOC constituents analyzed. In total, only 1,4-dichlorobenzene was detected in TCLP leachate at a concentration exceeding its RBC at core location W002. The W002 sample was collected from the south end of WDL, where NAPL blebs were observed in the sediment cores. 1,2-dichlorobenzene concentrations are shown in Figure 4E and VOC analytical results are summarized in Appendix C, Table C-4.

4.4.6 Chlorinated Herbicides

2,4-D was detected at 28 of 28 WDL core locations, with the highest concentrations detected at the southern end of WDL where residual NAPL was observed. 2,4-D concentrations at the south end of WDL ranged from 1.1 mg/kg in W005 (7 feet bwsi)

to 5,100 mg/kg in W002 (5 feet bwsi). 2,4-D was detected at 170 mg/kg in W018 (6 feet bwsi) at the northern end of WDL.

Phase 1 TCLP samples were analyzed for 13 chlorinated herbicide constituents, seven of which are assigned site-specific RBCs. Six herbicides were detected above laboratory MDLs but below applicable RBCs. Only 2-methyl-4-chlorophenoxyacetic acid (MCPA) was detected above its respective RBC in sediment sample W002 . This sample was collected from the south end of WDL. 2,4-D concentrations are shown in Figure 4F and chlorinated herbicide results are summarized in Appendix C, Table C-5.

4.4.7 Pesticides and PCBs

DDT was detected in 3 of the 28 Phase 1 WDL cores, all three located at the south end of WDL, in samples W005, WDL-101-S, and WDL-103-S between 2.25 and 7 feet bwsi. Detected concentrations of DDT ranged from 0.26 mg/kg in core location WDL-103-S (2.25 feet bwsi) to 18.5 mg/kg at core location WDL-101-S (7.0 feet bwsi).

Samples were screened for 21 pesticides, 14 of which are assigned site-specific RBCs. Only three pesticides (beta-BHC in sample W010, endrin in sample W011 and gamma-chlordane in sample W007) were detected. These concentrations were well below calculated RBCs. No other pesticides were detected above laboratory MDLs in Phase 1 TCLP leachate.

Aroclors 1248, 1254, and 1260 were detected in 100-series samples only. Only Aroclor 1242 was detected in W-series data (samples W014, W015, and W017). PCBs appear to be limited to the southern half of WDL, with the majority of Aroclor detections originating from samples WDL-101-S through WDL-103-S and WDL-201-S through WDL-203-S. In general, PCB Aroclors appear to be confined to sediment above 5 feet bwsi. No other PCB Aroclors were detected in sediment samples collected from WDL during Phase 1.

Site-specific RBCs were not calculated for PCBs. Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260 were not detected in TCLP leachate at a concentration at or above laboratory MDLs. DDT concentrations are shown in Figure 4G; pesticide results are summarized in Appendix C, Table C-6, and PCB analytical results are summarized in Appendix C, Table C-7.

4.4.8 Geochemical Parameters

In addition to the analyte groups listed above, WDL sediment samples W001 through W020 were screened for geochemical parameters. Geochemical parameters included ammonia (as nitrogen), chloride, nitrate, sulfate, and TOC. The 100- and 200-series

sediment samples were only analyzed for the geochemical parameters ammonia (as nitrogen), sulfide, and TOC. Analytical results summarizing geochemical parameters are provided in Appendix C, Table C-8.

Ammonia, ranging from 3.12 to 4,200 mg/kg, was detected in the 100- and 200-series sediment samples, with the oldest samples (100-series) constituting the upper range. Phase 1 samples revealed ammonia concentrations ranging from 11.4 to 258 mg/kg in W002 and W014, respectively.

Chloride concentrations in the Phase 1 sediments ranged from 34.8 to 4,060 mg/kg (W011 at 9 feet bwsi and W011 at 18.5 feet bwsi, respectively). 100- and 200-series WDL sediment samples were not analyzed for chloride.

Nitrates were not detected at or above the laboratory MDL of 0.025 mg/kg in any of the Phase 1 sediment samples. Sulfate concentrations ranged from 17.4 to 9,370 mg/kg, with one sample result below the MDL. Sulfides were detected in 100- series sediment samples at concentrations ranging from 4 to 1,100 mg/kg. Sulfide was not detected at or above the laboratory MDL in any of the WDL Phase 1 sediment samples.

Concentrations of TOC in Phase 1, 100-, and 200-series sediment samples ranged from 1,100 mg/kg in W011 to 184,000 mg/kg in WDL-101-S at 5 feet bwsi.

4.5 Subsurface Conditions

In addition to physical and chemical testing of sediments throughout WDL, Phase 1 also was designed to gain greater stratigraphic understanding of WDL. WDL covers an area of approximately 50,000 square feet (Figure 2) and has an average water depth of about 2 feet (Figure 3).

Particle size analysis was conducted on Phase 1 samples W001 through W020 to empirically validate depth-discrete soil conditions observed in the field and to provide better lithologic accuracy for use in construction of the simplified cross section (Figure 3). Particle size distribution graphs and gradation breakdowns (percent [%] gravel, sand, silt, and clay) are provided in Appendix F.

Subsurface conditions observed during the drilling of each of the 20 cores (W001 through W020) are presented on the boring logs included in Appendix B. A simplified cross section was constructed north to south through the long axis of WDL and is presented in Figure 3. The cross section was constructed using lithologic information from cores drilled during the RRI (AMEC, 2003) and leachability analysis (AMEC 2004) and WDL TS activities.

Cores completed in and around WDL have shown a wide variety of subsurface material, particularly in the shallow soils and sediments, due to the abundant fill material and previous remedy processes utilized. Fill may include broken concrete pieces, brick, wood, metal, and wire cable. The southern portion of WDL consists of soft, black to gray, clayey silts with organics and fill material to 2.0 feet bwsi. A lens of medium dense, black, fine-grained sand is present between 8 feet and 11.5 feet bwsi at core locations W003, W004, and W005. NAPL blebs were observed in three cores collected from the southern end of WDL (WDL-101-S, WDL-102-S, and W002) at depths between 3 and 10 feet bwsi in the silt.

The northern portion of WDL consists of soft, black to gray, clayey silts with organics and fill material. Assorted lenses of, silty sand and gravel are present within the silt. Fill material along the northern portion of WDL includes railroad ballast (large rock) and foundry sands that are suspected to have sloughed off from adjacent properties into WDL.

4.6 Phase 1 TS Summary

WDL sediment was adequately characterized through the collection and analysis of WDL sediment samples. The WDL sediment lithology is depicted in Figure 3, and consists of lenses of silty sand and gravel within soft, black to gray clayey silt. Chemical constituent concentrations are generally higher at WDL's southern end and lessen in concentration moving north across the lake. Based on Phase 1 findings, objective consideration was given in the selection of representative samples to be collected in Phase 2 and tested in Phase 3.

5.0 REPRESENTATIVE SEDIMENT SAMPLING (Phase 2)

Based on Phase 1 sampling results, three Phase 2 representative sediment sampling locations (TS-1, TS-2, and TS-3) were identified for use in Phase 3 mix design testing. Sample TS-1 was selected from an area representative of "worst case" conditions in the south end of WDL, where NAPL blebs were observed. TS-2 and TS-3, collected near the center of WDL, were selected to be representative of "average-case" conditions. The Phase 2 sample locations are shown on Figure 2. As in Phase 1, vibracore services were provided by TEG in conjunction with Campbell Crane.

The terms "treated" and "untreated" are used extensively throughout Phase 2 and Phase 3 discussions. For clarification purposes, untreated samples are defined as Phase 2 samples that contain no S/S additives and are representative of in-situ WDL sediment conditions. Conversely, treated samples are defined as Phase 3 samples containing varying ratios of sediment, water, portland cement, fly ash, and bentonite. Refer to Section 7.0 for a detailed summary of Phase 3 treated samples.

5.1 Phase 2 Field Procedure

Sediment samples were extracted using the same vibracore system described in Section 4.1.1. TS-1, TS-2, and TS-3 were advanced to 12.0, 9.5, and 7.0 feet bwsi, respectively. Due to refusal at each sampling location, multiple cores were needed to collect sufficient sediment volume for use in Phase 3 mix design testing. Once cores were extracted from WDL, they were extruded onto clean, polyethylene-lined trays, photographed, logged, and then placed into polyethylene-lined drums. To ensure that multiple cores collected from one sample location were properly mixed, individual cores were homogenized using a paddle wheel mixer. Lithologic descriptions for each location were recorded on a boring log. Copies of the boring logs are presented in Appendix B. Since this sampling event nearly duplicated previous sampling activities, sampling forms were not completed.

Disposable materials were used whenever possible during sample collection and staging. The non-disposable sampling equipment (e.g., paddle wheel mixer) was decontaminated prior to use and between each sample location. Waste generated during the sampling procedure, including PPE, was handled in accordance with the SOPs provided in the WDL TS WP.

5.2 Phase 2 Field Observations

Phase 2 sediment sampling field observations and lithologic conditions are shown on the boring logs included in Appendix B. Residual NAPL blebs were observed in TS-1 from 3.0 to 6.0 feet bwsi. A sheen was observed in the sediment from sampling location TS-2. No odor or sheen was noted in sample TS-3. PID readings were not obtained during Phase 2 sediment sampling.

Sediment collected from cores TS-1 and TS-2 were described as silt with some clay. TS-3 consisted of silt underlain by silty sand, then silty gravel, and back to silt by the end of the boring (7.0 feet bwsi). TS-3 was collected in the narrow, shallower portion of WDL, where coarser grained sediments were observed during the Phase 1 sampling event.

5.3 Phase 2 Sample Handling

Prior to shipment, the 20-gallon sampling containers were labeled and capped in accordance with sample labeling and handling procedures described in the WDL TS WP. A chain-of-custody form that included sample location, date, and time was completed and the samples were transported to Soil Technology's laboratory for processing.

Upon arrival at the laboratory, untreated Phase 2 samples TS-1 through TS-3 were homogenized using a paddle wheel mixer to blend pore water that had separated from the sediment during transportation back into the matrix. Subsamples of the untreated homogenate were then collected for physical parameter analysis as well as bulk and TCLP chemical analysis prior to Phase 3 mix design testing.

5.4 Chemical Parameter Results of Untreated and Treated Sediments

Chemical results are summarized in Tables 10 through 12. It should be noted that Tables 10 through 12 include analytical results for both Phase 2 untreated and Phase 3 treated samples. Phase 2 and Phase 3 physical and analytical testing results are discussed in Section 7.2. Physical test reports from Soil Technology are provided in Appendix F.

5.5 Physical Parameter Results of Untreated Sediments

To evaluate general geotechnical properties of WDL sediment and to verify TS samples represent lithologic conditions observed in Phase 1, maximum dry density (ASTM D698, 2000b), plasticity index (ASTM D4318, 2005b), and grain size (ASTM D422) analyses were conducted on Phase 2 untreated sediments (TS-1 through TS-3) by Soil Technology. Results of Phase 2 physical testing appear to be consistent with Phase 1 sediments and are provided in Appendix F.

6.0 INITIAL SCREENING TEST

Although not specified in the WDL TS WP, approximately 5-gallons of additional sediment were collected from sampling location W003 during the Phase 1 sampling and sent to Soil Technology for initial physical testing and a simplified sequential batch leach test (SBLT). The initial physical testing consisted of UCS by ASTM Method D1633-00 (ASTM, 2000a) and was intended to evaluate the effects, if any, of NAPL on the strength gain process of treated sediment. As such, only treated sediment, and not untreated sediment, was included in the initial screening test. The purpose of the initial screening was to obtain additional information for use in evaluating the effectiveness of proposed S/S treatment of WDL sediments, and to acquire a starting point for evaluating the most effective range of admixture ratios to be tested in Phase 3.

Prior to treated sediment SBLT and TCLP testing, the W003 sediment sample was mixed with portland cement, fly ash, and bentonite at a ratio of 12%, 4%, and 4%, respectively. The sample was placed into four plastic concrete molds and allowed to cure for 1, 3, 7, and 28 days. UCS was determined for each of the cure times listed above. UCS results for 1-, 3-, 7-, and 28-day breaks were 39, 61, 97, and 120 pounds

per square inch (psi), respectively. UCS data is provided in Appendix F. Fragments from the 28-day break were used to conduct TCLP and SBLT analysis.

The simplified SBLT consisted of placing deionized water and break fragments in a stainless steel centrifuge bottle at a 4:1 ratio, respectively. The centrifuge bottle was tumbled for 24 hours at 40 revolutions per minute and then accelerated in a centrifuge for 30 minutes at 6,500 Gs. Finally, water from the centrifuge bottle was sampled and submitted to STL for analysis. This process was repeated on the same break fragment sample for a total of four cycles. Testing details and analytical results are summarized below. TCLP and SBLT testing results are provided in Table 2.

TCLP results revealed three metals (aluminum, barium, and chromium) detected above corresponding RBCs. Two metals from the SBLT sample, aluminum and chromium, were detected above RBCs. Because of inadequate sample volume, barium was not analyzed during the SBLT. All SBLT metal concentrations decreased from cycle one to cycle four with the exception of calcium, chromium, copper, lead, and vanadium. These metals increased only slightly, and all but chromium were well below their respective RBCs.

VOCs and SVOCs were not detected above RBCs in TCLP or SBLT samples. Herbicides 2,4-D and MCPA both were detected above RBCs after the first SBLT cycle, but only MCPA was detected above the RBC after the second cycle. MCPA dropped below the RBC in the third and fourth cycles. No herbicides from the TCLP analysis exceeded RBCs.

No TCLP pesticide concentrations were detected above laboratory MDLs. 4,4-DDT was the only SBLT pesticide detected above its RBC (first 2 cycles) but fell below the RBC after cycles 3 and 4. All pesticides except endrin exhibited decreasing concentrations with each successive SBLT tumble cycle. Endrin was not detected in the TCLP sample, but was detected after the first SBLT cycle at 0.0098 mg/L. Endrin concentrations decreased to 0.0066 mg/L after the second cycle and to 0.00091 mg/L after the third cycle. Endrin concentrations, however, increased to 0.0033 mg/L after cycle 4 but remained below the site-specific RBC. It should be noted that the MDLs for beta-BHC, dieldrin, endosulfan sulfate, and gamma-chlordane TCLP samples were slightly above RBCs. MDLs for SBLT samples were all below the RBCs.

Dioxins were not analyzed in the TCLP sample due to the limited amount of material available. Dioxins and furans analyzed from SBLT were not detected above the laboratory MDLs with the exception of 2,3,7,8-TCDD which was detected at a concentration an order of magnitude lower than the RBC.

Although the UCS for the 1-day cure period was less than the proposed performance criteria of 50 psi, strengths exceeding the criteria were achieved for samples cured for 3-, 7-, and 28-days This indicates portland cement, fly ash, and bentonite percentages near 10, 5, and 5, respectively (+/- 10% portland cement, 5% fly ash, and 5% bentonite), are likely appropriate admixture ratios to overcome the potential negative affects of NAPL on treated sediment, in terms of the strength gain process. Generally decreasing chemical concentrations observed during SBLT indicated that leachability within treated sediment is limited to 1 or 2 SBLT cycles and that admixture ratios in the vicinity of 10% portland cement, 5% fly ash, and 5% bentonite are appropriate for the more thorough Phase 3 mix design treatability testing (Section 7.0).

7.0 MIX DESIGN TESTING (Phase 3)

Phase 3 of the TS consisted of mixing certain amounts of S/S reagents with sediment samples. The sediment samples used for the Phase 3 TS were collected during the Phase 2 field work (discussed in Section 4.1.1). Samples TS-1, TS-2, and TS-3 were mixed with varying amounts of portland cement (10 to 20% by volume), fly ash (0 to 10% by volume), and bentonite clay (5 to 10% by volume). Four different admixtures (A, B, C, and D) were prepared and mixed with each of the TS samples. The percentage by volume of reagent utilized for each mixture is presented in Table 3. Each of the treated samples was subjected to physical and chemical tests. The objective of Phase 3 of the TS was to identify the mix designs with the highest potential to solidify/stabilize WDL sediments.

In addition to physical parameter testing, the Phase 3 TS treated samples were tested for WDL COCs using TCLP analytical testing methods. An example of sample identification nomenclature used is TS-1-WDLSS-1A or TS-1 Mix A. A summary of the analytical data is presented in Tables 10 (TS-1), 11 (TS-2), and 12 (TS-3), and discussed in Section 7.2.

The general treatability testing procedure consisted of mixing a standard aliquot of each of the WDL sediment samples with each of the four mix ratios and then allowing the mixture to cure in laboratory-provided test molds prior to the physical and chemical tests. Details of how the samples were mixed are included in Appendix F.

7.1 Physical Testing Discussion

A summary of the physical testing results and laboratory observations is included below. Detailed reports and tables from Soil Technology are included in Appendix F. Physical testing included VOC off-gassing, UCS, hydraulic conductivity, wet/dry durability, and moisture content. During the physical testing process, observations and measurements were recorded after 1-, 3-, 7-, and 28-day intervals once curing began

for the TS-1 and TS-2 mixtures. Measurements and observations for sample TS-3 were recorded at 1-, 5-, 7-, and 28-day intervals. The results of the physical testing parameters are discussed below.

7.1.1 VOC Off-Gas

VOC off-gas measurements were collected at the time of sediment mixing with admixture components to evaluate whether off-gassing may occur due to heat generation during full-scale sediment and additive mixing. VOCs were measured using a PID during the mixing and early curing times of 1 and 3 days (TS-1 and TS-2 mixtures), and 1 and 5 days (TS-3 mixtures). VOC off-gas readings are provided in Table 4. The highest PID reading (18 to 20 ppm) was recorded for TS-1 Mix B. The highest PID reading did not exceed the work plan established performance criteria of 20 ppm for VOC off-gassing.

Although the performance criteria were not exceeded in the laboratory, precautions will be taken during full-scale implementation of the S/S technology at WDL. Adequate health and safety precautions (PPE, air monitoring, and engineering controls) will be put into place prior to commencing field work.

7.1.2 Unconfined Compressive Strength

UCS testing was conducted in general accordance with ASTM D1633-00 (*Standard Test Method for Compressive Strength of Molded Soil-Cement Cylinders*). The UCS data was used to evaluate the strength of mix designs A through D. The UCS performance criteria specified in the WDL TS WP was at least 50 psi, which was based on the EPA recommendations to account for pressure induced by overburden material and heavy equipment (Spence, 2004). Samples that did not exhibit the minimum UCS of 50 psi were considered to have “failed” during laboratory testing. UCS test results are presented in Table 5. UCS stress/strain curves prepared by Soil Technology are provided in Appendix F.

Each mix tested for UCS passed except for TS-2 Mix C, which had a recorded UCS of 45.9 psi at 3 days. Following 7 days of curing time, TS-2 Mix C passed with a UCS of 55 psi. For each sediment sample, Mix D had a recorded UCS value greater that 95 psi starting at day 3 (day 5 for TS-3). Overall, the admixture that performed the best in TS-1 and TS-2 was Mix D (20% portland cement, 10% fly ash, and 10% bentonite). This mixture appears to gain the most strength after 3 days of curing and is the strongest after 28 days of curing. In sample TS-3, the 5-day UCS (177.5 psi) for Mix D was higher than the 28-day UCS of 171 psi. The 28-day cure UCS for TS-3 Mix A (174 psi) was also slightly higher than Mix D.

The UCS is closer to the same range in TS-1 and TS-3 for all mixtures, although similar trends are noted for TS-1 and TS-2. The UCS values for TS-2 on the 3- and 7-day cures generally were less than those for TS-1 and TS-3, although the highest UCS value was recorded for the TS-2 sample using Mixture D at a 28-day cure time.

Overall it appears Mix D performed the best, with each sample having the highest relative 3-, 7-, and 28-day cure UCS measurements. Although mixtures A, B, and C do reach comparable 28-day strengths, their early cure strengths are significantly lower than the Mix D early cure UCS data. Variances in the Mix D data from one sample to the other are probably due to the subtle differences in grain size distribution (sand versus silt) and organic content of the samples. This may also be attributed to the difference in the constituent concentrations, although TS-1, with NAPL present in the sample, did not perform significantly different when compared with TS-2 and TS-3.

7.1.3 Hydraulic Conductivity

Hydraulic conductivity was calculated using ASTM D5084-00 (*Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter, 2003*). ASTM D5084-00 Method C (Falling Head, Rising Tailwater Elevation) was used in the permeability calculation for each sample cylinder. Hydraulic conductivity measures the rate of discharge of water assuming laminar flow through porous media under a hydraulic gradient. A hydraulic conductivity performance criteria equal to or less than 1×10^{-7} centimeters per second (cm/sec) was specified in the WDL TS WP. This value was based on recommendations suggested in a United States Army Corp of Engineers (USACE) document (USACE, 1995).

In accordance with the ASTM test method, a simulated stress is applied to the sample cylinder to mimic field overburden stress conditions. Applied confining stresses of 1 psi and 2 psi were applied to the untreated sample cylinders. A confining stress of 1 psi correlates to an in-situ depth of 3.5 feet. Two (2) psi correlates to an in-situ depth of 7 feet.

At 1 and 2 psi, the untreated sediment samples had hydraulic conductivity values in the range of 10^{-7} to 10^{-8} cm/sec. Hydraulic conductivity values for the treated (28-day cure time) sample cylinders did not exceed 6.00×10^{-8} cm/sec under a confining stress of 5 psi, which correlates to an in-situ depth of 17.5 feet. Each treated sample cylinder tested for hydraulic conductivity passed the TS performance criteria. Hydraulic conductivity data are summarized in Table 6.

7.1.4 Wet/Dry Durability

Wet/dry durability was conducted in accordance with ASTM D559 (*Standard Test Method for Wetting and Drying Compacted Soil-Cement Mixtures - ASTM D559-89, 1998*). Sample cylinders were prepared for the wet/dry durability testing following ASTM D558-04 (Standard Test Methods for Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures). Wet/dry durability evaluates material loss through the process of repeating wetting and drying conditions. The wet/dry durability test was conducted to compare the durability from one mix design to another under intense physical weathering conditions.

The wet/dry durability test was undertaken on all treated samples and included each sample experiencing 12 consecutive wetting and drying cycles. Following the drying cycle, scrubbing of the cylinder at a pressure of 3 psi was conducted to mimic mechanical weathering processes. A sample was considered to have failed if the sample cylinders broke in any of the 12 wet/dry cycles. The wet/dry durability test results are summarized in Table 7.

Six (6) of the 12 cylinder samples failed the wet/dry durability test. Mix D sample cylinders did not break throughout the entire wet/dry durability testing process. The wet/dry durability test demonstrates the durability of a sample; however, it is an aggressive test and does not represent actual field conditions likely to be encountered at WDL. Stabilized sediment in WDL is not likely to encounter extreme alternating wet/dry weather conditions because a low permeability cap will protect stabilized sediment from dry and wet weather conditions.

7.1.5 Moisture Content

The moisture content of soil, based on dry weight, was determined by ASTM D2216-05 (*Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass, 2005a*). The procedure measures the amount of water present in the sediment in order to calculate the amount of water needed to hydrate the stabilization mix additives. The moisture content of untreated samples ranged from 72 to 142% by wet weight. Water was added at the time of mixing with the most being added to TS-3 Mix D (1,000 milliliters [mL]) (Table 8). Immediately following mixing, the moisture content of the sample cylinders was calculated. The moisture content before curing for the mixed samples ranged from 76% in TS-3 Mix A to 158% in TS-2 Mix D. After 3 days of curing, the moisture content decreased from the moisture content recorded prior to curing. Moisture content measurements ranged from 53% in TS-1 Mix B to 101% in TS-2 Mix C. Nominal changes in moisture content were measured from the 7- and 28-day cure times in each mixture. The 28-day

moisture content measurements ranged from 45% in TS-1 Mix C to 101% in TS-2 Mix C. Moisture content results are presented in Table 8.

7.1.6 Physical Testing Summary

Overall, Mix D outperformed the other mixes with respect to UCS, hydraulic conductivity, wet/dry durability, and moisture content. Mix D's performance is likely a function of the relatively high percentages of portland cement and fly ash reagents. It should be noted, however, that with the exception of the wet/dry durability test, all mix designs exceeded performance criteria after 7 days of cure time. Because it is not anticipated that significant wetting and drying of solidified sediment will occur in the field, the wet/dry durability test becomes less relevant to the overall performance assessment of the four mixes. For this reason, all mix designs are considered to be adequate for solidification purposes and chemical (stabilization) data will drive the final mix design selection.

7.2 Chemical Analysis Discussion

Prior to Phase 3 mix design testing, untreated bulk and TCLP Phase 2 sediment samples were analyzed for the chemicals listed below. The purpose of Phase 2 bulk testing was to evaluate baseline conditions of untreated sediment for comparison to TCLP testing of treated sediment. Bulk testing also was conducted to ensure that Phase 2 core locations were truly representative of WDL conditions as determined during Phase 1 characterization.

A discussion presenting bulk and TCLP results from untreated Phase 2 samples in comparison to Phase 3 treated sediment TCLP results and groundwater RBCs is provided in the sections that follow. The purpose of TCLP testing of treated samples was to evaluate the stability of the mix designs containing WDL COCs against simulated harsh environmental conditions.

Geochemical analytical results are provided in the right hand columns of Table 9. Phase 2 bulk and TCLP analytical results (untreated samples) are presented in the left hand columns of Tables 10, 11, and 12 for TS1, TS-2, TS-3, respectively. Phase 3 TCLP analytical results (treated samples) are presented in the right hand columns of Tables 10, 11, and 12. Analytical results with detections are highlighted in bold text only, while constituent concentrations detected in excess of their respective RBCs are bolded and shaded. Analytical methods used to characterize untreated and treated sediments included the following;

- SVOCs including phenols by EPA Method 8270C;
- TPH by NWTPH-HCID Method;

- Dioxins/furans by EPA Method 8290;
- Metals by EPA Methods 6010B, 6020, and 7471A (specifically aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc);
- VOCs by EPA Method 8260B;
- Chlorinated herbicides by EPA Method 8151A; and
- Pesticides/PCBs EPA Methods 8081A/8082.

In addition to the chemical analysis above, untreated Phase 2 TS samples were analyzed for the following physical and geochemical parameters:

- TOC by EPA Method 9060;
- Total Solids EPA Method 160.3;
- Sulfate, nitrate, and chloride by EPA Method 300.0;
- Ammonia by EPA Method 350.3 modified for sediment; and
- pH by EPA Method 150.1/9040 and hydraulic conductivity by ASTM Method D5084.

In the sections that follow, TS-1 findings are primarily discussed for Phase 2 and Phase 3 because TS-1 is considered to be the “worst case” data for WDL. It should be noted that constituent concentrations observed in TS-1, TS-2, and TS-3 are generally less than those detected in the Phase 1 vertically-discrete samples because TS samples consisted of greater sediment volume as well as sediment from the entire core (to represent actual mixing conditions).

7.2.1 SVOCs

A total of 33 SVOC constituents were present in the untreated TS-1 bulk sediment sample. The highest concentration of 2,4-dichlorphenol was detected in sample TS-1. Concentrations of 2,4-dichlorophenol decreased moving north in WDL (TS-2 and TS-3), confirming contaminant trends identified during Phase 1 sampling. When the untreated TS-1 sediment sample was tested for SVOCs using TCLP, 20 SVOCs were detected.

A total of 16 SVOC constituents were detected in the Mix A sample, 18 in the Mix B and C samples, and 17 in the Mix D sample. No SVOC constituent concentrations exceeded the performance criteria. Mix A exhibited the best stabilization performance because fewer SVOCs were detected in the treated Mix A sample. Mix D also passed

the performance criteria; however, the 2,4-dichlorophenol concentration that leached was twice that of Mix A. The addition of solidification reagents increased butylbenzylphthalate concentrations by an order of magnitude in Mix B and Mix C. No other SVOC concentrations increased with the addition of solidification reagents.

7.2.2 Total Petroleum Hydrocarbons

The highest concentrations of diesel and gasoline range petroleum hydrocarbons were detected at sample location TS-1 in the bulk sediment. Sediment from TS-2 and TS-3 bulk samples yielded TPH concentrations an order of magnitude less than TS-1. Total petroleum hydrocarbons were not tested in the untreated Phase 2 or treated Phase 3 TCLP samples.

7.2.3 Dioxins/Furans

Untreated TS-1 sample testing yielded seven dioxin/furan congener detections in bulk sediment. 2,3,7,8-TCDD was detected in the Phase 2 and Phase 3 sediment at concentrations similar to, but lower than, those found in Phase 1. No dioxin/furan congeners were detected in TCLP leachate extracts from either untreated or treated sediment samples.

7.2.4 Metals

A total of 25 metals were detected in untreated TS-1 bulk sediment. When the same TS-1 sediment was tested for metals using TCLP, 18 metals were detected. Beryllium, cadmium, copper, mercury, selenium, and vanadium were not detected in the untreated sediment using TCLP procedures, and sodium was not tested. In the treated TS-1 sediment sample, 13 metals were detected in Mix A and Mix C, 14 metals in Mix B, and 16 in Mix D. Only aluminum was detected at a concentration exceeding the RBC in Mix D. Aluminum, chromium, molybdenum, potassium, and vanadium TCLP concentrations increased at least an order of magnitude in each mix when solidification reagents were added to sediment. This increase in constituent concentration suggests that the addition of alkaline material made some metals more soluble. However, a majority of the metals were stabilized by adding the selected admixtures as demonstrated by a decrease in the concentration of metals in the TCLP leachate. Mixes A, B, and C performed the best (i.e., resulted in the greatest metals concentration decrease).

7.2.5 VOCs

During evaluation of TS-1 bulk sediment for VOCs, 18 VOCs were detected. VOC concentrations in the bulk sediment decreases moving in a northerly direction through

WDL, which confirms the trend exhibited in Phase 1 samples. The highest VOC concentrations were observed in Phase 1 bulk sediment.

When the untreated TS-1 sediment sample was tested for VOCs using TCLP, 14 VOC constituents were detected. Only 11 VOCs were detected in treated TS-1 samples in Mixes A, B, and D. Twelve (12) VOCs were detected in TS-1 Mix C. The leachate concentrations detected were below the performance criteria specified. None of the mix designs outperformed another based on detected VOC concentrations. Detected VOC concentrations decreased or remained the same with the addition of the solidification admixtures.

7.2.6 Chlorinated Herbicides

Chlorinated herbicide data for TS-1 were evaluated and seven constituents were detected in the bulk sediment. Pentachlorophenol was not analyzed for and, therefore, was not detected in the bulk sediment.

The untreated TS-1 sediment sample was tested for herbicides using TCLP. Eight constituents were detected, including pentachlorophenol, which was analyzed for in untreated and treated samples. The same eight constituents were detected in treated sediment samples from Mixes A, B, and C. Of the eight detected, two failed the performance criteria in Mix A and C, and three failed for Mix B. Only seven herbicides were detected in Mix D, three at concentrations exceeding RBCs. 2,4,5-T, silvex, 2,4-D, 2,4-DB, dichlorprop, MCPA, MCPP, and pentachlorophenol increased at least an order of magnitude with the addition of solidification reagents. Dichlorprop concentration did not increase with Mix D. Mix A and Mix C appear to be the preferred mix designs with respect to herbicides, and they yielded the lowest leachate concentrations.

7.2.7 Pesticides and PCBs

Pesticides and PCB data were evaluated and 12 constituents were detected in the bulk sediment. DDT was detected at low concentrations in samples TS-2 and TS-3. DDT was only detected in Phase 1 sample W005 (closest to TS-1) and although DDT was not detected in TS-1, detections in TS-2 and TS-3 are representative of concentrations found in W005.

When TS-1 sediment (untreated) was tested for pesticides and PCBs using TCLP, gamma-BHC was the only constituent detected. In treated samples, endrin was the only constituent detected (all mix designs). Treated sample endrin concentrations were below the RBC. Considering only PCBs and pesticides, no individual mix design is preferred to another. It should be noted, however, that with the addition of

solidification reagents, the MDL increased by an order of magnitude or more in each mix design. This increase caused 4,4-DDD, 4,4-DDE, 4,4-DDT, aldrin, alpha-BHC and alpha-chlordane MDLs to exceed their respective RBCs. Of the pesticides also detected in the bulk sediment, the following increased by at least one order of magnitude: beta-BHC, delta-BHC, endrin, endrin ketone, lindane, gamma-chlorodane, and heptachlor.

7.2.8 Geochemical Parameters

To evaluate baseline characteristics of Phase 2 samples, analysis included geochemical parameters. Geochemical parameters were not tested for in Phase 3. Geochemical data is presented in Table 9.

The pH values ranged from a near neutral pH of 7.43 standard units (SU) at TS-1 to a more alkaline pH reading of 10.5 SU at TS-3. Percent moisture ranged from 45.7% in TS-3 to 60.1% in TS-2. Percent solids ranged from 41% (TS-2) to 57% (TS-1).

The highest TOC concentrations were detected in sample TS-2 at 32,000 mg/kg. TOC concentrations were similar in TS-1 and TS-3. Sodium and sulfate concentrations generally were high, which may be caused by debris deposited in the area. Nitrate concentrations were relatively low in all three samples, indicating that oxidizing conditions do not exist in WDL. Chloride concentrations ranged from 120 to 1,400 mg/kg. Ammonia ranged from a low of 200 mg/kg at TS-1 to a high of 640 mg/kg at TS-2.

7.2.9 Chemical Testing Summary

Although some metals and herbicides leached from each mix design, fewer COCs from the chemical classes listed above leached from Mix A and as a result Mix A was selected as the preferred mix. Mixes B and D performed the worst in the TS and showed the highest COC leaching.

8.0 CONCLUSIONS

S/S technology has the potential to be an effective method for treatment of WDL sediment based on the outcome of TS Phases 1, 2 and 3. However, further mix optimization (Phase 4) is deemed necessary. The evaluation of chemical data collected during the TS indicates Mix A (10% portland cement, 0% fly ash, and 5% bentonite) is the preferred S/S admixture. The TS physical testing demonstrates that each of the selected admixtures provide a suitable solidification matrix for creating an impermeable cap and decreasing hydraulic conductivity. However, TS chemical data reveal that optimization (Phase 4) of admixtures may further improve stabilization

potential. Well known additives such as GAC, organophyllic clays, or zeolites may be helpful in increasing stabilization potential of Mix A.

Although the TS indicated Mix A to be the preferred S/S mix for WDL, two data gaps have been identified: 1) aggressive TCLP testing is not indicative (over estimates leaching potential) of site-specific field conditions; and 2) mix designs were not optimized to capture the organics mobilized by the increased pH induced by S/S admixtures.

The increasing trend of herbicide leaching observed during Phase 3 may be partially attributed to TCLP sample preparation. The TCLP involves a sample passing through a 9.5 millimeter sieve and placing it with acetic acid (with a pH of approximately 4) into a rotary devise for agitation. Following the agitation sequence, the solution or leachate, is extracted and tested. Although TCLP is a widely accepted test method for leachability, there are precautions/limitations in the usability of its data. The limitations for TCLP data include, but are not limited to, the following:

- The TCLP was initially designed to simulate leaching potential of waste in an unmanaged municipal waste landfill. Organic acids formed from decomposition have been known to leach from these types of landfills. The TCLP method does not simulate site-specific conditions that would likely be observed in the field. TCLP extractions from a portland cement/fly ash-based mass will not likely yield site-specific field conditions because the pH of the acetic acid is not low enough to offset the high pH of the portland cement and/or fly ash, thereby, increasing potential solubility of chlorinated herbicides and phenols.
- The preparation, specifically crushing the solid sample, of the TCLP leachate allows for a larger surface area to be exposed than that typically present in the field. Under field conditions, only the exterior surface area of the solidified mass would be in contact with groundwater. The low permeability of the solidified mass would inhibit groundwater from passing through the mass, therefore, limiting COC availability to leaching.

Due to the need to further optimize the preferred mix design, and to conduct leachate testing that better simulates actual WDL conditions, a fourth TS phase will be performed. The results of WDL TS Phase 4 are included in Attachment 2 of the WDL EE/CA.

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LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This West Doane Lake Treatability Study is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

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Finally, it should be noted that no subsurface exploration can be thorough enough to exclude the possible presence of hazardous materials or wastes at a given site. In cases where contaminants have not been discovered through exploration, this should not be construed as a guarantee that contaminants do not exist. Where sample collection and testing have been performed, AMEC's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at unsampled locations.

TABLES

TABLE 1
Summary of Risk-Based Concentrations for Excavation Workers
WDL Treatability Study
RP - Portland Site

Analyte	Risk-Based Concentration (mg/L)
Dioxins	
2,3,7,8-TCDD	1.41E-08
Dioxin TEQ	1.41E-08
Inorganics	
Aluminum	1.25E+05
Antimony	4.98E+01
Arsenic	5.81E+00
Barium	2.49E+04
Beryllium	2.49E+02
Boron	2.49E+04
Cadmium	6.23E+01
Chromium, Total	3.74E+02
Cobalt	6.23E+03
Copper	4.98E+03
Iron	3.74E+04
Manganese	2.99E+03
Mercury	3.74E+01
Molybdenum	6.23E+02
Nickel	1.25E+04
Selenium	6.23E+02
Silver	1.04E+03
Thallium	8.22E+00
Vanadium	1.25E+02
Zinc	6.23E+04
Herbicides	
2,4,5-T	4.21E+01
2,4,5-TP (Silvex)	1.75E+01
2,4-D	7.21E+01
2,4-DB	4.41E+01
MCPA	1.62E+00
MCPP	4.25E+00
Pesticides	
4,4'-DDD	4.00E-02
4,4'-DDE	3.22E-02
4,4'-DDT	1.50E-02
alpha-BHC	2.79E-02
alpha-Chlordane	8.13E-02
beta-BHC	8.39E-02
Dieldrin	6.07E-03
Endosulfan I	3.04E+01
Endosulfan II	3.04E+01
Endrin	4.17E-01
gamma-BHC (Lindane)	1.46E-01
gamma-Chlordane	8.13E-02
Heptachlor	3.16E-02
Heptachlor epoxide	6.07E-03

TABLE 1
Summary of Risk-Based Concentrations for Excavation Workers
WDL Treatability Study
RP - Portland Site

Analyte	Risk-Based Concentration (mg/L)
Semivolatiles	
1-Methylnaphthalene	3.40E+00
2,3,4,6-Tetrachlorophenol	1.92E+01
2,3,5,6-Tetrachlorophenol	4.56E+01
2,4,5-Trichlorophenol	1.55E+02
2,4,6-Trichlorophenol	9.86E+00
2,4-Dichlorophenol	9.76E+00
2,4-Dimethylphenol	1.49E+02
2-Chloronaphthalene	7.55E+01
2-Chlorophenol	4.99E+01
2-Methylnaphthalene	3.45E+00
2-Methylphenol (o-cresol)	5.65E+02
4-Methylphenol (p-cresol, 3/4 cresol)	5.65E+01
Benzoic acid	5.79E+04
Benzyl alcohol	1.26E+04
Bis(2-Ethylhexyl) pthalate	7.42E-02
Butylbenzylphthalate	1.40E+02
Diethylphthalate	9.56E+03
Di-n-butylphthalate	1.35E+02
Hexachlorobutadiene	4.02E-01
Naphthalene	3.53E+01
Nitrobenzene	3.09E+00
N-Nitrosodi-n-propyl amine	3.42E-01
Pentachlorophenol	5.22E-02
Phenol	6.39E+03
Volatiles	
1,1-Dichloroethane	1.07E+02
1,2,3-Trichlorobenzene	7.43E-01
1,2,4-Trichlorobenzene	7.45E-01
1,2,4-Trimethylbenzene	1.34E+00
1,2-Dibromo-3-chloropropane	3.17E-01
1,2-Dichlorobenzene (o-Dichlorobenzene)	3.61E+01
1,3,5-Trimethylbenzene	1.34E+00
1,3-Dichlorobenzene (m-Dichlorobenzene)	1.49E+01
1,4-Dichlorobenzene (p-Dichlorobenzene)	1.72E+00
2-Butanone (MEK)	1.14E+03
Acetone	7.27E+02
Benzene	1.67E+00
Bromomethane	1.13E+00
Carbon Disulfide	1.27E+02
Chlorobenzene	1.13E+01
Chloroethane	1.87E+01
Chloroform	7.05E-01
Chloromethane	2.03E+01
Ethylbenzene	1.05E+02
Isobutyl alcohol	2.40E+02
iso-Propylbenzene	4.85E+01
m,p-Xylene	2.18E+01
n-Butylbenzene	1.03E+01
n-Propylbenzene	1.77E+01
o-Xylene	2.18E+01
Toluene	2.05E+02

milligrams per liter = mg/L

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples								Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)		
Metals (EPA Method 6000/7000 Series)											
Aluminum	**1.7**		**3.1**		**3.2**		**2.2**		**2.7**		1.25E+05
Antimony	**0.019**	**J**	NT		NT		NT		NT		4.98E+01
Arsenic	**0.021**	**J**	**0.0015**	**J**	0.00037	U	0.00037	U	0.00037	U	5.81E+00
Barium	**0.86**		NT		NT		NT		NT		2.49E+04
Beryllium	0.00005	U	NT		NT		NT		NT		2.49E+02
Boron	0.071	U	NT		NT		NT		NT		2.49E+04
Cadmium	0.00011	U	**0.0014**	**J**	**0.0012**	**J**	**0.00081**	**J**	**0.00058**	**J**	6.23E+01
Calcium	**750**		**140**	**J**	**210**	**J**	**250**		**200**		NA
Chromium	**0.014**		**0.00088**	**J**	**0.0015**	**J**	**0.001**	**J**	**0.003**		3.74E+02
Cobalt	0.00023	U	NT		NT		NT		NT		6.23E+03
Copper	**0.013**		**0.0026**		**0.0026**		**0.0022**		**0.0057**		4.98E+03
Iron	0.015	U	**0.087**	**J**	**0.079**	**J**	**0.057**	**J**	**0.05**	**J**	3.74E+04
Lead	0.0012	U	**0.00011**	**J**	**0.00098**	**J**	**0.00022**	**J**	**0.0032**		NA
Magnesium	0.021	U	0.046	U	0.075	U	0.029	U	0.067	U	NA
Manganese	**0.00078**	**J**	0.00024	U	0.00024	U	0.00024	U	0.00024	U	2.99E+03
Mercury	**0.003**		**0.00066**		**0.00038**		**0.00018**	**J**	0.000055	U	3.74E+01
Molybdenum	**2.6**		NT		NT		NT		NT		6.23E+02
Nickel	**0.09**		**0.42**		**0.17**		**0.12**		**0.061**		1.25E+04
Potassium	**22**		**72**		**44**		**35**		**19**		NA
Selenium	0.0044	U	NT		NT		NT		NT		6.23E+02
Silver	**0.02**		NT		NT		NT		NT		1.04E+03
Sodium	NT		**580**	**J**	**220**	**J**	**100**		**37**		NA
Thallium	**0.062**		NT		NT		NT		NT		8.22E+00
Vanadium	**0.031**		**0.0077**	**J**	**0.0043**		**0.0046**		**0.0061**		1.25E+02
Zinc	0.0029	U	**0.014**	**J**	**0.017**	**J**	**0.012**	**J**	**0.013**	**J**	6.23E+04

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples								Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)		
Pesticides/PCBS (EPA Method 8081/8082)											
4,4'-DDD	0.1	U	**0.11**		**0.057**		**0.028**		**0.023**		4.00E-02
4,4'-DDE	0.11	U	0.00048	U	0.00019	U	**0.00061**	**J**	**0.0002**	**J**	3.22E-02
4,4'-DDT	0.19	U	**0.0066**	**J**	**0.0055**		**0.0035**	**J**	**0.0027**	**J**	1.50E-02
Aldrin	0.13	U	0.00058	U	0.00022	U	**0.00011**		0.000088	U	NA
alpha-BHC	0.13	U	0.00054	U	0.00021	U	**0.00015**	**J**	0.000082	U	2.79E-02
alpha-Chlordane	0.12	U	**0.014**		**0.0083**		**0.0042**	**J**	**0.0035**	**J**	8.13E-02
Aroclor 1016	0.00022	U	NT		NT		NT		NT		NA
Aroclor 1221	0.00022	U	NT		NT		NT		NT		NA
Aroclor 1232	0.00022	U	NT		NT		NT		NT		NA
Aroclor 1242	0.00022	U	NT		NT		NT		NT		NA
Aroclor 1248	0.00022	U	NT		NT		NT		NT		NA
Aroclor 1254	0.00024	U	NT		NT		NT		NT		NA
Aroclor 1260	0.00024	U	NT		NT		NT		NT		NA
beta-BHC	0.21	U	0.00093	U	0.00036	U	**0.00038**	**J**	0.00014	U	8.39E-02
delta-BHC	0.095	U	0.00041	U	0.00016	U	**0.00018**	**J**	0.000063	UJ	NA
Dieldrin	0.12	U	0.00053	U	0.0002	U	**0.0003**	**J**	0.00008	U	6.07E-03
Endosulfan I	0.11	U	**0.0016**	**J**	**0.0012**	**J**	**0.00045**	**J**	**0.0005**	**J**	3.04E+01
Endosulfan II	0.13	U	**0.0063**	**J**	**0.0009**	**J**	**0.0013**	**J**	0.000088	U	3.04E+01
Endosulfan sulfate	0.17	U	**0.0035**	**J**	**0.0014**	**J**	**0.00059**	**J**	0.00011	U	NA
Endrin	0.00069	U	**0.0098**		**0.0066**		**0.00091**	**J**	**0.0033**		4.17E-01
Endrin aldehyde	1.1	U	0.0049	U	0.0019	U	**0.0015**	**J**	0.00074	U	NA
Endrin Ketone	0.12	U	**0.0023**	**J**	**0.0013**	**J**	**0.00048**	**J**	**0.00018**	**J**	NA
gamma-BHC (Lindane)	0.00011	U	0.00054	U	0.00021	U	**0.0003**	**J**	0.000082	U	1.46E-01
gamma-Chlordane	0.11	U	0.0005	U	0.00019	U	**0.00051**	**J**	0.000075	UJ	8.13E-02
Heptachlor	0.00029	U	0.00073	U	0.00028	U	**0.00041**	**J**	0.00011	U	3.16E-02
Heptachlor epoxide	0.00014	U	0.00044	U	0.00017	U	**0.00023**	**J**	0.000066	UJ	6.07E-03
Methoxychlor	0.0013	U	0.0017	U	0.00064	U	**0.00031**		0.00025	U	NA
Toxaphene	NT		0.11	U	0.043	U	**0.021**		0.017	U	NA

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples								Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)		
Herbicides (EPA Method 8151A)											
2,4,5-T	**0.02**		**0.1**		**0.055**		**0.017**		**0.014**		4.21E+01
2,4,5-TP (Silvex)	0.00024	U	0.0017	U	0.0017	U	0.000017	U	0.000017	U	1.75E+01
2,4-D	**0.92**		**12**		**5.7**		**1.4**		**1.1**		7.21E+01
2,4-DB	**0.084**		**0.36**		**0.19**		**0.076**		**0.071**		4.41E+01
4-Nitrophenol	0.00028	U	0.002	U	0.002	U	0.00002	U	0.00002	U	NA
Bromoxynil	0.001	U	0.008	U	0.008	U	0.00008	U	0.00008	U	NA
Dalapon	0.00041	U	0.0034	UJ	0.0034	UJ	0.000034	UJ	0.000034	UJ	NA
Dicamba	0.0003	U	0.0017	U	0.0017	U	0.000017	U	0.000017	U	NA
Dichlorprop	**0.0055**		**0.057**		**0.021**		**0.0085**		**0.006**		NA
Dinoseb	0.00026	U	0.0044	U	0.0044	U	0.000044	U	0.000044	U	NA
MCPA	**0.21**		**2.1**		**0.9**		**0.21**		**0.16**		1.62E+00
MCPP	**0.03**		**0.29**		**0.12**		**0.023**		**0.018**	**J**	4.25E+00
Pentachlorophenol	0.00031	U	0.0015	U	0.0015	U	0.000015	U	0.000015	U	5.22E-02
Volatiles (EPA Method 8260B)											
1,1,1,2-Tetrachloroethane	0.03	U	0.0003	U	0.0012	U	0.0003	U	0.0006	U	NA
1,1,1-Trichloroethane	0.033	U	0.00033	U	0.0013	U	0.00033	U	0.00065	U	NA
1,1,2,2-Tetrachloroethane	0.041	U	0.00041	U	0.0016	U	0.00041	U	0.00081	U	NA
1,1,2-Trichloroethane	0.041	U	0.00041	U	0.0016	U	0.00041	U	0.00082	U	NA
1,1-Dichloroethane	0.039	U	0.00039	U	0.0016	U	0.00039	U	0.00078	U	1.07E+02
1,1-Dichloroethene	0.043	U	0.00043	U	0.0017	U	0.00043	U	0.00086	U	NA
1,1-Dichloropropene	0.04	U	0.0004	U	0.0016	U	0.0004	U	0.0008	U	NA
1,2,3-Trichlorobenzene	0.024	U	**0.00025**	**J**	0.00096	U	0.00024	U	0.00048	U	7.43E-01
1,2,3-Trichloropropane	0.053	U	0.00053	U	0.0021	U	0.00053	U	0.0011	U	NA
1,2,4-Trichlorobenzene	0.048	U	**0.00063**	**J**	0.0019	U	**0.00075**	**J**	0.00095	U	7.45E-01
1,2,4-Trimethylbenzene	0.037	U	**0.0037**	**J**	**0.0042**	**J**	**0.0035**	**J**	**0.0033**	**J**	1.34E+00
1,2-Dibromo-3-chloropropane	0.037	U	0.00037	U	0.0015	U	0.00037	U	0.00074	U	3.17E-01
1,2-Dibromoethane	0.037	U	0.00037	U	0.0015	U	0.00037	U	0.00073	U	NA
1,2-Dichlorobenzene	**0.08**	**J**	**0.03**		**0.033**		**0.028**		**0.027**		3.61E+01
1,2-Dichloroethane	0.022	U	0.00022	U	0.00086	U	0.00022	U	0.00043	U	NA

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples								Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)		
1,2-Dichloropropane	0.039	U	0.00039	U	0.0016	U	0.00039	U	0.00078	U	NA
1,3,5-Trimethylbenzene	0.039	U	**0.0021**	**J**	**0.0024**	**J**	**0.0019**	**J**	**0.0019**	**J**	1.34E+00
1,3-Dichlorobenzene	0.033	U	**0.001**	**J**	**0.0014**	**J**	**0.0011**	**J**	**0.00097**	**J**	1.49E+01
1,3-Dichloropropane	0.034	U	0.00034	U	0.0013	U	0.00034	U	0.00067	U	NA
1,4-Dichlorobenzene	0.027	U	**0.0052**		**0.0065**	**J**	**0.005**		**0.0049**	**J**	1.72E+00
2,2-Dichloropropane	0.08	U	0.0008	U	0.0032	U	0.0008	U	0.0016	U	NA
2-Butanone (MEK)	0.41	UJ	NT		NT		NT		NT		1.14E+03
2-Chlorotoluene	0.042	U	0.00042	U	0.0017	U	0.00042	U	0.00084	U	NA
2-Ethyl-1-hexanol	1.3	U	**0.79**	**J**	**1**	**J**	**0.43**	**J**	**0.69**	**J**	NA
2-Hexanone	0.38	U	NT		NT		NT		NT		NA
4-Chlorotoluene	0.043	U	0.00043	U	0.0017	U	0.00043	U	0.00085	U	NA
4-Isopropyltoluene	0.033	U	0.00033	U	0.0013	U	0.00033	U	0.00065	U	NA
4-methyl-2-pentanone (MIBK)	0.23	U	NT		NT		NT		NT		NA
Acetone	0.53	U	NT		NT		NT		NT		7.27E+02
Benzene	0.026	U	**0.00078**	**J**	0.001	U	**0.00053**	**J**	**0.00052**	**J**	1.67E+00
Bromobenzene	0.053	U	0.00053	U	0.0021	U	0.00053	U	0.0011	U	NA
Bromochloromethane	0.043	U	0.00043	U	0.0017	U	0.00043	U	0.00086	U	NA
Bromodichloromethane	0.025	U	0.00025	U	0.001	U	0.00025	U	0.0005	U	NA
Bromoform	0.05	U	0.0005	U	0.002	U	0.0005	U	0.00099	U	NA
Bromomethane	**0.43**	**J**	0.0016	U	0.0063	U	0.0016	U	0.0032	U	1.13E+00
Carbon disulfide	0.036	U	NT		NT		NT		NT		1.27E+02
Carbon tetrachloride	0.041	U	0.00041	U	0.0016	U	0.00041	U	0.00082	U	NA
Chlorobenzene	0.039	U	**0.0049**	**J**	**0.0071**	**J**	**0.0044**	**J**	**0.0043**	**J**	1.13E+01
Chloroethane	0.063	U	0.00063	U	0.0025	U	0.00063	U	0.0013	U	1.87E+01
Chloroform	0.035	U	0.00035	U	0.0014	U	0.00035	U	0.0007	U	7.05E-01
Chloromethane	0.06	U	0.0006	U	0.0024	U	0.0006	U	0.0012	U	2.03E+01
cis-1,2-Dichloroethene	0.031	U	0.00031	U	0.0012	U	0.00031	U	0.00062	U	NA
cis-1,3-Dichloropropene	0.034	U	0.00034	U	0.0013	U	0.00034	U	0.00067	U	NA

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples										Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)				
Dibromochloromethane	0.026	U	0.00026	U	0.001	U	0.00026	U	0.00052	U			NA
Dibromomethane	0.038	U	0.00038	U	0.0015	U	0.00038	U	0.00075	U			NA
Dichlorodifluoromethane	0.039	U	0.00039	U	0.0015	U	0.00039	U	0.00077	U			NA
Ethylbenzene	0.032	U	**0.0017**	**J**	**0.0021**	**J**	**0.0015**	**J**	**0.0015**	**J**			1.05E+02
Hexachlorobutadiene	0.034	U	0.00034	U	0.0013	U	0.00034	U	0.00067	U			4.02E-01
Iodomethane	1.9	U	NT		NT		NT		NT				NA
Isobutylalcohol	14	U	**0.46**	**J**	0.56	U	0.14	U	0.28	U			2.40E+02
Isopropylbenzene	0.033	U	**0.00043**	**J**	0.0013	U	**0.00037**	**J**	0.00065	U			4.85E+01
m,p-Xylene	0.049	U	**0.0044**	**J**	**0.0052**	**J**	**0.0044**	**J**	**0.0045**	**J**			2.18E+01
Methylene chloride	0.15	U	0.0015	U	0.0062	U	0.0015	U	0.0031	U			NA
Naphthalene	0.035	U	0.00035	U	0.0014	U	0.00035	U	0.00071	U			3.53E+01
n-Butylbenzene	0.044	U	0.00044	U	0.0017	U	**0.00098**	**J**	0.00087	U			1.03E+01
n-Propylbenzene	0.029	U	**0.00095**	**J**	0.0011	U	**0.00094**	**J**	**0.00092**	**J**			1.77E+01
o-Xylene	0.037	U	**0.0011**	**J**	0.0015	U	**0.001**	**J**	**0.0009**	**J**			2.18E+01
sec-Butylbenzene	0.042	U	0.00042	U	0.0017	U	0.00042	U	0.00084	U			NA
Styrene	0.033	U	0.00033	U	0.0013	U	0.00033	U	0.00066	U			NA
tert-Butylbenzene	0.035	U	0.00035	U	0.0014	U	0.00035	U	0.00069	U			NA
Tetrachloroethene	0.033	U	0.00033	U	0.0013	U	0.00033	U	0.00066	U			NA
Toluene	0.031	U	0.00036	U	0.0012	U	0.00036	U	0.00062	U			2.05E+02
trans-1,2-Dichloroethene	0.046	U	0.00046	U	0.0018	U	0.00046	U	0.00091	U			NA
trans-1,3-Dichloropropene	0.03	U	0.0003	U	0.0012	U	0.0003	U	0.0006	U			NA
Trichloroethene	0.028	U	0.00028	U	0.0011	U	0.00028	U	0.00055	U			NA
Trichlorofluoromethane	0.049	U	0.00049	U	0.0019	U	0.00049	U	0.00097	U			NA
Vinyl chloride	0.069	U	0.00069	U	0.0028	U	0.00069	U	0.0014	U			NA

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples								Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)		
Semi-volatiles (EPA Method 8270C)											
1,2,4-Trichlorobenzene	0.0058	U	0.0046	U	0.0048	U	0.0046	U	0.0046	U	7.45E-01
1,2-Dichlorobenzene	**0.03**		**0.019**		**0.023**		**0.017**		**0.02**		3.61E+01
1,3-Dichlorobenzene	0.0056	U	0.0045	U	0.0047	U	0.0045	U	0.0045	U	1.49E+01
1,4-Dichlorobenzene	0.0064	U	0.0051	U	0.0053	U	0.0051	U	0.0051	U	1.72E+00
1-Methylnaphthalene	0.00091	U	0.00073	U	0.00076	U	0.00073	U	0.00073	U	3.40E+00
2,3,4,6-Tetrachlorophenol	0.011	U	NT		NT		NT		NT		1.92E+01
2,3,5,6-Tetrachlorophenol	0.0054	UJ	NT		NT		NT		NT		4.56E+01
2,4,5-Trichlorophenol	**0.0062**	**J**	**0.065**	**J**	**0.03**		**0.019**	**J**	**0.0089**	**J**	1.55E+02
2,4,6-Trichlorophenol	0.0085	UJ	**0.024**	**J**	**0.014**	**J**	0.0068	U	0.0068	U	9.86E+00
2,4-Dichlorophenol	**0.2**	**J**	**1.8**	**J**	**0.56**		**0.26**		**0.15**		9.76E+00
2,4-Dimethylphenol	0.015	UJ	0.012	UJ	0.013	U	0.012	U	0.012	U	1.49E+02
2,4-Dinitrophenol	0.075	UJ	0.06	UJ	0.063	U	0.06	U	0.06	U	NA
2,4-Dinitrotoluene	0.0036	U	0.0029	U	0.003	U	0.0029	U	0.0029	U	NA
2,6-Dinitrotoluene	0.0021	U	0.0017	U	0.0018	U	0.0017	U	0.0017	U	NA
2-Chloronapthalene	0.00077	U	**0.084**		**0.03**		0.00062	U	0.00062	U	7.55E+01
2-Chlorophenol	**0.012**	**J**	**0.11**	**J**	**0.036**		**0.012**	**J**	**0.0072**	**J**	4.99E+01
2-Methyl-4,6-dinitrophenol	0.066	UJ	0.053	UJ	0.055	U	0.053	UJ	0.053	UJ	NA
2-Methylnaphthalene	0.0018	U	0.0014	U	0.0015	U	0.0014	U	0.0014	U	3.45E+00
2-Methylphenol	**0.035**	**J**	**0.24**	**J**	**0.078**	**J**	**0.022**	**J**	**0.016**	**J**	5.65E+02
2-Nitroaniline	0.0028	UJ	0.0022	U	0.0023	U	0.0022	U	0.0022	U	NA
2-Nitrophenol	0.0056	UJ	0.0045	UJ	0.0047	U	0.0045	U	0.0045	U	NA
3,3'-Dichlorobenzidine	**0.014**	**R**	0.011	U	0.012	U	0.011	U	0.011	U	NA
3/4-Cresol	0.0047	UJ	**0.0082**	**J**	0.0039	UJ	0.0038	UJ	0.0038	UJ	5.65E+01
3-Nitroaniline	**0.0028**	**R**	0.0022	U	0.0023	U	0.0022	U	0.0022	U	NA
4-Bromophenylphenyl ether	0.0028	U	0.0022	U	0.0023	U	0.0022	U	0.0022	U	NA
4-Chloro-3-methylphenol	0.004	UJ	**0.017**	**J**	**0.0077**	**J**	0.0032	UJ	0.0032	UJ	NA

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples								Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)		
4-Chloroaniline	0.0048	UJ	0.0038	U	0.004	U	0.0038	U	0.0038	U	NA
4-Chlorophenylphenyl ether	0.0035	U	0.0028	U	0.0029	U	0.0028	U	0.0028	U	NA
4-Nitroaniline	0.0081	UJ	0.0065	U	0.0068	U	0.0065	U	0.0065	U	NA
4-Nitrophenol	0.017	UJ	0.014	UJ	0.014	UJ	0.014	UJ	0.014	UJ	NA
Acenaphthene	0.0014	U	0.0012	U	0.0012	U	0.0012	U	0.0012	U	NA
Acenaphthylene	0.0011	U	0.0009	U	0.00093	U	0.0009	U	0.0009	U	NA
Anthracene	0.00066	U	0.00053	U	0.00055	U	0.00053	U	0.00053	U	NA
Benzo(a)anthracene	0.001	U	0.00081	U	0.00084	U	0.00081	U	0.00081	U	NA
Benzo(a)pyrene	0.00048	U	0.00038	U	0.0004	U	0.00038	U	0.00038	U	NA
Benzo(b)fluoranthene	0.0011	U	NT		NT		NT		NT		NA
Benzo(ghi)perylene	0.00069	U	0.00055	U	0.00058	U	0.00055	U	0.00055	U	NA
Benzo(k)fluoranthene	0.00073	U	NT		NT		NT		NT		NA
Benzofluoranthenes	NT		0.00094	U	0.00098	U	0.00094	U	0.00094	U	NA
Benzoic acid	0.01	U	**0.23**		**0.062**	**J**	0.0082	U	0.0082	U	5.79E+04
Benzyl alcohol	0.0037	UJ	0.003	UJ	0.0031	UJ	0.003	UJ	0.003	UJ	1.26E+04
Bis(2-Chloroethoxy) methane	0.0031	U	0.0025	U	0.0026	U	0.0025	U	0.0025	U	NA
Bis(2-Chloroethyl) ether	0.0029	U	0.0023	U	0.0024	U	0.0023	U	0.0023	U	NA
Bis(2-chloroisopropyl) Ether	0.0027	U	0.0022	U	0.0023	U	0.0022	UJ	0.0022	UJ	NA
bis(2-Ethylhexyl) phthalate	0.006	U	0.0048	U	0.005	U	0.0048	UJ	0.0048	UJ	7.42E-02
Butylbenzylphthalate	**0.0025**	**J**	0.0015	U	0.0016	U	0.0015	U	**0.0032**	**J**	1.40E+02
Carbazole	NT		0.0018	U	0.0018	U	0.0018	U	0.0018	U	NA

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample		Treated Sequential Batch Leach Test Samples								Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)		Cycle1 W003 04/04/2006 Leachate (mg/L)		Cycle2 W003 04/04/2006 Leachate (mg/L)		Cycle3 W003 04/06/2006 Leachate (mg/L)		Cycle4 W003 04/07/2006 Leachate (mg/L)		
Chrysene	0.00052	U	0.00042	U	0.00043	U	0.00042	U	0.00042	U	NA
Dibenzo(a,h)anthracene	0.00099	U	0.00079	U	0.00083	U	0.00079	U	0.00079	U	NA
Dibenzofuran	0.0027	U	0.0022	U	0.0023	U	0.0022	U	0.0022	U	NA
Diethylphthalate	0.0022	U	0.0018	U	0.0018	U	0.0018	U	0.0018	U	9.56E+03
Dimethylphthalate	0.0028	U	0.0022	U	0.0023	U	0.0022	U	0.0022	U	NA
Di-n-butylphthalate	**0.0068**	**J**	**0.0044**	**J**	**0.0041**	**J**	0.0026	U	0.0026	U	1.35E+02
Di-n-octyl phthalate	0.0043	U	0.0034	U	0.0036	U	0.0034	U	0.0034	U	NA
Fluoranthene	0.00074	U	0.00059	U	0.00062	U	0.00059	U	0.00059	U	NA
Fluorene	0.00091	U	0.00073	U	0.00076	U	0.00073	U	0.00073	U	NA
Hexachlorobenzene	0.0038	U	0.003	U	0.0032	U	0.003	U	0.003	U	NA
Hexachlorobutadiene	0.0078	U	0.0062	U	0.0065	U	0.0062	U	0.0062	U	4.02E-01
Hexachlorocyclopentadiene	0.0052	U	0.0042	U	0.0043	U	0.0042	UJ	0.0042	UJ	NA
Hexachloroethane	0.0075	U	0.006	U	0.0063	U	0.006	U	0.006	U	NA
Indeno(1,2,3-cd)pyrene	0.00075	U	0.0006	U	0.00063	U	0.0006	U	0.0006	U	NA
Isophorone	0.0023	U	0.0018	U	0.0019	U	0.0018	U	0.0018	U	NA
Naphthalene	**0.057**	**J**	**0.53**		**0.18**		**0.059**		**0.033**		3.53E+01
Nitrobenzene	0.0017	U	**0.3**		0.0014	U	0.0014	U	0.0014	U	3.09E+00
N-Nitrosodi-n-propyl amine	0.0029	U	0.0023	U	0.0024	U	0.0023	UJ	0.0023	UJ	3.42E-01
N-Nitrosodiphenylamine	0.0027	U	0.0022	U	0.0023	U	0.0022	U	0.0022	U	NA
Pentachlorophenol	0.011	UJ	0.0086	UJ	0.009	U	0.0086	UJ	0.0086	UJ	5.22E-02
Phenanthrene	0.0013	U	0.001	U	0.0011	U	0.001	U	0.001	U	NA
Phenol	0.0088	UJ	**0.035**	**J**	**0.016**	**J**	**0.0073**	**J**	0.007	UJ	6.39E+03
Pyrene	0.00084	U	0.00067	U	0.0007	U	0.00067	U	0.00067	U	NA

TABLE 2
TCLP Analytical Results for W003 Sequential Batch Leach Test
WDL Treatability Study
RP - Portland Site

Chemical Name	Treated TCLP Sample	Treated Sequential Batch Leach Test Samples				Risk-Based Concentrations (mg/L)
	W003-CFB 03/02/2006 Leachate (mg/L)	Cycle1 W003 04/04/2006 Leachate (mg/L)	Cycle2 W003 04/04/2006 Leachate (mg/L)	Cycle3 W003 04/06/2006 Leachate (mg/L)	Cycle4 W003 04/07/2006 Leachate (mg/L)	
Dioxins/Furans (EPA Method 8280/8290)						
1,2,3,4,6,7,8,9-OCDD	NT	0.0000000140 U	0.0000000110 U	0.0000000110 U	0.0000000110 U	NA
1,2,3,4,6,7,8,9-OCDF	NT	0.0000000110 U	0.0000000084 U	0.0000000100 U	0.0000000110 U	NA
1,2,3,4,6,7,8-HpCDD	NT	0.0000000096 U	0.0000000093 U	0.0000000079 U	0.0000000080 U	NA
1,2,3,4,6,7,8-HpCDF	NT	0.0000000057 U	0.0000000041 U	0.0000000042 U	0.0000000042 U	NA
1,2,3,4,7,8,9-HpCDF	NT	0.0000000063 U	0.0000000046 U	0.0000000047 U	0.0000000046 U	NA
1,2,3,4,7,8-HxCDD	NT	0.0000000092 U	0.0000000081 U	0.0000000084 U	0.0000000074 U	NA
1,2,3,4,7,8-HxCDF	NT	0.0000000067 U	0.0000000062 U	0.0000000059 U	0.0000000054 U	NA
1,2,3,6,7,8-HxCDD	NT	0.0000000084 U	0.0000000074 U	0.0000000077 U	0.0000000068 U	NA
1,2,3,6,7,8-HxCDF	NT	0.0000000062 U	0.0000000057 U	0.0000000055 U	0.0000000050 U	NA
1,2,3,7,8,9-HxCDD	NT	0.0000000082 U	0.0000000072 U	0.0000000075 U	0.0000000066 U	NA
1,2,3,7,8,9-HxCDF	NT	0.0000000070 U	0.0000000064 U	0.0000000062 U	0.0000000056 U	NA
1,2,3,7,8-PeCDD	NT	0.0000000160 U	0.0000000120 U	0.0000000120 U	0.0000000100 U	NA
1,2,3,7,8-PeCDF	NT	0.0000000071 U	0.0000000066 U	0.0000000069 U	0.0000000055 U	NA
2,3,4,6,7,8-HxCDF	NT	0.0000000067 U	0.0000000062 U	0.0000000060 U	0.0000000054 U	NA
2,3,4,7,8-PeCDF	NT	0.0000000069 U	0.0000000064 U	0.0000000067 U	0.0000000053 U	NA
2,3,7,8-TCDD	NT	0.0000000068 U	**0.0000000065 J**	0.0000000063 U	0.0000000053 U	1.41E-08
2,3,7,8-TCDF	NT	0.0000000056 U	0.0000000046 U	0.0000000045 U	0.0000000039 U	NA

Notes:
J = The associated analytical result is quantitatively uncertain; indicative of a data limitation related to a quality control (QC) element that exceeds required acceptance limits.
mg/L = milligrams per liter
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
NA = Not applicable; no risk-based concentration (RBC) calculated because either no toxicity data are available or analyte was not detected in leachate.
NT = not tested
R = Indicates that a result has been rejected due to serious QC problems; it is not possible to determine whether the analyte is present or absent.
U = The analytical result must be considered to be nondetected at the concentration listed.
UJ = The analyte was not detected at a concentration above the method reporting limit. However, the reporting limit is approximate and may be inaccurate or imprecise.
Bold = detected
= exceeds RBCs

TABLE 3
Solidification/Stabilization (S/S) Mix Ratios
WDL Treatability Study
RP - Portland Site

Mixture ID	% Portland Cement	% Fly Ash	% Bentonite
A	10	0	5
B	10	10	5
C	10	0	10
D	20	10	10

TABLE 4
Volatile Organic Compound Off-Gas Results Summary
WDL Treatability Study
RP - Portland Site

Sample ID	VOC Readings (ppm)				Performance Criteria (ppm)
	During Mixing	Cure Time			
		Day 1	Day 3	Day 5	
TS-1 WDLSS-1A	10 - 12	2.2	2 - 5.4	--	< 20
TS-1 WDLSS-1B	18 - 20	2.5	1.8	--	< 20
TS-1 WDLSS-1C	NA	4.2	1.8	--	< 20
TS-1 WDLSS-1D	0.4 - 0.7	3.4	4.2	--	< 20
TS-2 WDLSS-1A	1.7	0.1	0 - 0.1	--	< 20
TS-2 WDLSS-1B	0.3 - 0.5	0.7	1.7 - 4.0	--	< 20
TS-2 WDLSS-1C	1.5 - 1.7	0.5	0.9 - 4.6	--	< 20
TS-2 WDLSS-1D	0	0.8	2.5 - 6.8	--	< 20
TS-3 WDLSS-1A	0.1 - 1	0.1	--	0.1 - 0.3	< 20
TS-3 WDLSS-1B	0	0.4	--	0.3 - 5.8	< 20
TS-3 WDLSS-1C	0.5 - 0.7	1.4 - 1.7	--	0.3 - 0.4	< 20
TS-3 WDLSS-1D	4.0 - 5.0	2.9	--	0.3 - 2.0	< 20

Notes:
VOC = volatile organic compound
ppm = parts per million
NA = not applicable
-- not tested

TABLE 5
Unconfined Compressive Strength Results Summary
WDL Treatability Study
RP - Portland Site

Sample ID	UCS (psi)				Performance Criteria (psi)
	Day 3	Day 5	Day 7	Day 28	
TS-1 WDLSS-1A	79	--	95	121.5	≥ 50
TS-1 WDLSS-1B	96	--	91	165	≥ 50
TS-1 WDLSS-1C	75	--	86	130.5	≥ 50
TS-1 WDLSS-1D	105	--	112	190	≥ 50
TS-2 WDLSS-1A	60.6	--	81	134	≥ 50
TS-2 WDLSS-1B	62.5	--	75.4	114.5	≥ 50
TS-2 WDLSS-1C	45.9	--	55	89	≥ 50
TS-2 WDLSS-1D	96.6	--	135	217	≥ 50
TS-3 WDLSS-1A	--	91	101	174	≥ 50
TS-3 WDLSS-1B	--	86	88	164.5	≥ 50
TS-3 WDLSS-1C	--	87	82	155	≥ 50
TS-3 WDLSS-1D	--	177.5	129	171	≥ 50

Notes:

-- = not tested

UCS = unconfined compressive strength

psi = pounds per square inch

= shaded cell indicates performance criteria failure

TABLE 6
Hydraulic Conductivity Results Summary
WDL Treatability Study
RP - Portland Site

Sample ID	Hydraulic Conductivity (cm/sec) Untreated 1 psi Consolidated Stress	Hydraulic Conductivity (cm/sec) Untreated 2 psi Consolidated Stress	Hydraulic Conductivity* (cm/sec) Treated 5 psi Consolidated Stress	Performance Criteria (cm/sec)
TS-1 WDLSS-1A	4.00E-07 (TS-1)	2.00E-07 (TS-1)	6.00E-08	≤1.00E-07
TS-1 WDLSS-1B			7.00E-08	≤1.00E-07
TS-1 WDLSS-1C			7.00E-08	≤1.00E-07
TS-1 WDLSS-1D			1.00E-08	≤1.00E-07
TS-2 WDLSS-1A	8.00E-08 (TS-2)	6.00E-08 (TS-2)	2.00E-08	≤1.00E-07
TS-2 WDLSS-1B			2.00E-08	≤1.00E-07
TS-2 WDLSS-1C			< 1.00E-08*	≤1.00E-07
TS-2 WDLSS-1D			< 1.00E-08*	≤1.00E-07
TS-3 WDLSS-1A	2.00E-07 (TS-3)	2.00E-07 (TS-3)	< 1.00E-08*	≤1.00E-07
TS-3 WDLSS-1B			2.00E-08	≤1.00E-07
TS-3 WDLSS-1C			3.00E-08	≤1.00E-07
TS-3 WDLSS-1D			2.00E-08	≤1.00E-07

Notes:
psi = pounds per square inch
cm/sec = centimeters per second
* Reported as < 1.00E-08 cm/sec at or near system detection limit

TABLE 7
Wet/Dry Durability Results Summary
WDL Treatability Study
RP - Portland Site

Sample ID	Day 3 Water Content (%)	Wet Density (pcf)	Specimen 1- Maximum Volume Change (% of original volume)	Specimen 1 - Maximum Water Content (% based on original oven dry weight)	Specimen 2 - Soil/Reagent Mass Loss (% of original oven dry weight)	Comments
TS-1 WDLSS-1A	61	101	9400%	63	7	Mold did not break throughout test.
TS-1 WDLSS-1B	53	102	93	54	5	Mold did not break throughout test.
TS-1 WDLSS-1C	59	97	82	59	test failure	Specimen 1 broke in cycle 2 and specimen 2 broke in cycle 10.
TS-1 WDLSS-1D	56	101	94	56	1	Mold did not break throughout test.
TS-2 WDLSS-1A	96	87	84	83	test failure	Specimen 1 broke in cycle 11 and specimen 2 broke in cycle 1.
TS-2 WDLSS-1B	82	89	84	75	test failure	Specimen 1 broke in cycle 4 and specimen 2 broke in cycle 1.
TS-2 WDLSS-1C	101	85	80	102	test failure	Specimen 1 broke in cycle 4 and specimen 2 broke in cycle 1.
TS-2 WDLSS-1D	72	90	91	62	5	Mold did not break throughout test.
TS-3 WDLSS-1A	59	104	94	55	test failure	Specimen 1 broke in cycle 9 and specimen 2 broke in cycle 3.
TS-3 WDLSS-1B	54	101	90	51	12	Mold did not break throughout test.
TS-3 WDLSS-1C	63	101	92	64	test failure	Specimen 1 broke in cycle 4 and specimen 2 broke in cycle 2.
TS-3 WDLSS-1D	54	104	92	47	5	Mold did not break throughout test.

Notes:
The specimens noted above are two sample molds of the same mix as required in ASTM D559 test method.
pcf = pounds per cubic foot
= shaded cell indicates test failure
Consolidated stress for Specimen 1 was 1 pound per square inch (psi) and for Specimen 2 was 2 psi.

TABLE 8
Moisture Content Results Summary
WDL Treatability Study
RP - Portland Site

Sample ID	Moisture Content - Prior to Mixing (%)	Water Added During Mixing (mL)	Moisture Content (%)			
			Immediately After Adding Water (%)	3 day/5 day Cure (%)	7 day Cure (%)	28 day Cure (%)
TS-1 WDLSS-1A	81	75	83	61	60	60
TS-1 WDLSS-1B	81	75	83	53	52	53
TS-1 WDLSS-1C	81	100	82	59	59	45
TS-1 WDLSS-1D	81	900	101	56	54	53
TS-2 WDLSS-1A	142	0	142	96	95	95
TS-2 WDLSS-1B	142	0	142	82	82	82
TS-2 WDLSS-1C	142	370	155	101	101	101
TS-2 WDLSS-1D	142	480	158	72	71	70
TS-3 WDLSS-1A	72	186	76	59	59	59
TS-3 WDLSS-1B	72	256	77	54	54	53
TS-3 WDLSS-1C	72	571	84	63	64	59
TS-3 WDLSS-1D	72	1000	92	54	53	53
W003	82	143	85	NM	NM	NM

Notes:
mL = milliliters
NM = Not Measured

TABLE 9
General Chemistry and Petroleum Hydrocarbon Analytical Results for W003, TS-1, TS-2, and TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	Analytical Method	Units (Leachate)	W003-CFB 03/02/2006 Leachate	Cycle1 W003 04/04/2006 Leachate	Cycle2 W003 04/04/2006 Leachate	Cycle3 W003 04/06/2006 Leachate	Cycle4 W003 04/07/2006 Leachate	Units (Bulk)	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated)	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated)	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated)
pH	EPA Method 9045C	NA	NT	NT	NT	NT	NT	SU	**7.43**	**9.6**	**10.5**
Percent Moisture	Calculated	NA	NT	NT	NT	NT	NT	%	**46.6**	**60.1**	**45.7**
Total Volatile Solids	EPA Method 160.4	NA	NT	NT	NT	NT	NT	mg/kg	**6.3**	**6.3**	**3.4**
Percent Solids	EPA Method 160.3	NA	NT	NT	NT	NT	NT	%	**57**	**41**	**56**
Ammonia as Nitrogen	EPA Method 350.1	NA	NT	NT	NT	NT	NT	mg/kg	**200**	**640**	**420**
Chloride	EPA Method 300.0A	NA	NT	NT	NT	NT	NT	mg/kg	**1400**	**120**	**260**
Nitrate	EPA Method 300.0A	NA	NT	NT	NT	NT	NT	mg/kg	**0.15 J**	**0.11 J**	**0.073 J**
Sulfate*	EPA Method 300.0A	mg/L	**330**	NT	NT	NT	NT	mg/kg	**2600**	**120**	**140**
Total Organic Carbon	EPA Method 9060	NA	NT	NT	NT	NT	NT	mg/kg	**26000**	**32000**	**21000**
Diesel Range Organics	NWTPH-HCID	NA	NT	NT	NT	NT	NT	mg/kg	**4000**	**700**	**580**
Gasoline Range Hydrocarbons	NWTPH-HCID	NA	NT	NT	NT	NT	NT	mg/kg	**1800**	**110**	**84**
Residual Range Organics	NWTPH-HCID	NA	NT	NT	NT	NT	NT	mg/kg	**2200**	**840**	**1000**
Diesel Range Organics	NWTPH-DX	mg/L	NT	**23**	**4.5**	**4.2**	**2.4**	mg/kg	**5600**	**840**	**700**
Residual Range Organics	NWTPH-DX	mg/L	NT	**0.54 J**	<0.48	**0.54 J**	<0.48	mg/kg	**2500**	**1000**	**1200**
Gasoline Range Hydrocarbons	NWTPH-GX	NA	NT	NT	NT	NT	NT	mg/kg	**1700**	**230**	**96**

Notes:
NA = Not Applicable
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
SU = standard units
NT = not tested
J = Indicates that the associated result is quantitatively uncertain
* Sulfate analysis for sample W003-CFB was performed using a standard test method, and not a TCLP method.
Bold = detected

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Metals (EPA Method 6000/7000 Series)							
Aluminum	**16000**	**0.035 J**	**1.2**	**0.95**	**0.8**	**2.2**	1.25E+05
Antimony	**12**	**0.056**	0.003 U	0.003 U	0.003 U	0.003 U	4.98E+01
Arsenic	**61**	**0.063**	**0.041 J**	**0.026 J**	**0.023 J**	**0.0052 J**	5.81E+00
Barium	**160**	**0.39**	**0.33**	**0.47**	**0.32**	**0.79**	2.49E+04
Beryllium	**0.61**	0.00005 U	0.00005 U	0.00005 U	0.00005 U	**0.00015 J**	2.49E+02
Boron	**54 J**	**0.047 J**	0.017 U	**0.61 J**	0.017 U	**0.19 J**	2.49E+04
Cadmium	**0.6**	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	6.23E+01
Calcium	**25000**	**660**	**800**	**780**	**780**	**750**	NA
Chromium	**72**	**0.0035 J**	**0.049**	**0.053**	**0.055**	**0.028**	3.74E+02
Cobalt	**15**	**0.037**	**0.00057 J**	**0.00064 J**	**0.00062 J**	**0.00043 J**	6.23E+03
Copper	**52**	0.00065 U	**0.022**	**0.02**	**0.023**	**0.042**	4.98E+03
Iron	**26000**	**14**	0.015 U	0.015 U	0.015 U	**0.028 J**	3.74E+04
Lead	**560**	**0.02**	0.0012 U	0.0012 U	0.0012 U	0.0012 U	NA
Magnesium	**3800**	**11**	0.021 U	0.038 U	0.028 U	0.021 U	NA
Manganese	**490**	**4.7**	0.00024 U	0.00024 U	0.00024 U	0.00024 U	2.99E+03
Mercury	**0.62**	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	3.74E+01
Molybdenum	**84**	**0.25**	**1.5**	**1.3**	**1.4**	**0.91**	6.23E+02
Nickel	**130**	**0.5**	**0.093**	**0.076**	**0.076**	**0.065**	1.25E+04
Potassium	**780**	**5.6**	**16**	**16**	**15**	**22**	NA
Selenium	**1.9**	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	6.23E+02
Silver	**0.46**	**0.029**	0.00083 U	0.00083 U	0.00083 U	0.00083 U	1.04E+03
Sodium	**3700**	NT	NT	NT	NT	NT	NA
Thallium	**0.18 J**	**0.023 J**	**0.063**	**0.069**	**0.067**	**0.065**	8.22E+00
Vanadium	**120**	0.00025 U	**0.11**	**0.16**	**0.13**	**0.043**	1.25E+02
Zinc	**230**	**0.0082**	**0.011 J**	**0.011 J**	**0.01 J**	**0.0075 J**	6.23E+04

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Pesticides/PCBS (EPA Method 8081/8082)							
4,4'-DDD	**22**	0.1 U	1 U	1 U	1 U	1 U	4.00E-02
4,4'-DDE	0.37 U	0.11 U	1.1 U	1.1 U	1.1 U	1.1 U	3.22E-02
4,4'-DDT	0.42 U	0.19 U	1.9 U	1.9 U	1.9 U	1.9 U	1.50E-02
Aldrin	0.17 U	0.13 U	1.3 U	1.3 U	1.3 U	1.3 U	NA
alpha-BHC	**0.29 J**	0.13 U	1.3 U	1.3 U	1.3 U	1.3 U	2.79E-02
alpha-Chlordane	**1.4 J**	0.12 U	1.2 U	1.2 U	1.2 U	1.2 U	8.13E-02
Aroclor 1016	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1221	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1232	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1242	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1248	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1254	0.028 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NA
Aroclor 1260	0.028 UR	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NA
beta-BHC	**0.73 J**	0.21 U	2.1 U	2.1 U	2.1 U	2.1 U	8.39E-02
delta-BHC	**0.3 J**	0.095 U	0.95 U	0.95 U	0.95 U	0.95 U	NA
Dieldrin	**6.8**	0.12 U	1.2 U	1.2 U	1.2 U	1.2 U	6.07E-03
Endosulfan I	**22**	0.11 U	1.1 U	1.1 U	1.1 U	1.1 U	3.04E+01
Endosulfan II	0.42 U	0.13 U	1.3 U	1.3 U	1.3 U	1.3 U	3.04E+01
Endosulfan sulfate	0.55 U	0.17 U	1.7 U	1.7 U	1.7 U	1.7 U	NA
Endrin	**1.8 J**	0.00079 U	**0.015 J**	**0.015 J**	**0.013 J**	**0.019 J**	4.17E-01
Endrin aldehyde	0.4 U	1.1 U	11 U	11 U	11 U	11 U	NA
Endrin Ketone	**0.58 J**	0.12 U	1.2 U	1.2 U	1.2 U	1.2 U	NA
gamma-BHC (Lindane)	**0.33 J**	**0.00023 J**	0.0011 U	0.0011 U	0.0011 U	0.0011 U	1.46E-01
gamma-Chlordane	**1.5 J**	0.11 U	1.1 U	1.1 U	1.1 U	1.1 U	8.13E-02
Heptachlor	**0.32 J**	0.00029 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	3.16E-02
Heptachlor epoxide	0.2 U	0.00014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	6.07E-03
Methoxychlor	2.1 U	0.0013 U	0.013 U	0.013 U	0.013 U	0.013 U	NA
Toxaphene	16 U	NT	NT	NT	NT	NT	NA

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Herbicides (EPA Method 8151A)							
2,4,5-T	**74**	**0.47**	**17 J**	**17 J**	**15 J**	**12 J**	4.21E+01
2,4,5-TP (Silvex)	**2.1**	**0.019**	**0.27 J**	**0.25 J**	**0.27 J**	**0.29 J**	1.75E+01
2,4-D	**890**	**8.7**	**180 J**	**180 J**	**200 J**	**150 J**	7.21E+01
2,4-DB	**89**	**0.39**	**11 J**	**11 J**	**9.3 J**	**8.1 J**	4.41E+01
4-Nitrophenol	NT	0.00028 U	0.0024 UJ	0.0024 UJ	0.0024 UJ	0.0024 UJ	NA
Bromoxynil	0.049 U	0.001 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA
Dalapon	0.02 UJ	0.00041 UJ	0.0043 UJ	0.0043 UJ	0.0043 UJ	0.0043 UJ	NA
Dicamba	0.071 U	0.0003 U	0.0022 UJ	0.0022 UJ	0.0022 UJ	0.0022 UJ	NA
Dichlorprop	**0.88**	**0.012**	**0.17 J**	**0.16 J**	**0.21 J**	0.0023 UJ	NA
Dinoseb	0.045 U	0.00026 U	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0055 UJ	NA
MCPA	**90**	**0.81**	**32 J**	**26 J**	**29 J**	**20 J**	1.62E+00
MCPP	**3**	**0.047**	**0.34 J**	**0.31 J**	**0.33 J**	**0.51 J**	4.25E+00
Pentachlorophenol	NT	**0.0033**	**0.031 J**	**0.15 J**	**0.035 J**	**0.18 J**	5.22E-02
Volatiles (EPA Method 8260B)							
1,1,1,2-Tetrachloroethane	0.14 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA
1,1,1-Trichloroethane	0.11 UJ	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
1,1,2,2-Tetrachloroethane	0.2 UJ	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
1,1,2-Trichloroethane	0.18 UJ	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
1,1-Dichloroethane	0.15 UJ	**0.095 J**	0.039 U	0.039 U	**0.039 J**	0.039 U	1.07E+02
1,1-Dichloroethene	0.17 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
1,1-Dichloropropene	0.094 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA
1,2,3-Trichlorobenzene	0.56 UJ	0.024 U	0.024 U	0.035 U	0.032 U	0.024 U	7.43E-01
1,2,3-Trichloropropane	0.15 UJ	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	NA
1,2,4-Trichlorobenzene	**1.6 J**	**0.051 J**	0.055 U	0.053 U	0.056 U	0.048 U	7.45E-01
1,2,4-Trimethylbenzene	**4.7 J**	**0.43 J**	**0.29 J**	**0.26 J**	**0.29 J**	**0.25 J**	1.34E+00
1,2-Dibromo-3-chloropropane	0.4 UJ	0.037 U	0.038 U	0.037 U	0.037 U	0.037 U	3.17E-01
1,2-Dibromoethane	0.12 UJ	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	NA
1,2-Dichlorobenzene	**48 J**	**5.7**	**3.4**	**2.6**	**3.1**	**2.5**	3.61E+01
1,2-Dichloroethane	0.11 UJ	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
1,2-Dichloropropane	0.14 UJ	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	NA
1,3,5-Trimethylbenzene	**2.2 J**	**0.18 J**	**0.12 J**	**0.1 J**	**0.12 J**	**0.097 J**	1.34E+00
1,3-Dichlorobenzene	**2 J**	**0.24 J**	**0.15 J**	**0.11 J**	**0.13 J**	**0.11 J**	1.49E+01
1,3-Dichloropropane	0.12 UJ	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	NA
1,4-Dichlorobenzene	**13 J**	**1.4**	**0.65**	**0.49 J**	**0.58**	**0.49 J**	1.72E+00
2,2-Dichloropropane	0.12 UJ	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	NA
2-Butanone (MEK)	2.4 UJ	0.41 U	0.78 U	0.74 U	0.86 U	0.88 U	1.14E+03
2-Chlorotoluene	0.17 UJ	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	NA
2-Ethyl-1-hexanol	**12 J**	1.3 U	**3.3 J**	**2.6 J**	**2.3 J**	**2.1 J**	NA
2-Hexanone	1.1 UJ	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	NA
4-Chlorotoluene	0.12 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
4-Isopropyltoluene	**0.36 J**	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
4-methyl-2-pentanone (MIBK)	0.51 UJ	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	NA
Acetone	0.48 UJ	0.37 U	0.37 U	0.5 U	0.39 U	0.81 U	7.27E+02
Benzene	**0.068 J**	**0.033 J**	0.026 U	0.026 U	0.026 U	0.026 U	1.67E+00
Bromobenzene	0.15 UJ	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	NA
Bromochloromethane	0.17 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
Bromodichloromethane	0.048 UJ	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA
Bromoform	0.17 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA
Bromomethane	0.46 UJ	**0.45 J**	0.39 U	0.4 U	0.29 U	0.35 U	1.13E+00
Carbon disulfide	0.092 UJ	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.27E+02
Carbon tetrachloride	0.1 UJ	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
Chlorobenzene	**0.87 J**	**0.17 J**	0.039 U	0.039 U	0.039 U	0.039 U	1.13E+01
Chloroethane	0.12 UJ	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	1.87E+01
Chloroform	0.087 UJ	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	7.05E-01
Chloromethane	0.32 UJ	0.06 U	0.19 U	0.15 U	0.19 U	0.2 U	2.03E+01
cis-1,2-Dichloroethene	0.13 UJ	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	NA
cis-1,3-Dichloropropene	0.095 UJ	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	NA

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Dibromochloromethane	0.076 UJ	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	NA
Dibromomethane	0.13 UJ	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	NA
Dichlorodifluoromethane	0.13 UJ	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	NA
Ethylbenzene	**1.9 J**	**0.36 J**	**0.13 J**	**0.12 J**	**0.13 J**	**0.12 J**	1.05E+02
Hexachlorobutadiene	0.1 UJ	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	4.02E-01
Iodomethane	0.52 UJ	2 U	2.3 U	2.3 U	2.3 U	2.3 U	NA
Isobutylalcohol	6.3 UJ	14 U	14 U	14 U	14 U	14 U	2.40E+02
Isopropylbenzene	**0.5 J**	0.033 U	**0.091 J**	**0.099 J**	**0.085 J**	**0.11 J**	4.85E+01
m,p-Xylene	**7.4 J**	**1.2**	**0.44 J**	**0.36 J**	**0.45 J**	**0.36 J**	2.18E+01
Methylene chloride	0.094 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	NA
Naphthalene	**0.51 J**	0.035 U	0.043 U	0.035 U	0.038 U	0.041 U	3.53E+01
n-Butylbenzene	0.31 UJ	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	1.03E+01
n-Propylbenzene	**1.4 J**	**0.093 J**	**0.061 J**	**0.054 J**	**0.067 J**	**0.051 J**	1.77E+01
o-Xylene	**1.3 J**	**0.27 J**	**0.11 J**	**0.086 J**	**0.11 J**	**0.085 J**	2.18E+01
sec-Butylbenzene	**0.36 J**	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	NA
Styrene	0.087 UJ	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
tert-Butylbenzene	0.097 UJ	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	NA
Tetrachloroethene	0.14 UJ	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
Toluene	0.08 UJ	0.031 U	0.039 U	0.034 U	0.036 U	0.046 U	2.05E+02
trans-1,2-Dichloroethene	0.11 UJ	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	NA
trans-1,3-Dichloropropene	0.086 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA
Trichloroethene	0.13 UJ	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	NA
Trichlorofluoromethane	0.097 UJ	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	NA
Vinyl chloride	0.16 UJ	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	NA

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Semi-volatiles (EPA Method 8270C)							
1,2,4-Trichlorobenzene	**2.2**	**0.046**	**0.037**	**0.033**	**0.032**	**0.03**	0.745
1,2-Dichlorobenzene	**62**	**4.2**	**2.4**	**2.2**	**2.3**	**2**	36.1
1,3-Dichlorobenzene	**3.5**	**0.19**	**0.11**	**0.095**	**0.11**	**0.087**	14.9
1,4-Dichlorobenzene	**18**	**1**	**0.57**	**0.52**	**0.53**	**0.48**	1.72E+00
1-Methylnaphthalene	**0.31**	**0.0089**	**0.0068**	**0.0058**	**0.0068**	**0.0062**	3.40E+00
2,3,4,6-Tetrachlorophenol	0.019 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	1.92E+01
2,3,5,6-Tetrachlorophenol	**0.49**	**0.027**	**0.017 J**	**0.043**	**0.046**	**0.035**	4.56E+01
2,4,5-Trichlorophenol	**3.5**	**0.16**	**0.15 J**	**0.28**	**0.32**	**0.27 J**	1.55E+02
2,4,6-Trichlorophenol	**11**	**0.87**	**0.45 J**	**0.9 J**	**0.98 J**	**0.74 J**	9.86E+00
2,4-Dichlorophenol	**21**	**2.3**	**0.99 J**	**2.1**	**2.4**	**1.8**	9.76E+00
2,4-Dimethylphenol	0.0054 U	**0.019 J**	0.015 UJ	0.015 U	0.015 U	0.015 U	1.49E+02
2,4-Dinitrophenol	0.14 U	0.075 U	0.075 UJ	0.075 U	0.075 U	0.075 UJ	NA
2,4-Dinitrotoluene	0.012 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	NA
2,6-Dinitrotoluene	0.012 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	NA
2-Chloronapthalene	0.0056 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	7.55E+01
2-Chlorophenol	**1.7**	**0.2**	**0.081 J**	**0.15**	**0.18**	**0.13**	4.99E+01
2-Methyl-4,6-dinitrophenol	0.094 U	0.066 U	0.066 UJ	0.066 U	0.066 U	0.066 U	NA
2-Methylnaphthalene	**0.28**	**0.007 J**	**0.0059 J**	**0.0064 J**	**0.0068 J**	**0.0056 J**	3.45E+00
2-Methylphenol	**4.4**	**0.5**	**0.34 J**	**0.36**	**0.38**	**0.29**	5.65E+02
2-Nitroaniline	0.011 U	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	NA
2-Nitrophenol	0.0074 U	**0.011 J**	0.0056 UJ	0.0056 U	0.0056 U	0.0056 U	NA
3,3'-Dichlorobenzidine	0.042 UJ	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	NA
3/4-Cresol	**0.15**	**0.015 J**	**0.0089 J**	**0.011 J**	**0.011 J**	**0.0093 J**	5.65E+01
3-Nitroaniline	0.028 U	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	NA
4-Bromophenylphenyl ether	**0.059 J**	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	NA
4-Chloro-3-methylphenol	0.0028 U	0.004 U	0.004 UJ	0.004 U	0.004 U	0.004 U	NA
4-Chloroaniline	0.047 U	0.0048 U	0.0048 UJ	0.0048 U	0.0048 U	0.0048 UJ	NA
4-Chlorophenylphenyl ether	0.011 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	NA
4-Nitroaniline	0.058 U	0.0081 U	0.0081 UJ	0.0081 UJ	0.0081 UJ	0.0081 UJ	NA
4-Nitrophenol	0.093 U	**0.026 J**	0.017 UJ	0.017 U	0.017 U	0.017 U	NA
Acenaphthene	**0.058**	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	NA
Acenaphthylene	0.0074 U	0.0011 U	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0011 UJ	NA
Anthracene	**0.018 J**	0.00066 U	0.00066 U	0.00066 U	0.00066 U	0.00066 U	NA

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Benzo(a)anthracene	**0.046**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA
Benzo(a)pyrene	**0.078**	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	NA
Benzo(b)fluoranthene	**0.059**	0.0011 U	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0011 UJ	NA
Benzo(ghi)perylene	**0.041**	0.00069 U	0.00069 U	0.00069 U	0.00069 U	0.00069 U	NA
Benzo(k)fluoranthene	0.0093 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	NA
Benzofluoranthenes	NT	NT	NT	NT	NT	NT	NA
Benzoic acid	0.21 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	5.79E+04
Benzyl alcohol	0.0081 U	0.0037 U	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	1.26E+04
Bis(2-Chloroethoxy) methane	0.028 U	0.0031 U	0.0031 UJ	0.0031 UJ	0.0031 UJ	0.0031 UJ	NA
Bis(2-Chloroethyl) ether	0.035 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	NA
Bis(2-chloroisopropyl) Ether	**0.49**	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	NA
bis(2-Ethylhexyl) phthalate	0.052 U	0.008 U	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	7.42E-02
Butylbenzylphthalate	**0.049 J**	**0.0065 J**	0.0019 U	**0.022 J**	**0.012 J**	0.0019 U	1.40E+02
Carbazole	NT	NT	NT	NT	NT	NT	NA
Chrysene	**0.047**	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	NA
Dibenzo(a,h)anthracene	**0.037**	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	NA
Dibenzofuran	0.0061 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	NA
Diethylphthalate	0.027 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	9.56E+03
Dimethylphthalate	0.014 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	NA
Di-n-butylphthalate	0.052 U	**0.014 J**	**0.0061 J**	**0.026**	**0.007 J**	**0.0036 J**	1.35E+02
Di-n-octyl phthalate	0.0096 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	NA
Fluoranthene	**0.089**	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	NA
Fluorene	**0.093**	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	NA
Hexachlorobenzene	**1**	0.0038 U	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	NA
Hexachlorobutadiene	0.01 U	0.0078 U	0.0078 UJ	0.0078 UJ	0.0078 UJ	0.0078 UJ	4.02E-01
Hexachlorocyclopentadiene	0.0084 U	0.0052 U	0.0052 UJ	0.0052 UJ	0.0052 UJ	0.0052 UJ	NA
Hexachloroethane	0.012 U	0.0075 U	0.0075 UJ	0.0075 UJ	0.0075 UJ	0.0075 UJ	NA
Indeno(1,2,3-cd)pyrene	**0.027 J**	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	NA
Isophorone	0.0039 U	0.0023 U	0.0023 UJ	0.0023 UJ	0.0023 UJ	0.0023 UJ	NA
Naphthalene	**4.1**	**0.43**	**0.3**	**0.43**	**0.52**	**0.39 J**	3.53E+01
Nitrobenzene	0.03 U	0.0017 U	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	3.09E+00
N-Nitrosodi-n-propyl amine	0.0067 U	0.0029 U	0.0029 UJ	0.0029 UJ	0.0029 UJ	0.0029 UJ	3.42E-01
N-Nitrosodiphenylamine	0.0045 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 UJ	NA
Pentachlorophenol	**0.17 J**	0.011 U	0.011 UJ	**0.013 J**	**0.017 J**	**0.011 J**	5.22E-02
Phenanthrene	**0.17**	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	NA
Phenol	**2.3**	**0.18**	**0.091 J**	**0.14 J**	**0.089 J**	**0.11 J**	6.39E+03
Pyrene	**0.12**	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	NA

TABLE 10
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-1
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Dioxins/Furans (EPA Method 8280/8290)							
1,2,3,4,6,7,8,9-OCDD	**0.023**	0.00000052 U	0.0000013 U	0.00000094 U	0.0000008 U	0.0000007 U	NA
1,2,3,4,6,7,8,9-OCDF	**0.019**	0.00000071 U	0.0000007 U	0.0000005 U	0.00000049 U	0.00000042 U	NA
1,2,3,4,6,7,8-HpCDD	**0.0025**	0.00000015 U	0.00000053 U	0.00000069 U	0.00000046 U	0.0000004 U	NA
1,2,3,4,6,7,8-HpCDF	**0.0043**	0.00000072 U	0.00000053 U	0.00000078 U	0.00000037 U	0.00000047 U	NA
1,2,3,4,7,8,9-HpCDF	0.00035 U	0.00000054 U	0.00000044 U	0.00000048 U	0.0000003 U	0.00000027 U	NA
1,2,3,4,7,8-HxCDD	0.00061 U	0.00000043 U	0.0000005 U	0.00000046 U	0.00000018 U	0.00000021 U	NA
1,2,3,4,7,8-HxCDF	0.0005 U	0.00000021 U	0.00000044 U	0.000000048 U	0.00000015 U	0.00000028 U	NA
1,2,3,6,7,8-HxCDD	0.00083 U	0.00000058 U	0.00000059 U	0.00000054 U	0.00000022 U	0.00000024 U	NA
1,2,3,6,7,8-HxCDF	0.00063 U	0.00000028 U	0.00000021 U	0.00000047 U	0.00000019 U	0.00000028 U	NA
1,2,3,7,8,9-HxCDD	0.00048 U	0.00000046 U	0.00000025 U	0.0000011 U	0.000001 U	0.00000099 U	NA
1,2,3,7,8,9-HxCDF	0.00074 U	0.00000029 U	0.00000031 U	0.00000041 U	0.00000014 U	0.00000017 U	NA
1,2,3,7,8-PeCDD	0.00029 U	0.00000092 U	0.00000041 U	0.00000034 U	0.00000029 U	0.0000002 U	NA
1,2,3,7,8-PeCDF	**0.011**	0.00000017 U	0.00000021 U	0.00000015 U	0.00000013 U	0.0000001 U	NA
2,3,4,6,7,8-HxCDF	0.00028 U	0.00000028 U	0.000000016 U	0.000000042 U	0.00000014 U	0.00000026 U	NA
2,3,4,7,8-PeCDF	0.00039 U	0.00000017 U	0.0000002 U	0.00000017 U	0.00000012 U	0.000000095 U	NA
2,3,7,8-TCDD	**0.019**	0.00000024 U	0.0000001 U	0.00000013 U	0.000000091 U	0.000000068 U	1.41E-08
2,3,7,8-TCDF	**0.17**	0.000000059 U	0.00000045 U	0.00000078 U	0.00000055 U	0.00000035 U	NA

Notes:
mg/L = milligrams per liter
mg/kg = milligrams per kilogram
NT = not tested
NA = Not applicable; no risk-based concentration (RBC) calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious quality control (QC) problems; it is not possible to determine whether the analyte is present or absent.
U = The analytical result must be considered to be nondetected at the concentration listed.
J = The associated analytical result is quantitatively uncertain; indicative of a data limitation related to a QC element that exceeds required acceptance limits.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = The analyte was not detected at a concentration above the method reporting limit. However, the reporting limit is approximate and may be inaccurate or imprecise.
= exceeds RBCs
Bold = detected

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Metals (EPA Method 6000/7000 Series)							
Aluminum	**19000**	0.034 U	**1.9**	**1.3**	**1.3**	**2.3**	1.25E+05
Antimony	**21**	**0.049 J**	0.003 U	0.003 U	0.003 U	0.003 U	4.98E+01
Arsenic	**55**	**0.077**	**0.0079 J**	**0.01 J**	**0.013 J**	0.0027 U	5.81E+00
Barium	**240**	**0.65**	**0.45**	**0.6**	**0.38**	**1.6**	2.49E+04
Beryllium	**0.74**	0.00005 U	**0.00012 J**	0.00005 U	**0.00012 J**	**0.00018 J**	2.49E+02
Boron	**87 J**	0.19 U	0.017 U	**0.77 J**	0.017 U	**0.15 J**	2.49E+04
Cadmium	**2.2**	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	6.23E+01
Calcium	**31000**	**580**	**680**	**660**	**660**	**680**	NA
Chromium	**280**	**0.0073 J**	**0.0029 J**	**0.032**	**0.021**	**0.016**	3.74E+02
Cobalt	**21**	**0.018**	0.00023 U	**0.00066 J**	0.00023 U	**0.00077 J**	6.23E+03
Copper	**110**	0.00065 U	0.00065 U	**0.012**	0.00065 U	**0.036**	4.98E+03
Iron	**36000**	**83**	**0.022 J**	0.015 U	0.015 U	0.015 U	3.74E+04
Lead	**700**	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	NA
Magnesium	**8500**	**16**	0.021 U	0.021 U	0.021 U	0.021 U	NA
Manganese	**1500**	**7.5**	0.00024 U	0.00024 U	0.00024 U	0.00024 U	2.99E+03
Mercury	**0.68**	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	3.74E+01
Molybdenum	**410**	**0.83**	**4.4**	**3.9**	**3.7**	**3.1**	6.23E+02
Nickel	**240**	**0.49**	**0.13**	**0.11**	**0.097**	**0.13**	1.25E+04
Potassium	**1100**	**6**	**19**	**17**	**16**	**27**	NA
Selenium	**1.5**	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	6.23E+02
Silver	**1.6**	**0.028 J**	0.00083 U	0.00083 U	0.00083 U	0.00083 U	1.04E+03
Sodium	**6100**	NT	NT	NT	NT	NT	NA
Thallium	**0.32 J**	**0.021 J**	**0.058**	**0.057**	**0.077**	**0.072**	8.22E+00
Vanadium	**120**	0.00025 U	**0.039**	**0.095**	**0.071**	**0.011**	1.25E+02
Zinc	**1000**	**0.1**	**0.0066 J**	**0.0077 J**	**0.0051 J**	**0.0074 J**	6.23E+04

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Pesticides/PCBS (EPA Method 8081/8082)							
4,4'-DDD	**1.4**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	4.00E-02
4,4'-DDE	**0.47**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	3.22E-02
4,4'-DDT	**2.1**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	1.50E-02
Aldrin	0.0026 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	NA
alpha-BHC	0.0026 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	2.79E-02
alpha-Chlordane	**0.044**	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	8.13E-02
Aroclor 1016	0.071 U	0.00022 U	0.00022 U	0.00022 U	0.00022 UJ	0.00022 U	NA
Aroclor 1221	0.071 U	0.00022 U	0.00022 U	0.00022 U	0.00022 UJ	0.00022 U	NA
Aroclor 1232	0.071 U	0.00022 U	0.00022 U	0.00022 U	0.00022 UJ	0.00022 U	NA
Aroclor 1242	**8**	0.00022 U	0.00022 U	0.00022 U	0.00022 UJ	0.00022 U	NA
Aroclor 1248	0.071 U	0.00022 U	0.00022 U	0.00022 U	0.00022 UJ	0.00022 U	NA
Aroclor 1254	0.039 U	0.00024 U	0.00024 U	0.00024 U	0.00024 UJ	0.00024 U	NA
Aroclor 1260	0.039 U	0.00024 U	0.00024 U	0.00024 U	0.00024 UJ	0.00024 U	NA
beta-BHC	0.0031 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	8.39E-02
delta-BHC	0.0029 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	NA
Dieldrin	0.0054 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	6.07E-03
Endosulfan I	**0.94**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	3.04E+01
Endosulfan II	**0.22**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	3.04E+01
Endosulfan sulfate	0.0083 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	NA
Endrin	**0.2**	0.0008 U	**0.0081**	**0.0088**	**0.0094**	**0.0046**	4.17E-01
Endrin aldehyde	0.0061 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	NA
Endrin Ketone	**0.038 J**	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	NA
gamma-BHC (Lindane)	**0.0074 J**	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	1.46E-01
gamma-Chlordane	0.0029 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	8.13E-02
Heptachlor	0.0033 U	0.00029 U	**0.00067 J**	**0.00067 J**	**0.00059 J**	0.00029 U	3.16E-02
Heptachlor epoxide	0.0031 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	6.07E-03
Methoxychlor	0.032 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	NA
Toxaphene	0.24 U	NT	NT	NT	NT	NT	NA

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Herbicides (EPA Method 8151A)							
2,4,5-T	**0.87 J**	**0.0038**	**0.22**	**0.18**	**0.17**	**0.17**	4.21E+01
2,4,5-TP (Silvex)	**0.092 J**	0.00024 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	1.75E+01
2,4-D	**11 J**	**0.043**	**3.3**	**2.9**	**2.5**	**1.8**	7.21E+01
2,4-DB	**15 J**	**0.059**	**1.1**	**0.89**	**0.85**	**0.75**	4.41E+01
4-Nitrophenol	NT	0.00028 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	NA
Bromoxynil	0.0069 UJ	0.001 U	0.01 U	0.01 U	0.01 U	0.01 U	NA
Dalapon	0.0028 UJ	0.00041 UJ	0.0043 U	0.0043 U	0.0043 U	0.0043 U	NA
Dicamba	0.01 UJ	0.0003 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	NA
Dichlorprop	**0.12 J**	0.00052 U	**0.016 J**	**0.015 J**	**0.011 J**	0.0023 U	NA
Dinoseb	0.0064 UJ	0.00026 U	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0055 UJ	NA
MCPA	**2.7 J**	**0.0098**	**0.47**	**0.41**	**0.39**	**0.33**	1.62E+00
MCPP	**1.6 J**	**0.013**	**0.22**	**0.16**	**0.2**	**0.13**	4.25E+00
Pentachlorophenol	NT	0.00031 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	5.22E-02
Volatiles (EPA Method 8260B)							
1,1,1,2-Tetrachloroethane	0.047 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA
1,1,1-Trichloroethane	0.038 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
1,1,2,2-Tetrachloroethane	0.069 U	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
1,1,2-Trichloroethane	0.063 U	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
1,1-Dichloroethane	0.052 U	**0.097 J**	0.039 U	0.039 U	**0.039 J**	**0.039 J**	1.07E+02
1,1-Dichloroethene	0.059 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
1,1-Dichloropropene	0.032 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA
1,2,3-Trichlorobenzene	0.19 U	0.024 U	0.028 U	0.024 U	0.034 U	0.039 U	7.43E-01
1,2,3-Trichloropropane	0.052 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	NA
1,2,4-Trichlorobenzene	**0.43 J**	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	7.45E-01
1,2,4-Trimethylbenzene	**3.2**	**0.045 J**	0.037 U	**0.037 J**	0.037 U	0.037 U	1.34E+00
1,2-Dibromo-3-chloropropane	0.14 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	3.17E-01
1,2-Dibromoethane	0.042 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	NA

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
1,2-Dichlorobenzene	**26**	**0.35 J**	**0.18 J**	**0.26 J**	**0.16 J**	**0.12 J**	3.61E+01
1,2-Dichloroethane	0.036 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA
1,2-Dichloropropane	0.049 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	NA
1,3,5-Trimethylbenzene	**1.2**	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	1.34E+00
1,3-Dichlorobenzene	**0.92**	0.033 U	0.033 U	0.033 U	0.033 U	**0.034 J**	1.49E+01
1,3-Dichloropropane	0.042 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	NA
1,4-Dichlorobenzene	**5.9**	0.027 U	0.027 U	0.046 U	0.039 U	0.04 U	1.72E+00
2,2-Dichloropropane	0.042 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	NA
2-Butanone (MEK)	0.81 U	0.41 U	0.9 U	0.74 U	0.57 U	0.41 U	1.14E+03
2-Chlorotoluene	0.059 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	NA
2-Ethyl-1-hexanol	**7**	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	NA
2-Hexanone	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	NA
4-Chlorotoluene	0.041 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
4-Isopropyltoluene	**0.14 J**	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
4-methyl-2-pentanone (MIBK)	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	NA
Acetone	0.17 U	0.37 U	0.78 U	0.37 U	0.37 U	0.37 U	7.27E+02
Benzene	**0.042 J**	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	1.67E+00
Bromobenzene	0.052 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	NA
Bromochloromethane	0.056 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
Bromodichloromethane	0.017 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA
Bromoform	0.058 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA
Bromomethane	0.16 U	**0.49 J**	0.41 U	0.39 U	0.29 U	0.45 U	1.13E+00
Carbon disulfide	0.032 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.27E+02
Carbon tetrachloride	0.034 U	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
Chlorobenzene	**0.28 J**	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	1.13E+01
Chloroethane	0.04 UJ	0.063 U	0.063 U	0.063 U	**0.068 J**	**0.079 J**	1.87E+01
Chloroform	0.03 U	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	7.05E-01
Chloromethane	0.11 U	0.06 U	0.19 U	0.21 U	0.17 U	0.2 U	2.03E+01
cis-1,2-Dichloroethene	0.045 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	NA
cis-1,3-Dichloropropene	0.032 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	NA
Dibromochloromethane	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	NA
Dibromomethane	0.046 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	NA

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Dichlorodifluoromethane	0.043 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	NA
Ethylbenzene	**0.65**	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	1.05E+02
Hexachlorobutadiene	0.036 U	**0.04 J**	0.034 U	0.034 U	0.034 U	0.037 U	4.02E-01
Iodomethane	0.18 U	2 U	2.4 U	2.6 U	2.6 U	3 U	NA
Isobutylalcohol	2.1 U	14 U	14 U	14 U	14 U	14 U	2.40E+02
Isopropylbenzene	**0.23 J**	0.033 U	0.033 U	**0.042 J**	0.033 U	0.033 U	4.85E+01
m,p-Xylene	**2.7**	**0.052 J**	0.049 U	0.049 U	0.049 U	0.049 U	2.18E+01
Methylene chloride	0.032 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	NA
Naphthalene	**0.32 J**	0.035 U	0.037 U	0.055 U	0.05 U	0.044 U	3.53E+01
n-Butylbenzene	0.1 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	1.03E+01
n-Propylbenzene	**0.61**	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	1.77E+01
o-Xylene	**0.63**	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	2.18E+01
sec-Butylbenzene	**0.15 J**	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	NA
Styrene	0.03 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
tert-Butylbenzene	0.033 U	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	NA
Tetrachloroethene	0.049 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
Toluene	**0.2 J**	0.031 U	0.031 U	0.031 U	0.037 U	0.031 U	2.05E+02
trans-1,2-Dichloroethene	0.038 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	NA
trans-1,3-Dichloropropene	0.029 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA
Trichloroethene	0.045 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	NA
Trichlorofluoromethane	0.033 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	NA
Vinyl chloride	0.055 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	NA

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Semi-volatiles (EPA Method 8270C)							
1,2,4-Trichlorobenzene	0.016 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	7.45E-01
1,2-Dichlorobenzene	**1.5**	**0.24**	**0.11**	**0.13**	**0.13**	**0.1**	3.61E+01
1,3-Dichlorobenzene	**0.048 J**	**0.0081 J**	0.0056 U	0.0056 U	0.0056 U	0.0056 U	1.49E+01
1,4-Dichlorobenzene	**0.4**	**0.049**	**0.019 J**	**0.023**	**0.023**	**0.018 J**	1.72E+00
1-Methylnaphthalene	**0.081**	**0.0067**	**0.004**	**0.0053**	**0.0047**	**0.0046**	3.40E+00
2,3,4,6-Tetrachlorophenol	0.027 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	1.92E+01
2,3,5,6-Tetrachlorophenol	0.051 U	0.0054 UJ	0.0054 U	0.0054 U	0.0054 U	0.0054 U	4.56E+01
2,4,5-Trichlorophenol	**0.26**	**0.013 J**	**0.027**	**0.029**	**0.021**	0.0053 U	1.55E+02
2,4,6-Trichlorophenol	**0.041 J**	0.0085 UJ	**0.0091 J**	0.0085 UJ	0.0085 UJ	0.0085 UJ	9.86E+00
2,4-Dichlorophenol	**8**	**0.66 J**	**0.53**	**0.55**	**0.43**	**0.44**	9.76E+00
2,4-Dimethylphenol	0.0076 U	0.015 UJ	0.015 U	0.015 U	0.015 U	0.015 U	1.49E+02
2,4-Dinitrophenol	0.2 U	0.075 UJ	0.075 U	0.075 U	0.075 U	0.075 U	NA
2,4-Dinitrotoluene	0.017 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	NA
2,6-Dinitrotoluene	0.018 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	NA
2-Chloronapthalene	0.0079 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	7.55E+01
2-Chlorophenol	**0.43**	**0.035 J**	**0.028**	**0.028**	**0.025**	**0.023**	4.99E+01
2-Methyl-4,6-dinitrophenol	0.13 U	0.066 UJ	0.066 U	0.066 U	0.066 U	0.066 U	NA
2-Methylnaphthalene	**0.026 J**	0.0018 U	**0.004 J**	0.0018 U	**0.0047 J**	0.0018 U	3.45E+00
2-Methylphenol	**0.78**	**0.058 J**	**0.038**	**0.041**	**0.045**	**0.027**	5.65E+02
2-Nitroaniline	0.015 U	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	NA
2-Nitrophenol	0.011 U	0.0056 UJ	0.0056 U	0.0056 U	0.0056 U	0.0056 U	NA
3,3'-Dichlorobenzidine	0.06 UJ	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	NA
3/4-Cresol	**0.15**	**0.013 J**	**0.0088 J**	**0.011 J**	**0.011 J**	**0.0093 J**	5.65E+01
3-Nitroaniline	0.04 U	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	NA
4-Bromophenylphenyl ether	0.016 U	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	NA
4-Chloro-3-methylphenol	0.004 U	0.004 UJ	**0.27**	**0.3**	**0.28**	**0.23**	NA
4-Chloroaniline	0.066 U	0.0048 U	0.0048 UJ	0.0048 UJ	0.0048 UJ	0.0048 UJ	NA
4-Chlorophenylphenyl ether	0.016 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	NA

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
4-Nitroaniline	0.083 U	0.0081 U	0.0081 UJ	0.0081 UJ	0.0081 UJ	0.0081 UJ	NA
4-Nitrophenol	0.13 U	0.017 UJ	0.017 U	0.017 U	0.017 U	0.017 U	NA
Acenaphthene	**0.03 J**	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	NA
Acenaphthylene	0.011 U	0.0011 U	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0011 UJ	NA
Anthracene	**0.014 J**	0.00066 U	0.00066 U	0.00066 U	0.00066 U	0.00066 U	NA
Benzo(a)anthracene	**0.053**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA
Benzo(a)pyrene	**0.11**	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	NA
Benzo(b)fluoranthene	**0.071**	0.0011 U	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0011 UJ	NA
Benzo(ghi)perylene	**0.044 J**	0.00069 U	0.00069 U	0.00069 U	0.00069 U	0.00069 U	NA
Benzo(k)fluoranthene	**0.017 J**	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	NA
Benzofluoranthenes	NT	NT	NT	NT	NT	NT	NA
Benzoic acid	0.29 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	5.79E+04
Benzyl alcohol	0.011 U	**0.024**	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	1.26E+04
Bis(2-Chloroethoxy) methane	0.039 U	0.0031 U	0.0031 UJ	0.0031 UJ	0.0031 UJ	0.0031 UJ	NA
Bis(2-Chloroethyl) ether	0.049 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	NA
Bis(2-chloroisopropyl) Ether	0.049 U	0.0027 U	0.0027 U	**0.018 J**	0.0027 U	0.0027 U	NA
bis(2-Ethylhexyl) phthalate	0.074 U	0.0071 U	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	7.42E-02
Butylbenzylphthalate	0.037 U	**0.0051 J**	**0.0041 J**	**0.0047 J**	**0.0056 J**	**0.0041 J**	1.40E+02
Carbazole	NT	NT	NT	NT	NT	NT	NA

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Chrysene	**0.043 J**	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	NA
Dibenzo(a,h)anthracene	0.0055 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	NA
Dibenzofuran	0.0086 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	NA
Diethylphthalate	0.039 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	9.56E+03
Dimethylphthalate	0.02 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	NA
Di-n-butylphthalate	0.074 U	**0.017 J**	**0.0041 J**	**0.0032 J**	**0.0053 J**	**0.0032 J**	1.35E+02
Di-n-octyl phthalate	**0.061 J**	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	NA
Fluoranthene	**0.053**	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	NA
Fluorene	**0.038 J**	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	NA
Hexachlorobenzene	0.011 U	0.0038 U	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	NA
Hexachlorobutadiene	0.015 U	0.0078 U	0.0078 UJ	0.0078 UJ	0.0078 UJ	0.0078 UJ	4.02E-01
Hexachlorocyclopentadiene	0.012 U	0.0052 U	0.0052 UJ	0.0052 UJ	0.0052 UJ	0.0052 UJ	NA
Hexachloroethane	0.017 U	0.0075 U	0.0075 UJ	0.0075 UJ	0.0075 UJ	0.0075 UJ	NA
Indeno(1,2,3-cd)pyrene	**0.027 J**	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	NA
Isophorone	0.0056 U	0.0023 U	0.0023 UJ	0.0023 UJ	0.0023 UJ	0.0023 UJ	NA
Naphthalene	**1.9**	**0.16**	**0.14**	**0.15**	**0.13**	**0.12**	3.53E+01
Nitrobenzene	0.042 U	0.0017 U	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	3.09E+00
N-Nitrosodi-n-propyl amine	0.0095 U	0.0029 U	**0.0048 J**	0.0029 UJ	0.0029 UJ	0.0029 UJ	3.42E-01
N-Nitrosodiphenylamine	0.0064 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	NA
Pentachlorophenol	0.042 U	0.011 UJ	0.011 UJ	0.011 UJ	0.011 UJ	0.011 UJ	5.22E-02
Phenanthrene	**0.092**	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	NA
Phenol	**0.37**	**0.019 J**	**0.017 J**	**0.018 J**	**0.017 J**	**0.018 J**	6.39E+03
Pyrene	**0.07**	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	NA

TABLE 11
Phase 2 and Phase 3 Bulk and TCLP Analytical Results for TS-2
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-2 03/02/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-2 03/02/2006 Phase 2 Leachate (untreated) (mg/L)	TS-2 WDLSS-1A 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1B 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1C 03/31/2006 Phase 3 Leachate (treated) (mg/L)	TS-2 WDLSS-1D 03/31/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Dioxins/Furans (EPA Method 8280/8290)							
1,2,3,4,6,7,8,9-OCDD	**0.0074**	0.00000058 U	0.00000070 U	0.000000660 U	0.000000640 U	0.000000650 U	NA
1,2,3,4,6,7,8,9-OCDF	0.0005 U	0.00000068 U	0.00000045 U	0.000000440 U	0.000000370 U	0.000000340 U	NA
1,2,3,4,6,7,8-HpCDD	0.00025 U	0.00000015 U	0.00000050 U	0.000000420 U	0.000000450 U	0.000000530 U	NA
1,2,3,4,6,7,8-HpCDF	0.00016 U	0.00000047 U	0.00000062 U	0.000000530 U	0.000000220 U	0.000000280 U	NA
1,2,3,4,7,8,9-HpCDF	0.00035 U	0.00000050 U	0.00000034 U	0.000000320 U	0.000000270 U	0.000000280 U	NA
1,2,3,4,7,8-HxCDD	0.00061 U	0.00000053 U	0.00000037 U	0.000000210 U	0.000000370 U	0.000000390 U	NA
1,2,3,4,7,8-HxCDF	0.0005 U	0.00000024 U	0.00000029 U	0.000000220 U	0.000000380 U	0.000000430 U	NA
1,2,3,6,7,8-HxCDD	0.00083 U	0.00000063 U	0.00000047 U	0.000000230 U	0.000000500 U	0.000000490 U	NA
1,2,3,6,7,8-HxCDF	0.00063 U	0.00000027 U	0.00000031 U	0.000000240 U	0.000000410 U	0.000000410 U	NA
1,2,3,7,8,9-HxCDD	0.00048 U	0.00000056 U	0.00000039 U	0.000000200 U	0.000000420 U	0.000000360 U	NA
1,2,3,7,8,9-HxCDF	0.00074 U	0.00000028 U	0.00000025 U	0.000000210 U	0.000000260 U	0.000000250 U	NA
1,2,3,7,8-PeCDD	0.00029 U	0.00000081 U	0.00000034 U	0.000000380 U	0.000000410 U	0.000000400 U	NA
1,2,3,7,8-PeCDF	0.00032 U	0.00000021 U	0.00000010 U	0.000000110 U	0.000000160 U	0.000000160 U	NA
2,3,4,6,7,8-HxCDF	0.00028 U	0.00000026 U	0.00000030 U	0.000000230 U	0.000000320 U	0.000000360 U	NA
2,3,4,7,8-PeCDF	0.00039 U	0.00000022 U	0.00000012 U	0.000000140 U	0.000000160 U	0.000000160 U	NA
2,3,7,8-TCDD	**0.0037**	0.00000016 U	0.00000009 U	0.000000089 U	0.000000066 U	0.000000100 U	1.41E-08
2,3,7,8-TCDF	**0.038**	0.00000017 U	0.00000014 U	0.000000120 U	0.000000120 U	0.000000190 U	NA

Notes:
mg/L = milligrams per liter
mg/kg = milligrams per kilogram
NT = not tested
NA = Not applicable; no risk-based concentration (RBC) calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious quality control (QC) problems; it is not possible to determine whether the analyte is present or absent.
U = The analytical result must be considered to be nondetected at the concentration listed.
J = The associated analytical result is quantitatively uncertain indicative of a data limitation related to a QC element that exceeds required acceptance limits.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = The analyte was not detected at a concentration above the method reporting limit. However, the reporting limit is approximate and may be inaccurate or imprecise.
Bold = detected

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Metals (EPA Method 6000/7000 Series)							
Aluminum	**9000**	**0.098 J**	**0.81**	**0.48 J**	**0.5**	**0.54**	1.25E+05
Antimony	**11**	**0.04 J**	0.003 U	0.003 U	0.003 U	0.003 U	4.98E+01
Arsenic	**21**	**0.065**	**0.0054 J**	**0.026 J**	**0.018 J**	**0.006 J**	5.81E+00
Barium	**300**	**1.3**	**0.84**	**1.1**	**0.77**	**2.1**	2.49E+04
Beryllium	**0.3 J**	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	2.49E+02
Boron	**130 J**	**0.82 J**	0.21 U	**1.2 J**	0.22 U	0.08 U	2.49E+04
Cadmium	**1.8**	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	6.23E+01
Calcium	**51000**	**800**	**790**	**850**	**830**	**830**	NA
Chromium	**1000**	0.00063 U	**0.018**	**0.027**	**0.026**	**0.016**	3.74E+02
Cobalt	**31**	**0.011**	0.00023 U	0.00023 U	0.00023 U	0.00023 U	6.23E+03
Copper	**170**	0.00065 U	0.00065 U	**0.015**	**0.0081 J**	**0.023**	4.98E+03
Iron	**43000**	**0.4**	0.073 U	0.07 U	0.072 U	0.096 U	3.74E+04
Lead	**480 J**	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	NA
Magnesium	**29000**	**57**	0.25 U	0.34 U	0.26 U	0.23 U	NA
Manganese	**3300**	**10**	0.00024 U	0.00024 U	**0.0014 J**	0.00024 U	2.99E+03
Mercury	**0.32**	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	3.74E+01
Molybdenum	**770**	**3.7**	**7.6**	**6.8**	**7.1**	**5.4**	6.23E+02
Nickel	**1200**	**0.64**	**0.14**	**0.11**	**0.11**	**0.1**	1.25E+04
Potassium	**660**	**8.6**	**25**	**21**	**21**	**30**	NA
Selenium	**0.61 J**	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	6.23E+02
Silver	**3.7**	**0.035**	0.00083 U	0.0014 U	0.00083 U	0.0013 U	1.04E+03
Sodium	**3000**	NT	NT	NT	NT	NT	NA
Thallium	**0.12 J**	**0.0059 J**	**0.079**	**0.059**	**0.058**	**0.068**	8.22E+00
Vanadium	**65 J**	**0.00038 J**	**0.011**	**0.061**	**0.026**	0.00025 U	1.25E+02
Zinc	**470 J**	0.012 U	**0.028 J**	**0.019 J**	**0.018 J**	**0.015 J**	6.23E+04

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Pesticides/PCBS (EPA Method 8081/8082)							
4,4'-DDD	**0.18**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	4.00E-02
4,4'-DDE	**0.11**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	3.22E-02
4,4'-DDT	**0.56**	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	1.50E-02
Aldrin	0.0018 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	NA
alpha-BHC	0.0018 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	2.79E-02
alpha-Chlordane	0.002 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	8.13E-02
Aroclor 1016	0.049 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1221	0.049 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1232	0.049 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1242	**0.36**	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1248	0.049 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Aroclor 1254	0.027 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NA
Aroclor 1260	0.027 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NA
beta-BHC	**0.0045 J**	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	8.39E-02
delta-BHC	**0.0071 J**	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	NA
Dieldrin	0.0038 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	6.07E-03
Endosulfan I	**0.052**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	3.04E+01
Endosulfan II	**0.46**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	3.04E+01
Endosulfan sulfate	0.0058 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	NA
Endrin	**0.024 J**	0.00066 U	**0.0041**	**0.0017 J**	**0.0042**	0.0013 U	4.17E-01
Endrin aldehyde	0.0043 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	NA
Endrin Ketone	**0.013 J**	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	NA
gamma-BHC (Lindane)	**0.0036 J**	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	1.46E-01
gamma-Chlordane	0.002 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	8.13E-02
Heptachlor	0.0023 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	3.16E-02
Heptachlor epoxide	**0.013 J**	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	6.07E-03
Methoxychlor	0.023 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	NA
Toxaphene	0.17 U	NT	0.0093 U	0.0093 U	0.0093 U	0.0093 U	NA

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Herbicides (EPA Method 8151A)							
2,4,5-T	**0.091**	0.0004 U	**0.0011 J**	0.00015 UJ	**0.0016 J**	0.00015 UJ	4.21E+01
2,4,5-TP (Silvex)	0.0032 U	0.00024 U	0.00021 UJ	0.00021 UJ	0.00021 UJ	0.00021 UJ	1.75E+01
2,4-D	**3.2**	**0.0083**	**0.033 J**	**0.028 J**	**0.038 J**	**0.028 J**	7.21E+01
2,4-DB	**9.6**	**0.02**	**0.056**	**0.043**	**0.051**	**0.044**	4.41E+01
4-Nitrophenol	NT	0.00028 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NA
Bromoxynil	0.0048 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA
Dalapon	0.0019 UJ	0.00041 UJ	0.00043 UJ	0.00043 UJ	0.00043 UJ	0.00043 UJ	NA
Dicamba	0.0069 U	0.0003 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NA
Dichlorprop	**0.079**	0.00052 U	**0.0016 J**	0.00023 U	0.00023 U	0.00023 U	NA
Dinoseb	0.0044 U	0.00026 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	NA
MCPA	**1.4**	**0.0025**	**0.018**	**0.016**	**0.022**	**0.016**	1.62E+00
MCPP	**0.84**	**0.0028**	**0.0084 J**	**0.0068 J**	**0.0077 J**	**0.0065 J**	4.25E+00
Pentachlorophenol	NT	0.00031 U	0.00019 UJ	0.00019 UJ	0.00019 UJ	0.00019 UJ	5.22E-02
Volatiles (EPA Method 8260B)							
1,1,1,2-Tetrachloroethane	0.034 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA
1,1,1-Trichloroethane	0.027 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
1,1,2,2-Tetrachloroethane	0.05 U	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
1,1,2-Trichloroethane	0.046 U	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
1,1-Dichloroethane	0.037 U	**0.096 J**	**0.039 J**	0.039 U	0.039 U	0.039 U	1.07E+02
1,1-Dichloroethene	0.042 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
1,1-Dichloropropene	0.023 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA
1,2,3-Trichlorobenzene	0.14 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	7.43E-01
1,2,3-Trichloropropane	0.037 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	NA
1,2,4-Trichlorobenzene	**0.3 J**	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	7.45E-01
1,2,4-Trimethylbenzene	**1.1**	0.037 U	**0.13 J**	**0.15 J**	**0.2 J**	**0.25 J**	1.34E+00
1,2-Dibromo-3-chloropropane	0.1 U	**0.04 J**	0.037 U	0.037 U	0.037 U	0.037 U	3.17E-01
1,2-Dibromoethane	0.031 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	NA
1,2-Dichlorobenzene	**5.8**	**0.088 J**	**0.082 J**	**0.057 J**	**0.075 J**	**0.05 J**	3.61E+01
1,2-Dichloroethane	0.026 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA
1,2-Dichloropropane	0.036 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	NA
1,3,5-Trimethylbenzene	**0.5**	0.039 U	**0.041 J**	**0.042 J**	**0.058 J**	**0.082 J**	1.34E+00
1,3-Dichlorobenzene	**0.24 J**	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	1.49E+01
1,3-Dichloropropane	0.03 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	NA
1,4-Dichlorobenzene	**1.2**	0.029 U	0.027 U	0.027 U	0.027 U	0.027 U	1.72E+00

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
2,2-Dichloropropane	0.03 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	NA
2-Butanone (MEK)	0.58 U	0.41 U	0.59 U	0.78 U	0.55 U	0.53 U	1.14E+03
2-Chlorotoluene	0.043 U	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	NA
2-Ethyl-1-hexanol	0.84 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	NA
2-Hexanone	0.28 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	NA
4-Chlorotoluene	0.029 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	NA
4-Isopropyltoluene	**0.094 J**	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
4-methyl-2-pentanone (MIBK)	0.13 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	NA
Acetone	0.12 U	0.37 U	0.37 U	0.37 U	**0.46 J**	0.37 U	7.27E+02
Benzene	**0.021 J**	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	1.67E+00
Bromobenzene	0.038 U	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	NA
Bromochloromethane	0.041 U	0.043 U	**0.051 J**	**0.058 J**	0.043 U	0.043 U	NA
Bromodichloromethane	0.012 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA
Bromoform	0.042 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA
Bromomethane	0.11 U	**0.46 J**	0.32 U	0.3 U	0.3 U	0.31 U	1.13E+00
Carbon disulfide	**0.32 J**	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	1.27E+02
Carbon tetrachloride	0.025 U	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	NA
Chlorobenzene	0.028 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	1.13E+01
Chloroethane	0.029 UJ	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	1.87E+01
Chloroform	0.022 U	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	7.05E-01
Chloromethane	0.08 U	0.06 U	0.19 U	0.18 U	0.18 U	0.18 U	2.03E+01
cis-1,2-Dichloroethene	0.033 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	NA
cis-1,3-Dichloropropene	0.023 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	NA
Dibromochloromethane	0.019 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	NA
Dibromomethane	0.033 U	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	NA

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Dichlorodifluoromethane	0.031 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	NA
Ethylbenzene	**0.14 J**	0.032 U	0.032 U	0.032 U	**0.065 J**	**0.048 J**	1.05E+02
Hexachlorobutadiene	0.026 U	**0.037 J**	0.034 U	0.034 U	0.034 U	0.034 U	4.02E-01
Iodomethane	1.3 U	2.1 U	1.9 U	2 U	1.9 U	1.9 U	NA
Isobutylalcohol	1.5 U	14 U	14 U	14 U	14 U	14 U	2.40E+02
Isopropylbenzene	**0.096 J**	0.033 U	0.033 U	**2.4**	0.033 U	0.033 U	4.85E+01
m,p-Xylene	**0.45 J**	0.049 U	**0.054 J**	**0.071 J**	**0.089 J**	**0.14 J**	2.18E+01
Methylene chloride	**0.037 J**	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	NA
Naphthalene	**0.17 J**	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	3.53E+01
n-Butylbenzene	0.075 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	1.03E+01
n-Propylbenzene	**0.24 J**	0.029 U	0.029 U	0.029 U	**0.033 J**	**0.044 J**	1.77E+01
o-Xylene	0.14 U	0.037 U	0.037 U	0.037 U	0.037 U	**0.046 J**	2.18E+01
sec-Butylbenzene	**0.095 J**	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	NA
Styrene	0.022 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
tert-Butylbenzene	0.024 U	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	NA
Tetrachloroethene	0.035 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	NA
Toluene	**0.065 J**	0.031 U	**0.033 J**	**0.043 J**	**0.054 J**	**0.05 J**	2.05E+02
trans-1,2-Dichloroethene	0.027 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	NA
trans-1,3-Dichloropropene	0.021 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	NA
Trichloroethene	0.033 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	NA
Trichlorofluoromethane	0.024 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	NA
Vinyl chloride	0.04 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	NA

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Semi-volatiles (EPA Method 8270C)							
1,2,4-Trichlorobenzene	**0.045 J**	0.0058 U	0.0058 U	0.0058 U	0.0058 U	0.0058 U	7.45E-01
1,2-Dichlorobenzene	**0.88**	**0.065**	**0.083**	**0.048**	**0.069**	**0.059**	3.61E+01
1,3-Dichlorobenzene	**0.041 J**	0.0056 U	0.0056 U	0.0056 U	0.0056 U	0.0056 U	1.49E+01
1,4-Dichlorobenzene	**0.24**	**0.01 J**	**0.011 J**	**0.0068 J**	**0.0091 J**	**0.0079 J**	1.72E+00
1-Methylnaphthalene	**0.042**	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	3.40E+00
2,3,4,6-Tetrachlorophenol	0.019 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	1.92E+01
2,3,5,6-Tetrachlorophenol	0.037 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	0.0054 U	4.56E+01
2,4,5-Trichlorophenol	0.0031 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	0.0053 U	1.55E+02
2,4,6-Trichlorophenol	0.011 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	0.0085 U	9.86E+00
2,4-Dichlorophenol	**0.71**	**0.074**	**0.22**	**0.13**	**0.16**	**0.13**	9.76E+00
2,4-Dimethylphenol	**0.021 J**	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	1.49E+02
2,4-Dinitrophenol	0.14 U	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	NA
2,4-Dinitrotoluene	0.012 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	NA
2,6-Dinitrotoluene	0.012 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	NA
2-Chloronapthalene	0.0056 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	7.55E+01
2-Chlorophenol	**0.044 J**	**0.0064 J**	**0.012 J**	**0.008 J**	**0.009 J**	**0.0081 J**	4.99E+01
2-Methyl-4,6-dinitrophenol	0.095 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	NA
2-Methylnaphthalene	**0.05**	0.0018 U	0.0018 U	0.0018 U	0.0018 U	0.0018 U	3.45E+00
2-Methylphenol	**0.16**	**0.016 J**	**0.023**	**0.014 J**	**0.019 J**	**0.019 J**	5.65E+02
2-Nitroaniline	0.011 U	0.0028 U	0.0028 UJ	**0.0028 R**	0.0028 UJ	0.0028 UJ	NA
2-Nitrophenol	0.0075 U	**0.0063 J**	0.0056 U	0.0056 U	0.0056 U	0.0056 U	NA
3,3'-Dichlorobenzidine	**0.27 J**	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	NA
3/4-Cresol	**0.051 J**	**0.0074 J**	**0.01 J**	**0.0069 J**	**0.0088 J**	**0.0081 J**	5.65E+01
3-Nitroaniline	0.028 U	0.0028 U	0.0028 UJ	**0.0028 R**	0.0028 UJ	0.0028 UJ	NA
4-Bromophenylphenyl ether	0.012 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	NA
4-Chloro-3-methylphenol	0.0029 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	NA
4-Chloroaniline	**0.25**	0.0048 U	0.0048 UJ	0.0048 UJ	0.0048 UJ	0.0048 UJ	NA
4-Chlorophenylphenyl ether	0.011 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	NA
4-Nitroaniline	0.059 U	0.0081 U	0.0081 UJ	0.0081 UJ	0.0081 UJ	0.0081 UJ	NA
4-Nitrophenol	0.094 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	NA
Acenaphthene	**0.022 J**	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	NA
Acenaphthylene	0.0075 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	NA
Anthracene	**0.016 J**	0.00066 U	0.00066 U	0.00066 U	0.00066 U	0.00066 U	NA
Benzo(a)anthracene	**0.29**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA
Benzo(a)pyrene	**0.42**	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	NA

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Benzo(b)fluoranthene	**0.46**	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	NA
Benzo(ghi)perylene	**0.46**	0.00069 U	0.00069 U	0.00069 U	0.00069 U	0.00069 U	NA
Benzo(k)fluoranthene	**0.27**	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	NA
Benzofluoranthenes	NT	NT	0.0012 U	0.0012 U	0.0012 U	0.0012 U	NA
Benzoic acid	0.21 U	0.01 U	**0.038 J**	**0.027 J**	**0.027 J**	**0.016 J**	5.79E+04
Benzyl alcohol	0.0081 U	0.0037 U	0.0037 U	0.0037 UJ	0.0037 U	0.0037 U	1.26E+04
Bis(2-Chloroethoxy) methane	0.028 U	0.0031 U	0.0031 U	0.0031 UJ	0.0031 U	0.0031 U	NA
Bis(2-Chloroethyl) ether	0.035 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	NA
Bis(2-chloroisopropyl) Ether	0.035 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	NA
bis(2-Ethylhexyl) phthalate	**0.065 J**	0.011 U	0.006 U	0.006 U	0.006 U	**0.0095 J**	7.42E-02
Butylbenzylphthalate	0.026 U	**0.003 J**	**0.013 J**	**0.014 J**	**0.0091 J**	0.0019 U	1.40E+02
Carbazole	NT	NT	0.0022 U	**0.0022 R**	0.0022 U	0.0022 U	NA
Chrysene	**0.43**	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	NA
Dibenzo(a,h)anthracene	**0.094**	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	NA
Dibenzofuran	0.0061 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	NA
Diethylphthalate	0.027 U	0.0022 U	0.023 U	0.021 U	0.022 U	0.017 U	9.56E+03
Dimethylphthalate	0.014 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	NA
Di-n-butylphthalate	0.053 U	**0.0089 J**	0.037 U	0.035 U	0.028 U	0.018 U	1.35E+02
Di-n-octyl phthalate	0.0097 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	NA
Fluoranthene	**0.33**	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	NA
Fluorene	**0.021 J**	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	NA
Hexachlorobenzene	**0.012 J**	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	NA
Hexachlorobutadiene	0.011 U	0.0078 U	0.0078 U	0.0078 U	0.0078 U	0.0078 U	4.02E-01
Hexachlorocyclopentadiene	0.0084 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	NA
Hexachloroethane	0.012 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	0.0075 U	NA
Indeno(1,2,3-cd)pyrene	**0.3**	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	NA
Isophorone	0.004 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	NA
Naphthalene	**0.055**	**0.024**	**0.052**	**0.033**	**0.041**	**0.034**	3.53E+01
Nitrobenzene	0.03 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	3.09E+00
N-Nitrosodi-n-propyl amine	0.0068 U	0.0029 U	0.0029 UJ	0.0029 UJ	0.0029 UJ	0.0029 UJ	3.42E-01
N-Nitrosodiphenylamine	**0.019 J**	0.0027 U	0.0027 UJ	0.0027 UJ	0.0027 UJ	0.0027 UJ	NA
Pentachlorophenol	0.03 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	5.22E-02
Phenanthrene	**0.11**	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	NA
Phenol	**0.5**	**0.052**	**0.083**	**0.058**	**0.078**	**0.079**	6.39E+03
Pyrene	**0.42**	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	NA

TABLE 12
Phase 2 and 3 Bulk and TCLP Analytical Results for TS-3
WDL Treatability Study
RP - Portland Site

Chemical Name	TS-3 03/06/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-3 03/06/2006 Phase 2 Leachate (untreated) (mg/L)	TS-3 WDLSS-1A 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1B 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1C 04/05/2006 Phase 3 Leachate (treated) (mg/L)	TS-3 WDLSS-1D 04/05/2006 Phase 3 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
Dioxins/Furans (EPA Method 8280/8290)							
1,2,3,4,6,7,8,9-OCDD	**0.0035 J**	0.0000006600 U	0.0000000043 U	0.0000000045 U	0.0000000045 U	0.0000000039 U	NA
1,2,3,4,6,7,8,9-OCDF	0.0005 U	0.0000006000 U	0.0000000064 U	0.0000000057 U	0.0000000050 U	0.0000000046 U	NA
1,2,3,4,6,7,8-HpCDD	0.00025 U	0.0000002100 U	0.0000000062 U	0.0000000052 U	0.0000000045 U	0.0000000057 U	NA
1,2,3,4,6,7,8-HpCDF	0.00016 U	0.0000004300 U	0.0000000040 U	0.0000000042 U	0.0000000034 U	0.0000000034 U	NA
1,2,3,4,7,8,9-HpCDF	0.00035 U	0.0000006700 U	0.0000000048 U	0.0000000050 U	0.0000000041 U	0.0000000040 U	NA
1,2,3,4,7,8-HxCDD	0.00061 U	0.0000003000 U	0.0000000039 U	0.0000000038 U	0.0000000033 U	0.0000000033 U	NA
1,2,3,4,7,8-HxCDF	0.0005 U	0.0000002700 U	0.0000000026 U	0.0000000020 U	0.0000000022 U	0.0000000021 U	NA
1,2,3,6,7,8-HxCDD	0.00083 U	0.0000003800 U	0.0000000035 U	0.0000000035 U	0.0000000030 U	0.0000000030 U	NA
1,2,3,6,7,8-HxCDF	0.00063 U	0.0000002900 U	0.0000000023 U	0.0000000018 U	0.0000000020 U	0.0000000019 U	NA
1,2,3,7,8,9-HxCDD	0.00048 U	0.0000003100 U	0.0000000035 U	0.0000000035 U	0.0000000030 U	0.0000000030 U	NA
1,2,3,7,8,9-HxCDF	0.00074 U	0.0000002900 U	0.0000000029 U	0.0000000024 U	0.0000000025 U	0.0000000024 U	NA
1,2,3,7,8-PeCDD	0.00029 U	0.0000008100 U	0.0000000052 U	0.0000000044 U	0.0000000043 U	0.0000000042 U	NA
1,2,3,7,8-PeCDF	0.00032 U	0.0000001700 U	0.0000000035 U	0.0000000024 U	0.0000000023 U	0.0000000030 U	NA
2,3,4,6,7,8-HxCDF	0.00028 U	0.0000002200 U	0.0000000027 U	0.0000000021 U	0.0000000023 U	0.0000000022 U	NA
2,3,4,7,8-PeCDF	0.00039 U	0.0000002200 U	0.0000000034 U	0.0000000024 U	0.0000000023 U	0.0000000029 U	NA
2,3,7,8-TCDD	**0.00065 J**	0.0000001200 U	0.0000000028 U	0.0000000022 U	0.0000000018 U	0.0000000020 U	1.41E-08
2,3,7,8-TCDF	**0.0083**	0.0000001800 U	0.0000000062 U	0.0000000053 U	0.0000000054 U	0.0000000053 U	NA

Notes:
mg/L = milligrams per liter
NT = not tested
NA = Not applicable; no risk-based calculations (RBC) calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious quality control (QC) problems; it is not possible to determine whether the analyte is present or absent.
U = The analytical result must be considered to be nondetected at the concentration listed.
J = The associated analytical result is quantitatively uncertain; indicative of a data limitation related to a QC element that exceeds required acceptance limits.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = The analyte was not detected at a concentration above the method reporting limit. However, the reporting limit is approximate and may be inaccurate or imprecise.
Bold = detected

FIGURES

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	JE
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	= 1"=350'
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SITE AND VICINITY MAP
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	1

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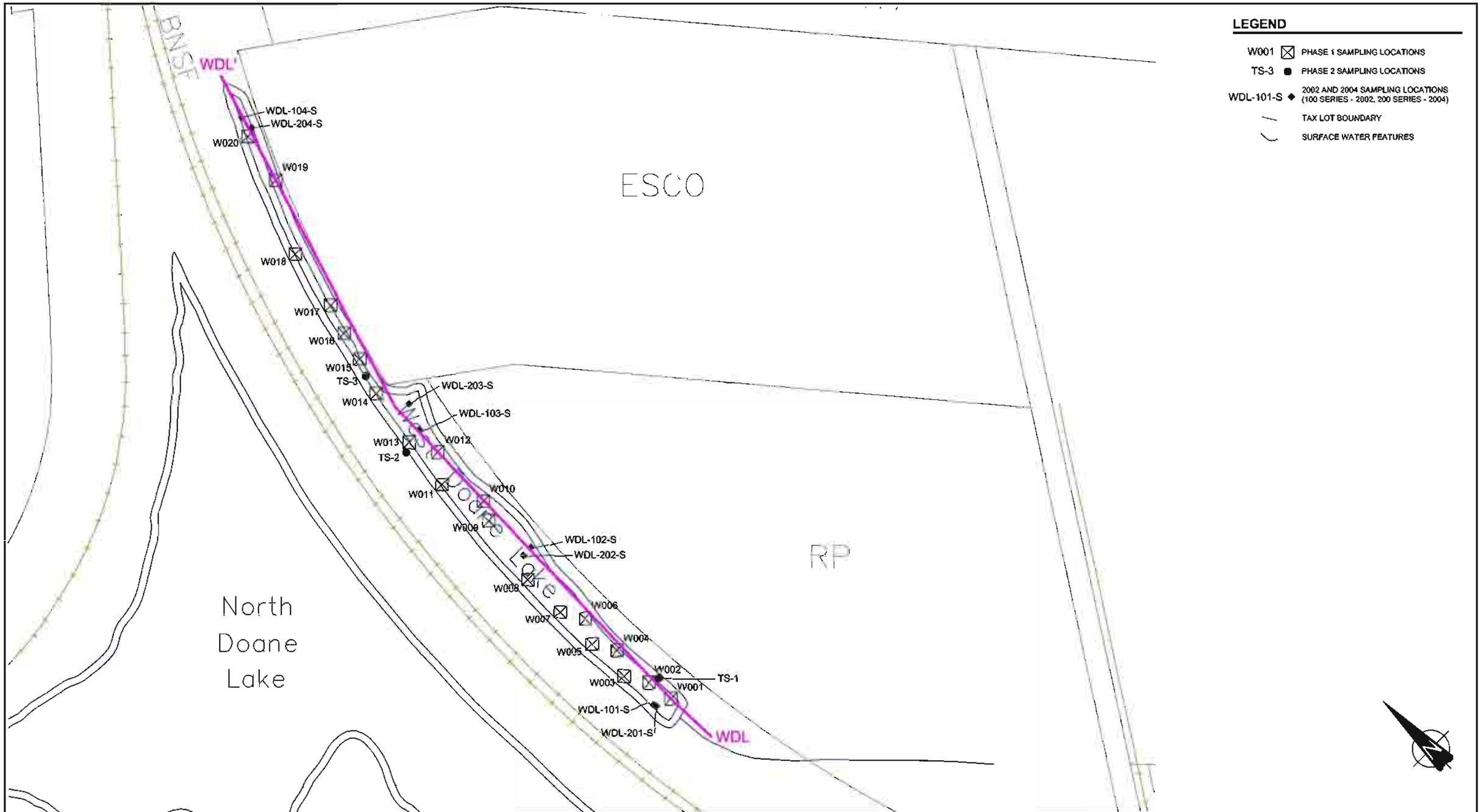
amec

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_1_WDL_TS_Figs\Figure_01_Site&Vicinity_Map.dwg - Layout2 - Jun. 28, 2007 3:28pm - laura.mccoy



NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	1" = 125'
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SEDIMENT SAMPLING LOCATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	2

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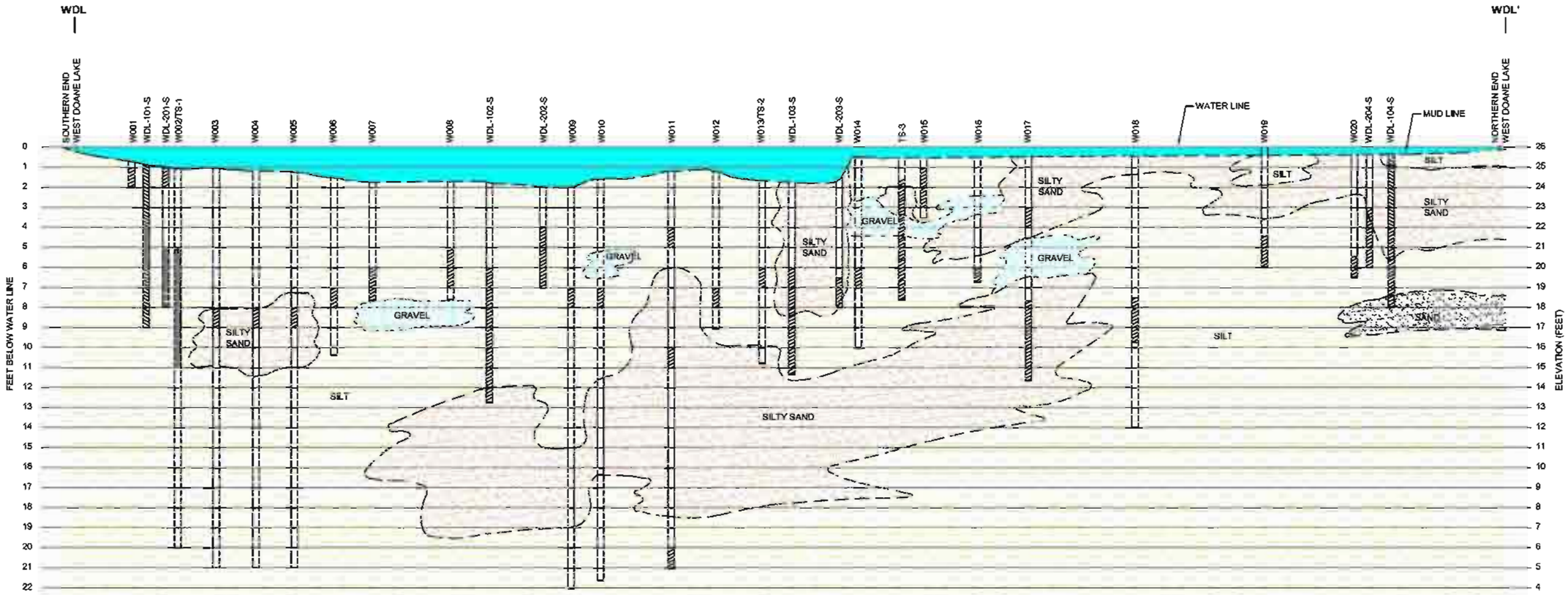

LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SIMPLIFIED CROSS-SECTION
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	2
FIGURE No.	3

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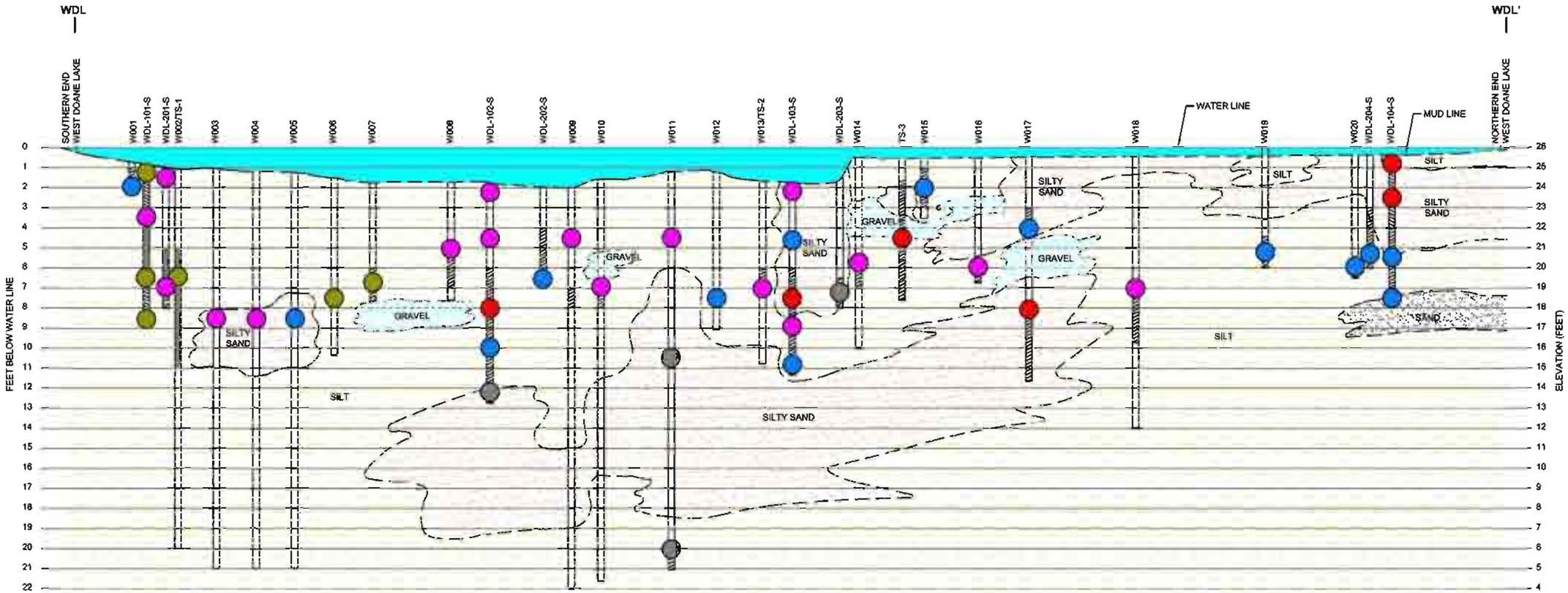
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_1_WDL_TS_Figs\Figure_03_WDL_A-A_Cross_Section.dwg – Layout1 – Jun. 28, 2007 1:38pm – laura.mccoy



LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT
- mg/kg MILLIGRAMS PER KILOGRAM

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

CONCENTRATIONS IN BULK SEDIMENT

- NOT DETECTED
- 0.1-1 (mg/kg)
- 1-10 (mg/kg)
- 10-100 (mg/kg)
- 100-1000 (mg/kg)

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SIMPLIFIED CROSS-SECTION WITH BULK SEDIMENT 2,4-DICHLOROPHENOL CONCENTRATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4A

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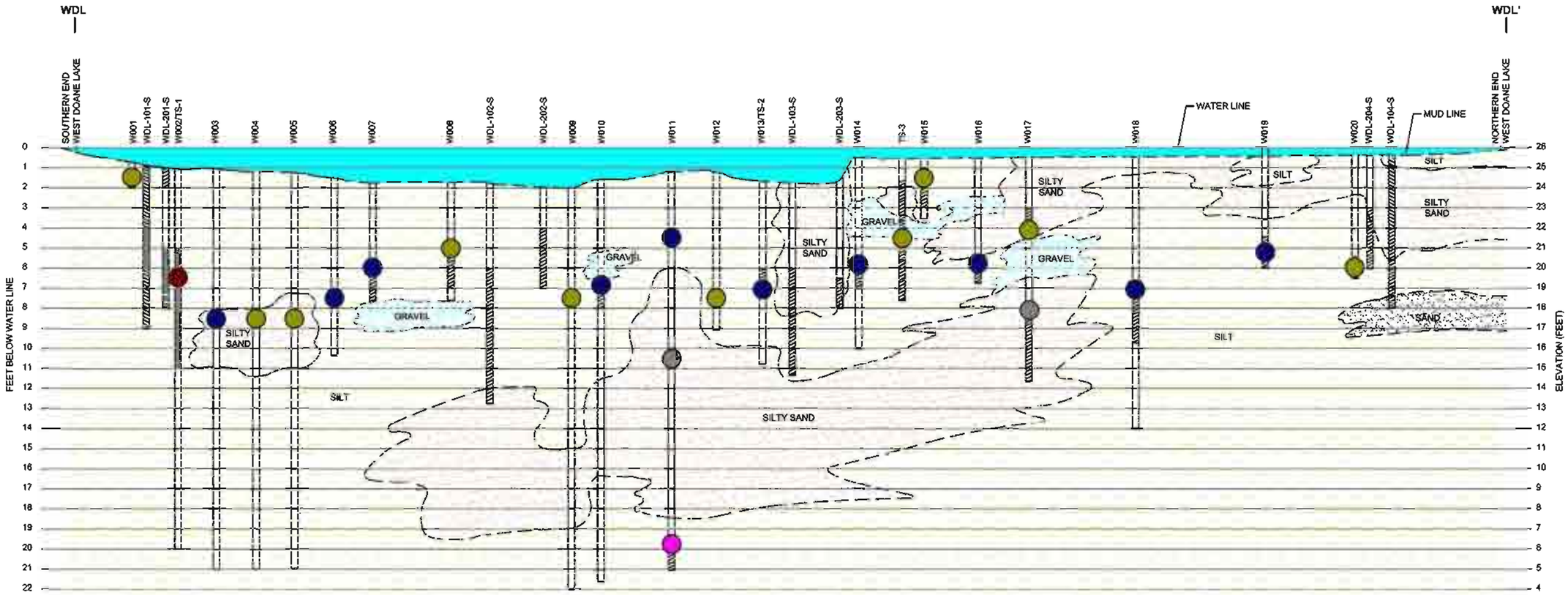
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_1_WDL_TS_Figs\Figure_4A.dwg - Layout1 - Jun. 28, 2007 3:09pm - laura.mccoy



LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT
- mg/kg MILLIGRAMS PER KILOGRAM

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

CONCENTRATIONS IN BULK SEDIMENT

- NOT DETECTED
- 1-10 (mg/kg)
- 10-100 (mg/kg)
- 100-1000 (mg/kg)
- 1000-10,000 (mg/kg)
- 10,000-100,000 (mg/kg)

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT: SLLI

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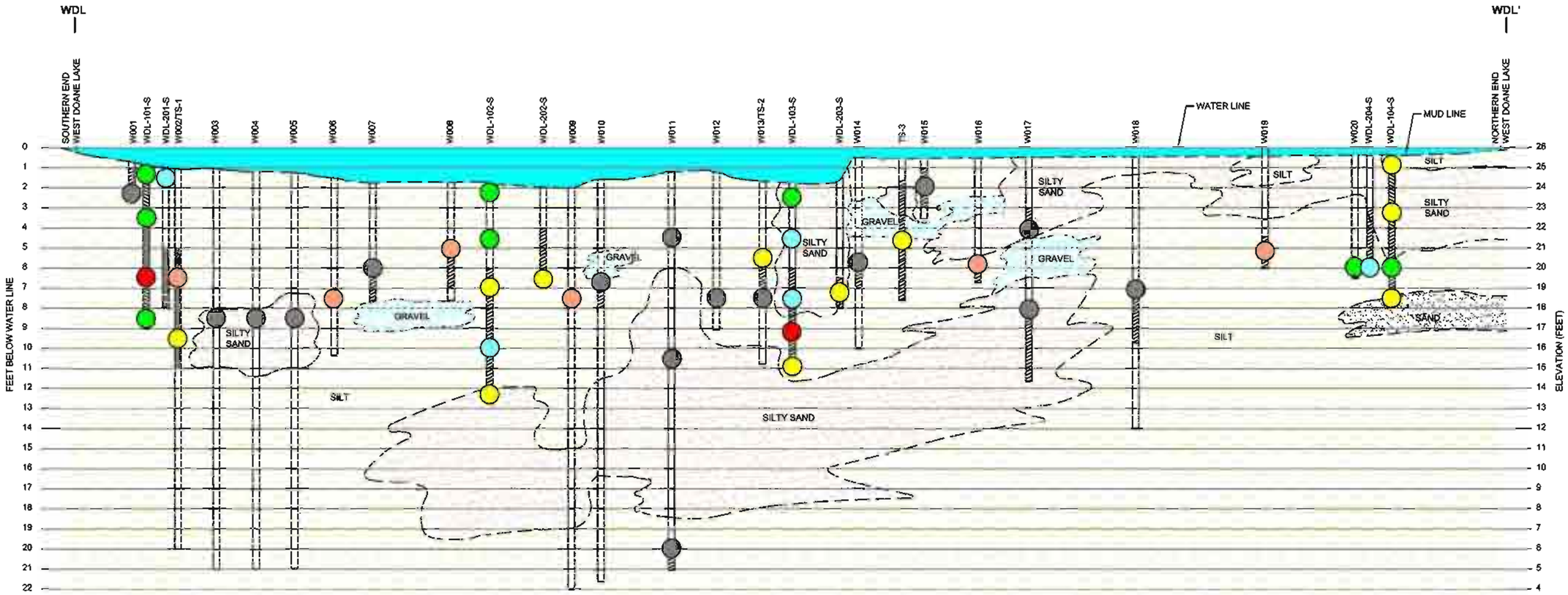
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED

PROJECT: RP - PORTLAND SITE

TITLE: WEST DOANE LAKE SIMPLIFIED CROSS-SECTION WITH BULK SEDIMENT DIESEL RANGE ORGANIC CONCENTRATIONS

DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4B

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_1_WDL_TS_Figs\Figure_4B.dwg - Layout1 - Jun. 28, 2007 3:22pm - laura.mccoy



LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT
- mg/kg MILLIGRAMS PER KILOGRAM

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

CONCENTRATIONS IN BULK SEDIMENT

- NOT DETECTED
- 0.00001-0.0001 (mg/kg)
- 0.0001-0.001 (mg/kg)
- 0.001-0.01 (mg/kg)
- 0.01-0.1 (mg/kg)
- 0.1-1 (mg/kg)

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SIMPLIFIED CROSS-SECTION WITH BULK SEDIMENT 2,3,7,8-TCDD CONCENTRATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4C

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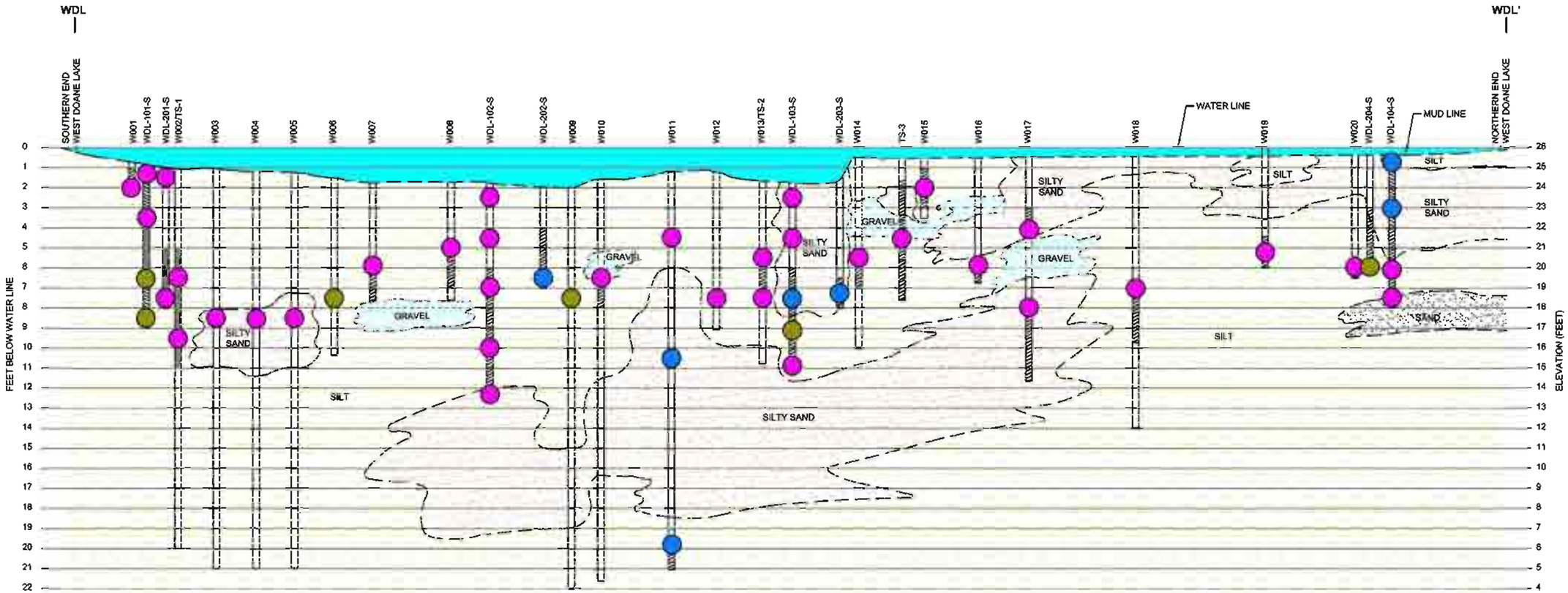
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_1_WDL_TS_Figs\Figure_4C.dwg - Layout1 - Jun. 28, 2007 3:18pm - laura.mccoy



LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT
- mg/kg MILLIGRAMS PER KILOGRAM

CONCENTRATIONS IN BULK SEDIMENT

- NOT DETECTED
- 1-10 (mg/kg)
- 10-100 (mg/kg)
- 100-1000 (mg/kg)

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SIMPLIFIED CROSS-SECTION WITH BULK SEDIMENT ARSENIC CONCENTRATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4D

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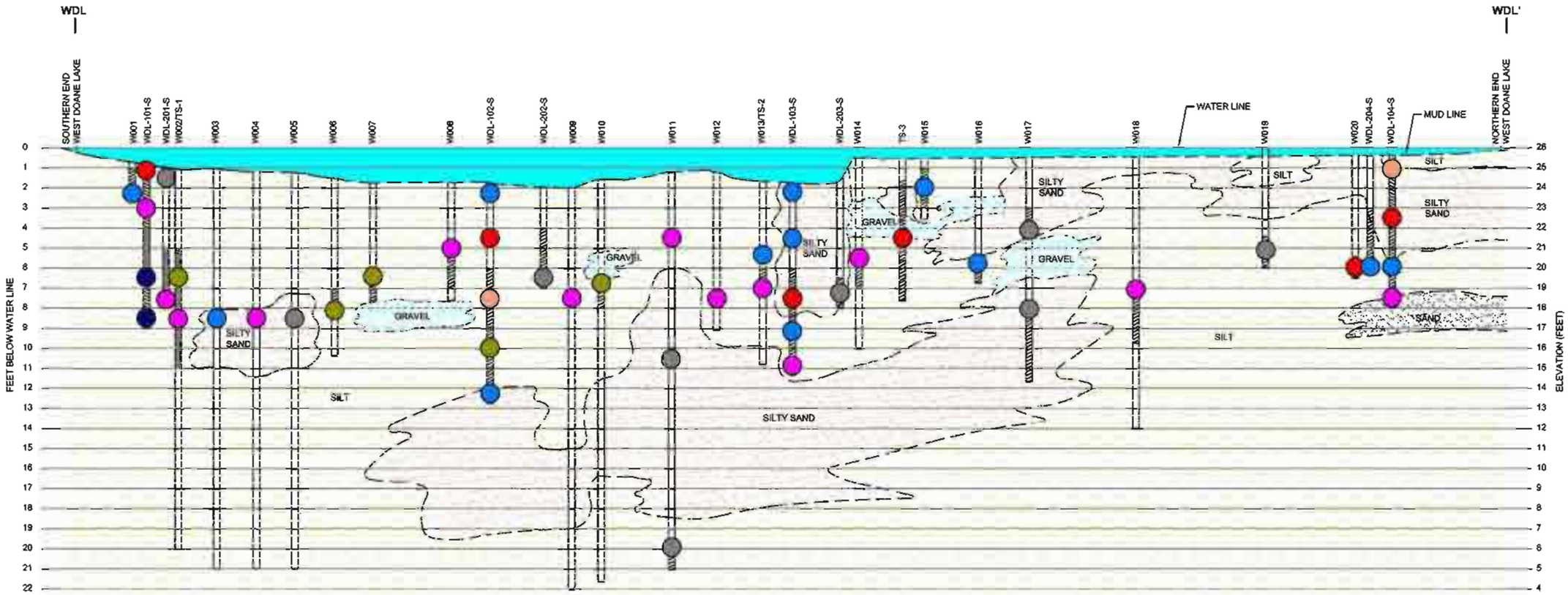
Portland, OR. U.S.A. 97224

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_1_WDL_TS_Figs\Figure_4D.dwg - Layout1 - Jun. 28, 2007 3:18pm - laura.mccoy



LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT
- mg/kg MILLIGRAMS PER KILOGRAM

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

CONCENTRATIONS IN BULK SEDIMENT

- NOT DETECTED
- 0.01-0.1 (mg/kg)
- 0.1-1 (mg/kg)
- 1-10 (mg/kg)
- 10-100 (mg/kg)
- 100-1000 (mg/kg)
- 1000-10,000 (mg/kg)

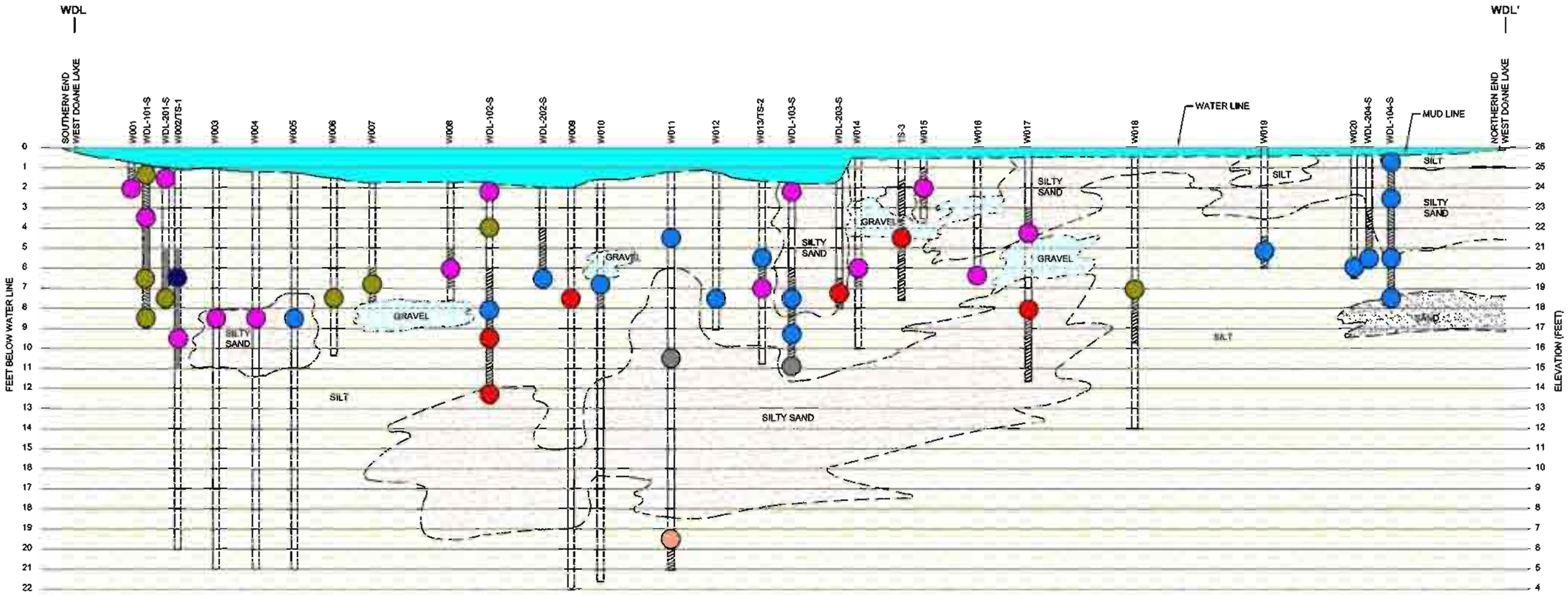
NOTE: REPRESENTS RESULTS FROM METHOD 8270C ANALYSES

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SIMPLIFIED CROSS-SECTION WITH BULK SEDIMENT 1,2-DICHLOROBENZENE CONCENTRATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4E

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_1_WDL_TS_Figs\Figure_4E.dwg - Layout1 - Jun. 28, 2007 3:14pm - laura.mccoy



LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT
- mg/kg MILLIGRAMS PER KILOGRAM

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

CONCENTRATIONS IN BULK SEDIMENT

- NOT DETECTED
- 0.01-0.1 (mg/kg)
- 0.1-1 (mg/kg)
- 1-10 (mg/kg)
- 10-100 (mg/kg)
- 100-1000 (mg/kg)
- 1000-10,000 (mg/kg)

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SIMPLIFIED CROSS-SECTION WITH BULK SEDIMENT 2,4-D CONCENTRATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4F

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

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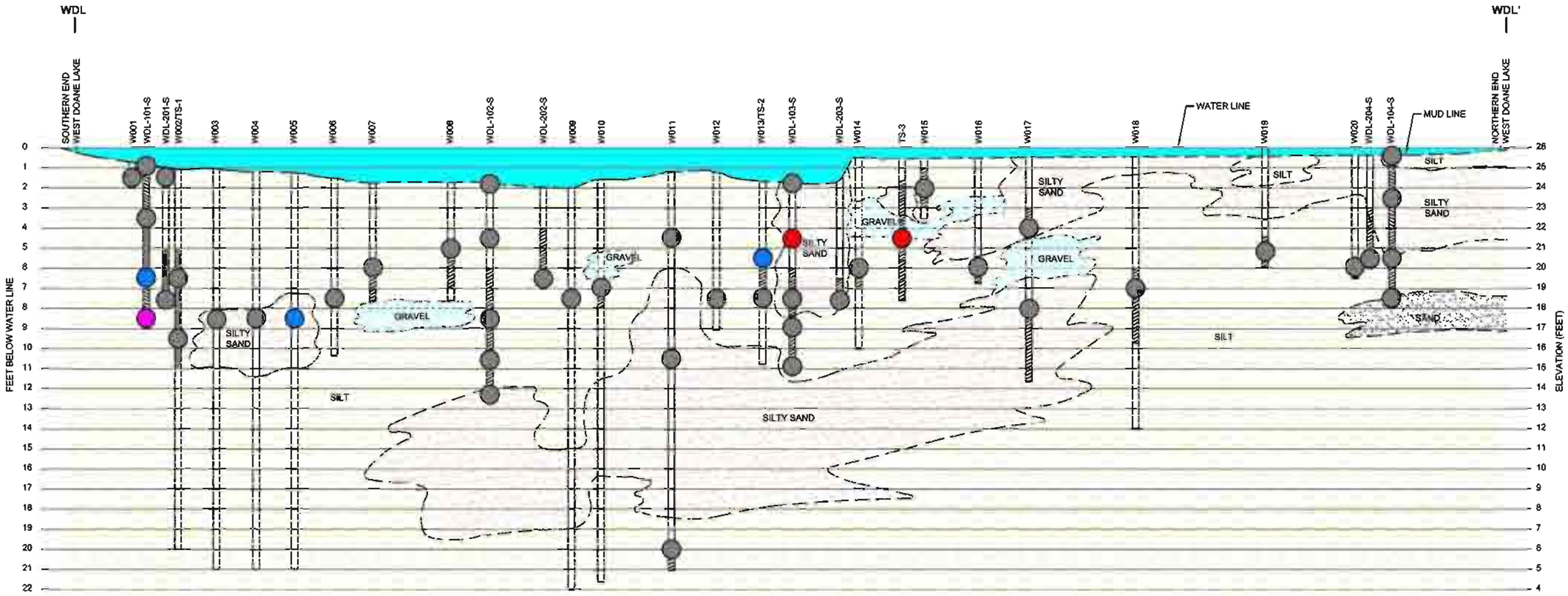

LEGEND

- NON AQUEOUS PHASE LIQUID OBSERVED IN SOIL
- SAMPLE DEPTHS ANALYZED FOR CHEMICAL CONSTITUTIENTS
- INFERRED LITHOLOGIC CONTACT
- mg/kg MILLIGRAMS PER KILOGRAM

VERTICAL SCALE: 0' 2.5' 5.0' 7.5' — 1" = 5'

HORIZONTAL SCALE: 0' 42.5' 85' 127.5' — 1" =85'

CONCENTRATIONS IN BULK SEDIMENT

- NOT DETECTED
- 0.001-0.01 (mg/kg)
- 0.01-0.1 (mg/kg)
- 0.1-1 (mg/kg)
- 1-10 (mg/kg)
- 10-100 (mg/kg)

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS.

CLIENT:	SLLI
DWN BY:	DD
CHK'D BY:	JE
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT	RP - PORTLAND SITE
TITLE	WEST DOANE LAKE SIMPLIFIED CROSS-SECTION WITH BULK SEDIMENT TOTAL DDT CONCENTRATIONS
DATE:	JULY 2007
PROJECT NO:	0-61M-10703-0 P-65
REV. NO.:	1
FIGURE No.	4G

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

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APPENDIX A

Risk-Based Calculation Tables

TABLE A-1
Site-Specific Excavation Worker Groundwater Risk-Based Concentrations for COPCs
RP - Portland Site

$$RBC_C = \frac{(ARL_C*AT_C*BW)}{(ED_E*EF_E*((IR_A*VF_{WE}*SF_I)+(DA_{WE}*E_VF_{WE}*SA_{WE}*SF_O)))}$$

$$RBC_N = \frac{(ARL_N*AT_{NE}*BW)}{(ED_E*EF_E*(((IR_A*VF_{WE})/RFD_I)+((DA_{WE}*E_VF_{WE}*SA_{WE})/RFD_O)))}$$

parameter	symbol	value	units	source
Risk-based concentration for groundwater - carcinogenic	RBC_C	calculated	mg/L	DEQ 2003, Eq. B-161
Risk-based concentration for groundwater - noncarcinogenic	RBC_N	calculated	mg/L	DEQ 2003, Eq. B-162
Acceptable risk level - carcinogens	ARL_C	1.00E-06	unitless	DEQ 2003
Acceptable risk level - noncarcinogens	ARL_N	1	unitless	DEQ 2003
Averaging time - carcinogens	AT_C	25550	days	DEQ 2003
Averaging time - noncarcinogens - excavation worker	AT_{NE}	365	days	DEQ 2003
Body weight	BW	70	kg	DEQ 2003
Exposure duration - excavation worker	ED_E	1	years	DEQ 2003
Exposure frequency - excavation worker	EF_E	9	days/year	DEQ 2003
Inhalation rate	IR_A	7	m^3/day	DEQ 2003
Volatilization factor for groundwater - excavation worker	VF_{WE}	0.5	L/m^3	DEQ 2003
Dermal absorption factor for groundwater - excavation worker	DA_{WE}	calculated	L/cm^2-event	TABLE A-2
Event frequency - excavation worker	E_VF_{WE}	2	event/day	DEQ 2003
Skin surface area - groundwater - excavation worker	SA_{WE}	5700	cm^2	DEQ 2003
Slope factor - oral	SF_O	chem. spec.	$(mg/kg\text{-}day)^{-1}$	EPA Region 9 PRG Table 2004
Reference dose - oral	RFD_O	chem. spec.	mg/kg-day	EPA Region 9 PRG Table 2004
Slope factor - inhalation	SF_I	chem. spec.	$(mg/kg\text{-}day)^{-1}$	EPA Region 9 PRG Table 2004
Reference dose - inhalation	RFD_I	chem. spec.	mg/kg-day	EPA Region 9 PRG Table 2004

Analyte	Dermal Absorption Factor for Groundwater (L/cm^2-event)	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$	Oral Reference Dose (mg/kg-day)	Inhalation Slope Factor $(mg/kg\text{-}day)^{-1}$	Inhalation Reference Dose (mg/kg-day)	Carcinogen/ Noncarcinogen?	Risk-Based Concentration (mg/L)
Dioxins							
2,3,7,8-TCDD	8.27E-03	1.50E+05		1.50E+05		carcinogen	1.41E-08
Dioxin TEQ	8.27E-03	1.50E+05		1.50E+05		carcinogen	1.41E-08
Inorganics							
Aluminum	2.00E-06		1.00E+00		1.40E-03	noncarcinogen	1.25E+05
Antimony	2.00E-06		4.00E-04			noncarcinogen	4.98E+01
Arsenic	2.00E-06	1.50E+00	3.00E-04	1.51E+01		carcinogen	5.81E+00
Barium	2.00E-06		2.00E-01		1.43E-04	noncarcinogen	2.49E+04
Beryllium	2.00E-06		2.00E-03	8.40E+00	5.71E-06	noncarcinogen	2.49E+02
Boron	2.00E-06		2.00E-01		5.70E-03	noncarcinogen	2.49E+04
Cadmium	2.00E-06		5.00E-04	6.30E+00		noncarcinogen	6.23E+01
Chromium, Total	2.00E-06		3.00E-03	2.94E+02	2.29E-06	noncarcinogen	3.74E+02
Cobalt	8.00E-07		2.00E-02	9.80E+00	5.70E-06	noncarcinogen	6.23E+03
Copper	2.00E-06		4.00E-02			noncarcinogen	4.98E+03
Iron	2.00E-06		3.00E-01			noncarcinogen	3.74E+04
Manganese	2.00E-06		2.40E-02		1.43E-05	noncarcinogen	2.99E+03
Mercury	2.00E-06		3.00E-04		8.57E-05	noncarcinogen	3.74E+01
Molybdenum	2.00E-06		5.00E-03			noncarcinogen	6.23E+02
Nickel	4.00E-07		2.00E-02			noncarcinogen	1.25E+04
Selenium	2.00E-06		5.00E-03			noncarcinogen	6.23E+02
Silver	1.20E-06		5.00E-03			noncarcinogen	1.04E+03
Thallium	2.00E-06		6.60E-05			noncarcinogen	8.22E+00
Vanadium	2.00E-06		1.00E-03			noncarcinogen	1.25E+02
Zinc	1.20E-06		3.00E-01			noncarcinogen	6.23E+04
Herbicides							
2,4,5-T	5.91E-05		1.00E-02		1.00E-02	noncarcinogen	4.21E+01
2,4,5-TP (Silvex)	1.14E-04		8.00E-03		8.00E-03	noncarcinogen	1.75E+01
2,4-D	3.45E-05		1.00E-02		1.00E-02	noncarcinogen	7.21E+01
2,4-DB	4.52E-05		8.00E-03		8.00E-03	noncarcinogen	4.41E+01
MCPA	7.69E-05		5.00E-04		5.00E-04	noncarcinogen	1.62E+00
MCPP	5.86E-05		1.00E-03		1.00E-03	noncarcinogen	4.25E+00

TABLE A-1
Site-Specific Excavation Worker Groundwater Risk-Based Concentrations for COPCs
RP - Portland Site

$$RBC_C = \frac{(ARL_C*AT_C*BW)}{(ED_E*EF_E*((IR_A*VF_{WE}*SF_I)+(DA_{WE}*E_VF_{WE}*SA_{WE}*SF_O)))}$$

$$RBC_N = \frac{(ARL_N*AT_{NE}*BW)}{(ED_E*EF_E*(((IR_A*VF_{WE})/RFD_I)+((DA_{WE}*E_VF_{WE}*SA_{WE})/RFD_O)))}$$

parameter	symbol	value	units	source
Risk-based concentration for groundwater - carcinogenic	RBC_C	calculated	mg/L	DEQ 2003, Eq. B-161
Risk-based concentration for groundwater - noncarcinogenic	RBC_N	calculated	mg/L	DEQ 2003, Eq. B-162
Acceptable risk level - carcinogens	ARL_C	1.00E-06	unitless	DEQ 2003
Acceptable risk level - noncarcinogens	ARL_N	1	unitless	DEQ 2003
Averaging time - carcinogens	AT_C	25550	days	DEQ 2003
Averaging time - noncarcinogens - excavation worker	AT_{NE}	365	days	DEQ 2003
Body weight	BW	70	kg	DEQ 2003
Exposure duration - excavation worker	ED_E	1	years	DEQ 2003
Exposure frequency - excavation worker	EF_E	9	days/year	DEQ 2003
Inhalation rate	IR_A	7	m^3/day	DEQ 2003
Volatilization factor for groundwater - excavation worker	VF_{WE}	0.5	L/m^3	DEQ 2003
Dermal absorption factor for groundwater - excavation worker	DA_{WE}	calculated	L/cm^2-event	TABLE A-2
Event frequency - excavation worker	E_VF_{WE}	2	event/day	DEQ 2003
Skin surface area - groundwater - excavation worker	SA_{WE}	5700	cm^2	DEQ 2003
Slope factor - oral	SF_O	chem. spec.	$(mg/kg\text{-}day)^{-1}$	EPA Region 9 PRG Table 2004
Reference dose - oral	RFD_O	chem. spec.	mg/kg-day	EPA Region 9 PRG Table 2004
Slope factor - inhalation	SF_I	chem. spec.	$(mg/kg\text{-}day)^{-1}$	EPA Region 9 PRG Table 2004
Reference dose - inhalation	RFD_I	chem. spec.	mg/kg-day	EPA Region 9 PRG Table 2004

Analyte	Dermal Absorption Factor for Groundwater (L/cm^2-event)	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$	Oral Reference Dose (mg/kg-day)	Inhalation Slope Factor $(mg/kg\text{-}day)^{-1}$	Inhalation Reference Dose (mg/kg-day)	Carcinogen/ Noncarcinogen?	Risk-Based Concentration (mg/L)
Pesticides							
4,4'-DDD	1.81E-03	2.40E-01		2.40E-01		carcinogen	4.00E-02
4,4'-DDE	1.59E-03	3.40E-01		3.40E-01		carcinogen	3.22E-02
4,4'-DDT	3.41E-03	3.40E-01	5.00E-04	3.40E-01	5.00E-04	carcinogen	1.50E-02
alpha-BHC	9.92E-05	6.30E+00	5.00E-04	6.30E+00	5.00E-04	carcinogen	2.79E-02
alpha-Chlordane	6.13E-04	3.50E-01	5.00E-04	3.50E-01	2.00E-04	carcinogen	8.13E-02
beta-BHC	1.15E-04	1.80E+00	2.00E-04	1.86E+00	2.00E-04	carcinogen	8.39E-02
Dieldrin	1.79E-04	1.60E+01	5.00E-05	1.61E+01	5.00E-05	carcinogen	6.07E-03
Endosulfan I	4.91E-05		6.00E-03		6.00E-03	noncarcinogen	3.04E+01
Endosulfan II	4.91E-05		6.00E-03		6.00E-03	noncarcinogen	3.04E+01
Endrin	1.79E-04		3.00E-04		3.00E-04	noncarcinogen	4.17E-01
gamma-BHC (Lindane)	9.19E-05	1.30E+00	3.00E-04	1.30E+00	3.00E-04	carcinogen	1.46E-01
gamma-Chlordane	6.13E-04	3.50E-01	5.00E-04	3.50E-01	2.00E-04	carcinogen	8.13E-02
Heptachlor	1.22E-04	4.50E+00	5.00E-04	4.55E+00	5.00E-04	carcinogen	3.16E-02
Heptachlor epoxide	3.16E-04	9.10E+00	1.30E-05	9.10E+00	1.30E-05	carcinogen	6.07E-03
Semivolatiles							
1-Methylnaphthalene	2.93E-04		4.00E-03			noncarcinogen	3.40E+00
2,3,4,6-Tetrachlorophenol	3.89E-04		3.00E-02		3.00E-02	noncarcinogen	1.92E+01
2,3,5,6-Tetrachlorophenol	1.64E-04		3.00E-02		3.00E-02	noncarcinogen	4.56E+01
2,4,5-Trichlorophenol	1.60E-04		1.00E-01		1.00E-01	noncarcinogen	1.55E+02
2,4,6-Trichlorophenol	1.61E-04	1.10E-02	1.00E-04	1.09E-02	1.00E-04	carcinogen	9.86E+00
2,4-Dichlorophenol	7.66E-05		3.00E-03		3.00E-03	noncarcinogen	9.76E+00
2,4-Dimethylphenol	3.34E-05		2.00E-02		2.00E-02	noncarcinogen	1.49E+02
2-Chloronaphthalene	2.64E-04		8.00E-02		8.00E-02	noncarcinogen	7.55E+01
2-Chlorophenol	2.50E-05		5.00E-03		5.00E-03	noncarcinogen	4.99E+01
2-Methylnaphthalene	2.88E-04		4.00E-03			noncarcinogen	3.45E+00
2-Methylphenol (o-cresol)	2.20E-05		5.00E-02		5.00E-02	noncarcinogen	5.65E+02
4-Methylphenol (p-cresol, 3/4 cresol)	2.20E-05		5.00E-03		5.00E-03	noncarcinogen	5.65E+01
Benzoic acid	1.72E-05		4.00E+00		4.00E+00	noncarcinogen	5.79E+04
Benzyl alcohol	5.93E-06		3.00E-01		3.00E-01	noncarcinogen	1.26E+04
Bis(2-Ethylhexyl) pthalate	1.68E-02	1.40E-02	2.00E-02	1.40E-02	2.00E-02	carcinogen	7.42E-02
Butylbenzylphthalate	3.55E-04		2.00E-01		2.00E-01	noncarcinogen	1.40E+02
Diethylphthalate	2.08E-05		8.00E-01		8.00E-01	noncarcinogen	9.56E+03
Di-n-butylphthalate	1.84E-04		1.00E-01			noncarcinogen	1.35E+02
Hexachlorobutadiene	5.57E-04	7.80E-02	3.00E-04	7.70E-02	3.00E-04	carcinogen	4.02E-01
Naphthalene	1.41E-04		2.00E-02		8.57E-04	noncarcinogen	3.53E+01
Nitrobenzene	4.03E-05		5.00E-04		5.71E-04	noncarcinogen	3.09E+00
N-Nitrosodi-n-propyl amine	7.28E-06	7.00E+00		7.00E+00		carcinogen	3.42E-01
Pentachlorophenol	2.78E-03	1.20E-01	3.00E-02	1.20E-01	3.00E-02	carcinogen	5.22E-02
Phenol	1.17E-05		3.00E-01		3.00E-01	noncarcinogen	6.39E+03

TABLE A-1
Site-Specific Excavation Worker Groundwater Risk-Based Concentrations for COPCs
RP - Portland Site

$$RBC_C = \frac{(ARL_C*AT_C*BW)}{(ED_E*EF_E*((IR_A*VF_{WE}*SF_I)+(DA_{WE}*E_VF_{WE}*SA_{WE}*SF_O)))}$$

$$RBC_N = \frac{(ARL_N*AT_{NE}*BW)}{(ED_E*EF_E*(((IR_A*VF_{WE})/RFD_I)+((DA_{WE}*E_VF_{WE}*SA_{WE})/RFD_O)))}$$

parameter	symbol	value	units	source
Risk-based concentration for groundwater - carcinogenic	RBC_C	calculated	mg/L	DEQ 2003, Eq. B-161
Risk-based concentration for groundwater - noncarcinogenic	RBC_N	calculated	mg/L	DEQ 2003, Eq. B-162
Acceptable risk level - carcinogens	ARL_C	1.00E-06	unitless	DEQ 2003
Acceptable risk level - noncarcinogens	ARL_N	1	unitless	DEQ 2003
Averaging time - carcinogens	AT_C	25550	days	DEQ 2003
Averaging time - noncarcinogens - excavation worker	AT_{NE}	365	days	DEQ 2003
Body weight	BW	70	kg	DEQ 2003
Exposure duration - excavation worker	ED_E	1	years	DEQ 2003
Exposure frequency - excavation worker	EF_E	9	days/year	DEQ 2003
Inhalation rate	IR_A	7	m^3/day	DEQ 2003
Volatilization factor for groundwater - excavation worker	VF_{WE}	0.5	L/m^3	DEQ 2003
Dermal absorption factor for groundwater - excavation worker	DA_{WE}	calculated	L/cm^2-event	TABLE A-2
Event frequency - excavation worker	E_VF_{WE}	2	event/day	DEQ 2003
Skin surface area - groundwater - excavation worker	SA_{WE}	5700	cm^2	DEQ 2003
Slope factor - oral	SF_O	chem. spec.	$(mg/kg\text{-}day)^{-1}$	EPA Region 9 PRG Table 2004
Reference dose - oral	RFD_O	chem. spec.	mg/kg-day	EPA Region 9 PRG Table 2004
Slope factor - inhalation	SF_I	chem. spec.	$(mg/kg\text{-}day)^{-1}$	EPA Region 9 PRG Table 2004
Reference dose - inhalation	RFD_I	chem. spec.	mg/kg-day	EPA Region 9 PRG Table 2004

Analyte	Dermal Absorption Factor for Groundwater (L/cm^2-event)	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$	Oral Reference Dose (mg/kg-day)	Inhalation Slope Factor $(mg/kg\text{-}day)^{-1}$	Inhalation Reference Dose (mg/kg-day)	Carcinogen/ Noncarcinogen?	Risk-Based Concentration (mg/L)
Volatiles							
1,1-Dichloroethane	1.85E-05		1.00E-01		1.43E-01	noncarcinogen	1.07E+02
1,2,3-Trichlorobenzene	2.80E-04		1.00E-02		1.00E-03	noncarcinogen	7.43E-01
1,2,4-Trichlorobenzene	2.72E-04		1.00E-02		1.00E-03	noncarcinogen	7.45E-01
1,2,4-Trimethylbenzene	2.91E-04		5.00E-02		1.70E-03	noncarcinogen	1.34E+00
1,2-Dibromo-3-chloropropane	3.93E-05	1.4E+00	5.70E-05		5.71E-05	carcinogen	3.17E-01
1,2-Dichlorobenzene (o-Dichlorobenzene)	1.38E-04		9.00E-02		5.71E-02	noncarcinogen	3.61E+01
1,3,5-Trimethylbenzene	2.91E-04		5.00E-02		1.70E-03	noncarcinogen	1.34E+00
1,3-Dichlorobenzene (m-Dichlorobenzene)	1.95E-04		3.00E-02		3.00E-02	noncarcinogen	1.49E+01
1,4-Dichlorobenzene (p-Dichlorobenzene)	1.41E-04	2.40E-02	3.00E-02	2.20E-02	2.29E-01	carcinogen	1.72E+00
2-Butanone (MEK)	2.44E-06		6.00E-01		1.43E+00	noncarcinogen	1.14E+03
Acetone	1.27E-06		9.00E-01		9.00E-01	noncarcinogen	7.27E+02
Benzene	3.68E-05	5.50E-02	4.00E-03	2.73E-02	8.57E-03	carcinogen	1.67E+00
Bromomethane	7.62E-06		1.40E-03		1.43E-03	noncarcinogen	1.13E+00
Carbon Disulfide	4.21E-05		1.00E-01		2.00E-01	noncarcinogen	1.27E+02
Chlorobenzene	7.92E-05		2.00E-02		1.70E-02	noncarcinogen	1.13E+01
Chloroethane	1.51E-05	2.90E-03	4.00E-01	2.90E-03	3.14E+00	carcinogen	1.87E+01
Chloroform	2.04E-05		1.00E-02	8.05E-02	1.40E-02	carcinogen	7.05E-01
Chloromethane	7.87E-06		2.60E-02		2.57E-02	noncarcinogen	2.03E+01
Ethylbenzene	1.31E-04		1.00E-01		2.86E-01	noncarcinogen	1.05E+02
Isobutyl alcohol	4.91E-06		3.00E-01		3.00E-01	noncarcinogen	2.40E+02
iso-Propylbenzene	2.45E-04		1.00E-01		1.14E-01	noncarcinogen	4.85E+01
m,p-Xylene	1.31E-04		2.00E-01		2.86E-02	noncarcinogen	2.18E+01
n-Butylbenzene	6.57E-04		4.00E-02		4.00E-02	noncarcinogen	1.03E+01
n-Propylbenzene	2.55E-04		4.00E-02		4.00E-02	noncarcinogen	1.77E+01
o-Xylene	1.31E-04		2.00E-01		2.86E-02	noncarcinogen	2.18E+01
Toluene	8.02E-05		8.00E-02		1.43E+00	noncarcinogen	2.05E+02

TABLE A-2
Excavation Worker Dermal Absorption Factor for Groundwater
RP - Portland Site

DA_{WE} for inorganics = K_P*CF*t_{EVENTe}

DA_{WE} for organics where t_{EVENTe} < t* = 2*K_P*CF*(SQRT((6*T*t_{EVENTe})/PI()))

DA_{WE} for organics where t_{EVENTe} > t* = K_P*CF*((t_{EVENTe}/(1+B))+2*T*((1+3*B+3*B^2)/(1+B)^2))

parameter	symbol	value	unit	source
Dermal absorption factor for groundwater	DA_{WE}	calculated	L/cm^2-event	DEQ 2003; Eqs. B-163 & B-164
Conversion factor	CF	0.001	L/cm^3	DEQ 2003
Duration of exposure	t_{EVENTe}	2	hr/event	DEQ 2003
Dermal permeability coefficient	K_P	chem. spec.	cm/hr	EPA 2004 (Exhibit 3-1 & B-3, Eqn. 3.8)
Lag time	T	chem. spec.	hr/event	EPA 2004 (Exhibit B-3, Eqn. A.4)
π	PI()	3.14	unitless	
Relative contribution of permeability coefficient	B	chem. spec.	unitless	EPA 2004 (Exhibit B-3, Eqn. A.1)
Time to reach steady-state	t*	chem. spec.	hr	EPA 2004 (Exhibit B-3, Eqn. A.5-A.8)

Analyte	Dermal Permeability Coefficient (cm/hr)	Lag Time (hr/event)	Relative Contribution of Permeability Coefficient (unitless)	Time to Reach Steady-state (hr)	Is t_{EVENTe} < t*?	Dermal Absorption Factor for Groundwater (L/cm^2-event)
Dioxins						
2,3,7,8-TCDD	8.10E-01	6.82E+00	5.60E+00	3.01E+01	Yes	8.27E-03
Dioxin TEQ	8.10E-01	6.82E+00	5.60E+00	3.01E+01	Yes	8.27E-03
Inorganics						
Aluminum	1.00E-03					2.00E-06
Antimony	1.00E-03					2.00E-06
Arsenic	1.00E-03					2.00E-06
Barium	1.00E-03					2.00E-06
Beryllium	1.00E-03					2.00E-06
Boron	1.00E-03					2.00E-06
Cadmium	1.00E-03					2.00E-06
Chromium, Total	1.00E-03					2.00E-06
Cobalt	4.00E-04					8.00E-07
Copper	1.00E-03					2.00E-06
Iron	1.00E-03					2.00E-06
Manganese	1.00E-03					2.00E-06
Mercury	1.00E-03					2.00E-06
Molybdenum	1.00E-03					2.00E-06
Nickel	2.00E-04					4.00E-07
Selenium	1.00E-03					2.00E-06
Silver	6.00E-04					1.20E-06
Thallium	1.00E-03					2.00E-06
Vanadium	1.00E-03					2.00E-06
Zinc	6.00E-04					1.20E-06
Herbicides						
2,4,5-T	8.99E-03	2.83E+00	5.53E-02	6.79E+00	Yes	5.91E-05
2,4,5-TP (Silvex)	1.58E-02	3.39E+00	9.98E-02	8.14E+00	Yes	1.14E-04
2,4-D	6.56E-03	1.81E+00	3.75E-02	4.36E+00	Yes	3.45E-05
2,4-DB	3.76E-03	9.46E+00	2.70E-02	2.27E+01	Yes	4.52E-05
MCPA	1.67E-02	1.39E+00	9.07E-02	3.35E+00	Yes	7.69E-05
MCPP	1.16E-02	1.67E+00	6.53E-02	4.01E+00	Yes	5.86E-05
Pesticides						
4,4'-DDD	1.80E-01	6.65E+00	1.20E+00	2.60E+01	Yes	1.81E-03
4,4'-DDE	1.60E-01	6.48E+00	1.10E+00	2.51E+01	Yes	1.59E-03
4,4'-DDT	2.70E-01	1.05E+01	1.90E+00	4.25E+01	Yes	3.41E-03
alpha-BHC	1.20E-02	4.47E+00	7.87E-02	1.07E+01	Yes	9.92E-05
alpha-Chlordane	3.40E-02	2.13E+01	3.00E-01	5.11E+01	Yes	6.13E-04
beta-BHC	1.40E-02	4.47E+00	9.17E-02	1.07E+01	Yes	1.15E-04
Dieldrin	1.20E-02	1.46E+01	1.00E-01	3.51E+01	Yes	1.79E-04
Endosulfan I	2.81E-03	2.00E+01	2.18E-02	4.79E+01	Yes	4.91E-05
Endosulfan II	2.81E-03	2.00E+01	2.18E-02	4.79E+01	Yes	4.91E-05
Endrin	1.20E-02	1.46E+01	1.00E-01	3.51E+01	Yes	1.79E-04
gamma-BHC (Lindane)	1.10E-02	4.57E+00	1.00E-01	1.10E+01	Yes	9.19E-05
gamma-Chlordane	3.40E-02	2.13E+01	3.00E-01	5.11E+01	Yes	6.13E-04
Heptachlor	8.60E-03	1.33E+01	1.00E-01	3.19E+01	Yes	1.22E-04
Heptachlor epoxide	2.02E-02	1.59E+01	1.54E-01	3.82E+01	Yes	3.16E-04

TABLE A-2
Excavation Worker Dermal Absorption Factor for Groundwater
RP - Portland Site

DA_{WE} for inorganics = K_P*CF*t_{EVENTe}

DA_{WE} for organics where t_{EVENTe} < t* = 2*K_P*CF*(SQRT((6*T*t_{EVENTe})/PI()))

DA_{WE} for organics where t_{EVENTe} > t* = K_P*CF*((t_{EVENTe}/(1+B))+2*T*((1+3*B+3*B^2)/(1+B)^2))

parameter	symbol	value	unit	source
Dermal absorption factor for groundwater	DA_{WE}	calculated	L/cm^2-event	DEQ 2003; Eqs. B-163 & B-164
Conversion factor	CF	0.001	L/cm^3	DEQ 2003
Duration of exposure	t_{EVENTe}	2	hr/event	DEQ 2003
Dermal permeability coefficient	K_P	chem. spec.	cm/hr	EPA 2004 (Exhibit 3-1 & B-3, Eqn. 3.8)
Lag time	T	chem. spec.	hr/event	EPA 2004 (Exhibit B-3, Eqn. A.4)
π	PI()	3.14	unitless	
Relative contribution of permeability coefficient	B	chem. spec.	unitless	EPA 2004 (Exhibit B-3, Eqn. A.1)
Time to reach steady-state	t*	chem. spec.	hr	EPA 2004 (Exhibit B-3, Eqn. A.5-A.8)

Analyte	Dermal Permeability Coefficient (cm/hr)	Lag Time (hr/event)	Relative Contribution of Permeability Coefficient (unitless)	Time to Reach Steady-state (hr)	Is t_{EVENTe} < t*?	Dermal Absorption Factor for Groundwater (L/cm^2-event)
Semivolatiles						
1-Methylnaphthalene	9.08E-02	6.57E-01	4.16E-01	1.58E+00	No	2.93E-04
2,3,4,6-Tetrachlorophenol	6.89E-02	2.09E+00	4.04E-01	5.01E+00	Yes	3.89E-04
2,3,5,6-Tetrachlorophenol	2.90E-02	2.09E+00	1.70E-01	5.01E+00	Yes	1.64E-04
2,4,5-Trichlorophenol	3.54E-02	1.34E+00	1.92E-01	3.21E+00	Yes	1.60E-04
2,4,6-Trichlorophenol	3.56E-02	1.33E+00	1.92E-01	3.20E+00	Yes	1.61E-04
2,4-Dichlorophenol	2.10E-02	8.70E-01	1.00E-01	2.10E+00	Yes	7.66E-05
2,4-Dimethylphenol	1.10E-02	5.20E-01	0.00E+00	1.24E+00	No	3.34E-05
2-Chloronaphthalene	7.30E-02	8.55E-01	3.58E-01	2.05E+00	Yes	2.64E-04
2-Chlorophenol	8.00E-03	5.60E-01	0.00E+00	1.34E+00	No	2.50E-05
2-Methylnaphthalene	8.94E-02	6.57E-01	4.10E-01	1.58E+00	No	2.88E-04
2-Methylphenol (o-cresol)	7.70E-03	4.30E-01	0.00E+00	1.03E+00	No	2.20E-05
4-Methylphenol (p-cresol, 3/4 cresol)	7.70E-03	4.30E-01	0.00E+00	1.03E+00	No	2.20E-05
Benzoic acid	5.70E-03	5.10E-01	0.00E+00	1.24E+00	No	1.72E-05
Benzyl alcohol	2.09E-03	4.23E-01	8.36E-03	1.02E+00	No	5.93E-06
Bis(2-Ethylhexyl) pthalate	1.07E+00	1.62E+01	8.12E+00	7.26E+01	Yes	1.68E-02
Butylbenzylphthalate	3.74E-02	5.89E+00	2.54E-01	1.41E+01	Yes	3.55E-04
Diethylphthalate	3.90E-03	1.87E+00	0.00E+00	4.50E+00	Yes	2.08E-05
Di-n-butylphthalate	2.40E-02	3.86E+00	2.00E-01	9.27E+00	Yes	1.84E-04
Hexachlorobutadiene	8.10E-02	3.09E+00	5.00E-01	7.42E+00	Yes	5.57E-04
Naphthalene	4.70E-02	5.60E-01	2.00E-01	1.34E+00	No	1.41E-04
Nitrobenzene	1.79E-02	1.55E-01	3.77E-02	3.71E-01	No	4.03E-05
N-Nitrosodi-n-propyl amine	2.34E-03	5.63E-01	1.03E-02	1.35E+00	No	7.28E-06
Pentachlorophenol	3.90E-01	3.33E+00	2.50E+00	1.38E+01	Yes	2.78E-03
Phenol	4.30E-03	3.60E-01	0.00E+00	8.60E-01	No	1.17E-05
Volatiles						
1,1-Dichloroethane	6.70E-03	3.80E-01	0.00E+00	9.20E-01	No	1.85E-05
1,2,3-Trichlorobenzene	6.87E-02	1.09E+00	3.56E-01	2.62E+00	Yes	2.80E-04
1,2,4-Trichlorobenzene	6.60E-02	1.11E+00	3.00E-01	2.66E+00	Yes	2.72E-04
1,2,4-Trimethylbenzene	1.05E-01	4.95E-01	4.43E-01	1.19E+00	No	2.91E-04
1,2-Dibromo-3-chloropropane	6.76E-03	2.21E+00	4.00E-02	5.31E+00	Yes	3.93E-05
1,2-Dichlorobenzene (o-Dichlorobenzene)	4.10E-02	7.10E-01	2.00E-01	1.71E+00	No	1.38E-04
1,3,5-Trimethylbenzene	1.05E-01	4.95E-01	4.43E-01	1.19E+00	No	2.91E-04
1,3-Dichlorobenzene (m-Dichlorobenzene)	5.80E-02	7.10E-01	3.00E-01	1.71E+00	No	1.95E-04
1,4-Dichlorobenzene (p-Dichlorobenzene)	4.20E-02	7.10E-01	2.00E-01	1.71E+00	No	1.41E-04
2-Butanone (MEK)	9.60E-04	2.70E-01	0.00E+00	6.50E-01	No	2.44E-06
Acetone	5.20E-04	2.22E-01	1.53E-03	5.33E-01	No	1.27E-06
Benzene	1.50E-02	2.90E-01	1.00E-01	7.00E-01	No	3.68E-05
Bromomethane	2.80E-03	3.60E-01	0.00E+00	8.70E-01	No	7.62E-06
Carbon Disulfide	1.70E-02	3.00E-01	1.00E-01	7.20E-01	No	4.21E-05
Chlorobenzene	2.80E-02	4.60E-01	1.00E-01	1.09E+00	No	7.92E-05
Chloroethane	6.10E-03	2.40E-01	0.00E+00	5.90E-01	No	1.51E-05
Chloroform	6.80E-03	5.00E-01	0.00E+00	1.19E+00	No	2.04E-05
Chloromethane	3.30E-03	2.01E-01	9.01E-03	4.83E-01	No	7.87E-06
Ethylbenzene	4.90E-02	4.20E-01	2.00E-01	1.01E+00	No	1.31E-04
Isobutyl alcohol	1.94E-03	2.73E-01	6.41E-03	6.54E-01	No	4.91E-06
iso-Propylbenzene	8.78E-02	4.93E-01	3.70E-01	1.18E+00	No	2.45E-04
m,p-Xylene	4.92E-02	4.12E-01	1.95E-01	9.89E-01	No	1.31E-04
n-Butylbenzene	2.18E-01	5.93E-01	9.73E-01	2.28E+00	Yes	6.57E-04
n-Propylbenzene	9.17E-02	4.95E-01	3.87E-01	1.19E+00	No	2.55E-04
o-Xylene	4.92E-02	4.12E-01	1.95E-01	9.89E-01	No	1.31E-04
Toluene	3.10E-02	3.50E-01	1.00E-01	8.40E-01	No	8.02E-05

TABLE A-3
Physical and Chemical Parameters of Constituents of Potential Concern for WDL Leachate
RP - Portland Site

Analyte	SF_o $(mg/kg\text{-}day)^{-1}$	Source	RfD_o (mg/kg-day)	Source	SF_i $(mg/kg\text{-}day)^{-1}$	Source	RfD_i (mg/kg-day)	Source	Molecular Weight (g/mol)	Estimated K_p (cm/hr)	Source	T (hr/event)	Source	t* (hr)	Source	B (unitless)	Source	log K_{ow} (unitless)	Source
Dioxins																			
2,3,7,8-TCDD	1.50E+05	ph			1.50E+05	ph			3.22E+02	8.10E-01	g	6.82E+00	g	3.01E+01	g	5.60E+00	g		
Dioxin TEQ	1.50E+05	ph			1.50E+05	ph			3.22E+02	8.10E-01	g	6.82E+00	g	3.01E+01	g	5.60E+00	g		
Inorganics																			
Aluminum			1.00E+00	pp			1.40E-03	pp	2.70E+01	1.00E-03									
Antimony			4.00E-04	i					1.22E+02	1.00E-03									
Arsenic	1.50E+00	i	3.00E-04	i	1.51E+01	i2			7.49E+01	1.00E-03									
Barium			2.00E-01	i			1.43E-04	ph	1.37E+02	1.00E-03									
Beryllium			2.00E-03	i	8.40E+00	i2	5.71E-06	i2		1.00E-03									
Boron			2.00E-01	i			5.70E-03	ph	1.08E+01	1.00E-03									
Cadmium			5.00E-04	i	6.30E+00	i2			1.12E+02	1.00E-03									
Chromium VI			3.00E-03	i	2.94E+02	pi	2.29E-06	i2	5.20E+01	1.00E-03									
Cobalt			2.00E-02	pp	9.80E+00	pp	5.70E-06	pp	5.89E+01	4.00E-04									
Copper			4.00E-02	ph					6.35E+01	1.00E-03									
Iron			3.00E-01	pn						1.00E-03									
Manganese			2.40E-02	pi			1.43E-05	i2	5.49E+01	1.00E-03									
Mercury			3.00E-04	pi			8.57E-05	i2	2.01E+02	1.00E-03									
Molybdenum			5.00E-03	i					9.59E+01	1.00E-03									
Nickel			2.00E-02	i					5.87E+01	2.00E-04									
Selenium			5.00E-03	i					7.90E+01	1.00E-03									
Silver			5.00E-03	i					1.08E+02	6.00E-04									
Thallium			6.60E-05	pi					2.04E+02	1.00E-03									
Vanadium			1.00E-03	pn					5.09E+01	1.00E-03									
Zinc			3.00E-01	i					6.54E+01	6.00E-04									
Herbicides																			
2,4,5-T			1.00E-02	i			1.00E-02	pr	2.55E+02	8.99E-03	g2	2.83E+00	g2	6.79E+00	g2	5.53E-02	g2	3.31E+00	t
2,4,5-TP (Silvex)			8.00E-03	i			8.00E-03	pr	2.70E+02	1.58E-02	g2	3.39E+00	g2	8.14E+00	g2	9.98E-02	g2	3.80E+00	t
2,4-D			1.00E-02	i			1.00E-02	pr	2.21E+02	6.56E-03	g2	1.81E+00	g2	4.36E+00	g2	3.75E-02	g2	2.81E+00	c
2,4-DB			8.00E-03	i			8.00E-03	pr	3.49E+02	3.76E-03	g2	9.46E+00	g2	2.27E+01	g2	2.70E-02	g2	3.53E+00	t
MCPA			5.00E-04	i			5.00E-04	pr	2.01E+02	1.67E-02	g2	1.39E+00	g2	3.35E+00	g2	9.07E-02	g2	3.25E+00	t
MCPP			1.00E-03	i			1.00E-03	pr	2.15E+02	1.16E-02	g2	1.67E+00	g2	4.01E+00	g2	6.53E-02	g2	3.13E+00	t

TABLE A-3
Physical and Chemical Parameters of Constituents of Potential Concern for WDL Leachate
RP - Portland Site

Analyte	SF_o $(mg/kg\text{-}day)^{-1}$	Source	RfD_o (mg/kg-day)	Source	SF_i $(mg/kg\text{-}day)^{-1}$	Source	RfD_i (mg/kg-day)	Source	Molecular Weight (g/mol)	Estimated K_p (cm/hr)	Source	T (hr/event)	Source	t* (hr)	Source	B (unitless)	Source	log K_{ow} (unitless)	Source
Pesticides/PCBs																			
4,4'-DDD	2.40E-01	i			2.40E-01	pr			3.20E+02	1.80E-01	g	6.65E+00	g	2.60E+01	g	1.20E+00	g		
4,4'-DDE	3.40E-01	i			3.40E-01	pr			3.18E+02	1.60E-01	g	6.48E+00	g	2.51E+01	g	1.10E+00	g		
4,4'-DDT	3.40E-01	i	5.00E-04	i	3.40E-01	i2	5.00E-04	pr	3.54E+02	2.70E-01	g	1.05E+01	g	4.25E+01	g	1.90E+00	g		
alpha-BHC	6.30E+00	i	5.00E-04	pn	6.30E+00	i2	5.00E-04	pr	2.91E+02	1.20E-02	g2	4.47E+00	g2	1.07E+01	g2	7.87E-02	g2	3.80E+00	t
alpha-Chlordane	3.50E-01	i	5.00E-04	i	3.50E-01	i2	2.00E-04	i2	4.10E+02	3.40E-02	g	2.13E+01	g	5.11E+01	g	3.00E-01	g		
beta-BHC	1.80E+00	i	2.00E-04	pn	1.86E+00	i2	2.00E-04	pr	2.91E+02	1.40E-02	g2	4.47E+00	g2	1.07E+01	g2	9.17E-02	g2	3.90E+00	c
Dieldrin	1.60E+01	i	5.00E-05	i	1.61E+01	i2	5.00E-05	pr	3.81E+02	1.20E-02	g	1.46E+01	g	3.51E+01	g	1.00E-01	g		
Endosulfan I			6.00E-03	i			6.00E-03	pr	4.07E+02	2.81E-03	g2	2.00E+01	g2	4.79E+01	g2	2.18E-02	g2	3.83E+00	t
Endosulfan II			6.00E-03	i			6.00E-03	pr	4.07E+02	2.81E-03	g2	2.00E+01	g2	4.79E+01	g2	2.18E-02	g2	3.83E+00	t
Endrin			3.00E-04	i			3.00E-04	pr	3.81E+02	1.20E-02	g	1.46E+01	g	3.51E+01	g	1.00E-01	g		
gamma-BHC (Lindane)	1.30E+00	ph	3.00E-04	i	1.30E+00	pr	3.00E-04	pr	2.91E+02	1.10E-02	g	4.57E+00	g	1.10E+01	g	1.00E-01	g		
gamma-Chlordane	3.50E-01	i	5.00E-04	i	3.50E-01	i2	2.00E-04	i2	4.10E+02	3.40E-02	g	2.13E+01	g	5.11E+01	g	3.00E-01	g		
Heptachlor	4.50E+00	i	5.00E-04	i	4.55E+00	i2	5.00E-04	pr	3.73E+02	8.60E-03	g	1.33E+01	g	3.19E+01	g	1.00E-01	g		
Heptachlor epoxide	9.10E+00	i	1.30E-05	i	9.10E+00	i2	1.30E-05	pr	3.89E+02	2.02E-02	g2	1.59E+01	g2	3.82E+01	g2	1.54E-01	g2	4.98E+00	t
Semivolatiles																			
1-Methylnaphthalene			4.00E-03	i					1.42E+02	9.08E-02	g2	6.57E-01	g2	1.58E+00	g2	4.16E-01	g2	3.87E+00	t
2,3,4,6-Tetrachlorophenol			3.00E-02	i			3.00E-02	pr	2.32E+02	6.89E-02	g2	2.09E+00	g2	5.01E+00	g2	4.04E-01	g2	4.45E+00	t
2,3,5,6-Tetrachlorophenol			3.00E-02	i			3.00E-02	pr	2.32E+02	2.90E-02	g2	2.09E+00	g2	5.01E+00	g2	1.70E-01	g2	3.88E+00	t
2,4,5-Trichlorophenol			1.00E-01	i			1.00E-01	pr	1.97E+02	3.54E-02	g2	1.34E+00	g2	3.21E+00	g2	1.92E-01	g2	3.72E+00	t
2,4,6-Trichlorophenol	1.10E-02	i	1.00E-04	pn	1.09E-02	i2	1.00E-04	pr	1.97E+02	3.56E-02	g2	1.33E+00	g2	3.20E+00	g2	1.92E-01	g2	3.72E+00	c
2,4-Dichlorophenol			3.00E-03	i			3.00E-03	pr	1.63E+02	2.10E-02	g	8.70E-01	g	2.10E+00	g	1.00E-01	g	3.23E+00	c
2,4-Dimethylphenol			2.00E-02	i			2.00E-02	pr	1.22E+02	1.10E-02	g	5.20E-01	g	1.24E+00	g	0.00E+00	g		
2-Chloronaphthalene			8.00E-02	i			8.00E-02	pr	1.63E+02	7.30E-02	g2	8.55E-01	g2	2.05E+00	g2	3.58E-01	g2	3.90E+00	t
2-Chlorophenol			5.00E-03	i			5.00E-03	pr	1.29E+02	8.00E-03	g	5.60E-01	g	1.34E+00	g	0.00E+00	g	2.16E+00	c
2-Methylnaphthalene			4.00E-03	i					1.42E+02	8.94E-02	g2	6.57E-01	g2	1.58E+00	g2	4.10E-01	g2	3.86E+00	t
2-Methylphenol (o-cresol)			5.00E-02	i			5.00E-02	pr	1.08E+02	7.70E-03	g	4.30E-01	g	1.03E+00	g	0.00E+00	g		
4-Methylphenol (p-cresol, 3/4 cresol)			5.00E-03	ph			5.00E-03	pr	1.08E+02	7.70E-03	g	4.30E-01	g	1.03E+00	g	0.00E+00	g		
Benzoic acid			4.00E+00	i			4.00E+00	pr	1.22E+02	5.70E-03	g	5.10E-01	g	1.24E+00	g	0.00E+00	g		
Benzyl alcohol			3.00E-01	ph			3.00E-01	pr	1.08E+02	2.09E-03	g2	4.23E-01	g2	1.02E+00	g2	8.36E-03	g2	1.10E+00	t
Bis(2-Ethylhexyl) pthalate	1.40E-02	i	2.00E-02	i	1.40E-02	pr	2.00E-02	pr	3.91E+02	1.07E+00	g2	1.62E+01	g2	7.26E+01	g2	8.12E+00	g2	7.60E+00	t
Butylbenzylphthalate			2.00E-01	i			2.00E-01	pr	3.12E+02	3.74E-02	g2	5.89E+00	g2	1.41E+01	g2	2.54E-01	g2	4.73E+00	t
Diethylphthalate			8.00E-01	i			8.00E-01	pr	2.22E+02	3.90E-03	g	1.87E+00	g	4.50E+00	g	0.00E+00	g		
Di-n-butylphthalate			1.00E-01	i					2.78E+02	2.40E-02	g	3.86E+00	g	9.27E+00	g	2.00E-01	g		
Hexachlorobutadiene	7.80E-02	i	3.00E-04	pn	7.70E-02	i2	3.00E-04	pr	2.61E+02	8.10E-02	g	3.09E+00	g	7.42E+00	g	5.00E-01	g	4.78E+00	t
Naphthalene			2.00E-02	i			8.57E-04	i2	1.28E+02	4.70E-02	g	5.60E-01	g	1.34E+00	g	2.00E-01	g		
Nitrobenzene			5.00E-04	i			5.71E-04	ph	3.00E+01	1.79E-02	g2	1.55E-01	g2	3.71E-01	g2	3.77E-02	g2	1.85E+00	t
N-Nitrosodi-n-propyl amine	7.00E+00	i			7.00E+00	pr			1.30E+02	2.34E-03	g2	5.63E-01	g2	1.35E+00	g2	1.03E-02	g2	1.36E+00	t
Pentachlorophenol	1.20E-01	i	3.00E-02	i	1.20E-01	pr	3.00E-02	pr	2.66E+02	3.90E-01	g	3.33E+00	g	1.38E+01	g	2.50E+00	g		
Phenol			3.00E-01	i			3.00E-01	pr	9.41E+01	4.30E-03	g	3.60E-01	g	8.60E-01	g	0.00E+00	g		

TABLE A-3
Physical and Chemical Parameters of Constituents of Potential Concern for WDL Leachate
RP - Portland Site

Analyte	SF_o $(mg/kg\text{-}day)^{-1}$	Source	RfD_o (mg/kg-day)	Source	SF_i $(mg/kg\text{-}day)^{-1}$	Source	RfD_i (mg/kg-day)	Source	Molecular Weight (g/mol)	Estimated K_p (cm/hr)	Source	T (hr/event)	Source	t* (hr)	Source	B (unitless)	Source	log K_{ow} (unitless)	Source
Volatiles																			
1,1-Dichloroethane			1.00E-01	ph			1.43E-01	ph	9.90E+01	6.70E-03	g	3.80E-01	g	9.20E-01	g	0.00E+00	g		
1,2,3-Trichlorobenzene			1.00E-02	i			1.00E-03	pp	1.81E+02	6.87E-02	g2	1.09E+00	g2	2.62E+00	g2	3.56E-01	g2	4.02E+00	t
1,2,4-Trichlorobenzene			1.00E-02	i			1.00E-03	pp	1.81E+02	6.60E-02	g	1.11E+00	g	2.66E+00	g	3.00E-01	g		
1,2,4-Trimethylbenzene			5.00E-02	pp			1.70E-03	pp	1.20E+02	1.05E-01	g2	4.95E-01	g2	1.19E+00	g2	4.43E-01	g2	3.78E+00	c
1,2-Dibromo-3-chloropropane	1.4E+00	ph	5.7E-05	pr			5.71E-05	i2	2.36E+02	6.76E-03	g2	2.21E+00	g2	5.31E+00	g2	4.00E-02	g2	2.96E+00	t
1,2-Dichlorobenzene (o-Dichlorobenzene)			9.00E-02	i			5.71E-02	ph	1.47E+02	4.10E-02	g	7.10E-01	g	1.71E+00	g	2.00E-01	g		
1,3,5-Trimethylbenzene			5.00E-02	pp			1.70E-03	pp	1.20E+02	1.05E-01	g2	4.95E-01	g2	1.19E+00	g2	4.43E-01	g2	3.78E+00	c
1,3-Dichlorobenzene (m-Dichlorobenzene)			3.00E-02	pn			3.00E-02	pr	1.47E+02	5.80E-02	g	7.10E-01	g	1.71E+00	g	3.00E-01	g		
1,4-Dichlorobenzene (p-Dichlorobenzene)	2.40E-02	ph	3.00E-02	pn	2.20E-02	pn	2.29E-01	i2	1.47E+02	4.20E-02	g	7.10E-01	g	1.71E+00	g	2.00E-01	g		
2-Butanone (MEK)			6.00E-01	i			1.43E+00	i2	7.21E+01	9.60E-04	g	2.70E-01	g	6.50E-01	g	0.00E+00	g		
Acetone			9.00E-01	i			9.00E-01	pr	5.81E+01	5.20E-04	g2	2.22E-01	g2	5.33E-01	g2	1.53E-03	g2	-2.40E-01	t
Benzene	5.50E-02	i	4.00E-03	i	2.73E-02	i2	8.57E-03	i2	7.81E+01	1.50E-02	g	2.90E-01	g	7.00E-01	g	1.00E-01	g		
Bromomethane			1.40E-03	i			1.43E-03	i2	9.49E+01	2.80E-03	g	3.60E-01	g	8.70E-01	g	0.00E+00	g		
Carbon Disulfide			1.00E-01	i			2.00E-01	i2	7.60E+01	1.70E-02	g	3.00E-01	g	7.20E-01	g	1.00E-01	g		
Chlorobenzene			2.00E-02	i			1.70E-02	pn	1.13E+02	2.80E-02	g	4.60E-01	g	1.09E+00	g	1.00E-01	g		
Chloroethane	2.90E-03	pn	4.00E-01	pn	2.90E-03	pr	3.14E+00	i2	6.45E+01	6.10E-03	g	2.40E-01	g	5.90E-01	g	0.00E+00	g		
Chloroform			1.00E-02	i	8.05E-02	i2	1.40E-02	pn	1.19E+02	6.80E-03	g	5.00E-01	g	1.19E+00	g	0.00E+00	g		
Chloromethane			2.60E-02	pr			2.57E-02	i2	5.05E+01	3.30E-03	g2	2.01E-01	g2	4.83E-01	g2	9.01E-03	g2	9.10E-01	t
Ethylbenzene			1.00E-01	i			2.86E-01	i2	1.06E+02	4.90E-02	g	4.20E-01	g	1.01E+00	g	2.00E-01	g		
Isobutyl alcohol			3.00E-01	i			3.00E-01	pr	7.40E+01	1.94E-03	g2	2.73E-01	g2	6.54E-01	g2	6.41E-03	g2	7.60E-01	c
iso-Propylbenzene			1.00E-01	i			1.14E-01	i2	1.20E+02	8.78E-02	g2	4.93E-01	g2	1.18E+00	g2	3.70E-01	g2	3.66E+00	t
m,p-Xylene			2.00E-01	i			2.86E-02	i2	1.06E+02	4.92E-02	g2	4.12E-01	g2	9.89E-01	g2	1.95E-01	g2	3.16E+00	t
n-Butylbenzene			4.00E-02	pn			4.00E-02	pr	1.342E+02	2.18E-01	g2	5.93E-01	g2	2.28E+00	g2	9.73E-01	g2	4.38E+00	t
n-Propylbenzene			4.00E-02	pn			4.00E-02	pr	1.20E+02	9.17E-02	g2	4.95E-01	g2	1.19E+00	g2	3.87E-01	g2	3.69E+00	t
o-Xylene			2.00E-01	i			2.86E-02	i2	1.06E+02	4.92E-02	g2	4.12E-01	g2	9.89E-01	g2	1.95E-01	g2	3.16E+00	t
Toluene			8.00E-02	i			1.43E+00	i2	9.214E+01	3.10E-02	g	3.50E-01	g	8.40E-01	g	1.00E-01	g		

Notes:
mg/kg-day = milligrams per kilograms per day
g/mol = grams per mol
cm/hr = centimeters per hour
WDL = West Doane Lake
i: IRIS (www.epa.gov/iris/index.html), viewed on October 20, 2006.
i2: Value calculated using Rfc or UFC from IRIS (www.epa.gov/iris/index.html), viewed on October 20, 2006, and conversion equations from the EPA Region 9 PRG guidance, Section 2.2 Toxicity Values, Inhalation Conversion Factors.
c: Electronic Handbook of Risk Assessment Values (March 1999)
g: United States Environmental Protection Agency (EPA) Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment, Final; July 2004) EPA/540/R/99/005
g2: Calculated using EPA RAGS Part E, Final; July 2004; equations referenced on Table A-2
ph: HEAST (EPA Region IX PRG Tables, December 2004)
pn: NCEA (EPA Region IX PRG Tables, December 2004)
oh: Ohio EPA
pp: PPRTV (EPA Region IX PRG Tables, December 2004)
pr: Route extrapolation (EPA Region IX PRG Tables, December 2004)
t: National Library of Medicine Hazardous Substances Database, Toxnet (ChemIDplus Lite).

APPENDIX B

Field Forms

B-1 Boring Logs for W001 through W020, TS-1 through TS-3

B-2 Sediment Sampling Forms

B-1

Boring Logs for W001 through W020, TS-1 through TS-3

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Soft, gray SILT with some sand and clay, trace organics (wood debris); wet.		2.0				523-01
			Total depth drilled below mudline = 2 ft bwsi due to refusal on hard debris.						
5									
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/21/2005 - 11/21/2005

REMARKS:

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W001

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black, clayey SILT with trace gravel and organics (wood debris); wet.						
		ML	Medium stiff, gray SILT with some clay and trace sand and organics (wood debris); moist. Becomes wet at 5 ft bwsi. NAPL globules noted in SILT from 5-11 ft bwsi. Trace organics (wood debris) from 5-8 ft bwsi.						
5					221				522-01
10									
			Becomes brown.						
15			Trace organics from 15-20 ft bwsi.						
20			Total depth drilled below mudline = 20 ft bwsi.		33				
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/21/2005 - 11/21/2005

REMARKS:

RP - Portland
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LOG OF BORING W002

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, clayey SILT with trace organics (wood fibers); wet.						
5									
		SP	Medium dense, black, poorly graded, coarse SAND with trace rounded gravel, silt, clay and organics (wood fibers); wet. Discontinuous sheen and strong odor.		19.8				521-01
10		ML	Medium stiff, gray SILT with some clay, trace organics (wood fibers); moist.						
15									
20			Total depth drilled below mudline = 20 ft bwsi.						
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/21/2005 - 11/21/2005

REMARKS:

RP - Portland
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LOG OF BORING W003

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black, clayey SILT; wet.						
5		ML	Soft, black, clayey SILT with trace gravel, sand and organics (wood debris); wet.						
		SP	Medium dense, black, poorly graded, coarse SAND with trace rounded gravel, silt, clay and organics (wood debris); wet. Strong odor noted and oily coating. Wood debris layer at 7 ft bwsi.		47				520-01
10		ML	Medium stiff, gray SILT with some clay, trace fiberous organics; wet.						
15			Becomes green-gray.						
20			Total depth drilled below mudline = 20 ft bwsi.		4.9				
25									
30									

BORING METHOD: Vibrocore

ELEVATION REFERENCE: NA

BOREHOLE DIAMETER: 4.0 (in)

REMARKS:

DRILL RIG: Vibrocore

GROUND SURFACE ELEVATION: NA

CONTRACTOR: TEG

START CARD/TAG ID: NA

LOGGED BY: J. Fassio

DRILLING DATES: 11/21/2005 - 11/21/2005

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LOG OF BORING W004

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft to soft, black SILT with some clay, trace organics (wood debris); wet.		1.0				
5		SP-SM	Loose to medium dense, black, poorly graded, coarse SAND with fine to coarse rounded gravel and trace organics (wood debris); wet. Gravel observed with oily sheen. Very strong odor.		33.4				519-01
10		ML	Medium stiff, dark brown SILT with trace fine sand and organics (wood fibers); moist.		1.5				
15		ML	Medium stiff, dark brown, clayey SILT with trace organics (wood fibers); moist.		1.0				
20			Total depth drilled below mudline = 20 ft bwsi.						
25									
30									

BORING METHOD: Vibrocore

ELEVATION REFERENCE: NA

BOREHOLE DIAMETER: 4.0 (in)

REMARKS:

DRILL RIG: Vibrocore

GROUND SURFACE ELEVATION: NA

CONTRACTOR: TEG

START CARD/TAG ID: NA

LOGGED BY: J. Fassio

DRILLING DATES: 11/21/2005 - 11/21/2005

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LOG OF BORING W005

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black SILT with some fine sand and organics (woody debris); wet.						
					1.0				
			With coarse, angular GRAVEL interbeds.						
		ML	Soft, dark gray SILT with trace sand and fine gravel; wet.						
					1.0				
5									
		ML	Medium stiff, dark gray, clayey SILT; wet. Sheen and strong odor from 6-7 ft bwsi.		7.0				518-01
			Total depth drilled below mudline = 9 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/21/2005 - 11/21/2005

REMARKS:

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LOG OF BORING W006

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, dark gray, SILT with some clay and trace sand; wet. Organics (woody debris) observed from 0-4 ft bwsi.						
			Becomes soft. Strong odor and sheen. Viscous soil noted from 4-6 ft bwsi.		6.4				517-01
5			Sandy GRAVEL with organics (wood debris) in vibrocore cutting head.						
			Total depth drilled below mudline = 6 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

ELEVATION REFERENCE: NA

BOREHOLE DIAMETER: 4.0 (in)

REMARKS:

DRILL RIG: Vibrocore

GROUND SURFACE ELEVATION: NA

CONTRACTOR: TEG

START CARD/TAG ID: NA

LOGGED BY: J. Fassio

DRILLING DATES: 11/21/2005 - 11/21/2005

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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING
W007

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black SILT with some sand and clay; wet.						
			Sheen noted from 3-5 ftbwsi.		1.8				516-01
			Becomes soft and dark gray.						
5		GW	Dense, black, sandy GRAVEL; wet.						
			Total depth drilled below mudline = 6 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/20/2005 - 11/21/2005

REMARKS:

RP - Portland
West Doane Lake Treatability Study
Sediment Sampling - Phase 1
0-61M-107030 P65

AMEC Earth and Environmental

Tel
Fax

amec

LOG OF BORING W008

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black, clayey SILT; wet.						
5		ML	Soft, black SILT with some clay; wet. Strong odor and discontinuous sheen.		5.8				515-01
10									
		SP	Dark gray, poorly graded, medium SAND; wet.						
15									
		ML	Medium stiff, brown SILT with trace clay, some organics; moist. Moderate odor.						
20			Total depth drilled below mudline = 20 ft bwsi.						
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/21/2005 - 11/21/2005

REMARKS:

RP - Portland
West Doane Lake Treatability Study
Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W009

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black SILT with some clay; wet.						
		GM	Very soft, black, gravelly SILT, angular gravel; wet.						
5		ML	Very soft, black SILT with some sand and clay; wet. Strong phenolic-like odor and discontinuous sheen.		7.8				514-01
		ML	Soft, dark gray, clayey SILT; wet.						
10		SP	Loose to medium dense, black, fine SAND with trace silt; wet.						
15		ML	Medium stiff, dark brown SILT with some clay; moist.						
20			Total depth drilled below mudline = 20 ft bwsi.						
25									
30									

BORING METHOD: Vibrocore
ELEVATION REFERENCE: NA
BOREHOLE DIAMETER: 4.0 (in)
REMARKS:
DRILL RIG: Vibrocore
GROUND SURFACE ELEVATION: NA
CONTRACTOR: TEG
START CARD/TAG ID: NA
LOGGED BY: J. Fassio
DRILLING DATES: 11/20/2005 - 11/20/2005

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W010

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black SILT with some clay and trace sand; wet.						
					7.8				
			Strong odor and heavy discontinuous sheen from 3-4 ft bwsi.						513-01
		ML	Stiff, black, clayey SILT with some angular gravel; wet.						
5		SP-SM	Loose to medium dense, black, fine SAND with trace silt and clay; wet. Strong odor.						
					13				512-01
10									
15									
		ML	Stiff, dark brown SILT with some clay and sand; moist.						
					0.7				511-01
20			Total depth drilled below mudline = 20 ft bwsi.						
25									
30									

BORING METHOD: Vibrocore

ELEVATION REFERENCE: NA

BOREHOLE DIAMETER: 4.0 (in)

REMARKS:

DRILL RIG: Vibrocore

GROUND SURFACE ELEVATION: NA

CONTRACTOR: TEG

START CARD/TAG ID: NA

LOGGED BY: J. Fassio

DRILLING DATES: 11/20/2005 - 11/20/2005

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W011

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black, clayey SILT; wet.						
		ML	Soft, dark gray SILT with some clay, trace sand, angular gravel and fill debris (concrete); wet. Discontinuous sheen.		3.4				510-01
			Total depth drilled below mudline = 8 ft bwsi due to refusal.						
5									
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore
ELEVATION REFERENCE: NA
BOREHOLE DIAMETER: 4.0 (in)
REMARKS:
DRILL RIG: Vibrocore
GROUND SURFACE ELEVATION: NA
CONTRACTOR: TEG
START CARD/TAG ID: NA
LOGGED BY: J. Fassio
DRILLING DATES: 11/19/2005 - 11/19/2005

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W012

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black SILT; wet.						
		GM	Black, angular, silty GRAVEL with fill debris (brick, slag); wet.						
		ML	Black to dark gray SILT with some clay and sand; wet. Strong odor and discontinuous sheen.						
5					3.4				509-01
			Total depth drilled below mudline = 6.5 ftbwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/19/2005 - 11/19/2005

REMARKS:

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W013

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Soft, dark gray, clayey SILT with some fibrous organics and trace fine sand; wet.						
		GM	Dense, black, coarse GRAVEL with silt and trace sand; wet.						
		ML	Medium stiff, black SILT with some clay and trace fine sand; wet.						
5					2.2				508-01
10			Total depth drilled below mudline = 9.5 ft bwsi due to refusal.						
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/19/2005 - 11/19/2005

REMARKS:

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W014

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		PT	Root mat from 0-0.5 ft bwsi.						
		ML	Very soft, black SILT with some clay and sand, trace organics (rootlets, plant fibers); wet.		1.0				507-01
		ML	Soft, dark gray, clayey SILT with trace organics (rootlets); wet.						
			Dense SAND plug in vibracore cutter head (possible foundry sand).						
			Total depth drilled below mudline = 3 ft bwsi due to refusal.						
5									
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/19/2005 - 11/19/2005

REMARKS:

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W015

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Soft, black, clayey SILT with some organics; wet.						
		GM	Soft, black SILT with angular gravel; wet.						
		SP	Medium dense, black, poorly graded, fine to medium SAND; wet.						
5		ML	Soft, black SILT with some sand and clay and trace organics (plant and wood fibers); wet.		3.7				506-01
			Total depth drilled below mudline = 6 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/19/2005 - 11/19/2005

REMARKS:

RP - Portland
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Sediment Sampling - Phase 1
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LOG OF BORING W016

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		SP-SM	Loose, black, fine SAND, with silt and trace clay; wet.						504-01
5		GM	Very Stiff, black SILT with angular gravel (possible foundry sand mold fagments); wet.						
		SP	Medium dense, black, poorly graded, fine SAND, with trace gravel, silt, and clay; wet.		2.7				505-01
10			Total depth drilled below mudline = 11 ft bwsi due to refusal.						
15									
20									
25									
30									

BORING METHOD: Vibrocore

ELEVATION REFERENCE: NA

BOREHOLE DIAMETER: 4.0 (in)

REMARKS:

DRILL RIG: Vibrocore

GROUND SURFACE ELEVATION: NA

CONTRACTOR: TEG

START CARD/TAG ID: NA

LOGGED BY: J. Fassio

DRILLING DATES: 11/18/2005 - 11/18/2005

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LOG OF BORING
W017

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		SM	Soft, brown, sandy SILT with trace organics; wet. Becomes stiff.						
		PT	Organics (root mat).						
		ML	Soft, black SILT with trace sand; wet.						
			Becomes clayey SILT. Strong odor and sheen.						
5			Becomes stiff with trace sand.		6.2				503-01
10									
			Total depth drilled below mudline = 13.5 ft bwsi due to refusal.						
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/18/2005 - 11/18/2005

REMARKS:

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Sediment Sampling - Phase 1
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LOG OF BORING W018

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Stiff, black SILT with trace clay; wet.						
		SM	Medium dense, black, silty, fine SAND; wet.						
		ML	Very soft, black SILT with some clay and trace sand; wet.		2.5				502-01
5			Total depth drilled below mudline = 5.5 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/18/2005 - 11/18/2005

REMARKS:

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Sediment Sampling - Phase 1
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LOG OF BORING W019

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		SM	Soft, black, sandy SILT with organics (fibrous matt); wet.						
		SM	Loose, black, silty SAND with angular gravel; wet.						
		SP	Medium dense, black, poorly graded, medium SAND; wet.						
			Total depth drilled below mudline = 2 ft bwsi due to refusal.						
5									
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/18/2005 - 11/18/2005

REMARKS:

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W019A

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Stiff, black SILT with trace clay; wet.						
		SM	Medium dense, black, silty, fine SAND; wet.						
		ML	Very soft, black SILT with trace clay; wet.						
5			Total depth drilled below mudline = 5.5 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore
ELEVATION REFERENCE: NA
BOREHOLE DIAMETER: 4.0 (in)
REMARKS:
DRILL RIG: Vibrocore
GROUND SURFACE ELEVATION: NA
CONTRACTOR: TEG
START CARD/TAG ID: NA
LOGGED BY: J. Fassio
DRILLING DATES: 11/18/2005 - 11/18/2005

RP - Portland
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Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W019B

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		SP	Loose, black, poorly graded, medium SAND with some organics (fibrous plant matter) and trace silt; wet. Light discontinuous sheen from 0-5 ft bwsi.						
		ML	Very soft, black SILT with some sand, clay and trace organics; wet.						
5			Heavy sheen at 6 ftbwsi.		1.3				501-01
			Total depth drilled below mudline = 6 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore
ELEVATION REFERENCE: NA
BOREHOLE DIAMETER: 4.0 (in)
REMARKS:
DRILL RIG: Vibrocore
GROUND SURFACE ELEVATION: NA
CONTRACTOR: TEG
START CARD/TAG ID: NA
LOGGED BY: J. Fassio
DRILLING DATES: 11/18/2005 - 11/18/2005

RP - Portland
West Doane Lake Treatability Study
Sediment Sampling - Phase 1
0-61M-107030 P65

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LOG OF BORING W020

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black SILT with trace clay, scattered organics; wet.						
		SP	Loose, black, poorly graded, medium SAND with trace silt, scattered organics; wet.						
		ML	Soft, black, SILT with some clay and organics; wet.						
5			Heavy discontinuous sheen from 5-6 ft bwsi.						
		SP	Dense, black, poorly graded, medium SAND; wet.						
			Total depth drilled below mudline = 8 ft bwsi due to refusal.						
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

ELEVATION REFERENCE: NA

BOREHOLE DIAMETER: 4.0 (in)

REMARKS:

DRILL RIG: Vibrocore

GROUND SURFACE ELEVATION: NA

CONTRACTOR: TEG

START CARD/TAG ID: NA

LOGGED BY: J. Fassio

DRILLING DATES: 11/18/2005 - 11/18/2005

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0-61M-107030 P65

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LOG OF BORING W020A

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	VOLATILE READING (ppm)	GROUNDWATER	GW SCREENED INTERVAL	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Very soft, black SILT with scattered organics; wet.						
			Angular gravel in vibracore cutter head. Total depth drilled below mudline = 4 ft bwsi due to refusal.						
5									
10									
15									
20									
25									
30									

BORING METHOD: Vibrocore

BOREHOLE DIAMETER: 4.0 (in)

DRILL RIG: Vibrocore

CONTRACTOR: TEG

LOGGED BY: J. Fassio

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

START CARD/TAG ID: NA

DRILLING DATES: 11/18/2005 - 11/18/2005

REMARKS:

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0-61M-107030 P65

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LOG OF BORING W020B

DIRECT PUSH BORING 0-61M-107030 P65.GPJ AMEC PORTLAND.GDT 10/2/06

B-2

Sediment Sampling Forms

0.16

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W001 (→ NO) DATE: ~~11/15/05~~ 11/21/05 START TIME: ~~815~~ 1530

SAMPLE NUMBER: 523-01 WEATHER: clear, 45°F light East wind

PERSONNEL: J. Fabiszewski, B. McGillicuddy, Cheryl Imperio

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	~45°F	estimate	
Sediment Type Description	Gray, Soft, clayey SILT with TR sand and wood scattered wood debris (MH)		
Sample Depth (ft)	1-2'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	wood debris		
VOC Headspace Reading	2.0	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.25	Tape Measure	
Observation of Contamination	NONE		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature			
pH			
Specific Conductance			
DO			
ORP			
Turbidity			

Water quality parameters collected on 11/16/05

*Too Shallow for Measurements.

Record Sample Position x-coordinate 7625483.3823 y-coordinate 701937.562 → 15' west, 10' north of Stake G this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 523-01 QA/QC SAMPLE #: NA TIME: 1600

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nitrate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1gal. bags			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES NO

QA/QC SAMPLE COLLECTED? YES NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: - Drums ~~Hazardous~~ Gen - HazMat warehouse

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 800/11/21/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

Three Attempt - too much debris at this corner of Lake

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WD02 DATE: 11/21/05 START TIME: 1437
SAMPLE NUMBER: S22-01 WEATHER: Clear, 45°F Light East wind
PERSONNEL: J. Fassio, B. McGilliveddy, Cherilyn Inouye

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	45°F	estimate	
Sediment Type Description	Gray, medium stiff, clayey SILT (ML)		
Sample Depth (ft)	5-8'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	moist to wet	N/A	Visual Observation
Animals/Plants in Media	scattered wood fragments		
VOC Headspace Reading	19.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.7 ft	Tape Measure	
Observation of Contamination	NAPL Blebs at 5-11'		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature DC	7.74		
pH	8.59		
Specific Conductance	0.537		
DO	13.01		
ORP	178		
Turbidity NTU	6.92		

Readings Collected @ 0.5' below top of water surface
Above Parameters Collected on 11-16-05

NOTE: Airbubble observed under DO sensor membrane. Unable to fix in field.

Record Sample Position x-coordinate 7623478.0335 y-coordinate 702024.1099 → 4' west stake @ this location

ADDITIONS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: S22-01 QA/QC SAMPLE #: NA TIME: 1510

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nitrate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1 gal Bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES/NO
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL: Drums #724 Hazmat warehouse
ADDITIONAL COMMENTS: Core TD = 20'

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800/11/21/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W003 DATE: 11/21/05 START TIME: 1745
SAMPLE NUMBER: ~~512-01~~ 521-01 WEATHER: clear. 40°F Light east wind
PERSONNEL: J. Fassler, R. McGillicuddy, Cherilyn Inaye

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	~40°F	estimate	
Sediment Type Description	medium dense, black, coarse SAND with TR Gravel; Saturated (SP)		
Sample Depth (ft)	7-8'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	occasional wood fibers		
VOC Headspace Reading	19.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.1	Tape Measure	
Observation of Contamination	discontinuous sheen and strong odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.74	YSI-650	
pH	8.70		
Specific Conductance	0.519		
DO	13.24		
ORP	372		
Turbidity NTU	5.70		

Reading Collected 2.05' below top of water surface
Above parameters collected on 11-16-05

NOTE: Air bubble observed under DO sensor membrane. Unable to fix.

Record Sample Position x-coordinate 7625460.3509 y-coordinate 702054.7404 → 4' East of stake at this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: ~~512-01~~ 521-01 QA/QC SAMPLE #: NA TIME: 1420

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1 gal. bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES / NO
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: Drum - Hazmat warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 500 @ 11/21/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

TD = 20'

SIGNATURE

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WDB4 DATE: 11/21/05 START TIME: 1100

SAMPLE NUMBER: 520-01 WEATHER: Clear, 40°F, Light east wind

PERSONNEL: J. Bassuo, B. McGillicuddy, C. Inouye

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	40°F	estimate	
Sediment Type Description	medium dense, black, course SAND with rounded gravel (SP)		
Sample Depth (ft)	7-8'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	~~none~~ TR organics (occasional wood debris)		
VOC Headspace Reading	47.1	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.3	Tape Measure	
Observation of Contamination	Strong odor, oily coating		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.44	YSI-650	
pH	8.80		
Specific Conductance	0.510		
DO	13.84		
ORP	166		
Turbidity NTU	4.95		

Reading Collected @ 0.5' Below top of Water Surface

Above Parameters Collected on 11-16-05

NOTE: Air Bubble observed under DO Sensor membrane unable to Fix

Record Sample Position x-coordinate 7625478.0355 y-coordinate 720085.3709 → 3' west of stake @ this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 520-01 QA/QC SAMPLE #: NA TIME: 1140

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1 gal bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: Drum #394 Hazmat warehouse

ADDITIONAL COMMENTS: TD = 20'

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 500 - 11/21/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WD05 DATE: 11/21/05 START TIME: 1000
SAMPLE NUMBER: 519-01 WEATHER: 45°F, Light east wind, clear
PERSONNEL: J. Fassio, B. McGillicuddy, C. Inouye

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	45°F	Shimaie	
Sediment Type Description	Loose to med (unclass), Sand Gravelly Sand (SP)		
Sample Depth (ft)	7-8'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	cattail woody debris		
VOC Headspace Reading	33.4	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.2	Tape Measure	
Observation of Contamination	Strong odor, oily coating		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.36		
pH	8.81		
Specific Conductance	0.516		
DO	13.42		
ORP	164		
Turbidity	4.24		

Reading Collected @ 0.75' below top of water surface
Above Parameters Collected on 11-16-05
NOTE: No sensor: Air bubble observed under membrane.

Record Sample Position x-coordinate 7625460.3509 y-coordinate 702116.0014 → 6' west of stake @ this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 519-01 QA/QC SAMPLE #: NA TIME: 1030

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gal bag.			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES / NO
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: Drum # ~~3 gal water~~ Hazmat Warehouse
ADDITIONAL COMMENTS: TD = 20'

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 · 11/21/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WD06 DATE: 11/21/05 START TIME: 920
SAMPLE NUMBER: 518-01 WEATHER: Clear, Cold
PERSONNEL: J. Farris, B. McGillicuddy, C. Inouye

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	~38°F	estimate	
Sediment Type Description	medium stiff, dark gray silty Clay (Plastic) ~~(CH)~~ (CH)		
Sample Depth (ft)	6-7'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	none		
VOC Headspace Reading	69	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.5	Tape Measure	
Observation of Contamination	Sheen, Strong odor, PIW = 7.0 above core		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.69		
pH	8.93		
Specific Conductance	0.504		
DO	14.60		
ORP	154		
Turbidity NTU	4.47		

Reading Collected @ 0.5' below top of water surface
Above Parameters Collected on 11-16-05

NOTE: Air bubble observed under DO sensor membrane. unable to fix

Record Sample Position x-coordinate 7625478.0354 y-coordinate 702146.631954 → 7'8" west of stake @ this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 518-01 QA/QC SAMPLE #: NA TIME: 1000

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gal bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES / NO
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: Drum Haz Mat warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 11/21/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

TD = 9'

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W007 DATE: 11/21/05 START TIME: 815
SAMPLE NUMBER: 517-01 WEATHER: Clear, Cold
PERSONNEL: J. Fazzio, B. McGillicuddy, C. Inouye

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	~28°F	estimate	
Sediment Type Description	Dark Gray, Soft, Clay with some Silt with numerous wood fibers (CH)		
Sample Depth (ft)	4-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	wood fibers		
VOC Headspace Reading	6.4	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	2.5	Tape Measure	
Observation of Contamination	Sheen and Strong odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.83		
pH	9.09		
Specific Conductance	0.496		
DO	16.15		
ORP	149		
Turbidity NTU	4.45		

Reading Collect @ 1.0' below top of water surface
Above Parameters Collected on 11-16-05

NOTE: Airbubble under DO Sensor Membrane. unable to fix

Record Sample Position x-coordinate 7625460.3509 y-coordinate 702177.2624 → 10' east of stake @ this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 517-0 QA/QC SAMPLE #: 517-03 Trip Blank Time 700 TIME: 910

QA/QC SAMPLE DESCRIPTION: Trip Blank

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gal bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES/NO Trip Blank
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL: Drum Hazmat warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) Sat 11/21/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:
Two Attempts TD = 6' → 5' recovery

SIGNATURE

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W008 DATE: 11/20/05 START TIME: 1115

SAMPLE NUMBER: S18-01 WEATHER: Clear, Cold

PERSONNEL: J. Fassio, B. McGillicuddy, T. Johnson

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	~40°F	estimate	
Sediment Type Description	Black very soft, Clayey Silt (MH)		
Sample Depth (ft)	3.5' 3.5'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	1.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	2.7	Tape Measure	
Observation of Contamination	Discontinuous sheen, Strong odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	8.0		
pH	9.19		
Specific Conductance	0.484		
DO	16.40		
ORP	142		
Turbidity NTU	4.25		

Readings Collected @ 1.0' below top of water surface

Above Parameters Collection on 11-16-05

NOTE: Airbubble Observed under DO sensor membrane. Unable to Fix

	x-coordinate	y-coordinate
Record Sample Position	7625460.3508	702238.5235 → 4' east of Stake

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: S18-01 QA/QC SAMPLE #: NA TIME: 1430

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Soilds by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-gal. bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: Drums - RP Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 800 11/20/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

Second Attempt on 11/21/05

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WØØ9 DATE: 11/20/05 START TIME: 1000
SAMPLE NUMBER: SIS-01 WEATHER: Clear, Cold
PERSONNEL: J. Fassio, B. McGillicuddy, T. Johnson

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	40°F	Est. Same	
Sediment Type Description	Black, soft, Clayey Silt CL		
Sample Depth (ft)	5-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	5.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	3.0	Tape Measure	
Observation of Contamination	Discontinuous Sheen, Strong odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.93		
pH	9.21		
Specific Conductance	0.483		
DO	15.96		
ORP	134		
Turbidity NTU	4.92		

Reading Collected @ 1.5' below Top of water Surface
Above Parameters Collected on 11-16-05

Record Sample Position x-coordinate 7625479.1271 y-coordinate 702332.8609 → 3' North of stake @ this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: SIS-01 QA/QC SAMPLE #: None TIME: 1030

QA/QC SAMPLE DESCRIPTION:

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8 oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1 gal. bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES/NO
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL: RP - Haz Mat warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 11/20/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W010 DATE: 11/20/05 START TIME: 845
SAMPLE NUMBER: 514-01 WEATHER: Clear, Cold
PERSONNEL: J. Fassie, B. McGillicuddy, T. Johnson

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	~36°F		
Sediment Type Description	Black, very soft, Clay with some Silt		
Sample Depth (ft)	5-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	7.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.7	Tape Measure	
Observation of Contamination	Discontinuous sheen		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.88	YSI-650	
pH	9.23		
Specific Conductance	0.489		
DO	14.70		
ORP	125		
Turbidity NTU	4.97		

Reading collected @ 1.0 ft below top of water surface
Above parameters collected on 11-14-05

NOTE: Air bubble observed under membrane on DO sensor. Unable to fix

Record Sample Position x-coordinate 7625492.2682 y-coordinate 702956.1873 5' west of Stake @ this location

ADDITIONS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 514-01 QA/QC SAMPLE #: None TIME: 945

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nitrate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-gal Bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES/NO
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL: Drum - Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 11/20/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

SIGNATURE

Form 8

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W011 DATE: 11/20/05 START TIME: 810

SAMPLE NUMBER: S13-01 WEATHER: Clear 36°F East wind 10-15 mph

PERSONNEL: J. Fenster, J. Johnson, B. McGillicuddy

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	36°F	est.	
Sediment Type Description	Black, very soft, Silty Clay CL		
Sample Depth (ft)	3-4'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	saturated	N/A	Visual Observation
Animals/Plants in Media	none		
VOC Headspace Reading	7.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.5	Tape Measure	
Observation of Contamination	Discontinuous sheen, strong odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature			
pH			
Specific Conductance			
DO			
ORP			
Turbidity			

See field form for sample S11-01

Record Sample Position: x-coordinate (stake) 7623479.4709 y-coordinate 7024120297 6.4 → 4' east of stake at this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: S13-01 QA/QC SAMPLE #: none TIME: 840

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1): STL COC #:

LABORATORY (2): COC #:

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1 gal Bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES/NO

CHAIN OF CUSTODY COMPLETED? YES/NO

WASTE DISPOSAL: RP Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 860 11/20/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

TD = 20'

SIGNATURE [signature]

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W011 DATE: 11/20/05 START TIME: ~~845~~ 810
SAMPLE NUMBER: S12-01 WEATHER: Clear, 36°F East wind 10-15mph
PERSONNEL: J. Fossie, T. Johansen, B. McGillivray

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	31°F	est	
Sediment Type Description	Black, loose to medium dense, fine SAND with TR silt (SP); wet SP		
Sample Depth (ft)	9-10'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	none		
VOC Headspace Reading	12.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)		Tape Measure	
Observation of Contamination	Strong odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature			
pH			
Specific Conductance			
DO			
ORP			
Turbidity			

See field form for sample S11-01

Record Sample Position: x-coordinate 7625469.4709 y-coordinate 702412029.64 → 4' east of stake at this location (of Stake)

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: S12-01 QA/QC SAMPLE #: none TIME: ~~830~~ 835 QAM

QA/QC SAMPLE DESCRIPTION: ~~none~~ NA QAM

LABORATORY (1): STL COC #:
LABORATORY (2): COC #:

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gal.			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? (YES)/NO
QA/QC SAMPLE COLLECTED? YES / (NO)
CHAIN OF CUSTODY COMPLETED? (YES)/ NO
WASTE DISPOSAL: RP Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 11/20/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:
TD = 20'

SIGNATURE

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WD11 DATE: 11/20/05 START TIME: 810

SAMPLE NUMBER: S11-01 WEATHER: Clear, 30°F East wind 10-15 mph

PERSONNEL: J. Fassio, T. Jamison, B. McGillicuddy

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	36°F	0.St.	
Sediment Type Description	Dark brown, Stiff, Silt with TR Clay ML		
Sample Depth (ft)	18.5-20	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Moist	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	0.7	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.5	Tape Measure	
Observation of Contamination	slight odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.87	YSI-650	
pH	9.84		
Specific Conductance	0.408		
DO	15.16		
ORP	152		
Turbidity NTU	7.48		

Reading Collected 0.7 ft below top of water surface

Above parameters Collected on 11-16-05

Air bubble NOTED under DO Membrane.

Record Sample Position: x-coordinate 7625469.4704 (✓ Stake); y-coordinate 702413.02916 → 4' east of stake at this location

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: S11-01 QA/QC SAMPLE #: S11-03 Trip blank TIME: 830

QA/QC SAMPLE DESCRIPTION: Trip Blank

LABORATORY (1): STL COC #:

LABORATORY (2): COC #:

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gallon			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: RP Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 800 11/20/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

TD = 20'

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WD12 DATE: 11/19/05 START TIME: 1400
SAMPLE NUMBER: 510-01 WEATHER: Clear, Cold 40°F
PERSONNEL: Joe Fossio, Brandon McGillicuddy, Tim Johnson

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	40°F		
Sediment Type Description	Barley tan, ~~med~~ soft, clay; wet CL TR angular gravel and fill debris		
Sample Depth (ft)	6.7'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	3.4	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	1.5	Tape Measure	
Observation of Contamination	Sheen		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.77	YSI-1650	
pH	9.39		
Specific Conductance	0.470		
DO	15.47		
ORP	151		
Turbidity NTU	5.79		

Reading collected at 0.5 below top of water surface.
Above Parameters collected on 11-16-05
NOTE: Calibrate YSI for DO. No DIFFERENCE BEFORE TO AFTER Calibration Reading.

Record Sample Position x-coordinate 7625496.1254 y-coordinate 702446.9347 → 3' west of stake

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 510-01 QA/QC SAMPLE #: None TIME: 1500

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz	↓	↓	
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-Ziploc bag	↓		
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)			✓	✓	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: RP - Hazmat warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 11/19/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:
Refusal @ 8'

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WD13 DATE: 11/19/05 START TIME: 1230
SAMPLE NUMBER: 509-01 WEATHER: Clear, Cold, 40°F eastwind 10 mph
PERSONNEL: Joe Fassio, Brendan McGillicuddy

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	40°F	231.	
Sediment Type Description	Black to dark gray, Silty Clay with TR Sand		
Sample Depth (ft)	5-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	NO		
VOC Headspace Reading	3.4	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	2.1	Tape Measure	
Observation of Contamination	Discontinuous Sheen, Strong odor		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature	7.37°C	YSI-450	
pH	9.34		
Specific Conductance	2.471		
DO	15.46		
ORP	156		
Turbidity * NTU	6.59		

Taken @ 1' below water surface
Above Parameters collected on 11-16-05
* Turbidity readings may be higher due to disturbance of Sediment while rowing

Record Sample Position x-coordinate 7625476.0664 y-coordinate 702483.9087 → 20' North of Stake with +Case covered Water

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 509-01 QA/QC SAMPLE #: None TIME: 1230

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3 - 8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gal bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO
QA/QC SAMPLE COLLECTED? YES / NO
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: RP- Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 11/19/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:
Refusal at 6.5

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WØ14 DATE: 11/19/05 START TIME: 1045
SAMPLE NUMBER: 508-01 WEATHER: Clear, 40°F 10 mph Eastwind
PERSONNEL: Joe Fassio, Brandon McGillicuddy, Tim Johnson

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	40°F		
Sediment Type Description	Black, medium ff, clayey SILT ML		
Sample Depth (ft)	5-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	wet	N/A	Visual Observation
Animals/Plants in Media	None noted		
VOC Headspace Reading	7.2	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.5	Tape Measure	
Observation of Contamination	Mucky odor		

(ft=Depth in Feet)

PID = 1.4 in ambient air

Measurement Type	Value/ Units	Instrument	Comments
Temperature	7.65°C	YSI-650 mds	
pH	9.32		
Specific Conductance	0.482		
DO	13.38		
ORP	160		
Turbidity NTU	7.85		

Above

Record Sample Position x-coordinate 7625493.3757 y-coordinate 702561.8863 → 5' south of Stake with these coordinates

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 508-01 QA/QC SAMPLE #: None TIME: 1150

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1 gal. bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: RP - Treatment Warehouse

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 11/19/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:
Refusal at 9.5 TD = 9.5 one Attempt

SIGNATURE Joe Fassio

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WØ15 DATE: 11/19/05 38°F START TIME: 1000

SAMPLE NUMBER: 507-01 WEATHER: Clear, ~~42°F~~, 10 mph East wind

PERSONNEL: Joe Fritsky, Brendan McGillicuddy, Tim Johnson QAN

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	38°F	est.	
Sediment Type Description	Black, very soft clay		
Sample Depth (ft)	1-2'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	Roots and Plant fibers		
VOC Headspace Reading	1.0	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	8.52	Tape Measure	
Observation of Contamination	None		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	9.72		
pH	9.80		
Specific Conductance	0.496		
DO	10.28		
ORP	107		
Turbidity NTU	15.7		

Readings Collected ~~@~~ 3' below top of Sediment Surface

Above parameters Collected on 11-14-05

NOTE: Air bubble observed under DO sensor membrane. Unable to fix in field.

	x-coordinate	y-coordinate
Record Sample Position	762551.0.9179	702610.6617

→ 15' south of stake with these coordinates

ADDITIONS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 507-01 QA/QC SAMPLE #: None TIME: 1030

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) STL COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gal bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)			✓	✓	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: RP Hazmat Warehouse

ADDITIONAL COMMENTS:

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 800 11/19/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

SIGNATURE

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WDLC DATE: 11/19/05 START TIME: 715

SAMPLE NUMBER: 506-02 WEATHER: Clear, 38°F, 10mph wind from East

PERSONNEL: J. Fossler, T. Johnson, B. McGillicuddy

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	38°F	est.	
Sediment Type Description	Black, Soft, Clayey Silt with scattered organic ML		
Sample Depth (ft)	5-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated & some fibrous material	N/A	Visual Observation
Animals/Plants in Media	Scattered plant and wood fibers		
VOC Headspace Reading	3.7	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.5	Tape Measure	
Observation of Contamination	Odor - slight to moderate		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	9.68	YSI-450	
pH	9.76		
Specific Conductance	0.488		
DO	10.33		
ORP	114		
Turbidity NTU	44.3		

Readings collected @ 0.3' below top of water surface

Above parameters collected on 11-16-05

NOTE: Airbubble observed under DO sensor membrane. Unable to fix in field

Record Sample Position x-coordinate 7625510.9179 y-coordinate 702610.6617 → 15' North of stake with these coordinates

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 506-01 QA/QC SAMPLE #: 506-03 TIME: 920

QA/QC SAMPLE DESCRIPTION: Trip blank

LABORATORY (1): STL COC #:

LABORATORY (2): COC #:

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1 gal bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: RP Hazmat Warehouse

ADDITIONAL COMMENTS:

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 800 11/19/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

SIGNATURE

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WB17 DATE: 11/18/05 START TIME: 1548

SAMPLE NUMBER: S04-01 WEATHER: foggy, 40°F, north wind, 5 mph

PERSONNEL: J. Fossia, M. Rarity, C. Graham, H. Rice

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	38°F		
Sediment Type Description	Black soft silt with sand (ML)		
Sample Depth (ft)	3.41	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	1.8	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.5	Tape Measure	
Observation of Contamination	NAVL		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	9.04		
pH	10.09		
Specific Conductance	0.504		
DO	8.04		
ORP	91		
Turbidity NTU	41.86		

Readings collected @ 0.3' below top of water surface

Above parameters collected on 11-16-05

NOTE: Air bubble observed under DO sensor membrane. unable to fix in field

	x-coordinate	y-coordinate
Record Sample Position	7625574.3809	702690.7141

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: S04-01 QA/QC SAMPLE #: None TIME: 1700

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1gal bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL:

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 830 11/18/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

Three attempts NO oil in soil test

Samples collected from third attempt

SIGNATURE

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: CW017 DATE: 11/18/05 START TIME: ~~1555~~ 1548

SAMPLE NUMBER: 505-01 WEATHER: Foggy, 40°F, Northwind, 5mph

PERSONNEL: J. Fassler, M. Rerig, Coby Graham, Heidi Rice

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	38°F	est.	
Sediment Type Description	Black, fine to medium grained sand		
Sample Depth (ft)	7-11	Tape Measure	Feet Below Mud Line
Moisture Content (%)	~~Wet~~ Saturated	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	2.7	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.5	Tape Measure	
Observation of Contamination	None	Strong odor	

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature			
pH			
Specific Conductance			
DO			
ORP			
Turbidity			

See field form for sample 504-01

Record Sample Position x-coordinate 7625534.3809 y-coordinate 702690.7141

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 505-01 QA/QC SAMPLE #: None TIME: 1710

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chionde) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-1 gal bag			
Dry Weight by SOP		1			
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)		✓	✓	✓	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: RP Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 830 11/18/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

Three attempt no oil in soil test → sample too dark to see any color

sample collected from third attempt

SIGNATURE

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: WD18 DATE: 11/13/05 START TIME: 1450

SAMPLE NUMBER: 503-01 WEATHER: foggy, 40°F, north wind, 5 mph

PERSONNEL: J. Fossio, M. Rosity, C. Graham, H. Rice

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	38°F	OSI.	
Sediment Type Description	Black, soft, silt with TR Clay ML		
Sample Depth (ft)	6-7.5	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	None		
VOC Headspace Reading	6.2	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.5	Tape Measure	
Observation of Contamination	Strong odor + sheen		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	3.22		
pH	10.07		
Specific Conductance	0.505		
DO	7.34		
ORP	93		
Turbidity NTU	11.3		

Readings collected @ 0.3' below top of water surface

Above Parameters Collected on 11-14-05

NOTE: Airbubble observed under DO sensor membrane. unable to fix in field.

	x-coordinate	y-coordinate
Record Sample Position	762549.5447	702772.9797

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 503-01 QA/QC SAMPLE #: NOLE TIME: 1500

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) STL COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-gal. bag			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES NO

QA/QC SAMPLE COLLECTED? YES NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: RP Hazmat warehouse

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 830 / 11/12/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

Oil in Soil = Negative

SIGNATURE

Form B
WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W019 DATE: 11/18/05 START TIME: 1130
SAMPLE NUMBER: 02-01 WEATHER: Foggy 40°F, Northwind, 5mph
PERSONNEL: J. [illegible], M. Rovitz, C. Graham, H. Rice

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	38°F	est.	
Sediment Type Description	Black silt + with TR Clay		
Sample Depth (ft)	4-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	[illegible]	N/A	Visual Observation
Animals/Plants in Media	TR organics		
VOC Headspace Reading	2.4	PID	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.7	Tape Measure	
Observation of Contamination	Broken shaves at 4-6'		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.94		
pH	10.20		
Specific Conductance	0.582		
DO	6.82		
ORP	94.5		
Turbidity NTU	3.85		

Readings Collect @ 0.35' below top of water surface
Above parameters collected on 11-16-05

NOTE: Airbubbles observed under DO sensor membrane unable to fix in field

Record Sample Position x-coordinate 7625601.509383 y-coordinate 702862.8763 → 5' South of Stake G these coordinates

ADDITIONAL COMMENTS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 02-01 QA/QC SAMPLE #: NONE TIME: 1200

QA/QC SAMPLE DESCRIPTION: NA

LABORATORY (1) STL COC #
LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	1-8oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-gal.			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: RP Hermett warehouse center

SAMPLING METHOD USED: Vibracore Sampler
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 830 11/18/05
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:
First Attempt: 5.5' OZ in Soil = Negative
sample collect from first core attempt.

SIGNATURE [signature]

Form B

WEST DOANE LAKE STAGE I SAMPLING FORM

SAMPLE LOCATION: W020 DATE: 11/18/05 START TIME: 915

SAMPLE NUMBER: 501-01 WEATHER: Cloudy, 40°F, north wind 5 mph

PERSONNEL: Joe Fassler, M. Rusty, C. Graham, M. Rice

Measurement Type	Value/Units	Instrument	Comments
Air Temp (°C)	40°F	est.	
Sediment Type Description	Black, clayey Silt with organics (OL/ML) and TR Angular Gravel		
Sample Depth (ft)	5-6'	Tape Measure	Feet Below Mud Line
Moisture Content (%)	Saturated	N/A	Visual Observation
Animals/Plants in Media	fibrous organic in core + scattered		
VOC Headspace Reading	1.3	PID 1.3	See Calibration Below
UVLight Reading	NA	NA	
Water Column to Mud Line (ft)	0.4	Tape Measure	
Observation of Contamination	Sheen at 5-6 - Lighter sheen at 1-5'		

(ft=Depth in Feet)

Measurement Type	Value/ Units	Instrument	Comments
Temperature °C	7.0		
pH	9.64		
Specific Conductance	520		
DO	5.54		
ORP	112		
Turbidity NTU	3.62		

Reading collected at 0.3' below top of water surface

Above parameters collected on 11-18-05

NOTE: Air bubble observed under DO sensor membrane - unable to fix

Record Sample Position x-coordinate 7623616.5713 y-coordinate 702931.5584 → 3' south of stake in field

ADDITIONS/OBSERVATIONS (Water Quality Measurements At Sediment Sampling Location):

SAMPLE COLLECTION

SAMPLE NUMBER: 501-01 QA/QC SAMPLE #: ~~NA~~ 501-03 (Trip Blank) TIME: 1000

QA/QC SAMPLE DESCRIPTION: Trip Blank

LABORATORY (1) STL COC #

LABORATORY (2) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Volatile Organic Compounds (VOCs) by EPA Method 8260B	Cool to 4°C (no headspace)/ 8 oz Glass Jar	8 oz	STL	Y	
Chlorinated Herbicides by EPA Method 8151A	Refrigerate to 4°C/ 24 oz Glass Jar (3) 8 oz Glass Jars)	3-8 oz			
Pesticides and PCBs by EPA Method 8081A/8082					
Semivolatile Organic Compounds (SVOCs), including phenols, by EPA Method 8270C					
Metals by EPA Methods 6010B, 6020, 7471A					
NWTPH					
Total Solids (TS) by EPA 160.3, Volatile Solids by EPA Method 160.4					
Acid Volatile Sulfide by Draft Guidance					
pH by EPA 110.0					
Anions (Sulfate, Nirate, and Chloride) by EPA 300.0					
Ammonia by EPA Method 350.1, 350.2, or 350.3 (Modified for Sediment)					
Total Organic Carbon (TOC) by EPA Method 9060 Modified					
Dioxins/Furans (PCDD/PCDF) by EPA Method 8280					
Moisture Content by ASTM D2216	Cool to 4°C/ 1-Gallon Baggie (16 oz minimum)	1-gallon			
Dry Weight by SOP					
Particle Size by PSEP Guidance or ASTM D422 (Including Silt/Clay Fraction)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES/NO

QA/QC SAMPLE COLLECTED? YES / NO

CHAIN OF CUSTODY COMPLETED? YES / NO

WASTE DISPOSAL: RP Hazmat Warehouse

SAMPLING METHOD USED: Vibracore Sampler

SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab

INSTRUMENT CALIBRATION: (Date/Time) 830 11/18/05

INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

Sample collected from first Attempt. Oil in Soil = negative. Three Attempts #1 - 6', #2 - 8', #3 - 4'

SIGNATURE

APPENDIX C

Phase 1 Chemical Data Summary Tables

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 U	7.45E-01
W002	11/21/2005	5	1,2,4-Trichlorobenzene	**24 J**	0.00375 U	7.45E-01
W003	11/21/2005	7	1,2,4-Trichlorobenzene	0.027 UJ	**0.00660 J**	7.45E-01
W004	11/21/2005	7	1,2,4-Trichlorobenzene	**0.92 J**	**0.0140 J**	7.45E-01
W005	11/21/2005	7	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 UJ	7.45E-01
W006	11/21/2005	6	1,2,4-Trichlorobenzene	**8.1 J**	0.00375 U	7.45E-01
W007	11/21/2005	4	1,2,4-Trichlorobenzene	**4.3 J**	0.00375 U	7.45E-01
W008	11/20/2005	3	1,2,4-Trichlorobenzene	**3.1 J**	0.00375 U	7.45E-01
W009	11/20/2005	5	1,2,4-Trichlorobenzene	**2 J**	0.00375 U	7.45E-01
W010	11/20/2005	5	1,2,4-Trichlorobenzene	**4.1 J**	0.00375 U	7.45E-01
W011	11/20/2005	3	1,2,4-Trichlorobenzene	**1.8 J**	0.00375 U	7.45E-01
W011	11/20/2005	9	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 U	7.45E-01
W011	11/20/2005	18.5	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 U	7.45E-01
W012	11/19/2005	6	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 U	7.45E-01
W013	11/19/2005	5	1,2,4-Trichlorobenzene	**2.7 J**	0.00375 U	7.45E-01
W014	11/19/2005	5	1,2,4-Trichlorobenzene	**1.8 J**	0.00375 U	7.45E-01
W015	11/19/2005	1	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 U	7.45E-01
W016	11/19/2005	5	1,2,4-Trichlorobenzene	**2 J**	0.00375 U	7.45E-01
W017	11/18/2005	3	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 UJ	7.45E-01
W017	11/18/2005	7	1,2,4-Trichlorobenzene	0.027 UJ	0.00375 U	7.45E-01
W018	11/18/2005	6	1,2,4-Trichlorobenzene	**0.73 J**	0.00375 U	7.45E-01
W019	11/18/2005	4	1,2,4-Trichlorobenzene	**0.71 J**	0.00375 U	7.45E-01
W020	11/18/2005	5	1,2,4-Trichlorobenzene	**1.5 J**	0.00375 U	7.45E-01
WDL-101-S	8/14/2002	0.25	1,2,4-Trichlorobenzene	0.0349 U	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,4-Trichlorobenzene	**0.353 JN**	NT	NA
WDL-101-S	8/14/2002	5	1,2,4-Trichlorobenzene	**38.9 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,4-Trichlorobenzene	**37.4 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,4-Trichlorobenzene	**0.191 JN**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,4-Trichlorobenzene	0.029 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,4-Trichlorobenzene	0.0137 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,4-Trichlorobenzene	0.0192 UJ	NT	NA
WDL-102-S	8/14/2002	10	1,2,4-Trichlorobenzene	0.154 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,4-Trichlorobenzene	0.0386 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,4-Trichlorobenzene	**0.0293 N**	NT	NA
WDL-103-S	8/15/2002	5	1,2,4-Trichlorobenzene	0.0223 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,4-Trichlorobenzene	**1.79**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,4-Trichlorobenzene	**0.0672 N**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,4-Trichlorobenzene	0.014 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,4-Trichlorobenzene	0.0139 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,4-Trichlorobenzene	**0.106**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,4-Trichlorobenzene	**2.03**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,4-Trichlorobenzene	1.11 U	0.0500 U	0.745
WDL-201-S	2/12/2004	6	1,2,4-Trichlorobenzene	1.75 U	1.25 U	0.745
WDL-202-S	2/12/2004	4	1,2,4-Trichlorobenzene	0.35 U	0.0500 U	0.745
WDL-203-S	2/13/2004	5.75	1,2,4-Trichlorobenzene	0.14 U	0.0500 U	0.745
WDL-204-S	2/12/2004	5	1,2,4-Trichlorobenzene	**1**	0.0500 U	0.745
W001	11/21/2005	1	1,2-Dichlorobenzene	**2.8 J**	**0.00550 J**	3.61E+01
W002	11/21/2005	5	1,2-Dichlorobenzene	**470 J**	**5.30**	3.61E+01
W003	11/21/2005	7	1,2-Dichlorobenzene	**8.5 J**	**0.250**	3.61E+01
W004	11/21/2005	7	1,2-Dichlorobenzene	**14 J**	**1.50**	3.61E+01
W005	11/21/2005	7	1,2-Dichlorobenzene	0.042 UJ	**0.100 J**	3.61E+01
W006	11/21/2005	6	1,2-Dichlorobenzene	**200 J**	**1.20**	3.61E+01
W007	11/21/2005	4	1,2-Dichlorobenzene	**220 J**	**1.20**	3.61E+01
W008	11/20/2005	3	1,2-Dichlorobenzene	**23 J**	0.00385 U	3.61E+01
W009	11/20/2005	5	1,2-Dichlorobenzene	**11 J**	**0.0190 J**	3.61E+01
W010	11/20/2005	5	1,2-Dichlorobenzene	**130 J**	**0.250**	3.61E+01
W011	11/20/2005	3	1,2-Dichlorobenzene	**78 J**	**0.500**	3.61E+01
W011	11/20/2005	9	1,2-Dichlorobenzene	0.042 UJ	0.00385 U	3.61E+01
W011	11/20/2005	18.5	1,2-Dichlorobenzene	0.042 UJ	0.00385 U	3.61E+01
W012	11/19/2005	6	1,2-Dichlorobenzene	**75 J**	**0.300**	3.61E+01

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W013	11/19/2005	5	1,2-Dichlorobenzene	**60 J**	**0.660**	3.61E+01
W014	11/19/2005	5	1,2-Dichlorobenzene	**66 J**	**0.0400 J**	3.61E+01
W015	11/19/2005	1	1,2-Dichlorobenzene	**2.6 J**	0.00385 U	3.61E+01
W016	11/19/2005	5	1,2-Dichlorobenzene	**2.3 J**	0.00385 U	3.61E+01
W017	11/18/2005	3	1,2-Dichlorobenzene	0.042 UJ	0.00385 UJ	3.61E+01
W017	11/18/2005	7	1,2-Dichlorobenzene	0.042 UJ	0.00385 U	3.61E+01
W018	11/18/2005	6	1,2-Dichlorobenzene	**14 J**	**0.160**	3.61E+01
W019	11/18/2005	4	1,2-Dichlorobenzene	0.042 UJ	**0.0110 J**	3.61E+01
W020	11/18/2005	5	1,2-Dichlorobenzene	**0.95 J**	0.00385 U	3.61E+01
WDL-101-S	8/14/2002	0.25	1,2-Dichlorobenzene	**0.128 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2-Dichlorobenzene	**51.3 J**	NT	NA
WDL-101-S	8/14/2002	5	1,2-Dichlorobenzene	**1150 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2-Dichlorobenzene	**1060 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2-Dichlorobenzene	**5.36 J**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2-Dichlorobenzene	**0.477 J**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2-Dichlorobenzene	**0.0376**	NT	NA
WDL-102-S	8/14/2002	8	1,2-Dichlorobenzene	**111 J**	NT	NA
WDL-102-S	8/14/2002	10	1,2-Dichlorobenzene	**6.19 J**	NT	NA
WDL-103-S	8/15/2002	0.25	1,2-Dichlorobenzene	**1.12**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2-Dichlorobenzene	**1.05**	NT	NA
WDL-103-S	8/15/2002	5	1,2-Dichlorobenzene	**0.552**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2-Dichlorobenzene	**7.28**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2-Dichlorobenzene	**30.5**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2-Dichlorobenzene	**0.054 J**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2-Dichlorobenzene	**0.523**	NT	NA
WDL-104-S	8/15/2002	5	1,2-Dichlorobenzene	**3.58**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2-Dichlorobenzene	**69.6**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2-Dichlorobenzene	7.91 U	0.0500 U	36.1
WDL-201-S	2/12/2004	6	1,2-Dichlorobenzene	**40.4**	**2.62**	36.1
WDL-202-S	2/12/2004	4	1,2-Dichlorobenzene	2.5 U	**0.419**	36.1
WDL-203-S	2/13/2004	5.75	1,2-Dichlorobenzene	1 U	0.0500 U	36.1
WDL-204-S	2/12/2004	5	1,2-Dichlorobenzene	**5.94**	0.0500 U	36.1
W001	11/21/2005	1	1,3-Dichlorobenzene	**0.71 J**	0.00380 U	1.49E+01
W002	11/21/2005	5	1,3-Dichlorobenzene	**26 J**	**0.220 J**	1.49E+01
W003	11/21/2005	7	1,3-Dichlorobenzene	**0.6 J**	**0.0120 J**	1.49E+01
W004	11/21/2005	7	1,3-Dichlorobenzene	**0.96 J**	**0.0600**	1.49E+01
W005	11/21/2005	7	1,3-Dichlorobenzene	0.039 UJ	0.00380 UJ	1.49E+01
W006	11/21/2005	6	1,3-Dichlorobenzene	**9.7 J**	**0.0390 J**	1.49E+01
W007	11/21/2005	4	1,3-Dichlorobenzene	**12 J**	**0.0490 J**	1.49E+01
W008	11/20/2005	3	1,3-Dichlorobenzene	**1.3 J**	0.00380 U	1.49E+01
W009	11/20/2005	5	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
W010	11/20/2005	5	1,3-Dichlorobenzene	**6.3 J**	**0.00950 J**	1.49E+01
W011	11/20/2005	3	1,3-Dichlorobenzene	**3.8 J**	**0.0190 J**	1.49E+01
W011	11/20/2005	9	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
W011	11/20/2005	18.5	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
W012	11/19/2005	6	1,3-Dichlorobenzene	**3.6 J**	**0.0110 J**	1.49E+01
W013	11/19/2005	5	1,3-Dichlorobenzene	**2.9 J**	**0.0280 J**	1.49E+01
W014	11/19/2005	5	1,3-Dichlorobenzene	**3.4 J**	0.00380 U	1.49E+01
W015	11/19/2005	1	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
W016	11/19/2005	5	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
W017	11/18/2005	3	1,3-Dichlorobenzene	0.039 UJ	0.00380 UJ	1.49E+01
W017	11/18/2005	7	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
W018	11/18/2005	6	1,3-Dichlorobenzene	**0.97 J**	**0.0120 J**	1.49E+01
W019	11/18/2005	4	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
W020	11/18/2005	5	1,3-Dichlorobenzene	0.039 UJ	0.00380 U	1.49E+01
WDL-101-S	8/14/2002	0.25	1,3-Dichlorobenzene	0.0588 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,3-Dichlorobenzene	**1.96**	NT	NA
WDL-101-S	8/14/2002	5	1,3-Dichlorobenzene	**63 J**	NT	NA
WDL-101-S	8/14/2002	7	1,3-Dichlorobenzene	**29.5 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,3-Dichlorobenzene	**0.335 J**	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	2.25	1,3-Dichlorobenzene	0.0488 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	1,3-Dichlorobenzene	0.0231 U	NT	NA
WDL-102-S	8/14/2002	8	1,3-Dichlorobenzene	**2.17**	NT	NA
WDL-102-S	8/14/2002	10	1,3-Dichlorobenzene	0.26 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	1,3-Dichlorobenzene	0.0651 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,3-Dichlorobenzene	0.0235 U	NT	NA
WDL-103-S	8/15/2002	5	1,3-Dichlorobenzene	0.0375 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,3-Dichlorobenzene	0.535 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,3-Dichlorobenzene	**1.01**	NT	NA
WDL-104-S	8/15/2002	0.25	1,3-Dichlorobenzene	0.0236 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,3-Dichlorobenzene	0.0235 U	NT	NA
WDL-104-S	8/15/2002	5	1,3-Dichlorobenzene	**0.0529**	NT	NA
WDL-104-S	8/15/2002	6.75	1,3-Dichlorobenzene	**2.65**	NT	NA
WDL-201-S	2/12/2004	0.25	1,3-Dichlorobenzene	7.91 U	0.0500 U	14.9
WDL-201-S	2/12/2004	6	1,3-Dichlorobenzene	12.5 U	1.25 U	14.9
WDL-202-S	2/12/2004	4	1,3-Dichlorobenzene	2.5 U	0.0500 U	14.9
WDL-203-S	2/13/2004	5.75	1,3-Dichlorobenzene	1 U	0.0500 U	14.9
WDL-204-S	2/12/2004	5	1,3-Dichlorobenzene	2.5 U	0.0500 U	14.9
W001	11/21/2005	1	1,4-Dichlorobenzene	**3.1 J**	0.00375 UJ	1.72E+00
W002	11/21/2005	5	1,4-Dichlorobenzene	**140 J**	**1.40 J**	1.72E+00
W003	11/21/2005	7	1,4-Dichlorobenzene	**3.3 J**	**0.0660 J**	1.72E+00
W004	11/21/2005	7	1,4-Dichlorobenzene	**5.2 J**	**0.370 J**	1.72E+00
W005	11/21/2005	7	1,4-Dichlorobenzene	0.044 UJ	**0.0240 J**	1.72E+00
W006	11/21/2005	6	1,4-Dichlorobenzene	**51 J**	**0.290 J**	1.72E+00
W007	11/21/2005	4	1,4-Dichlorobenzene	**65 J**	**0.350 J**	1.72E+00
W008	11/20/2005	3	1,4-Dichlorobenzene	**7.7 J**	0.00375 U	1.72E+00
W009	11/20/2005	5	1,4-Dichlorobenzene	**3.8 J**	0.00375 U	1.72E+00
W010	11/20/2005	5	1,4-Dichlorobenzene	**40 J**	**0.0650**	1.72E+00
W011	11/20/2005	3	1,4-Dichlorobenzene	**25 J**	**0.130**	1.72E+00
W011	11/20/2005	9	1,4-Dichlorobenzene	0.044 UJ	0.00375 U	1.72E+00
W011	11/20/2005	18.5	1,4-Dichlorobenzene	0.044 UJ	0.00375 U	1.72E+00
W012	11/19/2005	6	1,4-Dichlorobenzene	**23 J**	**0.0800**	1.72E+00
W013	11/19/2005	5	1,4-Dichlorobenzene	**18 J**	**0.170**	1.72E+00
W014	11/19/2005	5	1,4-Dichlorobenzene	**20 J**	0.00375 U	1.72E+00
W015	11/19/2005	1	1,4-Dichlorobenzene	0.044 UJ	0.00375 U	1.72E+00
W016	11/19/2005	5	1,4-Dichlorobenzene	0.044 UJ	0.00375 U	1.72E+00
W017	11/18/2005	3	1,4-Dichlorobenzene	0.044 UJ	0.00375 UJ	1.72E+00
W017	11/18/2005	7	1,4-Dichlorobenzene	0.044 UJ	0.00375 U	1.72E+00
W018	11/18/2005	6	1,4-Dichlorobenzene	**5.4 J**	**0.0630**	1.72E+00
W019	11/18/2005	4	1,4-Dichlorobenzene	0.044 UJ	0.00375 U	1.72E+00
W020	11/18/2005	5	1,4-Dichlorobenzene	**0.97 J**	0.00375 UJ	1.72E+00
WDL-101-S	8/14/2002	0.25	1,4-Dichlorobenzene	0.0672 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,4-Dichlorobenzene	**13.3 J**	NT	NA
WDL-101-S	8/14/2002	5	1,4-Dichlorobenzene	**321**	NT	NA
WDL-101-S	8/14/2002	7	1,4-Dichlorobenzene	**307**	NT	NA
WDL-102-S	8/14/2002	0.5	1,4-Dichlorobenzene	**1.85 J**	NT	NA
WDL-102-S	8/14/2002	2.25	1,4-Dichlorobenzene	0.0558 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	1,4-Dichlorobenzene	0.0264 U	NT	NA
WDL-102-S	8/14/2002	8	1,4-Dichlorobenzene	**31.4 J**	NT	NA
WDL-102-S	8/14/2002	10	1,4-Dichlorobenzene	**3.03 J**	NT	NA
WDL-103-S	8/15/2002	0.25	1,4-Dichlorobenzene	**0.601**	NT	NA
WDL-103-S	8/15/2002	2.25	1,4-Dichlorobenzene	**0.342**	NT	NA
WDL-103-S	8/15/2002	5	1,4-Dichlorobenzene	**0.224**	NT	NA
WDL-103-S	8/15/2002	6.75	1,4-Dichlorobenzene	**3.43**	NT	NA
WDL-103-S	8/15/2002	8.25	1,4-Dichlorobenzene	**7.71**	NT	NA
WDL-104-S	8/15/2002	0.25	1,4-Dichlorobenzene	0.027 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,4-Dichlorobenzene	**0.0834**	NT	NA
WDL-104-S	8/15/2002	5	1,4-Dichlorobenzene	0.823 R	NT	NA
WDL-104-S	8/15/2002	6.75	1,4-Dichlorobenzene	**18.7**	NT	NA
WDL-201-S	2/12/2004	0.25	1,4-Dichlorobenzene	7.91 U	0.0500 UJ	1.72

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	6	1,4-Dichlorobenzene	12.5 U	1.25 UJ	1.72
WDL-202-S	2/12/2004	4	1,4-Dichlorobenzene	2.5 U	0.0500 UJ	1.72
WDL-203-S	2/13/2004	5.75	1,4-Dichlorobenzene	1 U	0.0500 UJ	1.72
WDL-204-S	2/12/2004	5	1,4-Dichlorobenzene	2.5 U	0.0500 UJ	1.72
WDL-201-S	2/12/2004	0.25	1-Methylnaphthalene	**1.99**	NT	NA
WDL-201-S	2/12/2004	6	1-Methylnaphthalene	1.75 U	NT	NA
WDL-202-S	2/12/2004	4	1-Methylnaphthalene	0.35 U	NT	NA
WDL-203-S	2/13/2004	5.75	1-Methylnaphthalene	0.14 U	NT	NA
WDL-204-S	2/12/2004	5	1-Methylnaphthalene	**0.512**	NT	NA
W001	11/21/2005	1	2,4,5-Trichlorophenol	0.036 UJ	0.00850 UJ	1.55E+02
W002	11/21/2005	5	2,4,5-Trichlorophenol	**37 J**	**1.10 J**	1.55E+02
W003	11/21/2005	7	2,4,5-Trichlorophenol	0.036 UJ	0.00850 UJ	1.55E+02
W004	11/21/2005	7	2,4,5-Trichlorophenol	0.036 UJ	**0.0780 J**	1.55E+02
W005	11/21/2005	7	2,4,5-Trichlorophenol	0.036 UJ	0.00850 UJ	1.55E+02
W006	11/21/2005	6	2,4,5-Trichlorophenol	**20 J**	**0.200 J**	1.55E+02
W007	11/21/2005	4	2,4,5-Trichlorophenol	**8.9 J**	**0.0680 J**	1.55E+02
W008	11/20/2005	3	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W009	11/20/2005	5	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W010	11/20/2005	5	2,4,5-Trichlorophenol	**4.6 J**	0.00850 UJ	1.55E+02
W011	11/20/2005	3	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W011	11/20/2005	9	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W011	11/20/2005	18.5	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W012	11/19/2005	6	2,4,5-Trichlorophenol	**2.4 J**	0.00850 UJ	1.55E+02
W013	11/19/2005	5	2,4,5-Trichlorophenol	**4.1 J**	**0.0450 J**	1.55E+02
W014	11/19/2005	5	2,4,5-Trichlorophenol	**2.1 J**	0.00850 UJ	1.55E+02
W015	11/19/2005	1	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W016	11/19/2005	5	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W017	11/18/2005	3	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W017	11/18/2005	7	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W018	11/18/2005	6	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W019	11/18/2005	4	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
W020	11/18/2005	5	2,4,5-Trichlorophenol	0.036 U	0.00850 UJ	1.55E+02
WDL-101-S	8/14/2002	0.25	2,4,5-Trichlorophenol	0.0756 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2,4,5-Trichlorophenol	**1.87 JN**	NT	NA
WDL-101-S	8/14/2002	5	2,4,5-Trichlorophenol	**32.4 J**	NT	NA
WDL-101-S	8/14/2002	7	2,4,5-Trichlorophenol	**23.3 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,4,5-Trichlorophenol	**0.55 J**	NT	NA
WDL-102-S	8/14/2002	2.25	2,4,5-Trichlorophenol	0.0628 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2,4,5-Trichlorophenol	0.0297 U	NT	NA
WDL-102-S	8/14/2002	8	2,4,5-Trichlorophenol	**0.407 N**	NT	NA
WDL-102-S	8/14/2002	10	2,4,5-Trichlorophenol	0.335 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2,4,5-Trichlorophenol	0.0837 U	NT	NA
WDL-103-S	8/15/2002	2.25	2,4,5-Trichlorophenol	0.0302 U	NT	NA
WDL-103-S	8/15/2002	5	2,4,5-Trichlorophenol	0.0483 U	NT	NA
WDL-103-S	8/15/2002	6.75	2,4,5-Trichlorophenol	0.688 U	NT	NA
WDL-103-S	8/15/2002	8.25	2,4,5-Trichlorophenol	**0.169 N**	NT	NA
WDL-104-S	8/15/2002	0.25	2,4,5-Trichlorophenol	0.0304 U	NT	NA
WDL-104-S	8/15/2002	2.25	2,4,5-Trichlorophenol	0.0302 U	NT	NA
WDL-104-S	8/15/2002	5	2,4,5-Trichlorophenol	**0.0402 N**	NT	NA
WDL-104-S	8/15/2002	6.75	2,4,5-Trichlorophenol	0.344 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,4,5-Trichlorophenol	1.11 U	0.0500 UJ	155
WDL-201-S	2/12/2004	6	2,4,5-Trichlorophenol	**7.22**	1.25 U	155
WDL-202-S	2/12/2004	4	2,4,5-Trichlorophenol	0.35 U	0.0500 U	155
WDL-203-S	2/13/2004	5.75	2,4,5-Trichlorophenol	0.14 U	0.0500 U	155
WDL-204-S	2/12/2004	5	2,4,5-Trichlorophenol	0.35 U	0.0500 U	155
W001	11/21/2005	1	2,4,6-Trichlorophenol	0.0530 UJ	0.00900 UJ	9.86E+00
W002	11/21/2005	5	2,4,6-Trichlorophenol	**120 J**	**3.80 J**	9.86E+00
W003	11/21/2005	7	2,4,6-Trichlorophenol	0.0530 UJ	0.00900 UJ	9.86E+00
W004	11/21/2005	7	2,4,6-Trichlorophenol	0.0530 UJ	**0.0530 J**	9.86E+00
W005	11/21/2005	7	2,4,6-Trichlorophenol	0.0530 UJ	0.00900 UJ	9.86E+00

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W006	11/21/2005	6	2,4,6-Trichlorophenol	**5.40 J**	**0.0650 J**	9.86E+00
W007	11/21/2005	4	2,4,6-Trichlorophenol	**1.60 J**	**0.0160 J**	9.86E+00
W008	11/20/2005	3	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W009	11/20/2005	5	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W010	11/20/2005	5	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W011	11/20/2005	3	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W011	11/20/2005	9	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W011	11/20/2005	18.5	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W012	11/19/2005	6	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W013	11/19/2005	5	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W014	11/19/2005	5	2,4,6-Trichlorophenol	**1.20 J**	0.00900 UJ	9.86E+00
W015	11/19/2005	1	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W016	11/19/2005	5	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W017	11/18/2005	3	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W017	11/18/2005	7	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W018	11/18/2005	6	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W019	11/18/2005	4	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
W020	11/18/2005	5	2,4,6-Trichlorophenol	0.0530 U	0.00900 UJ	9.86E+00
WDL-101-S	8/14/2002	0.25	2,4,6-Trichlorophenol	**0.248 J**	NT	NA
WDL-101-S	8/14/2002	2.25	2,4,6-Trichlorophenol	**0.465 JN**	NT	NA
WDL-101-S	8/14/2002	5	2,4,6-Trichlorophenol	**6.49 JN**	NT	NA
WDL-101-S	8/14/2002	7	2,4,6-Trichlorophenol	**12.4 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,4,6-Trichlorophenol	**1.54 J**	NT	NA
WDL-102-S	8/14/2002	2.25	2,4,6-Trichlorophenol	**0.493 J**	NT	NA
WDL-102-S	8/14/2002	5.5	2,4,6-Trichlorophenol	0.0220 U	NT	NA
WDL-102-S	8/14/2002	8	2,4,6-Trichlorophenol	**0.504 N**	NT	NA
WDL-102-S	8/14/2002	10	2,4,6-Trichlorophenol	0.247 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2,4,6-Trichlorophenol	**0.684**	NT	NA
WDL-103-S	8/15/2002	2.25	2,4,6-Trichlorophenol	**0.0489 N**	NT	NA
WDL-103-S	8/15/2002	5	2,4,6-Trichlorophenol	0.0357 U	NT	NA
WDL-103-S	8/15/2002	6.75	2,4,6-Trichlorophenol	0.509 U	NT	NA
WDL-103-S	8/15/2002	8.25	2,4,6-Trichlorophenol	0.0320 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,4,6-Trichlorophenol	**0.0342**	NT	NA
WDL-104-S	8/15/2002	2.25	2,4,6-Trichlorophenol	0.0224 U	NT	NA
WDL-104-S	8/15/2002	5	2,4,6-Trichlorophenol	0.0282 U	NT	NA
WDL-104-S	8/15/2002	6.75	2,4,6-Trichlorophenol	0.254 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,4,6-Trichlorophenol	1.11 U	0.0500 UJ	9.86
WDL-201-S	2/12/2004	6	2,4,6-Trichlorophenol	**11.2**	**2.24**	9.86
WDL-202-S	2/12/2004	4	2,4,6-Trichlorophenol	0.350 U	0.0500 U	9.86
WDL-203-S	2/13/2004	5.75	2,4,6-Trichlorophenol	0.140 U	0.0500 U	9.86
WDL-204-S	2/12/2004	5	2,4,6-Trichlorophenol	0.350 U	0.0500 U	9.86
W001	11/21/2005	1	2,4-Dichlorophenol	**5.90 J**	0.0100 UJ	9.76E+00
W002	11/21/2005	5	2,4-Dichlorophenol	**160 J**	**8.20 J**	9.76E+00
W003	11/21/2005	7	2,4-Dichlorophenol	**19.0 J**	**0.550 J**	9.76E+00
W004	11/21/2005	7	2,4-Dichlorophenol	**11.0 J**	**1.70 J**	9.76E+00
W005	11/21/2005	7	2,4-Dichlorophenol	**6.30 J**	**0.0830 J**	9.76E+00
W006	11/21/2005	6	2,4-Dichlorophenol	**130 J**	**2.30 J**	9.76E+00
W007	11/21/2005	4	2,4-Dichlorophenol	**270 J**	**4.00 J**	9.76E+00
W008	11/20/2005	3	2,4-Dichlorophenol	**12.0**	0.0100 UJ	9.76E+00
W009	11/20/2005	5	2,4-Dichlorophenol	**36.0**	**0.490 J**	9.76E+00
W010	11/20/2005	5	2,4-Dichlorophenol	**21.0**	**0.110 J**	9.76E+00
W011	11/20/2005	3	2,4-Dichlorophenol	**12.0**	**0.150 J**	9.76E+00
W011	11/20/2005	9	2,4-Dichlorophenol	0.0210 U	0.0100 UJ	9.76E+00
W011	11/20/2005	18.5	2,4-Dichlorophenol	0.0210 U	0.0100 UJ	9.76E+00
W012	11/19/2005	6	2,4-Dichlorophenol	**3.00 J**	**0.0540 J**	9.76E+00
W013	11/19/2005	5	2,4-Dichlorophenol	**52.0**	**1.20 J**	9.76E+00
W014	11/19/2005	5	2,4-Dichlorophenol	**94.0**	**0.510 J**	9.76E+00
W015	11/19/2005	1	2,4-Dichlorophenol	**7.50 J**	0.0100 UJ	9.76E+00
W016	11/19/2005	5	2,4-Dichlorophenol	**29.0**	**0.180 J**	9.76E+00
W017	11/18/2005	3	2,4-Dichlorophenol	**3.10 J**	0.0100 UJ	9.76E+00

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W017	11/18/2005	7	2,4-Dichlorophenol	**0.740 J**	**0.0550 J**	9.76E+00
W018	11/18/2005	6	2,4-Dichlorophenol	**14.0**	**2.40 J**	9.76E+00
W019	11/18/2005	4	2,4-Dichlorophenol	**7.30**	**0.0580 J**	9.76E+00
W020	11/18/2005	5	2,4-Dichlorophenol	**5.50 J**	0.0100 UJ	9.76E+00
WDL-101-S	8/14/2002	0.25	2,4-Dichlorophenol	**1.76 J**	NT	NA
WDL-101-S	8/14/2002	2.25	2,4-Dichlorophenol	**70.6 JN**	NT	NA
WDL-101-S	8/14/2002	5	2,4-Dichlorophenol	**718 J**	NT	NA
WDL-101-S	8/14/2002	7	2,4-Dichlorophenol	**567**	NT	NA
WDL-102-S	8/14/2002	0.5	2,4-Dichlorophenol	**48.9 JN**	NT	NA
WDL-102-S	8/14/2002	2.25	2,4-Dichlorophenol	**19.7 JN**	NT	NA
WDL-102-S	8/14/2002	5.5	2,4-Dichlorophenol	**0.564 J**	NT	NA
WDL-102-S	8/14/2002	8	2,4-Dichlorophenol	**1.54 JN**	NT	NA
WDL-102-S	8/14/2002	10	2,4-Dichlorophenol	0.204 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2,4-Dichlorophenol	**11.7**	NT	NA
WDL-103-S	8/15/2002	2.25	2,4-Dichlorophenol	**1.28**	NT	NA
WDL-103-S	8/15/2002	5	2,4-Dichlorophenol	**0.337**	NT	NA
WDL-103-S	8/15/2002	6.75	2,4-Dichlorophenol	**10.1**	NT	NA
WDL-103-S	8/15/2002	8.25	2,4-Dichlorophenol	**1.35**	NT	NA
WDL-104-S	8/15/2002	0.25	2,4-Dichlorophenol	**0.664**	NT	NA
WDL-104-S	8/15/2002	2.25	2,4-Dichlorophenol	**0.246**	NT	NA
WDL-104-S	8/15/2002	5	2,4-Dichlorophenol	**3.61**	NT	NA
WDL-104-S	8/15/2002	6.75	2,4-Dichlorophenol	**2.32**	NT	NA
WDL-201-S	2/12/2004	0.25	2,4-Dichlorophenol	**10.3**	0.0500 UJ	9.76
WDL-201-S	2/12/2004	6	2,4-Dichlorophenol	**12.8**	**3.05**	9.76
WDL-202-S	2/12/2004	4	2,4-Dichlorophenol	**1.26**	**0.0603**	9.76
WDL-203-S	2/13/2004	5.75	2,4-Dichlorophenol	0.140 U	0.0500 U	9.76
WDL-204-S	2/12/2004	5	2,4-Dichlorophenol	**1.96**	0.0500 U	9.76
W001	11/21/2005	1	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W002	11/21/2005	5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W003	11/21/2005	7	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W004	11/21/2005	7	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W005	11/21/2005	7	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W006	11/21/2005	6	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W007	11/21/2005	4	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W008	11/20/2005	3	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W009	11/20/2005	5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W010	11/20/2005	5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W011	11/20/2005	3	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W011	11/20/2005	9	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W011	11/20/2005	18.5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W012	11/19/2005	6	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W013	11/19/2005	5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W014	11/19/2005	5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W015	11/19/2005	1	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W016	11/19/2005	5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W017	11/18/2005	3	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W017	11/18/2005	7	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W018	11/18/2005	6	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W019	11/18/2005	4	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
W020	11/18/2005	5	2,4-Dimethylphenol	0.167 UJ	0.0125 UJ	1.49E+02
WDL-101-S	8/14/2002	0.25	2,4-Dimethylphenol	0.0462 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2,4-Dimethylphenol	0.0277 UJR	NT	NA
WDL-101-S	8/14/2002	5	2,4-Dimethylphenol	0.314 UJR	NT	NA
WDL-101-S	8/14/2002	7	2,4-Dimethylphenol	0.276 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2,4-Dimethylphenol	0.0341 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	2,4-Dimethylphenol	0.0384 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2,4-Dimethylphenol	0.0182 U	NT	NA
WDL-102-S	8/14/2002	8	2,4-Dimethylphenol	0.0255 UJ	NT	NA
WDL-102-S	8/14/2002	10	2,4-Dimethylphenol	0.204 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2,4-Dimethylphenol	**0.0635 N**	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	2.25	2,4-Dimethylphenol	0.0185 U	NT	NA
WDL-103-S	8/15/2002	5	2,4-Dimethylphenol	**0.0391**	NT	NA
WDL-103-S	8/15/2002	6.75	2,4-Dimethylphenol	0.421 U	NT	NA
WDL-103-S	8/15/2002	8.25	2,4-Dimethylphenol	0.0265 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,4-Dimethylphenol	0.0186 U	NT	NA
WDL-104-S	8/15/2002	2.25	2,4-Dimethylphenol	0.0185 U	NT	NA
WDL-104-S	8/15/2002	5	2,4-Dimethylphenol	0.0233 U	NT	NA
WDL-104-S	8/15/2002	6.75	2,4-Dimethylphenol	0.210 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,4-Dimethylphenol	7.91 U	0.100 UJ	149
WDL-201-S	2/12/2004	6	2,4-Dimethylphenol	12.5 U	2.50 U	149
WDL-202-S	2/12/2004	4	2,4-Dimethylphenol	2.50 U	0.100 U	149
WDL-203-S	2/13/2004	5.75	2,4-Dimethylphenol	1.00 U	0.100 U	149
WDL-204-S	2/12/2004	5	2,4-Dimethylphenol	2.50 U	0.100 U	149
W001	11/21/2005	1	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W002	11/21/2005	5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W003	11/21/2005	7	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W004	11/21/2005	7	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W005	11/21/2005	7	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W006	11/21/2005	6	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W007	11/21/2005	4	2,4-Dinitrophenol	0.660 R	0.125 UJ	NA
W008	11/20/2005	3	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W009	11/20/2005	5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W010	11/20/2005	5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W011	11/20/2005	3	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W011	11/20/2005	9	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W011	11/20/2005	18.5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W012	11/19/2005	6	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W013	11/19/2005	5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W014	11/19/2005	5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W015	11/19/2005	1	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W016	11/19/2005	5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W017	11/18/2005	3	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W017	11/18/2005	7	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W018	11/18/2005	6	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W019	11/18/2005	4	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
W020	11/18/2005	5	2,4-Dinitrophenol	0.660 UJ	0.125 UJ	NA
WDL-101-S	8/14/2002	0.25	2,4-Dinitrophenol	0.101 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2,4-Dinitrophenol	0.0605 URUJ	NT	NA
WDL-101-S	8/14/2002	5	2,4-Dinitrophenol	0.685 UJR	NT	NA
WDL-101-S	8/14/2002	7	2,4-Dinitrophenol	0.602 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2,4-Dinitrophenol	0.0744 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	2,4-Dinitrophenol	0.0837 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2,4-Dinitrophenol	0.0397 UJ	NT	NA
WDL-102-S	8/14/2002	8	2,4-Dinitrophenol	0.0556 UJ	NT	NA
WDL-102-S	8/14/2002	10	2,4-Dinitrophenol	0.446 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2,4-Dinitrophenol	0.112 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	2,4-Dinitrophenol	0.0403 UJ	NT	NA
WDL-103-S	8/15/2002	5	2,4-Dinitrophenol	0.0643 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	2,4-Dinitrophenol	0.918 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	2,4-Dinitrophenol	0.0578 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	2,4-Dinitrophenol	0.0405 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	2,4-Dinitrophenol	0.0403 UJ	NT	NA
WDL-104-S	8/15/2002	5	2,4-Dinitrophenol	0.0509 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	2,4-Dinitrophenol	0.458 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	2,4-Dinitrophenol	7.91 U	0.200 UJ	NA
WDL-201-S	2/12/2004	6	2,4-Dinitrophenol	12.5 U	5.00 U	NA
WDL-202-S	2/12/2004	4	2,4-Dinitrophenol	2.50 U	0.200 U	NA
WDL-203-S	2/13/2004	5.75	2,4-Dinitrophenol	1.00 U	0.200 U	NA
WDL-204-S	2/12/2004	5	2,4-Dinitrophenol	2.50 UR	0.200 U	NA
W001	11/21/2005	1	2,4-Dinitrotoluene	0.0210 UJ	0.0250 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W002	11/21/2005	5	2,4-Dinitrotoluene	0.0210 UJ	0.0250 U	NA
W003	11/21/2005	7	2,4-Dinitrotoluene	0.0210 UJ	0.0250 U	NA
W004	11/21/2005	7	2,4-Dinitrotoluene	0.0210 UJ	0.0250 U	NA
W005	11/21/2005	7	2,4-Dinitrotoluene	0.0210 UJ	0.0250 UJ	NA
W006	11/21/2005	6	2,4-Dinitrotoluene	0.0210 UJ	0.0250 U	NA
W007	11/21/2005	4	2,4-Dinitrotoluene	0.0210 UJ	0.0250 U	NA
W008	11/20/2005	3	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W009	11/20/2005	5	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W010	11/20/2005	5	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W011	11/20/2005	3	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W011	11/20/2005	9	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W011	11/20/2005	18.5	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W012	11/19/2005	6	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W013	11/19/2005	5	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W014	11/19/2005	5	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W015	11/19/2005	1	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W016	11/19/2005	5	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W017	11/18/2005	3	2,4-Dinitrotoluene	0.0210 U	0.0250 UJ	NA
W017	11/18/2005	7	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W018	11/18/2005	6	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W019	11/18/2005	4	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
W020	11/18/2005	5	2,4-Dinitrotoluene	0.0210 U	0.0250 U	NA
WDL-101-S	8/14/2002	0.25	2,4-Dinitrotoluene	0.0546 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2,4-Dinitrotoluene	0.0328 UJ	NT	NA
WDL-101-S	8/14/2002	5	2,4-Dinitrotoluene	0.371 UJ	NT	NA
WDL-101-S	8/14/2002	7	2,4-Dinitrotoluene	0.326 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2,4-Dinitrotoluene	0.0403 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	2,4-Dinitrotoluene	0.0454 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2,4-Dinitrotoluene	0.0215 UJ	NT	NA
WDL-102-S	8/14/2002	8	2,4-Dinitrotoluene	0.0301 U	NT	NA
WDL-102-S	8/14/2002	10	2,4-Dinitrotoluene	0.242 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2,4-Dinitrotoluene	0.0604 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	2,4-Dinitrotoluene	0.0218 UJ	NT	NA
WDL-103-S	8/15/2002	5	2,4-Dinitrotoluene	0.0349 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	2,4-Dinitrotoluene	0.497 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	2,4-Dinitrotoluene	0.0313 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	2,4-Dinitrotoluene	0.0219 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	2,4-Dinitrotoluene	0.0218 UJ	NT	NA
WDL-104-S	8/15/2002	5	2,4-Dinitrotoluene	0.0276 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	2,4-Dinitrotoluene	0.248 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	2,4-Dinitrotoluene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	2,4-Dinitrotoluene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	2,4-Dinitrotoluene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	2,4-Dinitrotoluene	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	2,4-Dinitrotoluene	0.350 U	0.0500 U	NA
WDL-201-S	2/12/2004	0.25	2,6-Dichlorophenol	7.91 U	NT	NA
WDL-201-S	2/12/2004	6	2,6-Dichlorophenol	12.5 U	NT	NA
WDL-202-S	2/12/2004	4	2,6-Dichlorophenol	2.50 U	NT	NA
WDL-203-S	2/13/2004	5.75	2,6-Dichlorophenol	1.00 U	NT	NA
WDL-204-S	2/12/2004	5	2,6-Dichlorophenol	2.50 U	NT	NA
W001	11/21/2005	1	2,6-Dinitrotoluene	0.0300 UJ	0.00380 U	NA
W002	11/21/2005	5	2,6-Dinitrotoluene	0.0300 UJ	0.00380 U	NA
W003	11/21/2005	7	2,6-Dinitrotoluene	0.0300 UJ	0.00380 U	NA
W004	11/21/2005	7	2,6-Dinitrotoluene	0.0300 UJ	0.00380 U	NA
W005	11/21/2005	7	2,6-Dinitrotoluene	0.0300 UJ	0.00380 UJ	NA
W006	11/21/2005	6	2,6-Dinitrotoluene	0.0300 UJ	0.00380 U	NA
W007	11/21/2005	4	2,6-Dinitrotoluene	0.0300 UJ	0.00380 U	NA
W008	11/20/2005	3	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W009	11/20/2005	5	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W010	11/20/2005	5	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	3	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W011	11/20/2005	9	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W011	11/20/2005	18.5	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W012	11/19/2005	6	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W013	11/19/2005	5	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W014	11/19/2005	5	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W015	11/19/2005	1	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W016	11/19/2005	5	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W017	11/18/2005	3	2,6-Dinitrotoluene	0.0300 U	0.00380 UJ	NA
W017	11/18/2005	7	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W018	11/18/2005	6	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W019	11/18/2005	4	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
W020	11/18/2005	5	2,6-Dinitrotoluene	0.0300 U	0.00380 U	NA
WDL-101-S	8/14/2002	0.25	2,6-Dinitrotoluene	0.0756 U	NT	NA
WDL-101-S	8/14/2002	2.25	2,6-Dinitrotoluene	0.0454 U	NT	NA
WDL-101-S	8/14/2002	5	2,6-Dinitrotoluene	0.514 UJ	NT	NA
WDL-101-S	8/14/2002	7	2,6-Dinitrotoluene	0.452 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2,6-Dinitrotoluene	0.0558 UR	NT	NA
WDL-102-S	8/14/2002	2.25	2,6-Dinitrotoluene	0.0628 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2,6-Dinitrotoluene	0.0297 U	NT	NA
WDL-102-S	8/14/2002	8	2,6-Dinitrotoluene	0.0417 U	NT	NA
WDL-102-S	8/14/2002	10	2,6-Dinitrotoluene	0.335 U	NT	NA
WDL-103-S	8/15/2002	0.25	2,6-Dinitrotoluene	0.0837 U	NT	NA
WDL-103-S	8/15/2002	2.25	2,6-Dinitrotoluene	0.0302 U	NT	NA
WDL-103-S	8/15/2002	5	2,6-Dinitrotoluene	0.0483 U	NT	NA
WDL-103-S	8/15/2002	6.75	2,6-Dinitrotoluene	0.688 U	NT	NA
WDL-103-S	8/15/2002	8.25	2,6-Dinitrotoluene	0.0433 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,6-Dinitrotoluene	0.0304 U	NT	NA
WDL-104-S	8/15/2002	2.25	2,6-Dinitrotoluene	0.0302 U	NT	NA
WDL-104-S	8/15/2002	5	2,6-Dinitrotoluene	0.0382 U	NT	NA
WDL-104-S	8/15/2002	6.75	2,6-Dinitrotoluene	0.344 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,6-Dinitrotoluene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	2,6-Dinitrotoluene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	2,6-Dinitrotoluene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	2,6-Dinitrotoluene	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	2,6-Dinitrotoluene	0.350 U	0.0500 U	NA
W001	11/21/2005	1	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W002	11/21/2005	5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W003	11/21/2005	7	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W004	11/21/2005	7	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W005	11/21/2005	7	2-Chloronapthalene	0.0190 UJ	0.00485 UJ	7.55E+01
W006	11/21/2005	6	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W007	11/21/2005	4	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W008	11/20/2005	3	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W009	11/20/2005	5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W010	11/20/2005	5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W011	11/20/2005	3	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W011	11/20/2005	9	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W011	11/20/2005	18.5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W012	11/19/2005	6	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W013	11/19/2005	5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W014	11/19/2005	5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W015	11/19/2005	1	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W016	11/19/2005	5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W017	11/18/2005	3	2-Chloronapthalene	0.0190 UJ	0.00485 UJ	7.55E+01
W017	11/18/2005	7	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W018	11/18/2005	6	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W019	11/18/2005	4	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01
W020	11/18/2005	5	2-Chloronapthalene	0.0190 UJ	0.00485 U	7.55E+01

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	0.25	2-Chloronapthalene	0.0126 U	NT	NA
WDL-101-S	8/14/2002	2.25	2-Chloronapthalene	0.00757 U	NT	NA
WDL-101-S	8/14/2002	5	2-Chloronapthalene	0.0856 UJ	NT	NA
WDL-101-S	8/14/2002	7	2-Chloronapthalene	0.0753 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2-Chloronapthalene	0.00930 UR	NT	NA
WDL-102-S	8/14/2002	2.25	2-Chloronapthalene	0.0105 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2-Chloronapthalene	0.00496 U	NT	NA
WDL-102-S	8/14/2002	8	2-Chloronapthalene	0.00696 U	NT	NA
WDL-102-S	8/14/2002	10	2-Chloronapthalene	0.0558 U	NT	NA
WDL-103-S	8/15/2002	0.25	2-Chloronapthalene	0.0139 U	NT	NA
WDL-103-S	8/15/2002	2.25	2-Chloronapthalene	0.00503 U	NT	NA
WDL-103-S	8/15/2002	5	2-Chloronapthalene	0.00804 U	NT	NA
WDL-103-S	8/15/2002	6.75	2-Chloronapthalene	0.115 U	NT	NA
WDL-103-S	8/15/2002	8.25	2-Chloronapthalene	0.00722 U	NT	NA
WDL-104-S	8/15/2002	0.25	2-Chloronapthalene	0.00506 U	NT	NA
WDL-104-S	8/15/2002	2.25	2-Chloronapthalene	0.00504 U	NT	NA
WDL-104-S	8/15/2002	5	2-Chloronapthalene	0.00636 U	NT	NA
WDL-104-S	8/15/2002	6.75	2-Chloronapthalene	0.0573 U	NT	NA
WDL-201-S	2/12/2004	0.25	2-Chloronapthalene	1.11 U	0.0500 U	75.5
WDL-201-S	2/12/2004	6	2-Chloronapthalene	1.75 U	1.25 U	75.5
WDL-202-S	2/12/2004	4	2-Chloronapthalene	0.350 U	0.0500 U	75.5
WDL-203-S	2/13/2004	5.75	2-Chloronapthalene	0.140 U	0.0500 U	75.5
WDL-204-S	2/12/2004	5	2-Chloronapthalene	0.350 U	0.0500 U	75.5
W001	11/21/2005	1	2-Chlorophenol	**0.980 J**	0.0100 UJ	4.99E+01
W002	11/21/2005	5	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W003	11/21/2005	7	2-Chlorophenol	**0.790 J**	**0.0130 J**	4.99E+01
W004	11/21/2005	7	2-Chlorophenol	**1.20 J**	**0.270 J**	4.99E+01
W005	11/21/2005	7	2-Chlorophenol	0.0220 UJ	**0.0200 J**	4.99E+01
W006	11/21/2005	6	2-Chlorophenol	0.0220 UJ	**0.0630 J**	4.99E+01
W007	11/21/2005	4	2-Chlorophenol	0.0220 UJ	**0.130 J**	4.99E+01
W008	11/20/2005	3	2-Chlorophenol	**0.960 J**	0.0100 UJ	4.99E+01
W009	11/20/2005	5	2-Chlorophenol	**2.50 J**	**0.0460 J**	4.99E+01
W010	11/20/2005	5	2-Chlorophenol	**1.90 J**	**0.0240 J**	4.99E+01
W011	11/20/2005	3	2-Chlorophenol	0.0220 UJ	**0.0100 J**	4.99E+01
W011	11/20/2005	9	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W011	11/20/2005	18.5	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W012	11/19/2005	6	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W013	11/19/2005	5	2-Chlorophenol	**2.40 J**	**0.0640 J**	4.99E+01
W014	11/19/2005	5	2-Chlorophenol	**4.30 J**	**0.0470 J**	4.99E+01
W015	11/19/2005	1	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W016	11/19/2005	5	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W017	11/18/2005	3	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W017	11/18/2005	7	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
W018	11/18/2005	6	2-Chlorophenol	**1.20 J**	**0.0840 J**	4.99E+01
W019	11/18/2005	4	2-Chlorophenol	**2.20 J**	**0.0320 J**	4.99E+01
W020	11/18/2005	5	2-Chlorophenol	0.0220 UJ	0.0100 UJ	4.99E+01
WDL-101-S	8/14/2002	0.25	2-Chlorophenol	**0.554 J**	NT	NA
WDL-101-S	8/14/2002	2.25	2-Chlorophenol	**47.8 J**	NT	NA
WDL-101-S	8/14/2002	5	2-Chlorophenol	**6.60 J**	NT	NA
WDL-101-S	8/14/2002	7	2-Chlorophenol	**6.79**	NT	NA
WDL-102-S	8/14/2002	0.5	2-Chlorophenol	**8.02 J**	NT	NA
WDL-102-S	8/14/2002	2.25	2-Chlorophenol	**40.5 J**	NT	NA
WDL-102-S	8/14/2002	5.5	2-Chlorophenol	**0.239 J**	NT	NA
WDL-102-S	8/14/2002	8	2-Chlorophenol	**0.292**	NT	NA
WDL-102-S	8/14/2002	10	2-Chlorophenol	0.279 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2-Chlorophenol	**1.39**	NT	NA
WDL-103-S	8/15/2002	2.25	2-Chlorophenol	**0.203**	NT	NA
WDL-103-S	8/15/2002	5	2-Chlorophenol	**0.0534**	NT	NA
WDL-103-S	8/15/2002	6.75	2-Chlorophenol	**1.28**	NT	NA
WDL-103-S	8/15/2002	8.25	2-Chlorophenol	**1.27**	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	0.25	2-Chlorophenol	**0.0369**	NT	NA
WDL-104-S	8/15/2002	2.25	2-Chlorophenol	0.0252 U	NT	NA
WDL-104-S	8/15/2002	5	2-Chlorophenol	**0.520**	NT	NA
WDL-104-S	8/15/2002	6.75	2-Chlorophenol	0.286 U	NT	NA
WDL-201-S	2/12/2004	0.25	2-Chlorophenol	1.11 U	0.0500 UJ	49.9
WDL-201-S	2/12/2004	6	2-Chlorophenol	**3.04**	1.25 U	49.9
WDL-202-S	2/12/2004	4	2-Chlorophenol	0.350 U	0.0500 U	49.9
WDL-203-S	2/13/2004	5.75	2-Chlorophenol	0.140 U	0.0500 U	49.9
WDL-204-S	2/12/2004	5	2-Chlorophenol	**0.614**	0.0500 U	49.9
W001	11/21/2005	1	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W002	11/21/2005	5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W003	11/21/2005	7	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W004	11/21/2005	7	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W005	11/21/2005	7	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W006	11/21/2005	6	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W007	11/21/2005	4	2-Methyl-4,6-dinitrophenol	0.660 R	0.100 UJ	NA
W008	11/20/2005	3	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W009	11/20/2005	5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W010	11/20/2005	5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W011	11/20/2005	3	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W011	11/20/2005	9	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W011	11/20/2005	18.5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W012	11/19/2005	6	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W013	11/19/2005	5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W014	11/19/2005	5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W015	11/19/2005	1	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W016	11/19/2005	5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W017	11/18/2005	3	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W017	11/18/2005	7	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W018	11/18/2005	6	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W019	11/18/2005	4	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
W020	11/18/2005	5	2-Methyl-4,6-dinitrophenol	0.660 UJ	0.100 UJ	NA
WDL-101-S	8/14/2002	0.25	2-Methyl-4,6-dinitrophenol	0.155 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2-Methyl-4,6-dinitrophenol	0.0933 UR	NT	NA
WDL-101-S	8/14/2002	5	2-Methyl-4,6-dinitrophenol	1.06 UR	NT	NA
WDL-101-S	8/14/2002	7	2-Methyl-4,6-dinitrophenol	0.928 U	NT	NA
WDL-102-S	8/14/2002	0.5	2-Methyl-4,6-dinitrophenol	0.115 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	2-Methyl-4,6-dinitrophenol	0.129 U	NT	NA
WDL-102-S	8/14/2002	5.5	2-Methyl-4,6-dinitrophenol	0.0611 U	NT	NA
WDL-102-S	8/14/2002	8	2-Methyl-4,6-dinitrophenol	0.0858 U	NT	NA
WDL-102-S	8/14/2002	10	2-Methyl-4,6-dinitrophenol	0.688 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2-Methyl-4,6-dinitrophenol	0.172 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	2-Methyl-4,6-dinitrophenol	0.0621 UJ	NT	NA
WDL-103-S	8/15/2002	5	2-Methyl-4,6-dinitrophenol	0.0992 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	2-Methyl-4,6-dinitrophenol	1.41 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	2-Methyl-4,6-dinitrophenol	0.0890 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	2-Methyl-4,6-dinitrophenol	0.0624 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	2-Methyl-4,6-dinitrophenol	0.0622 UJ	NT	NA
WDL-104-S	8/15/2002	5	2-Methyl-4,6-dinitrophenol	0.0785 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	2-Methyl-4,6-dinitrophenol	0.707 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	2-Methyl-4,6-dinitrophenol	7.91 U	0.200 UJ	NA
WDL-201-S	2/12/2004	6	2-Methyl-4,6-dinitrophenol	12.5 U	5.00 U	NA
WDL-202-S	2/12/2004	4	2-Methyl-4,6-dinitrophenol	2.50 U	0.200 U	NA
WDL-203-S	2/13/2004	5.75	2-Methyl-4,6-dinitrophenol	1.00 U	0.200 U	NA
WDL-204-S	2/12/2004	5	2-Methyl-4,6-dinitrophenol	2.50 UR	0.200 U	NA
W001	11/21/2005	1	2-Methylnaphthalene	**1.30 J**	0.00500 U	3.45E+00
W002	11/21/2005	5	2-Methylnaphthalene	**5.00 J**	**1.20**	3.45E+00
W003	11/21/2005	7	2-Methylnaphthalene	0.0540 UJ	0.00500 U	3.45E+00
W004	11/21/2005	7	2-Methylnaphthalene	0.0540 UJ	0.00500 U	3.45E+00
W005	11/21/2005	7	2-Methylnaphthalene	0.0540 UJ	0.00500 UJ	3.45E+00

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W006	11/21/2005	6	2-Methylnaphthalene	**3.10 J**	**0.0280 J**	3.45E+00
W007	11/21/2005	4	2-Methylnaphthalene	**2.40 J**	0.00500 U	3.45E+00
W008	11/20/2005	3	2-Methylnaphthalene	**2.20 J**	0.00500 U	3.45E+00
W009	11/20/2005	5	2-Methylnaphthalene	**2.00 J**	0.00500 U	3.45E+00
W010	11/20/2005	5	2-Methylnaphthalene	**13.0**	**0.00760 J**	3.45E+00
W011	11/20/2005	3	2-Methylnaphthalene	**11.0**	0.00500 U	3.45E+00
W011	11/20/2005	9	2-Methylnaphthalene	0.0540 U	0.00500 U	3.45E+00
W011	11/20/2005	18.5	2-Methylnaphthalene	0.0540 U	0.00500 U	3.45E+00
W012	11/19/2005	6	2-Methylnaphthalene	**13.0**	0.00500 U	3.45E+00
W013	11/19/2005	5	2-Methylnaphthalene	**6.20 J**	0.00500 U	3.45E+00
W014	11/19/2005	5	2-Methylnaphthalene	**7.40**	0.00500 U	3.45E+00
W015	11/19/2005	1	2-Methylnaphthalene	**2.30 J**	0.00500 U	3.45E+00
W016	11/19/2005	5	2-Methylnaphthalene	**1.60 J**	0.00500 U	3.45E+00
W017	11/18/2005	3	2-Methylnaphthalene	0.0540 U	0.00500 UJ	3.45E+00
W017	11/18/2005	7	2-Methylnaphthalene	0.0540 U	0.00500 U	3.45E+00
W018	11/18/2005	6	2-Methylnaphthalene	**1.20 J**	0.00500 U	3.45E+00
W019	11/18/2005	4	2-Methylnaphthalene	0.0540 U	0.00500 U	3.45E+00
W020	11/18/2005	5	2-Methylnaphthalene	**1.10 J**	0.00500 U	3.45E+00
WDL-101-S	8/14/2002	0.25	2-Methylnaphthalene	**0.0471**	NT	NA
WDL-101-S	8/14/2002	2.25	2-Methylnaphthalene	**3.86 J**	NT	NA
WDL-101-S	8/14/2002	5	2-Methylnaphthalene	**23.9 J**	NT	NA
WDL-101-S	8/14/2002	7	2-Methylnaphthalene	**5.98 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2-Methylnaphthalene	**1.94 J**	NT	NA
WDL-102-S	8/14/2002	2.25	2-Methylnaphthalene	**0.317 J**	NT	NA
WDL-102-S	8/14/2002	5.5	2-Methylnaphthalene	**0.0213**	NT	NA
WDL-102-S	8/14/2002	8	2-Methylnaphthalene	**0.893 J**	NT	NA
WDL-102-S	8/14/2002	10	2-Methylnaphthalene	0.0290 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2-Methylnaphthalene	**0.684**	NT	NA
WDL-103-S	8/15/2002	2.25	2-Methylnaphthalene	**0.278**	NT	NA
WDL-103-S	8/15/2002	5	2-Methylnaphthalene	**0.157**	NT	NA
WDL-103-S	8/15/2002	6.75	2-Methylnaphthalene	0.478 U	NT	NA
WDL-103-S	8/15/2002	8.25	2-Methylnaphthalene	**0.635**	NT	NA
WDL-104-S	8/15/2002	0.25	2-Methylnaphthalene	**0.0715**	NT	NA
WDL-104-S	8/15/2002	2.25	2-Methylnaphthalene	**0.431**	NT	NA
WDL-104-S	8/15/2002	5	2-Methylnaphthalene	**0.911**	NT	NA
WDL-104-S	8/15/2002	6.75	2-Methylnaphthalene	**1.56**	NT	NA
WDL-201-S	2/12/2004	0.25	2-Methylnaphthalene	**1.82**	0.0500 U	3.45
WDL-201-S	2/12/2004	6	2-Methylnaphthalene	1.75 U	1.25 U	3.45
WDL-202-S	2/12/2004	4	2-Methylnaphthalene	0.350 U	0.0500 U	3.45
WDL-203-S	2/13/2004	5.75	2-Methylnaphthalene	0.140 U	0.0500 U	3.45
WDL-204-S	2/12/2004	5	2-Methylnaphthalene	**0.528**	0.0500 U	3.45
W001	11/21/2005	1	2-Methylphenol	0.0580 UJ	0.00900 UJ	5.65E+02
W002	11/21/2005	5	2-Methylphenol	**37.0 J**	**0.400 J**	5.65E+02
W003	11/21/2005	7	2-Methylphenol	**0.780 J**	0.00900 UJ	5.65E+02
W004	11/21/2005	7	2-Methylphenol	0.0580 UJ	**0.0460 J**	5.65E+02
W005	11/21/2005	7	2-Methylphenol	0.0580 UJ	**0.0130 J**	5.65E+02
W006	11/21/2005	6	2-Methylphenol	**3.70 J**	**0.0850 J**	5.65E+02
W007	11/21/2005	4	2-Methylphenol	**1.90 J**	**0.0300 J**	5.65E+02
W008	11/20/2005	3	2-Methylphenol	0.0580 UJ	0.00900 UJ	5.65E+02
W009	11/20/2005	5	2-Methylphenol	0.0580 UJ	**0.0130 J**	5.65E+02
W010	11/20/2005	5	2-Methylphenol	**3.30 J**	**0.0450 J**	5.65E+02
W011	11/20/2005	3	2-Methylphenol	0.0580 UJ	**0.00920 J**	5.65E+02
W011	11/20/2005	9	2-Methylphenol	0.0580 UJ	0.00900 UJ	5.65E+02
W011	11/20/2005	18.5	2-Methylphenol	0.0580 UJ	0.00900 UJ	5.65E+02
W012	11/19/2005	6	2-Methylphenol	**1.60 J**	0.00900 UJ	5.65E+02
W013	11/19/2005	5	2-Methylphenol	**2.50 J**	**0.0340 J**	5.65E+02
W014	11/19/2005	5	2-Methylphenol	**1.90 J**	0.00900 UJ	5.65E+02
W015	11/19/2005	1	2-Methylphenol	0.0580 UJ	0.00900 UJ	5.65E+02
W016	11/19/2005	5	2-Methylphenol	**1.50 J**	0.00900 UJ	5.65E+02
W017	11/18/2005	3	2-Methylphenol	0.0580 UJ	0.00900 UJ	5.65E+02

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W017	11/18/2005	7	2-Methylphenol	0.0580 UJ	0.00900 UJ	5.65E+02
W018	11/18/2005	6	2-Methylphenol	**3.90 J**	**0.150 J**	5.65E+02
W019	11/18/2005	4	2-Methylphenol	**8.00 J**	**0.0910 J**	5.65E+02
W020	11/18/2005	5	2-Methylphenol	**2.00 J**	0.00900 UJ	5.65E+02
WDL-101-S	8/14/2002	0.25	2-Methylphenol	0.0504 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2-Methylphenol	**12.9 J**	NT	NA
WDL-101-S	8/14/2002	5	2-Methylphenol	0.342 UR	NT	NA
WDL-101-S	8/14/2002	7	2-Methylphenol	0.301 U	NT	NA
WDL-102-S	8/14/2002	0.5	2-Methylphenol	**2.57 JN**	NT	NA
WDL-102-S	8/14/2002	2.25	2-Methylphenol	**8.06 J**	NT	NA
WDL-102-S	8/14/2002	5.5	2-Methylphenol	**0.380**	NT	NA
WDL-102-S	8/14/2002	8	2-Methylphenol	**1.53 N**	NT	NA
WDL-102-S	8/14/2002	10	2-Methylphenol	0.223 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2-Methylphenol	**0.990**	NT	NA
WDL-103-S	8/15/2002	2.25	2-Methylphenol	**2.07**	NT	NA
WDL-103-S	8/15/2002	5	2-Methylphenol	**0.590**	NT	NA
WDL-103-S	8/15/2002	6.75	2-Methylphenol	**2.73**	NT	NA
WDL-103-S	8/15/2002	8.25	2-Methylphenol	**8.49**	NT	NA
WDL-104-S	8/15/2002	0.25	2-Methylphenol	**0.0589**	NT	NA
WDL-104-S	8/15/2002	2.25	2-Methylphenol	0.0202 U	NT	NA
WDL-104-S	8/15/2002	5	2-Methylphenol	**2.13**	NT	NA
WDL-104-S	8/15/2002	6.75	2-Methylphenol	**6.22**	NT	NA
WDL-201-S	2/12/2004	0.25	2-Methylphenol	1.11 U	NT	NA
WDL-201-S	2/12/2004	6	2-Methylphenol	**3.09**	NT	NA
WDL-202-S	2/12/2004	4	2-Methylphenol	0.350 U	NT	NA
WDL-203-S	2/13/2004	5.75	2-Methylphenol	0.140 U	NT	NA
WDL-204-S	2/12/2004	5	2-Methylphenol	**3.86**	NT	NA
W001	11/21/2005	1	2-Nitroaniline	0.0450 UJ	0.00340 U	NA
W002	11/21/2005	5	2-Nitroaniline	0.0450 UJ	0.00340 U	NA
W003	11/21/2005	7	2-Nitroaniline	0.0450 UJ	0.00340 U	NA
W004	11/21/2005	7	2-Nitroaniline	0.0450 UJ	0.00340 U	NA
W005	11/21/2005	7	2-Nitroaniline	0.0450 UJ	0.00340 UJ	NA
W006	11/21/2005	6	2-Nitroaniline	0.0450 UJ	0.00340 U	NA
W007	11/21/2005	4	2-Nitroaniline	0.0450 UJ	0.00340 U	NA
W008	11/20/2005	3	2-Nitroaniline	0.0450 U	0.00340 U	NA
W009	11/20/2005	5	2-Nitroaniline	0.0450 U	0.00340 U	NA
W010	11/20/2005	5	2-Nitroaniline	0.0450 U	0.00340 U	NA
W011	11/20/2005	3	2-Nitroaniline	0.0450 U	0.00340 U	NA
W011	11/20/2005	9	2-Nitroaniline	0.0450 U	0.00340 U	NA
W011	11/20/2005	18.5	2-Nitroaniline	0.0450 U	0.00340 U	NA
W012	11/19/2005	6	2-Nitroaniline	0.0450 U	0.00340 U	NA
W013	11/19/2005	5	2-Nitroaniline	0.0450 U	0.00340 U	NA
W014	11/19/2005	5	2-Nitroaniline	0.0450 U	0.00340 U	NA
W015	11/19/2005	1	2-Nitroaniline	0.0450 U	0.00340 U	NA
W016	11/19/2005	5	2-Nitroaniline	0.0450 U	0.00340 U	NA
W017	11/18/2005	3	2-Nitroaniline	0.0450 U	0.00340 UJ	NA
W017	11/18/2005	7	2-Nitroaniline	0.0450 U	0.00340 U	NA
W018	11/18/2005	6	2-Nitroaniline	0.0450 U	0.00340 U	NA
W019	11/18/2005	4	2-Nitroaniline	0.0450 U	0.00340 U	NA
W020	11/18/2005	5	2-Nitroaniline	0.0450 U	0.00340 U	NA
WDL-101-S	8/14/2002	0.25	2-Nitroaniline	0.0546 U	NT	NA
WDL-101-S	8/14/2002	2.25	2-Nitroaniline	0.0328 U	NT	NA
WDL-101-S	8/14/2002	5	2-Nitroaniline	0.371 UJ	NT	NA
WDL-101-S	8/14/2002	7	2-Nitroaniline	0.326 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2-Nitroaniline	0.0403 UR	NT	NA
WDL-102-S	8/14/2002	2.25	2-Nitroaniline	0.0454 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2-Nitroaniline	0.0215 U	NT	NA
WDL-102-S	8/14/2002	8	2-Nitroaniline	0.0301 U	NT	NA
WDL-102-S	8/14/2002	10	2-Nitroaniline	0.242 U	NT	NA
WDL-103-S	8/15/2002	0.25	2-Nitroaniline	0.0604 U	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	2.25	2-Nitroaniline	0.0218 U	NT	NA
WDL-103-S	8/15/2002	5	2-Nitroaniline	0.0349 U	NT	NA
WDL-103-S	8/15/2002	6.75	2-Nitroaniline	0.497 U	NT	NA
WDL-103-S	8/15/2002	8.25	2-Nitroaniline	0.0313 U	NT	NA
WDL-104-S	8/15/2002	0.25	2-Nitroaniline	0.0219 U	NT	NA
WDL-104-S	8/15/2002	2.25	2-Nitroaniline	0.0218 U	NT	NA
WDL-104-S	8/15/2002	5	2-Nitroaniline	0.0276 U	NT	NA
WDL-104-S	8/15/2002	6.75	2-Nitroaniline	0.248 U	NT	NA
WDL-201-S	2/12/2004	0.25	2-Nitroaniline	1.11 U	0.200 U	NA
WDL-201-S	2/12/2004	6	2-Nitroaniline	1.75 U	5.00 U	NA
WDL-202-S	2/12/2004	4	2-Nitroaniline	0.350 U	0.200 U	NA
WDL-203-S	2/13/2004	5.75	2-Nitroaniline	0.140 U	0.200 U	NA
WDL-204-S	2/12/2004	5	2-Nitroaniline	0.350 U	0.200 U	NA
W001	11/21/2005	1	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W002	11/21/2005	5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W003	11/21/2005	7	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W004	11/21/2005	7	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W005	11/21/2005	7	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W006	ssociated analyt	6	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W007	11/21/2005	4	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W008	dentified and th	3	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W009	11/20/2005	5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W010	11/20/2005	5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W011	11/20/2005	3	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W011	11/20/2005	9	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W011	11/20/2005	18.5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W012	11/19/2005	6	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W013	11/19/2005	5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W014	11/19/2005	5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W015	11/19/2005	1	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W016	11/19/2005	5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W017	11/18/2005	3	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W017	11/18/2005	7	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W018	11/18/2005	6	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W019	11/18/2005	4	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
W020	11/18/2005	5	2-Nitrophenol	0.0300 UJ	0.0100 UJ	NA
WDL-101-S	8/14/2002	0.25	2-Nitrophenol	0.0588 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2-Nitrophenol	0.0353 URUJ	NT	NA
WDL-101-S	8/14/2002	5	2-Nitrophenol	0.399 UJR	NT	NA
WDL-101-S	8/14/2002	7	2-Nitrophenol	0.351 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2-Nitrophenol	0.0434 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	2-Nitrophenol	0.0488 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	2-Nitrophenol	0.0231 U	NT	NA
WDL-102-S	8/14/2002	8	2-Nitrophenol	0.0325 UJ	NT	NA
WDL-102-S	8/14/2002	10	2-Nitrophenol	0.260 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	2-Nitrophenol	0.0651 U	NT	NA
WDL-103-S	8/15/2002	2.25	2-Nitrophenol	0.0235 U	NT	NA
WDL-103-S	8/15/2002	5	2-Nitrophenol	0.0375 U	NT	NA
WDL-103-S	8/15/2002	6.75	2-Nitrophenol	0.535 U	NT	NA
WDL-103-S	8/15/2002	8.25	2-Nitrophenol	0.0337 U	NT	NA
WDL-104-S	8/15/2002	0.25	2-Nitrophenol	0.0236 U	NT	NA
WDL-104-S	8/15/2002	2.25	2-Nitrophenol	0.0235 U	NT	NA
WDL-104-S	8/15/2002	5	2-Nitrophenol	0.0297 U	NT	NA
WDL-104-S	8/15/2002	6.75	2-Nitrophenol	0.267 U	NT	NA
WDL-201-S	2/12/2004	0.25	2-Nitrophenol	1.11 U	0.0500 UJ	NA
WDL-201-S	2/12/2004	6	2-Nitrophenol	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	2-Nitrophenol	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	2-Nitrophenol	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	2-Nitrophenol	0.350 U	0.0500 U	NA
WDL-101-S	8/14/2002	0.25	3 & 4-Methylphenol	0.0622 UJ	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	2.25	3 & 4-Methylphenol	0.0373 URUJ	NT	NA
WDL-101-S	8/14/2002	5	3 & 4-Methylphenol	0.422 UJR	NT	NA
WDL-101-S	8/14/2002	7	3 & 4-Methylphenol	0.371 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	3 & 4-Methylphenol	0.0459 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	3 & 4-Methylphenol	0.0516 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	3 & 4-Methylphenol	0.0245 UJ	NT	NA
WDL-102-S	8/14/2002	8	3 & 4-Methylphenol	**0.519 JN**	NT	NA
WDL-102-S	8/14/2002	10	3 & 4-Methylphenol	0.275 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	3 & 4-Methylphenol	**0.112 N**	NT	NA
WDL-103-S	8/15/2002	2.25	3 & 4-Methylphenol	0.0248 U	NT	NA
WDL-103-S	8/15/2002	5	3 & 4-Methylphenol	0.0397 U	NT	NA
WDL-103-S	8/15/2002	6.75	3 & 4-Methylphenol	0.566 U	NT	NA
WDL-103-S	8/15/2002	8.25	3 & 4-Methylphenol	**2.96**	NT	NA
WDL-104-S	8/15/2002	0.25	3 & 4-Methylphenol	**0.0257 N**	NT	NA
WDL-104-S	8/15/2002	2.25	3 & 4-Methylphenol	**0.325 N**	NT	NA
WDL-104-S	8/15/2002	5	3 & 4-Methylphenol	**0.114 N**	NT	NA
WDL-104-S	8/15/2002	6.75	3 & 4-Methylphenol	**0.398 N**	NT	NA
WDL-201-S	2/12/2004	0.25	3 & 4-Methylphenol	1.11 U	0.100 UJ	NA
WDL-201-S	2/12/2004	6	3 & 4-Methylphenol	1.75 U	2.50 U	NA
WDL-202-S	2/12/2004	4	3 & 4-Methylphenol	0.350 U	0.100 U	NA
WDL-203-S	2/13/2004	5.75	3 & 4-Methylphenol	0.140 U	0.100 U	NA
WDL-204-S	2/12/2004	5	3 & 4-Methylphenol	0.350 U	0.100 U	NA
W001	11/21/2005	1	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W002	11/21/2005	5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W003	11/21/2005	7	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W004	11/21/2005	7	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W005	11/21/2005	7	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 UJ	NA
W006	11/21/2005	6	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W007	11/21/2005	4	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W008	11/20/2005	3	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W009	11/20/2005	5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W010	11/20/2005	5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W011	11/20/2005	3	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W011	11/20/2005	9	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W011	11/20/2005	18.5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W012	11/19/2005	6	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W013	11/19/2005	5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W014	11/19/2005	5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W015	11/19/2005	1	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W016	11/19/2005	5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W017	11/18/2005	3	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 UJ	NA
W017	11/18/2005	7	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W018	11/18/2005	6	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W019	11/18/2005	4	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 U	NA
W020	11/18/2005	5	3,3'-Dichlorobenzidine	0.330 UJ	0.00650 UJ	NA
WDL-101-S	8/14/2002	0.25	3,3'-Dichlorobenzidine	0.0462 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	3,3'-Dichlorobenzidine	0.0277 UJ	NT	NA
WDL-101-S	8/14/2002	5	3,3'-Dichlorobenzidine	0.314 UJ	NT	NA
WDL-101-S	8/14/2002	7	3,3'-Dichlorobenzidine	0.276 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	3,3'-Dichlorobenzidine	0.0341 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	3,3'-Dichlorobenzidine	0.0384 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	3,3'-Dichlorobenzidine	0.0182 UJ	NT	NA
WDL-102-S	8/14/2002	8	3,3'-Dichlorobenzidine	0.0255 UJ	NT	NA
WDL-102-S	8/14/2002	10	3,3'-Dichlorobenzidine	0.204 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	3,3'-Dichlorobenzidine	0.0511 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	3,3'-Dichlorobenzidine	0.0185 UJ	NT	NA
WDL-103-S	8/15/2002	5	3,3'-Dichlorobenzidine	0.0295 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	3,3'-Dichlorobenzidine	0.421 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	3,3'-Dichlorobenzidine	0.0265 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	3,3'-Dichlorobenzidine	0.0186 UJ	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	2.25	3,3'-Dichlorobenzidine	0.0185 UJ	NT	NA
WDL-104-S	8/15/2002	5	3,3'-Dichlorobenzidine	0.0233 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	3,3'-Dichlorobenzidine	0.210 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	3,3'-Dichlorobenzidine	7.91 U	0.200 U	NA
WDL-201-S	2/12/2004	6	3,3'-Dichlorobenzidine	12.5 U	5.00 U	NA
WDL-202-S	2/12/2004	4	3,3'-Dichlorobenzidine	2.50 U	0.200 U	NA
WDL-203-S	2/13/2004	5.75	3,3'-Dichlorobenzidine	1.00 U	0.200 U	NA
WDL-204-S	2/12/2004	5	3,3'-Dichlorobenzidine	2.50 UJ	0.200 U	NA
W001	11/21/2005	1	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W002	11/21/2005	5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W003	11/21/2005	7	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W004	11/21/2005	7	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W005	11/21/2005	7	3-Nitroaniline	0.167 UJ	0.0250 UJ	NA
W006	11/21/2005	6	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W007	11/21/2005	4	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W008	11/20/2005	3	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W009	11/20/2005	5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W010	11/20/2005	5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W011	11/20/2005	3	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W011	11/20/2005	9	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W011	11/20/2005	18.5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W012	11/19/2005	6	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W013	11/19/2005	5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W014	11/19/2005	5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W015	11/19/2005	1	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W016	11/19/2005	5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W017	11/18/2005	3	3-Nitroaniline	0.167 UJ	0.0250 UJ	NA
W017	11/18/2005	7	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W018	11/18/2005	6	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W019	11/18/2005	4	3-Nitroaniline	0.167 UJ	0.0250 U	NA
W020	11/18/2005	5	3-Nitroaniline	0.167 UJ	0.0250 U	NA
WDL-101-S	8/14/2002	0.25	3-Nitroaniline	0.0714 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	3-Nitroaniline	0.0429 UJ	NT	NA
WDL-101-S	8/14/2002	5	3-Nitroaniline	0.485 UJ	NT	NA
WDL-101-S	8/14/2002	7	3-Nitroaniline	0.427 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	3-Nitroaniline	0.0527 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	3-Nitroaniline	0.0593 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	3-Nitroaniline	0.0281 UJ	NT	NA
WDL-102-S	8/14/2002	8	3-Nitroaniline	0.0394 UJ	NT	NA
WDL-102-S	8/14/2002	10	3-Nitroaniline	0.316 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	3-Nitroaniline	0.0790 U	NT	NA
WDL-103-S	8/15/2002	2.25	3-Nitroaniline	0.0285 U	NT	NA
WDL-103-S	8/15/2002	5	3-Nitroaniline	0.0456 U	NT	NA
WDL-103-S	8/15/2002	6.75	3-Nitroaniline	0.650 U	NT	NA
WDL-103-S	8/15/2002	8.25	3-Nitroaniline	0.0409 U	NT	NA
WDL-104-S	8/15/2002	0.25	3-Nitroaniline	0.0287 U	NT	NA
WDL-104-S	8/15/2002	2.25	3-Nitroaniline	0.0286 U	NT	NA
WDL-104-S	8/15/2002	5	3-Nitroaniline	0.0361 U	NT	NA
WDL-104-S	8/15/2002	6.75	3-Nitroaniline	0.325 U	NT	NA
WDL-201-S	2/12/2004	0.25	3-Nitroaniline	7.91 UJ	0.200 U	NA
WDL-201-S	2/12/2004	6	3-Nitroaniline	12.5 UJ	5.00 U	NA
WDL-202-S	2/12/2004	4	3-Nitroaniline	2.50 UJ	0.200 U	NA
WDL-203-S	2/13/2004	5.75	3-Nitroaniline	1.00 UJ	0.200 U	NA
WDL-204-S	2/12/2004	5	3-Nitroaniline	2.50 UJ	0.200 U	NA
W001	11/21/2005	1	4-Bromophenylphenyl ether	0.0230 UJ	0.00450 U	NA
W002	11/21/2005	5	4-Bromophenylphenyl ether	0.0230 UJ	0.00450 U	NA
W003	11/21/2005	7	4-Bromophenylphenyl ether	0.0230 UJ	0.00450 U	NA
W004	11/21/2005	7	4-Bromophenylphenyl ether	0.0230 UJ	0.00450 U	NA
W005	11/21/2005	7	4-Bromophenylphenyl ether	0.0230 UJ	0.00450 UJ	NA
W006	11/21/2005	6	4-Bromophenylphenyl ether	0.0230 UJ	0.00450 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	4-Bromophenylphenyl ether	0.0230 UJ	0.00450 U	NA
W008	11/20/2005	3	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W009	11/20/2005	5	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W010	11/20/2005	5	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W011	11/20/2005	3	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W011	11/20/2005	9	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W011	11/20/2005	18.5	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W012	11/19/2005	6	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W013	11/19/2005	5	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W014	11/19/2005	5	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W015	11/19/2005	1	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W016	11/19/2005	5	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W017	11/18/2005	3	4-Bromophenylphenyl ether	0.0230 U	0.00450 UJ	NA
W017	11/18/2005	7	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W018	11/18/2005	6	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W019	11/18/2005	4	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
W020	11/18/2005	5	4-Bromophenylphenyl ether	0.0230 U	0.00450 U	NA
WDL-101-S	8/14/2002	0.25	4-Bromophenylphenyl ether	0.0559 U	NT	NA
WDL-101-S	8/14/2002	2.25	4-Bromophenylphenyl ether	0.0335 U	NT	NA
WDL-101-S	8/14/2002	5	4-Bromophenylphenyl ether	0.379 U	NT	NA
WDL-101-S	8/14/2002	7	4-Bromophenylphenyl ether	0.334 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Bromophenylphenyl ether	0.0412 UR	NT	NA
WDL-102-S	8/14/2002	2.25	4-Bromophenylphenyl ether	0.0464 U	NT	NA
WDL-102-S	8/14/2002	5.5	4-Bromophenylphenyl ether	0.0220 U	NT	NA
WDL-102-S	8/14/2002	8	4-Bromophenylphenyl ether	0.0308 U	NT	NA
WDL-102-S	8/14/2002	10	4-Bromophenylphenyl ether	0.247 U	NT	NA
WDL-103-S	8/15/2002	0.25	4-Bromophenylphenyl ether	0.0618 U	NT	NA
WDL-103-S	8/15/2002	2.25	4-Bromophenylphenyl ether	0.0223 U	NT	NA
WDL-103-S	8/15/2002	5	4-Bromophenylphenyl ether	0.0357 U	NT	NA
WDL-103-S	8/15/2002	6.75	4-Bromophenylphenyl ether	0.509 U	NT	NA
WDL-103-S	8/15/2002	8.25	4-Bromophenylphenyl ether	0.0320 U	NT	NA
WDL-104-S	8/15/2002	0.25	4-Bromophenylphenyl ether	0.0224 U	NT	NA
WDL-104-S	8/15/2002	2.25	4-Bromophenylphenyl ether	0.0224 U	NT	NA
WDL-104-S	8/15/2002	5	4-Bromophenylphenyl ether	0.0282 U	NT	NA
WDL-104-S	8/15/2002	6.75	4-Bromophenylphenyl ether	0.254 U	NT	NA
WDL-201-S	2/12/2004	0.25	4-Bromophenylphenyl ether	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	4-Bromophenylphenyl ether	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	4-Bromophenylphenyl ether	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	4-Bromophenylphenyl ether	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	4-Bromophenylphenyl ether	0.350 U	0.0500 U	NA
W001	11/21/2005	1	4-Chloro-3-methylphenol	**30.0 J**	0.00430 UJ	NA
W002	11/21/2005	5	4-Chloro-3-methylphenol	**12.0 J**	0.00430 UJ	NA
W003	11/21/2005	7	4-Chloro-3-methylphenol	**11.0 J**	0.00430 UJ	NA
W004	11/21/2005	7	4-Chloro-3-methylphenol	**2.70 J**	0.00430 UJ	NA
W005	11/21/2005	7	4-Chloro-3-methylphenol	**2.00 J**	0.00430 UJ	NA
W006	11/21/2005	6	4-Chloro-3-methylphenol	**20.0 J**	**0.570 J**	NA
W007	11/21/2005	4	4-Chloro-3-methylphenol	**33.0 J**	0.00430 UJ	NA
W008	11/20/2005	3	4-Chloro-3-methylphenol	**34.0**	0.00430 UJ	NA
W009	11/20/2005	5	4-Chloro-3-methylphenol	**12.0**	**0.0330 J**	NA
W010	11/20/2005	5	4-Chloro-3-methylphenol	**51.0**	**0.320 J**	NA
W011	11/20/2005	3	4-Chloro-3-methylphenol	**23.0**	**0.240 J**	NA
W011	11/20/2005	9	4-Chloro-3-methylphenol	**0.600 J**	0.00430 UJ	NA
W011	11/20/2005	18.5	4-Chloro-3-methylphenol	0.0140 U	0.00430 UJ	NA
W012	11/19/2005	6	4-Chloro-3-methylphenol	**32.0**	**0.340 J**	NA
W013	11/19/2005	5	4-Chloro-3-methylphenol	**27.0**	**0.350 J**	NA
W014	11/19/2005	5	4-Chloro-3-methylphenol	**14.0**	**0.0640 J**	NA
W015	11/19/2005	1	4-Chloro-3-methylphenol	**43.0**	**0.0240 J**	NA
W016	11/19/2005	5	4-Chloro-3-methylphenol	**6.60**	**0.0160 J**	NA
W017	11/18/2005	3	4-Chloro-3-methylphenol	**8.00 J**	0.00430 UJ	NA
W017	11/18/2005	7	4-Chloro-3-methylphenol	0.0140 U	0.00430 UJ	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W018	11/18/2005	6	4-Chloro-3-methylphenol	**12.0**	**0.290 J**	NA
W019	11/18/2005	4	4-Chloro-3-methylphenol	**14.0**	**0.210 J**	NA
W020	11/18/2005	5	4-Chloro-3-methylphenol	**14.0**	0.00430 UJ	NA
WDL-101-S	8/14/2002	0.25	4-Chloro-3-methylphenol	0.0462 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	4-Chloro-3-methylphenol	0.0277 UJR	NT	NA
WDL-101-S	8/14/2002	5	4-Chloro-3-methylphenol	0.314 UJR	NT	NA
WDL-101-S	8/14/2002	7	4-Chloro-3-methylphenol	0.276 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Chloro-3-methylphenol	0.0341 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	4-Chloro-3-methylphenol	0.0384 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	4-Chloro-3-methylphenol	0.0182 U	NT	NA
WDL-102-S	8/14/2002	8	4-Chloro-3-methylphenol	0.0255 UJ	NT	NA
WDL-102-S	8/14/2002	10	4-Chloro-3-methylphenol	0.204 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	4-Chloro-3-methylphenol	0.0511 U	NT	NA
WDL-103-S	8/15/2002	2.25	4-Chloro-3-methylphenol	0.0185 U	NT	NA
WDL-103-S	8/15/2002	5	4-Chloro-3-methylphenol	0.0295 U	NT	NA
WDL-103-S	8/15/2002	6.75	4-Chloro-3-methylphenol	0.421 U	NT	NA
WDL-103-S	8/15/2002	8.25	4-Chloro-3-methylphenol	0.0265 U	NT	NA
WDL-104-S	8/15/2002	0.25	4-Chloro-3-methylphenol	0.0186 U	NT	NA
WDL-104-S	8/15/2002	2.25	4-Chloro-3-methylphenol	0.0185 U	NT	NA
WDL-104-S	8/15/2002	5	4-Chloro-3-methylphenol	0.0233 U	NT	NA
WDL-104-S	8/15/2002	6.75	4-Chloro-3-methylphenol	0.210 U	NT	NA
WDL-201-S	2/12/2004	0.25	4-Chloro-3-methylphenol	1.11 U	0.0500 UJ	NA
WDL-201-S	2/12/2004	6	4-Chloro-3-methylphenol	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	4-Chloro-3-methylphenol	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	4-Chloro-3-methylphenol	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	4-Chloro-3-methylphenol	0.350 U	0.0500 U	NA
W001	11/21/2005	1	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W002	11/21/2005	5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W003	11/21/2005	7	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W004	11/21/2005	7	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W005	11/21/2005	7	4-Chloroaniline	0.0580 UJ	0.00365 UJ	NA
W006	11/21/2005	6	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W007	11/21/2005	4	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W008	11/20/2005	3	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W009	11/20/2005	5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W010	11/20/2005	5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W011	11/20/2005	3	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W011	11/20/2005	9	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W011	11/20/2005	18.5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W012	11/19/2005	6	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W013	11/19/2005	5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W014	11/19/2005	5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W015	11/19/2005	1	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W016	11/19/2005	5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W017	11/18/2005	3	4-Chloroaniline	0.0580 UJ	0.00365 UJ	NA
W017	11/18/2005	7	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W018	11/18/2005	6	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W019	11/18/2005	4	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
W020	11/18/2005	5	4-Chloroaniline	0.0580 UJ	0.00365 U	NA
WDL-101-S	8/14/2002	0.25	4-Chloroaniline	0.0391 U	NT	NA
WDL-101-S	8/14/2002	2.25	4-Chloroaniline	0.0235 UJ	NT	NA
WDL-101-S	8/14/2002	5	4-Chloroaniline	0.265 UJ	NT	NA
WDL-101-S	8/14/2002	7	4-Chloroaniline	0.233 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Chloroaniline	0.0288 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	4-Chloroaniline	0.0324 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	4-Chloroaniline	0.0154 U	NT	NA
WDL-102-S	8/14/2002	8	4-Chloroaniline	0.0216 UJ	NT	NA
WDL-102-S	8/14/2002	10	4-Chloroaniline	0.173 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	4-Chloroaniline	0.0432 U	NT	NA
WDL-103-S	8/15/2002	2.25	4-Chloroaniline	0.0156 U	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	5	4-Chloroaniline	0.0249 U	NT	NA
WDL-103-S	8/15/2002	6.75	4-Chloroaniline	0.356 U	NT	NA
WDL-103-S	8/15/2002	8.25	4-Chloroaniline	0.0224 U	NT	NA
WDL-104-S	8/15/2002	0.25	4-Chloroaniline	0.0157 U	NT	NA
WDL-104-S	8/15/2002	2.25	4-Chloroaniline	0.0156 U	NT	NA
WDL-104-S	8/15/2002	5	4-Chloroaniline	0.0197 U	NT	NA
WDL-104-S	8/15/2002	6.75	4-Chloroaniline	0.178 U	NT	NA
WDL-201-S	2/12/2004	0.25	4-Chloroaniline	7.91 UJ	0.100 U	NA
WDL-201-S	2/12/2004	6	4-Chloroaniline	12.5 UJ	2.50 U	NA
WDL-202-S	2/12/2004	4	4-Chloroaniline	2.50 UJ	0.100 U	NA
WDL-203-S	2/13/2004	5.75	4-Chloroaniline	1.00 UJ	0.100 U	NA
WDL-204-S	2/12/2004	5	4-Chloroaniline	2.50 UJ	0.100 U	NA
W001	11/21/2005	1	4-Chlorophenylphenyl ether	0.0140 UJ	0.00430 U	NA
W002	11/21/2005	5	4-Chlorophenylphenyl ether	0.0140 UJ	0.00430 U	NA
W003	11/21/2005	7	4-Chlorophenylphenyl ether	0.0140 UJ	0.00430 U	NA
W004	11/21/2005	7	4-Chlorophenylphenyl ether	0.0140 UJ	0.00430 U	NA
W005	11/21/2005	7	4-Chlorophenylphenyl ether	0.0140 UJ	0.00430 UJ	NA
W006	11/21/2005	6	4-Chlorophenylphenyl ether	0.0140 UJ	0.00430 U	NA
W007	11/21/2005	4	4-Chlorophenylphenyl ether	0.0140 UJ	0.00430 U	NA
W008	11/20/2005	3	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W009	11/20/2005	5	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W010	11/20/2005	5	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W011	11/20/2005	3	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W011	11/20/2005	9	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W011	11/20/2005	18.5	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W012	11/19/2005	6	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W013	11/19/2005	5	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W014	11/19/2005	5	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W015	11/19/2005	1	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W016	11/19/2005	5	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W017	11/18/2005	3	4-Chlorophenylphenyl ether	0.0140 U	0.00430 UJ	NA
W017	11/18/2005	7	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W018	11/18/2005	6	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W019	11/18/2005	4	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
W020	11/18/2005	5	4-Chlorophenylphenyl ether	0.0140 U	0.00430 U	NA
WDL-101-S	8/14/2002	0.25	4-Chlorophenylphenyl ether	0.0706 U	NT	NA
WDL-101-S	8/14/2002	2.25	4-Chlorophenylphenyl ether	0.0424 U	NT	NA
WDL-101-S	8/14/2002	5	4-Chlorophenylphenyl ether	0.479 UJ	NT	NA
WDL-101-S	8/14/2002	7	4-Chlorophenylphenyl ether	0.422 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Chlorophenylphenyl ether	0.0521 UR	NT	NA
WDL-102-S	8/14/2002	2.25	4-Chlorophenylphenyl ether	0.0586 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	4-Chlorophenylphenyl ether	0.0278 U	NT	NA
WDL-102-S	8/14/2002	8	4-Chlorophenylphenyl ether	0.0390 U	NT	NA
WDL-102-S	8/14/2002	10	4-Chlorophenylphenyl ether	0.312 U	NT	NA
WDL-103-S	8/15/2002	0.25	4-Chlorophenylphenyl ether	0.0781 U	NT	NA
WDL-103-S	8/15/2002	2.25	4-Chlorophenylphenyl ether	0.0282 U	NT	NA
WDL-103-S	8/15/2002	5	4-Chlorophenylphenyl ether	0.0450 U	NT	NA
WDL-103-S	8/15/2002	6.75	4-Chlorophenylphenyl ether	0.642 U	NT	NA
WDL-103-S	8/15/2002	8.25	4-Chlorophenylphenyl ether	0.0404 U	NT	NA
WDL-104-S	8/15/2002	0.25	4-Chlorophenylphenyl ether	0.0283 U	NT	NA
WDL-104-S	8/15/2002	2.25	4-Chlorophenylphenyl ether	0.0282 U	NT	NA
WDL-104-S	8/15/2002	5	4-Chlorophenylphenyl ether	0.0356 U	NT	NA
WDL-104-S	8/15/2002	6.75	4-Chlorophenylphenyl ether	0.321 U	NT	NA
WDL-201-S	2/12/2004	0.25	4-Chlorophenylphenyl ether	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	4-Chlorophenylphenyl ether	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	4-Chlorophenylphenyl ether	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	4-Chlorophenylphenyl ether	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	4-Chlorophenylphenyl ether	0.350 U	0.0500 U	NA
W001	11/21/2005	1	4-Methylphenol (P-CRESOL)	0.0490 UJ	0.00750 UJ	3.78E+00
W002	11/21/2005	5	4-Methylphenol (P-CRESOL)	0.0490 UJ	**0.100 J**	3.78E+00

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W003	11/21/2005	7	4-Methylphenol (P-CRESOL)	0.0490 UJ	0.00750 UJ	3.78E+00
W004	11/21/2005	7	4-Methylphenol (P-CRESOL)	0.0490 UJ	**0.00760 J**	3.78E+00
W005	11/21/2005	7	4-Methylphenol (P-CRESOL)	0.0490 UJ	0.00750 UJ	3.78E+00
W006	11/21/2005	6	4-Methylphenol (P-CRESOL)	0.0490 UJ	**0.0110 J**	3.78E+00
W007	11/21/2005	4	4-Methylphenol (P-CRESOL)	0.0490 UJ	**0.00930 J**	3.78E+00
W008	11/20/2005	3	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W009	11/20/2005	5	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W010	11/20/2005	5	4-Methylphenol (P-CRESOL)	0.0490 U	**0.00780 J**	3.78E+00
W011	11/20/2005	3	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W011	11/20/2005	9	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W011	11/20/2005	18.5	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W012	11/19/2005	6	4-Methylphenol (P-CRESOL)	**1.10 J**	**0.0110 J**	3.78E+00
W013	11/19/2005	5	4-Methylphenol (P-CRESOL)	0.0490 U	**0.00980 J**	3.78E+00
W014	11/19/2005	5	4-Methylphenol (P-CRESOL)	**0.940 J**	0.00750 UJ	3.78E+00
W015	11/19/2005	1	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W016	11/19/2005	5	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W017	11/18/2005	3	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W017	11/18/2005	7	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W018	11/18/2005	6	4-Methylphenol (P-CRESOL)	0.0490 U	**0.0190 J**	3.78E+00
W019	11/18/2005	4	4-Methylphenol (P-CRESOL)	0.0490 U	**0.00840 J**	3.78E+00
W020	11/18/2005	5	4-Methylphenol (P-CRESOL)	0.0490 U	0.00750 UJ	3.78E+00
W001	11/21/2005	1	4-Nitroaniline	0.0370 UJ	0.00405 U	NA
W002	11/21/2005	5	4-Nitroaniline	0.0370 UJ	0.00405 U	NA
W003	11/21/2005	7	4-Nitroaniline	0.0370 UJ	0.00405 U	NA
W004	11/21/2005	7	4-Nitroaniline	0.0370 UJ	0.00405 U	NA
W005	11/21/2005	7	4-Nitroaniline	0.0370 UJ	0.00405 UJ	NA
W006	11/21/2005	6	4-Nitroaniline	0.0370 UJ	0.00405 U	NA
W007	11/21/2005	4	4-Nitroaniline	0.0370 UJ	0.00405 U	NA
W008	11/20/2005	3	4-Nitroaniline	0.0370 U	0.00405 U	NA
W009	11/20/2005	5	4-Nitroaniline	0.0370 U	0.00405 U	NA
W010	11/20/2005	5	4-Nitroaniline	0.0370 U	0.00405 U	NA
W011	11/20/2005	3	4-Nitroaniline	0.0370 U	0.00405 U	NA
W011	11/20/2005	9	4-Nitroaniline	0.0370 U	0.00405 U	NA
W011	11/20/2005	18.5	4-Nitroaniline	0.0370 U	0.00405 U	NA
W012	11/19/2005	6	4-Nitroaniline	0.0370 U	0.00405 U	NA
W013	11/19/2005	5	4-Nitroaniline	0.0370 U	0.00405 U	NA
W014	11/19/2005	5	4-Nitroaniline	0.0370 U	0.00405 U	NA
W015	11/19/2005	1	4-Nitroaniline	0.0370 U	0.00405 U	NA
W016	11/19/2005	5	4-Nitroaniline	0.0370 U	0.00405 U	NA
W017	11/18/2005	3	4-Nitroaniline	0.0370 U	0.00405 UJ	NA
W017	11/18/2005	7	4-Nitroaniline	0.0370 U	0.00405 U	NA
W018	11/18/2005	6	4-Nitroaniline	0.0370 U	0.00405 U	NA
W019	11/18/2005	4	4-Nitroaniline	0.0370 U	0.00405 U	NA
W020	11/18/2005	5	4-Nitroaniline	0.0370 U	0.00405 U	NA
WDL-101-S	8/14/2002	0.25	4-Nitroaniline	0.0714 UR	NT	NA
WDL-101-S	8/14/2002	2.25	4-Nitroaniline	0.0429 UR	NT	NA
WDL-101-S	8/14/2002	5	4-Nitroaniline	0.485 URUJ	NT	NA
WDL-101-S	8/14/2002	7	4-Nitroaniline	0.427 URUJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Nitroaniline	0.0527 UR	NT	NA
WDL-102-S	8/14/2002	2.25	4-Nitroaniline	0.0593 URUJ	NT	NA
WDL-102-S	8/14/2002	5.5	4-Nitroaniline	0.0281 UR	NT	NA
WDL-102-S	8/14/2002	8	4-Nitroaniline	0.0394 UR	NT	NA
WDL-102-S	8/14/2002	10	4-Nitroaniline	0.316 UR	NT	NA
WDL-103-S	8/15/2002	0.25	4-Nitroaniline	0.0790 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	4-Nitroaniline	0.0285 UJ	NT	NA
WDL-103-S	8/15/2002	5	4-Nitroaniline	0.0456 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	4-Nitroaniline	0.650 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	4-Nitroaniline	0.0409 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	4-Nitroaniline	0.0287 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	4-Nitroaniline	0.0286 UJ	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	5	4-Nitroaniline	0.0361 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	4-Nitroaniline	0.325 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	4-Nitroaniline	1.11 U	0.200 U	NA
WDL-201-S	2/12/2004	6	4-Nitroaniline	1.75 U	5.00 U	NA
WDL-202-S	2/12/2004	4	4-Nitroaniline	0.350 U	0.200 U	NA
WDL-203-S	2/13/2004	5.75	4-Nitroaniline	0.140 U	0.200 U	NA
WDL-204-S	2/12/2004	5	4-Nitroaniline	0.350 U	0.200 U	NA
W001	11/21/2005	1	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W002	11/21/2005	5	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W003	11/21/2005	7	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W004	11/21/2005	7	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W005	11/21/2005	7	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W006	11/21/2005	6	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W007	11/21/2005	4	4-Nitrophenol	0.660 R	0.0500 UJ	NA
W008	11/20/2005	3	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W009	11/20/2005	5	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W010	11/20/2005	5	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W011	11/20/2005	3	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W011	11/20/2005	9	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W011	11/20/2005	18.5	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W012	11/19/2005	6	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W013	11/19/2005	5	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W014	11/19/2005	5	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W015	11/19/2005	1	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W016	11/19/2005	5	4-Nitrophenol	0.660 U	0.0500 UJ	NA
W017	11/18/2005	3	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W017	11/18/2005	7	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W018	11/18/2005	6	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W019	11/18/2005	4	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
W020	11/18/2005	5	4-Nitrophenol	0.660 UJ	0.0500 UJ	NA
WDL-101-S	8/14/2002	0.25	4-Nitrophenol	0.0798 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	4-Nitrophenol	0.0479 UJR	NT	NA
WDL-101-S	8/14/2002	5	4-Nitrophenol	0.542 UJR	NT	NA
WDL-101-S	8/14/2002	7	4-Nitrophenol	0.477 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Nitrophenol	0.0589 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	4-Nitrophenol	0.0663 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	4-Nitrophenol	0.0314 UJ	NT	NA
WDL-102-S	8/14/2002	8	4-Nitrophenol	0.0441 UJ	NT	NA
WDL-102-S	8/14/2002	10	4-Nitrophenol	0.353 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	4-Nitrophenol	0.0883 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	4-Nitrophenol	0.0319 UJ	NT	NA
WDL-103-S	8/15/2002	5	4-Nitrophenol	0.0509 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	4-Nitrophenol	0.726 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	4-Nitrophenol	0.0457 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	4-Nitrophenol	0.0321 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	4-Nitrophenol	0.0319 UJ	NT	NA
WDL-104-S	8/15/2002	5	4-Nitrophenol	0.0403 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	4-Nitrophenol	0.363 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	4-Nitrophenol	7.91 U	0.200 UJ	NA
WDL-201-S	2/12/2004	6	4-Nitrophenol	12.5 U	5.00 U	NA
WDL-202-S	2/12/2004	4	4-Nitrophenol	2.50 U	0.200 U	NA
WDL-203-S	2/13/2004	5.75	4-Nitrophenol	1.00 U	0.200 U	NA
WDL-204-S	2/12/2004	5	4-Nitrophenol	2.50 U	0.200 U	NA
W001	11/21/2005	1	Acenaphthene	0.0190 UJ	0.00500 U	NA
W002	11/21/2005	5	Acenaphthene	0.0190 UJ	0.00500 U	NA
W003	11/21/2005	7	Acenaphthene	0.0190 UJ	0.00500 U	NA
W004	11/21/2005	7	Acenaphthene	0.0190 UJ	0.00500 U	NA
W005	11/21/2005	7	Acenaphthene	0.0190 UJ	0.00500 UJ	NA
W006	11/21/2005	6	Acenaphthene	**2.70 J**	0.00500 U	NA
W007	11/21/2005	4	Acenaphthene	**3.20 J**	0.00500 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W008	11/20/2005	3	Acenaphthene	0.0190 U	0.00500 U	NA
W009	11/20/2005	5	Acenaphthene	0.0190 U	0.00500 U	NA
W010	11/20/2005	5	Acenaphthene	**3.30 J**	0.00500 U	NA
W011	11/20/2005	3	Acenaphthene	**2.30 J**	0.00500 U	NA
W011	11/20/2005	9	Acenaphthene	0.0190 U	0.00500 U	NA
W011	11/20/2005	18.5	Acenaphthene	0.0190 U	0.00500 U	NA
W012	11/19/2005	6	Acenaphthene	**2.60 J**	0.00500 U	NA
W013	11/19/2005	5	Acenaphthene	**1.50 J**	0.00500 U	NA
W014	11/19/2005	5	Acenaphthene	0.0190 U	0.00500 U	NA
W015	11/19/2005	1	Acenaphthene	0.0190 U	0.00500 U	NA
W016	11/19/2005	5	Acenaphthene	0.0190 U	0.00500 U	NA
W017	11/18/2005	3	Acenaphthene	0.0190 U	0.00500 UJ	NA
W017	11/18/2005	7	Acenaphthene	0.0190 U	0.00500 U	NA
W018	11/18/2005	6	Acenaphthene	0.0190 U	0.00500 U	NA
W019	11/18/2005	4	Acenaphthene	0.0190 U	0.00500 U	NA
W020	11/18/2005	5	Acenaphthene	0.0190 U	0.00500 U	NA
WDL-101-S	8/14/2002	0.25	Acenaphthene	**0.0467 N**	NT	NA
WDL-101-S	8/14/2002	2.25	Acenaphthene	**0.654**	NT	NA
WDL-101-S	8/14/2002	5	Acenaphthene	**3.95 J**	NT	NA
WDL-101-S	8/14/2002	7	Acenaphthene	**2.39 JN**	NT	NA
WDL-102-S	8/14/2002	0.5	Acenaphthene	**0.343 J**	NT	NA
WDL-102-S	8/14/2002	2.25	Acenaphthene	**0.117 J**	NT	NA
WDL-102-S	8/14/2002	5.5	Acenaphthene	**0.0284**	NT	NA
WDL-102-S	8/14/2002	8	Acenaphthene	**0.881**	NT	NA
WDL-102-S	8/14/2002	10	Acenaphthene	0.0920 U	NT	NA
WDL-103-S	8/15/2002	0.25	Acenaphthene	**0.168**	NT	NA
WDL-103-S	8/15/2002	2.25	Acenaphthene	**0.0862**	NT	NA
WDL-103-S	8/15/2002	5	Acenaphthene	**0.0485**	NT	NA
WDL-103-S	8/15/2002	6.75	Acenaphthene	0.189 U	NT	NA
WDL-103-S	8/15/2002	8.25	Acenaphthene	**0.730**	NT	NA
WDL-104-S	8/15/2002	0.25	Acenaphthene	**0.0476**	NT	NA
WDL-104-S	8/15/2002	2.25	Acenaphthene	**0.103**	NT	NA
WDL-104-S	8/15/2002	5	Acenaphthene	**0.164**	NT	NA
WDL-104-S	8/15/2002	6.75	Acenaphthene	**1.79**	NT	NA
WDL-201-S	2/12/2004	0.25	Acenaphthene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Acenaphthene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Acenaphthene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Acenaphthene	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Acenaphthene	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Acenaphthylene	0.0170 UJ	0.00550 U	NA
W002	11/21/2005	5	Acenaphthylene	0.0170 UJ	0.00550 U	NA
W003	11/21/2005	7	Acenaphthylene	0.0170 UJ	0.00550 U	NA
W004	11/21/2005	7	Acenaphthylene	0.0170 UJ	0.00550 U	NA
W005	11/21/2005	7	Acenaphthylene	0.0170 UJ	0.00550 UJ	NA
W006	11/21/2005	6	Acenaphthylene	0.0170 UJ	0.00550 U	NA
W007	11/21/2005	4	Acenaphthylene	0.0170 UJ	0.00550 U	NA
W008	11/20/2005	3	Acenaphthylene	0.0170 U	0.00550 U	NA
W009	11/20/2005	5	Acenaphthylene	0.0170 U	0.00550 U	NA
W010	11/20/2005	5	Acenaphthylene	0.0170 U	0.00550 U	NA
W011	11/20/2005	3	Acenaphthylene	0.0170 U	0.00550 U	NA
W011	11/20/2005	9	Acenaphthylene	0.0170 U	0.00550 U	NA
W011	11/20/2005	18.5	Acenaphthylene	0.0170 U	0.00550 U	NA
W012	11/19/2005	6	Acenaphthylene	0.0170 U	0.00550 U	NA
W013	11/19/2005	5	Acenaphthylene	0.0170 U	0.00550 U	NA
W014	11/19/2005	5	Acenaphthylene	0.0170 U	0.00550 U	NA
W015	11/19/2005	1	Acenaphthylene	0.0170 U	0.00550 U	NA
W016	11/19/2005	5	Acenaphthylene	0.0170 U	0.00550 U	NA
W017	11/18/2005	3	Acenaphthylene	0.0170 U	0.00550 UJ	NA
W017	11/18/2005	7	Acenaphthylene	0.0170 U	0.00550 U	NA
W018	11/18/2005	6	Acenaphthylene	0.0170 U	0.00550 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W019	11/18/2005	4	Acenaphthylene	0.0170 U	0.00550 U	NA
W020	11/18/2005	5	Acenaphthylene	0.0170 U	0.00550 U	NA
WDL-101-S	8/14/2002	0.25	Acenaphthylene	0.0183 U	NT	NA
WDL-101-S	8/14/2002	2.25	Acenaphthylene	0.0110 U	NT	NA
WDL-101-S	8/14/2002	5	Acenaphthylene	0.124 UJ	NT	NA
WDL-101-S	8/14/2002	7	Acenaphthylene	**1.27 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Acenaphthylene	0.0135 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Acenaphthylene	0.0152 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Acenaphthylene	0.00720 U	NT	NA
WDL-102-S	8/14/2002	8	Acenaphthylene	0.0101 U	NT	NA
WDL-102-S	8/14/2002	10	Acenaphthylene	0.0810 U	NT	NA
WDL-103-S	8/15/2002	0.25	Acenaphthylene	0.0203 U	NT	NA
WDL-103-S	8/15/2002	2.25	Acenaphthylene	**0.0336**	NT	NA
WDL-103-S	8/15/2002	5	Acenaphthylene	**0.0178 N**	NT	NA
WDL-103-S	8/15/2002	6.75	Acenaphthylene	0.167 U	NT	NA
WDL-103-S	8/15/2002	8.25	Acenaphthylene	0.0105 U	NT	NA
WDL-104-S	8/15/2002	0.25	Acenaphthylene	0.00736 U	NT	NA
WDL-104-S	8/15/2002	2.25	Acenaphthylene	**0.0124**	NT	NA
WDL-104-S	8/15/2002	5	Acenaphthylene	0.00925 U	NT	NA
WDL-104-S	8/15/2002	6.75	Acenaphthylene	**0.275**	NT	NA
WDL-201-S	2/12/2004	0.25	Acenaphthylene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Acenaphthylene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Acenaphthylene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Acenaphthylene	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Acenaphthylene	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Anthracene	**0.760 J**	0.00110 U	NA
W002	11/21/2005	5	Anthracene	0.0270 UJ	0.00110 U	NA
W003	11/21/2005	7	Anthracene	0.0270 UJ	0.00110 U	NA
W004	11/21/2005	7	Anthracene	0.0270 UJ	0.00110 U	NA
W005	11/21/2005	7	Anthracene	0.0270 UJ	0.00110 UJ	NA
W006	11/21/2005	6	Anthracene	**2.70 J**	0.00110 U	NA
W007	11/21/2005	4	Anthracene	**2.90 J**	0.00110 U	NA
W008	11/20/2005	3	Anthracene	0.0270 U	0.00110 U	NA
W009	11/20/2005	5	Anthracene	0.0270 U	0.00110 U	NA
W010	11/20/2005	5	Anthracene	**3.10 J**	0.00110 U	NA
W011	11/20/2005	3	Anthracene	**2.70 J**	0.00110 U	NA
W011	11/20/2005	9	Anthracene	0.0270 U	0.00110 U	NA
W011	11/20/2005	18.5	Anthracene	0.0270 U	0.00110 U	NA
W012	11/19/2005	6	Anthracene	**2.80 J**	0.00110 U	NA
W013	11/19/2005	5	Anthracene	**1.60 J**	0.00110 U	NA
W014	11/19/2005	5	Anthracene	**2.40 J**	0.00110 U	NA
W015	11/19/2005	1	Anthracene	0.0270 U	0.00110 U	NA
W016	11/19/2005	5	Anthracene	0.0270 U	0.00110 U	NA
W017	11/18/2005	3	Anthracene	0.0270 U	0.00110 UJ	NA
W017	11/18/2005	7	Anthracene	0.0270 U	0.00110 U	NA
W018	11/18/2005	6	Anthracene	0.0270 U	0.00110 U	NA
W019	11/18/2005	4	Anthracene	0.0270 U	0.00110 U	NA
W020	11/18/2005	5	Anthracene	0.0270 U	0.00110 U	NA
WDL-101-S	8/14/2002	0.25	Anthracene	0.0106 U	NT	NA
WDL-101-S	8/14/2002	2.25	Anthracene	0.00636 U	NT	NA
WDL-101-S	8/14/2002	5	Anthracene	0.0719 U	NT	NA
WDL-101-S	8/14/2002	7	Anthracene	**1.10 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Anthracene	**0.148 JN**	NT	NA
WDL-102-S	8/14/2002	2.25	Anthracene	**0.120 NJ**	NT	NA
WDL-102-S	8/14/2002	5.5	Anthracene	**0.0363 N**	NT	NA
WDL-102-S	8/14/2002	8	Anthracene	**0.889**	NT	NA
WDL-102-S	8/14/2002	10	Anthracene	0.0468 U	NT	NA
WDL-103-S	8/15/2002	0.25	Anthracene	**0.245**	NT	NA
WDL-103-S	8/15/2002	2.25	Anthracene	**0.0919**	NT	NA
WDL-103-S	8/15/2002	5	Anthracene	**0.0536**	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	6.75	Anthracene	**0.285**	NT	NA
WDL-103-S	8/15/2002	8.25	Anthracene	**1.71**	NT	NA
WDL-104-S	8/15/2002	0.25	Anthracene	**0.0431**	NT	NA
WDL-104-S	8/15/2002	2.25	Anthracene	**0.0624**	NT	NA
WDL-104-S	8/15/2002	5	Anthracene	0.00535 U	NT	NA
WDL-104-S	8/15/2002	6.75	Anthracene	**2.53**	NT	NA
WDL-201-S	2/12/2004	0.25	Anthracene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Anthracene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Anthracene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Anthracene	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Anthracene	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Benzo(a)anthracene	**0.620 J**	0.00440 U	NA
W002	11/21/2005	5	Benzo(a)anthracene	**0.800 J**	0.00440 U	NA
W003	11/21/2005	7	Benzo(a)anthracene	0.0170 UJ	0.00440 U	NA
W004	11/21/2005	7	Benzo(a)anthracene	0.0170 UJ	0.00440 U	NA
W005	11/21/2005	7	Benzo(a)anthracene	0.0170 UJ	0.00440 UJ	NA
W006	11/21/2005	6	Benzo(a)anthracene	**2.30 J**	0.00440 U	NA
W007	11/21/2005	4	Benzo(a)anthracene	**1.90 J**	0.00440 U	NA
W008	11/20/2005	3	Benzo(a)anthracene	0.0170 U	0.00440 U	NA
W009	11/20/2005	5	Benzo(a)anthracene	**1.90 J**	0.00440 U	NA
W010	11/20/2005	5	Benzo(a)anthracene	**3.00 J**	0.00440 U	NA
W011	11/20/2005	3	Benzo(a)anthracene	**2.30 J**	0.00440 U	NA
W011	11/20/2005	9	Benzo(a)anthracene	0.0170 U	0.00440 U	NA
W011	11/20/2005	18.5	Benzo(a)anthracene	0.0170 U	0.00440 U	NA
W012	11/19/2005	6	Benzo(a)anthracene	**2.10 J**	0.00440 U	NA
W013	11/19/2005	5	Benzo(a)anthracene	**3.30 J**	0.00440 U	NA
W014	11/19/2005	5	Benzo(a)anthracene	**2.20 J**	0.00440 U	NA
W015	11/19/2005	1	Benzo(a)anthracene	**1.20 J**	0.00440 U	NA
W016	11/19/2005	5	Benzo(a)anthracene	**4.40 J**	0.00440 U	NA
W017	11/18/2005	3	Benzo(a)anthracene	**1.70 J**	0.00440 UJ	NA
W017	11/18/2005	7	Benzo(a)anthracene	0.0170 U	0.00440 U	NA
W018	11/18/2005	6	Benzo(a)anthracene	**1.30 J**	0.00440 U	NA
W019	11/18/2005	4	Benzo(a)anthracene	**8.00**	0.00440 U	NA
W020	11/18/2005	5	Benzo(a)anthracene	**4.80 J**	0.00440 U	NA
WDL-101-S	8/14/2002	0.25	Benzo(a)anthracene	0.0256 U	NT	NA
WDL-101-S	8/14/2002	2.25	Benzo(a)anthracene	0.0154 U	NT	NA
WDL-101-S	8/14/2002	5	Benzo(a)anthracene	0.174 U	NT	NA
WDL-101-S	8/14/2002	7	Benzo(a)anthracene	0.153 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Benzo(a)anthracene	0.0189 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Benzo(a)anthracene	0.0213 U	NT	NA
WDL-102-S	8/14/2002	5.5	Benzo(a)anthracene	**0.159 N**	NT	NA
WDL-102-S	8/14/2002	8	Benzo(a)anthracene	**0.547**	NT	NA
WDL-102-S	8/14/2002	10	Benzo(a)anthracene	0.113 U	NT	NA
WDL-103-S	8/15/2002	0.25	Benzo(a)anthracene	0.0581 U	NT	NA
WDL-103-S	8/15/2002	2.25	Benzo(a)anthracene	**0.381**	NT	NA
WDL-103-S	8/15/2002	5	Benzo(a)anthracene	**0.270**	NT	NA
WDL-103-S	8/15/2002	6.75	Benzo(a)anthracene	0.478 U	NT	NA
WDL-103-S	8/15/2002	8.25	Benzo(a)anthracene	**1.02**	NT	NA
WDL-104-S	8/15/2002	0.25	Benzo(a)anthracene	**0.355**	NT	NA
WDL-104-S	8/15/2002	2.25	Benzo(a)anthracene	**1.23**	NT	NA
WDL-104-S	8/15/2002	5	Benzo(a)anthracene	**1.69**	NT	NA
WDL-104-S	8/15/2002	6.75	Benzo(a)anthracene	**2.63**	NT	NA
WDL-201-S	2/12/2004	0.25	Benzo(a)anthracene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Benzo(a)anthracene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Benzo(a)anthracene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Benzo(a)anthracene	**1.17**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Benzo(a)anthracene	**2.39**	0.0500 U	NA
W001	11/21/2005	1	Benzo(a)pyrene	0.0200 UJ	0.00415 U	NA
W002	11/21/2005	5	Benzo(a)pyrene	0.0200 UJ	0.00415 U	NA
W003	11/21/2005	7	Benzo(a)pyrene	0.0200 UJ	0.00415 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W004	11/21/2005	7	Benzo(a)pyrene	0.0200 UJ	0.00415 U	NA
W005	11/21/2005	7	Benzo(a)pyrene	0.0200 UJ	0.00415 UJ	NA
W006	11/21/2005	6	Benzo(a)pyrene	0.0200 UJ	0.00415 U	NA
W007	11/21/2005	4	Benzo(a)pyrene	0.0200 UJ	0.00415 U	NA
W008	11/20/2005	3	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W009	11/20/2005	5	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W010	11/20/2005	5	Benzo(a)pyrene	**2.30 J**	0.00415 U	NA
W011	11/20/2005	3	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W011	11/20/2005	9	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W011	11/20/2005	18.5	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W012	11/19/2005	6	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W013	11/19/2005	5	Benzo(a)pyrene	**4.00 J**	0.00415 U	NA
W014	11/19/2005	5	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W015	11/19/2005	1	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W016	11/19/2005	5	Benzo(a)pyrene	**7.60**	0.00415 U	NA
W017	11/18/2005	3	Benzo(a)pyrene	0.0200 U	0.00415 UJ	NA
W017	11/18/2005	7	Benzo(a)pyrene	0.0200 U	0.00415 U	NA
W018	11/18/2005	6	Benzo(a)pyrene	**2.50 J**	0.00415 U	NA
W019	11/18/2005	4	Benzo(a)pyrene	**15.0**	0.00415 U	NA
W020	11/18/2005	5	Benzo(a)pyrene	**9.00**	0.00415 U	NA
WDL-101-S	8/14/2002	0.25	Benzo(a)pyrene	**0.104 J**	NT	NA
WDL-101-S	8/14/2002	2.25	Benzo(a)pyrene	0.0148 UJ	NT	NA
WDL-101-S	8/14/2002	5	Benzo(a)pyrene	**3.69 J**	NT	NA
WDL-101-S	8/14/2002	7	Benzo(a)pyrene	**1.99 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Benzo(a)pyrene	0.0182 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Benzo(a)pyrene	0.0205 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Benzo(a)pyrene	**0.212 JN**	NT	NA
WDL-102-S	8/14/2002	8	Benzo(a)pyrene	**0.545 J**	NT	NA
WDL-102-S	8/14/2002	10	Benzo(a)pyrene	0.109 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Benzo(a)pyrene	**0.257**	NT	NA
WDL-103-S	8/15/2002	2.25	Benzo(a)pyrene	**0.456**	NT	NA
WDL-103-S	8/15/2002	5	Benzo(a)pyrene	**0.421**	NT	NA
WDL-103-S	8/15/2002	6.75	Benzo(a)pyrene	**1.28**	NT	NA
WDL-103-S	8/15/2002	8.25	Benzo(a)pyrene	0.0141 U	NT	NA
WDL-104-S	8/15/2002	0.25	Benzo(a)pyrene	**0.758**	NT	NA
WDL-104-S	8/15/2002	2.25	Benzo(a)pyrene	**1.75**	NT	NA
WDL-104-S	8/15/2002	5	Benzo(a)pyrene	**3.07**	NT	NA
WDL-104-S	8/15/2002	6.75	Benzo(a)pyrene	**2.33**	NT	NA
WDL-201-S	2/12/2004	0.25	Benzo(a)pyrene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Benzo(a)pyrene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Benzo(a)pyrene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Benzo(a)pyrene	**2.18**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Benzo(a)pyrene	**3.58**	0.0500 U	NA
W001	11/21/2005	1	Benzo(b)fluoranthene	0.0250 UJ	0.00435 U	NA
W002	11/21/2005	5	Benzo(b)fluoranthene	0.0250 UJ	0.00435 U	NA
W003	11/21/2005	7	Benzo(b)fluoranthene	0.0250 UJ	0.00435 U	NA
W004	11/21/2005	7	Benzo(b)fluoranthene	0.0250 UJ	0.00435 U	NA
W005	11/21/2005	7	Benzo(b)fluoranthene	0.0250 UJ	0.00435 UJ	NA
W006	11/21/2005	6	Benzo(b)fluoranthene	0.0250 UJ	0.00435 U	NA
W007	11/21/2005	4	Benzo(b)fluoranthene	0.0250 UJ	0.00435 U	NA
W008	11/20/2005	3	Benzo(b)fluoranthene	0.0250 U	0.00435 U	NA
W009	11/20/2005	5	Benzo(b)fluoranthene	**2.90 J**	0.00435 U	NA
W010	11/20/2005	5	Benzo(b)fluoranthene	**1.40 J**	0.00435 U	NA
W011	11/20/2005	3	Benzo(b)fluoranthene	0.0250 U	0.00435 U	NA
W011	11/20/2005	9	Benzo(b)fluoranthene	0.0250 U	0.00435 U	NA
W011	11/20/2005	18.5	Benzo(b)fluoranthene	0.0250 U	0.00435 U	NA
W012	11/19/2005	6	Benzo(b)fluoranthene	0.0250 U	0.00435 U	NA
W013	11/19/2005	5	Benzo(b)fluoranthene	**4.30 J**	0.00435 U	NA
W014	11/19/2005	5	Benzo(b)fluoranthene	**1.80 J**	0.00435 U	NA
W015	11/19/2005	1	Benzo(b)fluoranthene	0.0250 U	0.00435 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W016	11/19/2005	5	Benzo(b)fluoranthene	**8.00**	0.00435 U	NA
W017	11/18/2005	3	Benzo(b)fluoranthene	**3.40 J**	0.00435 UJ	NA
W017	11/18/2005	7	Benzo(b)fluoranthene	0.0250 U	0.00435 U	NA
W018	11/18/2005	6	Benzo(b)fluoranthene	**2.60 J**	0.00435 U	NA
W019	11/18/2005	4	Benzo(b)fluoranthene	**16.0**	0.00435 U	NA
W020	11/18/2005	5	Benzo(b)fluoranthene	**9.70**	0.00435 U	NA
WDL-201-S	2/12/2004	0.25	Benzo(b)fluoranthene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Benzo(b)fluoranthene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Benzo(b)fluoranthene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Benzo(b)fluoranthene	**2.03**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Benzo(b)fluoranthene	**3.64**	0.0500 U	NA
W001	11/21/2005	1	Benzo(ghi)perylene	0.0220 UJ	0.00550 U	NA
W002	11/21/2005	5	Benzo(ghi)perylene	0.0220 UJ	0.00550 U	NA
W003	11/21/2005	7	Benzo(ghi)perylene	0.0220 UJ	0.00550 U	NA
W004	11/21/2005	7	Benzo(ghi)perylene	0.0220 UJ	0.00550 U	NA
W005	11/21/2005	7	Benzo(ghi)perylene	0.0220 UJ	0.00550 UJ	NA
W006	11/21/2005	6	Benzo(ghi)perylene	0.0220 UJ	0.00550 U	NA
W007	11/21/2005	4	Benzo(ghi)perylene	0.0220 UJ	0.00550 U	NA
W008	11/20/2005	3	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W009	11/20/2005	5	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W010	11/20/2005	5	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W011	11/20/2005	3	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W011	11/20/2005	9	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W011	11/20/2005	18.5	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W012	11/19/2005	6	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W013	11/19/2005	5	Benzo(ghi)perylene	**6.00 J**	0.00550 U	NA
W014	11/19/2005	5	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W015	11/19/2005	1	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W016	11/19/2005	5	Benzo(ghi)perylene	**5.60 J**	0.00550 U	NA
W017	11/18/2005	3	Benzo(ghi)perylene	0.0220 U	0.00550 UJ	NA
W017	11/18/2005	7	Benzo(ghi)perylene	0.0220 U	0.00550 U	NA
W018	11/18/2005	6	Benzo(ghi)perylene	**2.00 J**	0.00550 U	NA
W019	11/18/2005	4	Benzo(ghi)perylene	**9.70**	0.00550 U	NA
W020	11/18/2005	5	Benzo(ghi)perylene	**5.90 J**	0.00550 U	NA
WDL-101-S	8/14/2002	0.25	Benzo(ghi)perylene	**0.220**	NT	NA
WDL-101-S	8/14/2002	2.25	Benzo(ghi)perylene	0.00416 U	NT	NA
WDL-101-S	8/14/2002	5	Benzo(ghi)perylene	**2.00 NJ**	NT	NA
WDL-101-S	8/14/2002	7	Benzo(ghi)perylene	**1.45 NJ**	NT	NA
WDL-102-S	8/14/2002	0.5	Benzo(ghi)perylene	0.00511 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Benzo(ghi)perylene	0.00576 U	NT	NA
WDL-102-S	8/14/2002	5.5	Benzo(ghi)perylene	**0.237**	NT	NA
WDL-102-S	8/14/2002	8	Benzo(ghi)perylene	**0.542 N**	NT	NA
WDL-102-S	8/14/2002	10	Benzo(ghi)perylene	0.0307 U	NT	NA
WDL-103-S	8/15/2002	0.25	Benzo(ghi)perylene	**0.209**	NT	NA
WDL-103-S	8/15/2002	2.25	Benzo(ghi)perylene	**0.355**	NT	NA
WDL-103-S	8/15/2002	5	Benzo(ghi)perylene	**0.370**	NT	NA
WDL-103-S	8/15/2002	6.75	Benzo(ghi)perylene	**1.82**	NT	NA
WDL-103-S	8/15/2002	8.25	Benzo(ghi)perylene	**0.607**	NT	NA
WDL-104-S	8/15/2002	0.25	Benzo(ghi)perylene	**0.646**	NT	NA
WDL-104-S	8/15/2002	2.25	Benzo(ghi)perylene	**0.118**	NT	NA
WDL-104-S	8/15/2002	5	Benzo(ghi)perylene	**2.79**	NT	NA
WDL-104-S	8/15/2002	6.75	Benzo(ghi)perylene	**1.05**	NT	NA
WDL-201-S	2/12/2004	0.25	Benzo(ghi)perylene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Benzo(ghi)perylene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Benzo(ghi)perylene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Benzo(ghi)perylene	**1.81**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Benzo(ghi)perylene	**2.31**	0.0500 U	NA
W001	11/21/2005	1	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W002	11/21/2005	5	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W003	11/21/2005	7	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W004	11/21/2005	7	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W005	11/21/2005	7	Benzo(k)fluoranthene	0.0140 UJ	0.00550 UJ	NA
W006	11/21/2005	6	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W007	11/21/2005	4	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W008	11/20/2005	3	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W009	11/20/2005	5	Benzo(k)fluoranthene	**2.50 J**	0.00550 U	NA
W010	11/20/2005	5	Benzo(k)fluoranthene	**1.10 J**	0.00550 U	NA
W011	11/20/2005	3	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W011	11/20/2005	9	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W011	11/20/2005	18.5	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W012	11/19/2005	6	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W013	11/19/2005	5	Benzo(k)fluoranthene	**4.00 J**	0.00550 U	NA
W014	11/19/2005	5	Benzo(k)fluoranthene	**1.00 J**	0.00550 U	NA
W015	11/19/2005	1	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W016	11/19/2005	5	Benzo(k)fluoranthene	**7.70 J**	0.00550 U	NA
W017	11/18/2005	3	Benzo(k)fluoranthene	**2.10 J**	0.00550 UJ	NA
W017	11/18/2005	7	Benzo(k)fluoranthene	0.0140 UJ	0.00550 U	NA
W018	11/18/2005	6	Benzo(k)fluoranthene	**2.20 J**	0.00550 U	NA
W019	11/18/2005	4	Benzo(k)fluoranthene	**12.0 J**	0.00550 U	NA
W020	11/18/2005	5	Benzo(k)fluoranthene	**7.20 J**	0.00550 U	NA
WDL-201-S	2/12/2004	0.25	Benzo(k)fluoranthene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Benzo(k)fluoranthene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Benzo(k)fluoranthene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Benzo(k)fluoranthene	**1.89**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Benzo(k)fluoranthene	**3.31**	0.0500 U	NA
WDL-101-S	8/14/2002	0.25	Benzofluoranthenes	**0.542**	NT	NA
WDL-101-S	8/14/2002	2.25	Benzofluoranthenes	0.0111 U	NT	NA
WDL-101-S	8/14/2002	5	Benzofluoranthenes	**4.14 NJ**	NT	NA
WDL-101-S	8/14/2002	7	Benzofluoranthenes	**4.18 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Benzofluoranthenes	0.0136 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Benzofluoranthenes	0.0154 U	NT	NA
WDL-102-S	8/14/2002	5.5	Benzofluoranthenes	**0.626**	NT	NA
WDL-102-S	8/14/2002	8	Benzofluoranthenes	**1.40**	NT	NA
WDL-102-S	8/14/2002	10	Benzofluoranthenes	0.0818 U	NT	NA
WDL-103-S	8/15/2002	0.25	Benzofluoranthenes	**0.526**	NT	NA
WDL-103-S	8/15/2002	2.25	Benzofluoranthenes	**0.791**	NT	NA
WDL-103-S	8/15/2002	5	Benzofluoranthenes	**0.716**	NT	NA
WDL-103-S	8/15/2002	6.75	Benzofluoranthenes	**1.40**	NT	NA
WDL-103-S	8/15/2002	8.25	Benzofluoranthenes	0.0106 U	NT	NA
WDL-104-S	8/15/2002	0.25	Benzofluoranthenes	**1.04**	NT	NA
WDL-104-S	8/15/2002	2.25	Benzofluoranthenes	0.00739 U	NT	NA
WDL-104-S	8/15/2002	5	Benzofluoranthenes	**4.78**	NT	NA
WDL-104-S	8/15/2002	6.75	Benzofluoranthenes	**3.25**	NT	NA
WDL-101-S	8/14/2002	0.25	Benzoic acid	0.143 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Benzoic acid	0.0858 UJ	NT	NA
WDL-101-S	8/14/2002	5	Benzoic acid	0.970 UJR	NT	NA
WDL-101-S	8/14/2002	7	Benzoic acid	0.853 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Benzoic acid	0.105 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Benzoic acid	0.119 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Benzoic acid	0.0562 UJ	NT	NA
WDL-102-S	8/14/2002	8	Benzoic acid	0.0788 UJ	NT	NA
WDL-102-S	8/14/2002	10	Benzoic acid	0.632 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Benzoic acid	2.91 U	NT	NA
WDL-103-S	8/15/2002	2.25	Benzoic acid	1.05 U	NT	NA
WDL-103-S	8/15/2002	5	Benzoic acid	1.68 U	NT	NA
WDL-103-S	8/15/2002	6.75	Benzoic acid	23.9 U	NT	NA
WDL-103-S	8/15/2002	8.25	Benzoic acid	1.50 U	NT	NA
WDL-104-S	8/15/2002	0.25	Benzoic acid	1.05 U	NT	NA
WDL-104-S	8/15/2002	2.25	Benzoic acid	1.05 U	NT	NA
WDL-104-S	8/15/2002	5	Benzoic acid	1.33 U	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	6.75	Benzoic acid	11.9 U	NT	NA
WDL-201-S	2/12/2004	0.25	Benzoic acid	7.91 U	0.200 U	57900
WDL-201-S	2/12/2004	6	Benzoic acid	12.5 U	5.00 U	57900
WDL-202-S	2/12/2004	4	Benzoic acid	2.50 U	0.200 U	57900
WDL-203-S	2/13/2004	5.75	Benzoic acid	1.00 U	0.200 U	57900
WDL-204-S	2/12/2004	5	Benzoic acid	2.50 UJ	0.200 U	57900
WDL-101-S	8/14/2002	0.25	Benzyl alcohol	0.0882 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Benzyl alcohol	0.0530 UJ	NT	NA
WDL-101-S	8/14/2002	5	Benzyl alcohol	0.599 UJ	NT	NA
WDL-101-S	8/14/2002	7	Benzyl alcohol	0.527 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Benzyl alcohol	0.0651 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Benzyl alcohol	0.0733 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Benzyl alcohol	0.0347 UJ	NT	NA
WDL-102-S	8/14/2002	8	Benzyl alcohol	0.0487 UJ	NT	NA
WDL-102-S	8/14/2002	10	Benzyl alcohol	0.390 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Benzyl alcohol	0.0976 U	NT	NA
WDL-103-S	8/15/2002	2.25	Benzyl alcohol	0.0352 U	NT	NA
WDL-103-S	8/15/2002	5	Benzyl alcohol	0.0563 U	NT	NA
WDL-103-S	8/15/2002	6.75	Benzyl alcohol	0.803 U	NT	NA
WDL-103-S	8/15/2002	8.25	Benzyl alcohol	0.0505 U	NT	NA
WDL-104-S	8/15/2002	0.25	Benzyl alcohol	0.0354 U	NT	NA
WDL-104-S	8/15/2002	2.25	Benzyl alcohol	0.0353 U	NT	NA
WDL-104-S	8/15/2002	5	Benzyl alcohol	0.0446 U	NT	NA
WDL-104-S	8/15/2002	6.75	Benzyl alcohol	0.401 U	NT	NA
WDL-201-S	2/12/2004	0.25	Benzyl alcohol	1.11 U	0.200 U	12600
WDL-201-S	2/12/2004	6	Benzyl alcohol	1.75 U	5.00 U	12600
WDL-202-S	2/12/2004	4	Benzyl alcohol	0.350 U	0.200 U	12600
WDL-203-S	2/13/2004	5.75	Benzyl alcohol	0.140 U	0.200 U	12600
WDL-204-S	2/12/2004	5	Benzyl alcohol	0.350 U	0.200 U	12600
W001	11/21/2005	1	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W002	11/21/2005	5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W003	11/21/2005	7	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W004	11/21/2005	7	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W005	11/21/2005	7	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 UJ	NA
W006	11/21/2005	6	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W007	11/21/2005	4	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W008	11/20/2005	3	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W009	11/20/2005	5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W010	11/20/2005	5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W011	11/20/2005	3	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W011	11/20/2005	9	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W011	11/20/2005	18.5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W012	11/19/2005	6	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W013	11/19/2005	5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W014	11/19/2005	5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W015	11/19/2005	1	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W016	11/19/2005	5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W017	11/18/2005	3	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 UJ	NA
W017	11/18/2005	7	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W018	11/18/2005	6	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W019	11/18/2005	4	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
W020	11/18/2005	5	Bis(2-Chloroethoxy) methane	0.0220 UJ	0.00550 U	NA
WDL-101-S	8/14/2002	0.25	Bis(2-Chloroethoxy) methane	0.0504 U	NT	NA
WDL-101-S	8/14/2002	2.25	Bis(2-Chloroethoxy) methane	0.0303 UJ	NT	NA
WDL-101-S	8/14/2002	5	Bis(2-Chloroethoxy) methane	0.342 UJ	NT	NA
WDL-101-S	8/14/2002	7	Bis(2-Chloroethoxy) methane	0.301 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bis(2-Chloroethoxy) methane	0.0372 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Bis(2-Chloroethoxy) methane	0.0419 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Bis(2-Chloroethoxy) methane	0.0198 U	NT	NA
WDL-102-S	8/14/2002	8	Bis(2-Chloroethoxy) methane	0.0278 UJ	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	10	Bis(2-Chloroethoxy) methane	0.223 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Bis(2-Chloroethoxy) methane	0.0558 U	NT	NA
WDL-103-S	8/15/2002	2.25	Bis(2-Chloroethoxy) methane	0.0201 U	NT	NA
WDL-103-S	8/15/2002	5	Bis(2-Chloroethoxy) methane	0.0322 U	NT	NA
WDL-103-S	8/15/2002	6.75	Bis(2-Chloroethoxy) methane	0.459 U	NT	NA
WDL-103-S	8/15/2002	8.25	Bis(2-Chloroethoxy) methane	0.0289 U	NT	NA
WDL-104-S	8/15/2002	0.25	Bis(2-Chloroethoxy) methane	0.0202 U	NT	NA
WDL-104-S	8/15/2002	2.25	Bis(2-Chloroethoxy) methane	0.0202 U	NT	NA
WDL-104-S	8/15/2002	5	Bis(2-Chloroethoxy) methane	0.0255 U	NT	NA
WDL-104-S	8/15/2002	6.75	Bis(2-Chloroethoxy) methane	0.229 U	NT	NA
WDL-201-S	2/12/2004	0.25	Bis(2-Chloroethoxy) methane	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Bis(2-Chloroethoxy) methane	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Bis(2-Chloroethoxy) methane	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Bis(2-Chloroethoxy) methane	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Bis(2-Chloroethoxy) methane	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W002	11/21/2005	5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W003	11/21/2005	7	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W004	11/21/2005	7	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W005	11/21/2005	7	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 UJ	NA
W006	11/21/2005	6	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W007	11/21/2005	4	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W008	11/20/2005	3	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W009	11/20/2005	5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W010	11/20/2005	5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W011	11/20/2005	3	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W011	11/20/2005	9	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W011	11/20/2005	18.5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W012	11/19/2005	6	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W013	11/19/2005	5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W014	11/19/2005	5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W015	11/19/2005	1	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W016	11/19/2005	5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W017	11/18/2005	3	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 UJ	NA
W017	11/18/2005	7	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W018	11/18/2005	6	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W019	11/18/2005	4	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
W020	11/18/2005	5	Bis(2-Chloroethyl) ether	0.0320 UJ	0.00600 U	NA
WDL-101-S	8/14/2002	0.25	Bis(2-Chloroethyl) ether	0.0802 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Bis(2-Chloroethyl) ether	0.0482 U	NT	NA
WDL-101-S	8/14/2002	5	Bis(2-Chloroethyl) ether	0.545 U	NT	NA
WDL-101-S	8/14/2002	7	Bis(2-Chloroethyl) ether	0.479 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bis(2-Chloroethyl) ether	0.0592 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Bis(2-Chloroethyl) ether	0.0666 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Bis(2-Chloroethyl) ether	0.0316 U	NT	NA
WDL-102-S	8/14/2002	8	Bis(2-Chloroethyl) ether	0.0443 U	NT	NA
WDL-102-S	8/14/2002	10	Bis(2-Chloroethyl) ether	0.355 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Bis(2-Chloroethyl) ether	0.0888 U	NT	NA
WDL-103-S	8/15/2002	2.25	Bis(2-Chloroethyl) ether	0.0321 U	NT	NA
WDL-103-S	8/15/2002	5	Bis(2-Chloroethyl) ether	0.0512 U	NT	NA
WDL-103-S	8/15/2002	6.75	Bis(2-Chloroethyl) ether	0.730 U	NT	NA
WDL-103-S	8/15/2002	8.25	Bis(2-Chloroethyl) ether	0.0460 U	NT	NA
WDL-104-S	8/15/2002	0.25	Bis(2-Chloroethyl) ether	0.0322 U	NT	NA
WDL-104-S	8/15/2002	2.25	Bis(2-Chloroethyl) ether	0.0321 U	NT	NA
WDL-104-S	8/15/2002	5	Bis(2-Chloroethyl) ether	0.0405 U	NT	NA
WDL-104-S	8/15/2002	6.75	Bis(2-Chloroethyl) ether	0.365 U	NT	NA
WDL-201-S	2/12/2004	0.25	Bis(2-Chloroethyl) ether	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Bis(2-Chloroethyl) ether	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Bis(2-Chloroethyl) ether	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Bis(2-Chloroethyl) ether	0.140 U	0.0500 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-204-S	2/12/2004	5	Bis(2-Chloroethyl) ether	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W002	11/21/2005	5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W003	11/21/2005	7	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W004	11/21/2005	7	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W005	11/21/2005	7	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 UJ	NA
W006	11/21/2005	6	Bis(2-Chloroisopropyl) ether	0.0320 UJ	**0.00530 J**	NA
W007	11/21/2005	4	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W008	11/20/2005	3	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W009	11/20/2005	5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W010	11/20/2005	5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W011	11/20/2005	3	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W011	11/20/2005	9	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W011	11/20/2005	18.5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W012	11/19/2005	6	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W013	11/19/2005	5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W014	11/19/2005	5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W015	11/19/2005	1	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W016	11/19/2005	5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W017	11/18/2005	3	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 UJ	NA
W017	11/18/2005	7	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W018	11/18/2005	6	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W019	11/18/2005	4	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
W020	11/18/2005	5	Bis(2-Chloroisopropyl) ether	0.0320 UJ	0.00435 U	NA
WDL-201-S	2/12/2004	0.25	Bis(2-Chloroisopropyl) ether	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Bis(2-Chloroisopropyl) ether	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Bis(2-Chloroisopropyl) ether	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Bis(2-Chloroisopropyl) ether	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Bis(2-Chloroisopropyl) ether	0.350 U	0.0500 U	NA
WDL-101-S	8/14/2002	0.25	Bis(2-chloroisopropyl)ether	0.109 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Bis(2-chloroisopropyl)ether	0.0656 U	NT	NA
WDL-101-S	8/14/2002	5	Bis(2-chloroisopropyl)ether	0.742 U	NT	NA
WDL-101-S	8/14/2002	7	Bis(2-chloroisopropyl)ether	0.652 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bis(2-chloroisopropyl)ether	0.0806 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Bis(2-chloroisopropyl)ether	0.0907 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Bis(2-chloroisopropyl)ether	0.0430 U	NT	NA
WDL-102-S	8/14/2002	8	Bis(2-chloroisopropyl)ether	0.0603 U	NT	NA
WDL-102-S	8/14/2002	10	Bis(2-chloroisopropyl)ether	0.483 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Bis(2-chloroisopropyl)ether	0.121 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	Bis(2-chloroisopropyl)ether	0.0436 UJ	NT	NA
WDL-103-S	8/15/2002	5	Bis(2-chloroisopropyl)ether	0.0697 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	Bis(2-chloroisopropyl)ether	0.994 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Bis(2-chloroisopropyl)ether	0.0626 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	Bis(2-chloroisopropyl)ether	0.0439 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	Bis(2-chloroisopropyl)ether	0.0437 UJ	NT	NA
WDL-104-S	8/15/2002	5	Bis(2-chloroisopropyl)ether	0.0552 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	Bis(2-chloroisopropyl)ether	0.497 UJ	NT	NA
W001	11/21/2005	1	bis(2-Ethylhexyl) phthalate	0.0240 UJ	0.00355 U	7.42E-02
W002	11/21/2005	5	bis(2-Ethylhexyl) phthalate	0.0240 UJ	0.00355 U	7.42E-02
W003	11/21/2005	7	bis(2-Ethylhexyl) phthalate	0.0240 UJ	0.00355 U	7.42E-02
W004	11/21/2005	7	bis(2-Ethylhexyl) phthalate	0.0240 UJ	0.00355 U	7.42E-02
W005	11/21/2005	7	bis(2-Ethylhexyl) phthalate	0.0240 UJ	0.00355 UJ	7.42E-02
W006	11/21/2005	6	bis(2-Ethylhexyl) phthalate	0.0240 UJ	0.00355 U	7.42E-02
W007	11/21/2005	4	bis(2-Ethylhexyl) phthalate	0.0240 UJ	0.00355 U	7.42E-02
W008	11/20/2005	3	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W009	11/20/2005	5	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W010	11/20/2005	5	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W011	11/20/2005	3	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W011	11/20/2005	9	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W011	11/20/2005	18.5	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W012	11/19/2005	6	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W013	11/19/2005	5	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W014	11/19/2005	5	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W015	11/19/2005	1	bis(2-Ethylhexyl) phthalate	**4.20 J**	0.00355 U	7.42E-02
W016	11/19/2005	5	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W017	11/18/2005	3	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 UJ	7.42E-02
W017	11/18/2005	7	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W018	11/18/2005	6	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W019	11/18/2005	4	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
W020	11/18/2005	5	bis(2-Ethylhexyl) phthalate	0.0240 U	0.00355 U	7.42E-02
WDL-101-S	8/14/2002	0.25	bis(2-Ethylhexyl) phthalate	**0.215 J**	NT	NA
WDL-101-S	8/14/2002	2.25	bis(2-Ethylhexyl) phthalate	**0.834 J**	NT	NA
WDL-101-S	8/14/2002	5	bis(2-Ethylhexyl) phthalate	**5.89 J**	NT	NA
WDL-101-S	8/14/2002	7	bis(2-Ethylhexyl) phthalate	1.03 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	bis(2-Ethylhexyl) phthalate	0.127 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	bis(2-Ethylhexyl) phthalate	**0.808 J**	NT	NA
WDL-102-S	8/14/2002	5.5	bis(2-Ethylhexyl) phthalate	0.0677 UJ	NT	NA
WDL-102-S	8/14/2002	8	bis(2-Ethylhexyl) phthalate	0.0951 UJ	NT	NA
WDL-102-S	8/14/2002	10	bis(2-Ethylhexyl) phthalate	0.762 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	bis(2-Ethylhexyl) phthalate	0.191 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	bis(2-Ethylhexyl) phthalate	0.0688 UJ	NT	NA
WDL-103-S	8/15/2002	5	bis(2-Ethylhexyl) phthalate	0.110 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	bis(2-Ethylhexyl) phthalate	1.57 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	bis(2-Ethylhexyl) phthalate	0.0987 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	bis(2-Ethylhexyl) phthalate	**0.187 J**	NT	NA
WDL-104-S	8/15/2002	2.25	bis(2-Ethylhexyl) phthalate	0.0689 UJ	NT	NA
WDL-104-S	8/15/2002	5	bis(2-Ethylhexyl) phthalate	**0.289 J**	NT	NA
WDL-104-S	8/15/2002	6.75	bis(2-Ethylhexyl) phthalate	0.783 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	bis(2-Ethylhexyl) phthalate	31.6 U	0.0500 U	0.0742
WDL-201-S	2/12/2004	6	bis(2-Ethylhexyl) phthalate	50.0 U	1.25 U	0.0742
WDL-202-S	2/12/2004	4	bis(2-Ethylhexyl) phthalate	10.0 U	0.0500 U	0.0742
WDL-203-S	2/13/2004	5.75	bis(2-Ethylhexyl) phthalate	4.00 U	0.0500 U	0.0742
WDL-204-S	2/12/2004	5	bis(2-Ethylhexyl) phthalate	10.0 U	0.0500 U	0.0742
W001	11/21/2005	1	Butylbenzylphthalate	0.0190 UJ	0.00395 U	1.40E+02
W002	11/21/2005	5	Butylbenzylphthalate	0.0190 UJ	0.00395 U	1.40E+02
W003	11/21/2005	7	Butylbenzylphthalate	0.0190 UJ	0.00395 U	1.40E+02
W004	11/21/2005	7	Butylbenzylphthalate	0.0190 UJ	0.00395 U	1.40E+02
W005	11/21/2005	7	Butylbenzylphthalate	0.0190 UJ	0.00395 UJ	1.40E+02
W006	11/21/2005	6	Butylbenzylphthalate	0.0190 UJ	0.00395 U	1.40E+02
W007	11/21/2005	4	Butylbenzylphthalate	0.0190 UJ	0.00395 U	1.40E+02
W008	11/20/2005	3	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W009	11/20/2005	5	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W010	11/20/2005	5	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W011	11/20/2005	3	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W011	11/20/2005	9	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W011	11/20/2005	18.5	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W012	11/19/2005	6	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W013	11/19/2005	5	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W014	11/19/2005	5	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W015	11/19/2005	1	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W016	11/19/2005	5	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W017	11/18/2005	3	Butylbenzylphthalate	0.0190 U	0.00395 UJ	1.40E+02
W017	11/18/2005	7	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W018	11/18/2005	6	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W019	11/18/2005	4	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
W020	11/18/2005	5	Butylbenzylphthalate	0.0190 U	0.00395 U	1.40E+02
WDL-101-S	8/14/2002	0.25	Butylbenzylphthalate	0.0798 U	NT	NA
WDL-101-S	8/14/2002	2.25	Butylbenzylphthalate	0.0479 U	NT	NA
WDL-101-S	8/14/2002	5	Butylbenzylphthalate	**3.03 JU**	NT	NA
WDL-101-S	8/14/2002	7	Butylbenzylphthalate	0.477 UJ	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	0.5	Butylbenzylphthalate	**0.636 JU**	NT	NA
WDL-102-S	8/14/2002	2.25	Butylbenzylphthalate	**0.377 JU**	NT	NA
WDL-102-S	8/14/2002	5.5	Butylbenzylphthalate	0.0314 U	NT	NA
WDL-102-S	8/14/2002	8	Butylbenzylphthalate	0.0441 U	NT	NA
WDL-102-S	8/14/2002	10	Butylbenzylphthalate	**0.361 JU**	NT	NA
WDL-103-S	8/15/2002	0.25	Butylbenzylphthalate	0.0883 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	Butylbenzylphthalate	0.0319 UJ	NT	NA
WDL-103-S	8/15/2002	5	Butylbenzylphthalate	0.0509 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	Butylbenzylphthalate	0.726 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Butylbenzylphthalate	0.0457 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	Butylbenzylphthalate	0.0321 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	Butylbenzylphthalate	0.0319 UJ	NT	NA
WDL-104-S	8/15/2002	5	Butylbenzylphthalate	0.0403 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	Butylbenzylphthalate	0.363 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	Butylbenzylphthalate	1.11 U	0.0500 U	140
WDL-201-S	2/12/2004	6	Butylbenzylphthalate	1.75 U	1.25 U	140
WDL-202-S	2/12/2004	4	Butylbenzylphthalate	0.350 U	0.0500 U	140
WDL-203-S	2/13/2004	5.75	Butylbenzylphthalate	0.140 U	0.0500 U	140
WDL-204-S	2/12/2004	5	Butylbenzylphthalate	0.350 U	0.0500 U	140
W001	11/21/2005	1	Chrysene	0.0840 UJ	0.00475 U	NA
W002	11/21/2005	5	Chrysene	**1.50 J**	0.00475 U	NA
W003	11/21/2005	7	Chrysene	0.0840 UJ	0.00475 U	NA
W004	11/21/2005	7	Chrysene	0.0840 UJ	0.00475 U	NA
W005	11/21/2005	7	Chrysene	0.0840 UJ	0.00475 UJ	NA
W006	11/21/2005	6	Chrysene	**4.40 J**	0.00475 U	NA
W007	11/21/2005	4	Chrysene	**3.90 J**	0.00475 U	NA
W008	11/20/2005	3	Chrysene	0.0840 U	0.00475 U	NA
W009	11/20/2005	5	Chrysene	**3.20 J**	0.00475 U	NA
W010	11/20/2005	5	Chrysene	**5.00 J**	0.00475 U	NA
W011	11/20/2005	3	Chrysene	**4.40 J**	0.00475 U	NA
W011	11/20/2005	9	Chrysene	0.0840 U	0.00475 U	NA
W011	11/20/2005	18.5	Chrysene	0.0840 U	0.00475 U	NA
W012	11/19/2005	6	Chrysene	**4.00 J**	0.00475 U	NA
W013	11/19/2005	5	Chrysene	**5.50 J**	0.00475 U	NA
W014	11/19/2005	5	Chrysene	**4.50 J**	0.00475 U	NA
W015	11/19/2005	1	Chrysene	0.0840 U	0.00475 U	NA
W016	11/19/2005	5	Chrysene	**7.50**	0.00475 U	NA
W017	11/18/2005	3	Chrysene	**2.90 J**	0.00475 UJ	NA
W017	11/18/2005	7	Chrysene	0.0840 U	0.00475 U	NA
W018	11/18/2005	6	Chrysene	**2.10 J**	0.00475 U	NA
W019	11/18/2005	4	Chrysene	**12.0**	0.00475 U	NA
W020	11/18/2005	5	Chrysene	**7.80**	0.00475 U	NA
WDL-101-S	8/14/2002	0.25	Chrysene	0.0247 U	NT	NA
WDL-101-S	8/14/2002	2.25	Chrysene	0.0148 U	NT	NA
WDL-101-S	8/14/2002	5	Chrysene	**4.64 J**	NT	NA
WDL-101-S	8/14/2002	7	Chrysene	**4.79 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Chrysene	0.0182 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Chrysene	0.0205 U	NT	NA
WDL-102-S	8/14/2002	5.5	Chrysene	**0.338**	NT	NA
WDL-102-S	8/14/2002	8	Chrysene	**1.70**	NT	NA
WDL-102-S	8/14/2002	10	Chrysene	0.109 U	NT	NA
WDL-103-S	8/15/2002	0.25	Chrysene	0.0581 U	NT	NA
WDL-103-S	8/15/2002	2.25	Chrysene	**0.409**	NT	NA
WDL-103-S	8/15/2002	5	Chrysene	**0.395**	NT	NA
WDL-103-S	8/15/2002	6.75	Chrysene	**0.837**	NT	NA
WDL-103-S	8/15/2002	8.25	Chrysene	**1.16**	NT	NA
WDL-104-S	8/15/2002	0.25	Chrysene	**0.469**	NT	NA
WDL-104-S	8/15/2002	2.25	Chrysene	**1.57**	NT	NA
WDL-104-S	8/15/2002	5	Chrysene	**1.99**	NT	NA
WDL-104-S	8/15/2002	6.75	Chrysene	**2.82**	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	0.25	Chrysene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Chrysene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Chrysene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Chrysene	**1.37**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Chrysene	**2.09**	0.0500 U	NA
W001	11/21/2005	1	Dibenzo(a,h)anthracene	0.0170 UJ	0.00475 U	NA
W002	11/21/2005	5	Dibenzo(a,h)anthracene	0.0170 UJ	0.00475 U	NA
W003	11/21/2005	7	Dibenzo(a,h)anthracene	0.0170 UJ	0.00475 U	NA
W004	11/21/2005	7	Dibenzo(a,h)anthracene	0.0170 UJ	0.00475 U	NA
W005	11/21/2005	7	Dibenzo(a,h)anthracene	0.0170 UJ	0.00475 UJ	NA
W006	11/21/2005	6	Dibenzo(a,h)anthracene	0.0170 UJ	0.00475 U	NA
W007	11/21/2005	4	Dibenzo(a,h)anthracene	0.0170 UJ	0.00475 U	NA
W008	11/20/2005	3	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W009	11/20/2005	5	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W010	11/20/2005	5	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W011	11/20/2005	3	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W011	11/20/2005	9	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W011	11/20/2005	18.5	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W012	11/19/2005	6	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W013	11/19/2005	5	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W014	11/19/2005	5	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W015	11/19/2005	1	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W016	11/19/2005	5	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W017	11/18/2005	3	Dibenzo(a,h)anthracene	0.0170 U	0.00475 UJ	NA
W017	11/18/2005	7	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W018	11/18/2005	6	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
W019	11/18/2005	4	Dibenzo(a,h)anthracene	**3.10 J**	0.00475 U	NA
W020	11/18/2005	5	Dibenzo(a,h)anthracene	0.0170 U	0.00475 U	NA
WDL-101-S	8/14/2002	0.25	Dibenzo(a,h)anthracene	0.00979 U	NT	NA
WDL-101-S	8/14/2002	2.25	Dibenzo(a,h)anthracene	0.00588 U	NT	NA
WDL-101-S	8/14/2002	5	Dibenzo(a,h)anthracene	0.0665 U	NT	NA
WDL-101-S	8/14/2002	7	Dibenzo(a,h)anthracene	0.0585 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dibenzo(a,h)anthracene	0.00722 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Dibenzo(a,h)anthracene	0.00813 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dibenzo(a,h)anthracene	**0.0641 N**	NT	NA
WDL-102-S	8/14/2002	8	Dibenzo(a,h)anthracene	0.00540 U	NT	NA
WDL-102-S	8/14/2002	10	Dibenzo(a,h)anthracene	0.0433 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dibenzo(a,h)anthracene	0.0108 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	Dibenzo(a,h)anthracene	**0.144 J**	NT	NA
WDL-103-S	8/15/2002	5	Dibenzo(a,h)anthracene	**0.163 J**	NT	NA
WDL-103-S	8/15/2002	6.75	Dibenzo(a,h)anthracene	0.0891 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Dibenzo(a,h)anthracene	0.00561 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	Dibenzo(a,h)anthracene	0.00393 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	Dibenzo(a,h)anthracene	**1.59 J**	NT	NA
WDL-104-S	8/15/2002	5	Dibenzo(a,h)anthracene	**2.52 J**	NT	NA
WDL-104-S	8/15/2002	6.75	Dibenzo(a,h)anthracene	0.0445 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	Dibenzo(a,h)anthracene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Dibenzo(a,h)anthracene	1.50 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Dibenzo(a,h)anthracene	0.300 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Dibenzo(a,h)anthracene	**0.948**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Dibenzo(a,h)anthracene	1.65 U	0.0500 U	NA
W001	11/21/2005	1	Dibenzofuran	0.0180 UJ	0.00600 U	NA
W002	11/21/2005	5	Dibenzofuran	0.0180 UJ	0.00600 U	NA
W003	11/21/2005	7	Dibenzofuran	0.0180 UJ	0.00600 U	NA
W004	11/21/2005	7	Dibenzofuran	0.0180 UJ	0.00600 U	NA
W005	11/21/2005	7	Dibenzofuran	0.0180 UJ	0.00600 UJ	NA
W006	11/21/2005	6	Dibenzofuran	**0.760 J**	0.00600 U	NA
W007	11/21/2005	4	Dibenzofuran	0.0180 UJ	0.00600 U	NA
W008	11/20/2005	3	Dibenzofuran	0.0180 U	0.00600 U	NA
W009	11/20/2005	5	Dibenzofuran	0.0180 U	0.00600 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W010	11/20/2005	5	Dibenzofuran	0.0180 U	0.00600 U	NA
W011	11/20/2005	3	Dibenzofuran	0.0180 U	0.00600 U	NA
W011	11/20/2005	9	Dibenzofuran	0.0180 U	0.00600 U	NA
W011	11/20/2005	18.5	Dibenzofuran	0.0180 U	0.00600 U	NA
W012	11/19/2005	6	Dibenzofuran	0.0180 U	0.00600 U	NA
W013	11/19/2005	5	Dibenzofuran	0.0180 U	0.00600 U	NA
W014	11/19/2005	5	Dibenzofuran	0.0180 U	0.00600 U	NA
W015	11/19/2005	1	Dibenzofuran	0.0180 U	0.00600 U	NA
W016	11/19/2005	5	Dibenzofuran	0.0180 U	0.00600 U	NA
W017	11/18/2005	3	Dibenzofuran	0.0180 U	0.00600 UJ	NA
W017	11/18/2005	7	Dibenzofuran	0.0180 U	0.00600 U	NA
W018	11/18/2005	6	Dibenzofuran	0.0180 U	0.00600 U	NA
W019	11/18/2005	4	Dibenzofuran	0.0180 U	0.00600 U	NA
W020	11/18/2005	5	Dibenzofuran	0.0180 U	0.00600 U	NA
WDL-101-S	8/14/2002	0.25	Dibenzofuran	0.0487 U	NT	NA
WDL-101-S	8/14/2002	2.25	Dibenzofuran	0.0293 U	NT	NA
WDL-101-S	8/14/2002	5	Dibenzofuran	0.331 UJ	NT	NA
WDL-101-S	8/14/2002	7	Dibenzofuran	**1.07 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Dibenzofuran	0.0360 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Dibenzofuran	0.0405 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Dibenzofuran	0.0192 U	NT	NA
WDL-102-S	8/14/2002	8	Dibenzofuran	0.0269 U	NT	NA
WDL-102-S	8/14/2002	10	Dibenzofuran	0.216 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dibenzofuran	**0.116**	NT	NA
WDL-103-S	8/15/2002	2.25	Dibenzofuran	**0.0484**	NT	NA
WDL-103-S	8/15/2002	5	Dibenzofuran	**0.0428**	NT	NA
WDL-103-S	8/15/2002	6.75	Dibenzofuran	0.444 U	NT	NA
WDL-103-S	8/15/2002	8.25	Dibenzofuran	**0.360**	NT	NA
WDL-104-S	8/15/2002	0.25	Dibenzofuran	0.0196 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dibenzofuran	**0.0296**	NT	NA
WDL-104-S	8/15/2002	5	Dibenzofuran	**0.0452**	NT	NA
WDL-104-S	8/15/2002	6.75	Dibenzofuran	0.222 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dibenzofuran	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Dibenzofuran	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Dibenzofuran	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Dibenzofuran	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Dibenzofuran	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Diethylphthalate	0.0200 UJ	0.00500 U	9.56E+03
W002	11/21/2005	5	Diethylphthalate	0.0200 UJ	0.00500 U	9.56E+03
W003	11/21/2005	7	Diethylphthalate	0.0200 UJ	0.00500 U	9.56E+03
W004	11/21/2005	7	Diethylphthalate	0.0200 UJ	0.00500 U	9.56E+03
W005	11/21/2005	7	Diethylphthalate	0.0200 UJ	0.00500 UJ	9.56E+03
W006	11/21/2005	6	Diethylphthalate	0.0200 UJ	0.00500 U	9.56E+03
W007	11/21/2005	4	Diethylphthalate	0.0200 UJ	0.00500 U	9.56E+03
W008	11/20/2005	3	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W009	11/20/2005	5	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W010	11/20/2005	5	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W011	11/20/2005	3	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W011	11/20/2005	9	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W011	11/20/2005	18.5	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W012	11/19/2005	6	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W013	11/19/2005	5	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W014	11/19/2005	5	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W015	11/19/2005	1	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W016	11/19/2005	5	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W017	11/18/2005	3	Diethylphthalate	0.0200 U	0.00500 UJ	9.56E+03
W017	11/18/2005	7	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W018	11/18/2005	6	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W019	11/18/2005	4	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03
W020	11/18/2005	5	Diethylphthalate	0.0200 U	0.00500 U	9.56E+03

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	0.25	Diethylphthalate	0.0714 U	NT	NA
WDL-101-S	8/14/2002	2.25	Diethylphthalate	0.0429 U	NT	NA
WDL-101-S	8/14/2002	5	Diethylphthalate	0.485 UJ	NT	NA
WDL-101-S	8/14/2002	7	Diethylphthalate	0.427 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Diethylphthalate	0.0527 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Diethylphthalate	0.0593 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Diethylphthalate	0.0281 U	NT	NA
WDL-102-S	8/14/2002	8	Diethylphthalate	0.0394 U	NT	NA
WDL-102-S	8/14/2002	10	Diethylphthalate	0.316 U	NT	NA
WDL-103-S	8/15/2002	0.25	Diethylphthalate	0.0790 U	NT	NA
WDL-103-S	8/15/2002	2.25	Diethylphthalate	0.0285 U	NT	NA
WDL-103-S	8/15/2002	5	Diethylphthalate	0.0456 U	NT	NA
WDL-103-S	8/15/2002	6.75	Diethylphthalate	0.650 U	NT	NA
WDL-103-S	8/15/2002	8.25	Diethylphthalate	0.0409 U	NT	NA
WDL-104-S	8/15/2002	0.25	Diethylphthalate	0.0287 U	NT	NA
WDL-104-S	8/15/2002	2.25	Diethylphthalate	0.0286 U	NT	NA
WDL-104-S	8/15/2002	5	Diethylphthalate	0.0361 U	NT	NA
WDL-104-S	8/15/2002	6.75	Diethylphthalate	0.325 U	NT	NA
WDL-201-S	2/12/2004	0.25	Diethylphthalate	1.11 U	0.0500 U	9560
WDL-201-S	2/12/2004	6	Diethylphthalate	1.75 U	1.25 U	9560
WDL-202-S	2/12/2004	4	Diethylphthalate	0.350 U	0.0500 U	9560
WDL-203-S	2/13/2004	5.75	Diethylphthalate	0.140 U	0.0500 U	9560
WDL-204-S	2/12/2004	5	Diethylphthalate	0.350 U	0.0500 U	9560
W001	11/21/2005	1	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W002	11/21/2005	5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W003	11/21/2005	7	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W004	11/21/2005	7	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W005	11/21/2005	7	Dimethylphthalate	0.0230 UJ	0.00480 UJ	NA
W006	11/21/2005	6	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W007	11/21/2005	4	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W008	11/20/2005	3	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W009	11/20/2005	5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W010	11/20/2005	5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W011	11/20/2005	3	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W011	11/20/2005	9	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W011	11/20/2005	18.5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W012	11/19/2005	6	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W013	11/19/2005	5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W014	11/19/2005	5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W015	11/19/2005	1	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W016	11/19/2005	5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W017	11/18/2005	3	Dimethylphthalate	0.0230 UJ	0.00480 UJ	NA
W017	11/18/2005	7	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W018	11/18/2005	6	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W019	11/18/2005	4	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
W020	11/18/2005	5	Dimethylphthalate	0.0230 UJ	0.00480 U	NA
WDL-101-S	8/14/2002	0.25	Dimethylphthalate	0.0462 U	NT	NA
WDL-101-S	8/14/2002	2.25	Dimethylphthalate	0.0277 U	NT	NA
WDL-101-S	8/14/2002	5	Dimethylphthalate	0.314 UJ	NT	NA
WDL-101-S	8/14/2002	7	Dimethylphthalate	0.276 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dimethylphthalate	**0.296 J**	NT	NA
WDL-102-S	8/14/2002	2.25	Dimethylphthalate	**1.33 J**	NT	NA
WDL-102-S	8/14/2002	5.5	Dimethylphthalate	0.0182 U	NT	NA
WDL-102-S	8/14/2002	8	Dimethylphthalate	0.0255 U	NT	NA
WDL-102-S	8/14/2002	10	Dimethylphthalate	0.204 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dimethylphthalate	0.0511 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dimethylphthalate	0.0185 U	NT	NA
WDL-103-S	8/15/2002	5	Dimethylphthalate	0.0295 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dimethylphthalate	0.421 U	NT	NA
WDL-103-S	8/15/2002	8.25	Dimethylphthalate	0.0265 U	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	0.25	Dimethylphthalate	0.0186 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dimethylphthalate	0.0185 U	NT	NA
WDL-104-S	8/15/2002	5	Dimethylphthalate	0.0233 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dimethylphthalate	0.210 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dimethylphthalate	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Dimethylphthalate	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Dimethylphthalate	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Dimethylphthalate	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Dimethylphthalate	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Di-n-butylphthalate	0.0260 UJ	0.00485 U	1.35E+02
W002	11/21/2005	5	Di-n-butylphthalate	0.0260 UJ	0.00485 U	1.35E+02
W003	11/21/2005	7	Di-n-butylphthalate	0.0260 UJ	0.00485 U	1.35E+02
W004	11/21/2005	7	Di-n-butylphthalate	0.0260 UJ	0.00485 U	1.35E+02
W005	11/21/2005	7	Di-n-butylphthalate	0.0260 UJ	0.00485 UJ	1.35E+02
W006	11/21/2005	6	Di-n-butylphthalate	0.0260 UJ	**0.00670 J**	1.35E+02
W007	11/21/2005	4	Di-n-butylphthalate	0.0260 UJ	NT	NA
W008	11/20/2005	3	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W009	11/20/2005	5	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W010	11/20/2005	5	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W011	11/20/2005	3	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W011	11/20/2005	9	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W011	11/20/2005	18.5	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W012	11/19/2005	6	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W013	11/19/2005	5	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W014	11/19/2005	5	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W015	11/19/2005	1	Di-n-butylphthalate	0.0260 U	NT	NA
W016	11/19/2005	5	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W017	11/18/2005	3	Di-n-butylphthalate	0.0260 U	0.00485 UJ	1.35E+02
W017	11/18/2005	7	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W018	11/18/2005	6	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W019	11/18/2005	4	Di-n-butylphthalate	0.0260 U	0.00485 U	1.35E+02
W020	11/18/2005	5	Di-n-butylphthalate	0.0260 U	NT	NA
WDL-101-S	8/14/2002	0.25	Di-n-butylphthalate	0.365 U	NT	NA
WDL-101-S	8/14/2002	2.25	Di-n-butylphthalate	0.219 U	NT	NA
WDL-101-S	8/14/2002	5	Di-n-butylphthalate	2.48 U	NT	NA
WDL-101-S	8/14/2002	7	Di-n-butylphthalate	2.18 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Di-n-butylphthalate	0.270 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Di-n-butylphthalate	0.304 U	NT	NA
WDL-102-S	8/14/2002	5.5	Di-n-butylphthalate	0.144 U	NT	NA
WDL-102-S	8/14/2002	8	Di-n-butylphthalate	0.202 U	NT	NA
WDL-102-S	8/14/2002	10	Di-n-butylphthalate	1.62 U	NT	NA
WDL-103-S	8/15/2002	0.25	Di-n-butylphthalate	0.404 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	Di-n-butylphthalate	0.146 UJ	NT	NA
WDL-103-S	8/15/2002	5	Di-n-butylphthalate	0.233 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	Di-n-butylphthalate	3.33 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Di-n-butylphthalate	0.209 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	Di-n-butylphthalate	0.147 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	Di-n-butylphthalate	**0.257 J**	NT	NA
WDL-104-S	8/15/2002	5	Di-n-butylphthalate	**0.304 J**	NT	NA
WDL-104-S	8/15/2002	6.75	Di-n-butylphthalate	1.66 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	Di-n-butylphthalate	7.91 U	0.0500 U	135
WDL-201-S	2/12/2004	6	Di-n-butylphthalate	12.5 U	1.25 U	135
WDL-202-S	2/12/2004	4	Di-n-butylphthalate	2.50 U	0.0500 U	135
WDL-203-S	2/13/2004	5.75	Di-n-butylphthalate	1.00 U	0.0500 U	135
WDL-204-S	2/12/2004	5	Di-n-butylphthalate	2.50 U	0.0500 U	135
W001	11/21/2005	1	Di-n-octyl phthalate	0.0240 UJ	0.00420 U	NA
W002	11/21/2005	5	Di-n-octyl phthalate	0.0240 UJ	0.00420 U	NA
W003	11/21/2005	7	Di-n-octyl phthalate	0.0240 UJ	0.00420 U	NA
W004	11/21/2005	7	Di-n-octyl phthalate	0.0240 UJ	0.00420 U	NA
W005	11/21/2005	7	Di-n-octyl phthalate	0.0240 UJ	0.00420 UJ	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W006	11/21/2005	6	Di-n-octyl phthalate	0.0240 UJ	0.00420 U	NA
W007	11/21/2005	4	Di-n-octyl phthalate	0.0240 UJ	0.00420 U	NA
W008	11/20/2005	3	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W009	11/20/2005	5	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W010	11/20/2005	5	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W011	11/20/2005	3	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W011	11/20/2005	9	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W011	11/20/2005	18.5	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W012	11/19/2005	6	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W013	11/19/2005	5	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W014	11/19/2005	5	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W015	11/19/2005	1	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W016	11/19/2005	5	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W017	11/18/2005	3	Di-n-octyl phthalate	0.0240 U	0.00420 UJ	NA
W017	11/18/2005	7	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W018	11/18/2005	6	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W019	11/18/2005	4	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
W020	11/18/2005	5	Di-n-octyl phthalate	0.0240 U	0.00420 U	NA
WDL-101-S	8/14/2002	0.25	Di-n-octyl phthalate	0.109 U	NT	NA
WDL-101-S	8/14/2002	2.25	Di-n-octyl phthalate	**1.06 N**	NT	NA
WDL-101-S	8/14/2002	5	Di-n-octyl phthalate	0.742 U	NT	NA
WDL-101-S	8/14/2002	7	Di-n-octyl phthalate	0.652 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Di-n-octyl phthalate	0.0806 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Di-n-octyl phthalate	0.0907 U	NT	NA
WDL-102-S	8/14/2002	5.5	Di-n-octyl phthalate	0.0430 U	NT	NA
WDL-102-S	8/14/2002	8	Di-n-octyl phthalate	0.0603 U	NT	NA
WDL-102-S	8/14/2002	10	Di-n-octyl phthalate	0.483 U	NT	NA
WDL-103-S	8/15/2002	0.25	Di-n-octyl phthalate	0.121 U	NT	NA
WDL-103-S	8/15/2002	2.25	Di-n-octyl phthalate	0.0436 U	NT	NA
WDL-103-S	8/15/2002	5	Di-n-octyl phthalate	0.0697 U	NT	NA
WDL-103-S	8/15/2002	6.75	Di-n-octyl phthalate	0.994 U	NT	NA
WDL-103-S	8/15/2002	8.25	Di-n-octyl phthalate	0.0626 U	NT	NA
WDL-104-S	8/15/2002	0.25	Di-n-octyl phthalate	0.0439 U	NT	NA
WDL-104-S	8/15/2002	2.25	Di-n-octyl phthalate	0.0437 U	NT	NA
WDL-104-S	8/15/2002	5	Di-n-octyl phthalate	0.0552 U	NT	NA
WDL-104-S	8/15/2002	6.75	Di-n-octyl phthalate	0.497 U	NT	NA
WDL-201-S	2/12/2004	0.25	Di-n-octyl phthalate	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Di-n-octyl phthalate	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Di-n-octyl phthalate	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Di-n-octyl phthalate	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Di-n-octyl phthalate	0.350 U	0.0500 U	NA
WDL-201-S	2/12/2004	0.25	Dinoseb	7.91 U	NT	NA
WDL-201-S	2/12/2004	6	Dinoseb	12.5 U	NT	NA
WDL-202-S	2/12/2004	4	Dinoseb	2.50 U	NT	NA
WDL-203-S	2/13/2004	5.75	Dinoseb	1.00 U	NT	NA
WDL-204-S	2/12/2004	5	Dinoseb	2.50 U	NT	NA
W001	11/21/2005	1	Fluoranthene	**1.30 J**	0.00450 U	NA
W002	11/21/2005	5	Fluoranthene	**1.60 J**	0.00450 U	NA
W003	11/21/2005	7	Fluoranthene	0.0300 UJ	0.00450 U	NA
W004	11/21/2005	7	Fluoranthene	0.0300 UJ	0.00450 U	NA
W005	11/21/2005	7	Fluoranthene	0.0300 UJ	0.00450 UJ	NA
W006	11/21/2005	6	Fluoranthene	**2.60 J**	0.00450 U	NA
W007	11/21/2005	4	Fluoranthene	**2.70 J**	0.00450 U	NA
W008	11/20/2005	3	Fluoranthene	**1.60 J**	0.00450 U	NA
W009	11/20/2005	5	Fluoranthene	**2.50 J**	0.00450 U	NA
W010	11/20/2005	5	Fluoranthene	**1.70 J**	0.00450 U	NA
W011	11/20/2005	3	Fluoranthene	**1.80 J**	0.00450 U	NA
W011	11/20/2005	9	Fluoranthene	0.0300 U	0.00450 U	NA
W011	11/20/2005	18.5	Fluoranthene	0.0300 U	0.00450 U	NA
W012	11/19/2005	6	Fluoranthene	**1.60 J**	0.00450 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W013	11/19/2005	5	Fluoranthene	**3.40 J**	0.00450 U	NA
W014	11/19/2005	5	Fluoranthene	**2.00 J**	0.00450 U	NA
W015	11/19/2005	1	Fluoranthene	**3.60 J**	0.00450 U	NA
W016	11/19/2005	5	Fluoranthene	**5.70 J**	0.00450 U	NA
W017	11/18/2005	3	Fluoranthene	**2.70 J**	0.00450 UJ	NA
W017	11/18/2005	7	Fluoranthene	0.0300 U	0.00450 U	NA
W018	11/18/2005	6	Fluoranthene	**1.40 J**	0.00450 U	NA
W019	11/18/2005	4	Fluoranthene	**7.70**	0.00450 U	NA
W020	11/18/2005	5	Fluoranthene	**5.10 J**	0.00450 U	NA
WDL-101-S	8/14/2002	0.25	Fluoranthene	**1.05**	NT	NA
WDL-101-S	8/14/2002	2.25	Fluoranthene	**2.26**	NT	NA
WDL-101-S	8/14/2002	5	Fluoranthene	**24.3 J**	NT	NA
WDL-101-S	8/14/2002	7	Fluoranthene	**7.26 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Fluoranthene	**3.66 J**	NT	NA
WDL-102-S	8/14/2002	2.25	Fluoranthene	**1.31 J**	NT	NA
WDL-102-S	8/14/2002	5.5	Fluoranthene	**0.698**	NT	NA
WDL-102-S	8/14/2002	8	Fluoranthene	**1.24**	NT	NA
WDL-102-S	8/14/2002	10	Fluoranthene	**0.186**	NT	NA
WDL-103-S	8/15/2002	0.25	Fluoranthene	**0.647 J**	NT	NA
WDL-103-S	8/15/2002	2.25	Fluoranthene	**0.777 J**	NT	NA
WDL-103-S	8/15/2002	5	Fluoranthene	**0.540 J**	NT	NA
WDL-103-S	8/15/2002	6.75	Fluoranthene	**1.32 J**	NT	NA
WDL-103-S	8/15/2002	8.25	Fluoranthene	**1.77 J**	NT	NA
WDL-104-S	8/15/2002	0.25	Fluoranthene	**0.550 J**	NT	NA
WDL-104-S	8/15/2002	2.25	Fluoranthene	**1.38 J**	NT	NA
WDL-104-S	8/15/2002	5	Fluoranthene	**2.08 J**	NT	NA
WDL-104-S	8/15/2002	6.75	Fluoranthene	**3.43 J**	NT	NA
WDL-201-S	2/12/2004	0.25	Fluoranthene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Fluoranthene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Fluoranthene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Fluoranthene	**0.819**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Fluoranthene	**1.46**	0.0500 U	NA
W001	11/21/2005	1	Fluorene	**1.10 J**	0.00550 U	NA
W002	11/21/2005	5	Fluorene	**2.00 J**	0.00550 U	NA
W003	11/21/2005	7	Fluorene	0.0150 UJ	0.00550 U	NA
W004	11/21/2005	7	Fluorene	0.0150 UJ	0.00550 U	NA
W005	11/21/2005	7	Fluorene	0.0150 UJ	0.00550 UJ	NA
W006	11/21/2005	6	Fluorene	**6.00 J**	0.00550 U	NA
W007	11/21/2005	4	Fluorene	**6.80 J**	0.00550 U	NA
W008	11/20/2005	3	Fluorene	**1.20 J**	0.00550 U	NA
W009	11/20/2005	5	Fluorene	**0.930 J**	0.00550 U	NA
W010	11/20/2005	5	Fluorene	**6.20**	0.00550 U	NA
W011	11/20/2005	3	Fluorene	**5.10 J**	0.00550 U	NA
W011	11/20/2005	9	Fluorene	0.0150 U	0.00550 U	NA
W011	11/20/2005	18.5	Fluorene	0.0150 U	0.00550 U	NA
W012	11/19/2005	6	Fluorene	**5.40 J**	0.00550 U	NA
W013	11/19/2005	5	Fluorene	**3.10 J**	0.00550 U	NA
W014	11/19/2005	5	Fluorene	**4.10 J**	0.00550 U	NA
W015	11/19/2005	1	Fluorene	0.0150 U	0.00550 U	NA
W016	11/19/2005	5	Fluorene	**1.50 J**	0.00550 U	NA
W017	11/18/2005	3	Fluorene	0.0150 U	0.00550 UJ	NA
W017	11/18/2005	7	Fluorene	0.0150 U	0.00550 U	NA
W018	11/18/2005	6	Fluorene	**0.530 J**	0.00550 U	NA
W019	11/18/2005	4	Fluorene	**0.720 J**	0.00550 U	NA
W020	11/18/2005	5	Fluorene	**0.920 J**	0.00550 U	NA
WDL-101-S	8/14/2002	0.25	Fluorene	0.0196 U	NT	NA
WDL-101-S	8/14/2002	2.25	Fluorene	0.0118 U	NT	NA
WDL-101-S	8/14/2002	5	Fluorene	**6.39 JN**	NT	NA
WDL-101-S	8/14/2002	7	Fluorene	0.117 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Fluorene	**0.309 J**	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	2.25	Fluorene	**0.129 J**	NT	NA
WDL-102-S	8/14/2002	5.5	Fluorene	**0.0257 N**	NT	NA
WDL-102-S	8/14/2002	8	Fluorene	0.0108 U	NT	NA
WDL-102-S	8/14/2002	10	Fluorene	0.0868 U	NT	NA
WDL-103-S	8/15/2002	0.25	Fluorene	**0.248**	NT	NA
WDL-103-S	8/15/2002	2.25	Fluorene	**0.114**	NT	NA
WDL-103-S	8/15/2002	5	Fluorene	**0.0761**	NT	NA
WDL-103-S	8/15/2002	6.75	Fluorene	**0.423**	NT	NA
WDL-103-S	8/15/2002	8.25	Fluorene	**1.49**	NT	NA
WDL-104-S	8/15/2002	0.25	Fluorene	**0.0219**	NT	NA
WDL-104-S	8/15/2002	2.25	Fluorene	**0.0535 N**	NT	NA
WDL-104-S	8/15/2002	5	Fluorene	**0.217**	NT	NA
WDL-104-S	8/15/2002	6.75	Fluorene	**2.64**	NT	NA
WDL-201-S	2/12/2004	0.25	Fluorene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Fluorene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Fluorene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Fluorene	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Fluorene	**0.367**	0.0500 U	NA
W001	11/21/2005	1	Hexachlorobenzene	0.0170 UJ	0.00500 U	NA
W002	11/21/2005	5	Hexachlorobenzene	**21.0 J**	0.00500 U	NA
W003	11/21/2005	7	Hexachlorobenzene	0.0170 UJ	0.00500 U	NA
W004	11/21/2005	7	Hexachlorobenzene	0.0170 UJ	0.00500 U	NA
W005	11/21/2005	7	Hexachlorobenzene	0.0170 UJ	0.00500 UJ	NA
W006	11/21/2005	6	Hexachlorobenzene	0.0170 UJ	0.00500 U	NA
W007	11/21/2005	4	Hexachlorobenzene	0.0170 UJ	0.00500 U	NA
W008	11/20/2005	3	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W009	11/20/2005	5	Hexachlorobenzene	**3.70 J**	0.00500 U	NA
W010	11/20/2005	5	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W011	11/20/2005	3	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W011	11/20/2005	9	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W011	11/20/2005	18.5	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W012	11/19/2005	6	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W013	11/19/2005	5	Hexachlorobenzene	**2.60 J**	0.00500 U	NA
W014	11/19/2005	5	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W015	11/19/2005	1	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W016	11/19/2005	5	Hexachlorobenzene	**2.30 J**	0.00500 U	NA
W017	11/18/2005	3	Hexachlorobenzene	0.0170 U	0.00500 UJ	NA
W017	11/18/2005	7	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W018	11/18/2005	6	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W019	11/18/2005	4	Hexachlorobenzene	0.0170 U	0.00500 U	NA
W020	11/18/2005	5	Hexachlorobenzene	0.0170 U	0.00500 U	NA
WDL-101-S	8/14/2002	0.25	Hexachlorobenzene	0.0462 U	NT	NA
WDL-101-S	8/14/2002	2.25	Hexachlorobenzene	0.0277 U	NT	NA
WDL-101-S	8/14/2002	5	Hexachlorobenzene	**59.8 J**	NT	NA
WDL-101-S	8/14/2002	7	Hexachlorobenzene	**6.85 JN**	NT	NA
WDL-102-S	8/14/2002	0.5	Hexachlorobenzene	0.0341 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Hexachlorobenzene	0.0384 U	NT	NA
WDL-102-S	8/14/2002	5.5	Hexachlorobenzene	0.0182 U	NT	NA
WDL-102-S	8/14/2002	8	Hexachlorobenzene	0.0255 U	NT	NA
WDL-102-S	8/14/2002	10	Hexachlorobenzene	0.204 U	NT	NA
WDL-103-S	8/15/2002	0.25	Hexachlorobenzene	0.0511 U	NT	NA
WDL-103-S	8/15/2002	2.25	Hexachlorobenzene	0.0185 U	NT	NA
WDL-103-S	8/15/2002	5	Hexachlorobenzene	0.0295 U	NT	NA
WDL-103-S	8/15/2002	6.75	Hexachlorobenzene	0.421 U	NT	NA
WDL-103-S	8/15/2002	8.25	Hexachlorobenzene	0.0265 U	NT	NA
WDL-104-S	8/15/2002	0.25	Hexachlorobenzene	0.0186 U	NT	NA
WDL-104-S	8/15/2002	2.25	Hexachlorobenzene	0.0185 U	NT	NA
WDL-104-S	8/15/2002	5	Hexachlorobenzene	0.0233 U	NT	NA
WDL-104-S	8/15/2002	6.75	Hexachlorobenzene	0.210 U	NT	NA
WDL-201-S	2/12/2004	0.25	Hexachlorobenzene	1.11 U	0.0500 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	6	Hexachlorobenzene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Hexachlorobenzene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Hexachlorobenzene	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Hexachlorobenzene	**0.488**	0.0500 U	NA
W001	11/21/2005	1	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W002	11/21/2005	5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W003	11/21/2005	7	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W004	11/21/2005	7	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W005	11/21/2005	7	Hexachlorobutadiene	0.0330 UJ	0.0250 UJ	4.02E-01
W006	11/21/2005	6	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W007	11/21/2005	4	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W008	11/20/2005	3	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W009	11/20/2005	5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W010	11/20/2005	5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W011	11/20/2005	3	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W011	11/20/2005	9	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W011	11/20/2005	18.5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W012	11/19/2005	6	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W013	11/19/2005	5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W014	11/19/2005	5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W015	11/19/2005	1	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W016	11/19/2005	5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W017	11/18/2005	3	Hexachlorobutadiene	0.0330 UJ	0.0250 UJ	4.02E-01
W017	11/18/2005	7	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W018	11/18/2005	6	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W019	11/18/2005	4	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
W020	11/18/2005	5	Hexachlorobutadiene	0.0330 UJ	0.0250 U	4.02E-01
WDL-101-S	8/14/2002	0.25	Hexachlorobutadiene	0.0378 U	NT	NA
WDL-101-S	8/14/2002	2.25	Hexachlorobutadiene	0.0227 UJ	NT	NA
WDL-101-S	8/14/2002	5	Hexachlorobutadiene	0.257 UJ	NT	NA
WDL-101-S	8/14/2002	7	Hexachlorobutadiene	0.226 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Hexachlorobutadiene	0.0279 URUJ	NT	NA
WDL-102-S	8/14/2002	2.25	Hexachlorobutadiene	0.0314 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Hexachlorobutadiene	0.0149 U	NT	NA
WDL-102-S	8/14/2002	8	Hexachlorobutadiene	0.0209 UJ	NT	NA
WDL-102-S	8/14/2002	10	Hexachlorobutadiene	0.167 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Hexachlorobutadiene	0.0418 U	NT	NA
WDL-103-S	8/15/2002	2.25	Hexachlorobutadiene	0.0151 U	NT	NA
WDL-103-S	8/15/2002	5	Hexachlorobutadiene	0.0241 U	NT	NA
WDL-103-S	8/15/2002	6.75	Hexachlorobutadiene	0.344 U	NT	NA
WDL-103-S	8/15/2002	8.25	Hexachlorobutadiene	0.0217 U	NT	NA
WDL-104-S	8/15/2002	0.25	Hexachlorobutadiene	0.0152 U	NT	NA
WDL-104-S	8/15/2002	2.25	Hexachlorobutadiene	0.0151 U	NT	NA
WDL-104-S	8/15/2002	5	Hexachlorobutadiene	0.0191 U	NT	NA
WDL-104-S	8/15/2002	6.75	Hexachlorobutadiene	0.172 U	NT	NA
WDL-201-S	2/12/2004	0.25	Hexachlorobutadiene	7.91 U	0.0500 UJ	0.402
WDL-201-S	2/12/2004	6	Hexachlorobutadiene	12.5 U	1.25 UJ	0.402
WDL-202-S	2/12/2004	4	Hexachlorobutadiene	2.50 U	0.0500 UJ	0.402
WDL-203-S	2/13/2004	5.75	Hexachlorobutadiene	1.00 U	0.0500 UJ	0.402
WDL-204-S	2/12/2004	5	Hexachlorobutadiene	2.50 U	0.0500 UJ	0.402
W001	11/21/2005	1	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W002	11/21/2005	5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W003	11/21/2005	7	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W004	11/21/2005	7	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W005	11/21/2005	7	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 UJ	NA
W006	11/21/2005	6	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W007	11/21/2005	4	Hexachlorocyclopentadiene	0.0250 R	0.0250 U	NA
W008	11/20/2005	3	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W009	11/20/2005	5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W010	11/20/2005	5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	3	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W011	11/20/2005	9	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W011	11/20/2005	18.5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W012	11/19/2005	6	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W013	11/19/2005	5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W014	11/19/2005	5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W015	11/19/2005	1	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W016	11/19/2005	5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W017	11/18/2005	3	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 UJ	NA
W017	11/18/2005	7	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W018	11/18/2005	6	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W019	11/18/2005	4	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
W020	11/18/2005	5	Hexachlorocyclopentadiene	0.0250 UJ	0.0250 U	NA
WDL-101-S	8/14/2002	0.25	Hexachlorocyclopentadiene	0.0592 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Hexachlorocyclopentadiene	0.0356 UJ	NT	NA
WDL-101-S	8/14/2002	5	Hexachlorocyclopentadiene	0.402 UJ	NT	NA
WDL-101-S	8/14/2002	7	Hexachlorocyclopentadiene	0.354 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Hexachlorocyclopentadiene	0.0437 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Hexachlorocyclopentadiene	0.0492 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Hexachlorocyclopentadiene	0.0233 UJ	NT	NA
WDL-102-S	8/14/2002	8	Hexachlorocyclopentadiene	0.0327 UJ	NT	NA
WDL-102-S	8/14/2002	10	Hexachlorocyclopentadiene	0.262 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Hexachlorocyclopentadiene	0.0655 U	NT	NA
WDL-103-S	8/15/2002	2.25	Hexachlorocyclopentadiene	0.0237 U	NT	NA
WDL-103-S	8/15/2002	5	Hexachlorocyclopentadiene	0.0378 U	NT	NA
WDL-103-S	8/15/2002	6.75	Hexachlorocyclopentadiene	0.539 U	NT	NA
WDL-103-S	8/15/2002	8.25	Hexachlorocyclopentadiene	0.0339 U	NT	NA
WDL-104-S	8/15/2002	0.25	Hexachlorocyclopentadiene	0.0238 U	NT	NA
WDL-104-S	8/15/2002	2.25	Hexachlorocyclopentadiene	0.0237 U	NT	NA
WDL-104-S	8/15/2002	5	Hexachlorocyclopentadiene	0.0299 U	NT	NA
WDL-104-S	8/15/2002	6.75	Hexachlorocyclopentadiene	0.269 U	NT	NA
WDL-201-S	2/12/2004	0.25	Hexachlorocyclopentadiene	7.91 U	0.200 U	NA
WDL-201-S	2/12/2004	6	Hexachlorocyclopentadiene	12.5 U	5.00 U	NA
WDL-202-S	2/12/2004	4	Hexachlorocyclopentadiene	2.50 U	0.200 U	NA
WDL-203-S	2/13/2004	5.75	Hexachlorocyclopentadiene	1.00 U	0.200 U	NA
WDL-204-S	2/12/2004	5	Hexachlorocyclopentadiene	2.50 UR	0.200 U	NA
W001	11/21/2005	1	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W002	11/21/2005	5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W003	11/21/2005	7	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W004	11/21/2005	7	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W005	11/21/2005	7	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W006	11/21/2005	6	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W007	11/21/2005	4	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W008	11/20/2005	3	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W009	11/20/2005	5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W010	11/20/2005	5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W011	11/20/2005	3	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W011	11/20/2005	9	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W011	11/20/2005	18.5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W012	11/19/2005	6	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W013	11/19/2005	5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W014	11/19/2005	5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W015	11/19/2005	1	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W016	11/19/2005	5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W017	11/18/2005	3	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W017	11/18/2005	7	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W018	11/18/2005	6	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W019	11/18/2005	4	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
W020	11/18/2005	5	Hexachloroethane	0.0460 UJ	0.0250 UJ	NA
WDL-101-S	8/14/2002	0.25	Hexachloroethane	0.0798 UJ	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	2.25	Hexachloroethane	0.0479 U	NT	NA
WDL-101-S	8/14/2002	5	Hexachloroethane	0.542 U	NT	NA
WDL-101-S	8/14/2002	7	Hexachloroethane	0.477 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Hexachloroethane	0.0589 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Hexachloroethane	0.0663 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Hexachloroethane	0.0314 U	NT	NA
WDL-102-S	8/14/2002	8	Hexachloroethane	0.0441 UJ	NT	NA
WDL-102-S	8/14/2002	10	Hexachloroethane	0.353 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Hexachloroethane	0.0883 U	NT	NA
WDL-103-S	8/15/2002	2.25	Hexachloroethane	0.0319 U	NT	NA
WDL-103-S	8/15/2002	5	Hexachloroethane	0.0509 U	NT	NA
WDL-103-S	8/15/2002	6.75	Hexachloroethane	0.726 U	NT	NA
WDL-103-S	8/15/2002	8.25	Hexachloroethane	0.0457 U	NT	NA
WDL-104-S	8/15/2002	0.25	Hexachloroethane	0.0321 U	NT	NA
WDL-104-S	8/15/2002	2.25	Hexachloroethane	0.0319 U	NT	NA
WDL-104-S	8/15/2002	5	Hexachloroethane	0.0403 U	NT	NA
WDL-104-S	8/15/2002	6.75	Hexachloroethane	0.363 U	NT	NA
WDL-201-S	2/12/2004	0.25	Hexachloroethane	7.91 U	0.0500 UJ	NA
WDL-201-S	2/12/2004	6	Hexachloroethane	12.5 U	1.25 UJ	NA
WDL-202-S	2/12/2004	4	Hexachloroethane	2.50 U	0.0500 UJ	NA
WDL-203-S	2/13/2004	5.75	Hexachloroethane	1.00 U	0.0500 UJ	NA
WDL-204-S	2/12/2004	5	Hexachloroethane	2.50 U	0.0500 UJ	NA
W001	11/21/2005	1	Indeno(1,2,3-cd)pyrene	0.0230 UJ	0.00425 U	NA
W002	11/21/2005	5	Indeno(1,2,3-cd)pyrene	0.0230 UJ	0.00425 U	NA
W003	11/21/2005	7	Indeno(1,2,3-cd)pyrene	0.0230 UJ	0.00425 U	NA
W004	11/21/2005	7	Indeno(1,2,3-cd)pyrene	0.0230 UJ	0.00425 U	NA
W005	11/21/2005	7	Indeno(1,2,3-cd)pyrene	0.0230 UJ	0.00425 UJ	NA
W006	11/21/2005	6	Indeno(1,2,3-cd)pyrene	0.0230 UJ	0.00425 U	NA
W007	11/21/2005	4	Indeno(1,2,3-cd)pyrene	0.0230 UJ	0.00425 U	NA
W008	11/20/2005	3	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W009	11/20/2005	5	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W010	11/20/2005	5	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W011	11/20/2005	3	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W011	11/20/2005	9	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W011	11/20/2005	18.5	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W012	11/19/2005	6	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W013	11/19/2005	5	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W014	11/19/2005	5	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W015	11/19/2005	1	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W016	11/19/2005	5	Indeno(1,2,3-cd)pyrene	**6.30**	0.00425 U	NA
W017	11/18/2005	3	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 UJ	NA
W017	11/18/2005	7	Indeno(1,2,3-cd)pyrene	0.0230 U	0.00425 U	NA
W018	11/18/2005	6	Indeno(1,2,3-cd)pyrene	**2.10 J**	0.00425 U	NA
W019	11/18/2005	4	Indeno(1,2,3-cd)pyrene	**11.0**	0.00425 U	NA
W020	11/18/2005	5	Indeno(1,2,3-cd)pyrene	**6.60 J**	0.00425 U	NA
WDL-101-S	8/14/2002	0.25	Indeno(1,2,3-cd)pyrene	0.00979 U	NT	NA
WDL-101-S	8/14/2002	2.25	Indeno(1,2,3-cd)pyrene	0.00588 U	NT	NA
WDL-101-S	8/14/2002	5	Indeno(1,2,3-cd)pyrene	**1.31 J**	NT	NA
WDL-101-S	8/14/2002	7	Indeno(1,2,3-cd)pyrene	**0.901 JN**	NT	NA
WDL-102-S	8/14/2002	0.5	Indeno(1,2,3-cd)pyrene	0.00722 UR	NT	NA
WDL-102-S	8/14/2002	2.25	Indeno(1,2,3-cd)pyrene	0.00813 U	NT	NA
WDL-102-S	8/14/2002	5.5	Indeno(1,2,3-cd)pyrene	**0.188**	NT	NA
WDL-102-S	8/14/2002	8	Indeno(1,2,3-cd)pyrene	**0.208**	NT	NA
WDL-102-S	8/14/2002	10	Indeno(1,2,3-cd)pyrene	0.0433 U	NT	NA
WDL-103-S	8/15/2002	0.25	Indeno(1,2,3-cd)pyrene	**0.128 J**	NT	NA
WDL-103-S	8/15/2002	2.25	Indeno(1,2,3-cd)pyrene	**0.140 J**	NT	NA
WDL-103-S	8/15/2002	5	Indeno(1,2,3-cd)pyrene	**0.426 J**	NT	NA
WDL-103-S	8/15/2002	6.75	Indeno(1,2,3-cd)pyrene	**1.53 J**	NT	NA
WDL-103-S	8/15/2002	8.25	Indeno(1,2,3-cd)pyrene	0.0301 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	Indeno(1,2,3-cd)pyrene	**0.629 J**	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	2.25	Indeno(1,2,3-cd)pyrene	**0.335 J**	NT	NA
WDL-104-S	8/15/2002	5	Indeno(1,2,3-cd)pyrene	**3.24 J**	NT	NA
WDL-104-S	8/15/2002	6.75	Indeno(1,2,3-cd)pyrene	**2.17 J**	NT	NA
WDL-201-S	2/12/2004	0.25	Indeno(1,2,3-cd)pyrene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Indeno(1,2,3-cd)pyrene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Indeno(1,2,3-cd)pyrene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Indeno(1,2,3-cd)pyrene	**1.60**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Indeno(1,2,3-cd)pyrene	**2.78**	0.0500 U	NA
W001	11/21/2005	1	Isophorone	0.0170 UJ	0.00550 U	NA
W002	11/21/2005	5	Isophorone	0.0170 UJ	0.00550 U	NA
W003	11/21/2005	7	Isophorone	0.0170 UJ	0.00550 U	NA
W004	11/21/2005	7	Isophorone	0.0170 UJ	0.00550 U	NA
W005	11/21/2005	7	Isophorone	0.0170 UJ	0.00550 UJ	NA
W006	11/21/2005	6	Isophorone	0.0170 UJ	0.00550 U	NA
W007	11/21/2005	4	Isophorone	0.0170 UJ	0.00550 U	NA
W008	11/20/2005	3	Isophorone	0.0170 U	0.00550 U	NA
W009	11/20/2005	5	Isophorone	0.0170 U	0.00550 U	NA
W010	11/20/2005	5	Isophorone	0.0170 U	0.00550 U	NA
W011	11/20/2005	3	Isophorone	0.0170 U	0.00550 U	NA
W011	11/20/2005	9	Isophorone	0.0170 U	0.00550 U	NA
W011	11/20/2005	18.5	Isophorone	0.0170 U	0.00550 U	NA
W012	11/19/2005	6	Isophorone	0.0170 U	0.00550 U	NA
W013	11/19/2005	5	Isophorone	0.0170 U	0.00550 U	NA
W014	11/19/2005	5	Isophorone	0.0170 U	0.00550 U	NA
W015	11/19/2005	1	Isophorone	0.0170 U	0.00550 U	NA
W016	11/19/2005	5	Isophorone	0.0170 U	0.00550 U	NA
W017	11/18/2005	3	Isophorone	0.0170 U	0.00550 UJ	NA
W017	11/18/2005	7	Isophorone	0.0170 U	0.00550 U	NA
W018	11/18/2005	6	Isophorone	0.0170 U	0.00550 U	NA
W019	11/18/2005	4	Isophorone	0.0170 U	0.00550 U	NA
W020	11/18/2005	5	Isophorone	0.0170 U	0.00550 U	NA
WDL-101-S	8/14/2002	0.25	Isophorone	0.0588 U	NT	NA
WDL-101-S	8/14/2002	2.25	Isophorone	0.0353 UJ	NT	NA
WDL-101-S	8/14/2002	5	Isophorone	0.399 UJ	NT	NA
WDL-101-S	8/14/2002	7	Isophorone	0.351 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Isophorone	0.0434 URUJ	NT	NA
WDL-102-S	8/14/2002	2.25	Isophorone	0.0488 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Isophorone	0.0231 U	NT	NA
WDL-102-S	8/14/2002	8	Isophorone	**0.329 J**	NT	NA
WDL-102-S	8/14/2002	10	Isophorone	0.260 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Isophorone	0.0651 U	NT	NA
WDL-103-S	8/15/2002	2.25	Isophorone	0.0235 U	NT	NA
WDL-103-S	8/15/2002	5	Isophorone	0.0375 U	NT	NA
WDL-103-S	8/15/2002	6.75	Isophorone	0.535 U	NT	NA
WDL-103-S	8/15/2002	8.25	Isophorone	0.0337 U	NT	NA
WDL-104-S	8/15/2002	0.25	Isophorone	0.0236 U	NT	NA
WDL-104-S	8/15/2002	2.25	Isophorone	**0.222**	NT	NA
WDL-104-S	8/15/2002	5	Isophorone	0.0297 U	NT	NA
WDL-104-S	8/15/2002	6.75	Isophorone	0.267 U	NT	NA
WDL-201-S	2/12/2004	0.25	Isophorone	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Isophorone	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Isophorone	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Isophorone	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Isophorone	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Naphthalene	**2.30 J**	0.00600 U	3.53E+01
W002	11/21/2005	5	Naphthalene	**25.0 J**	**0.990**	3.53E+01
W003	11/21/2005	7	Naphthalene	**7.00 J**	**0.00610 J**	3.53E+01
W004	11/21/2005	7	Naphthalene	**4.50 J**	**0.0180 J**	3.53E+01
W005	11/21/2005	7	Naphthalene	**3.10 J**	0.00600 UJ	3.53E+01
W006	11/21/2005	6	Naphthalene	**16.0 J**	**0.0250 J**	3.53E+01

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	Naphthalene	**26.0 J**	0.00600 U	3.53E+01
W008	11/20/2005	3	Naphthalene	0.0290 UJ	0.00600 U	3.53E+01
W009	11/20/2005	5	Naphthalene	0.0290 UJ	0.00600 U	3.53E+01
W010	11/20/2005	5	Naphthalene	**20.0 J**	0.00600 U	3.53E+01
W011	11/20/2005	3	Naphthalene	0.0290 UJ	0.00600 U	3.53E+01
W011	11/20/2005	9	Naphthalene	0.0290 UJ	0.00600 U	3.53E+01
W011	11/20/2005	18.5	Naphthalene	0.0290 UJ	0.00600 U	3.53E+01
W012	11/19/2005	6	Naphthalene	**5.30 J**	0.00600 U	3.53E+01
W013	11/19/2005	5	Naphthalene	**22.0 J**	**0.290**	3.53E+01
W014	11/19/2005	5	Naphthalene	**12.0 J**	0.00600 U	3.53E+01
W015	11/19/2005	1	Naphthalene	**14.0 J**	NT	NA
W016	11/19/2005	5	Naphthalene	**2.30 J**	0.00600 U	3.53E+01
W017	11/18/2005	3	Naphthalene	**3.90 J**	0.00600 UJ	3.53E+01
W017	11/18/2005	7	Naphthalene	0.0290 UJ	0.00600 U	3.53E+01
W018	11/18/2005	6	Naphthalene	**23.0 J**	**0.520**	3.53E+01
W019	11/18/2005	4	Naphthalene	**14.0 J**	**0.180**	3.53E+01
W020	11/18/2005	5	Naphthalene	**13.0 J**	0.00600 UJ	3.53E+01
WDL-101-S	8/14/2002	0.25	Naphthalene	0.0197 U	NT	NA
WDL-101-S	8/14/2002	2.25	Naphthalene	**1.88 J**	NT	NA
WDL-101-S	8/14/2002	5	Naphthalene	**5.47 J**	NT	NA
WDL-101-S	8/14/2002	7	Naphthalene	**1.85 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Naphthalene	**1.03 J**	NT	NA
WDL-102-S	8/14/2002	2.25	Naphthalene	**0.132 J**	NT	NA
WDL-102-S	8/14/2002	5.5	Naphthalene	0.00773 U	NT	NA
WDL-102-S	8/14/2002	8	Naphthalene	**0.603 J**	NT	NA
WDL-102-S	8/14/2002	10	Naphthalene	0.0870 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Naphthalene	**0.336**	NT	NA
WDL-103-S	8/15/2002	2.25	Naphthalene	**0.220**	NT	NA
WDL-103-S	8/15/2002	5	Naphthalene	**0.135**	NT	NA
WDL-103-S	8/15/2002	6.75	Naphthalene	**0.221**	NT	NA
WDL-103-S	8/15/2002	8.25	Naphthalene	**0.489**	NT	NA
WDL-104-S	8/15/2002	0.25	Naphthalene	**0.0551**	NT	NA
WDL-104-S	8/15/2002	2.25	Naphthalene	**0.464**	NT	NA
WDL-104-S	8/15/2002	5	Naphthalene	**1.95**	NT	NA
WDL-104-S	8/15/2002	6.75	Naphthalene	**0.867**	NT	NA
WDL-201-S	2/12/2004	0.25	Naphthalene	1.11 U	0.0500 U	35.3
WDL-201-S	2/12/2004	6	Naphthalene	1.75 U	1.25 U	35.3
WDL-202-S	2/12/2004	4	Naphthalene	0.350 U	0.0500 U	35.3
WDL-203-S	2/13/2004	5.75	Naphthalene	0.140 U	0.0500 U	35.3
WDL-204-S	2/12/2004	5	Naphthalene	0.350 U	0.0500 U	35.3
W001	11/21/2005	1	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W002	11/21/2005	5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W003	11/21/2005	7	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W004	11/21/2005	7	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W005	11/21/2005	7	Nitrobenzene	0.0760 UJ	0.00550 UJ	3.09E+00
W006	11/21/2005	6	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W007	11/21/2005	4	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W008	11/20/2005	3	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W009	11/20/2005	5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W010	11/20/2005	5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W011	11/20/2005	3	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W011	11/20/2005	9	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W011	11/20/2005	18.5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W012	11/19/2005	6	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W013	11/19/2005	5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W014	11/19/2005	5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W015	11/19/2005	1	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W016	11/19/2005	5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W017	11/18/2005	3	Nitrobenzene	0.0760 UJ	0.00550 UJ	3.09E+00
W017	11/18/2005	7	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W018	11/18/2005	6	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W019	11/18/2005	4	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
W020	11/18/2005	5	Nitrobenzene	0.0760 UJ	0.00550 U	3.09E+00
WDL-101-S	8/14/2002	0.25	Nitrobenzene	0.0576 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Nitrobenzene	0.0346 UJ	NT	NA
WDL-101-S	8/14/2002	5	Nitrobenzene	0.391 UJ	NT	NA
WDL-101-S	8/14/2002	7	Nitrobenzene	0.344 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Nitrobenzene	0.0425 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	Nitrobenzene	0.0478 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Nitrobenzene	0.0226 UJ	NT	NA
WDL-102-S	8/14/2002	8	Nitrobenzene	0.0318 UJ	NT	NA
WDL-102-S	8/14/2002	10	Nitrobenzene	0.255 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Nitrobenzene	0.0637 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	Nitrobenzene	0.0230 UJ	NT	NA
WDL-103-S	8/15/2002	5	Nitrobenzene	0.0367 UJ	NT	NA
WDL-103-S	8/15/2002	6.75	Nitrobenzene	0.524 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Nitrobenzene	**0.0920 JN**	NT	NA
WDL-104-S	8/15/2002	0.25	Nitrobenzene	0.0231 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	Nitrobenzene	0.0230 UJ	NT	NA
WDL-104-S	8/15/2002	5	Nitrobenzene	0.0291 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	Nitrobenzene	0.262 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	Nitrobenzene	1.11 U	0.0500 U	3.09
WDL-201-S	2/12/2004	6	Nitrobenzene	1.75 U	1.25 U	3.09
WDL-202-S	2/12/2004	4	Nitrobenzene	0.350 U	0.0500 U	3.09
WDL-203-S	2/13/2004	5.75	Nitrobenzene	0.140 U	0.0500 U	3.09
WDL-204-S	2/12/2004	5	Nitrobenzene	0.350 U	0.0500 U	3.09
W001	11/21/2005	1	N-Nitrosodi-n-propyl amine	0.0180 UJ	0.00435 U	3.42E-01
W002	11/21/2005	5	N-Nitrosodi-n-propyl amine	0.0180 UJ	0.00435 U	3.42E-01
W003	11/21/2005	7	N-Nitrosodi-n-propyl amine	0.0180 UJ	0.00435 U	3.42E-01
W004	11/21/2005	7	N-Nitrosodi-n-propyl amine	0.0180 UJ	0.00435 U	3.42E-01
W005	11/21/2005	7	N-Nitrosodi-n-propyl amine	0.0180 UJ	0.00435 UJ	3.42E-01
W006	11/21/2005	6	N-Nitrosodi-n-propyl amine	0.0180 UJ	0.00435 U	3.42E-01
W007	11/21/2005	4	N-Nitrosodi-n-propyl amine	0.0180 UJ	0.00435 U	3.42E-01
W008	11/20/2005	3	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W009	11/20/2005	5	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W010	11/20/2005	5	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W011	11/20/2005	3	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W011	11/20/2005	9	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W011	11/20/2005	18.5	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W012	11/19/2005	6	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W013	11/19/2005	5	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W014	11/19/2005	5	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W015	11/19/2005	1	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W016	11/19/2005	5	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W017	11/18/2005	3	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 UJ	3.42E-01
W017	11/18/2005	7	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W018	11/18/2005	6	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W019	11/18/2005	4	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
W020	11/18/2005	5	N-Nitrosodi-n-propyl amine	0.0180 U	0.00435 U	3.42E-01
WDL-101-S	8/14/2002	0.25	N-Nitrosodi-n-propyl amine	0.0462 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	N-Nitrosodi-n-propyl amine	0.0277 U	NT	NA
WDL-101-S	8/14/2002	5	N-Nitrosodi-n-propyl amine	0.314 U	NT	NA
WDL-101-S	8/14/2002	7	N-Nitrosodi-n-propyl amine	0.276 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	N-Nitrosodi-n-propyl amine	0.0341 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	N-Nitrosodi-n-propyl amine	0.0384 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	N-Nitrosodi-n-propyl amine	0.0182 U	NT	NA
WDL-102-S	8/14/2002	8	N-Nitrosodi-n-propyl amine	0.0255 U	NT	NA
WDL-102-S	8/14/2002	10	N-Nitrosodi-n-propyl amine	0.204 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	N-Nitrosodi-n-propyl amine	0.0511 U	NT	NA
WDL-103-S	8/15/2002	2.25	N-Nitrosodi-n-propyl amine	0.0185 U	NT	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	5	N-Nitrosodi-n-propyl amine	0.0295 U	NT	NA
WDL-103-S	8/15/2002	6.75	N-Nitrosodi-n-propyl amine	0.421 U	NT	NA
WDL-103-S	8/15/2002	8.25	N-Nitrosodi-n-propyl amine	0.0265 U	NT	NA
WDL-104-S	8/15/2002	0.25	N-Nitrosodi-n-propyl amine	0.0186 U	NT	NA
WDL-104-S	8/15/2002	2.25	N-Nitrosodi-n-propyl amine	0.0185 U	NT	NA
WDL-104-S	8/15/2002	5	N-Nitrosodi-n-propyl amine	0.0233 U	NT	NA
WDL-104-S	8/15/2002	6.75	N-Nitrosodi-n-propyl amine	0.210 U	NT	NA
WDL-201-S	2/12/2004	0.25	N-Nitrosodi-n-propyl amine	1.11 U	0.0500 U	0.342
WDL-201-S	2/12/2004	6	N-Nitrosodi-n-propyl amine	1.75 U	1.25 U	0.342
WDL-202-S	2/12/2004	4	N-Nitrosodi-n-propyl amine	0.350 U	0.0500 U	0.342
WDL-203-S	2/13/2004	5.75	N-Nitrosodi-n-propyl amine	0.140 U	0.0500 U	0.342
WDL-204-S	2/12/2004	5	N-Nitrosodi-n-propyl amine	0.350 U	0.0500 U	0.342
W001	11/21/2005	1	N-Nitrosodiphenylamine	0.0240 UJ	0.0250 U	NA
W002	11/21/2005	5	N-Nitrosodiphenylamine	0.0240 UJ	0.0250 U	NA
W003	11/21/2005	7	N-Nitrosodiphenylamine	0.0240 UJ	0.0250 U	NA
W004	11/21/2005	7	N-Nitrosodiphenylamine	0.0240 UJ	0.0250 U	NA
W005	11/21/2005	7	N-Nitrosodiphenylamine	0.0240 UJ	0.0250 UJ	NA
W006	11/21/2005	6	N-Nitrosodiphenylamine	0.0240 UJ	0.0250 U	NA
W007	11/21/2005	4	N-Nitrosodiphenylamine	0.0240 UJ	0.0250 U	NA
W008	11/20/2005	3	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W009	11/20/2005	5	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W010	11/20/2005	5	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W011	11/20/2005	3	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W011	11/20/2005	9	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W011	11/20/2005	18.5	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W012	11/19/2005	6	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W013	11/19/2005	5	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W014	11/19/2005	5	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W015	11/19/2005	1	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W016	11/19/2005	5	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W017	11/18/2005	3	N-Nitrosodiphenylamine	0.0240 U	0.0250 UJ	NA
W017	11/18/2005	7	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W018	11/18/2005	6	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W019	11/18/2005	4	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
W020	11/18/2005	5	N-Nitrosodiphenylamine	0.0240 U	0.0250 U	NA
WDL-101-S	8/14/2002	0.25	N-Nitrosodiphenylamine	0.0336 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	N-Nitrosodiphenylamine	0.0202 UJ	NT	NA
WDL-101-S	8/14/2002	5	N-Nitrosodiphenylamine	0.228 UJ	NT	NA
WDL-101-S	8/14/2002	7	N-Nitrosodiphenylamine	0.201 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	N-Nitrosodiphenylamine	0.0248 UJR	NT	NA
WDL-102-S	8/14/2002	2.25	N-Nitrosodiphenylamine	0.0279 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	N-Nitrosodiphenylamine	0.0132 UJ	NT	NA
WDL-102-S	8/14/2002	8	N-Nitrosodiphenylamine	0.0185 UJ	NT	NA
WDL-102-S	8/14/2002	10	N-Nitrosodiphenylamine	0.149 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	N-Nitrosodiphenylamine	0.0372 U	NT	NA
WDL-103-S	8/15/2002	2.25	N-Nitrosodiphenylamine	0.0134 U	NT	NA
WDL-103-S	8/15/2002	5	N-Nitrosodiphenylamine	0.0214 U	NT	NA
WDL-103-S	8/15/2002	6.75	N-Nitrosodiphenylamine	0.306 U	NT	NA
WDL-103-S	8/15/2002	8.25	N-Nitrosodiphenylamine	0.0193 U	NT	NA
WDL-104-S	8/15/2002	0.25	N-Nitrosodiphenylamine	0.0135 U	NT	NA
WDL-104-S	8/15/2002	2.25	N-Nitrosodiphenylamine	0.0134 U	NT	NA
WDL-104-S	8/15/2002	5	N-Nitrosodiphenylamine	0.0170 U	NT	NA
WDL-104-S	8/15/2002	6.75	N-Nitrosodiphenylamine	0.153 U	NT	NA
WDL-201-S	2/12/2004	0.25	N-Nitrosodiphenylamine	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	N-Nitrosodiphenylamine	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	N-Nitrosodiphenylamine	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	N-Nitrosodiphenylamine	0.140 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	N-Nitrosodiphenylamine	0.350 U	0.0500 U	NA
W001	11/21/2005	1	Pentachlorophenol	0.660 UJ	0.0900 UJ	5.22E-02
W002	11/21/2005	5	Pentachlorophenol	0.660 UJ	0.0900 UJ	5.22E-02

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W003	11/21/2005	7	Pentachlorophenol	0.660 UJ	0.0900 UJ	5.22E-02
W004	11/21/2005	7	Pentachlorophenol	0.660 UJ	0.0900 UJ	5.22E-02
W005	11/21/2005	7	Pentachlorophenol	0.660 UJ	0.0900 UJ	5.22E-02
W006	11/21/2005	6	Pentachlorophenol	0.660 UJ	0.0900 UJ	5.22E-02
W007	11/21/2005	4	Pentachlorophenol	0.660 R	0.0900 UJ	5.22E-02
W008	11/20/2005	3	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W009	11/20/2005	5	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W010	11/20/2005	5	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W011	11/20/2005	3	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W011	11/20/2005	9	Pentachlorophenol	0.660 UJ	0.0900 UJ	5.22E-02
W011	11/20/2005	18.5	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W012	11/19/2005	6	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W013	11/19/2005	5	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W014	11/19/2005	5	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W015	11/19/2005	1	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W016	11/19/2005	5	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W017	11/18/2005	3	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W017	11/18/2005	7	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W018	11/18/2005	6	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W019	11/18/2005	4	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
W020	11/18/2005	5	Pentachlorophenol	0.660 U	0.0900 UJ	5.22E-02
WDL-101-S	8/14/2002	0.25	Pentachlorophenol	0.0882 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Pentachlorophenol	0.0530 UJR	NT	NA
WDL-101-S	8/14/2002	5	Pentachlorophenol	0.599 UJR	NT	NA
WDL-101-S	8/14/2002	7	Pentachlorophenol	0.527 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Pentachlorophenol	0.0651 UJ	NT	NA
WDL-102-S	8/14/2002	2.25	Pentachlorophenol	0.0733 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Pentachlorophenol	0.0347 UJ	NT	NA
WDL-102-S	8/14/2002	8	Pentachlorophenol	0.0487 UJ	NT	NA
WDL-102-S	8/14/2002	10	Pentachlorophenol	0.390 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Pentachlorophenol	**0.830**	NT	NA
WDL-103-S	8/15/2002	2.25	Pentachlorophenol	0.0352 U	NT	NA
WDL-103-S	8/15/2002	5	Pentachlorophenol	0.0563 U	NT	NA
WDL-103-S	8/15/2002	6.75	Pentachlorophenol	0.803 U	NT	NA
WDL-103-S	8/15/2002	8.25	Pentachlorophenol	0.0505 UN	NT	NA
WDL-104-S	8/15/2002	0.25	Pentachlorophenol	0.0354 U	NT	NA
WDL-104-S	8/15/2002	2.25	Pentachlorophenol	0.0353 U	NT	NA
WDL-104-S	8/15/2002	5	Pentachlorophenol	0.0446 U	NT	NA
WDL-104-S	8/15/2002	6.75	Pentachlorophenol	0.401 U	NT	NA
WDL-201-S	2/12/2004	0.25	Pentachlorophenol	7.91 U	0.100 UJ	0.0522
WDL-201-S	2/12/2004	6	Pentachlorophenol	12.5 U	2.50 U	0.0522
WDL-202-S	2/12/2004	4	Pentachlorophenol	2.50 U	0.100 U	0.0522
WDL-203-S	2/13/2004	5.75	Pentachlorophenol	1.00 U	0.100 U	0.0522
WDL-204-S	2/12/2004	5	Pentachlorophenol	2.50 UR	0.100 U	0.0522
W001	11/21/2005	1	Phenanthrene	**2.50 J**	0.00480 U	NA
W002	11/21/2005	5	Phenanthrene	**4.70 J**	0.00480 U	NA
W003	11/21/2005	7	Phenanthrene	0.0160 UJ	0.00480 U	NA
W004	11/21/2005	7	Phenanthrene	0.0160 UJ	0.00480 U	NA
W005	11/21/2005	7	Phenanthrene	0.0160 UJ	0.00480 UJ	NA
W006	11/21/2005	6	Phenanthrene	**14.0 J**	0.00480 U	NA
W007	11/21/2005	4	Phenanthrene	**15.0 J**	0.00480 U	NA
W008	11/20/2005	3	Phenanthrene	**3.50 J**	0.00480 U	NA
W009	11/20/2005	5	Phenanthrene	**2.90 J**	0.00480 U	NA
W010	11/20/2005	5	Phenanthrene	**15.0**	0.00480 U	NA
W011	11/20/2005	3	Phenanthrene	**12.0**	0.00480 U	NA
W011	11/20/2005	9	Phenanthrene	0.0160 U	0.00480 U	NA
W011	11/20/2005	18.5	Phenanthrene	0.0160 U	0.00480 U	NA
W012	11/19/2005	6	Phenanthrene	**12.0**	0.00480 U	NA
W013	11/19/2005	5	Phenanthrene	**8.20**	0.00480 U	NA
W014	11/19/2005	5	Phenanthrene	**10.0**	0.00480 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W015	11/19/2005	1	Phenanthrene	**3.70 J**	0.00480 U	NA
W016	11/19/2005	5	Phenanthrene	**4.70 J**	0.00480 U	NA
W017	11/18/2005	3	Phenanthrene	**1.30 J**	0.00480 UJ	NA
W017	11/18/2005	7	Phenanthrene	0.0160 U	0.00480 U	NA
W018	11/18/2005	6	Phenanthrene	**1.40 J**	0.00480 U	NA
W019	11/18/2005	4	Phenanthrene	**2.90 J**	0.00480 U	NA
W020	11/18/2005	5	Phenanthrene	**4.10 J**	0.00480 U	NA
WDL-101-S	8/14/2002	0.25	Phenanthrene	**0.158**	NT	NA
WDL-101-S	8/14/2002	2.25	Phenanthrene	**0.390**	NT	NA
WDL-101-S	8/14/2002	5	Phenanthrene	**8.22 J**	NT	NA
WDL-101-S	8/14/2002	7	Phenanthrene	**6.96 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Phenanthrene	**0.505 J**	NT	NA
WDL-102-S	8/14/2002	2.25	Phenanthrene	**0.289 J**	NT	NA
WDL-102-S	8/14/2002	5.5	Phenanthrene	**0.304**	NT	NA
WDL-102-S	8/14/2002	8	Phenanthrene	**3.61**	NT	NA
WDL-102-S	8/14/2002	10	Phenanthrene	0.0396 U	NT	NA
WDL-103-S	8/15/2002	0.25	Phenanthrene	**0.761**	NT	NA
WDL-103-S	8/15/2002	2.25	Phenanthrene	**0.293**	NT	NA
WDL-103-S	8/15/2002	5	Phenanthrene	**0.156**	NT	NA
WDL-103-S	8/15/2002	6.75	Phenanthrene	**1.01**	NT	NA
WDL-103-S	8/15/2002	8.25	Phenanthrene	**4.21**	NT	NA
WDL-104-S	8/15/2002	0.25	Phenanthrene	**0.127**	NT	NA
WDL-104-S	8/15/2002	2.25	Phenanthrene	**0.256**	NT	NA
WDL-104-S	8/15/2002	5	Phenanthrene	**0.705**	NT	NA
WDL-104-S	8/15/2002	6.75	Phenanthrene	**5.71**	NT	NA
WDL-201-S	2/12/2004	0.25	Phenanthrene	1.11 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Phenanthrene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Phenanthrene	0.350 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Phenanthrene	**0.194**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Phenanthrene	**1.06**	0.0500 U	NA
W001	11/21/2005	1	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W002	11/21/2005	5	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W003	11/21/2005	7	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W004	11/21/2005	7	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W005	11/21/2005	7	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W006	11/21/2005	6	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W007	11/21/2005	4	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W008	11/20/2005	3	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W009	11/20/2005	5	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W010	11/20/2005	5	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W011	11/20/2005	3	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W011	11/20/2005	9	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W011	11/20/2005	18.5	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W012	11/19/2005	6	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W013	11/19/2005	5	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W014	11/19/2005	5	Phenol	**6.90 J**	**0.0540 J**	6.39E+03
W015	11/19/2005	1	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W016	11/19/2005	5	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W017	11/18/2005	3	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W017	11/18/2005	7	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
W018	11/18/2005	6	Phenol	**1.90 J**	**0.0680 J**	6.39E+03
W019	11/18/2005	4	Phenol	**4.70 J**	**0.0370 J**	6.39E+03
W020	11/18/2005	5	Phenol	0.0190 UJ	0.0250 UJ	6.39E+03
WDL-101-S	8/14/2002	0.25	Phenol	0.0840 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Phenol	**5.01 J**	NT	NA
WDL-101-S	8/14/2002	5	Phenol	0.571 UJR	NT	NA
WDL-101-S	8/14/2002	7	Phenol	0.502 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Phenol	**2.60 J**	NT	NA
WDL-102-S	8/14/2002	2.25	Phenol	0.0698 UJ	NT	NA
WDL-102-S	8/14/2002	5.5	Phenol	0.0330 UJ	NT	NA
WDL-102-S	8/14/2002	8	Phenol	**0.137 JN**	NT	NA
WDL-102-S	8/14/2002	10	Phenol	0.372 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	Phenol	**1.06**	NT	NA
WDL-103-S	8/15/2002	2.25	Phenol	**0.161**	NT	NA
WDL-103-S	8/15/2002	5	Phenol	0.0536 U	NT	NA
WDL-103-S	8/15/2002	6.75	Phenol	0.765 U	NT	NA
WDL-103-S	8/15/2002	8.25	Phenol	**1.43**	NT	NA
WDL-104-S	8/15/2002	0.25	Phenol	**0.107**	NT	NA
WDL-104-S	8/15/2002	2.25	Phenol	0.0336 U	NT	NA
WDL-104-S	8/15/2002	5	Phenol	**6.88**	NT	NA
WDL-104-S	8/15/2002	6.75	Phenol	0.382 U	NT	NA
WDL-201-S	2/12/2004	0.25	Phenol	1.11 U	0.0500 UJ	6390
WDL-201-S	2/12/2004	6	Phenol	**5.48**	1.25 U	6390
WDL-202-S	2/12/2004	4	Phenol	0.350 U	0.0500 U	6390
WDL-203-S	2/13/2004	5.75	Phenol	**1.45**	0.0500 U	6390
WDL-204-S	2/12/2004	5	Phenol	**1.35**	0.0500 U	6390
W001	11/21/2005	1	Pyrene	**1.70 J**	0.00500 U	NA
W002	11/21/2005	5	Pyrene	**4.10 J**	0.00500 U	NA
W003	11/21/2005	7	Pyrene	0.0210 UJ	0.00500 U	NA
W004	11/21/2005	7	Pyrene	0.0210 UJ	0.00500 U	NA
W005	11/21/2005	7	Pyrene	0.0210 UJ	0.00500 UJ	NA
W006	11/21/2005	6	Pyrene	**11.0 J**	0.00500 U	NA
W007	11/21/2005	4	Pyrene	**7.60 J**	0.00500 U	NA
W008	11/20/2005	3	Pyrene	**4.00 J**	0.00500 U	NA
W009	11/20/2005	5	Pyrene	**6.70 J**	0.00500 U	NA
W010	11/20/2005	5	Pyrene	**15.0**	0.00500 U	NA
W011	11/20/2005	3	Pyrene	**13.0**	0.00500 U	NA
W011	11/20/2005	9	Pyrene	0.0210 U	0.00500 U	NA
W011	11/20/2005	18.5	Pyrene	0.0210 U	0.00500 U	NA
W012	11/19/2005	6	Pyrene	**12.0**	0.00500 U	NA
W013	11/19/2005	5	Pyrene	**13.0**	0.00500 U	NA
W014	11/19/2005	5	Pyrene	**13.0**	0.00500 U	NA
W015	11/19/2005	1	Pyrene	**4.90 J**	0.00500 U	NA

TABLE C-1
Semivolatile Organic Carbon Analytical Results
for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W016	11/19/2005	5	Pyrene	**10.0**	0.00500 U	NA
W017	11/18/2005	3	Pyrene	**3.60 J**	0.00500 UJ	NA
W017	11/18/2005	7	Pyrene	0.0210 U	0.00500 U	NA
W018	11/18/2005	6	Pyrene	**2.40 J**	0.00500 U	NA
W019	11/18/2005	4	Pyrene	**11.0**	0.00500 U	NA
W020	11/18/2005	5	Pyrene	**7.60**	0.00500 U	NA
WDL-101-S	8/14/2002	0.25	Pyrene	**0.574**	NT	NA
WDL-101-S	8/14/2002	2.25	Pyrene	0.00832 U	NT	NA
WDL-101-S	8/14/2002	5	Pyrene	0.0942 U	NT	NA
WDL-101-S	8/14/2002	7	Pyrene	**7.46 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Pyrene	**1.28 J**	NT	NA
WDL-102-S	8/14/2002	2.25	Pyrene	**0.451 J**	NT	NA
WDL-102-S	8/14/2002	5.5	Pyrene	**0.616**	NT	NA
WDL-102-S	8/14/2002	8	Pyrene	**3.10**	NT	NA
WDL-102-S	8/14/2002	10	Pyrene	**0.241**	NT	NA
WDL-103-S	8/15/2002	0.25	Pyrene	**0.989**	NT	NA
WDL-103-S	8/15/2002	2.25	Pyrene	**0.579**	NT	NA
WDL-103-S	8/15/2002	5	Pyrene	**0.448**	NT	NA
WDL-103-S	8/15/2002	6.75	Pyrene	**1.82**	NT	NA
WDL-103-S	8/15/2002	8.25	Pyrene	**3.29**	NT	NA
WDL-104-S	8/15/2002	0.25	Pyrene	**0.542**	NT	NA
WDL-104-S	8/15/2002	2.25	Pyrene	**1.50**	NT	NA
WDL-104-S	8/15/2002	5	Pyrene	**1.80**	NT	NA
WDL-104-S	8/15/2002	6.75	Pyrene	**5.05**	NT	NA
WDL-201-S	2/12/2004	0.25	Pyrene	5.22 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Pyrene	1.75 U	1.25 U	NA
WDL-202-S	2/12/2004	4	Pyrene	1.65 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Pyrene	**0.904**	0.0500 U	NA
WDL-204-S	2/12/2004	5	Pyrene	**1.95**	0.0500 U	NA
WDL-201-S	2/12/2004	0.25	Tetrachlorophenols	7.91 U	NT	NA
WDL-201-S	2/12/2004	6	Tetrachlorophenols	12.5 U	NT	NA
WDL-202-S	2/12/2004	4	Tetrachlorophenols	2.50 U	NT	NA
WDL-203-S	2/13/2004	5.75	Tetrachlorophenols	1.00 U	NT	NA
WDL-204-S	2/12/2004	5	Tetrachlorophenols	2.50 U	NT	NA

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = The analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	1,2,3,4,6,7,8,9-OCDD	0.0005 U	2.40E-08 U	NA
W002	11/21/2005	5	1,2,3,4,6,7,8,9-OCDD	**0.076**	**6.40E-07**	NA
W003	11/21/2005	7	1,2,3,4,6,7,8,9-OCDD	0.0005 U	1.40E-08 U	NA
W004	11/21/2005	7	1,2,3,4,6,7,8,9-OCDD	0.0005 U	3.80E-08 U	NA
W005	11/21/2005	7	1,2,3,4,6,7,8,9-OCDD	0.0005 UJ	4.90E-08 UJ	NA
W006	11/21/2005	6	1,2,3,4,6,7,8,9-OCDD	0.0005 U	**1.50E-07**	NA
W007	11/21/2005	4	1,2,3,4,6,7,8,9-OCDD	0.0005 U	**1.40E-07**	NA
W008	11/20/2005	3	1,2,3,4,6,7,8,9-OCDD	0.0005 U	1.20E-08 U	NA
W009	11/20/2005	5	1,2,3,4,6,7,8,9-OCDD	0.0005 U	1.30E-08 U	NA
W010	11/20/2005	5	1,2,3,4,6,7,8,9-OCDD	0.0005 U	1.30E-08 U	NA
W011	11/20/2005	3	1,2,3,4,6,7,8,9-OCDD	0.0005 U	1.90E-08 U	NA
W011	11/20/2005	9	1,2,3,4,6,7,8,9-OCDD	0.0005 U	2.00E-08 U	NA
W011	11/20/2005	18.5	1,2,3,4,6,7,8,9-OCDD	0.0005 U	1.90E-08 U	NA
W012	11/19/2005	6	1,2,3,4,6,7,8,9-OCDD	0.0005 U	2.30E-08 U	NA
W013	11/19/2005	5	1,2,3,4,6,7,8,9-OCDD	0.0005 U	2.80E-08 U	NA
W014	11/19/2005	5	1,2,3,4,6,7,8,9-OCDD	0.0005 U	2.70E-08 U	NA
W015	11/19/2005	1	1,2,3,4,6,7,8,9-OCDD	0.0005 U	1.20E-08 U	NA
W016	11/19/2005	5	1,2,3,4,6,7,8,9-OCDD	0.0005 U	8.40E-09 U	NA
W017	11/18/2005	3	1,2,3,4,6,7,8,9-OCDD	0.0005 U	8.50E-09 U	NA
W017	11/18/2005	7	1,2,3,4,6,7,8,9-OCDD	0.0005 U	8.00E-09 U	NA
W018	11/18/2005	6	1,2,3,4,6,7,8,9-OCDD	0.0005 U	7.00E-09 U	NA
W019	11/18/2005	4	1,2,3,4,6,7,8,9-OCDD	0.0005 U	5.50E-09 U	NA
W020	11/18/2005	5	1,2,3,4,6,7,8,9-OCDD	0.0005 U	6.20E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,4,6,7,8,9-OCDD	**0.036 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,4,6,7,8,9-OCDD	**0.033 J**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,4,6,7,8,9-OCDD	**0.22 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,4,6,7,8,9-OCDD	**0.0044 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,4,6,7,8,9-OCDD	**0.016 J**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,4,6,7,8,9-OCDD	**0.029 J**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,4,6,7,8,9-OCDD	**0.00068**	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,4,6,7,8,9-OCDD	**0.00086**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,4,6,7,8,9-OCDD	**0.000016**	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,4,6,7,8,9-OCDD	**0.051 J**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,4,6,7,8,9-OCDD	**0.013**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,4,6,7,8,9-OCDD	**0.0068**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,4,6,7,8,9-OCDD	**0.058 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,4,6,7,8,9-OCDD	**0.0019**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,4,6,7,8,9-OCDD	**0.0016**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,4,6,7,8,9-OCDD	**0.00045**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,4,6,7,8,9-OCDD	**0.055 J**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,4,6,7,8,9-OCDD	**0.00055**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,4,6,7,8,9-OCDD	**0.00543**	**9.53E-08**	NA
WDL-201-S	2/12/2004	6	1,2,3,4,6,7,8,9-OCDD	**0.025**	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,4,6,7,8,9-OCDD	**0.000881**	**6.60E-09**	NA
WDL-203-S	2/13/2004	5.75	1,2,3,4,6,7,8,9-OCDD	**0.000128**	1.80E-08 U	NA
WDL-204-S	2/12/2004	5	1,2,3,4,6,7,8,9-OCDD	**0.00336**	**2.30E-08**	NA
W001	11/21/2005	1	1,2,3,4,6,7,8,9-OCDF	0.0005 U	3.40E-09 U	NA
W002	11/21/2005	5	1,2,3,4,6,7,8,9-OCDF	**0.065**	**5.80E-07**	NA
W003	11/21/2005	7	1,2,3,4,6,7,8,9-OCDF	0.0005 U	3.30E-09 U	NA
W004	11/21/2005	7	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.90E-09 U	NA
W005	11/21/2005	7	1,2,3,4,6,7,8,9-OCDF	0.0005 UJ	7.00E-09 UJ	NA
W006	11/21/2005	6	1,2,3,4,6,7,8,9-OCDF	0.0005 U	3.20E-08 U	NA
W007	11/21/2005	4	1,2,3,4,6,7,8,9-OCDF	0.0005 U	1.10E-08 U	NA
W008	11/20/2005	3	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.40E-09 U	NA
W009	11/20/2005	5	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.50E-09 U	NA
W010	11/20/2005	5	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.40E-09 U	NA
W011	11/20/2005	3	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.10E-09 U	NA
W011	11/20/2005	9	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.30E-09 U	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	18.5	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.50E-09 U	NA
W012	11/19/2005	6	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.20E-09 U	NA
W013	11/19/2005	5	1,2,3,4,6,7,8,9-OCDF	0.0005 U	9.00E-09 U	NA
W014	11/19/2005	5	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.60E-09 U	NA
W015	11/19/2005	1	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.80E-09 U	NA
W016	11/19/2005	5	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.90E-09 U	NA
W017	11/18/2005	3	1,2,3,4,6,7,8,9-OCDF	0.0005 U	5.90E-09 U	NA
W017	11/18/2005	7	1,2,3,4,6,7,8,9-OCDF	0.0005 U	4.70E-09 U	NA
W018	11/18/2005	6	1,2,3,4,6,7,8,9-OCDF	0.0005 U	4.80E-09 U	NA
W019	11/18/2005	4	1,2,3,4,6,7,8,9-OCDF	0.0005 U	6.60E-09 U	NA
W020	11/18/2005	5	1,2,3,4,6,7,8,9-OCDF	0.0005 U	6.20E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,4,6,7,8,9-OCDF	**0.0041 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,4,6,7,8,9-OCDF	**0.0049**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,4,6,7,8,9-OCDF	**0.28 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,4,6,7,8,9-OCDF	**0.00043 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,4,6,7,8,9-OCDF	**0.0031**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,4,6,7,8,9-OCDF	**0.0046**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,4,6,7,8,9-OCDF	**0.00004**	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,4,6,7,8,9-OCDF	**0.00015**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,4,6,7,8,9-OCDF	0.00000065 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,4,6,7,8,9-OCDF	**0.008**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,4,6,7,8,9-OCDF	**0.0022**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,4,6,7,8,9-OCDF	**0.0011**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,4,6,7,8,9-OCDF	**0.059 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,4,6,7,8,9-OCDF	**0.00037**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,4,6,7,8,9-OCDF	**0.00022**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,4,6,7,8,9-OCDF	**0.000047**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,4,6,7,8,9-OCDF	**0.0019**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,4,6,7,8,9-OCDF	**0.000075**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,4,6,7,8,9-OCDF	**0.000719**	**2.88E-08**	NA
WDL-201-S	2/12/2004	6	1,2,3,4,6,7,8,9-OCDF	**0.0164**	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,4,6,7,8,9-OCDF	**0.00012**	1.70E-08 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,4,6,7,8,9-OCDF	**0.0000321**	1.70E-08 U	NA
WDL-204-S	2/12/2004	5	1,2,3,4,6,7,8,9-OCDF	**0.000482**	**1.10E-08**	NA
W001	11/21/2005	1	1,2,3,4,6,7,8-HpCDD	0.00025 U	2.60E-09 U	NA
W002	11/21/2005	5	1,2,3,4,6,7,8-HpCDD	0.00025 U	**5.00E-08 J**	NA
W003	11/21/2005	7	1,2,3,4,6,7,8-HpCDD	0.00025 U	1.90E-09 U	NA
W004	11/21/2005	7	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.00E-09 U	NA
W005	11/21/2005	7	1,2,3,4,6,7,8-HpCDD	0.00025 UJ	6.20E-09 UJ	NA
W006	11/21/2005	6	1,2,3,4,6,7,8-HpCDD	0.00025 U	1.80E-08 U	NA
W007	11/21/2005	4	1,2,3,4,6,7,8-HpCDD	0.00025 U	1.30E-08 U	NA
W008	11/20/2005	3	1,2,3,4,6,7,8-HpCDD	0.00025 U	3.60E-09 U	NA
W009	11/20/2005	5	1,2,3,4,6,7,8-HpCDD	0.00025 U	3.50E-09 U	NA
W010	11/20/2005	5	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.70E-09 U	NA
W011	11/20/2005	3	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.30E-09 U	NA
W011	11/20/2005	9	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.40E-09 U	NA
W011	11/20/2005	18.5	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.40E-09 U	NA
W012	11/19/2005	6	1,2,3,4,6,7,8-HpCDD	0.00025 U	3.90E-09 U	NA
W013	11/19/2005	5	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.60E-09 U	NA
W014	11/19/2005	5	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.00E-09 U	NA
W015	11/19/2005	1	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.30E-09 U	NA
W016	11/19/2005	5	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.10E-09 U	NA
W017	11/18/2005	3	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.40E-09 U	NA
W017	11/18/2005	7	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.10E-09 U	NA
W018	11/18/2005	6	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.60E-09 U	NA
W019	11/18/2005	4	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.70E-09 U	NA
W020	11/18/2005	5	1,2,3,4,6,7,8-HpCDD	0.00025 U	4.60E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,4,6,7,8-HpCDD	**0.0079 J**	NT	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	2.25	1,2,3,4,6,7,8-HpCDD	**0.007 J**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,4,6,7,8-HpCDD	**0.031 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,4,6,7,8-HpCDD	**0.00045 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,4,6,7,8-HpCDD	**0.0056 J**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,4,6,7,8-HpCDD	**0.0045**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,4,6,7,8-HpCDD	**0.000077**	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,4,6,7,8-HpCDD	**0.000091**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,4,6,7,8-HpCDD	0.00000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,4,6,7,8-HpCDD	**0.012**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,4,6,7,8-HpCDD	**0.002**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,4,6,7,8-HpCDD	**0.001**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,4,6,7,8-HpCDD	**0.007 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,4,6,7,8-HpCDD	**0.00018**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,4,6,7,8-HpCDD	**0.00024**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,4,6,7,8-HpCDD	**0.000067**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,4,6,7,8-HpCDD	**0.0063**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,4,6,7,8-HpCDD	**0.000052**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,4,6,7,8-HpCDD	**0.00082**	**1.05E-08 N**	NA
WDL-201-S	2/12/2004	6	1,2,3,4,6,7,8-HpCDD	**0.0028**	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,4,6,7,8-HpCDD	**0.0000905**	7.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,4,6,7,8-HpCDD	**0.0000285**	8.00E-09 U	NA
WDL-204-S	2/12/2004	5	1,2,3,4,6,7,8-HpCDD	**0.000335**	**5.60E-09**	NA
W001	11/21/2005	1	1,2,3,4,6,7,8-HpCDF	0.00016 U	1.60E-09 U	NA
W002	11/21/2005	5	1,2,3,4,6,7,8-HpCDF	**0.015 J**	**1.30E-07**	NA
W003	11/21/2005	7	1,2,3,4,6,7,8-HpCDF	0.00016 U	2.00E-09 U	NA
W004	11/21/2005	7	1,2,3,4,6,7,8-HpCDF	0.00016 U	2.00E-09 U	NA
W005	11/21/2005	7	1,2,3,4,6,7,8-HpCDF	0.00016 UJ	3.40E-09 UJ	NA
W006	11/21/2005	6	1,2,3,4,6,7,8-HpCDF	0.00016 U	1.20E-08 U	NA
W007	11/21/2005	4	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.50E-09 U	NA
W008	11/20/2005	3	1,2,3,4,6,7,8-HpCDF	0.00016 U	2.40E-09 U	NA
W009	11/20/2005	5	1,2,3,4,6,7,8-HpCDF	0.00016 U	2.90E-09 U	NA
W010	11/20/2005	5	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.30E-09 U	NA
W011	11/20/2005	3	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.00E-09 U	NA
W011	11/20/2005	9	1,2,3,4,6,7,8-HpCDF	0.00016 U	2.90E-09 U	NA
W011	11/20/2005	18.5	1,2,3,4,6,7,8-HpCDF	0.00016 U	2.90E-09 U	NA
W012	11/19/2005	6	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.20E-09 U	NA
W013	11/19/2005	5	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.80E-09 U	NA
W014	11/19/2005	5	1,2,3,4,6,7,8-HpCDF	0.00016 U	6.30E-09 U	NA
W015	11/19/2005	1	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.40E-09 U	NA
W016	11/19/2005	5	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.00E-09 U	NA
W017	11/18/2005	3	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.60E-09 U	NA
W017	11/18/2005	7	1,2,3,4,6,7,8-HpCDF	0.00016 U	2.50E-09 U	NA
W018	11/18/2005	6	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.10E-09 U	NA
W019	11/18/2005	4	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.30E-09 U	NA
W020	11/18/2005	5	1,2,3,4,6,7,8-HpCDF	0.00016 U	3.20E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,4,6,7,8-HpCDF	**0.0017 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,4,6,7,8-HpCDF	**0.0024**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,4,6,7,8-HpCDF	**0.081 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,4,6,7,8-HpCDF	**0.0013 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,4,6,7,8-HpCDF	**0.0011**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,4,6,7,8-HpCDF	**0.0014**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,4,6,7,8-HpCDF	**0.000018**	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,4,6,7,8-HpCDF	**0.0002**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,4,6,7,8-HpCDF	0.00000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,4,6,7,8-HpCDF	**0.0028**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,4,6,7,8-HpCDF	**0.00083**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,4,6,7,8-HpCDF	**0.00042**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,4,6,7,8-HpCDF	**0.025 J**	NT	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	8.25	1,2,3,4,6,7,8-HpCDF	**0.00043**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,4,6,7,8-HpCDF	**0.000087**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,4,6,7,8-HpCDF	**0.000023**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,4,6,7,8-HpCDF	**0.0011**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,4,6,7,8-HpCDF	**0.000053**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,4,6,7,8-HpCDF	**0.000281**	**1.32E-08**	NA
WDL-201-S	2/12/2004	6	1,2,3,4,6,7,8-HpCDF	**0.0051**	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,4,6,7,8-HpCDF	**0.000037**	1.70E-08 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,4,6,7,8-HpCDF	**0.000041**	1.80E-08 U	NA
WDL-204-S	2/12/2004	5	1,2,3,4,6,7,8-HpCDF	**0.000337**	**4.80E-09**	NA
W001	11/21/2005	1	1,2,3,4,7,8,9-HpCDF	0.00035 U	1.80E-09 U	NA
W002	11/21/2005	5	1,2,3,4,7,8,9-HpCDF	0.00035 U	1.60E-08 U	NA
W003	11/21/2005	7	1,2,3,4,7,8,9-HpCDF	0.00035 U	1.60E-09 U	NA
W004	11/21/2005	7	1,2,3,4,7,8,9-HpCDF	0.00035 U	1.30E-09 U	NA
W005	11/21/2005	7	1,2,3,4,7,8,9-HpCDF	0.00035 UJ	1.20E-09 UJ	NA
W006	11/21/2005	6	1,2,3,4,7,8,9-HpCDF	0.00035 U	1.20E-09 U	NA
W007	11/21/2005	4	1,2,3,4,7,8,9-HpCDF	0.00035 U	1.50E-09 U	NA
W008	11/20/2005	3	1,2,3,4,7,8,9-HpCDF	0.00035 U	2.70E-09 U	NA
W009	11/20/2005	5	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.20E-09 U	NA
W010	11/20/2005	5	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.70E-09 U	NA
W011	11/20/2005	3	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.20E-09 U	NA
W011	11/20/2005	9	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.20E-09 U	NA
W011	11/20/2005	18.5	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.20E-09 U	NA
W012	11/19/2005	6	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.50E-09 U	NA
W013	11/19/2005	5	1,2,3,4,7,8,9-HpCDF	0.00035 U	4.20E-09 U	NA
W014	11/19/2005	5	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.10E-09 U	NA
W015	11/19/2005	1	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.80E-09 U	NA
W016	11/19/2005	5	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.30E-09 U	NA
W017	11/18/2005	3	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.90E-09 U	NA
W017	11/18/2005	7	1,2,3,4,7,8,9-HpCDF	0.00035 U	2.70E-09 U	NA
W018	11/18/2005	6	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.40E-09 U	NA
W019	11/18/2005	4	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.60E-09 U	NA
W020	11/18/2005	5	1,2,3,4,7,8,9-HpCDF	0.00035 U	3.50E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,4,7,8,9-HpCDF	**0.00016 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,4,7,8,9-HpCDF	**0.00025**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,4,7,8,9-HpCDF	**0.0066 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,4,7,8,9-HpCDF	**0.000062 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,4,7,8,9-HpCDF	**0.00009 J**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,4,7,8,9-HpCDF	**0.0001**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,4,7,8,9-HpCDF	0.00000034 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,4,7,8,9-HpCDF	0.00000044 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,4,7,8,9-HpCDF	0.00000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,4,7,8,9-HpCDF	**0.00027**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,4,7,8,9-HpCDF	**0.000069**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,4,7,8,9-HpCDF	**0.000034**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,4,7,8,9-HpCDF	**0.0012 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,4,7,8,9-HpCDF	**0.00002**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,4,7,8,9-HpCDF	**0.0000064 J**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,4,7,8,9-HpCDF	0.00000031 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,4,7,8,9-HpCDF	**0.000081**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,4,7,8,9-HpCDF	0.00000035 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,4,7,8,9-HpCDF	**0.0000322**	1.20E-08 U	NA
WDL-201-S	2/12/2004	6	1,2,3,4,7,8,9-HpCDF	0.00116 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,4,7,8,9-HpCDF	**0.0000031**	1.20E-08 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,4,7,8,9-HpCDF	**0.0000058**	1.20E-08 U	NA
WDL-204-S	2/12/2004	5	1,2,3,4,7,8,9-HpCDF	**0.0000107 N**	**6.90E-09**	NA
W001	11/21/2005	1	1,2,3,4,7,8-HxCDD	0.00061 U	2.90E-09 U	NA
W002	11/21/2005	5	1,2,3,4,7,8-HxCDD	0.00061 U	3.10E-09 U	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W003	11/21/2005	7	1,2,3,4,7,8-HxCDD	0.00061 U	2.30E-09 U	NA
W004	11/21/2005	7	1,2,3,4,7,8-HxCDD	0.00061 U	2.00E-09 U	NA
W005	11/21/2005	7	1,2,3,4,7,8-HxCDD	0.00061 UJ	2.00E-09 UJ	NA
W006	11/21/2005	6	1,2,3,4,7,8-HxCDD	0.00061 U	2.30E-09 U	NA
W007	11/21/2005	4	1,2,3,4,7,8-HxCDD	0.00061 U	2.00E-09 U	NA
W008	11/20/2005	3	1,2,3,4,7,8-HxCDD	0.00061 U	3.30E-09 U	NA
W009	11/20/2005	5	1,2,3,4,7,8-HxCDD	0.00061 U	4.10E-09 U	NA
W010	11/20/2005	5	1,2,3,4,7,8-HxCDD	0.00061 U	4.70E-09 U	NA
W011	11/20/2005	3	1,2,3,4,7,8-HxCDD	0.00061 U	4.60E-09 U	NA
W011	11/20/2005	9	1,2,3,4,7,8-HxCDD	0.00061 U	4.20E-09 U	NA
W011	11/20/2005	18.5	1,2,3,4,7,8-HxCDD	0.00061 U	4.30E-09 U	NA
W012	11/19/2005	6	1,2,3,4,7,8-HxCDD	0.00061 U	5.10E-09 U	NA
W013	11/19/2005	5	1,2,3,4,7,8-HxCDD	0.00061 U	4.60E-09 U	NA
W014	11/19/2005	5	1,2,3,4,7,8-HxCDD	0.00061 U	4.40E-09 U	NA
W015	11/19/2005	1	1,2,3,4,7,8-HxCDD	0.00061 U	4.80E-09 U	NA
W016	11/19/2005	5	1,2,3,4,7,8-HxCDD	0.00061 U	4.20E-09 U	NA
W017	11/18/2005	3	1,2,3,4,7,8-HxCDD	0.00061 U	5.20E-09 U	NA
W017	11/18/2005	7	1,2,3,4,7,8-HxCDD	0.00061 U	4.40E-09 U	NA
W018	11/18/2005	6	1,2,3,4,7,8-HxCDD	0.00061 U	4.40E-09 U	NA
W019	11/18/2005	4	1,2,3,4,7,8-HxCDD	0.00061 U	5.50E-09 U	NA
W020	11/18/2005	5	1,2,3,4,7,8-HxCDD	0.00061 U	4.60E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,4,7,8-HxCDD	**0.00014 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,4,7,8-HxCDD	**0.00029**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,4,7,8-HxCDD	**0.0011 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,4,7,8-HxCDD	0.00000098 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,4,7,8-HxCDD	**0.0002**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,4,7,8-HxCDD	**0.00011**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,4,7,8-HxCDD	0.00000069 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,4,7,8-HxCDD	0.0000009 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,4,7,8-HxCDD	0.00000066 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,4,7,8-HxCDD	**0.00022**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,4,7,8-HxCDD	**0.000053**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,4,7,8-HxCDD	**0.000026**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,4,7,8-HxCDD	**0.00022 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,4,7,8-HxCDD	0.00000094 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,4,7,8-HxCDD	**0.0000053 J**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,4,7,8-HxCDD	0.00000063 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,4,7,8-HxCDD	**0.000058**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,4,7,8-HxCDD	0.00000071 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,4,7,8-HxCDD	**0.0000279**	6.00E-09 U	NA
WDL-201-S	2/12/2004	6	1,2,3,4,7,8-HxCDD	0.00116 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,4,7,8-HxCDD	**0.0000026 N**	6.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,4,7,8-HxCDD	**0.000002**	6.00E-09 U	NA
WDL-204-S	2/12/2004	5	1,2,3,4,7,8-HxCDD	0.00000094 U	**4.50E-09**	NA
W001	11/21/2005	1	1,2,3,4,7,8-HxCDF	0.0005 U	3.00E-09 U	NA
W002	11/21/2005	5	1,2,3,4,7,8-HxCDF	0.0005 U	1.10E-08 U	NA
W003	11/21/2005	7	1,2,3,4,7,8-HxCDF	0.0005 U	2.30E-09 U	NA
W004	11/21/2005	7	1,2,3,4,7,8-HxCDF	0.0005 U	2.50E-09 U	NA
W005	11/21/2005	7	1,2,3,4,7,8-HxCDF	0.0005 UJ	2.70E-09 UJ	NA
W006	11/21/2005	6	1,2,3,4,7,8-HxCDF	0.0005 U	2.60E-09 U	NA
W007	11/21/2005	4	1,2,3,4,7,8-HxCDF	0.0005 U	2.00E-09 U	NA
W008	11/20/2005	3	1,2,3,4,7,8-HxCDF	0.0005 U	4.70E-09 U	NA
W009	11/20/2005	5	1,2,3,4,7,8-HxCDF	0.0005 U	4.80E-09 U	NA
W010	11/20/2005	5	1,2,3,4,7,8-HxCDF	0.0005 U	5.30E-09 U	NA
W011	11/20/2005	3	1,2,3,4,7,8-HxCDF	0.0005 U	4.80E-09 U	NA
W011	11/20/2005	9	1,2,3,4,7,8-HxCDF	0.0005 U	5.40E-09 U	NA
W011	11/20/2005	18.5	1,2,3,4,7,8-HxCDF	0.0005 U	5.00E-09 U	NA
W012	11/19/2005	6	1,2,3,4,7,8-HxCDF	0.0005 U	4.90E-09 U	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W013	11/19/2005	5	1,2,3,4,7,8-HxCDF	0.0005 U	6.40E-09 U	NA
W014	11/19/2005	5	1,2,3,4,7,8-HxCDF	0.0005 U	5.00E-09 U	NA
W015	11/19/2005	1	1,2,3,4,7,8-HxCDF	0.0005 U	4.80E-09 U	NA
W016	11/19/2005	5	1,2,3,4,7,8-HxCDF	0.0005 U	4.80E-09 U	NA
W017	11/18/2005	3	1,2,3,4,7,8-HxCDF	0.0005 U	5.00E-09 U	NA
W017	11/18/2005	7	1,2,3,4,7,8-HxCDF	0.0005 U	4.20E-09 U	NA
W018	11/18/2005	6	1,2,3,4,7,8-HxCDF	0.0005 U	4.70E-09 U	NA
W019	11/18/2005	4	1,2,3,4,7,8-HxCDF	0.0005 U	5.00E-09 U	NA
W020	11/18/2005	5	1,2,3,4,7,8-HxCDF	0.0005 U	5.80E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,4,7,8-HxCDF	**0.00024 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,4,7,8-HxCDF	**0.00028 J**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,4,7,8-HxCDF	**0.0067 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,4,7,8-HxCDF	**0.000081 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,4,7,8-HxCDF	**0.00023 J**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,4,7,8-HxCDF	**0.00018 J**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,4,7,8-HxCDF	**0.0000037 J**	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,4,7,8-HxCDF	**0.0000062 J**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,4,7,8-HxCDF	0.00000038 UJ	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,4,7,8-HxCDF	**0.00047 J**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,4,7,8-HxCDF	**0.00016 J**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,4,7,8-HxCDF	**0.000095 J**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,4,7,8-HxCDF	**0.0017 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,4,7,8-HxCDF	**0.000067 J**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,4,7,8-HxCDF	**0.000016 J**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,4,7,8-HxCDF	**0.0000062 J**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,4,7,8-HxCDF	**0.00022 J**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,4,7,8-HxCDF	0.0000004 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,4,7,8-HxCDF	**0.000117**	**3.50E-09**	NA
WDL-201-S	2/12/2004	6	1,2,3,4,7,8-HxCDF	0.00134 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,4,7,8-HxCDF	**0.0000088**	1.70E-08 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,4,7,8-HxCDF	**0.000037**	1.70E-08 U	NA
WDL-204-S	2/12/2004	5	1,2,3,4,7,8-HxCDF	**0.0000405**	**4.90E-09**	NA
W001	11/21/2005	1	1,2,3,6,7,8-HxCDD	0.00083 U	2.70E-09 U	NA
W002	11/21/2005	5	1,2,3,6,7,8-HxCDD	0.00083 U	4.40E-09 U	NA
W003	11/21/2005	7	1,2,3,6,7,8-HxCDD	0.00083 U	2.20E-09 U	NA
W004	11/21/2005	7	1,2,3,6,7,8-HxCDD	0.00083 U	1.80E-09 U	NA
W005	11/21/2005	7	1,2,3,6,7,8-HxCDD	0.00083 UJ	1.90E-09 UJ	NA
W006	11/21/2005	6	1,2,3,6,7,8-HxCDD	0.00083 U	2.10E-09 U	NA
W007	11/21/2005	4	1,2,3,6,7,8-HxCDD	0.00083 U	1.90E-09 U	NA
W008	11/20/2005	3	1,2,3,6,7,8-HxCDD	0.00083 U	3.20E-09 U	NA
W009	11/20/2005	5	1,2,3,6,7,8-HxCDD	0.00083 U	4.00E-09 U	NA
W010	11/20/2005	5	1,2,3,6,7,8-HxCDD	0.00083 U	4.50E-09 U	NA
W011	11/20/2005	3	1,2,3,6,7,8-HxCDD	0.00083 U	4.40E-09 U	NA
W011	11/20/2005	9	1,2,3,6,7,8-HxCDD	0.00083 U	4.00E-09 U	NA
W011	11/20/2005	18.5	1,2,3,6,7,8-HxCDD	0.00083 U	4.10E-09 U	NA
W012	11/19/2005	6	1,2,3,6,7,8-HxCDD	0.00083 U	4.80E-09 U	NA
W013	11/19/2005	5	1,2,3,6,7,8-HxCDD	0.00083 U	4.40E-09 U	NA
W014	11/19/2005	5	1,2,3,6,7,8-HxCDD	0.00083 U	4.10E-09 U	NA
W015	11/19/2005	1	1,2,3,6,7,8-HxCDD	0.00083 U	4.60E-09 U	NA
W016	11/19/2005	5	1,2,3,6,7,8-HxCDD	0.00083 U	4.00E-09 U	NA
W017	11/18/2005	3	1,2,3,6,7,8-HxCDD	0.00083 U	5.00E-09 U	NA
W017	11/18/2005	7	1,2,3,6,7,8-HxCDD	0.00083 U	4.10E-09 U	NA
W018	11/18/2005	6	1,2,3,6,7,8-HxCDD	0.00083 U	4.20E-09 U	NA
W019	11/18/2005	4	1,2,3,6,7,8-HxCDD	0.00083 U	5.30E-09 U	NA
W020	11/18/2005	5	1,2,3,6,7,8-HxCDD	0.00083 U	4.40E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,6,7,8-HxCDD	**0.0017 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,6,7,8-HxCDD	**0.0013**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,6,7,8-HxCDD	**0.0059 J**	NT	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	7	1,2,3,6,7,8-HxCDD	**0.000053 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,6,7,8-HxCDD	**0.0029**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,6,7,8-HxCDD	**0.00039**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,6,7,8-HxCDD	**0.0000048 J**	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,6,7,8-HxCDD	**0.000009**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,6,7,8-HxCDD	0.00000045 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,6,7,8-HxCDD	**0.0014**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,6,7,8-HxCDD	**0.00021**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,6,7,8-HxCDD	**0.00011**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,6,7,8-HxCDD	**0.0011 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,6,7,8-HxCDD	**0.000014 J**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,6,7,8-HxCDD	**0.000021**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,6,7,8-HxCDD	**0.0000047 J**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,6,7,8-HxCDD	**0.0003**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,6,7,8-HxCDD	0.00000049 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,6,7,8-HxCDD	**0.0000744**	**1.80E-09**	NA
WDL-201-S	2/12/2004	6	1,2,3,6,7,8-HxCDD	0.00134 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,6,7,8-HxCDD	**0.0000072**	8.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,6,7,8-HxCDD	**0.000003**	8.00E-09 U	NA
WDL-204-S	2/12/2004	5	1,2,3,6,7,8-HxCDD	**0.0000234**	**5.00E-09**	NA
W001	11/21/2005	1	1,2,3,6,7,8-HxCDF	0.00063 U	2.80E-09 U	NA
W002	11/21/2005	5	1,2,3,6,7,8-HxCDF	0.00063 U	8.30E-09 U	NA
W003	11/21/2005	7	1,2,3,6,7,8-HxCDF	0.00063 U	2.20E-09 U	NA
W004	11/21/2005	7	1,2,3,6,7,8-HxCDF	0.00063 U	2.30E-09 U	NA
W005	11/21/2005	7	1,2,3,6,7,8-HxCDF	0.00063 UJ	2.50E-09 UJ	NA
W006	11/21/2005	6	1,2,3,6,7,8-HxCDF	0.00063 U	2.40E-09 U	NA
W007	11/21/2005	4	1,2,3,6,7,8-HxCDF	0.00063 U	1.80E-09 U	NA
W008	11/20/2005	3	1,2,3,6,7,8-HxCDF	0.00063 U	4.60E-09 U	NA
W009	11/20/2005	5	1,2,3,6,7,8-HxCDF	0.00063 U	4.70E-09 U	NA
W010	11/20/2005	5	1,2,3,6,7,8-HxCDF	0.00063 U	5.20E-09 U	NA
W011	11/20/2005	3	1,2,3,6,7,8-HxCDF	0.00063 U	4.60E-09 U	NA
W011	11/20/2005	9	1,2,3,6,7,8-HxCDF	0.00063 U	5.30E-09 U	NA
W011	11/20/2005	18.5	1,2,3,6,7,8-HxCDF	0.00063 U	4.80E-09 U	NA
W012	11/19/2005	6	1,2,3,6,7,8-HxCDF	0.00063 U	4.80E-09 U	NA
W013	11/19/2005	5	1,2,3,6,7,8-HxCDF	0.00063 U	6.20E-09 U	NA
W014	11/19/2005	5	1,2,3,6,7,8-HxCDF	0.00063 U	4.80E-09 U	NA
W015	11/19/2005	1	1,2,3,6,7,8-HxCDF	0.00063 U	4.70E-09 U	NA
W016	11/19/2005	5	1,2,3,6,7,8-HxCDF	0.00063 U	4.60E-09 U	NA
W017	11/18/2005	3	1,2,3,6,7,8-HxCDF	0.00063 U	4.90E-09 U	NA
W017	11/18/2005	7	1,2,3,6,7,8-HxCDF	0.00063 U	4.10E-09 U	NA
W018	11/18/2005	6	1,2,3,6,7,8-HxCDF	0.00063 U	4.60E-09 U	NA
W019	11/18/2005	4	1,2,3,6,7,8-HxCDF	0.00063 U	4.90E-09 U	NA
W020	11/18/2005	5	1,2,3,6,7,8-HxCDF	0.00063 U	5.60E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,6,7,8-HxCDF	**0.00023 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,6,7,8-HxCDF	**0.00042**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,6,7,8-HxCDF	**0.01 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,6,7,8-HxCDF	**0.000079 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,6,7,8-HxCDF	**0.00014**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,6,7,8-HxCDF	**0.00015**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,6,7,8-HxCDF	0.0000034 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,6,7,8-HxCDF	**0.0000066 J**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,6,7,8-HxCDF	0.0000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,6,7,8-HxCDF	**0.00037**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,6,7,8-HxCDF	**0.0001**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,6,7,8-HxCDF	**0.00005**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,6,7,8-HxCDF	**0.0013 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,6,7,8-HxCDF	**0.000019**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,6,7,8-HxCDF	**0.000011**	NT	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	2.25	1,2,3,6,7,8-HxCDF	**0.0000042 J**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,6,7,8-HxCDF	**0.0001**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,6,7,8-HxCDF	0.0000035 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,6,7,8-HxCDF	**0.0000496**	**2.10E-09 N**	NA
WDL-201-S	2/12/2004	6	1,2,3,6,7,8-HxCDF	0.00143 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,6,7,8-HxCDF	**0.0000047**	8.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,6,7,8-HxCDF	**0.0000156**	9.00E-09 U	NA
WDL-204-S	2/12/2004	5	1,2,3,6,7,8-HxCDF	**0.0000267**	**3.90E-09**	NA
W001	11/21/2005	1	1,2,3,7,8,9-HxCDD	0.00048 U	2.60E-09 U	NA
W002	11/21/2005	5	1,2,3,7,8,9-HxCDD	0.00048 U	4.10E-09 U	NA
W003	11/21/2005	7	1,2,3,7,8,9-HxCDD	0.00048 U	2.10E-09 U	NA
W004	11/21/2005	7	1,2,3,7,8,9-HxCDD	0.00048 U	1.80E-09 U	NA
W005	11/21/2005	7	1,2,3,7,8,9-HxCDD	0.00048 UJ	1.80E-09 UJ	NA
W006	11/21/2005	6	1,2,3,7,8,9-HxCDD	0.00048 U	2.10E-09 U	NA
W007	11/21/2005	4	1,2,3,7,8,9-HxCDD	0.00048 U	1.80E-09 U	NA
W008	11/20/2005	3	1,2,3,7,8,9-HxCDD	0.00048 U	3.00E-09 U	NA
W009	11/20/2005	5	1,2,3,7,8,9-HxCDD	0.00048 U	3.80E-09 U	NA
W010	11/20/2005	5	1,2,3,7,8,9-HxCDD	0.00048 U	4.30E-09 U	NA
W011	11/20/2005	3	1,2,3,7,8,9-HxCDD	0.00048 U	4.20E-09 U	NA
W011	11/20/2005	9	1,2,3,7,8,9-HxCDD	0.00048 U	3.80E-09 U	NA
W011	11/20/2005	18.5	1,2,3,7,8,9-HxCDD	0.00048 U	3.90E-09 U	NA
W012	11/19/2005	6	1,2,3,7,8,9-HxCDD	0.00048 U	4.60E-09 U	NA
W013	11/19/2005	5	1,2,3,7,8,9-HxCDD	0.00048 U	4.20E-09 U	NA
W014	11/19/2005	5	1,2,3,7,8,9-HxCDD	0.00048 U	4.00E-09 U	NA
W015	11/19/2005	1	1,2,3,7,8,9-HxCDD	0.00048 U	4.40E-09 U	NA
W016	11/19/2005	5	1,2,3,7,8,9-HxCDD	0.00048 U	3.80E-09 U	NA
W017	11/18/2005	3	1,2,3,7,8,9-HxCDD	0.00048 U	4.80E-09 U	NA
W017	11/18/2005	7	1,2,3,7,8,9-HxCDD	0.00048 U	4.00E-09 U	NA
W018	11/18/2005	6	1,2,3,7,8,9-HxCDD	0.00048 U	4.00E-09 U	NA
W019	11/18/2005	4	1,2,3,7,8,9-HxCDD	0.00048 U	5.00E-09 U	NA
W020	11/18/2005	5	1,2,3,7,8,9-HxCDD	0.00048 U	4.20E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,7,8,9-HxCDD	**0.00037 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,7,8,9-HxCDD	**0.00075**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,7,8,9-HxCDD	**0.0018 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,7,8,9-HxCDD	0.00000065 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,7,8,9-HxCDD	**0.0014**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,7,8,9-HxCDD	**0.00026**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,7,8,9-HxCDD	0.00000046 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,7,8,9-HxCDD	0.0000006 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,7,8,9-HxCDD	0.00000044 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,7,8,9-HxCDD	**0.00045**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,7,8,9-HxCDD	**0.00013**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,7,8,9-HxCDD	**0.000042**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,7,8,9-HxCDD	**0.00027 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,7,8,9-HxCDD	0.00000062 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,7,8,9-HxCDD	**0.000008**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,7,8,9-HxCDD	0.00000042 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,7,8,9-HxCDD	**0.00015**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,7,8,9-HxCDD	0.00000047 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,7,8,9-HxCDD	**0.0000663**	**3.00E-09**	NA
WDL-201-S	2/12/2004	6	1,2,3,7,8,9-HxCDD	0.00125 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,7,8,9-HxCDD	**0.0000062**	1.40E-08 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,7,8,9-HxCDD	**0.0000053**	1.40E-08 U	NA
WDL-204-S	2/12/2004	5	1,2,3,7,8,9-HxCDD	**0.0000118**	**8.10E-09**	NA
W001	11/21/2005	1	1,2,3,7,8,9-HxCDF	0.00074 U	3.20E-09 U	NA
W002	11/21/2005	5	1,2,3,7,8,9-HxCDF	0.00074 U	5.00E-09 U	NA
W003	11/21/2005	7	1,2,3,7,8,9-HxCDF	0.00074 U	2.50E-09 U	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W004	11/21/2005	7	1,2,3,7,8,9-HxCDF	0.00074 U	2.60E-09 U	NA
W005	11/21/2005	7	1,2,3,7,8,9-HxCDF	0.00074 UJ	2.80E-09 UJ	NA
W006	11/21/2005	6	1,2,3,7,8,9-HxCDF	0.00074 U	2.80E-09 U	NA
W007	11/21/2005	4	1,2,3,7,8,9-HxCDF	0.00074 U	2.10E-09 U	NA
W008	11/20/2005	3	1,2,3,7,8,9-HxCDF	0.00074 U	5.10E-09 U	NA
W009	11/20/2005	5	1,2,3,7,8,9-HxCDF	0.00074 U	5.20E-09 U	NA
W010	11/20/2005	5	1,2,3,7,8,9-HxCDF	0.00074 U	5.80E-09 U	NA
W011	11/20/2005	3	1,2,3,7,8,9-HxCDF	0.00074 U	5.20E-09 U	NA
W011	11/20/2005	9	1,2,3,7,8,9-HxCDF	0.00074 U	5.90E-09 U	NA
W011	11/20/2005	18.5	1,2,3,7,8,9-HxCDF	0.00074 U	5.40E-09 U	NA
W012	11/19/2005	6	1,2,3,7,8,9-HxCDF	0.00074 U	5.40E-09 U	NA
W013	11/19/2005	5	1,2,3,7,8,9-HxCDF	0.00074 U	6.90E-09 U	NA
W014	11/19/2005	5	1,2,3,7,8,9-HxCDF	0.00074 U	5.40E-09 U	NA
W015	11/19/2005	1	1,2,3,7,8,9-HxCDF	0.00074 U	5.30E-09 U	NA
W016	11/19/2005	5	1,2,3,7,8,9-HxCDF	0.00074 U	5.20E-09 U	NA
W017	11/18/2005	3	1,2,3,7,8,9-HxCDF	0.00074 U	5.50E-09 U	NA
W017	11/18/2005	7	1,2,3,7,8,9-HxCDF	0.00074 U	4.60E-09 U	NA
W018	11/18/2005	6	1,2,3,7,8,9-HxCDF	0.00074 U	5.10E-09 U	NA
W019	11/18/2005	4	1,2,3,7,8,9-HxCDF	0.00074 U	5.40E-09 U	NA
W020	11/18/2005	5	1,2,3,7,8,9-HxCDF	0.00074 U	6.30E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,7,8,9-HxCDF	0.0000073 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,7,8,9-HxCDF	**0.000033**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,7,8,9-HxCDF	**0.00031 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,7,8,9-HxCDF	0.0000048 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,7,8,9-HxCDF	**0.0000085**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,7,8,9-HxCDF	0.0000084 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,7,8,9-HxCDF	0.0000034 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,7,8,9-HxCDF	0.0000044 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,7,8,9-HxCDF	0.0000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,7,8,9-HxCDF	**0.000023 J**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,7,8,9-HxCDF	0.0000071 U	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,7,8,9-HxCDF	0.0000049 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,7,8,9-HxCDF	**0.00007 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,7,8,9-HxCDF	0.0000046 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,7,8,9-HxCDF	0.0000034 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,7,8,9-HxCDF	0.0000031 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,7,8,9-HxCDF	0.0000045 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,7,8,9-HxCDF	0.0000035 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,7,8,9-HxCDF	**0.0000059**	3.00E-08 U	NA
WDL-201-S	2/12/2004	6	1,2,3,7,8,9-HxCDF	0.00098 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,7,8,9-HxCDF	**0.0000014**	3.00E-08 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,7,8,9-HxCDF	**0.0000018**	3.10E-08 U	NA
WDL-204-S	2/12/2004	5	1,2,3,7,8,9-HxCDF	**0.0000054 N**	**8.70E-09**	NA
W001	11/21/2005	1	1,2,3,7,8-PeCDD	0.00029 U	3.50E-09 U	NA
W002	11/21/2005	5	1,2,3,7,8-PeCDD	0.00029 U	3.40E-09 U	NA
W003	11/21/2005	7	1,2,3,7,8-PeCDD	0.00029 U	4.10E-09 U	NA
W004	11/21/2005	7	1,2,3,7,8-PeCDD	0.00029 U	2.70E-09 U	NA
W005	11/21/2005	7	1,2,3,7,8-PeCDD	0.00029 UJ	2.80E-09 UJ	NA
W006	11/21/2005	6	1,2,3,7,8-PeCDD	0.00029 U	2.80E-09 U	NA
W007	11/21/2005	4	1,2,3,7,8-PeCDD	0.00029 U	3.20E-09 U	NA
W008	11/20/2005	3	1,2,3,7,8-PeCDD	0.00029 U	4.50E-09 U	NA
W009	11/20/2005	5	1,2,3,7,8-PeCDD	0.00029 U	4.50E-09 U	NA
W010	11/20/2005	5	1,2,3,7,8-PeCDD	0.00029 U	5.00E-09 U	NA
W011	11/20/2005	3	1,2,3,7,8-PeCDD	0.00029 U	4.80E-09 U	NA
W011	11/20/2005	9	1,2,3,7,8-PeCDD	0.00029 U	5.10E-09 U	NA
W011	11/20/2005	18.5	1,2,3,7,8-PeCDD	0.00029 U	5.50E-09 U	NA
W012	11/19/2005	6	1,2,3,7,8-PeCDD	0.00029 U	5.00E-09 U	NA
W013	11/19/2005	5	1,2,3,7,8-PeCDD	0.00029 U	5.00E-09 U	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W014	11/19/2005	5	1,2,3,7,8-PeCDD	0.00029 U	5.40E-09 U	NA
W015	11/19/2005	1	1,2,3,7,8-PeCDD	0.00029 U	5.60E-09 U	NA
W016	11/19/2005	5	1,2,3,7,8-PeCDD	0.00029 U	4.90E-09 U	NA
W017	11/18/2005	3	1,2,3,7,8-PeCDD	0.00029 U	5.20E-09 U	NA
W017	11/18/2005	7	1,2,3,7,8-PeCDD	0.00029 U	5.00E-09 U	NA
W018	11/18/2005	6	1,2,3,7,8-PeCDD	0.00029 U	5.20E-09 U	NA
W019	11/18/2005	4	1,2,3,7,8-PeCDD	0.00029 U	6.20E-09 U	NA
W020	11/18/2005	5	1,2,3,7,8-PeCDD	0.00029 U	4.80E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,7,8-PeCDD	**0.00031 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,7,8-PeCDD	**0.00037**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,7,8-PeCDD	**0.0079 J**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3,7,8-PeCDD	**0.000061 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,7,8-PeCDD	**0.00029**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,7,8-PeCDD	**0.00022**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,7,8-PeCDD	0.00000034 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,7,8-PeCDD	0.00000044 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,7,8-PeCDD	0.00000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,7,8-PeCDD	**0.00049**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,7,8-PeCDD	**0.00012**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,7,8-PeCDD	**0.000063**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,7,8-PeCDD	**0.0013 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,7,8-PeCDD	0.00000046 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,7,8-PeCDD	**0.000014**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,7,8-PeCDD	0.00000031 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,7,8-PeCDD	**0.000061**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,7,8-PeCDD	0.00000035 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,7,8-PeCDD	**0.0000607**	7.00E-09 U	NA
WDL-201-S	2/12/2004	6	1,2,3,7,8-PeCDD	**0.0011**	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,7,8-PeCDD	**0.0000041**	7.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,7,8-PeCDD	**0.0000033**	7.00E-09 U	NA
WDL-204-S	2/12/2004	5	1,2,3,7,8-PeCDD	**0.0000169**	**3.90E-09 N**	NA
W001	11/21/2005	1	1,2,3,7,8-PeCDF	0.00032 U	2.30E-09 U	NA
W002	11/21/2005	5	1,2,3,7,8-PeCDF	**0.04**	5.80E-09 U	NA
W003	11/21/2005	7	1,2,3,7,8-PeCDF	0.00032 U	2.80E-09 U	NA
W004	11/21/2005	7	1,2,3,7,8-PeCDF	0.00032 U	1.90E-09 U	NA
W005	11/21/2005	7	1,2,3,7,8-PeCDF	0.00032 UJ	2.10E-09 UJ	NA
W006	11/21/2005	6	1,2,3,7,8-PeCDF	0.00032 U	2.10E-09 U	NA
W007	11/21/2005	4	1,2,3,7,8-PeCDF	0.00032 U	1.60E-09 U	NA
W008	11/20/2005	3	1,2,3,7,8-PeCDF	0.00032 U	2.30E-09 U	NA
W009	11/20/2005	5	1,2,3,7,8-PeCDF	0.00032 U	3.00E-09 U	NA
W010	11/20/2005	5	1,2,3,7,8-PeCDF	0.00032 U	3.30E-09 U	NA
W011	11/20/2005	3	1,2,3,7,8-PeCDF	0.00032 U	2.90E-09 U	NA
W011	11/20/2005	9	1,2,3,7,8-PeCDF	0.00032 U	3.50E-09 U	NA
W011	11/20/2005	18.5	1,2,3,7,8-PeCDF	0.00032 U	2.90E-09 U	NA
W012	11/19/2005	6	1,2,3,7,8-PeCDF	0.00032 U	3.20E-09 U	NA
W013	11/19/2005	5	1,2,3,7,8-PeCDF	0.00032 U	3.30E-09 U	NA
W014	11/19/2005	5	1,2,3,7,8-PeCDF	0.00032 U	3.50E-09 U	NA
W015	11/19/2005	1	1,2,3,7,8-PeCDF	0.00032 U	3.20E-09 U	NA
W016	11/19/2005	5	1,2,3,7,8-PeCDF	0.00032 U	3.10E-09 U	NA
W017	11/18/2005	3	1,2,3,7,8-PeCDF	0.00032 U	3.20E-09 U	NA
W017	11/18/2005	7	1,2,3,7,8-PeCDF	0.00032 U	2.70E-09 U	NA
W018	11/18/2005	6	1,2,3,7,8-PeCDF	0.00032 U	3.10E-09 U	NA
W019	11/18/2005	4	1,2,3,7,8-PeCDF	0.00032 U	3.80E-09 U	NA
W020	11/18/2005	5	1,2,3,7,8-PeCDF	0.00032 U	3.30E-09 U	NA
WDL-101-S	8/14/2002	0.25	1,2,3,7,8-PeCDF	**0.00024 J**	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3,7,8-PeCDF	**0.00037**	NT	NA
WDL-101-S	8/14/2002	5	1,2,3,7,8-PeCDF	**0.023 J**	NT	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	7	1,2,3,7,8-PeCDF	**0.00015 J**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3,7,8-PeCDF	**0.00018**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3,7,8-PeCDF	**0.00021**	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3,7,8-PeCDF	0.00000034 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3,7,8-PeCDF	**0.000005 N**	NT	NA
WDL-102-S	8/14/2002	10	1,2,3,7,8-PeCDF	0.00000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3,7,8-PeCDF	**0.00069**	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3,7,8-PeCDF	**0.00013**	NT	NA
WDL-103-S	8/15/2002	5	1,2,3,7,8-PeCDF	**0.000073**	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3,7,8-PeCDF	**0.0059 J**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3,7,8-PeCDF	**0.000015 J**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3,7,8-PeCDF	**0.000018**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3,7,8-PeCDF	**0.000007**	NT	NA
WDL-104-S	8/15/2002	5	1,2,3,7,8-PeCDF	**0.00013**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3,7,8-PeCDF	**0.0000074**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3,7,8-PeCDF	**0.0000423**	**2.49E-08 N**	NA
WDL-201-S	2/12/2004	6	1,2,3,7,8-PeCDF	0.00107 U	NT	NA
WDL-202-S	2/12/2004	4	1,2,3,7,8-PeCDF	**0.0000028**	4.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	1,2,3,7,8-PeCDF	**0.0000109**	4.00E-09 U	NA
WDL-204-S	2/12/2004	5	1,2,3,7,8-PeCDF	0.00000095 U	**5.20E-09**	NA
W001	11/21/2005	1	2,3,4,6,7,8-HxCDF	0.00028 U	3.00E-09 U	NA
W002	11/21/2005	5	2,3,4,6,7,8-HxCDF	0.00028 U	6.50E-09 U	NA
W003	11/21/2005	7	2,3,4,6,7,8-HxCDF	0.00028 U	2.30E-09 U	NA
W004	11/21/2005	7	2,3,4,6,7,8-HxCDF	0.00028 U	2.50E-09 U	NA
W005	11/21/2005	7	2,3,4,6,7,8-HxCDF	0.00028 UJ	2.60E-09 UJ	NA
W006	11/21/2005	6	2,3,4,6,7,8-HxCDF	0.00028 U	2.60E-09 U	NA
W007	11/21/2005	4	2,3,4,6,7,8-HxCDF	0.00028 U	2.00E-09 U	NA
W008	11/20/2005	3	2,3,4,6,7,8-HxCDF	0.00028 U	4.90E-09 U	NA
W009	11/20/2005	5	2,3,4,6,7,8-HxCDF	0.00028 U	5.00E-09 U	NA
W010	11/20/2005	5	2,3,4,6,7,8-HxCDF	0.00028 U	5.60E-09 U	NA
W011	11/20/2005	3	2,3,4,6,7,8-HxCDF	0.00028 U	5.00E-09 U	NA
W011	11/20/2005	9	2,3,4,6,7,8-HxCDF	0.00028 U	5.70E-09 U	NA
W011	11/20/2005	18.5	2,3,4,6,7,8-HxCDF	0.00028 U	5.20E-09 U	NA
W012	11/19/2005	6	2,3,4,6,7,8-HxCDF	0.00028 U	5.20E-09 U	NA
W013	11/19/2005	5	2,3,4,6,7,8-HxCDF	0.00028 U	6.60E-09 U	NA
W014	11/19/2005	5	2,3,4,6,7,8-HxCDF	0.00028 U	5.20E-09 U	NA
W015	11/19/2005	1	2,3,4,6,7,8-HxCDF	0.00028 U	5.00E-09 U	NA
W016	11/19/2005	5	2,3,4,6,7,8-HxCDF	0.00028 U	5.00E-09 U	NA
W017	11/18/2005	3	2,3,4,6,7,8-HxCDF	0.00028 U	5.30E-09 U	NA
W017	11/18/2005	7	2,3,4,6,7,8-HxCDF	0.00028 U	4.40E-09 U	NA
W018	11/18/2005	6	2,3,4,6,7,8-HxCDF	0.00028 U	4.90E-09 U	NA
W019	11/18/2005	4	2,3,4,6,7,8-HxCDF	0.00028 U	5.20E-09 U	NA
W020	11/18/2005	5	2,3,4,6,7,8-HxCDF	0.00028 U	6.00E-09 U	NA
WDL-101-S	8/14/2002	0.25	2,3,4,6,7,8-HxCDF	**0.00014 J**	NT	NA
WDL-101-S	8/14/2002	2.25	2,3,4,6,7,8-HxCDF	**0.00023**	NT	NA
WDL-101-S	8/14/2002	5	2,3,4,6,7,8-HxCDF	**0.0089 J**	NT	NA
WDL-101-S	8/14/2002	7	2,3,4,6,7,8-HxCDF	**0.000057 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,3,4,6,7,8-HxCDF	**0.00009**	NT	NA
WDL-102-S	8/14/2002	2.25	2,3,4,6,7,8-HxCDF	**0.000096**	NT	NA
WDL-102-S	8/14/2002	5.5	2,3,4,6,7,8-HxCDF	0.0000034 U	NT	NA
WDL-102-S	8/14/2002	8	2,3,4,6,7,8-HxCDF	**0.0000047 J**	NT	NA
WDL-102-S	8/14/2002	10	2,3,4,6,7,8-HxCDF	0.0000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	2,3,4,6,7,8-HxCDF	**0.00024**	NT	NA
WDL-103-S	8/15/2002	2.25	2,3,4,6,7,8-HxCDF	**0.00007**	NT	NA
WDL-103-S	8/15/2002	5	2,3,4,6,7,8-HxCDF	**0.000038**	NT	NA
WDL-103-S	8/15/2002	6.75	2,3,4,6,7,8-HxCDF	**0.0014 J**	NT	NA
WDL-103-S	8/15/2002	8.25	2,3,4,6,7,8-HxCDF	0.0000046 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,3,4,6,7,8-HxCDF	**0.0000086**	NT	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	2.25	2,3,4,6,7,8-HxCDF	**0.0000041 J**	NT	NA
WDL-104-S	8/15/2002	5	2,3,4,6,7,8-HxCDF	**0.000083**	NT	NA
WDL-104-S	8/15/2002	6.75	2,3,4,6,7,8-HxCDF	0.0000035 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,3,4,6,7,8-HxCDF	**0.0000512**	2.10E-08 U	NA
WDL-201-S	2/12/2004	6	2,3,4,6,7,8-HxCDF	0.0008 U	NT	NA
WDL-202-S	2/12/2004	4	2,3,4,6,7,8-HxCDF	**0.0000055**	2.00E-08 U	NA
WDL-203-S	2/13/2004	5.75	2,3,4,6,7,8-HxCDF	**0.0000183**	2.10E-08 U	NA
WDL-204-S	2/12/2004	5	2,3,4,6,7,8-HxCDF	**0.0000246**	**5.10E-09**	NA
W001	11/21/2005	1	2,3,4,7,8-PeCDF	0.00039 U	2.20E-09 U	NA
W002	11/21/2005	5	2,3,4,7,8-PeCDF	0.00039 U	7.30E-09 U	NA
W003	11/21/2005	7	2,3,4,7,8-PeCDF	0.00039 U	2.70E-09 U	NA
W004	11/21/2005	7	2,3,4,7,8-PeCDF	0.00039 U	1.80E-09 U	NA
W005	11/21/2005	7	2,3,4,7,8-PeCDF	0.00039 UJ	2.10E-09 UJ	NA
W006	11/21/2005	6	2,3,4,7,8-PeCDF	0.00039 U	2.00E-09 U	NA
W007	11/21/2005	4	2,3,4,7,8-PeCDF	0.00039 U	1.60E-09 U	NA
W008	11/20/2005	3	2,3,4,7,8-PeCDF	0.00039 U	2.20E-09 U	NA
W009	11/20/2005	5	2,3,4,7,8-PeCDF	0.00039 U	2.90E-09 U	NA
W010	11/20/2005	5	2,3,4,7,8-PeCDF	0.00039 U	3.20E-09 U	NA
W011	11/20/2005	3	2,3,4,7,8-PeCDF	0.00039 U	2.80E-09 U	NA
W011	11/20/2005	9	2,3,4,7,8-PeCDF	0.00039 U	3.30E-09 U	NA
W011	11/20/2005	18.5	2,3,4,7,8-PeCDF	0.00039 U	2.70E-09 U	NA
W012	11/19/2005	6	2,3,4,7,8-PeCDF	0.00039 U	3.00E-09 U	NA
W013	11/19/2005	5	2,3,4,7,8-PeCDF	0.00039 U	3.10E-09 U	NA
W014	11/19/2005	5	2,3,4,7,8-PeCDF	0.00039 U	3.40E-09 U	NA
W015	11/19/2005	1	2,3,4,7,8-PeCDF	0.00039 U	3.10E-09 U	NA
W016	11/19/2005	5	2,3,4,7,8-PeCDF	0.00039 U	3.00E-09 U	NA
W017	11/18/2005	3	2,3,4,7,8-PeCDF	0.00039 U	3.10E-09 U	NA
W017	11/18/2005	7	2,3,4,7,8-PeCDF	0.00039 U	2.60E-09 U	NA
W018	11/18/2005	6	2,3,4,7,8-PeCDF	0.00039 U	3.00E-09 U	NA
W019	11/18/2005	4	2,3,4,7,8-PeCDF	0.00039 U	3.70E-09 U	NA
W020	11/18/2005	5	2,3,4,7,8-PeCDF	0.00039 U	3.20E-09 U	NA
WDL-101-S	8/14/2002	0.25	2,3,4,7,8-PeCDF	**0.0003 J**	NT	NA
WDL-101-S	8/14/2002	2.25	2,3,4,7,8-PeCDF	**0.00037**	NT	NA
WDL-101-S	8/14/2002	5	2,3,4,7,8-PeCDF	**0.023 J**	NT	NA
WDL-101-S	8/14/2002	7	2,3,4,7,8-PeCDF	**0.00014 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,3,4,7,8-PeCDF	**0.00021**	NT	NA
WDL-102-S	8/14/2002	2.25	2,3,4,7,8-PeCDF	**0.00021**	NT	NA
WDL-102-S	8/14/2002	5.5	2,3,4,7,8-PeCDF	0.00000034 U	NT	NA
WDL-102-S	8/14/2002	8	2,3,4,7,8-PeCDF	**0.0000074 J**	NT	NA
WDL-102-S	8/14/2002	10	2,3,4,7,8-PeCDF	0.00000033 U	NT	NA
WDL-103-S	8/15/2002	0.25	2,3,4,7,8-PeCDF	**0.00039**	NT	NA
WDL-103-S	8/15/2002	2.25	2,3,4,7,8-PeCDF	**0.00012**	NT	NA
WDL-103-S	8/15/2002	5	2,3,4,7,8-PeCDF	**0.000064**	NT	NA
WDL-103-S	8/15/2002	6.75	2,3,4,7,8-PeCDF	**0.0031 J**	NT	NA
WDL-103-S	8/15/2002	8.25	2,3,4,7,8-PeCDF	0.00000046 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,3,4,7,8-PeCDF	**0.000019**	NT	NA
WDL-104-S	8/15/2002	2.25	2,3,4,7,8-PeCDF	**0.0000068**	NT	NA
WDL-104-S	8/15/2002	5	2,3,4,7,8-PeCDF	**0.000092**	NT	NA
WDL-104-S	8/15/2002	6.75	2,3,4,7,8-PeCDF	0.00000035 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,3,4,7,8-PeCDF	**0.000087**	5.00E-09 U	NA
WDL-201-S	2/12/2004	6	2,3,4,7,8-PeCDF	0.00107 U	NT	NA
WDL-202-S	2/12/2004	4	2,3,4,7,8-PeCDF	**0.0000059**	5.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	2,3,4,7,8-PeCDF	**0.0000278**	5.00E-09 U	NA
WDL-204-S	2/12/2004	5	2,3,4,7,8-PeCDF	**0.0000349**	**4.00E-09 N**	NA
W001	11/21/2005	1	2,3,7,8-TCDD	0.0001 U	2.00E-09 U	1.41E-08
W002	11/21/2005	5	2,3,7,8-TCDD	**0.044**	**3.40E-07**	1.41E-08
W003	11/21/2005	7	2,3,7,8-TCDD	0.0001 U	**1.70E-08**	1.41E-08
W004	11/21/2005	7	2,3,7,8-TCDD	0.0001 U	**2.20E-08**	1.41E-08
W005	11/21/2005	7	2,3,7,8-TCDD	0.0001 UJ	**1.30E-08 J**	1.41E-08

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W006	11/21/2005	6	2,3,7,8-TCDD	**0.038**	**4.40E-08**	1.41E-08
W007	11/21/2005	4	2,3,7,8-TCDD	0.0001 U	4.90E-09 U	1.41E-08
W008	11/20/2005	3	2,3,7,8-TCDD	**0.022**	**2.30E-08**	1.41E-08
W009	11/20/2005	5	2,3,7,8-TCDD	**0.017**	**1.20E-08**	1.41E-08
W010	11/20/2005	5	2,3,7,8-TCDD	0.0001 U	2.90E-09 U	1.41E-08
W011	11/20/2005	3	2,3,7,8-TCDD	0.0001 U	3.00E-09 U	1.41E-08
W011	11/20/2005	9	2,3,7,8-TCDD	0.0001 U	3.30E-09 U	1.41E-08
W011	11/20/2005	18.5	2,3,7,8-TCDD	0.0001 U	3.20E-09 U	1.41E-08
W012	11/19/2005	6	2,3,7,8-TCDD	0.0001 U	3.20E-09 U	1.41E-08
W013	11/19/2005	5	2,3,7,8-TCDD	0.0001 U	**1.20E-08 J**	1.41E-08
W014	11/19/2005	5	2,3,7,8-TCDD	0.0001 U	**5.40E-09 J**	1.41E-08
W015	11/19/2005	1	2,3,7,8-TCDD	0.0001 U	3.20E-09 U	1.41E-08
W016	11/19/2005	5	2,3,7,8-TCDD	**0.036**	**6.10E-09 J**	1.41E-08
W017	11/18/2005	3	2,3,7,8-TCDD	0.0001 U	3.00E-09 U	1.41E-08
W017	11/18/2005	7	2,3,7,8-TCDD	0.0001 U	2.60E-09 U	1.41E-08
W018	11/18/2005	6	2,3,7,8-TCDD	0.0001 U	4.10E-09 U	1.41E-08
W019	11/18/2005	4	2,3,7,8-TCDD	**0.026**	**1.10E-08**	1.41E-08
W020	11/18/2005	5	2,3,7,8-TCDD	**0.009 J**	4.10E-09 U	1.41E-08
WDL-101-S	8/14/2002	0.25	2,3,7,8-TCDD	**0.0024 J**	NT	NA
WDL-101-S	8/14/2002	2.25	2,3,7,8-TCDD	**0.0018 J**	NT	NA
WDL-101-S	8/14/2002	5	2,3,7,8-TCDD	**0.51 J**	NT	NA
WDL-101-S	8/14/2002	7	2,3,7,8-TCDD	**0.0047 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,3,7,8-TCDD	**0.0016 J**	NT	NA
WDL-102-S	8/14/2002	2.25	2,3,7,8-TCDD	**0.0017 J**	NT	NA
WDL-102-S	8/14/2002	5.5	2,3,7,8-TCDD	**0.0000069**	NT	NA
WDL-102-S	8/14/2002	8	2,3,7,8-TCDD	**0.00011**	NT	NA
WDL-102-S	8/14/2002	10	2,3,7,8-TCDD	**0.0000032**	NT	NA
WDL-103-S	8/15/2002	0.25	2,3,7,8-TCDD	**0.0026**	NT	NA
WDL-103-S	8/15/2002	2.25	2,3,7,8-TCDD	**0.00084**	NT	NA
WDL-103-S	8/15/2002	5	2,3,7,8-TCDD	**0.00046**	NT	NA
WDL-103-S	8/15/2002	6.75	2,3,7,8-TCDD	**0.11 J**	NT	NA
WDL-103-S	8/15/2002	8.25	2,3,7,8-TCDD	**0.000019**	NT	NA
WDL-104-S	8/15/2002	0.25	2,3,7,8-TCDD	**0.000087**	NT	NA
WDL-104-S	8/15/2002	2.25	2,3,7,8-TCDD	**0.000016**	NT	NA
WDL-104-S	8/15/2002	5	2,3,7,8-TCDD	**0.001**	NT	NA
WDL-104-S	8/15/2002	6.75	2,3,7,8-TCDD	**0.00007**	NT	NA
WDL-201-S	2/12/2004	0.25	2,3,7,8-TCDD	**0.000469**	**3.21E-08**	1.41E-08
WDL-201-S	2/12/2004	6	2,3,7,8-TCDD	**0.0217**	NT	NA
WDL-202-S	2/12/2004	4	2,3,7,8-TCDD	**0.0000232**	3.00E-09 U	1.41E-08
WDL-203-S	2/13/2004	5.75	2,3,7,8-TCDD	**0.0000052**	3.00E-09 U	1.41E-08
WDL-204-S	2/12/2004	5	2,3,7,8-TCDD	**0.000627**	**1.21E-08**	1.41E-08
W001	11/21/2005	1	2,3,7,8-TCDF	**0.01**	6.40E-10 U	NA
W002	11/21/2005	5	2,3,7,8-TCDF	**0.53 J**	**1.50E-08**	NA
W003	11/21/2005	7	2,3,7,8-TCDF	0.00013 U	9.00E-10 U	NA
W004	11/21/2005	7	2,3,7,8-TCDF	**0.015 J**	1.20E-09 U	NA
W005	11/21/2005	7	2,3,7,8-TCDF	0.00013 UJ	7.70E-10 UJ	NA
W006	11/21/2005	6	2,3,7,8-TCDF	**0.24 J**	2.40E-09 U	NA
W007	11/21/2005	4	2,3,7,8-TCDF	**0.026**	9.60E-10 U	NA
W008	11/20/2005	3	2,3,7,8-TCDF	**0.21**	2.70E-09 U	NA
W009	11/20/2005	5	2,3,7,8-TCDF	**0.17**	1.70E-09 U	NA
W010	11/20/2005	5	2,3,7,8-TCDF	**0.035**	4.90E-10 U	NA
W011	11/20/2005	3	2,3,7,8-TCDF	**0.012**	6.30E-10 U	NA
W011	11/20/2005	9	2,3,7,8-TCDF	0.00013 U	3.90E-10 U	NA
W011	11/20/2005	18.5	2,3,7,8-TCDF	0.00013 U	5.90E-10 U	NA
W012	11/19/2005	6	2,3,7,8-TCDF	0.00013 U	4.70E-10 U	NA
W013	11/19/2005	5	2,3,7,8-TCDF	**0.066**	3.40E-09 U	NA
W014	11/19/2005	5	2,3,7,8-TCDF	**0.028**	3.90E-09 U	NA
W015	11/19/2005	1	2,3,7,8-TCDF	**0.021**	3.50E-10 U	NA

TABLE C-2
Polychlorinated Dibenzo-p-dioxin and
Polychlorinated Dibenzofuran (Dioxin-Furan)
Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W016	11/19/2005	5	2,3,7,8-TCDF	**0.49 J**	**6.40E-09 J**	NA
W017	11/18/2005	3	2,3,7,8-TCDF	**0.01 J**	4.20E-10 U	NA
W017	11/18/2005	7	2,3,7,8-TCDF	0.00013 U	5.30E-10 U	NA
W018	11/18/2005	6	2,3,7,8-TCDF	**0.035**	6.80E-10 U	NA
W019	11/18/2005	4	2,3,7,8-TCDF	**1.8 J**	3.40E-09 U	NA
W020	11/18/2005	5	2,3,7,8-TCDF	**0.2**	1.10E-09 U	NA
WDL-101-S	8/14/2002	0.25	2,3,7,8-TCDF	**0.00051 J**	NT	NA
WDL-101-S	8/14/2002	2.25	2,3,7,8-TCDF	**0.00036**	NT	NA
WDL-101-S	8/14/2002	5	2,3,7,8-TCDF	**0.037 J**	NT	NA
WDL-101-S	8/14/2002	7	2,3,7,8-TCDF	**0.00025 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,3,7,8-TCDF	**0.00033**	NT	NA
WDL-102-S	8/14/2002	2.25	2,3,7,8-TCDF	**0.00039**	NT	NA
WDL-102-S	8/14/2002	5.5	2,3,7,8-TCDF	**0.0000021**	NT	NA
WDL-102-S	8/14/2002	8	2,3,7,8-TCDF	**0.000009**	NT	NA
WDL-102-S	8/14/2002	10	2,3,7,8-TCDF	0.000000087 U	NT	NA
WDL-103-S	8/15/2002	0.25	2,3,7,8-TCDF	**0.00074**	NT	NA
WDL-103-S	8/15/2002	2.25	2,3,7,8-TCDF	**0.00025 J**	NT	NA
WDL-103-S	8/15/2002	5	2,3,7,8-TCDF	**0.00014**	NT	NA
WDL-103-S	8/15/2002	6.75	2,3,7,8-TCDF	**0.016 J**	NT	NA
WDL-103-S	8/15/2002	8.25	2,3,7,8-TCDF	**0.0000079**	NT	NA
WDL-104-S	8/15/2002	0.25	2,3,7,8-TCDF	**0.000043**	NT	NA
WDL-104-S	8/15/2002	2.25	2,3,7,8-TCDF	**0.0000072**	NT	NA
WDL-104-S	8/15/2002	5	2,3,7,8-TCDF	**0.00019**	NT	NA
WDL-104-S	8/15/2002	6.75	2,3,7,8-TCDF	**0.00001**	NT	NA
WDL-201-S	2/12/2004	0.25	2,3,7,8-TCDF	**0.000163**	**3.00E-09**	NA
WDL-201-S	2/12/2004	6	2,3,7,8-TCDF	**0.323**	NT	NA
WDL-202-S	2/12/2004	4	2,3,7,8-TCDF	**0.0000056**	6.00E-09 U	NA
WDL-203-S	2/13/2004	5.75	2,3,7,8-TCDF	**0.0000152**	**8.80E-09**	NA
WDL-204-S	2/12/2004	5	2,3,7,8-TCDF	**0.000114**	**3.30E-09**	NA

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
mg/L = milligrams per liter
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = The analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.
NJ = The analyte has been presumptively identified; the associated analytical result is estimated.

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	Aluminum	**20,400**	0.0160 U	1.25E+05
W002	11/21/2005	5	Aluminum	**22,400**	0.680 U	1.25E+05
W003	11/21/2005	7	Aluminum	**8,770**	0.470 U	1.25E+05
W004	11/21/2005	7	Aluminum	**11,100**	0.320 U	1.25E+05
W005	11/21/2005	7	Aluminum	**8,080 J**	0.420 U	1.25E+05
W006	11/21/2005	6	Aluminum	**28,800**	0.410 U	1.25E+05
W007	11/21/2005	4	Aluminum	**28,500**	0.220 U	1.25E+05
W008	11/20/2005	3	Aluminum	**19,900 J**	0.00210 U	1.25E+05
W009	11/20/2005	5	Aluminum	**22,900**	0.00210 U	1.25E+05
W010	11/20/2005	5	Aluminum	**27,200**	0.00210 U	1.25E+05
W011	11/20/2005	3	Aluminum	**20,700**	0.00210 U	1.25E+05
W011	11/20/2005	9	Aluminum	**12,000 J**	**0.160 J**	1.25E+05
W011	11/20/2005	18.5	Aluminum	**27,700 J**	**0.0380 J**	1.25E+05
W012	11/19/2005	6	Aluminum	**38,000**	**0.210 J**	1.25E+05
W013	11/19/2005	5	Aluminum	**22,800**	**0.00870 J**	1.25E+05
W014	11/19/2005	5	Aluminum	**31,500**	**0.510**	1.25E+05
W015	11/19/2005	1	Aluminum	**20,600 J**	0.00210 U	1.25E+05
W016	11/19/2005	5	Aluminum	**23,100 J**	**0.0190 J**	1.25E+05
W017	11/18/2005	3	Aluminum	**17,800 J**	0.00210 U	1.25E+05
W017	11/18/2005	7	Aluminum	**5,460 J**	**0.190 J**	1.25E+05
W018	11/18/2005	6	Aluminum	**22,600**	**0.120 J**	1.25E+05
W019	11/18/2005	4	Aluminum	**15,700**	0.00210 U	1.25E+05
W020	11/18/2005	5	Aluminum	**16,900**	0.00210 U	1.25E+05
WDL-101-S	8/14/2002	0.25	Aluminum	**15,800**	NT	NA
WDL-101-S	8/14/2002	2.25	Aluminum	**15,100**	NT	NA
WDL-101-S	8/14/2002	5	Aluminum	**19,400**	NT	NA
WDL-101-S	8/14/2002	7	Aluminum	**10,700**	NT	NA
WDL-102-S	8/14/2002	0.5	Aluminum	**14,100**	NT	NA
WDL-102-S	8/14/2002	2.25	Aluminum	**14,500**	NT	NA
WDL-102-S	8/14/2002	5.5	Aluminum	**10,300**	NT	NA
WDL-102-S	8/14/2002	8	Aluminum	**24,100**	NT	NA
WDL-102-S	8/14/2002	10	Aluminum	**25,000**	NT	NA
WDL-103-S	8/15/2002	0.25	Aluminum	**21,700**	NT	NA
WDL-103-S	8/15/2002	2.25	Aluminum	**12,100**	NT	NA
WDL-103-S	8/15/2002	5	Aluminum	**11,300**	NT	NA
WDL-103-S	8/15/2002	6.75	Aluminum	**26,400**	NT	NA
WDL-103-S	8/15/2002	8.25	Aluminum	**37,700**	NT	NA
WDL-104-S	8/15/2002	0.25	Aluminum	**5,490**	NT	NA
WDL-104-S	8/15/2002	2.25	Aluminum	**2,370**	NT	NA
WDL-104-S	8/15/2002	5	Aluminum	**6,520**	NT	NA
WDL-104-S	8/15/2002	6.75	Aluminum	**10,600**	NT	NA
WDL-201-S	2/12/2004	0.25	Aluminum	**22,500**	1.00 U	1.25E+05
WDL-201-S	2/12/2004	6	Aluminum	**7,780**	1.00 U	1.25E+05
WDL-202-S	2/12/2004	4	Aluminum	**14,000**	1.00 U	1.25E+05
WDL-203-S	2/13/2004	5.75	Aluminum	**5,160**	1.00 U	1.25E+05
WDL-204-S	2/12/2004	5	Aluminum	**18,300**	**1.08**	1.25E+05
W001	11/21/2005	1	Antimony	**2.70**	**0.0130 J**	4.98E+01
W002	11/21/2005	5	Antimony	**2.80**	**0.0180 J**	4.98E+01
W003	11/21/2005	7	Antimony	**4.90**	**0.0470 J**	4.98E+01
W004	11/21/2005	7	Antimony	**0.720**	**0.00930 J**	4.98E+01
W005	11/21/2005	7	Antimony	**0.800 J**	**0.0180 J**	4.98E+01
W006	11/21/2005	6	Antimony	**4.00**	**0.0250 J**	4.98E+01
W007	11/21/2005	4	Antimony	**4.30**	**0.0310 J**	4.98E+01
W008	11/20/2005	3	Antimony	**5.40**	**0.0140 J**	4.98E+01
W009	11/20/2005	5	Antimony	**18.1**	**0.0180 J**	4.98E+01
W010	11/20/2005	5	Antimony	**2.70**	**0.0140 J**	4.98E+01
W011	11/20/2005	3	Antimony	**4.10**	**0.0230**	4.98E+01
W011	11/20/2005	9	Antimony	**0.240**	**0.00120 J**	4.98E+01
W011	11/20/2005	18.5	Antimony	**0.0350 J**	0.0000360 U	4.98E+01
W012	11/19/2005	6	Antimony	**2.20**	**0.00540 J**	4.98E+01

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W013	11/19/2005	5	Antimony	**6.60**	**0.00770 J**	4.98E+01
W014	11/19/2005	5	Antimony	**1.20**	**0.0100 J**	4.98E+01
W015	11/19/2005	1	Antimony	**2.90**	**0.00780 J**	4.98E+01
W016	11/19/2005	5	Antimony	**11.7**	**0.0540**	4.98E+01
W017	11/18/2005	3	Antimony	**1.70**	0.0180 U	4.98E+01
W017	11/18/2005	7	Antimony	**4.50**	**0.0200**	4.98E+01
W018	11/18/2005	6	Antimony	**1.00**	**0.0160 J**	4.98E+01
W019	11/18/2005	4	Antimony	**10.4 J**	0.0140 U	4.98E+01
W020	11/18/2005	5	Antimony	**5.50**	0.00600 U	4.98E+01
WDL-101-S	8/14/2002	0.25	Antimony	28.9 U	NT	NA
WDL-101-S	8/14/2002	2.25	Antimony	17.6 U	NT	NA
WDL-101-S	8/14/2002	5	Antimony	**99.7**	NT	NA
WDL-101-S	8/14/2002	7	Antimony	**106**	NT	NA
WDL-102-S	8/14/2002	0.5	Antimony	24.0 U	NT	NA
WDL-102-S	8/14/2002	2.25	Antimony	28.3 U	NT	NA
WDL-102-S	8/14/2002	5.5	Antimony	11.9 U	NT	NA
WDL-102-S	8/14/2002	8	Antimony	16.3 U	NT	NA
WDL-102-S	8/14/2002	10	Antimony	12.7 U	NT	NA
WDL-103-S	8/15/2002	0.25	Antimony	25.1 U	NT	NA
WDL-103-S	8/15/2002	2.25	Antimony	6.01 U	NT	NA
WDL-103-S	8/15/2002	5	Antimony	3.60 U	NT	NA
WDL-103-S	8/15/2002	6.75	Antimony	**51.6**	NT	NA
WDL-103-S	8/15/2002	8.25	Antimony	3.19 U	NT	NA
WDL-104-S	8/15/2002	0.25	Antimony	2.20 U	NT	NA
WDL-104-S	8/15/2002	2.25	Antimony	2.15 U	NT	NA
WDL-104-S	8/15/2002	5	Antimony	22.7 U	NT	NA
WDL-104-S	8/15/2002	6.75	Antimony	12.9 U	NT	NA
WDL-201-S	2/12/2004	0.25	Antimony	**8.04**	0.00000000 U	4.98E+01
WDL-201-S	2/12/2004	6	Antimony	**0.688**	**0.0387**	4.98E+01
WDL-202-S	2/12/2004	4	Antimony	**0.352**	**0.0180**	4.98E+01
WDL-203-S	2/13/2004	5.75	Antimony	**1.36**	**0.00820**	4.98E+01
WDL-204-S	2/12/2004	5	Antimony	**9.39**	**0.344**	4.98E+01
W001	11/21/2005	1	Arsenic	**14.5**	**0.0410 J**	5.81E+00
W002	11/21/2005	5	Arsenic	**98.6**	**0.0820 J**	5.81E+00
W003	11/21/2005	7	Arsenic	**72.4**	**0.0890 J**	5.81E+00
W004	11/21/2005	7	Arsenic	**35.7**	**0.100 J**	5.81E+00
W005	11/21/2005	7	Arsenic	**32.8 J**	**0.0920 J**	5.81E+00
W006	11/21/2005	6	Arsenic	**130 J**	**0.390 J**	5.81E+00
W007	11/21/2005	4	Arsenic	**86.8**	**0.130 J**	5.81E+00
W008	11/20/2005	3	Arsenic	**30.2**	**0.0370**	5.81E+00
W009	11/20/2005	5	Arsenic	**125**	**0.0490**	5.81E+00
W010	11/20/2005	5	Arsenic	**70.9**	**0.210**	5.81E+00
W011	11/20/2005	3	Arsenic	**41.8**	**0.0440**	5.81E+00
W011	11/20/2005	9	Arsenic	**8.60**	**0.00540 J**	5.81E+00
W011	11/20/2005	18.5	Arsenic	**2.80**	**0.00170 J**	5.81E+00
W012	11/19/2005	6	Arsenic	**65.0**	**0.270**	5.81E+00
W013	11/19/2005	5	Arsenic	**59.0**	**0.0800**	5.81E+00
W014	11/19/2005	5	Arsenic	**26.4**	**0.0530**	5.81E+00
W015	11/19/2005	1	Arsenic	**31.0**	**0.0590**	5.81E+00
W016	11/19/2005	5	Arsenic	**86.8**	**0.0430**	5.81E+00
W017	11/18/2005	3	Arsenic	**17.6**	**0.0110 J**	5.81E+00
W017	11/18/2005	7	Arsenic	**27.7**	**0.0310**	5.81E+00
W018	11/18/2005	6	Arsenic	**34.8**	**0.0530**	5.81E+00
W019	11/18/2005	4	Arsenic	**51.0 J**	**0.0430 J**	5.81E+00
W020	11/18/2005	5	Arsenic	**45.6**	**0.0400 J**	5.81E+00
WDL-101-S	8/14/2002	0.25	Arsenic	**45.3**	NT	NA
WDL-101-S	8/14/2002	2.25	Arsenic	**37.4**	NT	NA
WDL-101-S	8/14/2002	5	Arsenic	**294**	NT	NA
WDL-101-S	8/14/2002	7	Arsenic	**402**	NT	NA
WDL-102-S	8/14/2002	0.5	Arsenic	**32.0**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	2.25	Arsenic	**42.3**	NT	NA
WDL-102-S	8/14/2002	5.5	Arsenic	**12.2**	NT	NA
WDL-102-S	8/14/2002	8	Arsenic	**84.3**	NT	NA
WDL-102-S	8/14/2002	10	Arsenic	**17.7**	NT	NA
WDL-103-S	8/15/2002	0.25	Arsenic	**40.0**	NT	NA
WDL-103-S	8/15/2002	2.25	Arsenic	**15.4**	NT	NA
WDL-103-S	8/15/2002	5	Arsenic	**7.73**	NT	NA
WDL-103-S	8/15/2002	6.75	Arsenic	**167**	NT	NA
WDL-103-S	8/15/2002	8.25	Arsenic	**74.2**	NT	NA
WDL-104-S	8/15/2002	0.25	Arsenic	**4.57**	NT	NA
WDL-104-S	8/15/2002	2.25	Arsenic	**1.65**	NT	NA
WDL-104-S	8/15/2002	5	Arsenic	**28.8**	NT	NA
WDL-104-S	8/15/2002	6.75	Arsenic	**46.4**	NT	NA
WDL-201-S	2/12/2004	0.25	Arsenic	**38.9**	0.0522 U	5.81E+00
WDL-201-S	2/12/2004	6	Arsenic	**26.2**	**0.0910**	5.81E+00
WDL-202-S	2/12/2004	4	Arsenic	**8.88**	**0.0910**	5.81E+00
WDL-203-S	2/13/2004	5.75	Arsenic	**8.69**	0.0522 U	5.81E+00
WDL-204-S	2/12/2004	5	Arsenic	**109**	**0.510**	5.81E+00
W001	11/21/2005	1	Barium	**131 J**	0.350 U	2.49E+04
W002	11/21/2005	5	Barium	**125 J**	0.540 U	2.49E+04
W003	11/21/2005	7	Barium	**97.1 J**	0.650 U	2.49E+04
W004	11/21/2005	7	Barium	**84.3 J**	0.600 U	2.49E+04
W005	11/21/2005	7	Barium	**58.7 J**	0.410 U	2.49E+04
W006	11/21/2005	6	Barium	**164 J**	0.530 U	2.49E+04
W007	11/21/2005	4	Barium	**196 J**	0.770 U	2.49E+04
W008	11/20/2005	3	Barium	**156 J**	0.660 U	2.49E+04
W009	11/20/2005	5	Barium	**215 J**	0.140 U	2.49E+04
W010	11/20/2005	5	Barium	**153 J**	0.510 U	2.49E+04
W011	11/20/2005	3	Barium	**151 J**	0.630 U	2.49E+04
W011	11/20/2005	9	Barium	**75.4 J**	0.610 U	2.49E+04
W011	11/20/2005	18.5	Barium	**127 J**	0.750 U	2.49E+04
W012	11/19/2005	6	Barium	**179 J**	0.400 U	2.49E+04
W013	11/19/2005	5	Barium	**195 J**	0.710 U	2.49E+04
W014	11/19/2005	5	Barium	**174 J**	0.450 U	2.49E+04
W015	11/19/2005	1	Barium	**206 J**	**1.20 J**	2.49E+04
W016	11/19/2005	5	Barium	**176 J**	0.550 U	2.49E+04
W017	11/18/2005	3	Barium	**272 J**	**1.20 J**	2.49E+04
W017	11/18/2005	7	Barium	**67.3 J**	0.500 U	2.49E+04
W018	11/18/2005	6	Barium	**171 J**	0.910 U	2.49E+04
W019	11/18/2005	4	Barium	**379 J**	**1.20 J**	2.49E+04
W020	11/18/2005	5	Barium	**173 J**	**0.650 J**	2.49E+04
WDL-101-S	8/14/2002	0.25	Barium	**147**	NT	NA
WDL-101-S	8/14/2002	2.25	Barium	**171**	NT	NA
WDL-101-S	8/14/2002	5	Barium	**209**	NT	NA
WDL-101-S	8/14/2002	7	Barium	**157**	NT	NA
WDL-102-S	8/14/2002	0.5	Barium	**149**	NT	NA
WDL-102-S	8/14/2002	2.25	Barium	**140**	NT	NA
WDL-102-S	8/14/2002	5.5	Barium	**185**	NT	NA
WDL-102-S	8/14/2002	8	Barium	**202**	NT	NA
WDL-102-S	8/14/2002	10	Barium	**168**	NT	NA
WDL-103-S	8/15/2002	0.25	Barium	**218**	NT	NA
WDL-103-S	8/15/2002	2.25	Barium	**182**	NT	NA
WDL-103-S	8/15/2002	5	Barium	**341**	NT	NA
WDL-103-S	8/15/2002	6.75	Barium	**406**	NT	NA
WDL-103-S	8/15/2002	8.25	Barium	**191**	NT	NA
WDL-104-S	8/15/2002	0.25	Barium	**110**	NT	NA
WDL-104-S	8/15/2002	2.25	Barium	**78.5**	NT	NA
WDL-104-S	8/15/2002	5	Barium	**108**	NT	NA
WDL-104-S	8/15/2002	6.75	Barium	**89.6**	NT	NA
WDL-201-S	2/12/2004	0.25	Barium	**146**	**0.328**	2.49E+04

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	6	Barium	**117**	**0.688**	2.49E+04
WDL-202-S	2/12/2004	4	Barium	**176**	**0.315**	2.49E+04
WDL-203-S	2/13/2004	5.75	Barium	**156**	**0.112**	2.49E+04
WDL-204-S	2/12/2004	5	Barium	**149**	**2.24**	2.49E+04
W001	11/21/2005	1	Beryllium	**0.570**	0.0000780 U	2.49E+02
W002	11/21/2005	5	Beryllium	**0.560**	**0.000120 J**	2.49E+02
W003	11/21/2005	7	Beryllium	**0.160**	**0.000260 J**	2.49E+02
W004	11/21/2005	7	Beryllium	**0.480**	**0.000790 J**	2.49E+02
W005	11/21/2005	7	Beryllium	**0.370 J**	**0.000750 J**	2.49E+02
W006	11/21/2005	6	Beryllium	**0.720**	**0.000390 J**	2.49E+02
W007	11/21/2005	4	Beryllium	**0.390**	**0.000120 J**	2.49E+02
W008	11/20/2005	3	Beryllium	**0.560**	0.0000780 U	2.49E+02
W009	11/20/2005	5	Beryllium	**0.570**	0.0000780 U	2.49E+02
W010	11/20/2005	5	Beryllium	**0.520**	0.0000780 U	2.49E+02
W011	11/20/2005	3	Beryllium	**0.570**	0.0000780 U	2.49E+02
W011	11/20/2005	9	Beryllium	**0.310**	**0.000800 J**	2.49E+02
W011	11/20/2005	18.5	Beryllium	**0.600**	**0.000430 J**	2.49E+02
W012	11/19/2005	6	Beryllium	**1.10**	**0.000290 J**	2.49E+02
W013	11/19/2005	5	Beryllium	**0.590**	0.0000780 U	2.49E+02
W014	11/19/2005	5	Beryllium	**0.750**	**0.000300 J**	2.49E+02
W015	11/19/2005	1	Beryllium	**0.820**	0.0000780 U	2.49E+02
W016	11/19/2005	5	Beryllium	**0.290**	0.0000780 U	2.49E+02
W017	11/18/2005	3	Beryllium	**0.490**	0.0000780 U	2.49E+02
W017	11/18/2005	7	Beryllium	**0.0960 J**	**0.000110 J**	2.49E+02
W018	11/18/2005	6	Beryllium	**0.320**	**0.000100 J**	2.49E+02
W019	11/18/2005	4	Beryllium	**0.330**	0.0000780 U	2.49E+02
W020	11/18/2005	5	Beryllium	**0.320**	0.0000780 U	2.49E+02
WDL-101-S	8/14/2002	0.25	Beryllium	1.16 U	NT	NA
WDL-101-S	8/14/2002	2.25	Beryllium	0.705 U	NT	NA
WDL-101-S	8/14/2002	5	Beryllium	0.785 U	NT	NA
WDL-101-S	8/14/2002	7	Beryllium	0.737 U	NT	NA
WDL-102-S	8/14/2002	0.5	Beryllium	0.959 U	NT	NA
WDL-102-S	8/14/2002	2.25	Beryllium	1.13 U	NT	NA
WDL-102-S	8/14/2002	5.5	Beryllium	0.474 U	NT	NA
WDL-102-S	8/14/2002	8	Beryllium	**0.669**	NT	NA
WDL-102-S	8/14/2002	10	Beryllium	**0.725**	NT	NA
WDL-103-S	8/15/2002	0.25	Beryllium	0.822 U	NT	NA
WDL-103-S	8/15/2002	2.25	Beryllium	0.254 U	NT	NA
WDL-103-S	8/15/2002	5	Beryllium	0.240 U	NT	NA
WDL-103-S	8/15/2002	6.75	Beryllium	0.511 U	NT	NA
WDL-103-S	8/15/2002	8.25	Beryllium	**0.757**	NT	NA
WDL-104-S	8/15/2002	0.25	Beryllium	0.0769 U	NT	NA
WDL-104-S	8/15/2002	2.25	Beryllium	0.0477 U	NT	NA
WDL-104-S	8/15/2002	5	Beryllium	0.0633 U	NT	NA
WDL-104-S	8/15/2002	6.75	Beryllium	0.0495 U	NT	NA
WDL-201-S	2/12/2004	0.25	Beryllium	**0.815**	0.00216 U	2.49E+02
WDL-201-S	2/12/2004	6	Beryllium	**0.486**	0.00360 U	2.49E+02
WDL-202-S	2/12/2004	4	Beryllium	**0.723**	0.00360 U	2.49E+02
WDL-203-S	2/13/2004	5.75	Beryllium	0.160 U	0.00216 U	2.49E+02
WDL-204-S	2/12/2004	5	Beryllium	**0.183**	0.00540 U	2.49E+02
W001	11/21/2005	1	Boron	**6.80 J**	0.140 U	2.49E+04
W002	11/21/2005	5	Boron	**4.70 J**	0.130 U	2.49E+04
W003	11/21/2005	7	Boron	**4.60 J**	0.130 U	2.49E+04
W004	11/21/2005	7	Boron	**2.30 J**	0.140 U	2.49E+04
W005	11/21/2005	7	Boron	**2.80 J**	0.140 U	2.49E+04
W006	11/21/2005	6	Boron	**8.50 J**	0.170 U	2.49E+04
W007	11/21/2005	4	Boron	**12.7 J**	0.360 U	2.49E+04
W008	11/20/2005	3	Boron	**23.9 J**	**0.300 J**	2.49E+04
W009	11/20/2005	5	Boron	**25.6 J**	0.190 U	2.49E+04
W010	11/20/2005	5	Boron	**9.10 J**	0.180 U	2.49E+04

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	3	Boron	**18.9 J**	**0.290 J**	2.49E+04
W011	11/20/2005	9	Boron	1.90 U	0.190 U	2.49E+04
W011	11/20/2005	18.5	Boron	1.10 U	0.0930 U	2.49E+04
W012	11/19/2005	6	Boron	**9.20 J**	**0.210 J**	2.49E+04
W013	11/19/2005	5	Boron	**7.50 J**	0.130 U	2.49E+04
W014	11/19/2005	5	Boron	**11.5 J**	0.270 U	2.49E+04
W015	11/19/2005	1	Boron	**45.7 J**	**0.460 J**	2.49E+04
W016	11/19/2005	5	Boron	**28.1 J**	0.260 U	2.49E+04
W017	11/18/2005	3	Boron	**36.9 J**	**0.570 J**	2.49E+04
W017	11/18/2005	7	Boron	**8.70 J**	0.170 U	2.49E+04
W018	11/18/2005	6	Boron	**21.8 J**	**0.490 J**	2.49E+04
W019	11/18/2005	4	Boron	**34.9 J**	**0.460 J**	2.49E+04
W020	11/18/2005	5	Boron	**25.3 J**	**0.430 J**	2.49E+04
WDL-101-S	8/14/2002	0.25	Boron	116 U	NT	NA
WDL-101-S	8/14/2002	2.25	Boron	70.5 U	NT	NA
WDL-101-S	8/14/2002	5	Boron	78.5 U	NT	NA
WDL-101-S	8/14/2002	7	Boron	73.7 U	NT	NA
WDL-102-S	8/14/2002	0.5	Boron	95.9 U	NT	NA
WDL-102-S	8/14/2002	2.25	Boron	113 U	NT	NA
WDL-102-S	8/14/2002	5.5	Boron	47.4 U	NT	NA
WDL-102-S	8/14/2002	8	Boron	65.4 U	NT	NA
WDL-102-S	8/14/2002	10	Boron	50.6 U	NT	NA
WDL-103-S	8/15/2002	0.25	Boron	41.7 U	NT	NA
WDL-103-S	8/15/2002	2.25	Boron	15.8 U	NT	NA
WDL-103-S	8/15/2002	5	Boron	27.0 U	NT	NA
WDL-103-S	8/15/2002	6.75	Boron	35.2 U	NT	NA
WDL-103-S	8/15/2002	8.25	Boron	23.9 U	NT	NA
WDL-104-S	8/15/2002	0.25	Boron	**18.0**	NT	NA
WDL-104-S	8/15/2002	2.25	Boron	16.1 U	NT	NA
WDL-104-S	8/15/2002	5	Boron	21.4 U	NT	NA
WDL-104-S	8/15/2002	6.75	Boron	16.7 U	NT	NA
WDL-201-S	2/12/2004	0.25	Boron	**40.1**	**0.745**	2.49E+04
WDL-201-S	2/12/2004	6	Boron	**5.73**	**0.388**	2.49E+04
WDL-202-S	2/12/2004	4	Boron	**3.92**	**0.319**	2.49E+04
WDL-203-S	2/13/2004	5.75	Boron	**18.3**	**0.679**	2.49E+04
WDL-204-S	2/12/2004	5	Boron	**13.7**	**0.699**	2.49E+04
W001	11/21/2005	1	Cadmium	**1.20**	0.0000740 U	6.23E+01
W002	11/21/2005	5	Cadmium	**0.320**	0.0000740 U	6.23E+01
W003	11/21/2005	7	Cadmium	**0.340**	0.0000740 U	6.23E+01
W004	11/21/2005	7	Cadmium	**0.190**	0.0000740 U	6.23E+01
W005	11/21/2005	7	Cadmium	**0.110 J**	0.0000740 UJ	6.23E+01
W006	11/21/2005	6	Cadmium	**0.810**	0.0000740 U	6.23E+01
W007	11/21/2005	4	Cadmium	**1.60**	0.0000740 U	6.23E+01
W008	11/20/2005	3	Cadmium	**2.40**	0.0000740 U	6.23E+01
W009	11/20/2005	5	Cadmium	**5.40**	0.0000740 U	6.23E+01
W010	11/20/2005	5	Cadmium	**1.70**	0.0000740 U	6.23E+01
W011	11/20/2005	3	Cadmium	**2.30**	0.0000740 U	6.23E+01
W011	11/20/2005	9	Cadmium	**0.0500 J**	0.0000740 U	6.23E+01
W011	11/20/2005	18.5	Cadmium	**0.120 J**	0.0000740 U	6.23E+01
W012	11/19/2005	6	Cadmium	**0.700**	0.0000740 U	6.23E+01
W013	11/19/2005	5	Cadmium	**3.40**	0.0000740 U	6.23E+01
W014	11/19/2005	5	Cadmium	**2.80**	0.0000740 U	6.23E+01
W015	11/19/2005	1	Cadmium	**4.20**	0.0000740 U	6.23E+01
W016	11/19/2005	5	Cadmium	**7.90**	0.0000740 U	6.23E+01
W017	11/18/2005	3	Cadmium	**2.80**	0.0000740 U	6.23E+01
W017	11/18/2005	7	Cadmium	**0.210**	0.0000740 U	6.23E+01
W018	11/18/2005	6	Cadmium	**2.20**	0.0000740 U	6.23E+01
W019	11/18/2005	4	Cadmium	**7.90**	0.0000740 U	6.23E+01
W020	11/18/2005	5	Cadmium	**3.40**	0.0000740 U	6.23E+01
WDL-101-S	8/14/2002	0.25	Cadmium	**4.10**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	2.25	Cadmium	**1.06**	NT	NA
WDL-101-S	8/14/2002	5	Cadmium	**8.45**	NT	NA
WDL-101-S	8/14/2002	7	Cadmium	**11.6**	NT	NA
WDL-102-S	8/14/2002	0.5	Cadmium	**2.66**	NT	NA
WDL-102-S	8/14/2002	2.25	Cadmium	**3.05**	NT	NA
WDL-102-S	8/14/2002	5.5	Cadmium	**0.444**	NT	NA
WDL-102-S	8/14/2002	8	Cadmium	**0.0278**	NT	NA
WDL-102-S	8/14/2002	10	Cadmium	0.00899 U	NT	NA
WDL-103-S	8/15/2002	0.25	Cadmium	**2.96**	NT	NA
WDL-103-S	8/15/2002	2.25	Cadmium	**0.918**	NT	NA
WDL-103-S	8/15/2002	5	Cadmium	**1.00**	NT	NA
WDL-103-S	8/15/2002	6.75	Cadmium	**4.22**	NT	NA
WDL-103-S	8/15/2002	8.25	Cadmium	0.0126 U	NT	NA
WDL-104-S	8/15/2002	0.25	Cadmium	0.00869 U	NT	NA
WDL-104-S	8/15/2002	2.25	Cadmium	0.00847 U	NT	NA
WDL-104-S	8/15/2002	5	Cadmium	**3.06**	NT	NA
WDL-104-S	8/15/2002	6.75	Cadmium	0.00879 U	NT	NA
WDL-201-S	2/12/2004	0.25	Cadmium	**1.28**	**0.00780**	6.23E+01
WDL-201-S	2/12/2004	6	Cadmium	**0.227 R**	0.0121 U	6.23E+01
WDL-202-S	2/12/2004	4	Cadmium	**0.206 R**	0.0121 U	6.23E+01
WDL-203-S	2/13/2004	5.75	Cadmium	0.153 U	0.00728 U	6.23E+01
WDL-204-S	2/12/2004	5	Cadmium	0.106 U	0.0182 U	6.23E+01
W001	11/21/2005	1	Calcium	**53,600 J**	**631 J**	NA
W002	11/21/2005	5	Calcium	**8,650 J**	**312 J**	NA
W003	11/21/2005	7	Calcium	**5,040 J**	**76.6 J**	NA
W004	11/21/2005	7	Calcium	**7,000 J**	**51.9 J**	NA
W005	11/21/2005	7	Calcium	**4,240 J**	**25.6 J**	NA
W006	11/21/2005	6	Calcium	**6,500 J**	**62.8 J**	NA
W007	11/21/2005	4	Calcium	**4,650 J**	**45.6 J**	NA
W008	11/20/2005	3	Calcium	**95,500 J**	**673 J**	NA
W009	11/20/2005	5	Calcium	**24,400 J**	**638 J**	NA
W010	11/20/2005	5	Calcium	**28,900 J**	**458 J**	NA
W011	11/20/2005	3	Calcium	**52,200 J**	**475 J**	NA
W011	11/20/2005	9	Calcium	**3,350 J**	**12.8 J**	NA
W011	11/20/2005	18.5	Calcium	**3,530 J**	**28.2 J**	NA
W012	11/19/2005	6	Calcium	**5,350 J**	**93.7 J**	NA
W013	11/19/2005	5	Calcium	**26,200 J**	**528 J**	NA
W014	11/19/2005	5	Calcium	**7,840 J**	**97.1 J**	NA
W015	11/19/2005	1	Calcium	**105,000 J**	**615 J**	NA
W016	11/19/2005	5	Calcium	**57,700 J**	**553 J**	NA
W017	11/18/2005	3	Calcium	**115,000 J**	**831 J**	NA
W017	11/18/2005	7	Calcium	**3,710 J**	**37.3 J**	NA
W018	11/18/2005	6	Calcium	**6,760 J**	**308 J**	NA
W019	11/18/2005	4	Calcium	**25,000 J**	**435 J**	NA
W020	11/18/2005	5	Calcium	**41,100 J**	**527 J**	NA
WDL-101-S	8/14/2002	0.25	Calcium	**137,000**	NT	NA
WDL-101-S	8/14/2002	2.25	Calcium	**126,000**	NT	NA
WDL-101-S	8/14/2002	5	Calcium	**48,600**	NT	NA
WDL-101-S	8/14/2002	7	Calcium	**52,100**	NT	NA
WDL-102-S	8/14/2002	0.5	Calcium	**92,500**	NT	NA
WDL-102-S	8/14/2002	2.25	Calcium	**87,800**	NT	NA
WDL-102-S	8/14/2002	5.5	Calcium	**2,540**	NT	NA
WDL-102-S	8/14/2002	8	Calcium	**4,870**	NT	NA
WDL-102-S	8/14/2002	10	Calcium	**4,410**	NT	NA
WDL-103-S	8/15/2002	0.25	Calcium	**122,000**	NT	NA
WDL-103-S	8/15/2002	2.25	Calcium	**30,800**	NT	NA
WDL-103-S	8/15/2002	5	Calcium	**16,500**	NT	NA
WDL-103-S	8/15/2002	6.75	Calcium	**65,100**	NT	NA
WDL-103-S	8/15/2002	8.25	Calcium	**4,550**	NT	NA
WDL-104-S	8/15/2002	0.25	Calcium	**35,200**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	2.25	Calcium	**5,690**	NT	NA
WDL-104-S	8/15/2002	5	Calcium	**18,100**	NT	NA
WDL-104-S	8/15/2002	6.75	Calcium	**3,990**	NT	NA
WDL-201-S	2/12/2004	0.25	Calcium	**135,000**	**1,280**	NA
WDL-201-S	2/12/2004	6	Calcium	**21,700**	**25.4 J**	NA
WDL-202-S	2/12/2004	4	Calcium	**3,310**	**129 J**	NA
WDL-203-S	2/13/2004	5.75	Calcium	**13,600**	**276 J**	NA
WDL-204-S	2/12/2004	5	Calcium	**4,190**	**63.9 J**	NA
W001	11/21/2005	1	Chromium	**79.9**	0.00620 U	3.74E+02
W002	11/21/2005	5	Chromium	**38.2**	0.00720 U	3.74E+02
W003	11/21/2005	7	Chromium	**17.6**	0.00430 U	3.74E+02
W004	11/21/2005	7	Chromium	**14.5**	0.00840 U	3.74E+02
W005	11/21/2005	7	Chromium	**12.8 J**	0.00480 U	3.74E+02
W006	11/21/2005	6	Chromium	**68.8 J**	0.00500 U	3.74E+02
W007	11/21/2005	4	Chromium	**64.0**	0.0170 U	3.74E+02
W008	11/20/2005	3	Chromium	**221**	0.00320 U	3.74E+02
W009	11/20/2005	5	Chromium	**254**	0.0140 U	3.74E+02
W010	11/20/2005	5	Chromium	**93.4**	0.0300 U	3.74E+02
W011	11/20/2005	3	Chromium	**168**	0.00720 U	3.74E+02
W011	11/20/2005	9	Chromium	**18.2**	0.00440 U	3.74E+02
W011	11/20/2005	18.5	Chromium	**31.3**	0.0150 U	3.74E+02
W012	11/19/2005	6	Chromium	**58.3**	0.0210 U	3.74E+02
W013	11/19/2005	5	Chromium	**234**	**0.0230 J**	3.74E+02
W014	11/19/2005	5	Chromium	**170**	**0.0460 J**	3.74E+02
W015	11/19/2005	1	Chromium	**387**	0.00430 U	3.74E+02
W016	11/19/2005	5	Chromium	**966**	0.0160 U	3.74E+02
W017	11/18/2005	3	Chromium	**304**	0.00390 U	3.74E+02
W017	11/18/2005	7	Chromium	**13.3**	0.00390 U	3.74E+02
W018	11/18/2005	6	Chromium	**351**	**0.0650 J**	3.74E+02
W019	11/18/2005	4	Chromium	**2,510**	**0.0310 J**	3.74E+02
W020	11/18/2005	5	Chromium	**440**	**0.0320 J**	3.74E+02
WDL-101-S	8/14/2002	0.25	Chromium	**336**	NT	NA
WDL-101-S	8/14/2002	2.25	Chromium	**143**	NT	NA
WDL-101-S	8/14/2002	5	Chromium	**275**	NT	NA
WDL-101-S	8/14/2002	7	Chromium	**239**	NT	NA
WDL-102-S	8/14/2002	0.5	Chromium	**261**	NT	NA
WDL-102-S	8/14/2002	2.25	Chromium	**317**	NT	NA
WDL-102-S	8/14/2002	5.5	Chromium	**28.3**	NT	NA
WDL-102-S	8/14/2002	8	Chromium	**53.8**	NT	NA
WDL-102-S	8/14/2002	10	Chromium	**30.3**	NT	NA
WDL-103-S	8/15/2002	0.25	Chromium	**339**	NT	NA
WDL-103-S	8/15/2002	2.25	Chromium	**169**	NT	NA
WDL-103-S	8/15/2002	5	Chromium	**155**	NT	NA
WDL-103-S	8/15/2002	6.75	Chromium	**482**	NT	NA
WDL-103-S	8/15/2002	8.25	Chromium	**57.1**	NT	NA
WDL-104-S	8/15/2002	0.25	Chromium	**297**	NT	NA
WDL-104-S	8/15/2002	2.25	Chromium	**85.5**	NT	NA
WDL-104-S	8/15/2002	5	Chromium	**640**	NT	NA
WDL-104-S	8/15/2002	6.75	Chromium	**44.0**	NT	NA
WDL-201-S	2/12/2004	0.25	Chromium	**180**	0.0791 U	3.74E+02
WDL-201-S	2/12/2004	6	Chromium	**17.5**	0.132 U	3.74E+02
WDL-202-S	2/12/2004	4	Chromium	**50.9**	0.132 U	3.74E+02
WDL-203-S	2/13/2004	5.75	Chromium	**493 J**	0.0791 U	3.74E+02
WDL-204-S	2/12/2004	5	Chromium	**88.0**	0.198 U	3.74E+02
W001	11/21/2005	1	Cobalt	**15.8**	**0.00760 J**	6.23E+03
W002	11/21/2005	5	Cobalt	**13.0**	**0.0310 J**	6.23E+03
W003	11/21/2005	7	Cobalt	**9.90**	**0.0460 J**	6.23E+03
W004	11/21/2005	7	Cobalt	**12.0**	**0.0500 J**	6.23E+03
W005	11/21/2005	7	Cobalt	**9.50 J**	**0.0350 J**	6.23E+03
W006	11/21/2005	6	Cobalt	**21.9**	**0.0480 J**	6.23E+03

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	Cobalt	**12.5**	**0.00940 J**	6.23E+03
W008	11/20/2005	3	Cobalt	**16.0**	**0.00710 J**	6.23E+03
W009	11/20/2005	5	Cobalt	**18.0**	**0.00420 J**	6.23E+03
W010	11/20/2005	5	Cobalt	**14.9**	**0.00990 J**	6.23E+03
W011	11/20/2005	3	Cobalt	**16.8**	**0.0290**	6.23E+03
W011	11/20/2005	9	Cobalt	**13.1**	**0.0220**	6.23E+03
W011	11/20/2005	18.5	Cobalt	**14.4**	**0.0260**	6.23E+03
W012	11/19/2005	6	Cobalt	**17.2**	**0.0260**	6.23E+03
W013	11/19/2005	5	Cobalt	**17.3**	**0.00140 J**	6.23E+03
W014	11/19/2005	5	Cobalt	**17.3**	**0.00410 J**	6.23E+03
W015	11/19/2005	1	Cobalt	**24.2**	**0.00620 J**	6.23E+03
W016	11/19/2005	5	Cobalt	**33.1**	**0.000960 J**	6.23E+03
W017	11/18/2005	3	Cobalt	**21.2**	**0.0140 J**	6.23E+03
W017	11/18/2005	7	Cobalt	**5.20**	**0.00750 J**	6.23E+03
W018	11/18/2005	6	Cobalt	**17.2**	**0.00610 J**	6.23E+03
W019	11/18/2005	4	Cobalt	**51.9 J**	**0.00120 J**	6.23E+03
W020	11/18/2005	5	Cobalt	**20.3**	**0.00250 J**	6.23E+03
WDL-101-S	8/14/2002	0.25	Cobalt	**38.2**	NT	NA
WDL-101-S	8/14/2002	2.25	Cobalt	**20.7**	NT	NA
WDL-101-S	8/14/2002	5	Cobalt	**24.7**	NT	NA
WDL-101-S	8/14/2002	7	Cobalt	**23.5**	NT	NA
WDL-102-S	8/14/2002	0.5	Cobalt	**24.0**	NT	NA
WDL-102-S	8/14/2002	2.25	Cobalt	**25.1**	NT	NA
WDL-102-S	8/14/2002	5.5	Cobalt	**11.7**	NT	NA
WDL-102-S	8/14/2002	8	Cobalt	**19.7**	NT	NA
WDL-102-S	8/14/2002	10	Cobalt	**15.2**	NT	NA
WDL-103-S	8/15/2002	0.25	Cobalt	**28.0**	NT	NA
WDL-103-S	8/15/2002	2.25	Cobalt	**17.4**	NT	NA
WDL-103-S	8/15/2002	5	Cobalt	**13.6**	NT	NA
WDL-103-S	8/15/2002	6.75	Cobalt	**35.2**	NT	NA
WDL-103-S	8/15/2002	8.25	Cobalt	**27.0**	NT	NA
WDL-104-S	8/15/2002	0.25	Cobalt	**13.4**	NT	NA
WDL-104-S	8/15/2002	2.25	Cobalt	**14.5**	NT	NA
WDL-104-S	8/15/2002	5	Cobalt	**19.4**	NT	NA
WDL-104-S	8/15/2002	6.75	Cobalt	**18.6**	NT	NA
WDL-201-S	2/12/2004	0.25	Cobalt	**23.7**	**0.0378**	6.23E+03
WDL-201-S	2/12/2004	6	Cobalt	**10.8**	0.0333 U	6.23E+03
WDL-202-S	2/12/2004	4	Cobalt	**16.1**	0.0333 U	6.23E+03
WDL-203-S	2/13/2004	5.75	Cobalt	**24.6**	0.0200 U	6.23E+03
WDL-204-S	2/12/2004	5	Cobalt	**14.0**	**0.138**	6.23E+03
W001	11/21/2005	1	Copper	**44.4 J**	0.00300 U	4.98E+03
W002	11/21/2005	5	Copper	**28.0 J**	0.00250 U	4.98E+03
W003	11/21/2005	7	Copper	**37.6 J**	**0.00930 J**	4.98E+03
W004	11/21/2005	7	Copper	**23.2 J**	0.00440 U	4.98E+03
W005	11/21/2005	7	Copper	**13.7 J**	0.00150 U	4.98E+03
W006	11/21/2005	6	Copper	**59.5 J**	0.00160 U	4.98E+03
W007	11/21/2005	4	Copper	**72.9 J**	0.000790 U	4.98E+03
W008	11/20/2005	3	Copper	**104 J**	0.00210 U	4.98E+03
W009	11/20/2005	5	Copper	**109 J**	0.00220 U	4.98E+03
W010	11/20/2005	5	Copper	**50.8 J**	0.0180 U	4.98E+03
W011	11/20/2005	3	Copper	**59.9 J**	0.00180 U	4.98E+03
W011	11/20/2005	9	Copper	**11.3 J**	0.00470 U	4.98E+03
W011	11/20/2005	18.5	Copper	**24.0 J**	0.00330 U	4.98E+03
W012	11/19/2005	6	Copper	**55.3 J**	0.00180 U	4.98E+03
W013	11/19/2005	5	Copper	**72.2 J**	0.00200 U	4.98E+03
W014	11/19/2005	5	Copper	**65.4 J**	0.00250 U	4.98E+03
W015	11/19/2005	1	Copper	**143 J**	0.00280 U	4.98E+03
W016	11/19/2005	5	Copper	**150 J**	0.00260 U	4.98E+03
W017	11/18/2005	3	Copper	**110 J**	0.00270 U	4.98E+03
W017	11/18/2005	7	Copper	**6.60 J**	0.00170 U	4.98E+03

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W018	11/18/2005	6	Copper	**73.8 J**	0.00210 U	4.98E+03
W019	11/18/2005	4	Copper	**289 J**	0.00160 U	4.98E+03
W020	11/18/2005	5	Copper	**123 J**	0.00260 U	4.98E+03
WDL-101-S	8/14/2002	0.25	Copper	**199**	NT	NA
WDL-101-S	8/14/2002	2.25	Copper	**63.2**	NT	NA
WDL-101-S	8/14/2002	5	Copper	**134**	NT	NA
WDL-101-S	8/14/2002	7	Copper	**228**	NT	NA
WDL-102-S	8/14/2002	0.5	Copper	**142**	NT	NA
WDL-102-S	8/14/2002	2.25	Copper	**163**	NT	NA
WDL-102-S	8/14/2002	5.5	Copper	**38.1**	NT	NA
WDL-102-S	8/14/2002	8	Copper	**49.0**	NT	NA
WDL-102-S	8/14/2002	10	Copper	**51.8**	NT	NA
WDL-103-S	8/15/2002	0.25	Copper	**189**	NT	NA
WDL-103-S	8/15/2002	2.25	Copper	**77.5**	NT	NA
WDL-103-S	8/15/2002	5	Copper	**66.5**	NT	NA
WDL-103-S	8/15/2002	6.75	Copper	**187**	NT	NA
WDL-103-S	8/15/2002	8.25	Copper	**66.5**	NT	NA
WDL-104-S	8/15/2002	0.25	Copper	**47.5**	NT	NA
WDL-104-S	8/15/2002	2.25	Copper	**30.1**	NT	NA
WDL-104-S	8/15/2002	5	Copper	**158**	NT	NA
WDL-104-S	8/15/2002	6.75	Copper	**36.2**	NT	NA
WDL-201-S	2/12/2004	0.25	Copper	**144**	0.00340 U	4.98E+03
WDL-201-S	2/12/2004	6	Copper	**26.2**	0.00567 U	4.98E+03
WDL-202-S	2/12/2004	4	Copper	**69.8**	0.00567 U	4.98E+03
WDL-203-S	2/13/2004	5.75	Copper	**158**	0.00340 U	4.98E+03
WDL-204-S	2/12/2004	5	Copper	**91.9**	0.00850 U	4.98E+03
W001	11/21/2005	1	Iron	**33,300 J**	**65.6**	3.74E+04
W002	11/21/2005	5	Iron	**31,400 J**	**37.7**	3.74E+04
W003	11/21/2005	7	Iron	**19,600 J**	**3.90**	3.74E+04
W004	11/21/2005	7	Iron	**25,400 J**	**11.1**	3.74E+04
W005	11/21/2005	7	Iron	**24,000 J**	**28.4 J**	3.74E+04
W006	11/21/2005	6	Iron	**28,400 J**	**16.1**	3.74E+04
W007	11/21/2005	4	Iron	**26,100 J**	**80.7**	3.74E+04
W008	11/20/2005	3	Iron	**27,300 J**	**63.6**	3.74E+04
W009	11/20/2005	5	Iron	**30,900 J**	**59.1**	3.74E+04
W010	11/20/2005	5	Iron	**36,200 J**	**87.7**	3.74E+04
W011	11/20/2005	3	Iron	**32,000 J**	**73.2**	3.74E+04
W011	11/20/2005	9	Iron	**22,000 J**	**2.10**	3.74E+04
W011	11/20/2005	18.5	Iron	**24,800 J**	0.0575 U	3.74E+04
W012	11/19/2005	6	Iron	**27,600 J**	**77.0**	3.74E+04
W013	11/19/2005	5	Iron	**31,400 J**	**87.3**	3.74E+04
W014	11/19/2005	5	Iron	**26,100 J**	**72.8**	3.74E+04
W015	11/19/2005	1	Iron	**32,300 J**	**42.4**	3.74E+04
W016	11/19/2005	5	Iron	**53,500 J**	**104**	3.74E+04
W017	11/18/2005	3	Iron	**32,600 J**	**4.00**	3.74E+04
W017	11/18/2005	7	Iron	**15,600 J**	**71.5**	3.74E+04
W018	11/18/2005	6	Iron	**21,700 J**	**84.9**	3.74E+04
W019	11/18/2005	4	Iron	**67,800 J**	**79.3**	3.74E+04
W020	11/18/2005	5	Iron	**41,700 J**	**104**	3.74E+04
WDL-101-S	8/14/2002	0.25	Iron	**37,500**	NT	NA
WDL-101-S	8/14/2002	2.25	Iron	**30,400**	NT	NA
WDL-101-S	8/14/2002	5	Iron	**56,300**	NT	NA
WDL-101-S	8/14/2002	7	Iron	**32,600**	NT	NA
WDL-102-S	8/14/2002	0.5	Iron	**33,600**	NT	NA
WDL-102-S	8/14/2002	2.25	Iron	**43,400**	NT	NA
WDL-102-S	8/14/2002	5.5	Iron	**23,100**	NT	NA
WDL-102-S	8/14/2002	8	Iron	**36,300**	NT	NA
WDL-102-S	8/14/2002	10	Iron	**26,500**	NT	NA
WDL-103-S	8/15/2002	0.25	Iron	**42,000 J**	NT	NA
WDL-103-S	8/15/2002	2.25	Iron	**30,400 J**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	5	Iron	**31,200 J**	NT	NA
WDL-103-S	8/15/2002	6.75	Iron	**73,100 J**	NT	NA
WDL-103-S	8/15/2002	8.25	Iron	**38,800 J**	NT	NA
WDL-104-S	8/15/2002	0.25	Iron	**18,400**	NT	NA
WDL-104-S	8/15/2002	2.25	Iron	**14,300**	NT	NA
WDL-104-S	8/15/2002	5	Iron	**39,100**	NT	NA
WDL-104-S	8/15/2002	6.75	Iron	**22,300**	NT	NA
WDL-201-S	2/12/2004	0.25	Iron	**37,500**	**0.146**	3.74E+04
WDL-201-S	2/12/2004	6	Iron	**16,300**	**4.90**	3.74E+04
WDL-202-S	2/12/2004	4	Iron	**22,800**	**1.06**	3.74E+04
WDL-203-S	2/13/2004	5.75	Iron	**47,600**	**0.550**	3.74E+04
WDL-204-S	2/12/2004	5	Iron	**19,700**	**10.4**	3.74E+04
W001	11/21/2005	1	Lead	**804**	0.00120 U	NA
W002	11/21/2005	5	Lead	**375**	**0.0750 J**	NA
W003	11/21/2005	7	Lead	**286**	**0.160 J**	NA
W004	11/21/2005	7	Lead	**55.3**	**0.0770 J**	NA
W005	11/21/2005	7	Lead	**17.8 J**	**0.0220 J**	NA
W006	11/21/2005	6	Lead	**360**	**0.0510 J**	NA
W007	11/21/2005	4	Lead	**831**	**0.00290 J**	NA
W008	11/20/2005	3	Lead	**1,240 J**	0.000310 U	NA
W009	11/20/2005	5	Lead	**5,160**	0.000440 U	NA
W010	11/20/2005	5	Lead	**727 J**	**0.00150 J**	NA
W011	11/20/2005	3	Lead	**1,080 J**	**0.00320 J**	NA
W011	11/20/2005	9	Lead	**3.40 J**	0.00110 U	NA
W011	11/20/2005	18.5	Lead	**6.80 J**	0.000680 U	NA
W012	11/19/2005	6	Lead	**54.8 J**	0.000700 U	NA
W013	11/19/2005	5	Lead	**1,170 J**	**0.00130 J**	NA
W014	11/19/2005	5	Lead	**179 J**	**0.00240 J**	NA
W015	11/19/2005	1	Lead	**853 J**	0.000440 U	NA
W016	11/19/2005	5	Lead	**1,990 J**	**0.00180 J**	NA
W017	11/18/2005	3	Lead	**458 J**	0.00750 U	NA
W017	11/18/2005	7	Lead	**126 J**	**0.0290 J**	NA
W018	11/18/2005	6	Lead	**406 J**	**0.0120 J**	NA
W019	11/18/2005	4	Lead	**1,410 J**	0.00180 U	NA
W020	11/18/2005	5	Lead	**1,150 J**	0.00150 U	NA
WDL-101-S	8/14/2002	0.25	Lead	**996**	NT	NA
WDL-101-S	8/14/2002	0.25	Lead	**1,000**	NT	NA
WDL-101-S	8/14/2002	2.25	Lead	**888**	NT	NA
WDL-101-S	8/14/2002	2.25	Lead	**1,030**	NT	NA
WDL-101-S	8/14/2002	5	Lead	**4,340**	NT	NA
WDL-101-S	8/14/2002	5	Lead	**4,530**	NT	NA
WDL-101-S	8/14/2002	7	Lead	**3,500**	NT	NA
WDL-101-S	8/14/2002	7	Lead	**3,710**	NT	NA
WDL-102-S	8/14/2002	0.5	Lead	**889**	NT	NA
WDL-102-S	8/14/2002	0.5	Lead	**1,000**	NT	NA
WDL-102-S	8/14/2002	2.25	Lead	**526**	NT	NA
WDL-102-S	8/14/2002	2.25	Lead	**589**	NT	NA
WDL-102-S	8/14/2002	5.5	Lead	**268**	NT	NA
WDL-102-S	8/14/2002	5.5	Lead	**289**	NT	NA
WDL-102-S	8/14/2002	8	Lead	**52.9**	NT	NA
WDL-102-S	8/14/2002	8	Lead	**89.4**	NT	NA
WDL-102-S	8/14/2002	10	Lead	**55.1**	NT	NA
WDL-102-S	8/14/2002	10	Lead	**50.4**	NT	NA
WDL-103-S	8/15/2002	0.25	Lead	**1,490**	NT	NA
WDL-103-S	8/15/2002	2.25	Lead	**284**	NT	NA
WDL-103-S	8/15/2002	5	Lead	**210**	NT	NA
WDL-103-S	8/15/2002	6.75	Lead	**2,270**	NT	NA
WDL-103-S	8/15/2002	8.25	Lead	**74.1**	NT	NA
WDL-104-S	8/15/2002	0.25	Lead	**156**	NT	NA
WDL-104-S	8/15/2002	2.25	Lead	**48.1**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	5	Lead	**982**	NT	NA
WDL-104-S	8/15/2002	6.75	Lead	**345**	NT	NA
WDL-201-S	2/12/2004	0.25	Lead	**1,330**	**0.0898**	NA
WDL-201-S	2/12/2004	6	Lead	**118**	**0.0313**	NA
WDL-202-S	2/12/2004	4	Lead	**149**	**0.0283**	NA
WDL-203-S	2/13/2004	5.75	Lead	**266**	0.00768 U	NA
WDL-204-S	2/12/2004	5	Lead	**657 J**	**1.87**	NA
W001	11/21/2005	1	Lithium	**8.60**	NT	NA
W002	11/21/2005	5	Lithium	**10.1**	NT	NA
W003	11/21/2005	7	Lithium	**3.60**	NT	NA
W004	11/21/2005	7	Lithium	**3.60**	NT	NA
W005	11/21/2005	7	Lithium	**2.80 J**	NT	NA
W006	11/21/2005	6	Lithium	**13.5**	NT	NA
W007	11/21/2005	4	Lithium	**12.4**	NT	NA
W008	11/20/2005	3	Lithium	**7.40**	NT	NA
W009	11/20/2005	5	Lithium	**11.2**	NT	NA
W010	11/20/2005	5	Lithium	**11.5**	NT	NA
W011	11/20/2005	3	Lithium	**8.90**	NT	NA
W011	11/20/2005	9	Lithium	**5.80**	NT	NA
W011	11/20/2005	18.5	Lithium	**12.0**	NT	NA
W012	11/19/2005	6	Lithium	**15.8**	NT	NA
W013	11/19/2005	5	Lithium	**10.1**	NT	NA
W014	11/19/2005	5	Lithium	**14.2**	NT	NA
W015	11/19/2005	1	Lithium	**6.00**	NT	NA
W016	11/19/2005	5	Lithium	**11.7**	NT	NA
W017	11/18/2005	3	Lithium	**5.10**	NT	NA
W017	11/18/2005	7	Lithium	**4.00**	NT	NA
W018	11/18/2005	6	Lithium	**9.80**	NT	NA
W019	11/18/2005	4	Lithium	**8.90**	NT	NA
W020	11/18/2005	5	Lithium	**8.50**	NT	NA
W001	11/21/2005	1	Magnesium	**4,780 J**	**6.10**	NA
W002	11/21/2005	5	Magnesium	**4,970 J**	**8.40**	NA
W003	11/21/2005	7	Magnesium	**2,340 J**	**6.20**	NA
W004	11/21/2005	7	Magnesium	**3,360 J**	**5.40**	NA
W005	11/21/2005	7	Magnesium	**3,140 J**	**2.00 J**	NA
W006	11/21/2005	6	Magnesium	**4,980 J**	**4.40**	NA
W007	11/21/2005	4	Magnesium	**4,480 J**	**1.20 J**	NA
W008	11/20/2005	3	Magnesium	**6,880**	**6.80**	NA
W009	11/20/2005	5	Magnesium	**4,370**	**4.80**	NA
W010	11/20/2005	5	Magnesium	**5,640**	**9.60**	NA
W011	11/20/2005	3	Magnesium	**6,900**	**8.80**	NA
W011	11/20/2005	9	Magnesium	**3,070**	**0.440 J**	NA
W011	11/20/2005	18.5	Magnesium	**4,140**	**8.70**	NA
W012	11/19/2005	6	Magnesium	**5,840**	**8.50**	NA
W013	11/19/2005	5	Magnesium	**6,030**	**5.60**	NA
W014	11/19/2005	5	Magnesium	**5,280**	**4.10**	NA
W015	11/19/2005	1	Magnesium	**25,400**	**24.8**	NA
W016	11/19/2005	5	Magnesium	**8,170**	**7.60**	NA
W017	11/18/2005	3	Magnesium	**26,500**	**38.0**	NA
W017	11/18/2005	7	Magnesium	**2,150**	**2.70**	NA
W018	11/18/2005	6	Magnesium	**5,440**	**16.8**	NA
W019	11/18/2005	4	Magnesium	**19,300**	**15.0**	NA
W020	11/18/2005	5	Magnesium	**24,600 J**	**19.5**	NA
WDL-101-S	8/14/2002	0.25	Magnesium	**10,400**	NT	NA
WDL-101-S	8/14/2002	2.25	Magnesium	**4,710**	NT	NA
WDL-101-S	8/14/2002	5	Magnesium	**6,460**	NT	NA
WDL-101-S	8/14/2002	7	Magnesium	**5,720**	NT	NA
WDL-102-S	8/14/2002	0.5	Magnesium	**9,210**	NT	NA
WDL-102-S	8/14/2002	2.25	Magnesium	**14,300**	NT	NA
WDL-102-S	8/14/2002	5.5	Magnesium	**2,290**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	8	Magnesium	**5,780**	NT	NA
WDL-102-S	8/14/2002	10	Magnesium	**5,180**	NT	NA
WDL-103-S	8/15/2002	0.25	Magnesium	**10,300**	NT	NA
WDL-103-S	8/15/2002	2.25	Magnesium	**5,520**	NT	NA
WDL-103-S	8/15/2002	5	Magnesium	**5,670**	NT	NA
WDL-103-S	8/15/2002	6.75	Magnesium	**10,800**	NT	NA
WDL-103-S	8/15/2002	8.25	Magnesium	**6,950**	NT	NA
WDL-104-S	8/15/2002	0.25	Magnesium	**29,000**	NT	NA
WDL-104-S	8/15/2002	2.25	Magnesium	**28,500**	NT	NA
WDL-104-S	8/15/2002	5	Magnesium	**19,300**	NT	NA
WDL-104-S	8/15/2002	6.75	Magnesium	**3,040**	NT	NA
WDL-201-S	2/12/2004	0.25	Magnesium	**8,370**	**10.5 J**	NA
WDL-201-S	2/12/2004	6	Magnesium	**2,560**	**3.13**	NA
WDL-202-S	2/12/2004	4	Magnesium	**3,030**	**7.58**	NA
WDL-203-S	2/13/2004	5.75	Magnesium	**40,000**	**38.9**	NA
WDL-204-S	2/12/2004	5	Magnesium	**4,070**	**3.73**	NA
W001	11/21/2005	1	Manganese	**595**	**3.40 J**	2.99E+03
W002	11/21/2005	5	Manganese	**361**	**4.30 J**	2.99E+03
W003	11/21/2005	7	Manganese	**217**	**1.60 J**	2.99E+03
W004	11/21/2005	7	Manganese	**253 J**	**1.70 J**	2.99E+03
W005	11/21/2005	7	Manganese	**152 J**	**0.710 J**	2.99E+03
W006	11/21/2005	6	Manganese	**468**	**3.20 J**	2.99E+03
W007	11/21/2005	4	Manganese	**321**	**1.80 J**	2.99E+03
W008	11/20/2005	3	Manganese	**954 J**	**3.60 J**	2.99E+03
W009	11/20/2005	5	Manganese	**714 J**	**3.50 J**	2.99E+03
W010	11/20/2005	5	Manganese	**506 J**	**6.90 J**	2.99E+03
W011	11/20/2005	3	Manganese	**1,350 J**	**4.60 J**	2.99E+03
W011	11/20/2005	9	Manganese	**195 J**	**0.250 J**	2.99E+03
W011	11/20/2005	18.5	Manganese	**331 J**	**2.80 J**	2.99E+03
W012	11/19/2005	6	Manganese	**318 J**	**3.40 J**	2.99E+03
W013	11/19/2005	5	Manganese	**1,080 J**	**9.50 J**	2.99E+03
W014	11/19/2005	5	Manganese	**784 J**	**4.70 J**	2.99E+03
W015	11/19/2005	1	Manganese	**1,430 J**	**3.80 J**	2.99E+03
W016	11/19/2005	5	Manganese	**1,550 J**	**8.90 J**	2.99E+03
W017	11/18/2005	3	Manganese	**1,220 J**	**3.80 J**	2.99E+03
W017	11/18/2005	7	Manganese	**158 J**	**1.00 J**	2.99E+03
W018	11/18/2005	6	Manganese	**1,010**	**20.2 J**	2.99E+03
W019	11/18/2005	4	Manganese	**4,830**	**17.2 J**	2.99E+03
W020	11/18/2005	5	Manganese	**1,650**	**16.2 J**	2.99E+03
WDL-101-S	8/14/2002	0.25	Manganese	**1,270**	NT	NA
WDL-101-S	8/14/2002	2.25	Manganese	**932**	NT	NA
WDL-101-S	8/14/2002	5	Manganese	**1,100**	NT	NA
WDL-101-S	8/14/2002	7	Manganese	**935**	NT	NA
WDL-102-S	8/14/2002	0.5	Manganese	**1,080**	NT	NA
WDL-102-S	8/14/2002	2.25	Manganese	**1,010**	NT	NA
WDL-102-S	8/14/2002	5.5	Manganese	**221**	NT	NA
WDL-102-S	8/14/2002	8	Manganese	**397**	NT	NA
WDL-102-S	8/14/2002	10	Manganese	**253**	NT	NA
WDL-103-S	8/15/2002	0.25	Manganese	**1,290**	NT	NA
WDL-103-S	8/15/2002	2.25	Manganese	**944**	NT	NA
WDL-103-S	8/15/2002	5	Manganese	**1,060**	NT	NA
WDL-103-S	8/15/2002	6.75	Manganese	**2,400**	NT	NA
WDL-103-S	8/15/2002	8.25	Manganese	**350**	NT	NA
WDL-104-S	8/15/2002	0.25	Manganese	**3,500**	NT	NA
WDL-104-S	8/15/2002	2.25	Manganese	**386**	NT	NA
WDL-104-S	8/15/2002	5	Manganese	**3,740**	NT	NA
WDL-104-S	8/15/2002	6.75	Manganese	**247**	NT	NA
WDL-201-S	2/12/2004	0.25	Manganese	**1,170**	NT	NA
WDL-201-S	2/12/2004	6	Manganese	**338 J**	NT	NA
WDL-202-S	2/12/2004	4	Manganese	**448 J**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-203-S	2/13/2004	5.75	Manganese	**3,760 J**	NT	NA
WDL-204-S	2/12/2004	5	Manganese	**517 J**	NT	NA
W001	11/21/2005	1	Mercury	**0.390**	0.000535 U	3.74E+01
W002	11/21/2005	5	Mercury	**8.50**	0.000535 U	3.74E+01
W003	11/21/2005	7	Mercury	**0.260**	0.000535 U	3.74E+01
W004	11/21/2005	7	Mercury	**0.290**	0.000535 U	3.74E+01
W005	11/21/2005	7	Mercury	**0.0570 J**	0.000535 U	3.74E+01
W006	11/21/2005	6	Mercury	**0.970**	**0.000535 J**	3.74E+01
W007	11/21/2005	4	Mercury	**0.900**	0.000535 U	3.74E+01
W008	11/20/2005	3	Mercury	**2.60**	0.000535 U	3.74E+01
W009	11/20/2005	5	Mercury	**1.40**	0.000535 U	3.74E+01
W010	11/20/2005	5	Mercury	**0.930**	0.000535 U	3.74E+01
W011	11/20/2005	3	Mercury	**0.740**	0.000535 U	3.74E+01
W011	11/20/2005	9	Mercury	0.00858 U	0.000535 U	3.74E+01
W011	11/20/2005	18.5	Mercury	**0.0310 J**	0.000535 U	3.74E+01
W012	11/19/2005	6	Mercury	**0.380**	0.000535 U	3.74E+01
W013	11/19/2005	5	Mercury	**0.940**	0.000535 U	3.74E+01
W014	11/19/2005	5	Mercury	**0.400**	0.000535 U	3.74E+01
W015	11/19/2005	1	Mercury	**1.10**	0.000535 U	3.74E+01
W016	11/19/2005	5	Mercury	**1.10**	0.000535 U	3.74E+01
W017	11/18/2005	3	Mercury	**0.510**	0.000535 U	3.74E+01
W017	11/18/2005	7	Mercury	**0.0320 J**	0.000535 U	3.74E+01
W018	11/18/2005	6	Mercury	**0.240**	0.000535 U	3.74E+01
W019	11/18/2005	4	Mercury	**4.20**	0.000535 U	3.74E+01
W020	11/18/2005	5	Mercury	**0.700**	0.000535 U	3.74E+01
WDL-101-S	8/14/2002	0.25	Mercury	**1.55 J**	NT	NA
WDL-101-S	8/14/2002	2.25	Mercury	**0.544 J**	NT	NA
WDL-101-S	8/14/2002	5	Mercury	**94.9 J**	NT	NA
WDL-101-S	8/14/2002	7	Mercury	**14.8 J**	NT	NA
WDL-102-S	8/14/2002	0.5	Mercury	**0.933**	NT	NA
WDL-102-S	8/14/2002	2.25	Mercury	**0.921**	NT	NA
WDL-102-S	8/14/2002	5.5	Mercury	**0.0848**	NT	NA
WDL-102-S	8/14/2002	8	Mercury	**0.394**	NT	NA
WDL-102-S	8/14/2002	10	Mercury	**0.122**	NT	NA
WDL-103-S	8/15/2002	0.25	Mercury	**1.15**	NT	NA
WDL-103-S	8/15/2002	2.25	Mercury	**0.234**	NT	NA
WDL-103-S	8/15/2002	5	Mercury	**0.0877**	NT	NA
WDL-103-S	8/15/2002	6.75	Mercury	**0.591**	NT	NA
WDL-103-S	8/15/2002	8.25	Mercury	**0.282**	NT	NA
WDL-104-S	8/15/2002	0.25	Mercury	**0.121**	NT	NA
WDL-104-S	8/15/2002	2.25	Mercury	**0.184**	NT	NA
WDL-104-S	8/15/2002	5	Mercury	**0.515**	NT	NA
WDL-104-S	8/15/2002	6.75	Mercury	**0.345**	NT	NA
WDL-201-S	2/12/2004	0.25	Mercury	**1.26**	NT	NA
WDL-201-S	2/12/2004	6	Mercury	**0.723**	NT	NA
WDL-202-S	2/12/2004	4	Mercury	**0.143**	NT	NA
WDL-203-S	2/13/2004	5.75	Mercury	**0.0573**	NT	NA
WDL-204-S	2/12/2004	5	Mercury	**0.442**	NT	NA
W001	11/21/2005	1	Molybdenum	**71.7**	**0.610 J**	6.23E+02
W002	11/21/2005	5	Molybdenum	**13.1**	**0.160 J**	6.23E+02
W003	11/21/2005	7	Molybdenum	**13.3**	**0.0460 J**	6.23E+02
W004	11/21/2005	7	Molybdenum	**7.20**	**0.0320 J**	6.23E+02
W005	11/21/2005	7	Molybdenum	**5.00 J**	**0.0440 J**	6.23E+02
W006	11/21/2005	6	Molybdenum	**40.7 J**	**0.150 J**	6.23E+02
W007	11/21/2005	4	Molybdenum	**60.7**	**0.180 J**	6.23E+02
W008	11/20/2005	3	Molybdenum	**239 J**	**0.620**	6.23E+02
W009	11/20/2005	5	Molybdenum	**365 J**	**0.420**	6.23E+02
W010	11/20/2005	5	Molybdenum	**89.3 J**	**0.670**	6.23E+02
W011	11/20/2005	3	Molybdenum	**220 J**	**0.760**	6.23E+02
W011	11/20/2005	9	Molybdenum	**2.80 J**	**0.00750 J**	6.23E+02

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	18.5	Molybdenum	**0.920 J**	**0.000940 J**	6.23E+02
W012	11/19/2005	6	Molybdenum	**33.0 J**	**0.0470**	6.23E+02
W013	11/19/2005	5	Molybdenum	**422 J**	**1.30**	6.23E+02
W014	11/19/2005	5	Molybdenum	**918 J**	**2.30**	6.23E+02
W015	11/19/2005	1	Molybdenum	**543 J**	**2.30**	6.23E+02
W016	11/19/2005	5	Molybdenum	**1,410 J**	**2.70**	6.23E+02
W017	11/18/2005	3	Molybdenum	**658 J**	**2.70**	6.23E+02
W017	11/18/2005	7	Molybdenum	**94.4 J**	**0.480**	6.23E+02
W018	11/18/2005	6	Molybdenum	**440 J**	**2.00**	6.23E+02
W019	11/18/2005	4	Molybdenum	**1,270**	**0.920**	6.23E+02
W020	11/18/2005	5	Molybdenum	**253**	**0.470**	6.23E+02
WDL-101-S	8/14/2002	0.25	Molybdenum	**325**	NT	NA
WDL-101-S	8/14/2002	2.25	Molybdenum	**291**	NT	NA
WDL-101-S	8/14/2002	5	Molybdenum	**249**	NT	NA
WDL-101-S	8/14/2002	7	Molybdenum	**84.7**	NT	NA
WDL-102-S	8/14/2002	0.5	Molybdenum	**485**	NT	NA
WDL-102-S	8/14/2002	2.25	Molybdenum	**1,190**	NT	NA
WDL-102-S	sociated analy	5.5	Molybdenum	**7.63**	NT	NA
WDL-102-S	8/14/2002	8	Molybdenum	**3.99**	NT	NA
WDL-102-S	dentified and tl	10	Molybdenum	**22.5**	NT	NA
WDL-103-S	8/15/2002	0.25	Molybdenum	**1,120**	NT	NA
WDL-103-S	8/15/2002	2.25	Molybdenum	**170**	NT	NA
WDL-103-S	8/15/2002	5	Molybdenum	**88.5**	NT	NA
WDL-103-S	8/15/2002	6.75	Molybdenum	**313**	NT	NA
WDL-103-S	8/15/2002	8.25	Molybdenum	**20.6**	NT	NA
WDL-104-S	8/15/2002	0.25	Molybdenum	**77.4**	NT	NA
WDL-104-S	8/15/2002	2.25	Molybdenum	**36.1**	NT	NA
WDL-104-S	8/15/2002	5	Molybdenum	**306**	NT	NA
WDL-104-S	8/15/2002	6.75	Molybdenum	**32.0**	NT	NA
WDL-201-S	2/12/2004	0.25	Molybdenum	343 U	**1.09**	6.23E+02
WDL-201-S	2/12/2004	6	Molybdenum	**6.47 J**	**0.219**	6.23E+02
WDL-202-S	2/12/2004	4	Molybdenum	**36.5 J**	**0.848**	6.23E+02
WDL-203-S	2/13/2004	5.75	Molybdenum	**336 J**	**7.01**	6.23E+02
WDL-204-S	2/12/2004	5	Molybdenum	**71.0**	**0.424**	6.23E+02
W001	11/21/2005	1	Nickel	**123**	**0.0380 J**	1.25E+04
W002	11/21/2005	5	Nickel	**36.7**	**0.210 J**	1.25E+04
W003	11/21/2005	7	Nickel	**28.3**	**0.260 J**	1.25E+04
W004	11/21/2005	7	Nickel	**26.7**	**0.160 J**	1.25E+04
W005	11/21/2005	7	Nickel	**21.6 J**	**0.120 J**	1.25E+04
W006	11/21/2005	6	Nickel	**67.4 J**	**0.170 J**	1.25E+04
W007	11/21/2005	4	Nickel	**37.4**	**0.0440 J**	1.25E+04
W008	11/20/2005	3	Nickel	**232 J**	**0.200 J**	1.25E+04
W009	11/20/2005	5	Nickel	**155 J**	**0.0540 J**	1.25E+04
W010	11/20/2005	5	Nickel	**64.4 J**	**0.0820 J**	1.25E+04
W011	11/20/2005	3	Nickel	**152 J**	**0.340 J**	1.25E+04
W011	11/20/2005	9	Nickel	**20.0 J**	**0.0270 J**	1.25E+04
W011	11/20/2005	18.5	Nickel	**21.9 J**	0.0110 U	1.25E+04
W012	11/19/2005	6	Nickel	**52.2 J**	**0.0990 J**	1.25E+04
W013	11/19/2005	5	Nickel	**169 J**	**0.0550 J**	1.25E+04
W014	11/19/2005	5	Nickel	**131 J**	**0.0760 J**	1.25E+04
W015	11/19/2005	1	Nickel	**519 J**	**0.240 J**	1.25E+04
W016	11/19/2005	5	Nickel	**1,240 J**	**0.0480 J**	1.25E+04
W017	11/18/2005	3	Nickel	**357 J**	**0.560 J**	1.25E+04
W017	11/18/2005	7	Nickel	**10.0 J**	**0.0410 J**	1.25E+04
W018	11/18/2005	6	Nickel	**278 J**	**0.370 J**	1.25E+04
W019	11/18/2005	4	Nickel	**2,390**	**0.0300 J**	1.25E+04
W020	11/18/2005	5	Nickel	**305 J**	0.0150 U	1.25E+04
WDL-101-S	8/14/2002	0.25	Nickel	**885**	NT	NA
WDL-101-S	8/14/2002	2.25	Nickel	**389**	NT	NA
WDL-101-S	8/14/2002	5	Nickel	**321**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	7	Nickel	**504**	NT	NA
WDL-102-S	8/14/2002	0.5	Nickel	**419**	NT	NA
WDL-102-S	8/14/2002	2.25	Nickel	**450**	NT	NA
WDL-102-S	8/14/2002	5.5	Nickel	**19.4**	NT	NA
WDL-102-S	8/14/2002	8	Nickel	**55.7**	NT	NA
WDL-102-S	8/14/2002	10	Nickel	**25.1**	NT	NA
WDL-103-S	8/15/2002	0.25	Nickel	**448**	NT	NA
WDL-103-S	8/15/2002	2.25	Nickel	**131**	NT	NA
WDL-103-S	8/15/2002	5	Nickel	**140**	NT	NA
WDL-103-S	8/15/2002	6.75	Nickel	**381**	NT	NA
WDL-103-S	8/15/2002	8.25	Nickel	**62.9**	NT	NA
WDL-104-S	8/15/2002	0.25	Nickel	**237**	NT	NA
WDL-104-S	8/15/2002	2.25	Nickel	**293**	NT	NA
WDL-104-S	8/15/2002	5	Nickel	**441**	NT	NA
WDL-104-S	8/15/2002	6.75	Nickel	**45.2**	NT	NA
WDL-201-S	2/12/2004	0.25	Nickel	**586**	**1.16**	1.25E+04
WDL-201-S	2/12/2004	6	Nickel	**20.8**	**0.0183**	1.25E+04
WDL-202-S	2/12/2004	4	Nickel	**50.7**	**0.0167**	1.25E+04
WDL-203-S	2/13/2004	5.75	Nickel	**500 J**	**0.00320**	1.25E+04
WDL-204-S	2/12/2004	5	Nickel	**90.8**	**1.31**	1.25E+04
W001	11/21/2005	1	Potassium	**1,110**	**2.80 J**	NA
W002	11/21/2005	5	Potassium	**1,340**	**3.60 J**	NA
W003	11/21/2005	7	Potassium	**391**	**2.60 J**	NA
W004	11/21/2005	7	Potassium	**427**	**3.00 J**	NA
W005	11/21/2005	7	Potassium	**459 J**	**3.10 J**	NA
W006	11/21/2005	6	Potassium	**1,010**	**5.40**	NA
W007	11/21/2005	4	Potassium	**969**	**3.50 J**	NA
W008	11/20/2005	3	Potassium	**862**	**4.60 J**	NA
W009	11/20/2005	5	Potassium	**1,150**	**5.40**	NA
W010	11/20/2005	5	Potassium	**1,090**	**4.20 J**	NA
W011	11/20/2005	3	Potassium	**1,040**	**4.30 J**	NA
W011	11/20/2005	9	Potassium	**435**	**2.50 J**	NA
W011	11/20/2005	18.5	Potassium	**665**	**2.80 J**	NA
W012	11/19/2005	6	Potassium	**1,020**	**3.10 J**	NA
W013	11/19/2005	5	Potassium	**860**	**5.00**	NA
W014	11/19/2005	5	Potassium	**1,200**	**8.30**	NA
W015	11/19/2005	1	Potassium	**918**	**8.20**	NA
W016	11/19/2005	5	Potassium	**1,330**	**13.6**	NA
W017	11/18/2005	3	Potassium	**927**	**10.4**	NA
W017	11/18/2005	7	Potassium	**770**	**5.20**	NA
W018	11/18/2005	6	Potassium	**841**	**6.50**	NA
W019	11/18/2005	4	Potassium	**1,030**	**8.20**	NA
W020	11/18/2005	5	Potassium	**951**	**4.70 J**	NA
WDL-101-S	8/14/2002	0.25	Potassium	**1,310**	NT	NA
WDL-101-S	8/14/2002	2.25	Potassium	**1,020**	NT	NA
WDL-101-S	8/14/2002	5	Potassium	**1,510**	NT	NA
WDL-101-S	8/14/2002	7	Potassium	**736**	NT	NA
WDL-102-S	8/14/2002	0.5	Potassium	**994**	NT	NA
WDL-102-S	8/14/2002	2.25	Potassium	**959**	NT	NA
WDL-102-S	8/14/2002	5.5	Potassium	**510**	NT	NA
WDL-102-S	8/14/2002	8	Potassium	**1,340**	NT	NA
WDL-102-S	8/14/2002	10	Potassium	**1,220**	NT	NA
WDL-103-S	8/15/2002	0.25	Potassium	**1,590**	NT	NA
WDL-103-S	8/15/2002	2.25	Potassium	**1,110**	NT	NA
WDL-103-S	8/15/2002	5	Potassium	**887**	NT	NA
WDL-103-S	8/15/2002	6.75	Potassium	**1,880**	NT	NA
WDL-103-S	8/15/2002	8.25	Potassium	**1,560**	NT	NA
WDL-104-S	8/15/2002	0.25	Potassium	**480**	NT	NA
WDL-104-S	8/15/2002	2.25	Potassium	**218**	NT	NA
WDL-104-S	8/15/2002	5	Potassium	**486**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	6.75	Potassium	**695**	NT	NA
WDL-201-S	2/12/2004	0.25	Potassium	**1,240**	**4.78**	NA
WDL-201-S	2/12/2004	6	Potassium	**448**	**5.05 J**	NA
WDL-202-S	2/12/2004	4	Potassium	**651**	**7.74 J**	NA
WDL-203-S	2/13/2004	5.75	Potassium	**246**	**7.51 J**	NA
WDL-204-S	2/12/2004	5	Potassium	**819**	**5.71 J**	NA
W001	11/21/2005	1	Selenium	**0.770**	0.00170 U	6.23E+02
W002	11/21/2005	5	Selenium	**2.90**	0.00220 U	6.23E+02
W003	11/21/2005	7	Selenium	**0.730**	0.00200 U	6.23E+02
W004	11/21/2005	7	Selenium	**0.920**	0.00180 U	6.23E+02
W005	11/21/2005	7	Selenium	**0.570 J**	0.00200 U	6.23E+02
W006	11/21/2005	6	Selenium	**4.40**	0.00170 U	6.23E+02
W007	11/21/2005	4	Selenium	**1.60**	0.00180 U	6.23E+02
W008	11/20/2005	3	Selenium	**8.60**	0.00290 U	6.23E+02
W009	11/20/2005	5	Selenium	**2.60**	0.00240 U	6.23E+02
W010	11/20/2005	5	Selenium	**1.20**	0.00320 U	6.23E+02
W011	11/20/2005	3	Selenium	**1.40**	0.00260 U	6.23E+02
W011	11/20/2005	9	Selenium	**0.440**	0.00200 U	6.23E+02
W011	11/20/2005	18.5	Selenium	**0.900**	0.00170 U	6.23E+02
W012	11/19/2005	6	Selenium	**1.30**	0.00190 U	6.23E+02
W013	11/19/2005	5	Selenium	**1.90**	0.00240 U	6.23E+02
W014	11/19/2005	5	Selenium	**1.20**	0.00200 U	6.23E+02
W015	11/19/2005	1	Selenium	**1.30**	0.00300 U	6.23E+02
W016	11/19/2005	5	Selenium	**3.50**	0.00250 U	6.23E+02
W017	11/18/2005	3	Selenium	**1.00**	**0.00380 J**	6.23E+02
W017	11/18/2005	7	Selenium	**0.660**	0.00170 U	6.23E+02
W018	11/18/2005	6	Selenium	**0.710**	0.00200 U	6.23E+02
W019	11/18/2005	4	Selenium	**1.70**	**0.00350 J**	6.23E+02
W020	11/18/2005	5	Selenium	**1.30**	**0.00290 J**	6.23E+02
WDL-101-S	8/14/2002	0.25	Selenium	28.9 U	NT	NA
WDL-101-S	8/14/2002	2.25	Selenium	17.6 U	NT	NA
WDL-101-S	8/14/2002	5	Selenium	19.6 U	NT	NA
WDL-101-S	8/14/2002	7	Selenium	18.4 U	NT	NA
WDL-102-S	8/14/2002	0.5	Selenium	24.0 U	NT	NA
WDL-102-S	8/14/2002	2.25	Selenium	28.3 U	NT	NA
WDL-102-S	8/14/2002	5.5	Selenium	11.9 U	NT	NA
WDL-102-S	8/14/2002	8	Selenium	16.3 U	NT	NA
WDL-102-S	8/14/2002	10	Selenium	12.7 U	NT	NA
WDL-103-S	8/15/2002	0.25	Selenium	2.35 U	NT	NA
WDL-103-S	8/15/2002	2.25	Selenium	0.888 U	NT	NA
WDL-103-S	8/15/2002	5	Selenium	1.52 U	NT	NA
WDL-103-S	8/15/2002	6.75	Selenium	1.98 U	NT	NA
WDL-103-S	8/15/2002	8.25	Selenium	1.35 U	NT	NA
WDL-104-S	8/15/2002	0.25	Selenium	0.930 U	NT	NA
WDL-104-S	8/15/2002	2.25	Selenium	0.907 U	NT	NA
WDL-104-S	8/15/2002	5	Selenium	1.20 U	NT	NA
WDL-104-S	8/15/2002	6.75	Selenium	0.941 U	NT	NA
WDL-201-S	2/12/2004	0.25	Selenium	0.995 U	0.0269 U	6.23E+02
WDL-201-S	2/12/2004	6	Selenium	**0.449**	0.0448 U	6.23E+02
WDL-202-S	2/12/2004	4	Selenium	**0.348**	0.0448 U	6.23E+02
WDL-203-S	2/13/2004	5.75	Selenium	**0.736**	0.0269 U	6.23E+02
WDL-204-S	2/12/2004	5	Selenium	**1.86**	0.0672 U	6.23E+02
W001	11/21/2005	1	Silver	**0.580**	**0.0000570 J**	1.04E+03
W002	11/21/2005	5	Silver	**0.430**	**0.0000610 J**	1.04E+03
W003	11/21/2005	7	Silver	**0.260**	0.0000300 U	1.04E+03
W004	11/21/2005	7	Silver	**0.260**	0.0000300 U	1.04E+03
W005	11/21/2005	7	Silver	**0.210 J**	**0.0000430 J**	1.04E+03
W006	11/21/2005	6	Silver	**1.20**	**0.000160 J**	1.04E+03
W007	11/21/2005	4	Silver	**1.00**	**0.0000640 J**	1.04E+03
W008	11/20/2005	3	Silver	**0.920 J**	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W009	11/20/2005	5	Silver	**1.30 J**	NT	NA
W010	11/20/2005	5	Silver	**0.660 J**	NT	NA
W011	11/20/2005	3	Silver	**0.830 J**	NT	NA
W011	11/20/2005	9	Silver	0.0990 U	NT	NA
W011	11/20/2005	18.5	Silver	0.0990 U	NT	NA
W012	11/19/2005	6	Silver	**0.760 J**	NT	NA
W013	11/19/2005	5	Silver	**1.40**	NT	NA
W014	11/19/2005	5	Silver	**1.20 J**	NT	NA
W015	11/19/2005	1	Silver	**1.40 J**	NT	NA
W016	11/19/2005	5	Silver	**3.50**	NT	NA
W017	11/18/2005	3	Silver	**0.750 J**	NT	NA
W017	11/18/2005	7	Silver	0.0990 U	NT	NA
W018	11/18/2005	6	Silver	**1.70**	NT	NA
W019	11/18/2005	4	Silver	**3.30**	NT	NA
W020	11/18/2005	5	Silver	**2.00**	NT	NA
WDL-101-S	8/14/2002	0.25	Silver	5.79 U	NT	NA
WDL-101-S	8/14/2002	2.25	Silver	3.53 U	NT	NA
WDL-101-S	8/14/2002	5	Silver	**5.42**	NT	NA
WDL-101-S	8/14/2002	7	Silver	3.68 U	NT	NA
WDL-102-S	8/14/2002	0.5	Silver	4.79 U	NT	NA
WDL-102-S	8/14/2002	2.25	Silver	5.67 U	NT	NA
WDL-102-S	8/14/2002	5.5	Silver	2.37 U	NT	NA
WDL-102-S	8/14/2002	8	Silver	3.27 U	NT	NA
WDL-102-S	8/14/2002	10	Silver	2.53 U	NT	NA
WDL-103-S	8/15/2002	0.25	Silver	**1.09**	NT	NA
WDL-103-S	8/15/2002	2.25	Silver	**0.479**	NT	NA
WDL-103-S	8/15/2002	5	Silver	**0.941**	NT	NA
WDL-103-S	8/15/2002	6.75	Silver	**2.14**	NT	NA
WDL-103-S	8/15/2002	8.25	Silver	0.284 U	NT	NA
WDL-104-S	8/15/2002	0.25	Silver	**0.872**	NT	NA
WDL-104-S	8/15/2002	2.25	Silver	**0.227**	NT	NA
WDL-104-S	8/15/2002	5	Silver	**2.98**	NT	NA
WDL-104-S	8/15/2002	6.75	Silver	**0.391**	NT	NA
WDL-201-S	2/12/2004	0.25	Silver	**0.924**	0.00378 U	1.04E+03
WDL-201-S	2/12/2004	6	Silver	**0.162**	0.00630 U	1.04E+03
WDL-202-S	2/12/2004	4	Silver	**0.187**	0.00630 U	1.04E+03
WDL-203-S	2/13/2004	5.75	Silver	**2.41**	0.00378 U	1.04E+03
WDL-204-S	2/12/2004	5	Silver	**0.817**	0.00945 U	1.04E+03
W001	11/21/2005	1	Sodium	**3,630 J**	1,460 R	NA
W002	11/21/2005	5	Sodium	**5,480 J**	1,740 R	NA
W003	11/21/2005	7	Sodium	**1,350 J**	1,690 R	NA
W004	11/21/2005	7	Sodium	**1,730 J**	1,500 R	NA
W005	11/21/2005	7	Sodium	**2,540 J**	1,820 R	NA
W006	11/21/2005	6	Sodium	**7,980 J**	1,860 R	NA
W007	11/21/2005	4	Sodium	**8,270 J**	1,840 R	NA
W008	11/20/2005	3	Sodium	**3,300 J**	1,450 R	NA
W009	11/20/2005	5	Sodium	**8,840 J**	1,630 R	NA
W010	11/20/2005	5	Sodium	**6,490 J**	1,610 R	NA
W011	11/20/2005	3	Sodium	**5,530 J**	1,560 R	NA
W011	11/20/2005	9	Sodium	**2,620 J**	1,450 R	NA
W011	11/20/2005	18.5	Sodium	**3,340 J**	1,500 R	NA
W012	11/19/2005	6	Sodium	**9,110 J**	1,660 R	NA
W013	11/19/2005	5	Sodium	**7,580 J**	1,780 R	NA
W014	11/19/2005	5	Sodium	**10,900 J**	1,770 R	NA
W015	11/19/2005	1	Sodium	**2,880 J**	1,390 R	NA
W016	11/19/2005	5	Sodium	**9,860 J**	1,950 R	NA
W017	11/18/2005	3	Sodium	**1,170 J**	1,540 R	NA
W017	11/18/2005	7	Sodium	**1,490 J**	1,550 R	NA
W018	11/18/2005	6	Sodium	**6,730 J**	1,610 R	NA
W019	11/18/2005	4	Sodium	**7,440 J**	1,400 R	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W020	11/18/2005	5	Sodium	**4,810 J**	1,620 R	NA
WDL-101-S	8/14/2002	0.25	Sodium	579 U	NT	NA
WDL-101-S	8/14/2002	2.25	Sodium	**691**	NT	NA
WDL-101-S	8/14/2002	5	Sodium	392 U	NT	NA
WDL-101-S	8/14/2002	7	Sodium	368 U	NT	NA
WDL-102-S	8/14/2002	0.5	Sodium	479 U	NT	NA
WDL-102-S	8/14/2002	2.25	Sodium	**2,470**	NT	NA
WDL-102-S	8/14/2002	5.5	Sodium	**1,300**	NT	NA
WDL-102-S	8/14/2002	8	Sodium	**7,050**	NT	NA
WDL-102-S	8/14/2002	10	Sodium	**7,310**	NT	NA
WDL-103-S	8/15/2002	0.25	Sodium	**1,280**	NT	NA
WDL-103-S	8/15/2002	2.25	Sodium	**2,090**	NT	NA
WDL-103-S	8/15/2002	5	Sodium	**1,090**	NT	NA
WDL-103-S	8/15/2002	6.75	Sodium	**9,060**	NT	NA
WDL-103-S	8/15/2002	8.25	Sodium	**10,600**	NT	NA
WDL-104-S	8/15/2002	0.25	Sodium	**433**	NT	NA
WDL-104-S	8/15/2002	2.25	Sodium	**241**	NT	NA
WDL-104-S	8/15/2002	5	Sodium	**2,250**	NT	NA
WDL-104-S	8/15/2002	6.75	Sodium	**2,090**	NT	NA
WDL-201-S	2/12/2004	0.25	Sodium	**1,640**	NT	NA
WDL-201-S	2/12/2004	6	Sodium	**1,300**	NT	NA
WDL-202-S	2/12/2004	4	Sodium	**2,370**	NT	NA
WDL-203-S	2/13/2004	5.75	Sodium	**848**	NT	NA
WDL-204-S	2/12/2004	5	Sodium	**4,490**	NT	NA
W001	11/21/2005	1	Thallium	**0.160 J**	0.000340 U	8.22E+00
W002	11/21/2005	5	Thallium	**0.130 J**	0.000340 U	8.22E+00
W003	11/21/2005	7	Thallium	**0.130**	0.000340 U	8.22E+00
W004	11/21/2005	7	Thallium	**0.0590 J**	0.000600 U	8.22E+00
W005	11/21/2005	7	Thallium	0.0360 UJ	0.000340 UJ	8.22E+00
W006	11/21/2005	6	Thallium	**0.120 J**	0.000340 U	8.22E+00
W007	11/21/2005	4	Thallium	**0.180 J**	0.000420 U	8.22E+00
W008	11/20/2005	3	Thallium	**0.200**	0.000340 U	8.22E+00
W009	11/20/2005	5	Thallium	**0.410**	0.000340 U	8.22E+00
W010	11/20/2005	5	Thallium	**0.180**	0.000340 U	8.22E+00
W011	11/20/2005	3	Thallium	**0.260**	0.000340 U	8.22E+00
W011	11/20/2005	9	Thallium	0.0360 U	0.000340 U	8.22E+00
W011	11/20/2005	18.5	Thallium	**0.0920 J**	0.00120 U	8.22E+00
W012	11/19/2005	6	Thallium	**0.120 J**	0.000340 U	8.22E+00
W013	11/19/2005	5	Thallium	**0.240**	0.000340 U	8.22E+00
W014	11/19/2005	5	Thallium	**0.130 J**	0.000340 U	8.22E+00
W015	11/19/2005	1	Thallium	**0.190 J**	0.000340 U	8.22E+00
W016	11/19/2005	5	Thallium	**0.580**	0.000340 U	8.22E+00
W017	11/18/2005	3	Thallium	**0.110 J**	0.000340 U	8.22E+00
W017	11/18/2005	7	Thallium	**0.0610 J**	0.000340 U	8.22E+00
W018	11/18/2005	6	Thallium	**0.150**	0.000890 U	8.22E+00
W019	11/18/2005	4	Thallium	**0.420**	0.000340 U	8.22E+00
W020	11/18/2005	5	Thallium	**0.350**	0.00200 U	8.22E+00
WDL-101-S	8/14/2002	0.25	Thallium	28.9 U	NT	NA
WDL-101-S	8/14/2002	2.25	Thallium	17.6 U	NT	NA
WDL-101-S	8/14/2002	5	Thallium	19.6 U	NT	NA
WDL-101-S	8/14/2002	7	Thallium	18.4 U	NT	NA
WDL-102-S	8/14/2002	0.5	Thallium	24.0 U	NT	NA
WDL-102-S	8/14/2002	2.25	Thallium	28.3 U	NT	NA
WDL-102-S	8/14/2002	5.5	Thallium	11.9 U	NT	NA
WDL-102-S	8/14/2002	8	Thallium	16.3 U	NT	NA
WDL-102-S	8/14/2002	10	Thallium	12.7 U	NT	NA
WDL-103-S	8/15/2002	0.25	Thallium	16.5 U	NT	NA
WDL-103-S	8/15/2002	2.25	Thallium	6.24 U	NT	NA
WDL-103-S	8/15/2002	5	Thallium	10.7 U	NT	NA
WDL-103-S	8/15/2002	6.75	Thallium	13.9 U	NT	NA

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	8.25	Thallium	9.47 U	NT	NA
WDL-104-S	8/15/2002	0.25	Thallium	6.53 U	NT	NA
WDL-104-S	8/15/2002	2.25	Thallium	6.37 U	NT	NA
WDL-104-S	8/15/2002	5	Thallium	8.46 U	NT	NA
WDL-104-S	8/15/2002	6.75	Thallium	6.61 U	NT	NA
WDL-201-S	2/12/2004	0.25	Thallium	0.598 U	**0.000400**	8.22E+00
WDL-201-S	2/12/2004	6	Thallium	0.140 U	**0.00433**	8.22E+00
WDL-202-S	2/12/2004	4	Thallium	0.127 U	0.00000000 U	8.22E+00
WDL-203-S	2/13/2004	5.75	Thallium	0.188 U	0.00000000 U	8.22E+00
WDL-204-S	2/12/2004	5	Thallium	**0.149**	0.00000000 U	8.22E+00
W001	11/21/2005	1	Vanadium	**138**	0.0160 U	1.25E+02
W002	11/21/2005	5	Vanadium	**93.0**	0.0160 U	1.25E+02
W003	11/21/2005	7	Vanadium	**82.7**	0.00910 U	1.25E+02
W004	11/21/2005	7	Vanadium	**91.6**	0.00980 U	1.25E+02
W005	11/21/2005	7	Vanadium	**81.5 J**	0.0120 U	1.25E+02
W006	11/21/2005	6	Vanadium	**129 J**	**0.0300 J**	1.25E+02
W007	11/21/2005	4	Vanadium	**89.5**	**0.0300 J**	1.25E+02
W008	11/20/2005	3	Vanadium	**130**	**0.00490 J**	1.25E+02
W009	11/20/2005	5	Vanadium	**87.0**	**0.00610 J**	1.25E+02
W010	11/20/2005	5	Vanadium	**104**	**0.0210**	1.25E+02
W011	11/20/2005	3	Vanadium	**92.2**	**0.00930 J**	1.25E+02
W011	11/20/2005	9	Vanadium	**78.2**	**0.00470 J**	1.25E+02
W011	11/20/2005	18.5	Vanadium	**97.9**	0.00100 U	1.25E+02
W012	11/19/2005	6	Vanadium	**162**	**0.0440**	1.25E+02
W013	11/19/2005	5	Vanadium	**101**	**0.0120 J**	1.25E+02
W014	11/19/2005	5	Vanadium	**128**	**0.0440**	1.25E+02
W015	11/19/2005	1	Vanadium	**171**	**0.00530 J**	1.25E+02
W016	11/19/2005	5	Vanadium	**53.1**	**0.00770 J**	1.25E+02
W017	11/18/2005	3	Vanadium	**93.5**	0.00550 U	1.25E+02
W017	11/18/2005	7	Vanadium	**58.9**	**0.00390 J**	1.25E+02
W018	11/18/2005	6	Vanadium	**65.5**	**0.00890 J**	1.25E+02
W019	11/18/2005	4	Vanadium	**39.5 J**	0.00680 U	1.25E+02
W020	11/18/2005	5	Vanadium	**63.6**	0.00500 U	1.25E+02
WDL-101-S	8/14/2002	0.25	Vanadium	**475**	NT	NA
WDL-101-S	8/14/2002	2.25	Vanadium	**222**	NT	NA
WDL-101-S	8/14/2002	5	Vanadium	**128**	NT	NA
WDL-101-S	8/14/2002	7	Vanadium	**98.1**	NT	NA
WDL-102-S	8/14/2002	0.5	Vanadium	**207**	NT	NA
WDL-102-S	8/14/2002	2.25	Vanadium	**200**	NT	NA
WDL-102-S	8/14/2002	5.5	Vanadium	**83.6**	NT	NA
WDL-102-S	8/14/2002	8	Vanadium	**148**	NT	NA
WDL-102-S	8/14/2002	10	Vanadium	**89.0**	NT	NA
WDL-103-S	8/15/2002	0.25	Vanadium	**231**	NT	NA
WDL-103-S	8/15/2002	2.25	Vanadium	**79.4**	NT	NA
WDL-103-S	8/15/2002	5	Vanadium	**66.1**	NT	NA
WDL-103-S	8/15/2002	6.75	Vanadium	**134**	NT	NA
WDL-103-S	8/15/2002	8.25	Vanadium	**170**	NT	NA
WDL-104-S	8/15/2002	0.25	Vanadium	**55.5**	NT	NA
WDL-104-S	8/15/2002	2.25	Vanadium	**34.3**	NT	NA
WDL-104-S	8/15/2002	5	Vanadium	**62.7**	NT	NA
WDL-104-S	8/15/2002	6.75	Vanadium	**80.3**	NT	NA
WDL-201-S	2/12/2004	0.25	Vanadium	**306**	0.0134 U	1.25E+02
WDL-201-S	2/12/2004	6	Vanadium	**64.1**	**0.105**	1.25E+02
WDL-202-S	2/12/2004	4	Vanadium	**100**	**0.175**	1.25E+02
WDL-203-S	2/13/2004	5.75	Vanadium	**6.04**	**0.0232**	1.25E+02
WDL-204-S	2/12/2004	5	Vanadium	**60.1**	0.0334 U	1.25E+02
W001	11/21/2005	1	Zinc	**257 J**	0.0820 U	6.23E+04
W002	11/21/2005	5	Zinc	**101 J**	0.390 U	6.23E+04
W003	11/21/2005	7	Zinc	**85.5 J**	0.620 U	6.23E+04
W004	11/21/2005	7	Zinc	**115 J**	0.670 U	6.23E+04

TABLE C-3
Metals Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W005	11/21/2005	7	Zinc	**72.6 J**	0.420 U	6.23E+04
W006	11/21/2005	6	Zinc	**177 J**	0.540 U	6.23E+04
W007	11/21/2005	4	Zinc	**208 J**	0.360 U	6.23E+04
W008	11/20/2005	3	Zinc	**345 J**	0.140 U	6.23E+04
W009	11/20/2005	5	Zinc	**918 J**	0.0270 U	6.23E+04
W010	11/20/2005	5	Zinc	**287 J**	0.0940 U	6.23E+04
W011	11/20/2005	3	Zinc	**596 J**	0.230 U	6.23E+04
W011	11/20/2005	9	Zinc	**42.8 J**	0.310 U	6.23E+04
W011	11/20/2005	18.5	Zinc	**55.6 J**	0.270 U	6.23E+04
W012	11/19/2005	6	Zinc	**286 J**	0.0960 U	6.23E+04
W013	11/19/2005	5	Zinc	**944 J**	0.100 U	6.23E+04
W014	11/19/2005	5	Zinc	**269 J**	0.130 U	6.23E+04
W015	11/19/2005	1	Zinc	**475 J**	0.110 U	6.23E+04
W016	11/19/2005	5	Zinc	**846 J**	0.0910 U	6.23E+04
W017	11/18/2005	3	Zinc	**277 J**	0.120 U	6.23E+04
W017	11/18/2005	7	Zinc	**29.6 J**	0.110 U	6.23E+04
W018	11/18/2005	6	Zinc	**236 J**	0.140 U	6.23E+04
W019	11/18/2005	4	Zinc	**734 J**	0.110 U	6.23E+04
W020	11/18/2005	5	Zinc	**347 J**	0.0610 U	6.23E+04
WDL-101-S	8/14/2002	0.25	Zinc	**732**	NT	NA
WDL-101-S	8/14/2002	2.25	Zinc	**450**	NT	NA
WDL-101-S	8/14/2002	5	Zinc	**1,240**	NT	NA
WDL-101-S	8/14/2002	7	Zinc	**1,610**	NT	NA
WDL-102-S	8/14/2002	0.5	Zinc	**700**	NT	NA
WDL-102-S	8/14/2002	2.25	Zinc	**585**	NT	NA
WDL-102-S	8/14/2002	5.5	Zinc	**277**	NT	NA
WDL-102-S	8/14/2002	8	Zinc	**276**	NT	NA
WDL-102-S	8/14/2002	10	Zinc	**119**	NT	NA
WDL-103-S	8/15/2002	0.25	Zinc	**797**	NT	NA
WDL-103-S	8/15/2002	2.25	Zinc	**471**	NT	NA
WDL-103-S	8/15/2002	5	Zinc	**1,590**	NT	NA
WDL-103-S	8/15/2002	6.75	Zinc	**1,070**	NT	NA
WDL-103-S	8/15/2002	8.25	Zinc	**209**	NT	NA
WDL-104-S	8/15/2002	0.25	Zinc	**86.1**	NT	NA
WDL-104-S	8/15/2002	2.25	Zinc	**53.0**	NT	NA
WDL-104-S	8/15/2002	5	Zinc	**705**	NT	NA
WDL-104-S	8/15/2002	6.75	Zinc	**103**	NT	NA
WDL-201-S	2/12/2004	0.25	Zinc	**606**	**1.08**	6.23E+04
WDL-201-S	2/12/2004	6	Zinc	**82.1**	**0.102**	6.23E+04
WDL-202-S	2/12/2004	4	Zinc	**205**	**0.0387**	6.23E+04
WDL-203-S	2/13/2004	5.75	Zinc	**397 J**	**0.0334**	6.23E+04
WDL-204-S	2/12/2004	5	Zinc	**235**	**5.97**	6.23E+04

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.
NJ = The analyte has been presumptively identified; the associated analytical result is estimated.

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	1,1,1,2-Tetrachloroethane	0.00930 U	0.0340 U	NA
W002	11/21/2005	5	1,1,1,2-Tetrachloroethane	8.60 U	0.0340 U	NA
W003	11/21/2005	7	1,1,1,2-Tetrachloroethane	0.0530 U	0.0340 U	NA
W004	11/21/2005	7	1,1,1,2-Tetrachloroethane	0.200 U	0.0340 U	NA
W005	11/21/2005	7	1,1,1,2-Tetrachloroethane	0.00410 U	0.0340 U	NA
W006	11/21/2005	6	1,1,1,2-Tetrachloroethane	0.300 U	0.0340 U	NA
W007	11/21/2005	4	1,1,1,2-Tetrachloroethane	0.330 U	0.0340 U	NA
W007	11/21/2005		1,1,1,2-Tetrachloroethane	0.0000690 U	NT	NA
W008	11/20/2005	3	1,1,1,2-Tetrachloroethane	0.00810 U	0.0340 U	NA
W009	11/20/2005	5	1,1,1,2-Tetrachloroethane	0.00920 U	0.0340 U	NA
W010	11/20/2005	5	1,1,1,2-Tetrachloroethane	0.0680 U	0.0340 U	NA
W011	11/20/2005	3	1,1,1,2-Tetrachloroethane	0.0790 U	0.0340 U	NA
W011	11/20/2005	9	1,1,1,2-Tetrachloroethane	0.00410 U	0.0340 U	NA
W011	11/20/2005	18.5	1,1,1,2-Tetrachloroethane	0.00710 U	0.0340 U	NA
W011	11/20/2005		1,1,1,2-Tetrachloroethane	0.0000690 U	NT	NA
W012	11/19/2005	6	1,1,1,2-Tetrachloroethane	0.00740 U	0.0340 U	NA
W013	11/19/2005	5	1,1,1,2-Tetrachloroethane	0.00740 U	0.0340 U	NA
W014	11/19/2005	5	1,1,1,2-Tetrachloroethane	0.00700 U	0.0340 U	NA
W015	11/19/2005	1	1,1,1,2-Tetrachloroethane	0.0120 U	0.0340 U	NA
W016	11/19/2005	5	1,1,1,2-Tetrachloroethane	0.00790 U	0.0340 U	NA
W016	11/19/2005		1,1,1,2-Tetrachloroethane	0.0000690 U	NT	NA
W017	11/18/2005	3	1,1,1,2-Tetrachloroethane	0.00950 U	0.0340 U	NA
W017	11/18/2005	7	1,1,1,2-Tetrachloroethane	0.00430 U	0.0340 U	NA
W018	11/18/2005	6	1,1,1,2-Tetrachloroethane	0.00470 U	0.0340 U	NA
W019	11/18/2005	4	1,1,1,2-Tetrachloroethane	0.00750 U	0.0340 U	NA
W020	11/18/2005	5	1,1,1,2-Tetrachloroethane	0.00720 U	0.0340 U	NA
W020	11/18/2005		1,1,1,2-Tetrachloroethane	0.0000690 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,1,1,2-Tetrachloroethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,1,1,2-Tetrachloroethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,1,1,2-Tetrachloroethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,1,1,2-Tetrachloroethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,1,1,2-Tetrachloroethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,1,1,2-Tetrachloroethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,1,1,2-Tetrachloroethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,1,1,2-Tetrachloroethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,1,1,2-Tetrachloroethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,1,1,2-Tetrachloroethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,1,1,2-Tetrachloroethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,1,1,2-Tetrachloroethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,1,1,2-Tetrachloroethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,1,1,2-Tetrachloroethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,1,1,2-Tetrachloroethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,1,1,2-Tetrachloroethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,1,1,2-Tetrachloroethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,1,1,2-Tetrachloroethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,1,1,2-Tetrachloroethane	0.0293 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,1,1,2-Tetrachloroethane	0.0925 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,1,1,2-Tetrachloroethane	0.00925 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,1,1,2-Tetrachloroethane	0.00925 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,1,1,2-Tetrachloroethane	0.00925 U	0.0100 U	NA
W001	11/21/2005	1	1,1,1-Trichloroethane	0.00430 U	0.0710 U	NA
W002	11/21/2005	5	1,1,1-Trichloroethane	3.90 U	0.0710 U	NA
W003	11/21/2005	7	1,1,1-Trichloroethane	0.0240 U	0.0710 U	NA
W004	11/21/2005	7	1,1,1-Trichloroethane	0.0910 U	0.0710 U	NA
W005	11/21/2005	7	1,1,1-Trichloroethane	0.00190 U	0.0710 U	NA
W006	11/21/2005	6	1,1,1-Trichloroethane	0.140 U	0.0710 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	1,1,1-Trichloroethane	0.150 U	0.0710 U	NA
W007	11/21/2005		1,1,1-Trichloroethane	0.000140 U	NT	NA
W008	11/20/2005	3	1,1,1-Trichloroethane	0.00370 U	0.0710 U	NA
W009	11/20/2005	5	1,1,1-Trichloroethane	0.00420 U	0.0710 U	NA
W010	11/20/2005	5	1,1,1-Trichloroethane	0.0310 U	0.0710 U	NA
W011	11/20/2005	3	1,1,1-Trichloroethane	0.0360 U	0.0710 U	NA
W011	11/20/2005	9	1,1,1-Trichloroethane	0.00190 U	0.0710 U	NA
W011	11/20/2005	18.5	1,1,1-Trichloroethane	0.00330 U	0.0710 U	NA
W011	11/20/2005		1,1,1-Trichloroethane	0.000140 U	NT	NA
W012	11/19/2005	6	1,1,1-Trichloroethane	0.00340 U	0.0710 U	NA
W013	11/19/2005	5	1,1,1-Trichloroethane	0.00340 U	0.0710 U	NA
W014	11/19/2005	5	1,1,1-Trichloroethane	0.00320 U	0.0710 U	NA
W015	11/19/2005	1	1,1,1-Trichloroethane	0.00540 U	0.0710 U	NA
W016	11/19/2005	5	1,1,1-Trichloroethane	0.00360 U	0.0710 U	NA
W016	11/19/2005		1,1,1-Trichloroethane	0.000140 U	NT	NA
W017	11/18/2005	3	1,1,1-Trichloroethane	0.00440 U	0.0710 U	NA
W017	11/18/2005	7	1,1,1-Trichloroethane	0.00200 U	0.0710 U	NA
W018	11/18/2005	6	1,1,1-Trichloroethane	0.00220 U	0.0710 U	NA
W019	11/18/2005	4	1,1,1-Trichloroethane	0.00350 U	0.0710 U	NA
W020	11/18/2005	5	1,1,1-Trichloroethane	0.00330 U	0.0710 U	NA
W020	11/18/2005		1,1,1-Trichloroethane	0.000140 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,1,1-Trichloroethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,1,1-Trichloroethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,1,1-Trichloroethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,1,1-Trichloroethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,1,1-Trichloroethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,1,1-Trichloroethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,1,1-Trichloroethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,1,1-Trichloroethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,1,1-Trichloroethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,1,1-Trichloroethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,1,1-Trichloroethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,1,1-Trichloroethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,1,1-Trichloroethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,1,1-Trichloroethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,1,1-Trichloroethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,1,1-Trichloroethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,1,1-Trichloroethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,1,1-Trichloroethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,1,1-Trichloroethane	0.0194 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,1,1-Trichloroethane	0.0613 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,1,1-Trichloroethane	0.00613 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,1,1-Trichloroethane	0.00613 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,1,1-Trichloroethane	0.00613 U	0.0100 U	NA
W001	11/21/2005	1	1,1,2,2-Tetrachloroethane	0.00670 U	0.0340 U	NA
W002	11/21/2005	5	1,1,2,2-Tetrachloroethane	6.10 U	0.0340 U	NA
W003	11/21/2005	7	1,1,2,2-Tetrachloroethane	0.0380 U	0.0340 U	NA
W004	11/21/2005	7	1,1,2,2-Tetrachloroethane	0.140 U	0.0340 U	NA
W005	11/21/2005	7	1,1,2,2-Tetrachloroethane	0.00290 U	0.0340 U	NA
W006	11/21/2005	6	1,1,2,2-Tetrachloroethane	0.220 U	0.0340 U	NA
W007	11/21/2005	4	1,1,2,2-Tetrachloroethane	0.230 U	0.0340 U	NA
W007	11/21/2005		1,1,2,2-Tetrachloroethane	0.0000680 U	NT	NA
W008	11/20/2005	3	1,1,2,2-Tetrachloroethane	0.00580 UJ	0.0340 U	NA
W009	11/20/2005	5	1,1,2,2-Tetrachloroethane	0.00660 U	0.0340 U	NA
W010	11/20/2005	5	1,1,2,2-Tetrachloroethane	0.0490 U	0.0340 U	NA
W011	11/20/2005	3	1,1,2,2-Tetrachloroethane	0.0560 U	0.0340 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	9	1,1,2,2-Tetrachloroethane	0.00290 U	0.0340 U	NA
W011	11/20/2005	18.5	1,1,2,2-Tetrachloroethane	0.00510 U	0.0340 U	NA
W011	11/20/2005		1,1,2,2-Tetrachloroethane	0.0000680 U	NT	NA
W012	11/19/2005	6	1,1,2,2-Tetrachloroethane	0.00530 U	0.0340 U	NA
W013	11/19/2005	5	1,1,2,2-Tetrachloroethane	0.00530 U	0.0340 U	NA
W014	11/19/2005	5	1,1,2,2-Tetrachloroethane	0.00500 U	0.0340 U	NA
W015	11/19/2005	1	1,1,2,2-Tetrachloroethane	0.00850 U	0.0340 U	NA
W016	11/19/2005	5	1,1,2,2-Tetrachloroethane	0.00560 U	0.0340 U	NA
W016	11/19/2005		1,1,2,2-Tetrachloroethane	0.0000680 U	NT	NA
W017	11/18/2005	3	1,1,2,2-Tetrachloroethane	0.00680 U	0.0340 U	NA
W017	11/18/2005	7	1,1,2,2-Tetrachloroethane	0.00300 U	0.0340 U	NA
W018	11/18/2005	6	1,1,2,2-Tetrachloroethane	0.00330 U	0.0340 U	NA
W019	11/18/2005	4	1,1,2,2-Tetrachloroethane	0.00540 U	0.0340 U	NA
W020	11/18/2005	5	1,1,2,2-Tetrachloroethane	0.00520 U	0.0340 U	NA
W020	11/18/2005		1,1,2,2-Tetrachloroethane	0.0000680 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,1,2,2-Tetrachloroethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,1,2,2-Tetrachloroethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,1,2,2-Tetrachloroethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,1,2,2-Tetrachloroethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,1,2,2-Tetrachloroethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,1,2,2-Tetrachloroethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,1,2,2-Tetrachloroethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,1,2,2-Tetrachloroethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,1,2,2-Tetrachloroethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,1,2,2-Tetrachloroethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,1,2,2-Tetrachloroethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,1,2,2-Tetrachloroethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,1,2,2-Tetrachloroethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,1,2,2-Tetrachloroethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,1,2,2-Tetrachloroethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,1,2,2-Tetrachloroethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,1,2,2-Tetrachloroethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,1,2,2-Tetrachloroethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,1,2,2-Tetrachloroethane	0.0667 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,1,2,2-Tetrachloroethane	0.211 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,1,2,2-Tetrachloroethane	0.0211 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,1,2,2-Tetrachloroethane	0.0211 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,1,2,2-Tetrachloroethane	0.0211 U	0.0100 U	NA
W001	11/21/2005	1	1,1,2-Trichloroethane	0.0100 U	0.0470 U	NA
W002	11/21/2005	5	1,1,2-Trichloroethane	9.20 U	0.0470 U	NA
W003	11/21/2005	7	1,1,2-Trichloroethane	0.0570 U	0.0470 U	NA
W004	11/21/2005	7	1,1,2-Trichloroethane	0.210 U	0.0470 U	NA
W005	11/21/2005	7	1,1,2-Trichloroethane	0.00440 U	0.0470 U	NA
W006	11/21/2005	6	1,1,2-Trichloroethane	0.320 U	0.0470 U	NA
W007	11/21/2005	4	1,1,2-Trichloroethane	0.350 U	0.0470 U	NA
W007	11/21/2005		1,1,2-Trichloroethane	0.0000940 U	NT	NA
W008	11/20/2005	3	1,1,2-Trichloroethane	0.00870 U	0.0470 U	NA
W009	11/20/2005	5	1,1,2-Trichloroethane	0.00990 U	0.0470 U	NA
W010	11/20/2005	5	1,1,2-Trichloroethane	0.0730 U	0.0470 U	NA
W011	11/20/2005	3	1,1,2-Trichloroethane	0.0850 U	0.0470 U	NA
W011	11/20/2005	9	1,1,2-Trichloroethane	0.00440 U	0.0470 U	NA
W011	11/20/2005	18.5	1,1,2-Trichloroethane	0.00760 U	0.0470 U	NA
W011	11/20/2005		1,1,2-Trichloroethane	0.0000940 U	NT	NA
W012	11/19/2005	6	1,1,2-Trichloroethane	0.00790 U	0.0470 U	NA
W013	11/19/2005	5	1,1,2-Trichloroethane	0.00790 U	0.0470 U	NA
W014	11/19/2005	5	1,1,2-Trichloroethane	0.00750 U	0.0470 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W015	11/19/2005	1	1,1,2-Trichloroethane	0.0130 U	0.0470 U	NA
W016	11/19/2005	5	1,1,2-Trichloroethane	0.00850 U	0.0470 U	NA
W016	11/19/2005		1,1,2-Trichloroethane	0.0000940 U	NT	NA
W017	11/18/2005	3	1,1,2-Trichloroethane	0.0100 U	0.0470 U	NA
W017	11/18/2005	7	1,1,2-Trichloroethane	0.00460 U	0.0470 U	NA
W018	11/18/2005	6	1,1,2-Trichloroethane	0.00500 U	0.0470 U	NA
W019	11/18/2005	4	1,1,2-Trichloroethane	0.00810 U	0.0470 U	NA
W020	11/18/2005	5	1,1,2-Trichloroethane	0.00780 U	0.0470 U	NA
W020	11/18/2005		1,1,2-Trichloroethane	0.0000940 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,1,2-Trichloroethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,1,2-Trichloroethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,1,2-Trichloroethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,1,2-Trichloroethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,1,2-Trichloroethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,1,2-Trichloroethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,1,2-Trichloroethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,1,2-Trichloroethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,1,2-Trichloroethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,1,2-Trichloroethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,1,2-Trichloroethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,1,2-Trichloroethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,1,2-Trichloroethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,1,2-Trichloroethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,1,2-Trichloroethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,1,2-Trichloroethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,1,2-Trichloroethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,1,2-Trichloroethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,1,2-Trichloroethane	0.0572 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,1,2-Trichloroethane	0.181 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,1,2-Trichloroethane	0.0181 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,1,2-Trichloroethane	0.0181 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,1,2-Trichloroethane	0.0181 U	0.0100 U	NA
W001	11/21/2005	1	1,1-Dichloroethane	0.00130 U	0.0990 U	1.07E+02
W002	11/21/2005	5	1,1-Dichloroethane	1.20 U	0.0990 U	1.07E+02
W003	11/21/2005	7	1,1-Dichloroethane	0.00710 U	0.0990 U	1.07E+02
W004	11/21/2005	7	1,1-Dichloroethane	0.0270 U	0.0990 U	1.07E+02
W005	11/21/2005	7	1,1-Dichloroethane	0.000540 U	0.0990 U	1.07E+02
W006	11/21/2005	6	1,1-Dichloroethane	0.0400 U	0.0990 U	1.07E+02
W007	11/21/2005	4	1,1-Dichloroethane	0.0440 U	0.0990 U	1.07E+02
W007	11/21/2005		1,1-Dichloroethane	0.000200 U	NT	NA
W008	11/20/2005	3	1,1-Dichloroethane	0.00110 UJ	0.0990 U	1.07E+02
W009	11/20/2005	5	1,1-Dichloroethane	0.00120 U	0.0990 U	1.07E+02
W010	11/20/2005	5	1,1-Dichloroethane	0.00910 U	0.0990 U	1.07E+02
W011	11/20/2005	3	1,1-Dichloroethane	0.0110 U	0.0990 U	1.07E+02
W011	11/20/2005	9	1,1-Dichloroethane	0.000550 U	0.0990 U	1.07E+02
W011	11/20/2005	18.5	1,1-Dichloroethane	0.000950 U	0.0990 U	1.07E+02
W011	11/20/2005		1,1-Dichloroethane	0.000200 U	NT	NA
W012	11/19/2005	6	1,1-Dichloroethane	0.000990 U	0.0990 U	1.07E+02
W013	11/19/2005	5	1,1-Dichloroethane	0.000990 U	0.0990 U	1.07E+02
W014	11/19/2005	5	1,1-Dichloroethane	0.000940 U	0.0990 U	1.07E+02
W015	11/19/2005	1	1,1-Dichloroethane	0.00160 U	0.0990 U	1.07E+02
W016	11/19/2005	5	1,1-Dichloroethane	0.00110 U	0.0990 U	1.07E+02
W016	11/19/2005		1,1-Dichloroethane	0.000200 U	NT	NA
W017	11/18/2005	3	1,1-Dichloroethane	0.00130 U	0.0990 U	1.07E+02
W017	11/18/2005	7	1,1-Dichloroethane	0.000570 U	0.0990 U	1.07E+02
W018	11/18/2005	6	1,1-Dichloroethane	0.000630 U	0.0990 U	1.07E+02

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W019	11/18/2005	4	1,1-Dichloroethane	0.00100 U	0.0990 U	1.07E+02
W020	11/18/2005	5	1,1-Dichloroethane	0.000970 U	0.0990 U	1.07E+02
W020	11/18/2005		1,1-Dichloroethane	0.000200 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,1-Dichloroethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,1-Dichloroethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,1-Dichloroethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,1-Dichloroethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,1-Dichloroethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,1-Dichloroethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,1-Dichloroethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,1-Dichloroethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,1-Dichloroethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,1-Dichloroethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,1-Dichloroethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,1-Dichloroethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,1-Dichloroethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,1-Dichloroethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,1-Dichloroethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,1-Dichloroethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,1-Dichloroethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,1-Dichloroethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,1-Dichloroethane	0.0376 U	0.0100 U	107
WDL-201-S	2/12/2004	6	1,1-Dichloroethane	0.119 U	0.0200 U	107
WDL-202-S	2/12/2004	4	1,1-Dichloroethane	0.0119 U	0.0100 U	107
WDL-203-S	2/13/2004	5.75	1,1-Dichloroethane	0.0119 U	0.0100 U	107
WDL-204-S	2/12/2004	5	1,1-Dichloroethane	0.0119 U	0.0100 U	107
W001	11/21/2005	1	1,1-Dichloroethene	0.00440 U	0.0890 U	NA
W002	11/21/2005	5	1,1-Dichloroethene	4.00 U	0.0890 U	NA
W003	11/21/2005	7	1,1-Dichloroethene	0.0250 U	0.0890 U	NA
W004	11/21/2005	7	1,1-Dichloroethene	0.0930 U	0.0890 U	NA
W005	11/21/2005	7	1,1-Dichloroethene	0.00190 U	0.0890 U	NA
W006	11/21/2005	6	1,1-Dichloroethene	0.140 U	0.0890 U	NA
W007	11/21/2005	4	1,1-Dichloroethene	0.150 U	0.0890 U	NA
W007	11/21/2005		1,1-Dichloroethene	0.000180 U	NT	NA
W008	11/20/2005	3	1,1-Dichloroethene	0.00380 UJ	0.0890 U	NA
W009	11/20/2005	5	1,1-Dichloroethene	0.00430 U	0.0890 U	NA
W010	11/20/2005	5	1,1-Dichloroethene	0.0320 U	0.0890 U	NA
W011	11/20/2005	3	1,1-Dichloroethene	0.0370 U	0.0890 U	NA
W011	11/20/2005	9	1,1-Dichloroethene	0.00190 U	0.0890 U	NA
W011	11/20/2005	18.5	1,1-Dichloroethene	0.00330 U	0.0890 U	NA
W011	11/20/2005		1,1-Dichloroethene	0.000180 U	NT	NA
W012	11/19/2005	6	1,1-Dichloroethene	0.00350 U	0.0890 U	NA
W013	11/19/2005	5	1,1-Dichloroethene	0.00340 U	0.0890 U	NA
W014	11/19/2005	5	1,1-Dichloroethene	0.00330 U	0.0890 U	NA
W015	11/19/2005	1	1,1-Dichloroethene	0.00550 U	0.0890 U	NA
W016	11/19/2005	5	1,1-Dichloroethene	0.00370 U	0.0890 U	NA
W016	11/19/2005		1,1-Dichloroethene	0.000180 U	NT	NA
W017	11/18/2005	3	1,1-Dichloroethene	0.00450 U	0.0890 U	NA
W017	11/18/2005	7	1,1-Dichloroethene	0.00200 U	0.0890 U	NA
W018	11/18/2005	6	1,1-Dichloroethene	0.00220 U	0.0890 U	NA
W019	11/18/2005	4	1,1-Dichloroethene	0.00350 U	0.0890 U	NA
W020	11/18/2005	5	1,1-Dichloroethene	0.00340 U	0.0890 U	NA
W020	11/18/2005		1,1-Dichloroethene	0.000180 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,1-Dichloroethene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,1-Dichloroethene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,1-Dichloroethene	0.429 UJ	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	7	1,1-Dichloroethene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,1-Dichloroethene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,1-Dichloroethene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,1-Dichloroethene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,1-Dichloroethene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,1-Dichloroethene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,1-Dichloroethene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,1-Dichloroethene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,1-Dichloroethene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,1-Dichloroethene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,1-Dichloroethene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,1-Dichloroethene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,1-Dichloroethene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,1-Dichloroethene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,1-Dichloroethene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,1-Dichloroethene	0.0376 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,1-Dichloroethene	0.119 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,1-Dichloroethene	0.0119 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,1-Dichloroethene	0.0119 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,1-Dichloroethene	0.0119 U	0.0100 U	NA
W001	11/21/2005	1	1,1-Dichloropropene	0.00830 U	0.0740 U	NA
W002	11/21/2005	5	1,1-Dichloropropene	7.60 U	0.0740 U	NA
W003	11/21/2005	7	1,1-Dichloropropene	0.0470 U	0.0740 U	NA
W004	11/21/2005	7	1,1-Dichloropropene	0.180 U	0.0740 U	NA
W005	11/21/2005	7	1,1-Dichloropropene	0.00360 U	0.0740 U	NA
W006	11/21/2005	6	1,1-Dichloropropene	0.270 U	0.0740 U	NA
W007	11/21/2005	4	1,1-Dichloropropene	0.290 U	0.0740 U	NA
W007	11/21/2005		1,1-Dichloropropene	0.000150 U	NT	NA
W008	11/20/2005	3	1,1-Dichloropropene	0.00720 U	0.0740 U	NA
W009	11/20/2005	5	1,1-Dichloropropene	0.00810 U	0.0740 U	NA
W010	11/20/2005	5	1,1-Dichloropropene	0.0600 U	0.0740 U	NA
W011	11/20/2005	3	1,1-Dichloropropene	0.0700 U	0.0740 U	NA
W011	11/20/2005	9	1,1-Dichloropropene	0.00360 U	0.0740 U	NA
W011	11/20/2005	18.5	1,1-Dichloropropene	0.00630 U	0.0740 U	NA
W011	11/20/2005		1,1-Dichloropropene	0.000150 U	NT	NA
W012	11/19/2005	6	1,1-Dichloropropene	0.00650 U	0.0740 U	NA
W013	11/19/2005	5	1,1-Dichloropropene	0.00650 U	0.0740 U	NA
W014	11/19/2005	5	1,1-Dichloropropene	0.00620 U	0.0740 U	NA
W015	11/19/2005	1	1,1-Dichloropropene	0.0100 U	0.0740 U	NA
W016	11/19/2005	5	1,1-Dichloropropene	0.00700 U	0.0740 U	NA
W016	11/19/2005		1,1-Dichloropropene	0.000150 U	NT	NA
W017	11/18/2005	3	1,1-Dichloropropene	0.00840 U	0.0740 U	NA
W017	11/18/2005	7	1,1-Dichloropropene	0.00380 U	0.0740 U	NA
W018	11/18/2005	6	1,1-Dichloropropene	0.00410 U	0.0740 U	NA
W019	11/18/2005	4	1,1-Dichloropropene	0.00670 U	0.0740 U	NA
W020	11/18/2005	5	1,1-Dichloropropene	0.00640 U	0.0740 U	NA
W020	11/18/2005		1,1-Dichloropropene	0.000150 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,1-Dichloropropene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,1-Dichloropropene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,1-Dichloropropene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,1-Dichloropropene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,1-Dichloropropene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,1-Dichloropropene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,1-Dichloropropene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,1-Dichloropropene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,1-Dichloropropene	0.272 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	0.25	1,1-Dichloropropene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,1-Dichloropropene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,1-Dichloropropene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,1-Dichloropropene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,1-Dichloropropene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,1-Dichloropropene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,1-Dichloropropene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,1-Dichloropropene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,1-Dichloropropene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,1-Dichloropropene	0.0345 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,1-Dichloropropene	0.109 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,1-Dichloropropene	0.0109 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,1-Dichloropropene	0.0109 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,1-Dichloropropene	0.0109 U	0.0100 U	NA
W001	11/21/2005	1	1,2,3-Trichlorobenzene	**0.0600 J**	0.0340 U	7.43E-01
W002	11/21/2005	5	1,2,3-Trichlorobenzene	**25.0 J**	0.0340 U	7.43E-01
W003	11/21/2005	7	1,2,3-Trichlorobenzene	**0.210 J**	0.0340 U	7.43E-01
W004	11/21/2005	7	1,2,3-Trichlorobenzene	0.500 U	0.0340 U	7.43E-01
W005	11/21/2005	7	1,2,3-Trichlorobenzene	0.0100 U	0.0340 U	7.43E-01
W006	11/21/2005	6	1,2,3-Trichlorobenzene	**1.10 J**	0.0340 U	7.43E-01
W007	11/21/2005	4	1,2,3-Trichlorobenzene	0.820 U	0.0340 U	7.43E-01
W007	11/21/2005		1,2,3-Trichlorobenzene	0.0000680 U	NT	NA
W008	11/20/2005	3	1,2,3-Trichlorobenzene	0.0200 U	0.0340 U	7.43E-01
W009	11/20/2005	5	1,2,3-Trichlorobenzene	0.0230 U	0.0340 U	7.43E-01
W010	11/20/2005	5	1,2,3-Trichlorobenzene	0.170 U	0.0340 U	7.43E-01
W011	11/20/2005	3	1,2,3-Trichlorobenzene	0.200 U	0.0340 U	7.43E-01
W011	11/20/2005	9	1,2,3-Trichlorobenzene	0.0100 U	0.0340 U	7.43E-01
W011	11/20/2005	18.5	1,2,3-Trichlorobenzene	0.0180 U	0.0340 U	7.43E-01
W011	11/20/2005		1,2,3-Trichlorobenzene	0.0000680 U	NT	NA
W012	11/19/2005	6	1,2,3-Trichlorobenzene	0.0190 U	0.0340 U	7.43E-01
W013	11/19/2005	5	1,2,3-Trichlorobenzene	**0.240**	0.0340 U	7.43E-01
W014	11/19/2005	5	1,2,3-Trichlorobenzene	**0.200**	0.0340 U	7.43E-01
W015	11/19/2005	1	1,2,3-Trichlorobenzene	0.0300 U	0.0340 U	7.43E-01
W016	11/19/2005	5	1,2,3-Trichlorobenzene	**0.0530 J**	0.0340 U	7.43E-01
W016	11/19/2005		1,2,3-Trichlorobenzene	0.0000680 U	NT	NA
W017	11/18/2005	3	1,2,3-Trichlorobenzene	0.0240 U	0.0340 U	7.43E-01
W017	11/18/2005	7	1,2,3-Trichlorobenzene	0.0110 U	0.0340 U	7.43E-01
W018	11/18/2005	6	1,2,3-Trichlorobenzene	**0.180**	0.0340 U	7.43E-01
W019	11/18/2005	4	1,2,3-Trichlorobenzene	**0.120**	0.0340 U	7.43E-01
W020	11/18/2005	5	1,2,3-Trichlorobenzene	0.0180 U	0.0340 U	7.43E-01
W020	11/18/2005		1,2,3-Trichlorobenzene	0.0000680 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2,3-Trichlorobenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3-Trichlorobenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,2,3-Trichlorobenzene	**4.09**	NT	NA
WDL-101-S	8/14/2002	7	1,2,3-Trichlorobenzene	**3.54**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3-Trichlorobenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3-Trichlorobenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3-Trichlorobenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3-Trichlorobenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,3-Trichlorobenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3-Trichlorobenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3-Trichlorobenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2,3-Trichlorobenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3-Trichlorobenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3-Trichlorobenzene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3-Trichlorobenzene	0.268 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	2.25	1,2,3-Trichlorobenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,3-Trichlorobenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3-Trichlorobenzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3-Trichlorobenzene	0.0534 U	0.0100 U	0.743
WDL-201-S	2/12/2004	6	1,2,3-Trichlorobenzene	0.169 U	0.0200 U	0.743
WDL-202-S	2/12/2004	4	1,2,3-Trichlorobenzene	0.0169 U	0.0100 U	0.743
WDL-203-S	2/13/2004	5.75	1,2,3-Trichlorobenzene	0.0169 U	0.0100 U	0.743
WDL-204-S	2/12/2004	5	1,2,3-Trichlorobenzene	0.0169 U	0.0100 U	0.743
W001	11/21/2005	1	1,2,3-Trichloropropane	0.00780 U	0.0780 U	NA
W002	11/21/2005	5	1,2,3-Trichloropropane	7.20 U	0.0780 U	NA
W003	11/21/2005	7	1,2,3-Trichloropropane	0.0440 U	0.0780 U	NA
W004	11/21/2005	7	1,2,3-Trichloropropane	0.170 U	0.0780 U	NA
W005	11/21/2005	7	1,2,3-Trichloropropane	0.00340 U	0.0780 U	NA
W006	11/21/2005	6	1,2,3-Trichloropropane	0.250 U	0.0780 U	NA
W007	11/21/2005	4	1,2,3-Trichloropropane	0.270 U	0.0780 U	NA
W007	11/21/2005		1,2,3-Trichloropropane	0.000160 U	NT	NA
W008	11/20/2005	3	1,2,3-Trichloropropane	0.00680 U	0.0780 U	NA
W009	11/20/2005	5	1,2,3-Trichloropropane	0.00770 U	0.0780 U	NA
W010	11/20/2005	5	1,2,3-Trichloropropane	0.0570 U	0.0780 U	NA
W011	11/20/2005	3	1,2,3-Trichloropropane	**0.0960 J**	0.0780 U	NA
W011	11/20/2005	9	1,2,3-Trichloropropane	0.00340 U	0.0780 U	NA
W011	11/20/2005	18.5	1,2,3-Trichloropropane	0.00590 U	0.0780 U	NA
W011	11/20/2005		1,2,3-Trichloropropane	0.000160 U	NT	NA
W012	11/19/2005	6	1,2,3-Trichloropropane	0.00620 U	0.0780 U	NA
W013	11/19/2005	5	1,2,3-Trichloropropane	0.00610 U	0.0780 U	NA
W014	11/19/2005	5	1,2,3-Trichloropropane	0.00580 U	0.0780 U	NA
W015	11/19/2005	1	1,2,3-Trichloropropane	0.00990 U	0.0780 U	NA
W016	11/19/2005	5	1,2,3-Trichloropropane	0.00660 U	0.0780 U	NA
W016	11/19/2005		1,2,3-Trichloropropane	0.000160 U	NT	NA
W017	11/18/2005	3	1,2,3-Trichloropropane	0.00800 U	0.0780 U	NA
W017	11/18/2005	7	1,2,3-Trichloropropane	0.00360 U	0.0780 U	NA
W018	11/18/2005	6	1,2,3-Trichloropropane	0.00390 U	0.0780 U	NA
W019	11/18/2005	4	1,2,3-Trichloropropane	0.00630 U	0.0780 U	NA
W020	11/18/2005	5	1,2,3-Trichloropropane	0.00600 U	0.0780 U	NA
W020	11/18/2005		1,2,3-Trichloropropane	0.000160 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2,3-Trichloropropane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,3-Trichloropropane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,2,3-Trichloropropane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,2,3-Trichloropropane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,3-Trichloropropane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,3-Trichloropropane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,3-Trichloropropane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,3-Trichloropropane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,3-Trichloropropane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,3-Trichloropropane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,3-Trichloropropane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2,3-Trichloropropane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,3-Trichloropropane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,3-Trichloropropane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,3-Trichloropropane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,3-Trichloropropane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,3-Trichloropropane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,3-Trichloropropane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,3-Trichloropropane	0.156 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,2,3-Trichloropropane	0.492 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,2,3-Trichloropropane	0.0492 U	0.0100 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-203-S	2/13/2004	5.75	1,2,3-Trichloropropane	0.0492 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,2,3-Trichloropropane	0.0492 U	0.0100 U	NA
W001	11/21/2005	1	1,2,4-Trichlorobenzene	**0.350 J**	0.0300 U	7.45E-01
W002	11/21/2005	5	1,2,4-Trichlorobenzene	**160**	**0.110 J**	7.45E-01
W003	11/21/2005	7	1,2,4-Trichlorobenzene	**1.10**	0.0300 U	7.45E-01
W004	11/21/2005	7	1,2,4-Trichlorobenzene	**2.20**	0.0300 U	7.45E-01
W005	11/21/2005	7	1,2,4-Trichlorobenzene	**0.0360 J**	0.0300 U	7.45E-01
W006	11/21/2005	6	1,2,4-Trichlorobenzene	**5.90**	0.0300 U	7.45E-01
W007	11/21/2005	4	1,2,4-Trichlorobenzene	**1.20 J**	0.0300 U	7.45E-01
W007	11/21/2005		1,2,4-Trichlorobenzene	0.0000610 U	NT	NA
W008	11/20/2005	3	1,2,4-Trichlorobenzene	**0.130 J**	0.0300 U	7.45E-01
W009	11/20/2005	5	1,2,4-Trichlorobenzene	**0.0650 J**	0.0300 U	7.45E-01
W010	11/20/2005	5	1,2,4-Trichlorobenzene	**1.10**	0.0300 U	7.45E-01
W011	11/20/2005	3	1,2,4-Trichlorobenzene	0.0450 U	0.0300 U	7.45E-01
W011	11/20/2005	9	1,2,4-Trichlorobenzene	0.00230 U	0.0300 U	7.45E-01
W011	11/20/2005	18.5	1,2,4-Trichlorobenzene	0.00400 U	0.0300 U	7.45E-01
W011	11/20/2005		1,2,4-Trichlorobenzene	0.0000610 U	NT	NA
W012	11/19/2005	6	1,2,4-Trichlorobenzene	**0.110**	0.0300 U	7.45E-01
W013	11/19/2005	5	1,2,4-Trichlorobenzene	**1.30**	0.0300 U	7.45E-01
W014	11/19/2005	5	1,2,4-Trichlorobenzene	**1.10**	0.0300 U	7.45E-01
W015	11/19/2005	1	1,2,4-Trichlorobenzene	**0.0130 J**	0.0300 U	7.45E-01
W016	11/19/2005	5	1,2,4-Trichlorobenzene	**0.250**	0.0300 U	7.45E-01
W016	11/19/2005		1,2,4-Trichlorobenzene	0.0000610 U	NT	NA
W017	11/18/2005	3	1,2,4-Trichlorobenzene	**0.0160 J**	0.0300 U	7.45E-01
W017	11/18/2005	7	1,2,4-Trichlorobenzene	**0.0400 J**	0.0300 U	7.45E-01
W018	11/18/2005	6	1,2,4-Trichlorobenzene	**0.910**	0.0760 U	7.45E-01
W019	11/18/2005	4	1,2,4-Trichlorobenzene	**1.80**	0.0880 U	7.45E-01
W020	11/18/2005	5	1,2,4-Trichlorobenzene	0.00410 U	0.0750 U	7.45E-01
W020	11/18/2005		1,2,4-Trichlorobenzene	0.0000610 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2,4-Trichlorobenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,4-Trichlorobenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,2,4-Trichlorobenzene	**20.4**	NT	NA
WDL-101-S	8/14/2002	7	1,2,4-Trichlorobenzene	**19.5**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,4-Trichlorobenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,4-Trichlorobenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,4-Trichlorobenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,4-Trichlorobenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,2,4-Trichlorobenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,4-Trichlorobenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,4-Trichlorobenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2,4-Trichlorobenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,4-Trichlorobenzene	**0.719**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,4-Trichlorobenzene	**1.27**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,4-Trichlorobenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,4-Trichlorobenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,2,4-Trichlorobenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,4-Trichlorobenzene	**1.42**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,4-Trichlorobenzene	0.0677 U	0.0100 U	0.745
WDL-201-S	2/12/2004	6	1,2,4-Trichlorobenzene	**1.61**	0.0200 U	0.745
WDL-202-S	2/12/2004	4	1,2,4-Trichlorobenzene	0.0214 U	0.0100 U	0.745
WDL-203-S	2/13/2004	5.75	1,2,4-Trichlorobenzene	0.0214 U	0.0100 U	0.745
WDL-204-S	2/12/2004	5	1,2,4-Trichlorobenzene	**1.97**	0.0100 U	0.745
W001	11/21/2005	1	1,2,4-Trimethylbenzene	**2.40 J**	0.0270 U	1.34E+00
W002	11/21/2005	5	1,2,4-Trimethylbenzene	**990**	**1.00**	1.34E+00
W003	11/21/2005	7	1,2,4-Trimethylbenzene	**3.60**	0.0270 U	1.34E+00
W004	11/21/2005	7	1,2,4-Trimethylbenzene	**14.0**	**0.170 J**	1.34E+00

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W005	11/21/2005	7	1,2,4-Trimethylbenzene	**0.490**	0.0270 U	1.34E+00
W006	11/21/2005	6	1,2,4-Trimethylbenzene	**49.0**	**0.260 J**	1.34E+00
W007	11/21/2005	4	1,2,4-Trimethylbenzene	**27.0**	**0.180 J**	1.34E+00
W007	11/21/2005		1,2,4-Trimethylbenzene	0.0000540 U	NT	NA
W008	11/20/2005	3	1,2,4-Trimethylbenzene	**0.830**	0.0270 U	1.34E+00
W009	11/20/2005	5	1,2,4-Trimethylbenzene	**0.460**	0.0270 U	1.34E+00
W010	11/20/2005	5	1,2,4-Trimethylbenzene	**8.30**	**0.0810 J**	1.34E+00
W011	11/20/2005	3	1,2,4-Trimethylbenzene	**7.90**	**0.0610 J**	1.34E+00
W011	11/20/2005	9	1,2,4-Trimethylbenzene	**0.00820 J**	0.0270 U	1.34E+00
W011	11/20/2005	18.5	1,2,4-Trimethylbenzene	**0.0170 J**	0.0270 U	1.34E+00
W011	11/20/2005		1,2,4-Trimethylbenzene	0.0000540 U	NT	NA
W012	11/19/2005	6	1,2,4-Trimethylbenzene	**3.90**	**0.0360 J**	1.34E+00
W013	11/19/2005	5	1,2,4-Trimethylbenzene	**14.0**	**0.100 J**	1.34E+00
W014	11/19/2005	5	1,2,4-Trimethylbenzene	**2.30**	0.0270 U	1.34E+00
W015	11/19/2005	1	1,2,4-Trimethylbenzene	**3.40**	0.0270 U	1.34E+00
W016	11/19/2005	5	1,2,4-Trimethylbenzene	**0.980**	0.0270 U	1.34E+00
W016	11/19/2005		1,2,4-Trimethylbenzene	0.0000540 U	NT	NA
W017	11/18/2005	3	1,2,4-Trimethylbenzene	**0.340**	0.0270 U	1.34E+00
W017	11/18/2005	7	1,2,4-Trimethylbenzene	**0.0350 J**	0.0270 U	1.34E+00
W018	11/18/2005	6	1,2,4-Trimethylbenzene	**8.00**	**0.0950 J**	1.34E+00
W019	11/18/2005	4	1,2,4-Trimethylbenzene	**1.10**	0.0270 U	1.34E+00
W020	11/18/2005	5	1,2,4-Trimethylbenzene	**0.350**	0.0270 U	1.34E+00
W020	11/18/2005		1,2,4-Trimethylbenzene	0.0000540 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2,4-Trimethylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2,4-Trimethylbenzene	**1.21 J**	NT	NA
WDL-101-S	8/14/2002	5	1,2,4-Trimethylbenzene	**29.1**	NT	NA
WDL-101-S	8/14/2002	7	1,2,4-Trimethylbenzene	**72.6**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2,4-Trimethylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2,4-Trimethylbenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2,4-Trimethylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2,4-Trimethylbenzene	**1.35**	NT	NA
WDL-102-S	8/14/2002	10	1,2,4-Trimethylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2,4-Trimethylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2,4-Trimethylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2,4-Trimethylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2,4-Trimethylbenzene	**3.88**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2,4-Trimethylbenzene	**8.71**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2,4-Trimethylbenzene	**0.307**	NT	NA
WDL-104-S	8/15/2002	2.25	1,2,4-Trimethylbenzene	**6.66**	NT	NA
WDL-104-S	8/15/2002	5	1,2,4-Trimethylbenzene	**1.72**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2,4-Trimethylbenzene	**1.49**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2,4-Trimethylbenzene	**0.228**	0.0100 U	1.34
WDL-201-S	2/12/2004	6	1,2,4-Trimethylbenzene	**17.9**	**0.285**	1.34
WDL-202-S	2/12/2004	4	1,2,4-Trimethylbenzene	**1.29**	0.0100 U	1.34
WDL-203-S	2/13/2004	5.75	1,2,4-Trimethylbenzene	**1.11**	0.0100 U	1.34
WDL-204-S	2/12/2004	5	1,2,4-Trimethylbenzene	**1.56**	**0.0278**	1.34
W001	11/21/2005	1	1,2-Dibromo-3-chloropropane	0.0260 U	0.110 U	3.17E-01
W002	11/21/2005	5	1,2-Dibromo-3-chloropropane	24.0 U	0.110 U	3.17E-01
W003	11/21/2005	7	1,2-Dibromo-3-chloropropane	0.150 U	0.110 U	3.17E-01
W004	11/21/2005	7	1,2-Dibromo-3-chloropropane	0.550 U	0.110 U	3.17E-01
W005	11/21/2005	7	1,2-Dibromo-3-chloropropane	0.0110 U	0.110 U	3.17E-01
W006	11/21/2005	6	1,2-Dibromo-3-chloropropane	0.840 U	0.110 U	3.17E-01
W007	11/21/2005	4	1,2-Dibromo-3-chloropropane	0.910 U	0.110 U	3.17E-01
W007	11/21/2005		1,2-Dibromo-3-chloropropane	0.000220 U	NT	NA
W008	11/20/2005	3	1,2-Dibromo-3-chloropropane	0.0230 UJ	0.110 U	3.17E-01
W009	11/20/2005	5	1,2-Dibromo-3-chloropropane	0.0260 UJ	0.110 U	3.17E-01

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W010	11/20/2005	5	1,2-Dibromo-3-chloropropane	0.190 UJ	0.110 U	3.17E-01
W011	11/20/2005	3	1,2-Dibromo-3-chloropropane	0.220 UJ	0.110 U	3.17E-01
W011	11/20/2005	9	1,2-Dibromo-3-chloropropane	0.0110 UJ	0.110 U	3.17E-01
W011	11/20/2005	18.5	1,2-Dibromo-3-chloropropane	0.0200 UJ	0.110 U	3.17E-01
W011	11/20/2005		1,2-Dibromo-3-chloropropane	0.000220 UJ	NT	NA
W012	11/19/2005	6	1,2-Dibromo-3-chloropropane	0.0210 UJ	0.110 U	3.17E-01
W013	11/19/2005	5	1,2-Dibromo-3-chloropropane	0.0210 UJ	0.110 U	3.17E-01
W014	11/19/2005	5	1,2-Dibromo-3-chloropropane	0.0200 UJ	0.110 U	3.17E-01
W015	11/19/2005	1	1,2-Dibromo-3-chloropropane	0.0330 UJ	0.110 U	3.17E-01
W016	11/19/2005	5	1,2-Dibromo-3-chloropropane	0.0220 UJ	0.110 U	3.17E-01
W016	11/19/2005		1,2-Dibromo-3-chloropropane	0.000220 UJ	NT	NA
W017	11/18/2005	3	1,2-Dibromo-3-chloropropane	0.0270 UJ	0.110 U	3.17E-01
W017	11/18/2005	7	1,2-Dibromo-3-chloropropane	0.0120 UJ	0.110 U	3.17E-01
W018	11/18/2005	6	1,2-Dibromo-3-chloropropane	0.0130 UJ	0.110 U	3.17E-01
W019	11/18/2005	4	1,2-Dibromo-3-chloropropane	0.0210 UJ	0.110 U	3.17E-01
W020	11/18/2005	5	1,2-Dibromo-3-chloropropane	0.0200 UJ	0.110 U	3.17E-01
W020	11/18/2005		1,2-Dibromo-3-chloropropane	0.000220 UJ	NT	NA
WDL-101-S	8/14/2002	0.25	1,2-Dibromo-3-chloropropane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2-Dibromo-3-chloropropane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,2-Dibromo-3-chloropropane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,2-Dibromo-3-chloropropane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2-Dibromo-3-chloropropane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2-Dibromo-3-chloropropane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2-Dibromo-3-chloropropane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2-Dibromo-3-chloropropane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,2-Dibromo-3-chloropropane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2-Dibromo-3-chloropropane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2-Dibromo-3-chloropropane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2-Dibromo-3-chloropropane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2-Dibromo-3-chloropropane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,2-Dibromo-3-chloropropane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2-Dibromo-3-chloropropane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2-Dibromo-3-chloropropane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,2-Dibromo-3-chloropropane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2-Dibromo-3-chloropropane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2-Dibromo-3-chloropropane	0.0822 U	0.0250 U	0.317
WDL-201-S	2/12/2004	6	1,2-Dibromo-3-chloropropane	0.260 U	0.0500 U	0.317
WDL-202-S	2/12/2004	4	1,2-Dibromo-3-chloropropane	0.0260 U	0.0250 U	0.317
WDL-203-S	2/13/2004	5.75	1,2-Dibromo-3-chloropropane	0.0260 U	0.0250 U	0.317
WDL-204-S	2/12/2004	5	1,2-Dibromo-3-chloropropane	0.0260 U	0.0250 U	0.317
W001	11/21/2005	1	1,2-Dibromoethane	0.00370 U	0.0660 U	NA
W002	11/21/2005	5	1,2-Dibromoethane	3.40 U	0.0660 U	NA
W003	11/21/2005	7	1,2-Dibromoethane	0.0210 U	0.0660 U	NA
W004	11/21/2005	7	1,2-Dibromoethane	0.0790 U	0.0660 U	NA
W005	11/21/2005	7	1,2-Dibromoethane	**0.00250 J**	0.0660 U	NA
W006	11/21/2005	6	1,2-Dibromoethane	0.120 U	0.0660 U	NA
W007	11/21/2005	4	1,2-Dibromoethane	0.130 U	0.0660 U	NA
W007	11/21/2005		1,2-Dibromoethane	0.000130 U	NT	NA
W008	11/20/2005	3	1,2-Dibromoethane	0.00320 U	0.0660 U	NA
W009	11/20/2005	5	1,2-Dibromoethane	0.00370 U	0.0660 U	NA
W010	11/20/2005	5	1,2-Dibromoethane	0.0270 U	0.0660 U	NA
W011	11/20/2005	3	1,2-Dibromoethane	0.0310 U	0.0660 U	NA
W011	11/20/2005	9	1,2-Dibromoethane	0.00160 U	0.0660 U	NA
W011	11/20/2005	18.5	1,2-Dibromoethane	0.00280 U	0.0660 U	NA
W011	11/20/2005		1,2-Dibromoethane	0.000130 U	NT	NA
W012	11/19/2005	6	1,2-Dibromoethane	0.00300 U	0.0660 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W013	11/19/2005	5	1,2-Dibromoethane	**0.00390 J**	0.0660 U	NA
W014	11/19/2005	5	1,2-Dibromoethane	0.00280 U	0.0660 U	NA
W015	11/19/2005	1	1,2-Dibromoethane	0.00470 U	0.0660 U	NA
W016	11/19/2005	5	1,2-Dibromoethane	0.00320 U	0.0660 U	NA
W016	11/19/2005		1,2-Dibromoethane	0.000130 U	NT	NA
W017	11/18/2005	3	1,2-Dibromoethane	**0.00630 J**	0.0660 U	NA
W017	11/18/2005	7	1,2-Dibromoethane	0.00170 U	0.0660 U	NA
W018	11/18/2005	6	1,2-Dibromoethane	**0.00280 J**	0.0660 U	NA
W019	11/18/2005	4	1,2-Dibromoethane	0.00300 U	0.0660 U	NA
W020	11/18/2005	5	1,2-Dibromoethane	0.00290 U	0.0660 U	NA
W020	11/18/2005		1,2-Dibromoethane	0.000130 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2-Dibromoethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2-Dibromoethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,2-Dibromoethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,2-Dibromoethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2-Dibromoethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2-Dibromoethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2-Dibromoethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2-Dibromoethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,2-Dibromoethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2-Dibromoethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2-Dibromoethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2-Dibromoethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2-Dibromoethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,2-Dibromoethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2-Dibromoethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2-Dibromoethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,2-Dibromoethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2-Dibromoethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2-Dibromoethane	0.0367 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,2-Dibromoethane	0.116 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,2-Dibromoethane	0.0116 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,2-Dibromoethane	0.0116 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,2-Dibromoethane	0.0116 U	0.0100 U	NA
W001	11/21/2005	1	1,2-Dichlorobenzene	**10.0 J**	**0.0380 J**	3.61E+01
W002	11/21/2005	5	1,2-Dichlorobenzene	**5,400**	**11.0**	3.61E+01
W003	11/21/2005	7	1,2-Dichlorobenzene	**22.0**	**0.180 J**	3.61E+01
W004	11/21/2005	7	1,2-Dichlorobenzene	**120**	**2.10**	3.61E+01
W005	11/21/2005	7	1,2-Dichlorobenzene	**4.00**	**0.0980 J**	3.61E+01
W006	11/21/2005	6	1,2-Dichlorobenzene	**280**	**2.10**	3.61E+01
W007	11/21/2005	4	1,2-Dichlorobenzene	**200**	**1.80**	3.61E+01
W007	11/21/2005		1,2-Dichlorobenzene	0.0000440 U	NT	NA
W008	11/20/2005	3	1,2-Dichlorobenzene	**2.40**	0.0220 U	3.61E+01
W009	11/20/2005	5	1,2-Dichlorobenzene	**0.960**	0.0220 U	3.61E+01
W010	11/20/2005	5	1,2-Dichlorobenzene	**38.0**	**0.500**	3.61E+01
W011	11/20/2005	3	1,2-Dichlorobenzene	**97.0 J**	**0.750**	3.61E+01
W011	11/20/2005	9	1,2-Dichlorobenzene	**0.0980**	0.0220 U	3.61E+01
W011	11/20/2005	18.5	1,2-Dichlorobenzene	**0.170**	0.0220 U	3.61E+01
W011	11/20/2005		1,2-Dichlorobenzene	0.0000440 U	NT	NA
W012	11/19/2005	6	1,2-Dichlorobenzene	**41.0**	**0.480 J**	3.61E+01
W013	11/19/2005	5	1,2-Dichlorobenzene	**120 J**	**1.10**	3.61E+01
W014	11/19/2005	5	1,2-Dichlorobenzene	**9.50**	**0.0630 J**	3.61E+01
W015	11/19/2005	1	1,2-Dichlorobenzene	**1.60**	0.0220 U	3.61E+01
W016	11/19/2005	5	1,2-Dichlorobenzene	**1.00**	0.0220 U	3.61E+01
W016	11/19/2005		1,2-Dichlorobenzene	0.0000440 U	NT	NA
W017	11/18/2005	3	1,2-Dichlorobenzene	**0.190**	0.0220 U	3.61E+01

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W017	11/18/2005	7	1,2-Dichlorobenzene	**0.230**	0.0220 U	3.61E+01
W018	11/18/2005	6	1,2-Dichlorobenzene	**20.0**	**0.360 J**	3.61E+01
W019	11/18/2005	4	1,2-Dichlorobenzene	**3.20**	**0.0430 J**	3.61E+01
W020	11/18/2005	5	1,2-Dichlorobenzene	**0.0200 J**	0.0220 U	3.61E+01
W020	11/18/2005		1,2-Dichlorobenzene	0.0000440 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2-Dichlorobenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2-Dichlorobenzene	**1.19**	NT	NA
WDL-101-S	8/14/2002	5	1,2-Dichlorobenzene	**268**	NT	NA
WDL-101-S	8/14/2002	7	1,2-Dichlorobenzene	**525**	NT	NA
WDL-102-S	8/14/2002	0.5	1,2-Dichlorobenzene	**0.517 J**	NT	NA
WDL-102-S	8/14/2002	2.25	1,2-Dichlorobenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2-Dichlorobenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2-Dichlorobenzene	**18.4**	NT	NA
WDL-102-S	8/14/2002	10	1,2-Dichlorobenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2-Dichlorobenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2-Dichlorobenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2-Dichlorobenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2-Dichlorobenzene	**29.3**	NT	NA
WDL-103-S	8/15/2002	8.25	1,2-Dichlorobenzene	**63.3**	NT	NA
WDL-104-S	8/15/2002	0.25	1,2-Dichlorobenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2-Dichlorobenzene	**0.248**	NT	NA
WDL-104-S	8/15/2002	5	1,2-Dichlorobenzene	**1.17**	NT	NA
WDL-104-S	8/15/2002	6.75	1,2-Dichlorobenzene	**4.08**	NT	NA
WDL-201-S	2/12/2004	0.25	1,2-Dichlorobenzene	**0.180**	0.0100 U	36.1
WDL-201-S	2/12/2004	6	1,2-Dichlorobenzene	**116**	**2.23**	36.1
WDL-202-S	2/12/2004	4	1,2-Dichlorobenzene	**21.9**	0.0100 U	36.1
WDL-203-S	2/13/2004	5.75	1,2-Dichlorobenzene	**0.177**	0.0100 U	36.1
WDL-204-S	2/12/2004	5	1,2-Dichlorobenzene	**4.82**	**0.111**	36.1
W001	11/21/2005	1	1,2-Dichloroethane	0.00260 U	0.0790 U	NA
W002	11/21/2005	5	1,2-Dichloroethane	2.40 U	0.0790 U	NA
W003	11/21/2005	7	1,2-Dichloroethane	0.0150 U	0.0790 U	NA
W004	11/21/2005	7	1,2-Dichloroethane	0.0550 U	0.0790 U	NA
W005	11/21/2005	7	1,2-Dichloroethane	0.00110 U	0.0790 U	NA
W006	11/21/2005	6	1,2-Dichloroethane	0.0840 U	0.0790 U	NA
W007	11/21/2005	4	1,2-Dichloroethane	0.0910 U	0.0790 U	NA
W007	11/21/2005		1,2-Dichloroethane	0.000160 U	NT	NA
W008	11/20/2005	3	1,2-Dichloroethane	0.00230 UJ	0.0790 U	NA
W009	11/20/2005	5	1,2-Dichloroethane	0.00260 U	0.0790 U	NA
W010	11/20/2005	5	1,2-Dichloroethane	0.0190 U	0.0790 U	NA
W011	11/20/2005	3	1,2-Dichloroethane	0.0220 U	0.0790 U	NA
W011	11/20/2005	9	1,2-Dichloroethane	0.00110 U	0.0790 U	NA
W011	11/20/2005	18.5	1,2-Dichloroethane	0.00200 U	0.0790 U	NA
W011	11/20/2005		1,2-Dichloroethane	0.000160 U	NT	NA
W012	11/19/2005	6	1,2-Dichloroethane	0.00210 U	0.0790 U	NA
W013	11/19/2005	5	1,2-Dichloroethane	0.00210 U	0.0790 U	NA
W014	11/19/2005	5	1,2-Dichloroethane	0.00200 U	0.0790 U	NA
W015	11/19/2005	1	1,2-Dichloroethane	0.00330 U	0.0790 U	NA
W016	11/19/2005	5	1,2-Dichloroethane	0.00220 U	0.0790 U	NA
W016	11/19/2005		1,2-Dichloroethane	0.000160 U	NT	NA
W017	11/18/2005	3	1,2-Dichloroethane	0.00270 U	0.0790 U	NA
W017	11/18/2005	7	1,2-Dichloroethane	0.00120 U	0.0790 U	NA
W018	11/18/2005	6	1,2-Dichloroethane	**0.00140 J**	0.0790 U	NA
W019	11/18/2005	4	1,2-Dichloroethane	0.00210 U	0.0790 U	NA
W020	11/18/2005	5	1,2-Dichloroethane	0.00200 U	0.0790 U	NA
W020	11/18/2005		1,2-Dichloroethane	0.000160 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2-Dichloroethane	0.552 UJ	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	2.25	1,2-Dichloroethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,2-Dichloroethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,2-Dichloroethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2-Dichloroethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2-Dichloroethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2-Dichloroethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,2-Dichloroethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,2-Dichloroethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2-Dichloroethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2-Dichloroethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2-Dichloroethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2-Dichloroethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,2-Dichloroethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2-Dichloroethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2-Dichloroethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,2-Dichloroethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2-Dichloroethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2-Dichloroethane	0.0354 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,2-Dichloroethane	0.112 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,2-Dichloroethane	0.0112 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,2-Dichloroethane	0.0112 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,2-Dichloroethane	0.0112 U	0.0100 U	NA
W001	11/21/2005	1	1,2-Dichloropropane	0.00510 U	0.0760 U	NA
W002	11/21/2005	5	1,2-Dichloropropane	4.70 U	0.0760 U	NA
W003	11/21/2005	7	1,2-Dichloropropane	0.0290 U	0.0760 U	NA
W004	11/21/2005	7	1,2-Dichloropropane	0.110 U	0.0760 U	NA
W005	11/21/2005	7	1,2-Dichloropropane	0.00220 U	0.0760 U	NA
W006	11/21/2005	6	1,2-Dichloropropane	0.160 U	0.0760 U	NA
W007	11/21/2005	4	1,2-Dichloropropane	0.180 U	0.0760 U	NA
W007	11/21/2005		1,2-Dichloropropane	0.000150 U	NT	NA
W008	11/20/2005	3	1,2-Dichloropropane	0.00440 U	0.0760 U	NA
W009	11/20/2005	5	1,2-Dichloropropane	0.00500 U	0.0760 U	NA
W010	11/20/2005	5	1,2-Dichloropropane	0.0370 U	0.0760 U	NA
W011	11/20/2005	3	1,2-Dichloropropane	0.0430 U	0.0760 U	NA
W011	11/20/2005	9	1,2-Dichloropropane	0.00220 U	0.0760 U	NA
W011	11/20/2005	18.5	1,2-Dichloropropane	0.00390 U	0.0760 U	NA
W011	11/20/2005		1,2-Dichloropropane	0.000150 U	NT	NA
W012	11/19/2005	6	1,2-Dichloropropane	0.00410 U	0.0760 U	NA
W013	11/19/2005	5	1,2-Dichloropropane	0.00400 U	0.0760 U	NA
W014	11/19/2005	5	1,2-Dichloropropane	0.00380 U	0.0760 U	NA
W015	11/19/2005	1	1,2-Dichloropropane	0.00650 U	0.0760 U	NA
W016	11/19/2005	5	1,2-Dichloropropane	0.00430 U	0.0760 U	NA
W016	11/19/2005		1,2-Dichloropropane	0.000150 U	NT	NA
W017	11/18/2005	3	1,2-Dichloropropane	0.00520 U	0.0760 U	NA
W017	11/18/2005	7	1,2-Dichloropropane	0.00230 U	0.0760 U	NA
W018	11/18/2005	6	1,2-Dichloropropane	0.00260 U	0.0760 U	NA
W019	11/18/2005	4	1,2-Dichloropropane	0.00410 U	0.0760 U	NA
W020	11/18/2005	5	1,2-Dichloropropane	0.00400 U	0.0760 U	NA
W020	11/18/2005		1,2-Dichloropropane	0.000150 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,2-Dichloropropane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,2-Dichloropropane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,2-Dichloropropane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,2-Dichloropropane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,2-Dichloropropane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,2-Dichloropropane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,2-Dichloropropane	0.263 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	8	1,2-Dichloropropane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,2-Dichloropropane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,2-Dichloropropane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,2-Dichloropropane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,2-Dichloropropane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,2-Dichloropropane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,2-Dichloropropane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,2-Dichloropropane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,2-Dichloropropane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,2-Dichloropropane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,2-Dichloropropane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,2-Dichloropropane	0.0236 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,2-Dichloropropane	0.0745 U	0.0200 U	NA
WDL-202-S	sociated analyti	4	1,2-Dichloropropane	0.00745 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,2-Dichloropropane	0.00745 U	0.0100 U	NA
WDL-204-S	dentified and th	5	1,2-Dichloropropane	0.00745 U	0.0100 U	NA
W001	11/21/2005	1	1,3,5-Trimethylbenzene	**0.920 J**	0.0350 U	1.34E+00
W002	11/21/2005	5	1,3,5-Trimethylbenzene	**360**	**0.350 J**	1.34E+00
W003	11/21/2005	7	1,3,5-Trimethylbenzene	**1.40**	0.0350 U	1.34E+00
W004	11/21/2005	7	1,3,5-Trimethylbenzene	**4.40**	**0.0730 J**	1.34E+00
W005	11/21/2005	7	1,3,5-Trimethylbenzene	**0.130**	0.0350 U	1.34E+00
W006	11/21/2005	6	1,3,5-Trimethylbenzene	**16.0**	**0.0870 J**	1.34E+00
W007	11/21/2005	4	1,3,5-Trimethylbenzene	**8.30**	**0.0540 J**	1.34E+00
W007	11/21/2005		1,3,5-Trimethylbenzene	0.0000700 U	NT	NA
W008	11/20/2005	3	1,3,5-Trimethylbenzene	**0.400**	0.0350 U	1.34E+00
W009	11/20/2005	5	1,3,5-Trimethylbenzene	**0.210**	0.0350 U	1.34E+00
W010	11/20/2005	5	1,3,5-Trimethylbenzene	**2.90**	0.0350 U	1.34E+00
W011	11/20/2005	3	1,3,5-Trimethylbenzene	**2.00**	0.0350 U	1.34E+00
W011	11/20/2005	9	1,3,5-Trimethylbenzene	0.00180 U	0.0350 U	1.34E+00
W011	11/20/2005	18.5	1,3,5-Trimethylbenzene	**0.00540 J**	0.0350 U	1.34E+00
W011	11/20/2005		1,3,5-Trimethylbenzene	0.0000700 U	NT	NA
W012	11/19/2005	6	1,3,5-Trimethylbenzene	**1.10**	0.0350 U	1.34E+00
W013	11/19/2005	5	1,3,5-Trimethylbenzene	**5.70**	**0.0390 J**	1.34E+00
W014	11/19/2005	5	1,3,5-Trimethylbenzene	**1.10**	0.0350 U	1.34E+00
W015	11/19/2005	1	1,3,5-Trimethylbenzene	**1.50**	0.0350 U	1.34E+00
W016	11/19/2005	5	1,3,5-Trimethylbenzene	**0.510**	0.0350 U	1.34E+00
W016	11/19/2005		1,3,5-Trimethylbenzene	0.0000700 U	NT	NA
W017	11/18/2005	3	1,3,5-Trimethylbenzene	**0.190**	0.0350 U	1.34E+00
W017	11/18/2005	7	1,3,5-Trimethylbenzene	**0.0120 J**	0.0350 U	1.34E+00
W018	11/18/2005	6	1,3,5-Trimethylbenzene	**2.80**	**0.0390 J**	1.34E+00
W019	11/18/2005	4	1,3,5-Trimethylbenzene	**0.280**	0.0350 U	1.34E+00
W020	11/18/2005	5	1,3,5-Trimethylbenzene	**0.140**	0.0350 U	1.34E+00
W020	11/18/2005		1,3,5-Trimethylbenzene	0.0000700 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,3,5-Trimethylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,3,5-Trimethylbenzene	**0.601**	NT	NA
WDL-101-S	8/14/2002	5	1,3,5-Trimethylbenzene	**12.3**	NT	NA
WDL-101-S	8/14/2002	7	1,3,5-Trimethylbenzene	**34.0**	NT	NA
WDL-102-S	8/14/2002	0.5	1,3,5-Trimethylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,3,5-Trimethylbenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,3,5-Trimethylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,3,5-Trimethylbenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,3,5-Trimethylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,3,5-Trimethylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,3,5-Trimethylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,3,5-Trimethylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,3,5-Trimethylbenzene	**1.44**	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	8.25	1,3,5-Trimethylbenzene	**2.85**	NT	NA
WDL-104-S	8/15/2002	0.25	1,3,5-Trimethylbenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,3,5-Trimethylbenzene	**3.79**	NT	NA
WDL-104-S	8/15/2002	5	1,3,5-Trimethylbenzene	**0.797**	NT	NA
WDL-104-S	8/15/2002	6.75	1,3,5-Trimethylbenzene	**0.409**	NT	NA
WDL-201-S	2/12/2004	0.25	1,3,5-Trimethylbenzene	**0.0759**	0.0100 U	1.34
WDL-201-S	2/12/2004	6	1,3,5-Trimethylbenzene	**5.57**	**0.0822**	1.34
WDL-202-S	2/12/2004	4	1,3,5-Trimethylbenzene	**0.336**	0.0100 U	1.34
WDL-203-S	2/13/2004	5.75	1,3,5-Trimethylbenzene	**0.525**	0.0100 U	1.34
WDL-204-S	2/12/2004	5	1,3,5-Trimethylbenzene	**0.405**	0.0100 U	1.34
W001	11/21/2005	1	1,3-Dichlorobenzene	**0.690 J**	0.0300 U	1.49E+01
W002	11/21/2005	5	1,3-Dichlorobenzene	**250**	**0.360 J**	1.49E+01
W003	11/21/2005	7	1,3-Dichlorobenzene	**1.30**	0.0300 U	1.49E+01
W004	11/21/2005	7	1,3-Dichlorobenzene	**5.80**	**0.0910 J**	1.49E+01
W005	11/21/2005	7	1,3-Dichlorobenzene	**0.180**	0.0300 U	1.49E+01
W006	11/21/2005	6	1,3-Dichlorobenzene	**12.0**	**0.0750 J**	1.49E+01
W007	11/21/2005	4	1,3-Dichlorobenzene	**8.90**	**0.0670 J**	1.49E+01
W007	11/21/2005		1,3-Dichlorobenzene	0.0000600 U	NT	NA
W008	11/20/2005	3	1,3-Dichlorobenzene	**0.120**	0.0300 U	1.49E+01
W009	11/20/2005	5	1,3-Dichlorobenzene	**0.0490 J**	0.0300 U	1.49E+01
W010	11/20/2005	5	1,3-Dichlorobenzene	**1.80**	0.0300 U	1.49E+01
W011	11/20/2005	3	1,3-Dichlorobenzene	**3.90**	**0.0330 J**	1.49E+01
W011	11/20/2005	9	1,3-Dichlorobenzene	**0.00590 J**	0.0300 U	1.49E+01
W011	11/20/2005	18.5	1,3-Dichlorobenzene	**0.00990 J**	0.0300 U	1.49E+01
W011	11/20/2005		1,3-Dichlorobenzene	0.0000600 U	NT	NA
W012	11/19/2005	6	1,3-Dichlorobenzene	**1.60**	0.0300 U	1.49E+01
W013	11/19/2005	5	1,3-Dichlorobenzene	**6.00**	**0.0440 J**	1.49E+01
W014	11/19/2005	5	1,3-Dichlorobenzene	**0.540**	0.0300 U	1.49E+01
W015	11/19/2005	1	1,3-Dichlorobenzene	**0.0630 J**	0.0300 U	1.49E+01
W016	11/19/2005	5	1,3-Dichlorobenzene	**0.0820 J**	0.0300 U	1.49E+01
W016	11/19/2005		1,3-Dichlorobenzene	0.0000600 U	NT	NA
W017	11/18/2005	3	1,3-Dichlorobenzene	**0.0230 J**	0.0300 U	1.49E+01
W017	11/18/2005	7	1,3-Dichlorobenzene	**0.0180 J**	0.0300 U	1.49E+01
W018	11/18/2005	6	1,3-Dichlorobenzene	**1.70**	**0.0300 J**	1.49E+01
W019	11/18/2005	4	1,3-Dichlorobenzene	**0.260**	0.0300 U	1.49E+01
W020	11/18/2005	5	1,3-Dichlorobenzene	0.00390 U	0.0300 U	1.49E+01
W020	11/18/2005		1,3-Dichlorobenzene	0.0000600 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,3-Dichlorobenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,3-Dichlorobenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,3-Dichlorobenzene	**17.7**	NT	NA
WDL-101-S	8/14/2002	7	1,3-Dichlorobenzene	**30.4**	NT	NA
WDL-102-S	8/14/2002	0.5	1,3-Dichlorobenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,3-Dichlorobenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,3-Dichlorobenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,3-Dichlorobenzene	**0.512**	NT	NA
WDL-102-S	8/14/2002	10	1,3-Dichlorobenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,3-Dichlorobenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,3-Dichlorobenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,3-Dichlorobenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,3-Dichlorobenzene	**1.13**	NT	NA
WDL-103-S	8/15/2002	8.25	1,3-Dichlorobenzene	**2.80**	NT	NA
WDL-104-S	8/15/2002	0.25	1,3-Dichlorobenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,3-Dichlorobenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,3-Dichlorobenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,3-Dichlorobenzene	**0.397**	NT	NA
WDL-201-S	2/12/2004	0.25	1,3-Dichlorobenzene	0.0185 U	0.0100 U	14.9

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	6	1,3-Dichlorobenzene	**4.83**	**0.0798**	14.9
WDL-202-S	2/12/2004	4	1,3-Dichlorobenzene	**0.613**	0.0100 U	14.9
WDL-203-S	2/13/2004	5.75	1,3-Dichlorobenzene	0.00586 U	0.0100 U	14.9
WDL-204-S	2/12/2004	5	1,3-Dichlorobenzene	**0.400**	0.0100 U	14.9
W001	11/21/2005	1	1,3-Dichloropropane	0.00490 U	0.0530 U	NA
W002	11/21/2005	5	1,3-Dichloropropane	4.50 U	0.0530 U	NA
W003	11/21/2005	7	1,3-Dichloropropane	0.0280 U	0.0530 U	NA
W004	11/21/2005	7	1,3-Dichloropropane	0.100 U	0.0530 U	NA
W005	11/21/2005	7	1,3-Dichloropropane	0.00210 U	0.0530 U	NA
W006	11/21/2005	6	1,3-Dichloropropane	0.160 U	0.0530 U	NA
W007	11/21/2005	4	1,3-Dichloropropane	0.170 U	0.0530 U	NA
W007	11/21/2005		1,3-Dichloropropane	0.000110 U	NT	NA
W008	11/20/2005	3	1,3-Dichloropropane	0.00420 U	0.0530 U	NA
W009	11/20/2005	5	1,3-Dichloropropane	0.00480 U	0.0530 U	NA
W010	11/20/2005	5	1,3-Dichloropropane	0.0360 U	0.0530 U	NA
W011	11/20/2005	3	1,3-Dichloropropane	0.0410 U	0.0530 U	NA
W011	11/20/2005	9	1,3-Dichloropropane	0.00210 U	0.0530 U	NA
W011	11/20/2005	18.5	1,3-Dichloropropane	0.00370 U	0.0530 U	NA
W011	11/20/2005		1,3-Dichloropropane	0.000110 U	NT	NA
W012	11/19/2005	6	1,3-Dichloropropane	0.00390 U	0.0530 U	NA
W013	11/19/2005	5	1,3-Dichloropropane	0.00380 U	0.0530 U	NA
W014	11/19/2005	5	1,3-Dichloropropane	0.00370 U	0.0530 U	NA
W015	11/19/2005	1	1,3-Dichloropropane	0.00620 U	0.0530 U	NA
W016	11/19/2005	5	1,3-Dichloropropane	0.00410 U	0.0530 U	NA
W016	11/19/2005		1,3-Dichloropropane	0.000110 U	NT	NA
W017	11/18/2005	3	1,3-Dichloropropane	0.00500 U	0.0530 U	NA
W017	11/18/2005	7	1,3-Dichloropropane	0.00220 U	0.0530 U	NA
W018	11/18/2005	6	1,3-Dichloropropane	0.00240 U	0.0530 U	NA
W019	11/18/2005	4	1,3-Dichloropropane	0.00390 U	0.0530 U	NA
W020	11/18/2005	5	1,3-Dichloropropane	0.00380 U	0.0530 U	NA
W020	11/18/2005		1,3-Dichloropropane	0.000110 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,3-Dichloropropane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,3-Dichloropropane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	1,3-Dichloropropane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	1,3-Dichloropropane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	1,3-Dichloropropane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,3-Dichloropropane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,3-Dichloropropane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,3-Dichloropropane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	1,3-Dichloropropane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,3-Dichloropropane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,3-Dichloropropane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,3-Dichloropropane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,3-Dichloropropane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	1,3-Dichloropropane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	1,3-Dichloropropane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,3-Dichloropropane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,3-Dichloropropane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,3-Dichloropropane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	1,3-Dichloropropane	0.0550 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	1,3-Dichloropropane	0.174 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	1,3-Dichloropropane	0.0174 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	1,3-Dichloropropane	0.0174 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	1,3-Dichloropropane	0.0174 U	0.0100 U	NA
W001	11/21/2005	1	1,4-Dichlorobenzene	**3.60 J**	0.0510 U	1.72E+00
W002	11/21/2005	5	1,4-Dichlorobenzene	**1,500**	**2.50**	1.72E+00

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W003	11/21/2005	7	1,4-Dichlorobenzene	**6.70**	0.0510 U	1.72E+00
W004	11/21/2005	7	1,4-Dichlorobenzene	**34.0**	**0.520**	1.72E+00
W005	11/21/2005	7	1,4-Dichlorobenzene	**1.20**	0.0510 U	1.72E+00
W006	11/21/2005	6	1,4-Dichlorobenzene	**75.0**	**0.520**	1.72E+00
W007	11/21/2005	4	1,4-Dichlorobenzene	**60.0**	**0.380 J**	1.72E+00
W007	11/21/2005		1,4-Dichlorobenzene	0.000100 U	NT	NA
W008	11/20/2005	3	1,4-Dichlorobenzene	**0.480**	0.0510 U	1.72E+00
W009	11/20/2005	5	1,4-Dichlorobenzene	**0.220**	0.0510 U	1.72E+00
W010	11/20/2005	5	1,4-Dichlorobenzene	**11.0**	0.0510 U	1.72E+00
W011	11/20/2005	3	1,4-Dichlorobenzene	**25.0**	0.0510 U	1.72E+00
W011	11/20/2005	9	1,4-Dichlorobenzene	**0.0270 J**	0.0510 U	1.72E+00
W011	11/20/2005	18.5	1,4-Dichlorobenzene	**0.0440 J**	0.0510 U	1.72E+00
W011	11/20/2005		1,4-Dichlorobenzene	0.000100 U	NT	NA
W012	11/19/2005	6	1,4-Dichlorobenzene	**9.50**	0.0510 U	1.72E+00
W013	11/19/2005	5	1,4-Dichlorobenzene	**30.0**	**0.250 J**	1.72E+00
W014	11/19/2005	5	1,4-Dichlorobenzene	**2.50**	0.0510 U	1.72E+00
W015	11/19/2005	1	1,4-Dichlorobenzene	**0.120 J**	0.0510 U	1.72E+00
W016	11/19/2005	5	1,4-Dichlorobenzene	**0.400**	0.0510 U	1.72E+00
W016	11/19/2005		1,4-Dichlorobenzene	0.000100 U	NT	NA
W017	11/18/2005	3	1,4-Dichlorobenzene	**0.0590 J**	0.0510 U	1.72E+00
W017	11/18/2005	7	1,4-Dichlorobenzene	**0.0730**	0.0510 U	1.72E+00
W018	11/18/2005	6	1,4-Dichlorobenzene	**6.90**	**0.120 J**	1.72E+00
W019	11/18/2005	4	1,4-Dichlorobenzene	**1.10**	0.0510 U	1.72E+00
W020	11/18/2005	5	1,4-Dichlorobenzene	0.00270 U	0.0510 U	1.72E+00
W020	11/18/2005		1,4-Dichlorobenzene	0.000100 U	NT	NA
WDL-101-S	8/14/2002	0.25	1,4-Dichlorobenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	1,4-Dichlorobenzene	**0.685**	NT	NA
WDL-101-S	8/14/2002	5	1,4-Dichlorobenzene	**74.4**	NT	NA
WDL-101-S	8/14/2002	7	1,4-Dichlorobenzene	**138**	NT	NA
WDL-102-S	8/14/2002	0.5	1,4-Dichlorobenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	1,4-Dichlorobenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	1,4-Dichlorobenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	1,4-Dichlorobenzene	**4.13**	NT	NA
WDL-102-S	8/14/2002	10	1,4-Dichlorobenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	1,4-Dichlorobenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	1,4-Dichlorobenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	1,4-Dichlorobenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	1,4-Dichlorobenzene	**7.53**	NT	NA
WDL-103-S	8/15/2002	8.25	1,4-Dichlorobenzene	**18.7**	NT	NA
WDL-104-S	8/15/2002	0.25	1,4-Dichlorobenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	1,4-Dichlorobenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	1,4-Dichlorobenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	1,4-Dichlorobenzene	**1.55**	NT	NA
WDL-201-S	2/12/2004	0.25	1,4-Dichlorobenzene	**0.0633**	0.0100 U	1.72
WDL-201-S	2/12/2004	6	1,4-Dichlorobenzene	**34.9**	**0.605**	1.72
WDL-202-S	2/12/2004	4	1,4-Dichlorobenzene	**4.92**	0.0100 U	1.72
WDL-203-S	2/13/2004	5.75	1,4-Dichlorobenzene	0.0149 U	0.0100 U	1.72
WDL-204-S	2/12/2004	5	1,4-Dichlorobenzene	**1.63**	**0.0309**	1.72
W001	11/21/2005	1	2,2-Dichloropropane	0.00940 U	0.0800 U	NA
W002	11/21/2005	5	2,2-Dichloropropane	8.60 U	0.0800 U	NA
W003	11/21/2005	7	2,2-Dichloropropane	0.0530 U	0.0800 U	NA
W004	11/21/2005	7	2,2-Dichloropropane	0.200 U	0.0800 U	NA
W005	11/21/2005	7	2,2-Dichloropropane	0.00410 U	0.0800 U	NA
W006	11/21/2005	6	2,2-Dichloropropane	0.300 U	0.0800 U	NA
W007	11/21/2005	4	2,2-Dichloropropane	0.330 U	0.0800 U	NA
W007	11/21/2005		2,2-Dichloropropane	0.000160 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W008	11/20/2005	3	2,2-Dichloropropane	0.00810 UJ	0.0800 U	NA
W009	11/20/2005	5	2,2-Dichloropropane	0.00920 U	0.0800 U	NA
W010	11/20/2005	5	2,2-Dichloropropane	0.0680 U	0.0800 U	NA
W011	11/20/2005	3	2,2-Dichloropropane	0.0790 U	0.0800 U	NA
W011	11/20/2005	9	2,2-Dichloropropane	0.00410 U	0.0800 U	NA
W011	11/20/2005	18.5	2,2-Dichloropropane	0.00710 U	0.0800 U	NA
W011	11/20/2005		2,2-Dichloropropane	0.000160 U	NT	NA
W012	11/19/2005	6	2,2-Dichloropropane	0.00740 U	0.0800 U	NA
W013	11/19/2005	5	2,2-Dichloropropane	0.00740 U	0.0800 U	NA
W014	11/19/2005	5	2,2-Dichloropropane	0.00700 U	0.0800 U	NA
W015	11/19/2005	1	2,2-Dichloropropane	0.0120 U	0.0800 U	NA
W016	11/19/2005	5	2,2-Dichloropropane	0.00790 U	0.0800 U	NA
W016	11/19/2005		2,2-Dichloropropane	0.000160 U	NT	NA
W017	11/18/2005	3	2,2-Dichloropropane	0.00960 U	0.0800 U	NA
W017	11/18/2005	7	2,2-Dichloropropane	0.00430 U	0.0800 U	NA
W018	11/18/2005	6	2,2-Dichloropropane	0.00470 U	0.0800 U	NA
W019	11/18/2005	4	2,2-Dichloropropane	0.00760 U	0.0800 U	NA
W020	11/18/2005	5	2,2-Dichloropropane	0.00720 U	0.0800 U	NA
W020	11/18/2005		2,2-Dichloropropane	0.000160 U	NT	NA
WDL-101-S	8/14/2002	0.25	2,2-Dichloropropane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2,2-Dichloropropane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	2,2-Dichloropropane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	2,2-Dichloropropane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2,2-Dichloropropane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	2,2-Dichloropropane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	2,2-Dichloropropane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	2,2-Dichloropropane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	2,2-Dichloropropane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	2,2-Dichloropropane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	2,2-Dichloropropane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	2,2-Dichloropropane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	2,2-Dichloropropane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	2,2-Dichloropropane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,2-Dichloropropane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	2,2-Dichloropropane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	2,2-Dichloropropane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	2,2-Dichloropropane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,2-Dichloropropane	0.0256 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	2,2-Dichloropropane	0.0809 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	2,2-Dichloropropane	0.00809 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	2,2-Dichloropropane	0.00809 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	2,2-Dichloropropane	0.00809 U	0.0100 U	NA
W001	11/21/2005	1	2-Butanone (MEK)	0.170 U	0.930 U	1.14E+03
W002	11/21/2005	5	2-Butanone (MEK)	160 U	0.930 U	1.14E+03
W003	11/21/2005	7	2-Butanone (MEK)	0.960 U	0.930 U	1.14E+03
W004	11/21/2005	7	2-Butanone (MEK)	3.60 U	0.930 U	1.14E+03
W005	11/21/2005	7	2-Butanone (MEK)	**0.0940 J**	0.930 U	1.14E+03
W006	11/21/2005	6	2-Butanone (MEK)	5.50 U	0.930 U	1.14E+03
W007	11/21/2005	4	2-Butanone (MEK)	6.00 U	0.930 U	1.14E+03
W007	11/21/2005		2-Butanone (MEK)	0.00190 U	NT	NA
W008	11/20/2005	3	2-Butanone (MEK)	0.150 U	0.930 U	1.14E+03
W009	11/20/2005	5	2-Butanone (MEK)	0.170 U	0.930 U	1.14E+03
W010	11/20/2005	5	2-Butanone (MEK)	1.20 U	0.930 U	1.14E+03
W011	11/20/2005	3	2-Butanone (MEK)	1.40 U	0.930 U	1.14E+03
W011	11/20/2005	9	2-Butanone (MEK)	0.0740 U	0.930 U	1.14E+03
W011	11/20/2005	18.5	2-Butanone (MEK)	0.130 U	0.930 U	1.14E+03

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005		2-Butanone (MEK)	0.00190 U	NT	NA
W012	11/19/2005	6	2-Butanone (MEK)	0.140 U	0.930 U	1.14E+03
W013	11/19/2005	5	2-Butanone (MEK)	0.130 U	0.930 U	1.14E+03
W014	11/19/2005	5	2-Butanone (MEK)	0.130 U	0.930 U	1.14E+03
W015	11/19/2005	1	2-Butanone (MEK)	0.220 U	0.930 U	1.14E+03
W016	11/19/2005	5	2-Butanone (MEK)	0.140 U	0.930 U	1.14E+03
W016	11/19/2005		2-Butanone (MEK)	0.00190 U	NT	NA
W017	11/18/2005	3	2-Butanone (MEK)	0.170 U	0.930 U	1.14E+03
W017	11/18/2005	7	2-Butanone (MEK)	0.0780 U	0.930 U	1.14E+03
W018	11/18/2005	6	2-Butanone (MEK)	0.0860 U	0.930 U	1.14E+03
W019	11/18/2005	4	2-Butanone (MEK)	0.140 U	0.930 U	1.14E+03
W020	11/18/2005	5	2-Butanone (MEK)	0.130 U	0.930 U	1.14E+03
W020	11/18/2005		2-Butanone (MEK)	0.00190 U	NT	NA
WDL-101-S	8/14/2002	0.25	2-Butanone (MEK)	2.76 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2-Butanone (MEK)	1.98 UJ	NT	NA
WDL-101-S	8/14/2002	5	2-Butanone (MEK)	2.14 UJ	NT	NA
WDL-101-S	8/14/2002	7	2-Butanone (MEK)	2.03 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2-Butanone (MEK)	2.21 U	NT	NA
WDL-102-S	8/14/2002	2.25	2-Butanone (MEK)	2.80 U	NT	NA
WDL-102-S	8/14/2002	5.5	2-Butanone (MEK)	1.31 U	NT	NA
WDL-102-S	8/14/2002	8	2-Butanone (MEK)	1.82 U	NT	NA
WDL-102-S	8/14/2002	10	2-Butanone (MEK)	1.36 U	NT	NA
WDL-103-S	8/15/2002	0.25	2-Butanone (MEK)	3.20 U	NT	NA
WDL-103-S	8/15/2002	2.25	2-Butanone (MEK)	1.32 U	NT	NA
WDL-103-S	8/15/2002	5	2-Butanone (MEK)	1.90 U	NT	NA
WDL-103-S	8/15/2002	6.75	2-Butanone (MEK)	2.75 U	NT	NA
WDL-103-S	8/15/2002	8.25	2-Butanone (MEK)	1.74 U	NT	NA
WDL-104-S	8/15/2002	0.25	2-Butanone (MEK)	1.34 U	NT	NA
WDL-104-S	8/15/2002	2.25	2-Butanone (MEK)	1.18 U	NT	NA
WDL-104-S	8/15/2002	5	2-Butanone (MEK)	1.67 U	NT	NA
WDL-104-S	8/15/2002	6.75	2-Butanone (MEK)	1.37 U	NT	NA
WDL-201-S	2/12/2004	0.25	2-Butanone (MEK)	0.468 U	0.0250 U	1140
WDL-201-S	2/12/2004	6	2-Butanone (MEK)	1.48 U	0.0500 U	1140
WDL-202-S	2/12/2004	4	2-Butanone (MEK)	0.148 U	0.0250 U	1140
WDL-203-S	2/13/2004	5.75	2-Butanone (MEK)	0.148 U	0.0250 U	1140
WDL-204-S	2/12/2004	5	2-Butanone (MEK)	0.148 U	0.0250 U	1140
W001	11/21/2005	1	2-Chlorotoluene	0.00680 U	0.0430 U	NA
W002	11/21/2005	5	2-Chlorotoluene	6.30 U	0.0430 U	NA
W003	11/21/2005	7	2-Chlorotoluene	0.0390 U	0.0430 U	NA
W004	11/21/2005	7	2-Chlorotoluene	0.150 U	0.0430 U	NA
W005	11/21/2005	7	2-Chlorotoluene	0.00300 U	0.0430 U	NA
W006	11/21/2005	6	2-Chlorotoluene	0.220 U	0.0430 U	NA
W007	11/21/2005	4	2-Chlorotoluene	0.240 U	0.0430 U	NA
W007	11/21/2005		2-Chlorotoluene	0.0000860 U	NT	NA
W008	11/20/2005	3	2-Chlorotoluene	0.00590 U	0.0430 U	NA
W009	11/20/2005	5	2-Chlorotoluene	0.00670 U	0.0430 U	NA
W010	11/20/2005	5	2-Chlorotoluene	**0.0570 J**	0.0430 U	NA
W011	11/20/2005	3	2-Chlorotoluene	0.0580 U	0.0430 U	NA
W011	11/20/2005	9	2-Chlorotoluene	0.00300 U	0.0430 U	NA
W011	11/20/2005	18.5	2-Chlorotoluene	0.00520 U	0.0430 U	NA
W011	11/20/2005		2-Chlorotoluene	0.0000860 U	NT	NA
W012	11/19/2005	6	2-Chlorotoluene	0.00540 U	0.0430 U	NA
W013	11/19/2005	5	2-Chlorotoluene	0.00540 U	0.0430 U	NA
W014	11/19/2005	5	2-Chlorotoluene	0.00510 U	0.0430 U	NA
W015	11/19/2005	1	2-Chlorotoluene	0.00870 U	0.0430 U	NA
W016	11/19/2005	5	2-Chlorotoluene	**0.00680 J**	0.0430 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W016	11/19/2005		2-Chlorotoluene	0.0000860 U	NT	NA
W017	11/18/2005	3	2-Chlorotoluene	0.00700 U	0.0430 U	NA
W017	11/18/2005	7	2-Chlorotoluene	0.00310 U	0.0430 U	NA
W018	11/18/2005	6	2-Chlorotoluene	0.00340 U	0.0430 U	NA
W019	11/18/2005	4	2-Chlorotoluene	0.00550 U	0.0430 U	NA
W020	11/18/2005	5	2-Chlorotoluene	0.00530 U	0.0430 U	NA
W020	11/18/2005		2-Chlorotoluene	0.0000860 U	NT	NA
WDL-101-S	8/14/2002	0.25	2-Chlorotoluene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2-Chlorotoluene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	2-Chlorotoluene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	2-Chlorotoluene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2-Chlorotoluene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	2-Chlorotoluene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	2-Chlorotoluene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	2-Chlorotoluene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	2-Chlorotoluene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	2-Chlorotoluene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	2-Chlorotoluene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	2-Chlorotoluene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	2-Chlorotoluene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	2-Chlorotoluene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	2-Chlorotoluene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	2-Chlorotoluene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	2-Chlorotoluene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	2-Chlorotoluene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	2-Chlorotoluene	0.0348 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	2-Chlorotoluene	0.110 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	2-Chlorotoluene	**0.0142**	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	2-Chlorotoluene	0.0110 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	2-Chlorotoluene	0.0110 U	0.0100 U	NA
W001	11/21/2005	1	2-Ethyl-1-hexanol	**1.60 J**	1.30 U	NA
W002	11/21/2005	5	2-Ethyl-1-hexanol	**1,200 J**	1.30 U	NA
W003	11/21/2005	7	2-Ethyl-1-hexanol	**2.50 J**	1.30 U	NA
W004	11/21/2005	7	2-Ethyl-1-hexanol	**11.0 J**	1.30 U	NA
W005	11/21/2005	7	2-Ethyl-1-hexanol	**0.450 J**	1.30 U	NA
W006	11/21/2005	6	2-Ethyl-1-hexanol	**19.0 J**	1.30 U	NA
W007	11/21/2005	4	2-Ethyl-1-hexanol	**32.0 J**	1.30 U	NA
W007	11/21/2005		2-Ethyl-1-hexanol	0.00250 UR	NT	NA
W008	11/20/2005	3	2-Ethyl-1-hexanol	0.220 UR	1.30 U	NA
W009	11/20/2005	5	2-Ethyl-1-hexanol	**1.30 J**	1.30 U	NA
W010	11/20/2005	5	2-Ethyl-1-hexanol	1.90 UR	1.30 U	NA
W011	11/20/2005	3	2-Ethyl-1-hexanol	2.20 UR	1.30 U	NA
W011	11/20/2005	9	2-Ethyl-1-hexanol	0.110 UR	1.30 U	NA
W011	11/20/2005	18.5	2-Ethyl-1-hexanol	0.190 UR	1.30 U	NA
W011	11/20/2005		2-Ethyl-1-hexanol	0.00250 UR	NT	NA
W012	11/19/2005	6	2-Ethyl-1-hexanol	0.200 UR	1.30 U	NA
W013	11/19/2005	5	2-Ethyl-1-hexanol	**8.00 J**	1.30 U	NA
W014	11/19/2005	5	2-Ethyl-1-hexanol	**100 J**	1.30 U	NA
W015	11/19/2005	1	2-Ethyl-1-hexanol	0.320 UR	1.30 U	NA
W016	11/19/2005	5	2-Ethyl-1-hexanol	**11.0 J**	1.30 U	NA
W016	11/19/2005		2-Ethyl-1-hexanol	0.00250 UR	NT	NA
W017	11/18/2005	3	2-Ethyl-1-hexanol	**0.980 J**	1.30 U	NA
W017	11/18/2005	7	2-Ethyl-1-hexanol	**0.630 J**	1.30 U	NA
W018	11/18/2005	6	2-Ethyl-1-hexanol	**13.0 J**	1.30 U	NA
W019	11/18/2005	4	2-Ethyl-1-hexanol	0.210 UR	1.30 U	NA
W020	11/18/2005	5	2-Ethyl-1-hexanol	0.200 UR	1.30 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W020	11/18/2005		2-Ethyl-1-hexanol	0.00250 UR	NT	NA
WDL-201-S	2/12/2004	0.25	2-Ethyl-1-hexanol	31.6 UJ	500 U	NA
WDL-201-S	2/12/2004	6	2-Ethyl-1-hexanol	100 U	1,000 UJ	NA
WDL-202-S	2/12/2004	4	2-Ethyl-1-hexanol	10.0 UJ	500 U	NA
WDL-203-S	2/13/2004	5.75	2-Ethyl-1-hexanol	10.0 UJ	500 U	NA
WDL-204-S	2/12/2004	5	2-Ethyl-1-hexanol	10.0 UJ	500 U	NA
W001	11/21/2005	1	2-Hexanone	0.130 U	0.500 U	NA
W002	11/21/2005	5	2-Hexanone	120 U	0.500 U	NA
W003	11/21/2005	7	2-Hexanone	0.720 U	0.500 U	NA
W004	11/21/2005	7	2-Hexanone	2.70 U	0.500 U	NA
W005	11/21/2005	7	2-Hexanone	0.0560 U	0.500 U	NA
W006	11/21/2005	6	2-Hexanone	4.10 U	0.500 U	NA
W007	11/21/2005	4	2-Hexanone	4.50 U	0.500 U	NA
W007	11/21/2005		2-Hexanone	0.000990 U	NT	NA
W008	11/20/2005	3	2-Hexanone	0.110 U	0.500 U	NA
W009	11/20/2005	5	2-Hexanone	0.130 U	0.500 U	NA
W010	11/20/2005	5	2-Hexanone	0.930 U	0.500 U	NA
W011	11/20/2005	3	2-Hexanone	1.10 U	0.500 U	NA
W011	11/20/2005	9	2-Hexanone	0.0560 U	0.500 U	NA
W011	11/20/2005	18.5	2-Hexanone	0.0970 U	0.500 U	NA
W011	11/20/2005		2-Hexanone	0.000990 U	NT	NA
W012	11/19/2005	6	2-Hexanone	0.100 U	0.500 U	NA
W013	11/19/2005	5	2-Hexanone	0.100 U	0.500 U	NA
W014	11/19/2005	5	2-Hexanone	0.0960 U	0.500 U	NA
W015	11/19/2005	1	2-Hexanone	0.160 U	0.500 U	NA
W016	11/19/2005	5	2-Hexanone	0.110 U	0.500 U	NA
W016	11/19/2005		2-Hexanone	0.000990 U	NT	NA
W017	11/18/2005	3	2-Hexanone	0.130 U	0.500 U	NA
W017	11/18/2005	7	2-Hexanone	0.0580 U	0.500 U	NA
W018	11/18/2005	6	2-Hexanone	0.0640 U	0.500 U	NA
W019	11/18/2005	4	2-Hexanone	0.100 U	0.500 U	NA
W020	11/18/2005	5	2-Hexanone	0.0990 U	0.500 U	NA
W020	11/18/2005		2-Hexanone	0.000990 U	NT	NA
WDL-101-S	8/14/2002	0.25	2-Hexanone	2.76 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	2-Hexanone	1.98 UJ	NT	NA
WDL-101-S	8/14/2002	5	2-Hexanone	2.14 UJ	NT	NA
WDL-101-S	8/14/2002	7	2-Hexanone	2.03 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2-Hexanone	2.21 U	NT	NA
WDL-102-S	8/14/2002	2.25	2-Hexanone	2.80 U	NT	NA
WDL-102-S	8/14/2002	5.5	2-Hexanone	1.31 U	NT	NA
WDL-102-S	8/14/2002	8	2-Hexanone	1.82 U	NT	NA
WDL-102-S	8/14/2002	10	2-Hexanone	1.36 U	NT	NA
WDL-103-S	8/15/2002	0.25	2-Hexanone	3.20 U	NT	NA
WDL-103-S	8/15/2002	2.25	2-Hexanone	1.32 U	NT	NA
WDL-103-S	8/15/2002	5	2-Hexanone	1.90 U	NT	NA
WDL-103-S	8/15/2002	6.75	2-Hexanone	2.75 U	NT	NA
WDL-103-S	8/15/2002	8.25	2-Hexanone	1.74 U	NT	NA
WDL-104-S	8/15/2002	0.25	2-Hexanone	1.34 U	NT	NA
WDL-104-S	8/15/2002	2.25	2-Hexanone	1.18 U	NT	NA
WDL-104-S	8/15/2002	5	2-Hexanone	1.67 U	NT	NA
WDL-104-S	8/15/2002	6.75	2-Hexanone	1.37 U	NT	NA
WDL-201-S	2/12/2004	0.25	2-Hexanone	0.181 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	2-Hexanone	0.572 U	0.100 U	NA
WDL-202-S	2/12/2004	4	2-Hexanone	0.0572 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	2-Hexanone	0.0572 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	2-Hexanone	0.0572 U	0.0500 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	4-Chlorotoluene	0.00720 U	0.0430 U	NA
W002	11/21/2005	5	4-Chlorotoluene	6.60 U	0.0430 U	NA
W003	11/21/2005	7	4-Chlorotoluene	0.0410 U	0.0430 U	NA
W004	11/21/2005	7	4-Chlorotoluene	0.150 U	0.0430 U	NA
W005	11/21/2005	7	4-Chlorotoluene	0.00310 U	0.0430 U	NA
W006	11/21/2005	6	4-Chlorotoluene	0.230 U	0.0430 U	NA
W007	11/21/2005	4	4-Chlorotoluene	0.250 U	0.0430 U	NA
W007	11/21/2005		4-Chlorotoluene	0.0000860 U	NT	NA
W008	11/20/2005	3	4-Chlorotoluene	0.00630 U	0.0430 U	NA
W009	11/20/2005	5	4-Chlorotoluene	0.00710 U	0.0430 U	NA
W010	11/20/2005	5	4-Chlorotoluene	0.0530 U	0.0430 U	NA
W011	11/20/2005	3	4-Chlorotoluene	0.0610 U	0.0430 U	NA
W011	11/20/2005	9	4-Chlorotoluene	0.00310 U	0.0430 U	NA
W011	11/20/2005	18.5	4-Chlorotoluene	0.00550 U	0.0430 U	NA
W011	11/20/2005		4-Chlorotoluene	0.0000860 U	NT	NA
W012	11/19/2005	6	4-Chlorotoluene	0.00570 U	0.0430 U	NA
W013	11/19/2005	5	4-Chlorotoluene	0.00570 U	0.0430 U	NA
W014	11/19/2005	5	4-Chlorotoluene	0.00540 U	0.0430 U	NA
W015	11/19/2005	1	4-Chlorotoluene	0.00910 U	0.0430 U	NA
W016	11/19/2005	5	4-Chlorotoluene	0.00610 U	0.0430 U	NA
W016	11/19/2005		4-Chlorotoluene	0.0000860 U	NT	NA
W017	11/18/2005	3	4-Chlorotoluene	0.00740 U	0.0430 U	NA
W017	11/18/2005	7	4-Chlorotoluene	0.00330 U	0.0430 U	NA
W018	11/18/2005	6	4-Chlorotoluene	0.00360 U	0.0430 U	NA
W019	11/18/2005	4	4-Chlorotoluene	0.00580 U	0.0430 U	NA
W020	11/18/2005	5	4-Chlorotoluene	0.00560 U	0.0430 U	NA
W020	11/18/2005		4-Chlorotoluene	0.0000860 U	NT	NA
WDL-101-S	8/14/2002	0.25	4-Chlorotoluene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	4-Chlorotoluene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	4-Chlorotoluene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	4-Chlorotoluene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Chlorotoluene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	4-Chlorotoluene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	4-Chlorotoluene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	4-Chlorotoluene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	4-Chlorotoluene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	4-Chlorotoluene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	4-Chlorotoluene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	4-Chlorotoluene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	4-Chlorotoluene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	4-Chlorotoluene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	4-Chlorotoluene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	4-Chlorotoluene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	4-Chlorotoluene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	4-Chlorotoluene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	4-Chlorotoluene	0.0329 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	4-Chlorotoluene	0.104 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	4-Chlorotoluene	0.0104 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	4-Chlorotoluene	0.0104 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	4-Chlorotoluene	0.0104 U	0.0100 U	NA
W001	11/21/2005	1	4-Isopropyltoluene	**0.0440 J**	0.0260 U	NA
W002	11/21/2005	5	4-Isopropyltoluene	**10.0 J**	0.0260 U	NA
W003	11/21/2005	7	4-Isopropyltoluene	**0.0780 J**	0.0260 U	NA
W004	11/21/2005	7	4-Isopropyltoluene	0.190 U	0.0260 U	NA
W005	11/21/2005	7	4-Isopropyltoluene	0.00390 U	0.0260 U	NA
W006	11/21/2005	6	4-Isopropyltoluene	**0.610 J**	0.0260 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	4-Isopropyltoluene	0.320 U	0.0260 U	NA
W007	11/21/2005		4-Isopropyltoluene	0.0000520 U	NT	NA
W008	11/20/2005	3	4-Isopropyltoluene	**0.0910 J**	0.0260 U	NA
W009	11/20/2005	5	4-Isopropyltoluene	**0.0450 J**	0.0260 U	NA
W010	11/20/2005	5	4-Isopropyltoluene	**0.200 J**	0.0260 U	NA
W011	11/20/2005	3	4-Isopropyltoluene	0.0760 U	0.0260 U	NA
W011	11/20/2005	9	4-Isopropyltoluene	0.00390 U	0.0260 U	NA
W011	11/20/2005	18.5	4-Isopropyltoluene	0.00690 U	0.0260 U	NA
W011	11/20/2005		4-Isopropyltoluene	0.0000520 U	NT	NA
W012	11/19/2005	6	4-Isopropyltoluene	**0.0920 J**	0.0260 U	NA
W013	11/19/2005	5	4-Isopropyltoluene	**0.0820 J**	0.0260 U	NA
W014	11/19/2005	5	4-Isopropyltoluene	**0.0740 J**	0.0260 U	NA
W015	11/19/2005	1	4-Isopropyltoluene	**0.0320 J**	0.0260 U	NA
W016	11/19/2005	5	4-Isopropyltoluene	**0.130 J**	0.0260 U	NA
W016	11/19/2005		4-Isopropyltoluene	0.0000520 U	NT	NA
W017	11/18/2005	3	4-Isopropyltoluene	**0.0130 J**	0.0260 U	NA
W017	11/18/2005	7	4-Isopropyltoluene	0.00410 U	0.0260 U	NA
W018	11/18/2005	6	4-Isopropyltoluene	**0.0560 J**	0.0260 U	NA
W019	11/18/2005	4	4-Isopropyltoluene	**0.110 J**	0.0260 U	NA
W020	11/18/2005	5	4-Isopropyltoluene	**0.00720 J**	0.0260 U	NA
W020	11/18/2005		4-Isopropyltoluene	0.0000520 U	NT	NA
WDL-101-S	8/14/2002	0.25	opropyltoluene (actually 1-IS	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	opropyltoluene (actually 1-IS	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	opropyltoluene (actually 1-IS	**0.806**	NT	NA
WDL-101-S	8/14/2002	7	opropyltoluene (actually 1-IS	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	opropyltoluene (actually 1-IS	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	opropyltoluene (actually 1-IS	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	opropyltoluene (actually 1-IS	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	opropyltoluene (actually 1-IS	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	opropyltoluene (actually 1-IS	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	opropyltoluene (actually 1-IS	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	opropyltoluene (actually 1-IS	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	opropyltoluene (actually 1-IS	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	opropyltoluene (actually 1-IS	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	opropyltoluene (actually 1-IS	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	opropyltoluene (actually 1-IS	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	opropyltoluene (actually 1-IS	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	opropyltoluene (actually 1-IS	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	opropyltoluene (actually 1-IS	0.274 U	NT	NA
W001	11/21/2005	1	4-methyl-2-pentanone (MIBK)	0.0650 U	0.280 U	NA
W002	11/21/2005	5	4-methyl-2-pentanone (MIBK)	60.0 U	0.280 U	NA
W003	11/21/2005	7	4-methyl-2-pentanone (MIBK)	0.370 U	0.280 U	NA
W004	11/21/2005	7	4-methyl-2-pentanone (MIBK)	1.40 U	0.280 U	NA
W005	11/21/2005	7	4-methyl-2-pentanone (MIBK)	0.0280 U	0.280 U	NA
W006	11/21/2005	6	4-methyl-2-pentanone (MIBK)	2.10 U	0.280 U	NA
W007	11/21/2005	4	4-methyl-2-pentanone (MIBK)	2.30 U	0.280 U	NA
W007	11/21/2005		4-methyl-2-pentanone (MIBK)	0.000560 U	NT	NA
W008	11/20/2005	3	4-methyl-2-pentanone (MIBK)	0.0570 U	0.280 U	NA
W009	11/20/2005	5	4-methyl-2-pentanone (MIBK)	0.0640 U	0.280 U	NA
W010	11/20/2005	5	4-methyl-2-pentanone (MIBK)	0.480 U	0.280 U	NA
W011	11/20/2005	3	4-methyl-2-pentanone (MIBK)	0.550 U	0.280 U	NA
W011	11/20/2005	9	4-methyl-2-pentanone (MIBK)	0.0290 U	0.280 U	NA
W011	11/20/2005	18.5	4-methyl-2-pentanone (MIBK)	0.0500 U	0.280 U	NA
W011	11/20/2005		4-methyl-2-pentanone (MIBK)	0.000560 U	NT	NA
W012	11/19/2005	6	4-methyl-2-pentanone (MIBK)	0.0520 U	0.280 U	NA
W013	11/19/2005	5	4-methyl-2-pentanone (MIBK)	0.0520 U	0.280 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W014	11/19/2005	5	4-methyl-2-pentanone (MIBK)	0.0490 U	0.280 U	NA
W015	11/19/2005	1	4-methyl-2-pentanone (MIBK)	0.0830 U	0.280 U	NA
W016	11/19/2005	5	4-methyl-2-pentanone (MIBK)	0.0550 U	0.280 U	NA
W016	11/19/2005		4-methyl-2-pentanone (MIBK)	0.000560 U	NT	NA
W017	11/18/2005	3	4-methyl-2-pentanone (MIBK)	0.0670 U	0.280 U	NA
W017	11/18/2005	7	4-methyl-2-pentanone (MIBK)	0.0300 U	0.280 U	NA
W018	11/18/2005	6	4-methyl-2-pentanone (MIBK)	0.0330 U	0.280 U	NA
W019	11/18/2005	4	4-methyl-2-pentanone (MIBK)	0.0530 U	0.280 U	NA
W020	11/18/2005	5	4-methyl-2-pentanone (MIBK)	0.0510 U	0.280 U	NA
W020	11/18/2005		4-methyl-2-pentanone (MIBK)	0.000560 U	NT	NA
WDL-101-S	8/14/2002	0.25	4-methyl-2-pentanone (MIBK)	2.76 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	4-methyl-2-pentanone (MIBK)	1.98 UJ	NT	NA
WDL-101-S	8/14/2002	5	4-methyl-2-pentanone (MIBK)	2.14 UJ	NT	NA
WDL-101-S	8/14/2002	7	4-methyl-2-pentanone (MIBK)	2.03 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-methyl-2-pentanone (MIBK)	2.21 U	NT	NA
WDL-102-S	8/14/2002	2.25	4-methyl-2-pentanone (MIBK)	2.80 U	NT	NA
WDL-102-S	8/14/2002	5.5	4-methyl-2-pentanone (MIBK)	1.31 U	NT	NA
WDL-102-S	8/14/2002	8	4-methyl-2-pentanone (MIBK)	1.82 U	NT	NA
WDL-102-S	8/14/2002	10	4-methyl-2-pentanone (MIBK)	1.36 U	NT	NA
WDL-103-S	8/15/2002	0.25	4-methyl-2-pentanone (MIBK)	3.20 U	NT	NA
WDL-103-S	8/15/2002	2.25	4-methyl-2-pentanone (MIBK)	1.32 U	NT	NA
WDL-103-S	8/15/2002	5	4-methyl-2-pentanone (MIBK)	1.90 U	NT	NA
WDL-103-S	8/15/2002	6.75	4-methyl-2-pentanone (MIBK)	2.75 U	NT	NA
WDL-103-S	8/15/2002	8.25	4-methyl-2-pentanone (MIBK)	1.74 U	NT	NA
WDL-104-S	8/15/2002	0.25	4-methyl-2-pentanone (MIBK)	1.34 U	NT	NA
WDL-104-S	8/15/2002	2.25	4-methyl-2-pentanone (MIBK)	1.18 U	NT	NA
WDL-104-S	8/15/2002	5	4-methyl-2-pentanone (MIBK)	1.67 U	NT	NA
WDL-104-S	8/15/2002	6.75	4-methyl-2-pentanone (MIBK)	1.37 U	NT	NA
WDL-201-S	2/12/2004	0.25	4-methyl-2-pentanone (MIBK)	0.370 U	0.100 U	NA
WDL-201-S	2/12/2004	6	4-methyl-2-pentanone (MIBK)	1.17 U	0.200 U	NA
WDL-202-S	2/12/2004	4	4-methyl-2-pentanone (MIBK)	0.117 U	0.100 U	NA
WDL-203-S	2/13/2004	5.75	4-methyl-2-pentanone (MIBK)	0.117 U	0.100 U	NA
WDL-204-S	2/12/2004	5	4-methyl-2-pentanone (MIBK)	0.117 U	0.100 U	NA
W001	11/21/2005	1	Acetone	**0.210 J**	1.30 U	7.27E+02
W002	11/21/2005	5	Acetone	110 U	1.30 U	7.27E+02
W003	11/21/2005	7	Acetone	0.660 U	1.30 U	7.27E+02
W004	11/21/2005	7	Acetone	2.50 U	1.30 U	7.27E+02
W005	11/21/2005	7	Acetone	**0.200 J**	1.30 U	7.27E+02
W006	11/21/2005	6	Acetone	3.80 U	1.30 U	7.27E+02
W007	11/21/2005	4	Acetone	4.10 U	1.30 U	7.27E+02
W007	11/21/2005		Acetone	0.00260 U	NT	NA
W008	11/20/2005	3	Acetone	0.100 U	1.30 U	7.27E+02
W009	11/20/2005	5	Acetone	0.110 U	1.30 U	7.27E+02
W010	11/20/2005	5	Acetone	0.850 U	1.30 U	7.27E+02
W011	11/20/2005	3	Acetone	0.990 U	1.30 U	7.27E+02
W011	11/20/2005	9	Acetone	0.0510 U	1.30 U	7.27E+02
W011	11/20/2005	18.5	Acetone	**0.180 J**	1.30 U	7.27E+02
W011	11/20/2005		Acetone	0.00260 U	NT	NA
W012	11/19/2005	6	Acetone	0.0930 U	1.30 U	7.27E+02
W013	11/19/2005	5	Acetone	**0.110 J**	1.30 U	7.27E+02
W014	11/19/2005	5	Acetone	0.0870 U	1.30 U	7.27E+02
W015	11/19/2005	1	Acetone	0.150 U	1.30 U	7.27E+02
W016	11/19/2005	5	Acetone	0.0990 U	1.30 U	7.27E+02
W016	11/19/2005		Acetone	0.00260 U	NT	NA
W017	11/18/2005	3	Acetone	0.120 U	1.30 U	7.27E+02
W017	11/18/2005	7	Acetone	0.0530 U	1.30 U	7.27E+02

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W018	11/18/2005	6	Acetone	**0.290**	1.30 U	7.27E+02
W019	11/18/2005	4	Acetone	0.0940 U	1.30 U	7.27E+02
W020	11/18/2005	5	Acetone	0.0910 U	1.30 U	7.27E+02
W020	11/18/2005		Acetone	0.00260 U	NT	NA
WDL-101-S	8/14/2002	0.25	Acetone	2.76 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Acetone	1.98 UJ	NT	NA
WDL-101-S	8/14/2002	5	Acetone	2.14 UJ	NT	NA
WDL-101-S	8/14/2002	7	Acetone	2.03 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Acetone	2.21 U	NT	NA
WDL-102-S	8/14/2002	2.25	Acetone	2.80 U	NT	NA
WDL-102-S	8/14/2002	5.5	Acetone	1.31 U	NT	NA
WDL-102-S	8/14/2002	8	Acetone	1.82 U	NT	NA
WDL-102-S	8/14/2002	10	Acetone	1.36 U	NT	NA
WDL-103-S	8/15/2002	0.25	Acetone	3.20 U	NT	NA
WDL-103-S	8/15/2002	2.25	Acetone	1.32 U	NT	NA
WDL-103-S	8/15/2002	5	Acetone	1.90 U	NT	NA
WDL-103-S	8/15/2002	6.75	Acetone	2.75 U	NT	NA
WDL-103-S	8/15/2002	8.25	Acetone	1.74 U	NT	NA
WDL-104-S	8/15/2002	0.25	Acetone	1.34 U	NT	NA
WDL-104-S	8/15/2002	2.25	Acetone	1.18 U	NT	NA
WDL-104-S	8/15/2002	5	Acetone	1.67 U	NT	NA
WDL-104-S	8/15/2002	6.75	Acetone	1.37 U	NT	NA
WDL-201-S	2/12/2004	0.25	Acetone	0.455 U	0.250 U	727
WDL-201-S	2/12/2004	6	Acetone	1.44 U	0.500 U	727
WDL-202-S	2/12/2004	4	Acetone	0.144 U	0.250 U	727
WDL-203-S	2/13/2004	5.75	Acetone	0.144 U	0.250 U	727
WDL-204-S	2/12/2004	5	Acetone	0.144 U	0.250 U	727
W001	11/21/2005	1	Benzene	**0.180**	0.0670 U	1.67E+00
W002	11/21/2005	5	Benzene	**6.50 J**	**0.100 J**	1.67E+00
W003	11/21/2005	7	Benzene	**0.0550 J**	0.0670 U	1.67E+00
W004	11/21/2005	7	Benzene	**0.0620 J**	0.0670 U	1.67E+00
W005	11/21/2005	7	Benzene	**0.00750 J**	0.0670 U	1.67E+00
W006	11/21/2005	6	Benzene	**0.140 J**	0.0670 U	1.67E+00
W007	11/21/2005	4	Benzene	**0.130 J**	0.0670 U	1.67E+00
W007	11/21/2005		Benzene	0.000130 U	NT	NA
W008	11/20/2005	3	Benzene	**0.0120 J**	0.0670 U	1.67E+00
W009	11/20/2005	5	Benzene	**0.0110 J**	0.0670 U	1.67E+00
W010	11/20/2005	5	Benzene	**0.0610 J**	0.0670 U	1.67E+00
W011	11/20/2005	3	Benzene	**0.0700 J**	0.0670 U	1.67E+00
W011	11/20/2005	9	Benzene	0.000960 U	0.0670 U	1.67E+00
W011	11/20/2005	18.5	Benzene	**0.0130 J**	0.0670 U	1.67E+00
W011	11/20/2005		Benzene	0.000130 U	NT	NA
W012	11/19/2005	6	Benzene	**0.0590**	0.0670 U	1.67E+00
W013	11/19/2005	5	Benzene	**0.110**	0.0670 U	1.67E+00
W014	11/19/2005	5	Benzene	**0.0580**	0.0670 U	1.67E+00
W015	11/19/2005	1	Benzene	**0.0170 J**	0.0670 U	1.67E+00
W016	11/19/2005	5	Benzene	**0.0580**	0.0670 U	1.67E+00
W016	11/19/2005		Benzene	0.000130 U	NT	NA
W017	11/18/2005	3	Benzene	**0.0100 J**	0.0670 U	1.67E+00
W017	11/18/2005	7	Benzene	0.00100 U	0.0670 U	1.67E+00
W018	11/18/2005	6	Benzene	**0.0540**	0.0670 U	1.67E+00
W019	11/18/2005	4	Benzene	**0.0880**	0.0670 U	1.67E+00
W020	11/18/2005	5	Benzene	**0.00640 J**	0.0670 U	1.67E+00
W020	11/18/2005		Benzene	0.000130 U	NT	NA
WDL-101-S	8/14/2002	0.25	Benzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Benzene	0.397 UJ	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	5	Benzene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Benzene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Benzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Benzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Benzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Benzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Benzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Benzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Benzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Benzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Benzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Benzene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Benzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Benzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Benzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Benzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Benzene	0.0140 U	0.0100 U	1.67
WDL-201-S	2/12/2004	6	Benzene	**0.330**	0.0200 U	1.67
WDL-202-S	2/12/2004	4	Benzene	**0.0228**	0.0100 U	1.67
WDL-203-S	2/13/2004	5.75	Benzene	0.00444 U	0.0100 U	1.67
WDL-204-S	2/12/2004	5	Benzene	**0.0627**	0.0100 U	1.67
W001	11/21/2005	1	Bromobenzene	0.00960 U	0.0440 U	NA
W002	11/21/2005	5	Bromobenzene	8.90 U	0.0440 U	NA
W003	11/21/2005	7	Bromobenzene	0.0540 U	0.0440 U	NA
W004	11/21/2005	7	Bromobenzene	0.200 U	0.0440 U	NA
W005	11/21/2005	7	Bromobenzene	0.00420 U	0.0440 U	NA
W006	11/21/2005	6	Bromobenzene	0.310 U	0.0440 U	NA
W007	11/21/2005	4	Bromobenzene	0.340 U	0.0440 U	NA
W007	11/21/2005		Bromobenzene	0.0000880 U	NT	NA
W008	11/20/2005	3	Bromobenzene	0.00840 U	0.0440 U	NA
W009	11/20/2005	5	Bromobenzene	0.00950 U	0.0440 U	NA
W010	11/20/2005	5	Bromobenzene	0.0700 U	0.0440 U	NA
W011	11/20/2005	3	Bromobenzene	0.0810 U	0.0440 U	NA
W011	11/20/2005	9	Bromobenzene	0.00420 U	0.0440 U	NA
W011	11/20/2005	18.5	Bromobenzene	0.00730 U	0.0440 U	NA
W011	11/20/2005		Bromobenzene	0.0000880 U	NT	NA
W012	11/19/2005	6	Bromobenzene	0.00760 U	0.0440 U	NA
W013	11/19/2005	5	Bromobenzene	0.00760 U	0.0440 U	NA
W014	11/19/2005	5	Bromobenzene	0.00720 U	0.0440 U	NA
W015	11/19/2005	1	Bromobenzene	0.0120 U	0.0440 U	NA
W016	11/19/2005	5	Bromobenzene	0.00820 U	0.0440 U	NA
W016	11/19/2005		Bromobenzene	0.0000880 U	NT	NA
W017	11/18/2005	3	Bromobenzene	0.00980 U	0.0440 U	NA
W017	11/18/2005	7	Bromobenzene	0.00440 U	0.0440 U	NA
W018	11/18/2005	6	Bromobenzene	0.00480 U	0.0440 U	NA
W019	11/18/2005	4	Bromobenzene	0.00780 U	0.0440 U	NA
W020	11/18/2005	5	Bromobenzene	0.00750 U	0.0440 U	NA
W020	11/18/2005		Bromobenzene	0.0000880 U	NT	NA
WDL-101-S	8/14/2002	0.25	Bromobenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Bromobenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Bromobenzene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Bromobenzene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bromobenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Bromobenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Bromobenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Bromobenzene	0.365 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	10	Bromobenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Bromobenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Bromobenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Bromobenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Bromobenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Bromobenzene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Bromobenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Bromobenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Bromobenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Bromobenzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Bromobenzene	0.0386 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Bromobenzene	0.122 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Bromobenzene	0.0122 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Bromobenzene	0.0122 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Bromobenzene	0.0122 U	0.0100 U	NA
W001	11/21/2005	1	Bromochloromethane	0.00920 U	0.0890 U	NA
W002	11/21/2005	5	Bromochloromethane	8.50 U	0.0890 U	NA
W003	11/21/2005	7	Bromochloromethane	0.0520 U	0.0890 U	NA
W004	11/21/2005	7	Bromochloromethane	0.200 U	0.0890 U	NA
W005	11/21/2005	7	Bromochloromethane	0.00400 U	0.0890 U	NA
W006	11/21/2005	6	Bromochloromethane	0.300 U	0.0890 U	NA
W007	11/21/2005	4	Bromochloromethane	0.320 U	0.0890 U	NA
W007	11/21/2005		Bromochloromethane	0.000180 U	NT	NA
W008	11/20/2005	3	Bromochloromethane	0.00800 UJ	0.0890 U	NA
W009	11/20/2005	5	Bromochloromethane	0.00910 U	0.0890 U	NA
W010	11/20/2005	5	Bromochloromethane	0.0670 U	0.0890 U	NA
W011	11/20/2005	3	Bromochloromethane	0.0780 U	0.0890 U	NA
W011	11/20/2005	9	Bromochloromethane	0.00400 U	0.0890 U	NA
W011	11/20/2005	18.5	Bromochloromethane	0.00700 U	0.0890 U	NA
W011	11/20/2005		Bromochloromethane	0.000180 U	NT	NA
W012	11/19/2005	6	Bromochloromethane	0.00730 U	0.0890 U	NA
W013	11/19/2005	5	Bromochloromethane	0.00730 U	0.0890 U	NA
W014	11/19/2005	5	Bromochloromethane	0.00690 U	0.0890 U	NA
W015	11/19/2005	1	Bromochloromethane	0.0120 U	0.0890 U	NA
W016	11/19/2005	5	Bromochloromethane	0.00780 U	0.0890 U	NA
W016	11/19/2005		Bromochloromethane	0.000180 U	NT	NA
W017	11/18/2005	3	Bromochloromethane	0.00940 U	0.0890 U	NA
W017	11/18/2005	7	Bromochloromethane	0.00420 U	0.0890 U	NA
W018	11/18/2005	6	Bromochloromethane	0.00460 U	0.0890 U	NA
W019	11/18/2005	4	Bromochloromethane	0.00740 U	0.0890 U	NA
W020	11/18/2005	5	Bromochloromethane	0.00710 U	0.0890 U	NA
W020	11/18/2005		Bromochloromethane	0.000180 U	NT	NA
WDL-101-S	8/14/2002	0.25	Bromochloromethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Bromochloromethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Bromochloromethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Bromochloromethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bromochloromethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Bromochloromethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Bromochloromethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Bromochloromethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Bromochloromethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Bromochloromethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Bromochloromethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Bromochloromethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Bromochloromethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Bromochloromethane	0.348 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	0.25	Bromochloromethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Bromochloromethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Bromochloromethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Bromochloromethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Bromochloromethane	0.0519 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Bromochloromethane	0.164 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Bromochloromethane	0.0164 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Bromochloromethane	0.0164 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Bromochloromethane	0.0164 U	0.0100 U	NA
W001	11/21/2005	1	Bromodichloromethane	0.00330 U	0.0650 U	NA
W002	11/21/2005	5	Bromodichloromethane	3.10 U	0.0650 U	NA
W003	11/21/2005	7	Bromodichloromethane	0.0190 U	0.0650 U	NA
W004	11/21/2005	7	Bromodichloromethane	0.0710 U	0.0650 U	NA
W005	11/21/2005	7	Bromodichloromethane	0.00140 U	0.0650 U	NA
W006	11/21/2005	6	Bromodichloromethane	0.110 U	0.0650 U	NA
W007	11/21/2005	4	Bromodichloromethane	0.120 U	0.0650 U	NA
W007	11/21/2005		Bromodichloromethane	0.000130 U	NT	NA
W008	11/20/2005	3	Bromodichloromethane	0.00290 UJ	0.0650 U	NA
W009	11/20/2005	5	Bromodichloromethane	**0.00490 J**	0.0650 U	NA
W010	11/20/2005	5	Bromodichloromethane	**0.0260 J**	0.0650 U	NA
W011	11/20/2005	3	Bromodichloromethane	0.0280 U	0.0650 U	NA
W011	11/20/2005	9	Bromodichloromethane	0.00140 U	0.0650 U	NA
W011	11/20/2005	18.5	Bromodichloromethane	0.00250 U	0.0650 U	NA
W011	11/20/2005		Bromodichloromethane	0.000130 U	NT	NA
W012	11/19/2005	6	Bromodichloromethane	0.00260 U	0.0650 U	NA
W013	11/19/2005	5	Bromodichloromethane	0.00260 U	0.0650 U	NA
W014	11/19/2005	5	Bromodichloromethane	0.00250 U	0.0650 U	NA
W015	11/19/2005	1	Bromodichloromethane	0.00420 U	0.0650 U	NA
W016	11/19/2005	5	Bromodichloromethane	0.00280 U	0.0650 U	NA
W016	11/19/2005		Bromodichloromethane	0.000130 U	NT	NA
W017	11/18/2005	3	Bromodichloromethane	0.00340 U	0.0650 U	NA
W017	11/18/2005	7	Bromodichloromethane	0.00150 U	0.0650 U	NA
W018	11/18/2005	6	Bromodichloromethane	**0.00330 J**	0.0650 U	NA
W019	11/18/2005	4	Bromodichloromethane	0.00270 U	0.0650 U	NA
W020	11/18/2005	5	Bromodichloromethane	0.00260 U	0.0650 U	NA
W020	11/18/2005		Bromodichloromethane	0.000130 U	NT	NA
WDL-101-S	8/14/2002	0.25	Bromodichloromethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Bromodichloromethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Bromodichloromethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Bromodichloromethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bromodichloromethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Bromodichloromethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Bromodichloromethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Bromodichloromethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Bromodichloromethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Bromodichloromethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Bromodichloromethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Bromodichloromethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Bromodichloromethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Bromodichloromethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Bromodichloromethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Bromodichloromethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Bromodichloromethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Bromodichloromethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Bromodichloromethane	0.0323 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Bromodichloromethane	0.102 U	0.0200 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-202-S	2/12/2004	4	Bromodichloromethane	0.0102 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Bromodichloromethane	0.0102 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Bromodichloromethane	0.0102 U	0.0100 U	NA
W001	11/21/2005	1	Bromoform	0.00520 U	0.0890 U	NA
W002	11/21/2005	5	Bromoform	4.70 U	0.0890 U	NA
W003	11/21/2005	7	Bromoform	0.0290 U	0.0890 U	NA
W004	11/21/2005	7	Bromoform	0.110 U	0.0890 U	NA
W005	11/21/2005	7	Bromoform	0.00220 U	0.0890 U	NA
W006	11/21/2005	6	Bromoform	0.170 U	0.0890 U	NA
W007	11/21/2005	4	Bromoform	0.180 U	0.0890 U	NA
W007	11/21/2005		Bromoform	0.000180 U	NT	NA
W008	11/20/2005	3	Bromoform	0.00450 UJ	0.0890 U	NA
W009	11/20/2005	5	Bromoform	0.00510 U	0.0890 U	NA
W010	11/20/2005	5	Bromoform	0.0380 U	0.0890 U	NA
W011	11/20/2005	3	Bromoform	0.0440 U	0.0890 U	NA
W011	11/20/2005	9	Bromoform	0.00220 U	0.0890 U	NA
W011	11/20/2005	18.5	Bromoform	0.00390 U	0.0890 U	NA
W011	11/20/2005		Bromoform	0.000180 U	NT	NA
W012	11/19/2005	6	Bromoform	0.00410 U	0.0890 U	NA
W013	11/19/2005	5	Bromoform	0.00410 U	0.0890 U	NA
W014	11/19/2005	5	Bromoform	0.00390 U	0.0890 U	NA
W015	11/19/2005	1	Bromoform	0.00660 U	0.0890 U	NA
W016	11/19/2005	5	Bromoform	0.00440 U	0.0890 U	NA
W016	11/19/2005		Bromoform	0.000180 U	NT	NA
W017	11/18/2005	3	Bromoform	0.00530 U	0.0890 U	NA
W017	11/18/2005	7	Bromoform	0.00240 U	0.0890 U	NA
W018	11/18/2005	6	Bromoform	0.00260 U	0.0890 U	NA
W019	11/18/2005	4	Bromoform	0.00420 U	0.0890 U	NA
W020	11/18/2005	5	Bromoform	0.00400 U	0.0890 U	NA
W020	11/18/2005		Bromoform	0.000180 U	NT	NA
WDL-101-S	8/14/2002	0.25	Bromoform	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Bromoform	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Bromoform	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Bromoform	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bromoform	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Bromoform	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Bromoform	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Bromoform	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Bromoform	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Bromoform	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Bromoform	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Bromoform	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Bromoform	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Bromoform	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Bromoform	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Bromoform	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Bromoform	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Bromoform	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Bromoform	0.0500 U	0.0100 UJ	NA
WDL-201-S	2/12/2004	6	Bromoform	0.158 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Bromoform	0.0158 U	0.0100 UJ	NA
WDL-203-S	2/13/2004	5.75	Bromoform	0.0158 U	0.0100 UJ	NA
WDL-204-S	2/12/2004	5	Bromoform	0.0158 U	0.0100 UJ	NA
W001	11/21/2005	1	Bromomethane	0.0400 UJ	0.0470 U	1.13E+00
W002	11/21/2005	5	Bromomethane	36.0 UJ	0.320 U	1.13E+00
W003	11/21/2005	7	Bromomethane	0.220 UJ	0.0470 U	1.13E+00

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W004	11/21/2005	7	Bromomethane	0.840 UJ	0.0470 U	1.13E+00
W005	11/21/2005	7	Bromomethane	0.0170 UJ	0.0470 U	1.13E+00
W006	11/21/2005	6	Bromomethane	1.30 UJ	0.0470 U	1.13E+00
W007	11/21/2005	4	Bromomethane	1.40 UJ	0.320 U	1.13E+00
W007	11/21/2005		Bromomethane	0.0000950 UJ	NT	NA
W008	11/20/2005	3	Bromomethane	0.0340 UR	0.330 U	1.13E+00
W009	11/20/2005	5	Bromomethane	0.0390 UJ	0.0470 U	1.13E+00
W010	11/20/2005	5	Bromomethane	0.290 UJ	0.0470 U	1.13E+00
W011	11/20/2005	3	Bromomethane	0.330 UJ	0.0470 U	1.13E+00
W011	11/20/2005	9	Bromomethane	0.0170 UJ	0.0470 U	1.13E+00
W011	11/20/2005	18.5	Bromomethane	0.0300 UJ	0.0470 U	1.13E+00
W011	11/20/2005		Bromomethane	0.0000950 UJ	NT	NA
W012	11/19/2005	6	Bromomethane	0.0310 UJ	0.0470 U	1.13E+00
W013	11/19/2005	5	Bromomethane	0.0310 UJ	0.0470 U	1.13E+00
W014	11/19/2005	5	Bromomethane	0.0300 UJ	0.0470 U	1.13E+00
W015	11/19/2005	1	Bromomethane	0.0500 UJ	0.360 U	1.13E+00
W016	11/19/2005	5	Bromomethane	0.0340 UJ	0.0470 U	1.13E+00
W016	11/19/2005		Bromomethane	0.0000950 UJ	NT	NA
W017	11/18/2005	3	Bromomethane	0.0400 UJ	0.330 U	1.13E+00
W017	11/18/2005	7	Bromomethane	0.0180 UJ	0.320 U	1.13E+00
W018	11/18/2005	6	Bromomethane	0.0200 UJ	0.330 U	1.13E+00
W019	11/18/2005	4	Bromomethane	0.0320 UJ	0.350 U	1.13E+00
W020	11/18/2005	5	Bromomethane	0.0310 UJ	0.320 U	1.13E+00
W020	11/18/2005		Bromomethane	0.0000950 UJ	NT	NA
WDL-101-S	8/14/2002	0.25	Bromomethane	1.10 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Bromomethane	0.794 UJ	NT	NA
WDL-101-S	8/14/2002	5	Bromomethane	0.857 UJ	NT	NA
WDL-101-S	8/14/2002	7	Bromomethane	0.812 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Bromomethane	0.884 U	NT	NA
WDL-102-S	8/14/2002	2.25	Bromomethane	1.12 U	NT	NA
WDL-102-S	8/14/2002	5.5	Bromomethane	0.525 U	NT	NA
WDL-102-S	8/14/2002	8	Bromomethane	0.729 U	NT	NA
WDL-102-S	8/14/2002	10	Bromomethane	0.545 U	NT	NA
WDL-103-S	8/15/2002	0.25	Bromomethane	1.28 U	NT	NA
WDL-103-S	8/15/2002	2.25	Bromomethane	0.527 U	NT	NA
WDL-103-S	8/15/2002	5	Bromomethane	0.762 U	NT	NA
WDL-103-S	8/15/2002	6.75	Bromomethane	1.10 U	NT	NA
WDL-103-S	8/15/2002	8.25	Bromomethane	0.695 U	NT	NA
WDL-104-S	8/15/2002	0.25	Bromomethane	0.537 U	NT	NA
WDL-104-S	8/15/2002	2.25	Bromomethane	0.473 U	NT	NA
WDL-104-S	8/15/2002	5	Bromomethane	0.670 U	NT	NA
WDL-104-S	8/15/2002	6.75	Bromomethane	0.549 U	NT	NA
WDL-201-S	2/12/2004	0.25	Bromomethane	0.0161 U	0.0500 U	1.13
WDL-201-S	2/12/2004	6	Bromomethane	0.0509 U	0.100 U	1.13
WDL-202-S	2/12/2004	4	Bromomethane	0.00509 U	0.0500 U	1.13
WDL-203-S	2/13/2004	5.75	Bromomethane	0.00509 U	0.0500 U	1.13
WDL-204-S	2/12/2004	5	Bromomethane	0.00509 U	0.0500 U	1.13
W001	11/21/2005	1	Carbon disulfide	**0.0810 J**	0.0400 U	1.27E+02
W002	11/21/2005	5	Carbon disulfide	4.40 U	0.0400 U	1.27E+02
W003	11/21/2005	7	Carbon disulfide	**0.320 J**	0.0400 U	1.27E+02
W004	11/21/2005	7	Carbon disulfide	**0.450 J**	0.0400 U	1.27E+02
W005	11/21/2005	7	Carbon disulfide	**0.0460**	0.0400 U	1.27E+02
W006	11/21/2005	6	Carbon disulfide	0.160 U	0.0400 U	1.27E+02
W007	11/21/2005	4	Carbon disulfide	0.170 U	0.0400 U	1.27E+02
W007	11/21/2005		Carbon disulfide	0.0000800 U	NT	NA
W008	11/20/2005	3	Carbon disulfide	**0.140**	0.0400 U	1.27E+02

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W009	11/20/2005	5	Carbon disulfide	**0.0350 J**	0.0400 U	1.27E+02
W010	11/20/2005	5	Carbon disulfide	**0.0500 J**	0.0400 U	1.27E+02
W011	11/20/2005	3	Carbon disulfide	**0.100 J**	0.0400 U	1.27E+02
W011	11/20/2005	9	Carbon disulfide	**0.00970 J**	0.0400 U	1.27E+02
W011	11/20/2005	18.5	Carbon disulfide	0.00370 U	0.0400 U	1.27E+02
W011	11/20/2005		Carbon disulfide	0.0000800 U	NT	NA
W012	11/19/2005	6	Carbon disulfide	**0.0390 J**	0.0400 U	1.27E+02
W013	11/19/2005	5	Carbon disulfide	**0.0640 J**	0.0400 U	1.27E+02
W014	11/19/2005	5	Carbon disulfide	**0.210**	0.0400 U	1.27E+02
W015	11/19/2005	1	Carbon disulfide	0.00610 U	0.0400 U	1.27E+02
W016	11/19/2005	5	Carbon disulfide	**0.120**	0.0520 U	1.27E+02
W016	11/19/2005		Carbon disulfide	0.0000800 U	NT	NA
W017	11/18/2005	3	Carbon disulfide	**0.0470 J**	0.0400 U	1.27E+02
W017	11/18/2005	7	Carbon disulfide	**0.140**	0.0490 U	1.27E+02
W018	11/18/2005	6	Carbon disulfide	**0.260**	0.0460 U	1.27E+02
W019	11/18/2005	4	Carbon disulfide	**0.380**	0.0730 U	1.27E+02
W020	11/18/2005	5	Carbon disulfide	**0.0340 J**	0.0760 U	1.27E+02
W020	11/18/2005		Carbon disulfide	0.0000800 U	NT	NA
WDL-101-S	8/14/2002	0.25	Carbon disulfide	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Carbon disulfide	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Carbon disulfide	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Carbon disulfide	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Carbon disulfide	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Carbon disulfide	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Carbon disulfide	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Carbon disulfide	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Carbon disulfide	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Carbon disulfide	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Carbon disulfide	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Carbon disulfide	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Carbon disulfide	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Carbon disulfide	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Carbon disulfide	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Carbon disulfide	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Carbon disulfide	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Carbon disulfide	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Carbon disulfide	**0.0759**	NT	NA
WDL-201-S	2/12/2004	6	Carbon disulfide	0.0719 U	NT	NA
WDL-202-S	2/12/2004	4	Carbon disulfide	**0.117**	NT	NA
WDL-203-S	2/13/2004	5.75	Carbon disulfide	0.00719 U	NT	NA
WDL-204-S	2/12/2004	5	Carbon disulfide	0.00719 U	NT	NA
W001	11/21/2005	1	Carbon tetrachloride	0.00470 U	0.0690 U	NA
W002	11/21/2005	5	Carbon tetrachloride	4.30 U	0.0690 U	NA
W003	11/21/2005	7	Carbon tetrachloride	0.0260 U	0.0690 U	NA
W004	11/21/2005	7	Carbon tetrachloride	0.0990 U	0.0690 U	NA
W005	11/21/2005	7	Carbon tetrachloride	0.00200 U	0.0690 U	NA
W006	11/21/2005	6	Carbon tetrachloride	0.150 U	0.0690 U	NA
W007	11/21/2005	4	Carbon tetrachloride	0.160 U	0.0690 U	NA
W007	11/21/2005		Carbon tetrachloride	0.000140 U	NT	NA
W008	11/20/2005	3	Carbon tetrachloride	0.00410 UJ	0.0690 U	NA
W009	11/20/2005	5	Carbon tetrachloride	0.00460 U	0.0690 U	NA
W010	11/20/2005	5	Carbon tetrachloride	0.0340 U	0.0690 U	NA
W011	11/20/2005	3	Carbon tetrachloride	0.0390 U	0.0690 U	NA
W011	11/20/2005	9	Carbon tetrachloride	0.00200 U	0.0690 U	NA
W011	11/20/2005	18.5	Carbon tetrachloride	0.00360 U	0.0690 U	NA
W011	11/20/2005		Carbon tetrachloride	0.000140 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W012	11/19/2005	6	Carbon tetrachloride	0.00370 U	0.0690 U	NA
W013	11/19/2005	5	Carbon tetrachloride	0.00370 U	0.0690 U	NA
W014	11/19/2005	5	Carbon tetrachloride	0.00350 U	0.0690 U	NA
W015	11/19/2005	1	Carbon tetrachloride	0.00590 U	0.0690 U	NA
W016	11/19/2005	5	Carbon tetrachloride	0.00400 U	0.0690 U	NA
W016	11/19/2005		Carbon tetrachloride	0.000140 U	NT	NA
W017	11/18/2005	3	Carbon tetrachloride	0.00480 U	0.0690 U	NA
W017	11/18/2005	7	Carbon tetrachloride	0.00210 U	0.0690 U	NA
W018	11/18/2005	6	Carbon tetrachloride	0.00230 U	0.0690 U	NA
W019	11/18/2005	4	Carbon tetrachloride	0.00380 U	0.0690 U	NA
W020	11/18/2005	5	Carbon tetrachloride	0.00360 U	0.0690 U	NA
W020	11/18/2005		Carbon tetrachloride	0.000140 U	NT	NA
WDL-101-S	8/14/2002	0.25	Carbon Tetrachloride CTCL	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Carbon Tetrachloride CTCL	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Carbon Tetrachloride CTCL	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Carbon Tetrachloride CTCL	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Carbon Tetrachloride CTCL	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Carbon Tetrachloride CTCL	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Carbon Tetrachloride CTCL	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Carbon Tetrachloride CTCL	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Carbon Tetrachloride CTCL	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Carbon Tetrachloride CTCL	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Carbon Tetrachloride CTCL	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Carbon Tetrachloride CTCL	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Carbon Tetrachloride CTCL	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Carbon Tetrachloride CTCL	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Carbon Tetrachloride CTCL	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Carbon Tetrachloride CTCL	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Carbon Tetrachloride CTCL	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Carbon Tetrachloride CTCL	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Carbon Tetrachloride CTCL	0.0242 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Carbon Tetrachloride CTCL	0.0764 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Carbon Tetrachloride CTCL	0.00764 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Carbon Tetrachloride CTCL	0.00764 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Carbon Tetrachloride CTCL	0.00764 U	0.0100 U	NA
W001	11/21/2005	1	Chlorobenzene	**2.20 J**	0.0290 U	1.13E+01
W002	11/21/2005	5	Chlorobenzene	**44.0 J**	0.0290 U	1.13E+01
W003	11/21/2005	7	Chlorobenzene	**1.60**	0.0290 U	1.13E+01
W004	11/21/2005	7	Chlorobenzene	**2.70**	0.0290 U	1.13E+01
W005	11/21/2005	7	Chlorobenzene	**0.140**	0.0290 U	1.13E+01
W006	11/21/2005	6	Chlorobenzene	**1.70 J**	0.0290 U	1.13E+01
W007	11/21/2005	4	Chlorobenzene	**0.750 J**	0.0290 U	1.13E+01
W007	11/21/2005		Chlorobenzene	0.0000580 U	NT	NA
W008	11/20/2005	3	Chlorobenzene	0.00490 U	0.0290 U	1.13E+01
W009	11/20/2005	5	Chlorobenzene	0.00560 U	0.0290 U	1.13E+01
W010	11/20/2005	5	Chlorobenzene	**0.180 J**	0.0290 U	1.13E+01
W011	11/20/2005	3	Chlorobenzene	**0.190 J**	0.0290 U	1.13E+01
W011	11/20/2005	9	Chlorobenzene	0.00250 U	0.0290 U	1.13E+01
W011	11/20/2005	18.5	Chlorobenzene	0.00430 U	0.0290 U	1.13E+01
W011	11/20/2005		Chlorobenzene	0.0000580 U	NT	NA
W012	11/19/2005	6	Chlorobenzene	**0.110**	0.0290 U	1.13E+01
W013	11/19/2005	5	Chlorobenzene	**0.180**	0.0290 U	1.13E+01
W014	11/19/2005	5	Chlorobenzene	0.00420 U	0.0290 U	1.13E+01
W015	11/19/2005	1	Chlorobenzene	0.00720 U	0.0290 U	1.13E+01
W016	11/19/2005	5	Chlorobenzene	0.00480 U	0.0290 U	1.13E+01
W016	11/19/2005		Chlorobenzene	0.0000580 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W017	11/18/2005	3	Chlorobenzene	0.00580 U	0.0290 U	1.13E+01
W017	11/18/2005	7	Chlorobenzene	0.00260 U	0.0290 U	1.13E+01
W018	11/18/2005	6	Chlorobenzene	**0.320**	0.0290 U	1.13E+01
W019	11/18/2005	4	Chlorobenzene	0.00460 U	0.0290 U	1.13E+01
W020	11/18/2005	5	Chlorobenzene	0.00440 U	0.0290 U	1.13E+01
W020	11/18/2005		Chlorobenzene	0.0000580 U	NT	NA
WDL-101-S	8/14/2002	0.25	Chlorobenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Chlorobenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Chlorobenzene	**2.43**	NT	NA
WDL-101-S	8/14/2002	7	Chlorobenzene	**1.10**	NT	NA
WDL-102-S	8/14/2002	0.5	Chlorobenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Chlorobenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Chlorobenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Chlorobenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Chlorobenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Chlorobenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Chlorobenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Chlorobenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Chlorobenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Chlorobenzene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Chlorobenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Chlorobenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Chlorobenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Chlorobenzene	**0.846**	NT	NA
WDL-201-S	2/12/2004	0.25	Chlorobenzene	0.0256 U	0.0100 U	11.3
WDL-201-S	2/12/2004	6	Chlorobenzene	**2.36**	**0.0482**	11.3
WDL-202-S	2/12/2004	4	Chlorobenzene	**0.0996**	0.0100 U	11.3
WDL-203-S	2/13/2004	5.75	Chlorobenzene	0.00809 U	0.0100 U	11.3
WDL-204-S	2/12/2004	5	Chlorobenzene	**0.129**	0.0100 U	11.3
W001	11/21/2005	1	Chloroethane	0.0490 UJ	0.0940 U	1.87E+01
W002	11/21/2005	5	Chloroethane	45.0 UJ	0.0940 U	1.87E+01
W003	11/21/2005	7	Chloroethane	0.270 UJ	0.0940 U	1.87E+01
W004	11/21/2005	7	Chloroethane	1.00 UJ	0.0940 U	1.87E+01
W005	11/21/2005	7	Chloroethane	0.0210 UJ	0.0940 U	1.87E+01
W006	11/21/2005	6	Chloroethane	1.60 UJ	0.0940 U	1.87E+01
W007	11/21/2005	4	Chloroethane	1.70 UJ	0.0940 U	1.87E+01
W007	11/21/2005		Chloroethane	0.000190 UJ	NT	NA
W008	11/20/2005	3	Chloroethane	0.0420 UJ	0.0940 U	1.87E+01
W009	11/20/2005	5	Chloroethane	0.0480 UJ	0.0940 U	1.87E+01
W010	11/20/2005	5	Chloroethane	0.350 UJ	0.0940 U	1.87E+01
W011	11/20/2005	3	Chloroethane	0.410 UJ	0.0940 U	1.87E+01
W011	11/20/2005	9	Chloroethane	0.0210 UJ	0.0940 U	1.87E+01
W011	11/20/2005	18.5	Chloroethane	0.0370 UJ	0.0940 U	1.87E+01
W011	11/20/2005		Chloroethane	0.000190 UJ	NT	NA
W012	11/19/2005	6	Chloroethane	0.0390 UJ	0.0940 U	1.87E+01
W013	11/19/2005	5	Chloroethane	0.0380 UJ	0.0940 U	1.87E+01
W014	11/19/2005	5	Chloroethane	0.0360 UJ	0.0940 U	1.87E+01
W015	11/19/2005	1	Chloroethane	0.0620 UJ	0.0940 U	1.87E+01
W016	11/19/2005	5	Chloroethane	0.0410 UJ	0.0940 U	1.87E+01
W016	11/19/2005		Chloroethane	0.000190 UJ	NT	NA
W017	11/18/2005	3	Chloroethane	0.0500 UJ	0.0940 U	1.87E+01
W017	11/18/2005	7	Chloroethane	0.0220 UJ	0.0940 U	1.87E+01
W018	11/18/2005	6	Chloroethane	0.0240 UJ	0.0940 U	1.87E+01
W019	11/18/2005	4	Chloroethane	0.0390 UJ	0.0940 U	1.87E+01
W020	11/18/2005	5	Chloroethane	0.0380 UJ	0.0940 U	1.87E+01
W020	11/18/2005		Chloroethane	0.000190 UJ	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	0.25	Chloroethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Chloroethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Chloroethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Chloroethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Chloroethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Chloroethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Chloroethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Chloroethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Chloroethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Chloroethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Chloroethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Chloroethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Chloroethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Chloroethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Chloroethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Chloroethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Chloroethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Chloroethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Chloroethane	0.0338 U	0.00250 U	18.7
WDL-201-S	2/12/2004	6	Chloroethane	0.107 U	0.00500 U	18.7
WDL-202-S	2/12/2004	4	Chloroethane	0.0107 U	0.00250 U	18.7
WDL-203-S	2/13/2004	5.75	Chloroethane	0.0107 U	0.00250 U	18.7
WDL-204-S	2/12/2004	5	Chloroethane	0.0107 U	0.00250 U	18.7
W001	11/21/2005	1	Chloroform	0.00410 U	0.0910 UJ	7.05E-01
W002	11/21/2005	5	Chloroform	3.80 U	0.0910 U	7.05E-01
W003	11/21/2005	7	Chloroform	0.0230 U	0.0910 U	7.05E-01
W004	11/21/2005	7	Chloroform	0.0880 U	0.0910 U	7.05E-01
W005	11/21/2005	7	Chloroform	0.00180 U	0.0910 U	7.05E-01
W006	11/21/2005	6	Chloroform	0.130 U	0.0910 U	7.05E-01
W007	11/21/2005	4	Chloroform	0.150 U	0.0910 U	7.05E-01
W007	11/21/2005		Chloroform	0.000180 U	NT	NA
W008	11/20/2005	3	Chloroform	0.00360 U	0.0910 U	7.05E-01
W009	11/20/2005	5	Chloroform	0.00410 U	0.0910 U	7.05E-01
W010	11/20/2005	5	Chloroform	0.0300 U	0.0910 U	7.05E-01
W011	11/20/2005	3	Chloroform	0.0350 U	0.0910 U	7.05E-01
W011	11/20/2005	9	Chloroform	0.00180 U	0.0910 U	7.05E-01
W011	11/20/2005	18.5	Chloroform	0.00320 U	0.0910 U	7.05E-01
W011	11/20/2005		Chloroform	0.000180 U	NT	NA
W012	11/19/2005	6	Chloroform	**0.00550 J**	0.0910 U	7.05E-01
W013	11/19/2005	5	Chloroform	0.00330 U	0.0910 U	7.05E-01
W014	11/19/2005	5	Chloroform	0.00310 U	0.0910 U	7.05E-01
W015	11/19/2005	1	Chloroform	0.00530 U	0.0910 U	7.05E-01
W016	11/19/2005	5	Chloroform	0.00350 U	0.0910 U	7.05E-01
W016	11/19/2005		Chloroform	0.000180 U	NT	NA
W017	11/18/2005	3	Chloroform	0.00420 U	0.0910 U	7.05E-01
W017	11/18/2005	7	Chloroform	0.00190 U	0.0910 U	7.05E-01
W018	11/18/2005	6	Chloroform	0.00210 U	0.0910 U	7.05E-01
W019	11/18/2005	4	Chloroform	0.00330 U	0.0910 U	7.05E-01
W020	11/18/2005	5	Chloroform	0.00320 U	0.0910 U	7.05E-01
W020	11/18/2005		Chloroform	0.000180 U	NT	NA
WDL-101-S	8/14/2002	0.25	Chloroform	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Chloroform	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Chloroform	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Chloroform	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Chloroform	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Chloroform	0.561 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	5.5	Chloroform	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Chloroform	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Chloroform	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Chloroform	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Chloroform	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Chloroform	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Chloroform	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Chloroform	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Chloroform	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Chloroform	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Chloroform	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Chloroform	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Chloroform	0.0230 U	0.0100 U	0.705
WDL-201-S	2/12/2004	6	Chloroform	0.0726 U	0.0200 U	0.705
WDL-202-S	2/12/2004	4	Chloroform	0.00726 U	0.0100 U	0.705
WDL-203-S	2/13/2004	5.75	Chloroform	0.00726 U	0.0100 U	0.705
WDL-204-S	2/12/2004	5	Chloroform	0.00726 U	0.0100 U	0.705
W001	11/21/2005	1	Chloromethane	0.0140 U	0.140 U	2.03E+01
W002	11/21/2005	5	Chloromethane	13.0 U	0.140 U	2.03E+01
W003	11/21/2005	7	Chloromethane	0.0780 U	0.140 U	2.03E+01
W004	11/21/2005	7	Chloromethane	0.290 U	0.140 U	2.03E+01
W005	11/21/2005	7	Chloromethane	0.00600 U	0.140 U	2.03E+01
W006	11/21/2005	6	Chloromethane	0.450 U	0.140 U	2.03E+01
W007	11/21/2005	4	Chloromethane	0.480 U	0.140 U	2.03E+01
W007	11/21/2005		Chloromethane	0.000290 U	NT	NA
W008	11/20/2005	3	Chloromethane	0.0120 UJ	0.140 U	2.03E+01
W009	11/20/2005	5	Chloromethane	0.0140 U	0.140 U	2.03E+01
W010	11/20/2005	5	Chloromethane	0.100 U	0.140 U	2.03E+01
W011	11/20/2005	3	Chloromethane	0.120 U	0.140 U	2.03E+01
W011	11/20/2005	9	Chloromethane	0.00600 U	0.140 U	2.03E+01
W011	11/20/2005	18.5	Chloromethane	0.0110 U	0.140 U	2.03E+01
W011	11/20/2005		Chloromethane	0.000290 U	NT	NA
W012	11/19/2005	6	Chloromethane	0.0110 U	0.140 U	2.03E+01
W013	11/19/2005	5	Chloromethane	**0.0110 J**	0.140 U	2.03E+01
W014	11/19/2005	5	Chloromethane	0.0100 U	0.140 U	2.03E+01
W015	11/19/2005	1	Chloromethane	0.0180 U	0.140 U	2.03E+01
W016	11/19/2005	5	Chloromethane	0.0120 U	0.140 U	2.03E+01
W016	11/19/2005		Chloromethane	0.000290 U	NT	NA
W017	11/18/2005	3	Chloromethane	**0.0180 J**	0.140 U	2.03E+01
W017	11/18/2005	7	Chloromethane	0.00630 U	0.140 U	2.03E+01
W018	11/18/2005	6	Chloromethane	0.00690 U	0.140 U	2.03E+01
W019	11/18/2005	4	Chloromethane	0.0110 U	0.140 U	2.03E+01
W020	11/18/2005	5	Chloromethane	0.0110 U	0.140 U	2.03E+01
W020	11/18/2005		Chloromethane	0.000290 U	NT	NA
WDL-101-S	8/14/2002	0.25	Chloromethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Chloromethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Chloromethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Chloromethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Chloromethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Chloromethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Chloromethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Chloromethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Chloromethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Chloromethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Chloromethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Chloromethane	0.381 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	6.75	Chloromethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Chloromethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Chloromethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Chloromethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Chloromethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Chloromethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Chloromethane	0.0213 U	0.0500 U	20.3
WDL-201-S	2/12/2004	6	Chloromethane	0.0672 U	0.100 U	20.3
WDL-202-S	2/12/2004	4	Chloromethane	0.00672 U	0.0500 U	20.3
WDL-203-S	2/13/2004	5.75	Chloromethane	0.00672 U	0.0500 U	20.3
WDL-204-S	2/12/2004	5	Chloromethane	0.00672 U	0.0500 U	20.3
W001	11/21/2005	1	cis-1,2-Dichloroethene	**0.0110 J**	0.0770 U	NA
W002	11/21/2005	5	cis-1,2-Dichloroethene	3.90 U	0.0770 U	NA
W003	11/21/2005	7	cis-1,2-Dichloroethene	0.0240 U	0.0770 U	NA
W004	11/21/2005	7	cis-1,2-Dichloroethene	0.0890 U	0.0770 U	NA
W005	11/21/2005	7	cis-1,2-Dichloroethene	0.00180 U	0.0770 U	NA
W006	11/21/2005	6	cis-1,2-Dichloroethene	0.140 U	0.0770 U	NA
W007	11/21/2005	4	cis-1,2-Dichloroethene	0.150 U	0.0770 U	NA
W007	11/21/2005		cis-1,2-Dichloroethene	0.000150 U	NT	NA
W008	11/20/2005	3	cis-1,2-Dichloroethene	**0.00570 J**	0.0770 U	NA
W009	11/20/2005	5	cis-1,2-Dichloroethene	0.00410 U	0.0770 U	NA
W010	11/20/2005	5	cis-1,2-Dichloroethene	0.0310 U	0.0770 U	NA
W011	11/20/2005	3	cis-1,2-Dichloroethene	0.0350 U	0.0770 U	NA
W011	11/20/2005	9	cis-1,2-Dichloroethene	0.00180 U	0.0770 U	NA
W011	11/20/2005	18.5	cis-1,2-Dichloroethene	0.00320 U	0.0770 U	NA
W011	11/20/2005		cis-1,2-Dichloroethene	0.000150 U	NT	NA
W012	11/19/2005	6	cis-1,2-Dichloroethene	**0.00700 J**	0.0770 U	NA
W013	11/19/2005	5	cis-1,2-Dichloroethene	**0.00610 J**	0.0770 U	NA
W014	11/19/2005	5	cis-1,2-Dichloroethene	0.00310 U	0.0770 U	NA
W015	11/19/2005	1	cis-1,2-Dichloroethene	**0.0310 J**	0.0770 U	NA
W016	11/19/2005	5	cis-1,2-Dichloroethene	0.00350 U	0.0770 U	NA
W016	11/19/2005		cis-1,2-Dichloroethene	0.000150 U	NT	NA
W017	11/18/2005	3	cis-1,2-Dichloroethene	**0.0130 J**	0.0770 U	NA
W017	11/18/2005	7	cis-1,2-Dichloroethene	0.00190 U	0.0770 U	NA
W018	11/18/2005	6	cis-1,2-Dichloroethene	0.00210 U	0.0770 U	NA
W019	11/18/2005	4	cis-1,2-Dichloroethene	0.00340 U	0.0770 U	NA
W020	11/18/2005	5	cis-1,2-Dichloroethene	0.00320 U	0.0770 U	NA
W020	11/18/2005		cis-1,2-Dichloroethene	0.000150 U	NT	NA
WDL-101-S	8/14/2002	0.25	cis-1,2-Dichloroethene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	cis-1,2-Dichloroethene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	cis-1,2-Dichloroethene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	cis-1,2-Dichloroethene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	cis-1,2-Dichloroethene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	cis-1,2-Dichloroethene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	cis-1,2-Dichloroethene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	cis-1,2-Dichloroethene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	cis-1,2-Dichloroethene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	cis-1,2-Dichloroethene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	cis-1,2-Dichloroethene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	cis-1,2-Dichloroethene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	cis-1,2-Dichloroethene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	cis-1,2-Dichloroethene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	cis-1,2-Dichloroethene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	cis-1,2-Dichloroethene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	cis-1,2-Dichloroethene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	cis-1,2-Dichloroethene	0.274 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	0.25	cis-1,2-Dichloroethene	0.0398 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	cis-1,2-Dichloroethene	0.126 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	cis-1,2-Dichloroethene	**0.0228**	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	cis-1,2-Dichloroethene	0.0126 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	cis-1,2-Dichloroethene	0.0126 U	0.0100 U	NA
W001	11/21/2005	1	cis-1,3-Dichloropropene	0.00730 U	0.0700 U	NA
W002	11/21/2005	5	cis-1,3-Dichloropropene	6.70 U	0.0700 U	NA
W003	11/21/2005	7	cis-1,3-Dichloropropene	0.0410 U	0.0700 U	NA
W004	11/21/2005	7	cis-1,3-Dichloropropene	0.160 U	0.0700 U	NA
W005	11/21/2005	7	cis-1,3-Dichloropropene	0.00320 U	0.0700 U	NA
W006	11/21/2005	6	cis-1,3-Dichloropropene	0.240 U	0.0700 U	NA
W007	11/21/2005	4	cis-1,3-Dichloropropene	0.260 U	0.0700 U	NA
W007	11/21/2005		cis-1,3-Dichloropropene	0.000140 U	NT	NA
W008	11/20/2005	3	cis-1,3-Dichloropropene	0.00630 UJ	0.0700 U	NA
W009	11/20/2005	5	cis-1,3-Dichloropropene	0.00720 U	0.0700 U	NA
W010	11/20/2005	5	cis-1,3-Dichloropropene	0.0530 U	0.0700 U	NA
W011	11/20/2005	3	cis-1,3-Dichloropropene	0.0620 U	0.0700 U	NA
W011	11/20/2005	9	cis-1,3-Dichloropropene	0.00320 U	0.0700 U	NA
W011	11/20/2005	18.5	cis-1,3-Dichloropropene	0.00560 U	0.0700 U	NA
W011	11/20/2005		cis-1,3-Dichloropropene	0.000140 U	NT	NA
W012	11/19/2005	6	cis-1,3-Dichloropropene	0.00580 U	0.0700 U	NA
W013	11/19/2005	5	cis-1,3-Dichloropropene	0.00580 U	0.0700 U	NA
W014	11/19/2005	5	cis-1,3-Dichloropropene	0.00550 U	0.0700 U	NA
W015	11/19/2005	1	cis-1,3-Dichloropropene	0.00930 U	0.0700 U	NA
W016	11/19/2005	5	cis-1,3-Dichloropropene	0.00620 U	0.0700 U	NA
W016	11/19/2005		cis-1,3-Dichloropropene	0.000140 U	NT	NA
W017	11/18/2005	3	cis-1,3-Dichloropropene	0.00750 U	0.0700 U	NA
W017	11/18/2005	7	cis-1,3-Dichloropropene	0.00330 U	0.0700 U	NA
W018	11/18/2005	6	cis-1,3-Dichloropropene	0.00370 U	0.0700 U	NA
W019	11/18/2005	4	cis-1,3-Dichloropropene	0.00590 U	0.0700 U	NA
W020	11/18/2005	5	cis-1,3-Dichloropropene	0.00570 U	0.0700 U	NA
W020	11/18/2005		cis-1,3-Dichloropropene	0.000140 U	NT	NA
WDL-101-S	8/14/2002	0.25	cis-1,3-Dichloropropene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	cis-1,3-Dichloropropene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	cis-1,3-Dichloropropene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	cis-1,3-Dichloropropene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	cis-1,3-Dichloropropene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	cis-1,3-Dichloropropene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	cis-1,3-Dichloropropene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	cis-1,3-Dichloropropene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	cis-1,3-Dichloropropene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	cis-1,3-Dichloropropene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	cis-1,3-Dichloropropene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	cis-1,3-Dichloropropene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	cis-1,3-Dichloropropene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	cis-1,3-Dichloropropene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	cis-1,3-Dichloropropene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	cis-1,3-Dichloropropene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	cis-1,3-Dichloropropene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	cis-1,3-Dichloropropene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	cis-1,3-Dichloropropene	0.0157 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	cis-1,3-Dichloropropene	0.0495 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	cis-1,3-Dichloropropene	0.00495 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	cis-1,3-Dichloropropene	0.00495 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	cis-1,3-Dichloropropene	0.00495 U	0.0100 U	NA
W001	11/21/2005	1	Dibromochloromethane	0.00450 U	0.0600 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W002	11/21/2005	5	Dibromochloromethane	4.20 U	0.0600 U	NA
W003	11/21/2005	7	Dibromochloromethane	0.0260 U	0.0600 U	NA
W004	11/21/2005	7	Dibromochloromethane	0.0960 U	0.0600 U	NA
W005	11/21/2005	7	Dibromochloromethane	0.00200 U	0.0600 U	NA
W006	11/21/2005	6	Dibromochloromethane	0.150 U	0.0600 U	NA
W007	11/21/2005	4	Dibromochloromethane	0.160 U	0.0600 U	NA
W007	11/21/2005		Dibromochloromethane	0.000120 U	NT	NA
W008	11/20/2005	3	Dibromochloromethane	0.00390 UJ	0.0600 U	NA
W009	11/20/2005	5	Dibromochloromethane	0.00450 U	0.0600 U	NA
W010	11/20/2005	5	Dibromochloromethane	0.0330 U	0.0600 U	NA
W011	11/20/2005	3	Dibromochloromethane	0.0380 U	0.0600 U	NA
W011	11/20/2005	9	Dibromochloromethane	0.00200 U	0.0600 U	NA
W011	11/20/2005	18.5	Dibromochloromethane	0.00340 U	0.0600 U	NA
W011	11/20/2005		Dibromochloromethane	0.000120 U	NT	NA
W012	11/19/2005	6	Dibromochloromethane	0.00360 U	0.0600 U	NA
W013	11/19/2005	5	Dibromochloromethane	0.00360 U	0.0600 U	NA
W014	11/19/2005	5	Dibromochloromethane	0.00340 U	0.0600 U	NA
W015	11/19/2005	1	Dibromochloromethane	0.00570 U	0.0600 U	NA
W016	11/19/2005	5	Dibromochloromethane	0.00380 U	0.0600 U	NA
W016	11/19/2005		Dibromochloromethane	0.000120 U	NT	NA
W017	11/18/2005	3	Dibromochloromethane	0.00460 U	0.0600 U	NA
W017	11/18/2005	7	Dibromochloromethane	0.00210 U	0.0600 U	NA
W018	11/18/2005	6	Dibromochloromethane	0.00230 U	0.0600 U	NA
W019	11/18/2005	4	Dibromochloromethane	0.00370 U	0.0600 U	NA
W020	11/18/2005	5	Dibromochloromethane	0.00350 U	0.0600 U	NA
W020	11/18/2005		Dibromochloromethane	0.000120 U	NT	NA
WDL-101-S	8/14/2002	0.25	Dibromochloromethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Dibromochloromethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Dibromochloromethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Dibromochloromethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dibromochloromethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Dibromochloromethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dibromochloromethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Dibromochloromethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Dibromochloromethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dibromochloromethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dibromochloromethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Dibromochloromethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dibromochloromethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Dibromochloromethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dibromochloromethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dibromochloromethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Dibromochloromethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dibromochloromethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dibromochloromethane	0.0354 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Dibromochloromethane	0.112 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Dibromochloromethane	0.0112 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Dibromochloromethane	0.0112 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Dibromochloromethane	0.0112 U	0.0100 U	NA
W001	11/21/2005	1	Dibromomethane	0.00810 U	0.0780 U	NA
W002	11/21/2005	5	Dibromomethane	7.40 U	0.0780 U	NA
W003	11/21/2005	7	Dibromomethane	0.0450 U	0.0780 U	NA
W004	11/21/2005	7	Dibromomethane	0.170 U	0.0780 U	NA
W005	11/21/2005	7	Dibromomethane	0.00350 U	0.0780 U	NA
W006	11/21/2005	6	Dibromomethane	0.260 U	0.0780 U	NA
W007	11/21/2005	4	Dibromomethane	0.280 U	0.0780 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005		Dibromomethane	0.000160 U	NT	NA
W008	11/20/2005	3	Dibromomethane	0.00700 U	0.0780 U	NA
W009	11/20/2005	5	Dibromomethane	0.00790 U	0.0780 U	NA
W010	11/20/2005	5	Dibromomethane	0.0590 U	0.0780 U	NA
W011	11/20/2005	3	Dibromomethane	0.0680 U	0.0780 U	NA
W011	11/20/2005	9	Dibromomethane	0.00350 U	0.0780 U	NA
W011	11/20/2005	18.5	Dibromomethane	0.00610 U	0.0780 U	NA
W011	11/20/2005		Dibromomethane	0.000160 U	NT	NA
W012	11/19/2005	6	Dibromomethane	0.00640 U	0.0780 U	NA
W013	11/19/2005	5	Dibromomethane	0.00630 U	0.0780 U	NA
W014	11/19/2005	5	Dibromomethane	0.00600 U	0.0780 U	NA
W015	11/19/2005	1	Dibromomethane	0.0100 U	0.0780 U	NA
W016	11/19/2005	5	Dibromomethane	0.00680 U	0.0780 U	NA
W016	11/19/2005		Dibromomethane	0.000160 U	NT	NA
W017	11/18/2005	3	Dibromomethane	0.00820 U	0.0780 U	NA
W017	11/18/2005	7	Dibromomethane	0.00370 U	0.0780 U	NA
W018	11/18/2005	6	Dibromomethane	0.00400 U	0.0780 U	NA
W019	11/18/2005	4	Dibromomethane	0.00650 U	0.0780 U	NA
W020	11/18/2005	5	Dibromomethane	0.00620 U	0.0780 U	NA
W020	11/18/2005		Dibromomethane	0.000160 U	NT	NA
WDL-101-S	8/14/2002	0.25	Dibromomethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Dibromomethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Dibromomethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Dibromomethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dibromomethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Dibromomethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dibromomethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Dibromomethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Dibromomethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dibromomethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dibromomethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Dibromomethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dibromomethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Dibromomethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dibromomethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dibromomethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Dibromomethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dibromomethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dibromomethane	0.0465 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Dibromomethane	0.147 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Dibromomethane	0.0147 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Dibromomethane	0.0147 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Dibromomethane	0.0147 U	0.0100 U	NA
W001	11/21/2005	1	Dichlorodifluoromethane	0.00950 UJ	0.0560 U	NA
W002	11/21/2005	5	Dichlorodifluoromethane	8.70 UJ	0.0560 U	NA
W003	11/21/2005	7	Dichlorodifluoromethane	0.0540 UJ	0.0560 U	NA
W004	11/21/2005	7	Dichlorodifluoromethane	0.200 UJ	0.0560 U	NA
W005	11/21/2005	7	Dichlorodifluoromethane	0.00410 UJ	0.0560 U	NA
W006	11/21/2005	6	Dichlorodifluoromethane	0.310 UJ	0.0560 U	NA
W007	11/21/2005	4	Dichlorodifluoromethane	0.330 UJ	0.0560 U	NA
W007	11/21/2005		Dichlorodifluoromethane	0.000110 UJ	NT	NA
W008	11/20/2005	3	Dichlorodifluoromethane	0.00830 UJ	0.0560 UJ	NA
W009	11/20/2005	5	Dichlorodifluoromethane	0.00940 U	0.0560 UJ	NA
W010	11/20/2005	5	Dichlorodifluoromethane	0.0690 U	0.0560 UJ	NA
W011	11/20/2005	3	Dichlorodifluoromethane	0.0800 U	0.0560 UJ	NA
W011	11/20/2005	9	Dichlorodifluoromethane	0.00410 U	0.0560 UJ	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	18.5	Dichlorodifluoromethane	0.00720 U	0.0560 UJ	NA
W011	11/20/2005		Dichlorodifluoromethane	0.000110 U	NT	NA
W012	11/19/2005	6	Dichlorodifluoromethane	0.00750 U	0.0560 UJ	NA
W013	11/19/2005	5	Dichlorodifluoromethane	0.00750 U	0.0560 UJ	NA
W014	11/19/2005	5	Dichlorodifluoromethane	0.00710 U	0.0560 UJ	NA
W015	11/19/2005	1	Dichlorodifluoromethane	0.0120 U	0.0560 UJ	NA
W016	11/19/2005	5	Dichlorodifluoromethane	0.00810 U	0.0560 UJ	NA
W016	11/19/2005		Dichlorodifluoromethane	0.000110 U	NT	NA
W017	11/18/2005	3	Dichlorodifluoromethane	0.00970 U	0.0560 UJ	NA
W017	11/18/2005	7	Dichlorodifluoromethane	0.00430 U	0.0560 UJ	NA
W018	11/18/2005	6	Dichlorodifluoromethane	0.00480 U	0.0560 UJ	NA
W019	11/18/2005	4	Dichlorodifluoromethane	0.00770 U	0.0560 UJ	NA
W020	11/18/2005	5	Dichlorodifluoromethane	0.00740 U	0.0560 UJ	NA
W020	11/18/2005		Dichlorodifluoromethane	0.000110 U	NT	NA
WDL-101-S	8/14/2002	0.25	Dichlorodifluoromethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Dichlorodifluoromethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Dichlorodifluoromethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Dichlorodifluoromethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dichlorodifluoromethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Dichlorodifluoromethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dichlorodifluoromethane	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Dichlorodifluoromethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Dichlorodifluoromethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dichlorodifluoromethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dichlorodifluoromethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Dichlorodifluoromethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dichlorodifluoromethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Dichlorodifluoromethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dichlorodifluoromethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dichlorodifluoromethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Dichlorodifluoromethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dichlorodifluoromethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dichlorodifluoromethane	0.0373 U	0.0500 U	NA
WDL-201-S	2/12/2004	6	Dichlorodifluoromethane	0.118 U	0.100 U	NA
WDL-202-S	2/12/2004	4	Dichlorodifluoromethane	0.0118 U	0.0500 U	NA
WDL-203-S	2/13/2004	5.75	Dichlorodifluoromethane	0.0118 U	0.0500 U	NA
WDL-204-S	2/12/2004	5	Dichlorodifluoromethane	0.0118 U	0.0500 U	NA
W001	11/21/2005	1	Ethylbenzene	**0.780**	0.0260 U	1.05E+02
W002	11/21/2005	5	Ethylbenzene	**250**	**0.770**	1.05E+02
W003	11/21/2005	7	Ethylbenzene	**0.500 J**	0.0260 U	1.05E+02
W004	11/21/2005	7	Ethylbenzene	**1.90 J**	**0.0550 J**	1.05E+02
W005	11/21/2005	7	Ethylbenzene	**0.0450**	0.0260 U	1.05E+02
W006	11/21/2005	6	Ethylbenzene	**17.0**	**0.180 J**	1.05E+02
W007	11/21/2005	4	Ethylbenzene	**2.80 J**	**0.0410 J**	1.05E+02
W007	11/21/2005		Ethylbenzene	0.0000520 U	NT	NA
W008	11/20/2005	3	Ethylbenzene	**0.400**	0.0260 U	1.05E+02
W009	11/20/2005	5	Ethylbenzene	**0.160**	0.0260 U	1.05E+02
W010	11/20/2005	5	Ethylbenzene	**1.50**	**0.0280 J**	1.05E+02
W011	11/20/2005	3	Ethylbenzene	**2.90**	**0.0320 J**	1.05E+02
W011	11/20/2005	9	Ethylbenzene	**0.00450 J**	0.0260 U	1.05E+02
W011	11/20/2005	18.5	Ethylbenzene	**0.00700 J**	0.0260 U	1.05E+02
W011	11/20/2005		Ethylbenzene	0.0000520 U	NT	NA
W012	11/19/2005	6	Ethylbenzene	**1.80**	**0.0340 J**	1.05E+02
W013	11/19/2005	5	Ethylbenzene	**3.00**	**0.0360 J**	1.05E+02
W014	11/19/2005	5	Ethylbenzene	**0.350**	0.0260 U	1.05E+02
W015	11/19/2005	1	Ethylbenzene	**0.800**	0.0260 U	1.05E+02

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W016	11/19/2005	5	Ethylbenzene	**0.300**	0.0260 U	1.05E+02
W016	11/19/2005		Ethylbenzene	0.0000520 U	NT	NA
W017	11/18/2005	3	Ethylbenzene	**0.390**	0.0260 U	1.05E+02
W017	11/18/2005	7	Ethylbenzene	**0.00250 J**	0.0260 U	1.05E+02
W018	11/18/2005	6	Ethylbenzene	**0.380**	0.0260 U	1.05E+02
W019	11/18/2005	4	Ethylbenzene	**0.200**	0.0260 U	1.05E+02
W020	11/18/2005	5	Ethylbenzene	**0.0370 J**	0.0260 U	1.05E+02
W020	11/18/2005		Ethylbenzene	0.0000520 U	NT	NA
WDL-101-S	8/14/2002	0.25	Ethylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Ethylbenzene	**0.797**	NT	NA
WDL-101-S	8/14/2002	5	Ethylbenzene	**5.21**	NT	NA
WDL-101-S	8/14/2002	7	Ethylbenzene	**12.6**	NT	NA
WDL-102-S	8/14/2002	0.5	Ethylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Ethylbenzene	**1.35**	NT	NA
WDL-102-S	8/14/2002	5.5	Ethylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Ethylbenzene	**1.15**	NT	NA
WDL-102-S	8/14/2002	10	Ethylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Ethylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Ethylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Ethylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Ethylbenzene	**0.975**	NT	NA
WDL-103-S	8/15/2002	8.25	Ethylbenzene	**2.45**	NT	NA
WDL-104-S	8/15/2002	0.25	Ethylbenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Ethylbenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Ethylbenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Ethylbenzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Ethylbenzene	**0.120**	0.0100 U	105
WDL-201-S	2/12/2004	6	Ethylbenzene	**9.60**	**0.161**	105
WDL-202-S	2/12/2004	4	Ethylbenzene	**1.44**	0.0100 U	105
WDL-203-S	2/13/2004	5.75	Ethylbenzene	**0.0251**	0.0100 U	105
WDL-204-S	2/12/2004	5	Ethylbenzene	**0.0852**	0.0100 U	105
W001	11/21/2005	1	Hexachlorobutadiene	0.00660 U	0.0760 U	4.02E-01
W002	11/21/2005	5	Hexachlorobutadiene	6.10 U	0.0760 U	4.02E-01
W003	11/21/2005	7	Hexachlorobutadiene	0.0380 U	0.0760 U	4.02E-01
W004	11/21/2005	7	Hexachlorobutadiene	0.140 U	0.0760 U	4.02E-01
W005	11/21/2005	7	Hexachlorobutadiene	0.00290 U	0.0760 U	4.02E-01
W006	11/21/2005	6	Hexachlorobutadiene	0.210 U	0.0760 U	4.02E-01
W007	11/21/2005	4	Hexachlorobutadiene	0.230 U	0.0760 U	4.02E-01
W007	11/21/2005		Hexachlorobutadiene	0.000150 U	NT	NA
W008	11/20/2005	3	Hexachlorobutadiene	0.00580 U	0.0760 U	4.02E-01
W009	11/20/2005	5	Hexachlorobutadiene	0.00650 U	0.0760 U	4.02E-01
W010	11/20/2005	5	Hexachlorobutadiene	0.0480 U	0.0760 U	4.02E-01
W011	11/20/2005	3	Hexachlorobutadiene	0.0560 U	0.0760 U	4.02E-01
W011	11/20/2005	9	Hexachlorobutadiene	0.00290 U	0.0760 U	4.02E-01
W011	11/20/2005	18.5	Hexachlorobutadiene	0.00510 U	0.0760 U	4.02E-01
W011	11/20/2005		Hexachlorobutadiene	0.000150 U	NT	NA
W012	11/19/2005	6	Hexachlorobutadiene	0.00530 U	0.0760 U	4.02E-01
W013	11/19/2005	5	Hexachlorobutadiene	0.00520 U	0.0760 U	4.02E-01
W014	11/19/2005	5	Hexachlorobutadiene	0.00500 U	0.0760 U	4.02E-01
W015	11/19/2005	1	Hexachlorobutadiene	0.00840 U	0.0760 U	4.02E-01
W016	11/19/2005	5	Hexachlorobutadiene	0.00560 U	0.0760 U	4.02E-01
W016	11/19/2005		Hexachlorobutadiene	0.000150 U	NT	NA
W017	11/18/2005	3	Hexachlorobutadiene	0.00680 U	0.0760 U	4.02E-01
W017	11/18/2005	7	Hexachlorobutadiene	0.00300 U	0.0760 U	4.02E-01
W018	11/18/2005	6	Hexachlorobutadiene	0.00330 U	0.0760 U	4.02E-01
W019	11/18/2005	4	Hexachlorobutadiene	0.00540 U	**0.140 J**	4.02E-01

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W020	11/18/2005	5	Hexachlorobutadiene	0.00510 U	0.0760 U	4.02E-01
W020	11/18/2005		Hexachlorobutadiene	0.000150 U	NT	NA
WDL-101-S	8/14/2002	0.25	Hexachlorobutadiene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Hexachlorobutadiene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Hexachlorobutadiene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Hexachlorobutadiene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Hexachlorobutadiene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Hexachlorobutadiene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Hexachlorobutadiene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Hexachlorobutadiene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Hexachlorobutadiene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Hexachlorobutadiene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Hexachlorobutadiene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Hexachlorobutadiene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Hexachlorobutadiene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Hexachlorobutadiene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Hexachlorobutadiene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Hexachlorobutadiene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Hexachlorobutadiene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Hexachlorobutadiene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Hexachlorobutadiene	0.219 U	0.0250 U	0.402
WDL-201-S	2/12/2004	6	Hexachlorobutadiene	0.694 U	0.0500 U	0.402
WDL-202-S	2/12/2004	4	Hexachlorobutadiene	0.0694 U	0.0250 U	0.402
WDL-203-S	2/13/2004	5.75	Hexachlorobutadiene	0.0694 U	0.0250 U	0.402
WDL-204-S	2/12/2004	5	Hexachlorobutadiene	0.0694 U	0.0250 U	0.402
W001	11/21/2005	1	Iodomethane	0.220 U	1.30 U	NA
W002	11/21/2005	5	Iodomethane	27.0 U	1.40 U	NA
W003	11/21/2005	7	Iodomethane	0.160 U	1.40 U	NA
W004	11/21/2005	7	Iodomethane	0.610 U	1.40 U	NA
W005	11/21/2005	7	Iodomethane	0.0960 U	0.110 U	NA
W006	11/21/2005	6	Iodomethane	0.930 U	1.40 U	NA
W007	11/21/2005	4	Iodomethane	1.00 U	1.40 U	NA
W007	11/21/2005		Iodomethane	0.00280 U	NT	NA
W008	11/20/2005	3	Iodomethane	**0.170 J**	1.40 U	NA
W009	11/20/2005	5	Iodomethane	**0.190 J**	1.40 U	NA
W010	11/20/2005	5	Iodomethane	**1.20 J**	1.40 U	NA
W011	11/20/2005	3	Iodomethane	**1.50 J**	1.40 U	NA
W011	11/20/2005	9	Iodomethane	**0.0840 J**	1.40 U	NA
W011	11/20/2005	18.5	Iodomethane	**0.140 J**	1.40 U	NA
W011	11/20/2005		Iodomethane	0.000210 U	NT	NA
W012	11/19/2005	6	Iodomethane	**0.150 J**	1.50 U	NA
W013	11/19/2005	5	Iodomethane	**0.150 J**	1.40 U	NA
W014	11/19/2005	5	Iodomethane	**0.150 J**	1.40 U	NA
W015	11/19/2005	1	Iodomethane	**0.240 J**	1.50 U	NA
W016	11/19/2005	5	Iodomethane	**0.170 J**	1.50 U	NA
W016	11/19/2005		Iodomethane	0.00270 U	NT	NA
W017	11/18/2005	3	Iodomethane	**0.210 J**	1.50 U	NA
W017	11/18/2005	7	Iodomethane	**0.0950 J**	1.40 U	NA
W018	11/18/2005	6	Iodomethane	**0.110 J**	1.50 U	NA
W019	11/18/2005	4	Iodomethane	**0.180 J**	1.50 U	NA
W020	11/18/2005	5	Iodomethane	**0.160 J**	1.40 U	NA
W020	11/18/2005		Iodomethane	0.00280 U	NT	NA
WDL-201-S	2/12/2004	0.25	Iodomethane	0.427 U	23.8 U	NA
WDL-201-S	2/12/2004	6	Iodomethane	1.35 U	47.6 U	NA
WDL-202-S	2/12/2004	4	Iodomethane	0.135 U	23.8 U	NA
WDL-203-S	2/13/2004	5.75	Iodomethane	0.135 U	23.8 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-204-S	2/12/2004	5	Iodomethane	0.135 U	23.8 U	NA
W001	11/21/2005	1	Isobutylalcohol	1.80 U	15.0 U	2.40E+02
W002	11/21/2005	5	Isobutylalcohol	1,700 U	15.0 U	2.40E+02
W003	11/21/2005	7	Isobutylalcohol	10.0 U	15.0 U	2.40E+02
W004	11/21/2005	7	Isobutylalcohol	39.0 U	15.0 U	2.40E+02
W005	11/21/2005	7	Isobutylalcohol	0.800 U	15.0 U	2.40E+02
W006	11/21/2005	6	Isobutylalcohol	59.0 U	15.0 U	2.40E+02
W007	11/21/2005	4	Isobutylalcohol	65.0 U	15.0 U	2.40E+02
W007	11/21/2005		Isobutylalcohol	0.0310 U	NT	NA
W008	11/20/2005	3	Isobutylalcohol	1.60 U	15.0 U	2.40E+02
W009	11/20/2005	5	Isobutylalcohol	1.80 U	15.0 U	2.40E+02
W010	11/20/2005	5	Isobutylalcohol	13.0 U	15.0 U	2.40E+02
W011	11/20/2005	3	Isobutylalcohol	16.0 U	15.0 U	2.40E+02
W011	11/20/2005	9	Isobutylalcohol	0.800 U	15.0 U	2.40E+02
W011	11/20/2005	18.5	Isobutylalcohol	1.40 U	15.0 U	2.40E+02
W011	11/20/2005		Isobutylalcohol	0.0310 U	NT	NA
W012	11/19/2005	6	Isobutylalcohol	1.50 U	15.0 U	2.40E+02
W013	11/19/2005	5	Isobutylalcohol	1.50 U	15.0 U	2.40E+02
W014	11/19/2005	5	Isobutylalcohol	1.40 U	15.0 U	2.40E+02
W015	11/19/2005	1	Isobutylalcohol	2.30 U	15.0 U	2.40E+02
W016	11/19/2005	5	Isobutylalcohol	1.60 U	15.0 U	2.40E+02
W016	11/19/2005		Isobutylalcohol	0.0310 U	NT	NA
W017	11/18/2005	3	Isobutylalcohol	1.90 U	15.0 U	2.40E+02
W017	11/18/2005	7	Isobutylalcohol	0.840 U	15.0 U	2.40E+02
W018	11/18/2005	6	Isobutylalcohol	0.920 U	15.0 U	2.40E+02
W019	11/18/2005	4	Isobutylalcohol	1.50 U	15.0 U	2.40E+02
W020	11/18/2005	5	Isobutylalcohol	1.40 U	15.0 U	2.40E+02
W020	11/18/2005		Isobutylalcohol	0.0310 U	NT	NA
WDL-101-S	8/14/2002	0.25	Isobutylalcohol	55.2 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Isobutylalcohol	39.7 UJ	NT	NA
WDL-101-S	8/14/2002	5	Isobutylalcohol	42.9 UJ	NT	NA
WDL-101-S	8/14/2002	7	Isobutylalcohol	40.6 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Isobutylalcohol	44.2 U	NT	NA
WDL-102-S	8/14/2002	2.25	Isobutylalcohol	56.1 U	NT	NA
WDL-102-S	8/14/2002	5.5	Isobutylalcohol	26.3 U	NT	NA
WDL-102-S	8/14/2002	8	Isobutylalcohol	36.5 U	NT	NA
WDL-102-S	8/14/2002	10	Isobutylalcohol	27.2 U	NT	NA
WDL-103-S	8/15/2002	0.25	Isobutylalcohol	64.0 UJ	NT	NA
WDL-103-S	8/15/2002	2.25	Isobutylalcohol	26.3 U	NT	NA
WDL-103-S	8/15/2002	5	Isobutylalcohol	38.1 U	NT	NA
WDL-103-S	8/15/2002	6.75	Isobutylalcohol	54.9 U	NT	NA
WDL-103-S	8/15/2002	8.25	Isobutylalcohol	34.8 UJ	NT	NA
WDL-104-S	8/15/2002	0.25	Isobutylalcohol	26.8 UJ	NT	NA
WDL-104-S	8/15/2002	2.25	Isobutylalcohol	23.6 UJ	NT	NA
WDL-104-S	8/15/2002	5	Isobutylalcohol	33.5 UJ	NT	NA
WDL-104-S	8/15/2002	6.75	Isobutylalcohol	27.4 UJ	NT	NA
WDL-201-S	2/12/2004	0.25	Isobutylalcohol	4.55 UJ	159 U	240
WDL-201-S	2/12/2004	6	Isobutylalcohol	14.4 U	**671 J**	240
WDL-202-S	2/12/2004	4	Isobutylalcohol	1.44 UJ	159 U	240
WDL-203-S	2/13/2004	5.75	Isobutylalcohol	1.44 UJ	159 U	240
WDL-204-S	2/12/2004	5	Isobutylalcohol	1.44 UJ	159 U	240
W001	11/21/2005	1	Isopropylbenzene	**0.130 J**	0.0380 U	4.85E+01
W002	11/21/2005	5	Isopropylbenzene	**38.0**	**0.0520 J**	4.85E+01
W003	11/21/2005	7	Isopropylbenzene	**0.180**	0.0380 U	4.85E+01
W004	11/21/2005	7	Isopropylbenzene	**0.600**	0.0380 U	4.85E+01
W005	11/21/2005	7	Isopropylbenzene	**0.0160**	0.0380 U	4.85E+01

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W006	11/21/2005	6	Isopropylbenzene	**2.20**	0.0380 U	4.85E+01
W007	11/21/2005	4	Isopropylbenzene	**0.960**	0.0380 U	4.85E+01
W007	11/21/2005		Isopropylbenzene	0.0000760 U	NT	NA
W008	11/20/2005	3	Isopropylbenzene	**0.0500 J**	0.0380 U	4.85E+01
W009	11/20/2005	5	Isopropylbenzene	**0.0280 J**	0.0380 U	4.85E+01
W010	11/20/2005	5	Isopropylbenzene	**0.330 J**	0.0380 U	4.85E+01
W011	11/20/2005	3	Isopropylbenzene	**0.440 J**	0.0380 U	4.85E+01
W011	11/20/2005	9	Isopropylbenzene	0.00150 U	0.0380 U	4.85E+01
W011	11/20/2005	18.5	Isopropylbenzene	0.00270 U	0.0380 U	4.85E+01
W011	11/20/2005		Isopropylbenzene	0.0000760 U	NT	NA
W012	11/19/2005	6	Isopropylbenzene	**0.210 J**	0.0380 U	4.85E+01
W013	11/19/2005	5	Isopropylbenzene	**0.700 J**	0.0380 U	4.85E+01
W014	11/19/2005	5	Isopropylbenzene	**0.110 J**	0.0380 U	4.85E+01
W015	11/19/2005	1	Isopropylbenzene	**0.100 J**	0.0380 U	4.85E+01
W016	11/19/2005	5	Isopropylbenzene	**0.110 J**	0.0380 U	4.85E+01
W016	11/19/2005		Isopropylbenzene	0.0000760 U	NT	NA
W017	11/18/2005	3	Isopropylbenzene	**0.0170 J**	0.0380 U	4.85E+01
W017	11/18/2005	7	Isopropylbenzene	0.00160 U	0.0380 U	4.85E+01
W018	11/18/2005	6	Isopropylbenzene	**0.190 J**	0.0380 U	4.85E+01
W019	11/18/2005	4	Isopropylbenzene	**0.0520 J**	0.0380 U	4.85E+01
W020	11/18/2005	5	Isopropylbenzene	**0.00860 J**	0.0380 U	4.85E+01
W020	11/18/2005		Isopropylbenzene	0.0000760 U	NT	NA
WDL-101-S	8/14/2002	0.25	Isopropylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Isopropylbenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Isopropylbenzene	**1.71**	NT	NA
WDL-101-S	8/14/2002	7	Isopropylbenzene	**3.68**	NT	NA
WDL-102-S	8/14/2002	0.5	Isopropylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Isopropylbenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Isopropylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Isopropylbenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Isopropylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Isopropylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Isopropylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Isopropylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Isopropylbenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Isopropylbenzene	**0.348**	NT	NA
WDL-104-S	8/15/2002	0.25	Isopropylbenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Isopropylbenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Isopropylbenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Isopropylbenzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Isopropylbenzene	0.0302 U	0.0100 U	48.5
WDL-201-S	2/12/2004	6	Isopropylbenzene	**0.680**	0.0200 U	48.5
WDL-202-S	2/12/2004	4	Isopropylbenzene	**0.0868**	0.0100 U	48.5
WDL-203-S	2/13/2004	5.75	Isopropylbenzene	0.00955 U	0.0100 U	48.5
WDL-204-S	2/12/2004	5	Isopropylbenzene	**0.0466**	0.0100 U	48.5
W001	11/21/2005	1	m,p-Xylene	**2.50**	0.0380 U	2.18E+01
W002	11/21/2005	5	m,p-Xylene	**1,100**	**2.80**	2.18E+01
W003	11/21/2005	7	m,p-Xylene	**1.50**	0.0380 U	2.18E+01
W004	11/21/2005	7	m,p-Xylene	**8.80**	**0.200 J**	2.18E+01
W005	11/21/2005	7	m,p-Xylene	**0.200**	0.0380 U	2.18E+01
W006	11/21/2005	6	m,p-Xylene	**70.0**	**0.660 J**	2.18E+01
W007	11/21/2005	4	m,p-Xylene	**14.0**	**0.160 J**	2.18E+01
W007	11/21/2005		m,p-Xylene	0.0000750 U	NT	NA
W008	11/20/2005	3	m,p-Xylene	**1.10**	0.0380 U	2.18E+01
W009	11/20/2005	5	m,p-Xylene	**0.590**	0.0380 U	2.18E+01
W010	11/20/2005	5	m,p-Xylene	**6.20**	**0.0830 J**	2.18E+01

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	3	m,p-Xylene	**12.0**	**0.110 J**	2.18E+01
W011	11/20/2005	9	m,p-Xylene	0.0170 U	0.0380 U	2.18E+01
W011	11/20/2005	18.5	m,p-Xylene	0.0270 U	0.0380 U	2.18E+01
W011	11/20/2005		m,p-Xylene	0.0000750 U	NT	NA
W012	11/19/2005	6	m,p-Xylene	**7.50**	**0.110 J**	2.18E+01
W013	11/19/2005	5	m,p-Xylene	**14.0**	**0.150 J**	2.18E+01
W014	11/19/2005	5	m,p-Xylene	**1.30**	0.0380 U	2.18E+01
W015	11/19/2005	1	m,p-Xylene	**2.70**	0.0380 U	2.18E+01
W016	11/19/2005	5	m,p-Xylene	**0.960**	0.0380 U	2.18E+01
W016	11/19/2005		m,p-Xylene	0.0000750 U	NT	NA
W017	11/18/2005	3	m,p-Xylene	**1.20**	0.0380 U	2.18E+01
W017	11/18/2005	7	m,p-Xylene	0.0120 U	0.0380 U	2.18E+01
W018	11/18/2005	6	m,p-Xylene	**1.20**	0.0380 U	2.18E+01
W019	11/18/2005	4	m,p-Xylene	**0.650**	0.0380 U	2.18E+01
W020	11/18/2005	5	m,p-Xylene	**0.0880 J**	0.0380 U	2.18E+01
W020	11/18/2005		m,p-Xylene	0.0000750 U	NT	NA
WDL-101-S	8/14/2002	0.25	m,p-Xylene	1.10 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	m,p-Xylene	**1.36**	NT	NA
WDL-101-S	8/14/2002	5	m,p-Xylene	**19.7**	NT	NA
WDL-101-S	8/14/2002	7	m,p-Xylene	**56.0**	NT	NA
WDL-102-S	8/14/2002	0.5	m,p-Xylene	0.884 U	NT	NA
WDL-102-S	8/14/2002	2.25	m,p-Xylene	**2.82**	NT	NA
WDL-102-S	8/14/2002	5.5	m,p-Xylene	0.525 U	NT	NA
WDL-102-S	8/14/2002	8	m,p-Xylene	**5.03**	NT	NA
WDL-102-S	8/14/2002	10	m,p-Xylene	0.545 U	NT	NA
WDL-103-S	8/15/2002	0.25	m,p-Xylene	1.28 U	NT	NA
WDL-103-S	8/15/2002	2.25	m,p-Xylene	0.527 U	NT	NA
WDL-103-S	8/15/2002	5	m,p-Xylene	0.762 U	NT	NA
WDL-103-S	8/15/2002	6.75	m,p-Xylene	**3.69**	NT	NA
WDL-103-S	8/15/2002	8.25	m,p-Xylene	**9.31**	NT	NA
WDL-104-S	8/15/2002	0.25	m,p-Xylene	0.537 U	NT	NA
WDL-104-S	8/15/2002	2.25	m,p-Xylene	0.473 U	NT	NA
WDL-104-S	8/15/2002	5	m,p-Xylene	**0.710**	NT	NA
WDL-104-S	8/15/2002	6.75	m,p-Xylene	0.549 U	NT	NA
WDL-201-S	2/12/2004	0.25	m,p-Xylene	**0.262**	0.0100 U	21.8
WDL-201-S	2/12/2004	6	m,p-Xylene	**35.6**	**0.629**	21.8
WDL-202-S	2/12/2004	4	m,p-Xylene	**5.93**	0.0100 U	21.8
WDL-203-S	2/13/2004	5.75	m,p-Xylene	**0.0515**	0.0100 U	21.8
WDL-204-S	2/12/2004	5	m,p-Xylene	**0.257**	0.0100 U	21.8
W001	11/21/2005	1	Methylene chloride	**0.0430 J**	0.0780 U	NA
W002	11/21/2005	5	Methylene chloride	5.90 U	0.0780 U	NA
W003	11/21/2005	7	Methylene chloride	0.0360 U	0.0780 U	NA
W004	11/21/2005	7	Methylene chloride	0.140 U	0.0780 U	NA
W005	11/21/2005	7	Methylene chloride	0.00280 U	0.0780 U	NA
W006	11/21/2005	6	Methylene chloride	0.210 U	0.0780 U	NA
W007	11/21/2005	4	Methylene chloride	0.220 U	0.0780 U	NA
W007	11/21/2005		Methylene chloride	0.000160 U	NT	NA
W008	11/20/2005	3	Methylene chloride	**0.00780 J**	0.0780 U	NA
W009	11/20/2005	5	Methylene chloride	**0.00960 J**	0.0780 U	NA
W010	11/20/2005	5	Methylene chloride	0.0470 U	0.0780 U	NA
W011	11/20/2005	3	Methylene chloride	0.0540 U	0.0780 U	NA
W011	11/20/2005	9	Methylene chloride	0.00280 U	0.0780 U	NA
W011	11/20/2005	18.5	Methylene chloride	**0.0150 J**	0.0780 U	NA
W011	11/20/2005		Methylene chloride	**0.000260 J**	NT	NA
W012	11/19/2005	6	Methylene chloride	**0.0220**	0.0780 U	NA
W013	11/19/2005	5	Methylene chloride	**0.0140 J**	0.0780 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W014	11/19/2005	5	Methylene chloride	**0.0260**	0.0780 U	NA
W015	11/19/2005	1	Methylene chloride	0.00810 U	0.0780 U	NA
W016	11/19/2005	5	Methylene chloride	**0.0390**	0.0780 U	NA
W016	11/19/2005		Methylene chloride	0.000160 U	NT	NA
W017	11/18/2005	3	Methylene chloride	**0.0170 J**	0.0780 U	NA
W017	11/18/2005	7	Methylene chloride	0.00290 U	0.0780 U	NA
W018	11/18/2005	6	Methylene chloride	**0.0200**	0.0780 U	NA
W019	11/18/2005	4	Methylene chloride	**0.0220**	0.0780 U	NA
W020	11/18/2005	5	Methylene chloride	**0.0180**	0.0780 U	NA
W020	11/18/2005		Methylene chloride	0.000160 U	NT	NA
WDL-101-S	8/14/2002	0.25	Methylene chloride	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Methylene chloride	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Methylene chloride	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Methylene chloride	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Methylene chloride	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Methylene chloride	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Methylene chloride	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Methylene chloride	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Methylene chloride	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Methylene chloride	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Methylene chloride	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Methylene chloride	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Methylene chloride	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Methylene chloride	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Methylene chloride	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Methylene chloride	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Methylene chloride	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Methylene chloride	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Methylene chloride	**0.136**	0.250 U	NA
WDL-201-S	2/12/2004	6	Methylene chloride	0.105 U	0.500 U	NA
WDL-202-S	2/12/2004	4	Methylene chloride	**0.0527**	0.250 U	NA
WDL-203-S	2/13/2004	5.75	Methylene chloride	**0.0291**	0.250 U	NA
WDL-204-S	2/12/2004	5	Methylene chloride	**0.0595**	0.250 U	NA
W001	11/21/2005	1	Naphthalene	**0.0940 J**	0.0350 U	3.53E+01
W002	11/21/2005	5	Naphthalene	**9.10 J**	0.0350 U	3.53E+01
W003	11/21/2005	7	Naphthalene	**0.0810 J**	0.0350 U	3.53E+01
W004	11/21/2005	7	Naphthalene	**0.300 J**	0.0350 U	3.53E+01
W005	11/21/2005	7	Naphthalene	**0.0210 J**	0.0350 U	3.53E+01
W006	11/21/2005	6	Naphthalene	**0.690 J**	0.0350 U	3.53E+01
W007	11/21/2005	4	Naphthalene	**0.540 J**	0.0350 U	3.53E+01
W007	11/21/2005		Naphthalene	0.0000710 U	NT	NA
W008	11/20/2005	3	Naphthalene	**0.110 J**	0.0350 U	3.53E+01
W009	11/20/2005	5	Naphthalene	**0.0660 J**	0.0350 U	3.53E+01
W010	11/20/2005	5	Naphthalene	**0.550 J**	0.0350 U	3.53E+01
W011	11/20/2005	3	Naphthalene	**0.400 J**	0.0350 U	3.53E+01
W011	11/20/2005	9	Naphthalene	0.00120 U	0.0350 U	3.53E+01
W011	11/20/2005	18.5	Naphthalene	0.00210 U	0.0350 U	3.53E+01
W011	11/20/2005		Naphthalene	0.0000710 U	NT	NA
W012	11/19/2005	6	Naphthalene	**0.200**	0.0350 U	3.53E+01
W013	11/19/2005	5	Naphthalene	**0.350**	0.0350 U	3.53E+01
W014	11/19/2005	5	Naphthalene	**0.160**	0.0350 U	3.53E+01
W015	11/19/2005	1	Naphthalene	**0.140**	0.0350 U	3.53E+01
W016	11/19/2005	5	Naphthalene	**0.150**	0.0350 U	3.53E+01
W016	11/19/2005		Naphthalene	0.0000710 U	NT	NA
W017	11/18/2005	3	Naphthalene	**0.0410 J**	0.0350 U	3.53E+01
W017	11/18/2005	7	Naphthalene	0.0100 U	0.0350 U	3.53E+01

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W018	11/18/2005	6	Naphthalene	**0.130**	0.0350 U	3.53E+01
W019	11/18/2005	4	Naphthalene	**0.180**	0.0350 U	3.53E+01
W020	11/18/2005	5	Naphthalene	0.0190 U	0.0350 U	3.53E+01
W020	11/18/2005		Naphthalene	0.0000710 U	NT	NA
WDL-101-S	8/14/2002	0.25	Naphthalene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Naphthalene	**0.860**	NT	NA
WDL-101-S	8/14/2002	5	Naphthalene	**0.660**	NT	NA
WDL-101-S	8/14/2002	7	Naphthalene	**1.03**	NT	NA
WDL-102-S	8/14/2002	0.5	Naphthalene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Naphthalene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Naphthalene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Naphthalene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Naphthalene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Naphthalene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Naphthalene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Naphthalene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Naphthalene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Naphthalene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Naphthalene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Naphthalene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Naphthalene	**0.346**	NT	NA
WDL-104-S	8/15/2002	6.75	Naphthalene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Naphthalene	0.0446 U	0.0100 U	35.3
WDL-201-S	2/12/2004	6	Naphthalene	0.141 U	0.0200 U	35.3
WDL-202-S	2/12/2004	4	Naphthalene	**0.0697**	0.0100 U	35.3
WDL-203-S	2/13/2004	5.75	Naphthalene	**0.0898**	0.0100 U	35.3
WDL-204-S	2/12/2004	5	Naphthalene	**0.151**	0.0100 U	35.3
W001	11/21/2005	1	n-Butylbenzene	0.0110 U	0.0460 U	1.03E+01
W002	11/21/2005	5	n-Butylbenzene	11.0 U	0.0460 U	1.03E+01
W003	11/21/2005	7	n-Butylbenzene	0.0640 U	0.0460 U	1.03E+01
W004	11/21/2005	7	n-Butylbenzene	0.240 U	0.0460 U	1.03E+01
W005	11/21/2005	7	n-Butylbenzene	0.00500 U	0.0460 U	1.03E+01
W006	11/21/2005	6	n-Butylbenzene	0.370 U	0.0460 U	1.03E+01
W007	11/21/2005	4	n-Butylbenzene	0.400 U	0.0460 U	1.03E+01
W007	11/21/2005		n-Butylbenzene	0.0000930 U	NT	NA
W008	11/20/2005	3	n-Butylbenzene	0.00990 U	0.0460 U	1.03E+01
W009	11/20/2005	5	n-Butylbenzene	0.0110 U	0.0460 U	1.03E+01
W010	11/20/2005	5	n-Butylbenzene	0.0830 U	0.0460 U	1.03E+01
W011	11/20/2005	3	n-Butylbenzene	0.0960 U	0.0460 U	1.03E+01
W011	11/20/2005	9	n-Butylbenzene	0.00500 U	0.0460 U	1.03E+01
W011	11/20/2005	18.5	n-Butylbenzene	0.00870 U	0.0460 U	1.03E+01
W011	11/20/2005		n-Butylbenzene	0.0000930 U	NT	NA
W012	11/19/2005	6	n-Butylbenzene	0.00910 U	0.0460 U	1.03E+01
W013	11/19/2005	5	n-Butylbenzene	0.00900 U	0.0460 U	1.03E+01
W014	11/19/2005	5	n-Butylbenzene	**0.670**	0.0460 U	1.03E+01
W015	11/19/2005	1	n-Butylbenzene	0.0140 U	0.0460 U	1.03E+01
W016	11/19/2005	5	n-Butylbenzene	0.00970 U	0.0460 U	1.03E+01
W016	11/19/2005		n-Butylbenzene	0.0000930 U	NT	NA
W017	11/18/2005	3	n-Butylbenzene	0.0120 U	0.0460 U	1.03E+01
W017	11/18/2005	7	n-Butylbenzene	0.00520 U	0.0460 U	1.03E+01
W018	11/18/2005	6	n-Butylbenzene	0.00570 U	0.0460 U	1.03E+01
W019	11/18/2005	4	n-Butylbenzene	0.00920 U	0.0460 U	1.03E+01
W020	11/18/2005	5	n-Butylbenzene	0.00890 U	0.0460 U	1.03E+01
W020	11/18/2005		n-Butylbenzene	0.0000930 U	NT	NA
WDL-101-S	8/14/2002	0.25	n-Butylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	n-Butylbenzene	0.397 UJ	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	5	n-Butylbenzene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	n-Butylbenzene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	n-Butylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	n-Butylbenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	n-Butylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	n-Butylbenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	n-Butylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	n-Butylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	n-Butylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	n-Butylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	n-Butylbenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	n-Butylbenzene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	n-Butylbenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	n-Butylbenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	n-Butylbenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	n-Butylbenzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	n-Butylbenzene	**0.0759**	0.0100 U	10.3
WDL-201-S	2/12/2004	6	n-Butylbenzene	**0.230**	0.0200 U	10.3
WDL-202-S	2/12/2004	4	n-Butylbenzene	0.0113 U	0.0100 U	10.3
WDL-203-S	2/13/2004	5.75	n-Butylbenzene	**0.0291**	0.0100 U	10.3
WDL-204-S	2/12/2004	5	n-Butylbenzene	**0.310**	0.0100 U	10.3
W001	11/21/2005	1	n-Propylbenzene	**0.480 J**	0.0460 U	1.77E+01
W002	11/21/2005	5	n-Propylbenzene	**180**	**0.0500 J**	1.77E+01
W003	11/21/2005	7	n-Propylbenzene	**0.950**	0.0460 U	1.77E+01
W004	11/21/2005	7	n-Propylbenzene	**2.20**	0.0460 U	1.77E+01
W005	11/21/2005	7	n-Propylbenzene	**0.0570**	0.0460 U	1.77E+01
W006	11/21/2005	6	n-Propylbenzene	**8.70**	0.0460 U	1.77E+01
W007	11/21/2005	4	n-Propylbenzene	**3.70**	0.0460 U	1.77E+01
W007	11/21/2005		n-Propylbenzene	0.0000930 U	NT	NA
W008	11/20/2005	3	n-Propylbenzene	**0.180**	0.0460 U	1.77E+01
W009	11/20/2005	5	n-Propylbenzene	**0.0750 J**	0.0460 U	1.77E+01
W010	11/20/2005	5	n-Propylbenzene	**1.30**	0.0460 U	1.77E+01
W011	11/20/2005	3	n-Propylbenzene	**1.40**	0.0460 U	1.77E+01
W011	11/20/2005	9	n-Propylbenzene	0.00310 U	0.0460 U	1.77E+01
W011	11/20/2005	18.5	n-Propylbenzene	0.00540 U	0.0460 U	1.77E+01
W011	11/20/2005		n-Propylbenzene	0.0000930 U	NT	NA
W012	11/19/2005	6	n-Propylbenzene	**0.590**	0.0460 U	1.77E+01
W013	11/19/2005	5	n-Propylbenzene	**3.00**	0.0460 U	1.77E+01
W014	11/19/2005	5	n-Propylbenzene	**0.590**	0.0460 U	1.77E+01
W015	11/19/2005	1	n-Propylbenzene	**0.690**	0.0460 U	1.77E+01
W016	11/19/2005	5	n-Propylbenzene	**0.200**	0.0460 U	1.77E+01
W016	11/19/2005		n-Propylbenzene	0.0000930 U	NT	NA
W017	11/18/2005	3	n-Propylbenzene	**0.0640 J**	0.0460 U	1.77E+01
W017	11/18/2005	7	n-Propylbenzene	**0.00550 J**	0.0460 U	1.77E+01
W018	11/18/2005	6	n-Propylbenzene	**1.60**	0.0460 U	1.77E+01
W019	11/18/2005	4	n-Propylbenzene	**0.200**	0.0460 U	1.77E+01
W020	11/18/2005	5	n-Propylbenzene	**0.0450 J**	0.0460 U	1.77E+01
W020	11/18/2005		n-Propylbenzene	0.0000930 U	NT	NA
WDL-101-S	8/14/2002	0.25	n-Propylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	n-Propylbenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	n-Propylbenzene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	n-Propylbenzene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	n-Propylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	n-Propylbenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	n-Propylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	n-Propylbenzene	0.365 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	10	n-Propylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	n-Propylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	n-Propylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	n-Propylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	n-Propylbenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	n-Propylbenzene	**1.29**	NT	NA
WDL-104-S	8/15/2002	0.25	n-Propylbenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	n-Propylbenzene	**0.433**	NT	NA
WDL-104-S	8/15/2002	5	n-Propylbenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	n-Propylbenzene	**0.386**	NT	NA
WDL-201-S	2/12/2004	0.25	n-Propylbenzene	**0.0474**	0.0100 U	17.7
WDL-201-S	2/12/2004	6	n-Propylbenzene	**2.65**	**0.0328**	17.7
WDL-202-S	2/12/2004	4	n-Propylbenzene	**0.176**	0.0100 U	17.7
WDL-203-S	2/13/2004	5.75	n-Propylbenzene	**0.190**	0.0100 U	17.7
WDL-204-S	2/12/2004	5	n-Propylbenzene	**0.404**	0.0100 U	17.7
W001	11/21/2005	1	o-Xylene	**0.400**	0.0250 U	2.18E+01
W002	11/21/2005	5	o-Xylene	**200**	**0.650**	2.18E+01
W003	11/21/2005	7	o-Xylene	**0.280 J**	0.0250 U	2.18E+01
W004	11/21/2005	7	o-Xylene	**1.50 J**	**0.0440 J**	2.18E+01
W005	11/21/2005	7	o-Xylene	**0.0350 J**	0.0250 U	2.18E+01
W006	11/21/2005	6	o-Xylene	**16.0**	**0.200 J**	2.18E+01
W007	11/21/2005	4	o-Xylene	**2.60 J**	**0.0400 J**	2.18E+01
W007	11/21/2005		o-Xylene	0.0000500 U	NT	NA
W008	11/20/2005	3	o-Xylene	**0.230**	0.0250 U	2.18E+01
W009	11/20/2005	5	o-Xylene	**0.120**	0.0250 U	2.18E+01
W010	11/20/2005	5	o-Xylene	**1.40**	**0.0270 J**	2.18E+01
W011	11/20/2005	3	o-Xylene	**2.50**	**0.0310 J**	2.18E+01
W011	11/20/2005	9	o-Xylene	**0.00390 J**	0.0250 U	2.18E+01
W011	11/20/2005	18.5	o-Xylene	**0.00840 J**	0.0250 U	2.18E+01
W011	11/20/2005		o-Xylene	0.0000500 U	NT	NA
W012	11/19/2005	6	o-Xylene	**1.70**	**0.0330 J**	2.18E+01
W013	11/19/2005	5	o-Xylene	**2.60**	**0.0370 J**	2.18E+01
W014	11/19/2005	5	o-Xylene	**0.300**	0.0250 U	2.18E+01
W015	11/19/2005	1	o-Xylene	**0.530**	0.0250 U	2.18E+01
W016	11/19/2005	5	o-Xylene	**0.270**	0.0250 U	2.18E+01
W016	11/19/2005		o-Xylene	0.0000500 U	NT	NA
W017	11/18/2005	3	o-Xylene	**0.280**	0.0250 U	2.18E+01
W017	11/18/2005	7	o-Xylene	**0.00310 J**	0.0250 U	2.18E+01
W018	11/18/2005	6	o-Xylene	**0.330**	0.0250 U	2.18E+01
W019	11/18/2005	4	o-Xylene	**0.260**	0.0250 U	2.18E+01
W020	11/18/2005	5	o-Xylene	**0.0180 J**	0.0250 U	2.18E+01
W020	11/18/2005		o-Xylene	0.0000500 U	NT	NA
WDL-101-S	8/14/2002	0.25	o-Xylene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	o-Xylene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	o-Xylene	**3.46**	NT	NA
WDL-101-S	8/14/2002	7	o-Xylene	**8.83**	NT	NA
WDL-102-S	8/14/2002	0.5	o-Xylene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	o-Xylene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	o-Xylene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	o-Xylene	**1.20**	NT	NA
WDL-102-S	8/14/2002	10	o-Xylene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	o-Xylene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	o-Xylene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	o-Xylene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	o-Xylene	**1.04**	NT	NA
WDL-103-S	8/15/2002	8.25	o-Xylene	**2.55**	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	0.25	o-Xylene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	o-Xylene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	o-Xylene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	o-Xylene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	o-Xylene	**0.0474**	0.0100 U	21.8
WDL-201-S	2/12/2004	6	o-Xylene	**8.53**	**0.166**	21.8
WDL-202-S	2/12/2004	4	o-Xylene	**1.17**	0.0100 U	21.8
WDL-203-S	2/13/2004	5.75	o-Xylene	**0.0291**	0.0100 U	21.8
WDL-204-S	2/12/2004	5	o-Xylene	**0.105**	0.0100 U	21.8
WDL-201-S	2/12/2004	0.25	p-Isopropyltoluene	0.0306 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	p-Isopropyltoluene	0.0968 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	p-Isopropyltoluene	0.00968 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	p-Isopropyltoluene	0.00968 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	p-Isopropyltoluene	**0.0547**	0.0100 U	NA
W001	11/21/2005	1	sec-Butylbenzene	**0.0310 J**	0.0300 U	NA
W002	11/21/2005	5	sec-Butylbenzene	**10.0 J**	0.0300 U	NA
W003	11/21/2005	7	sec-Butylbenzene	**0.0860 J**	0.0300 U	NA
W004	11/21/2005	7	sec-Butylbenzene	0.170 U	0.0300 U	NA
W005	11/21/2005	7	sec-Butylbenzene	**0.00510 J**	0.0300 U	NA
W006	11/21/2005	6	sec-Butylbenzene	**0.490 J**	0.0300 U	NA
W007	11/21/2005	4	sec-Butylbenzene	0.280 U	0.0300 U	NA
W007	11/21/2005		sec-Butylbenzene	0.0000610 U	NT	NA
W008	11/20/2005	3	sec-Butylbenzene	**0.0870 J**	0.0300 U	NA
W009	11/20/2005	5	sec-Butylbenzene	**0.0270 J**	0.0300 U	NA
W010	11/20/2005	5	sec-Butylbenzene	**0.260 J**	0.0300 U	NA
W011	11/20/2005	3	sec-Butylbenzene	**0.120 J**	0.0300 U	NA
W011	11/20/2005	9	sec-Butylbenzene	0.00350 U	0.0300 U	NA
W011	11/20/2005	18.5	sec-Butylbenzene	0.00600 U	0.0300 U	NA
W011	11/20/2005		sec-Butylbenzene	0.0000610 U	NT	NA
W012	11/19/2005	6	sec-Butylbenzene	**0.0920 J**	0.0300 U	NA
W013	11/19/2005	5	sec-Butylbenzene	**0.160 J**	0.0300 U	NA
W014	11/19/2005	5	sec-Butylbenzene	**0.110 J**	0.0300 U	NA
W015	11/19/2005	1	sec-Butylbenzene	**0.0850 J**	0.0300 U	NA
W016	11/19/2005	5	sec-Butylbenzene	**0.130 J**	0.0300 U	NA
W016	11/19/2005		sec-Butylbenzene	0.0000610 U	NT	NA
W017	11/18/2005	3	sec-Butylbenzene	**0.0220 J**	0.0300 U	NA
W017	11/18/2005	7	sec-Butylbenzene	0.00360 U	0.0300 U	NA
W018	11/18/2005	6	sec-Butylbenzene	**0.0750 J**	0.0300 U	NA
W019	11/18/2005	4	sec-Butylbenzene	**0.0900 J**	0.0300 U	NA
W020	11/18/2005	5	sec-Butylbenzene	**0.00650 J**	0.0300 U	NA
W020	11/18/2005		sec-Butylbenzene	0.0000610 U	NT	NA
WDL-101-S	8/14/2002	0.25	sec-Butylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	sec-Butylbenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	sec-Butylbenzene	**1.37**	NT	NA
WDL-101-S	8/14/2002	7	sec-Butylbenzene	**2.08**	NT	NA
WDL-102-S	8/14/2002	0.5	sec-Butylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	sec-Butylbenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	sec-Butylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	sec-Butylbenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	sec-Butylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	sec-Butylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	sec-Butylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	sec-Butylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	sec-Butylbenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	sec-Butylbenzene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	sec-Butylbenzene	0.268 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	2.25	sec-Butylbenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	sec-Butylbenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	sec-Butylbenzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	sec-Butylbenzene	0.0236 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	sec-Butylbenzene	0.0745 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	sec-Butylbenzene	0.00745 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	sec-Butylbenzene	0.00745 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	sec-Butylbenzene	**0.0933**	0.0100 U	NA
W001	11/21/2005	1	Styrene	0.00200 U	0.0350 U	NA
W002	11/21/2005	5	Styrene	1.90 U	0.0350 U	NA
W003	11/21/2005	7	Styrene	0.0120 U	0.0350 U	NA
W004	11/21/2005	7	Styrene	0.0430 U	0.0350 U	NA
W005	11/21/2005	7	Styrene	0.000890 U	0.0350 U	NA
W006	11/21/2005	6	Styrene	0.0660 U	0.0350 U	NA
W007	11/21/2005	4	Styrene	0.0710 U	0.0350 U	NA
W007	11/21/2005		Styrene	0.0000700 U	NT	NA
W008	11/20/2005	3	Styrene	0.00180 U	0.0350 U	NA
W009	11/20/2005	5	Styrene	0.00200 U	0.0350 U	NA
W010	11/20/2005	5	Styrene	0.0150 U	0.0350 U	NA
W011	11/20/2005	3	Styrene	0.0170 U	0.0350 U	NA
W011	11/20/2005	9	Styrene	0.000890 U	0.0350 U	NA
W011	11/20/2005	18.5	Styrene	0.00160 U	0.0350 U	NA
W011	11/20/2005		Styrene	0.0000700 U	NT	NA
W012	11/19/2005	6	Styrene	0.00160 U	0.0350 U	NA
W013	11/19/2005	5	Styrene	0.00160 U	0.0350 U	NA
W014	11/19/2005	5	Styrene	0.00150 U	0.0350 U	NA
W015	11/19/2005	1	Styrene	0.00260 U	0.0350 U	NA
W016	11/19/2005	5	Styrene	0.00170 U	0.0350 U	NA
W016	11/19/2005		Styrene	0.0000700 U	NT	NA
W017	11/18/2005	3	Styrene	0.00210 U	0.0350 U	NA
W017	11/18/2005	7	Styrene	0.000930 U	0.0350 U	NA
W018	11/18/2005	6	Styrene	0.00100 U	0.0350 U	NA
W019	11/18/2005	4	Styrene	0.00160 U	0.0350 U	NA
W020	11/18/2005	5	Styrene	0.00160 U	0.0350 U	NA
W020	11/18/2005		Styrene	0.0000700 U	NT	NA
WDL-101-S	8/14/2002	0.25	Styrene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Styrene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Styrene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Styrene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Styrene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Styrene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Styrene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Styrene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Styrene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Styrene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Styrene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Styrene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Styrene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Styrene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Styrene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Styrene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Styrene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Styrene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Styrene	0.0281 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Styrene	0.0889 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Styrene	0.00889 U	0.0100 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-203-S	2/13/2004	5.75	Styrene	0.00889 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Styrene	0.00889 U	0.0100 U	NA
W001	11/21/2005	1	tert-Butylbenzene	0.00890 U	0.0340 U	NA
W002	11/21/2005	5	tert-Butylbenzene	8.20 U	0.0340 U	NA
W003	11/21/2005	7	tert-Butylbenzene	0.0500 U	0.0340 U	NA
W004	11/21/2005	7	tert-Butylbenzene	0.190 U	0.0340 U	NA
W005	11/21/2005	7	tert-Butylbenzene	0.00390 U	0.0340 U	NA
W006	11/21/2005	6	tert-Butylbenzene	0.290 U	0.0340 U	NA
W007	11/21/2005	4	tert-Butylbenzene	0.310 U	0.0340 U	NA
W007	11/21/2005		tert-Butylbenzene	0.0000680 U	NT	NA
W008	11/20/2005	3	tert-Butylbenzene	0.00770 U	0.0340 U	NA
W009	11/20/2005	5	tert-Butylbenzene	0.00880 U	0.0340 U	NA
W010	11/20/2005	5	tert-Butylbenzene	0.0650 U	0.0340 U	NA
W011	11/20/2005	3	tert-Butylbenzene	0.0750 U	0.0340 U	NA
W011	11/20/2005	9	tert-Butylbenzene	0.00390 U	0.0340 U	NA
W011	11/20/2005	18.5	tert-Butylbenzene	0.00680 U	0.0340 U	NA
W011	11/20/2005		tert-Butylbenzene	0.0000680 U	NT	NA
W012	11/19/2005	6	tert-Butylbenzene	0.00710 U	0.0340 U	NA
W013	11/19/2005	5	tert-Butylbenzene	0.00700 U	0.0340 U	NA
W014	11/19/2005	5	tert-Butylbenzene	0.00670 U	0.0340 U	NA
W015	11/19/2005	1	tert-Butylbenzene	0.0110 U	0.0340 U	NA
W016	11/19/2005	5	tert-Butylbenzene	0.00760 U	0.0340 U	NA
W016	11/19/2005		tert-Butylbenzene	0.0000680 U	NT	NA
W017	11/18/2005	3	tert-Butylbenzene	0.00910 U	0.0340 U	NA
W017	11/18/2005	7	tert-Butylbenzene	0.00410 U	0.0340 U	NA
W018	11/18/2005	6	tert-Butylbenzene	0.00450 U	0.0340 U	NA
W019	11/18/2005	4	tert-Butylbenzene	0.00720 U	0.0340 U	NA
W020	11/18/2005	5	tert-Butylbenzene	0.00690 U	0.0340 U	NA
W020	11/18/2005		tert-Butylbenzene	0.0000680 U	NT	NA
WDL-101-S	8/14/2002	0.25	tert-Butylbenzene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	tert-Butylbenzene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	tert-Butylbenzene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	tert-Butylbenzene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	tert-Butylbenzene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	tert-Butylbenzene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	tert-Butylbenzene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	tert-Butylbenzene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	tert-Butylbenzene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	tert-Butylbenzene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	tert-Butylbenzene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	tert-Butylbenzene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	tert-Butylbenzene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	tert-Butylbenzene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	tert-Butylbenzene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	tert-Butylbenzene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	tert-Butylbenzene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	tert-Butylbenzene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	tert-Butylbenzene	0.0481 U	0.0100 UJ	NA
WDL-201-S	2/12/2004	6	tert-Butylbenzene	0.152 U	0.0200 U	NA
WDL-202-S	hod detection li	4	tert-Butylbenzene	0.0152 U	0.0100 UJ	NA
WDL-203-S	2/13/2004	5.75	tert-Butylbenzene	0.0152 U	0.0100 UJ	NA
WDL-204-S	2/12/2004	5	tert-Butylbenzene	0.0152 U	0.0100 UJ	NA
W001	11/21/2005	1	Tetrachloroethene	0.00450 U	0.0720 U	NA
W002	11/21/2005	5	Tetrachloroethene	4.20 U	0.0720 U	NA
W003	11/21/2005	7	Tetrachloroethene	0.0260 U	0.0720 U	NA
W004	11/21/2005	7	Tetrachloroethene	0.0960 U	0.0720 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W005	11/21/2005	7	Tetrachloroethene	0.00200 U	0.0720 U	NA
W006	11/21/2005	6	Tetrachloroethene	0.150 U	0.0720 U	NA
W007	11/21/2005	4	Tetrachloroethene	0.160 U	0.0720 U	NA
W007	11/21/2005		Tetrachloroethene	0.000140 U	NT	NA
W008	11/20/2005	3	Tetrachloroethene	0.00390 UJ	0.0720 U	NA
W009	11/20/2005	5	Tetrachloroethene	0.00450 U	0.0720 U	NA
W010	11/20/2005	5	Tetrachloroethene	0.0330 U	0.0720 U	NA
W011	11/20/2005	3	Tetrachloroethene	0.0380 U	0.0720 U	NA
W011	11/20/2005	9	Tetrachloroethene	0.00200 U	0.0720 U	NA
W011	11/20/2005	18.5	Tetrachloroethene	0.00340 U	0.0720 U	NA
W011	11/20/2005		Tetrachloroethene	0.000140 U	NT	NA
W012	11/19/2005	6	Tetrachloroethene	**0.0120 J**	0.0720 U	NA
W013	11/19/2005	5	Tetrachloroethene	**0.0310**	0.0720 U	NA
W014	11/19/2005	5	Tetrachloroethene	**0.00770 J**	0.0720 U	NA
W015	11/19/2005	1	Tetrachloroethene	0.00570 U	0.0720 U	NA
W016	11/19/2005	5	Tetrachloroethene	**0.00460 J**	0.0720 U	NA
W016	11/19/2005		Tetrachloroethene	0.000140 U	NT	NA
W017	11/18/2005	3	Tetrachloroethene	0.00460 U	0.0720 U	NA
W017	11/18/2005	7	Tetrachloroethene	0.00210 U	0.0720 U	NA
W018	11/18/2005	6	Tetrachloroethene	**0.00840 J**	0.0720 U	NA
W019	11/18/2005	4	Tetrachloroethene	0.00370 U	0.0720 U	NA
W020	11/18/2005	5	Tetrachloroethene	0.00350 U	0.0720 U	NA
W020	11/18/2005		Tetrachloroethene	0.000140 U	NT	NA
WDL-101-S	8/14/2002	0.25	Tetrachloroethene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Tetrachloroethene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Tetrachloroethene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Tetrachloroethene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Tetrachloroethene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Tetrachloroethene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Tetrachloroethene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Tetrachloroethene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Tetrachloroethene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Tetrachloroethene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Tetrachloroethene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Tetrachloroethene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Tetrachloroethene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Tetrachloroethene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Tetrachloroethene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Tetrachloroethene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Tetrachloroethene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Tetrachloroethene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Tetrachloroethene	0.0534 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Tetrachloroethene	0.169 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Tetrachloroethene	0.0169 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Tetrachloroethene	0.0169 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Tetrachloroethene	0.0169 U	0.0100 U	NA
W001	11/21/2005	1	Toluene	**0.0340 J**	0.0640 U	2.05E+02
W002	11/21/2005	5	Toluene	**6.00 J**	0.0640 U	2.05E+02
W003	11/21/2005	7	Toluene	**0.0460 J**	0.0640 U	2.05E+02
W004	11/21/2005	7	Toluene	**0.160 J**	0.0640 U	2.05E+02
W005	11/21/2005	7	Toluene	0.00630 U	0.0640 U	2.05E+02
W006	11/21/2005	6	Toluene	**1.20 J**	0.0640 U	2.05E+02
W007	11/21/2005	4	Toluene	**0.560 J**	0.0640 U	2.05E+02
W007	11/21/2005		Toluene	0.000130 U	NT	NA
W008	11/20/2005	3	Toluene	**0.0570 J**	0.0640 U	2.05E+02
W009	11/20/2005	5	Toluene	**0.0580 J**	0.0640 U	2.05E+02

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W010	11/20/2005	5	Toluene	**0.370 J**	0.0640 U	2.05E+02
W011	11/20/2005	3	Toluene	**0.550 J**	0.0640 U	2.05E+02
W011	11/20/2005	9	Toluene	0.00290 U	0.0640 U	2.05E+02
W011	11/20/2005	18.5	Toluene	0.00680 U	0.0640 U	2.05E+02
W011	11/20/2005		Toluene	0.000130 U	NT	NA
W012	11/19/2005	6	Toluene	**0.210**	0.0640 U	2.05E+02
W013	11/19/2005	5	Toluene	**0.580**	0.0640 U	2.05E+02
W014	11/19/2005	5	Toluene	**0.240**	0.0640 U	2.05E+02
W015	11/19/2005	1	Toluene	**0.190**	0.0640 U	2.05E+02
W016	11/19/2005	5	Toluene	**0.260**	0.0640 U	2.05E+02
W016	11/19/2005		Toluene	0.000130 U	NT	NA
W017	11/18/2005	3	Toluene	**0.0680 J**	0.0640 U	2.05E+02
W017	11/18/2005	7	Toluene	0.00350 U	0.0640 U	2.05E+02
W018	11/18/2005	6	Toluene	**0.160**	0.0640 U	2.05E+02
W019	11/18/2005	4	Toluene	**0.340**	0.0640 U	2.05E+02
W020	11/18/2005	5	Toluene	**0.0190 J**	0.0640 U	2.05E+02
W020	11/18/2005		Toluene	0.000130 U	NT	NA
WDL-101-S	8/14/2002	0.25	Toluene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Toluene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Toluene	**5.12**	NT	NA
WDL-101-S	8/14/2002	7	Toluene	**2.18**	NT	NA
WDL-102-S	8/14/2002	0.5	Toluene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Toluene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Toluene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Toluene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Toluene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Toluene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Toluene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Toluene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Toluene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Toluene	**0.418**	NT	NA
WDL-104-S	8/15/2002	0.25	Toluene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Toluene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Toluene	**0.504**	NT	NA
WDL-104-S	8/15/2002	6.75	Toluene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Toluene	0.0199 U	0.0100 U	205
WDL-201-S	2/12/2004	6	Toluene	**0.300**	0.0200 U	205
WDL-202-S	2/12/2004	4	Toluene	**0.114**	0.0100 U	205
WDL-203-S	2/13/2004	5.75	Toluene	**0.299**	0.0100 U	205
WDL-204-S	2/12/2004	5	Toluene	**0.190**	0.0100 U	205
W001	11/21/2005	1	trans-1,2-Dichloroethene	0.00470 U	0.0730 U	NA
W002	11/21/2005	5	trans-1,2-Dichloroethene	4.30 U	0.0730 U	NA
W003	11/21/2005	7	trans-1,2-Dichloroethene	0.0270 U	0.0730 U	NA
W004	11/21/2005	7	trans-1,2-Dichloroethene	0.100 U	0.0730 U	NA
W005	11/21/2005	7	trans-1,2-Dichloroethene	0.00210 U	0.0730 U	NA
W006	11/21/2005	6	trans-1,2-Dichloroethene	0.150 U	0.0730 U	NA
W007	11/21/2005	4	trans-1,2-Dichloroethene	0.170 U	0.0730 U	NA
W007	11/21/2005		trans-1,2-Dichloroethene	0.000150 U	NT	NA
W008	11/20/2005	3	trans-1,2-Dichloroethene	0.00410 U	0.0730 U	NA
W009	11/20/2005	5	trans-1,2-Dichloroethene	0.00470 U	0.0730 U	NA
W010	11/20/2005	5	trans-1,2-Dichloroethene	0.0340 U	0.0730 U	NA
W011	11/20/2005	3	trans-1,2-Dichloroethene	0.0400 U	0.0730 U	NA
W011	11/20/2005	9	trans-1,2-Dichloroethene	0.00210 U	0.0730 U	NA
W011	11/20/2005	18.5	trans-1,2-Dichloroethene	0.00360 U	0.0730 U	NA
W011	11/20/2005		trans-1,2-Dichloroethene	0.000150 U	NT	NA
W012	11/19/2005	6	trans-1,2-Dichloroethene	0.00370 U	0.0730 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W013	11/19/2005	5	trans-1,2-Dichloroethene	0.00370 U	0.0730 U	NA
W014	11/19/2005	5	trans-1,2-Dichloroethene	0.00350 U	0.0730 U	NA
W015	11/19/2005	1	trans-1,2-Dichloroethene	0.00600 U	0.0730 U	NA
W016	11/19/2005	5	trans-1,2-Dichloroethene	0.00400 U	0.0730 U	NA
W016	11/19/2005		trans-1,2-Dichloroethene	0.000150 U	NT	NA
W017	11/18/2005	3	trans-1,2-Dichloroethene	0.00480 U	0.0730 U	NA
W017	11/18/2005	7	trans-1,2-Dichloroethene	0.00220 U	0.0730 U	NA
W018	11/18/2005	6	trans-1,2-Dichloroethene	0.00240 U	0.0730 U	NA
W019	11/18/2005	4	trans-1,2-Dichloroethene	0.00380 U	0.0730 U	NA
W020	11/18/2005	5	trans-1,2-Dichloroethene	0.00370 U	0.0730 U	NA
W020	11/18/2005		trans-1,2-Dichloroethene	0.000150 U	NT	NA
WDL-101-S	8/14/2002	0.25	trans-1,2-Dichloroethene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	trans-1,2-Dichloroethene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	trans-1,2-Dichloroethene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	trans-1,2-Dichloroethene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	trans-1,2-Dichloroethene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	trans-1,2-Dichloroethene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	trans-1,2-Dichloroethene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	trans-1,2-Dichloroethene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	trans-1,2-Dichloroethene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	trans-1,2-Dichloroethene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	trans-1,2-Dichloroethene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	trans-1,2-Dichloroethene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	trans-1,2-Dichloroethene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	trans-1,2-Dichloroethene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	trans-1,2-Dichloroethene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	trans-1,2-Dichloroethene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	trans-1,2-Dichloroethene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	trans-1,2-Dichloroethene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	trans-1,2-Dichloroethene	0.0284 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	trans-1,2-Dichloroethene	0.0897 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	trans-1,2-Dichloroethene	0.00897 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	trans-1,2-Dichloroethene	0.00897 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	trans-1,2-Dichloroethene	0.00897 U	0.0100 U	NA
W001	11/21/2005	1	trans-1,3-Dichloropropene	0.00800 U	0.0470 U	NA
W002	11/21/2005	5	trans-1,3-Dichloropropene	7.40 U	0.0470 U	NA
W003	11/21/2005	7	trans-1,3-Dichloropropene	0.0450 U	0.0470 U	NA
W004	11/21/2005	7	trans-1,3-Dichloropropene	0.170 U	0.0470 U	NA
W005	11/21/2005	7	trans-1,3-Dichloropropene	0.00350 U	0.0470 U	NA
W006	11/21/2005	6	trans-1,3-Dichloropropene	0.260 U	0.0470 U	NA
W007	11/21/2005	4	trans-1,3-Dichloropropene	0.280 U	0.0470 U	NA
W007	11/21/2005		trans-1,3-Dichloropropene	0.0000930 U	NT	NA
W008	11/20/2005	3	trans-1,3-Dichloropropene	0.00690 UJ	0.0470 U	NA
W009	11/20/2005	5	trans-1,3-Dichloropropene	0.00790 U	0.0470 U	NA
W010	11/20/2005	5	trans-1,3-Dichloropropene	0.0580 U	0.0470 U	NA
W011	11/20/2005	3	trans-1,3-Dichloropropene	0.0680 U	0.0470 U	NA
W011	11/20/2005	9	trans-1,3-Dichloropropene	0.00350 U	0.0470 U	NA
W011	11/20/2005	18.5	trans-1,3-Dichloropropene	0.00610 U	0.0470 U	NA
W011	11/20/2005		trans-1,3-Dichloropropene	0.0000930 U	NT	NA
W012	11/19/2005	6	trans-1,3-Dichloropropene	0.00630 U	0.0470 U	NA
W013	11/19/2005	5	trans-1,3-Dichloropropene	0.00630 U	0.0470 U	NA
W014	11/19/2005	5	trans-1,3-Dichloropropene	0.00600 U	0.0470 U	NA
W015	11/19/2005	1	trans-1,3-Dichloropropene	0.0100 U	0.0470 U	NA
W016	11/19/2005	5	trans-1,3-Dichloropropene	0.00680 U	0.0470 U	NA
W016	11/19/2005		trans-1,3-Dichloropropene	0.0000930 U	NT	NA
W017	11/18/2005	3	trans-1,3-Dichloropropene	0.00820 U	0.0470 U	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W017	11/18/2005	7	trans-1,3-Dichloropropene	0.00360 U	0.0470 U	NA
W018	11/18/2005	6	trans-1,3-Dichloropropene	0.00400 U	0.0470 U	NA
W019	11/18/2005	4	trans-1,3-Dichloropropene	0.00650 U	0.0470 U	NA
W020	11/18/2005	5	trans-1,3-Dichloropropene	0.00620 U	0.0470 U	NA
W020	11/18/2005		trans-1,3-Dichloropropene	0.0000930 U	NT	NA
WDL-101-S	8/14/2002	0.25	trans-1,3-Dichloropropene	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	trans-1,3-Dichloropropene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	trans-1,3-Dichloropropene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	trans-1,3-Dichloropropene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	trans-1,3-Dichloropropene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	trans-1,3-Dichloropropene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	trans-1,3-Dichloropropene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	trans-1,3-Dichloropropene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	trans-1,3-Dichloropropene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	trans-1,3-Dichloropropene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	trans-1,3-Dichloropropene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	trans-1,3-Dichloropropene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	trans-1,3-Dichloropropene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	trans-1,3-Dichloropropene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	trans-1,3-Dichloropropene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	trans-1,3-Dichloropropene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	trans-1,3-Dichloropropene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	trans-1,3-Dichloropropene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	trans-1,3-Dichloropropene	0.0262 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	trans-1,3-Dichloropropene	0.0829 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	trans-1,3-Dichloropropene	0.00829 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	trans-1,3-Dichloropropene	0.00829 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	trans-1,3-Dichloropropene	0.00829 U	0.0100 U	NA
W001	11/21/2005	1	Trichloroethene	0.00440 U	0.0630 U	NA
W002	11/21/2005	5	Trichloroethene	4.10 U	0.0630 U	NA
W003	11/21/2005	7	Trichloroethene	0.0250 U	0.0630 U	NA
W004	11/21/2005	7	Trichloroethene	0.0940 U	0.0630 U	NA
W005	11/21/2005	7	Trichloroethene	0.00190 U	0.0630 U	NA
W006	11/21/2005	6	Trichloroethene	**0.570 J**	0.0630 U	NA
W007	11/21/2005	4	Trichloroethene	0.160 U	0.0630 U	NA
W007	11/21/2005		Trichloroethene	0.000130 U	NT	NA
W008	11/20/2005	3	Trichloroethene	0.00390 U	0.0630 U	NA
W009	11/20/2005	5	Trichloroethene	0.00440 U	0.0630 U	NA
W010	11/20/2005	5	Trichloroethene	**0.0780 J**	0.0630 U	NA
W011	11/20/2005	3	Trichloroethene	**0.0710 J**	0.0630 U	NA
W011	11/20/2005	9	Trichloroethene	0.00190 U	0.0630 U	NA
W011	11/20/2005	18.5	Trichloroethene	0.00340 U	0.0630 U	NA
W011	11/20/2005		Trichloroethene	0.000130 U	NT	NA
W012	11/19/2005	6	Trichloroethene	**0.120**	0.0630 U	NA
W013	11/19/2005	5	Trichloroethene	**0.100**	0.0630 U	NA
W014	11/19/2005	5	Trichloroethene	**0.0110 J**	0.0630 U	NA
W015	11/19/2005	1	Trichloroethene	**0.0130 J**	0.0630 U	NA
W016	11/19/2005	5	Trichloroethene	**0.00620 J**	0.0630 U	NA
W016	11/19/2005		Trichloroethene	0.000130 U	NT	NA
W017	11/18/2005	3	Trichloroethene	**0.00640 J**	0.0630 U	NA
W017	11/18/2005	7	Trichloroethene	0.00200 U	0.0630 U	NA
W018	11/18/2005	6	Trichloroethene	0.00220 U	0.0630 U	NA
W019	11/18/2005	4	Trichloroethene	**0.00600 J**	0.0630 U	NA
W020	11/18/2005	5	Trichloroethene	0.00340 U	0.0630 U	NA
W020	11/18/2005		Trichloroethene	0.000130 U	NT	NA
WDL-101-S	8/14/2002	0.25	Trichloroethene	0.552 UJ	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	2.25	Trichloroethene	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Trichloroethene	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Trichloroethene	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Trichloroethene	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Trichloroethene	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Trichloroethene	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Trichloroethene	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Trichloroethene	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Trichloroethene	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Trichloroethene	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Trichloroethene	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Trichloroethene	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Trichloroethene	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Trichloroethene	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Trichloroethene	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Trichloroethene	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Trichloroethene	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Trichloroethene	0.0380 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Trichloroethene	0.120 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Trichloroethene	**0.0925**	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Trichloroethene	0.0120 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Trichloroethene	0.0120 U	0.0100 U	NA
W001	11/21/2005	1	Trichlorofluoromethane	0.0140 U	0.0700 U	NA
W002	11/21/2005	5	Trichlorofluoromethane	13.0 U	0.0700 U	NA
W003	11/21/2005	7	Trichlorofluoromethane	0.0800 U	0.0700 U	NA
W004	11/21/2005	7	Trichlorofluoromethane	0.300 U	0.0700 U	NA
W005	11/21/2005	7	Trichlorofluoromethane	0.00620 U	0.0700 U	NA
W006	11/21/2005	6	Trichlorofluoromethane	0.460 U	0.0700 U	NA
W007	11/21/2005	4	Trichlorofluoromethane	0.500 U	0.0700 U	NA
W007	11/21/2005		Trichlorofluoromethane	0.000140 U	NT	NA
W008	11/20/2005	3	Trichlorofluoromethane	0.0120 UJ	0.0700 U	NA
W009	11/20/2005	5	Trichlorofluoromethane	0.0140 U	0.0700 U	NA
W010	11/20/2005	5	Trichlorofluoromethane	0.100 U	0.0700 U	NA
W011	11/20/2005	3	Trichlorofluoromethane	0.120 U	0.0700 U	NA
W011	11/20/2005	9	Trichlorofluoromethane	0.00620 U	0.0700 U	NA
W011	11/20/2005	18.5	Trichlorofluoromethane	0.0110 U	0.0700 U	NA
W011	11/20/2005		Trichlorofluoromethane	0.000140 U	NT	NA
W012	11/19/2005	6	Trichlorofluoromethane	0.0110 U	0.0700 U	NA
W013	11/19/2005	5	Trichlorofluoromethane	0.0110 U	0.0700 U	NA
W014	11/19/2005	5	Trichlorofluoromethane	0.0110 U	0.0700 U	NA
W015	11/19/2005	1	Trichlorofluoromethane	0.0180 U	0.0700 U	NA
W016	11/19/2005	5	Trichlorofluoromethane	0.0120 U	0.0700 U	NA
W016	11/19/2005		Trichlorofluoromethane	0.000140 U	NT	NA
W017	11/18/2005	3	Trichlorofluoromethane	0.0150 U	0.0700 U	NA
W017	11/18/2005	7	Trichlorofluoromethane	0.00650 U	0.0700 U	NA
W018	11/18/2005	6	Trichlorofluoromethane	0.00710 U	0.0700 U	NA
W019	11/18/2005	4	Trichlorofluoromethane	0.0110 U	0.0700 U	NA
W020	11/18/2005	5	Trichlorofluoromethane	0.0110 U	0.0700 U	NA
W020	11/18/2005		Trichlorofluoromethane	0.000140 U	NT	NA
WDL-101-S	8/14/2002	0.25	Trichlorofluoromethane	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Trichlorofluoromethane	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Trichlorofluoromethane	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Trichlorofluoromethane	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Trichlorofluoromethane	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Trichlorofluoromethane	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Trichlorofluoromethane	0.263 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	8	Trichlorofluoromethane	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Trichlorofluoromethane	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Trichlorofluoromethane	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Trichlorofluoromethane	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Trichlorofluoromethane	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Trichlorofluoromethane	0.549 U	NT	NA
WDL-103-S	8/15/2002	8.25	Trichlorofluoromethane	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Trichlorofluoromethane	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Trichlorofluoromethane	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Trichlorofluoromethane	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Trichlorofluoromethane	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Trichlorofluoromethane	0.0284 U	0.0250 U	NA
WDL-201-S	2/12/2004	6	Trichlorofluoromethane	0.0897 U	0.0500 U	NA
WDL-202-S	2/12/2004	4	Trichlorofluoromethane	0.00897 U	0.0250 U	NA
WDL-203-S	2/13/2004	5.75	Trichlorofluoromethane	0.00897 U	0.0250 U	NA
WDL-204-S	2/12/2004	5	Trichlorofluoromethane	0.00897 U	0.0250 U	NA
W001	11/21/2005	1	Vinyl chloride	0.00530 U	0.0810 U	NA
W002	11/21/2005	5	Vinyl chloride	4.90 U	0.0810 U	NA
W003	11/21/2005	7	Vinyl chloride	0.0300 U	0.0810 U	NA
W004	11/21/2005	7	Vinyl chloride	0.110 U	0.0810 U	NA
W005	11/21/2005	7	Vinyl chloride	0.00230 U	0.0810 U	NA
W006	11/21/2005	6	Vinyl chloride	0.170 U	0.0810 U	NA
W007	11/21/2005	4	Vinyl chloride	0.190 U	0.0810 U	NA
W007	11/21/2005		Vinyl chloride	0.000160 U	NT	NA
W008	11/20/2005	3	Vinyl chloride	0.00460 UJ	0.0810 U	NA
W009	11/20/2005	5	Vinyl chloride	0.00520 U	0.0810 U	NA
W010	11/20/2005	5	Vinyl chloride	0.0390 U	0.0810 U	NA
W011	11/20/2005	3	Vinyl chloride	0.0450 U	0.0810 U	NA
W011	11/20/2005	9	Vinyl chloride	0.00230 U	0.0810 U	NA
W011	11/20/2005	18.5	Vinyl chloride	0.00400 U	0.0810 U	NA
W011	11/20/2005		Vinyl chloride	0.000160 U	NT	NA
W012	11/19/2005	6	Vinyl chloride	**0.00430 J**	0.0810 U	NA
W013	11/19/2005	5	Vinyl chloride	0.00420 U	0.0810 U	NA
W014	11/19/2005	5	Vinyl chloride	0.00400 U	0.0810 U	NA
W015	11/19/2005	1	Vinyl chloride	**0.00690 J**	0.0810 U	NA
W016	11/19/2005	5	Vinyl chloride	0.00450 U	0.0810 U	NA
W016	11/19/2005		Vinyl chloride	0.000160 U	NT	NA
W017	11/18/2005	3	Vinyl chloride	0.00540 U	0.0810 U	NA
W017	11/18/2005	7	Vinyl chloride	0.00240 U	0.0810 U	NA
W018	11/18/2005	6	Vinyl chloride	0.00260 U	0.0810 U	NA
W019	11/18/2005	4	Vinyl chloride	0.00430 U	0.0810 U	NA
W020	11/18/2005	5	Vinyl chloride	0.00410 U	0.0810 U	NA
W020	11/18/2005		Vinyl chloride	0.000160 U	NT	NA
WDL-101-S	8/14/2002	0.25	Vinyl chloride	0.552 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Vinyl chloride	0.397 UJ	NT	NA
WDL-101-S	8/14/2002	5	Vinyl chloride	0.429 UJ	NT	NA
WDL-101-S	8/14/2002	7	Vinyl chloride	0.406 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Vinyl chloride	0.442 U	NT	NA
WDL-102-S	8/14/2002	2.25	Vinyl chloride	0.561 U	NT	NA
WDL-102-S	8/14/2002	5.5	Vinyl chloride	0.263 U	NT	NA
WDL-102-S	8/14/2002	8	Vinyl chloride	0.365 U	NT	NA
WDL-102-S	8/14/2002	10	Vinyl chloride	0.272 U	NT	NA
WDL-103-S	8/15/2002	0.25	Vinyl chloride	0.640 U	NT	NA
WDL-103-S	8/15/2002	2.25	Vinyl chloride	0.263 U	NT	NA
WDL-103-S	8/15/2002	5	Vinyl chloride	0.381 U	NT	NA
WDL-103-S	8/15/2002	6.75	Vinyl chloride	0.549 U	NT	NA

TABLE C-4
Volatile Organic Carbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	8.25	Vinyl chloride	0.348 U	NT	NA
WDL-104-S	8/15/2002	0.25	Vinyl chloride	0.268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Vinyl chloride	0.236 U	NT	NA
WDL-104-S	8/15/2002	5	Vinyl chloride	0.335 U	NT	NA
WDL-104-S	8/15/2002	6.75	Vinyl chloride	0.274 U	NT	NA
WDL-201-S	2/12/2004	0.25	Vinyl chloride	0.0182 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Vinyl chloride	0.0574 U	0.0200 U	NA
WDL-202-S	2/12/2004	4	Vinyl chloride	0.00574 U	0.0100 U	NA
WDL-203-S	2/13/2004	5.75	Vinyl chloride	0.00574 U	0.0100 U	NA
WDL-204-S	2/12/2004	5	Vinyl chloride	0.00574 UJ	0.0100 U	NA

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	2,4,5-T	**3.60**	**0.00110 J**	4.21E+01
W002	11/21/2005	5	2,4,5-T	**450 J**	**2.00**	4.21E+01
W003	11/21/2005	7	2,4,5-T	**1.40**	**0.00110 J**	4.21E+01
W004	11/21/2005	7	2,4,5-T	**5.60**	**0.0180**	4.21E+01
W005	11/21/2005	7	2,4,5-T	**0.0960**	0.000400 U	4.21E+01
W006	11/21/2005	6	2,4,5-T	**21.0 J**	**0.0200**	4.21E+01
W007	11/21/2005	4	2,4,5-T	**0.380 J**	**0.00230 J**	4.21E+01
W008	11/20/2005	3	2,4,5-T	**0.360**	0.000400 U	4.21E+01
W009	11/20/2005	5	2,4,5-T	0.00460 U	0.000400 U	4.21E+01
W010	11/20/2005	5	2,4,5-T	**0.540**	0.000400 U	4.21E+01
W011	11/20/2005	3	2,4,5-T	0.00420 U	0.000400 U	4.21E+01
W011	11/20/2005	9	2,4,5-T	0.00210 U	0.000400 U	4.21E+01
W011	11/20/2005	18.5	2,4,5-T	0.00360 U	0.000400 U	4.21E+01
W012	11/19/2005	6	2,4,5-T	0.00340 U	0.000400 U	4.21E+01
W013	11/19/2005	5	2,4,5-T	**2.00**	**0.000920 J**	4.21E+01
W014	11/19/2005	5	2,4,5-T	**1.30**	**0.000780 J**	4.21E+01
W015	11/19/2005	1	2,4,5-T	**0.120**	0.000400 U	4.21E+01
W016	11/19/2005	5	2,4,5-T	**0.750**	**0.000820 J**	4.21E+01
W017	11/18/2005	3	2,4,5-T	**0.170**	0.000400 U	4.21E+01
W017	11/18/2005	7	2,4,5-T	**0.0480**	0.000400 U	4.21E+01
W018	11/18/2005	6	2,4,5-T	**2.50**	**0.00200 J**	4.21E+01
W019	11/18/2005	4	2,4,5-T	**0.280**	0.000400 U	4.21E+01
W020	11/18/2005	5	2,4,5-T	**0.0500**	0.000400 U	4.21E+01
WDL-101-S	8/14/2002	0.25	2,4,5-T	**0.801**	NT	NA
WDL-101-S	8/14/2002	2.25	2,4,5-T	**0.480 J**	NT	NA
WDL-101-S	8/14/2002	5	2,4,5-T	**118**	NT	NA
WDL-101-S	8/14/2002	7	2,4,5-T	**39.3 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,4,5-T	**0.366 J**	NT	NA
WDL-102-S	8/14/2002	2.25	2,4,5-T	**0.593**	NT	NA
WDL-102-S	8/14/2002	5.5	2,4,5-T	0.00382 U	NT	NA
WDL-102-S	8/14/2002	8	2,4,5-T	0.00549 U	NT	NA
WDL-102-S	8/14/2002	10	2,4,5-T	0.00440 U	NT	NA
WDL-103-S	8/15/2002	0.25	2,4,5-T	**0.215**	NT	NA
WDL-103-S	8/15/2002	2.25	2,4,5-T	0.00400 U	NT	NA
WDL-103-S	8/15/2002	5	2,4,5-T	0.00621 U	NT	NA
WDL-103-S	8/15/2002	6.75	2,4,5-T	**0.322 J**	NT	NA
WDL-103-S	8/15/2002	8.25	2,4,5-T	**0.0499 N**	NT	NA
WDL-104-S	8/15/2002	0.25	2,4,5-T	0.00383 U	NT	NA
WDL-104-S	8/15/2002	2.25	2,4,5-T	**0.0298 N**	NT	NA
WDL-104-S	8/15/2002	5	2,4,5-T	0.00490 U	NT	NA
WDL-104-S	8/15/2002	6.75	2,4,5-T	0.00379 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,4,5-T	0.0229 UJ	**0.0245**	4.21E+01
WDL-201-S	2/12/2004	6	2,4,5-T	**23.8 J**	**0.753 J**	4.21E+01
WDL-202-S	2/12/2004	4	2,4,5-T	0.00723 UJ	**0.00318**	4.21E+01
WDL-203-S	2/13/2004	5.75	2,4,5-T	0.00723 UJ	0.00100 U	4.21E+01
WDL-204-S	2/12/2004	5	2,4,5-T	0.00723 UJ	0.00100 U	4.21E+01
W001	11/21/2005	1	2,4,5-TP (Silvex)	0.00300 UJ	0.000240 U	1.75E+01
W002	11/21/2005	5	2,4,5-TP (Silvex)	**9.60 J**	0.000240 U	1.75E+01
W003	11/21/2005	7	2,4,5-TP (Silvex)	0.00240 UJ	0.000240 U	1.75E+01
W004	11/21/2005	7	2,4,5-TP (Silvex)	0.00190 UJ	0.000240 U	1.75E+01
W005	11/21/2005	7	2,4,5-TP (Silvex)	0.00180 UJ	0.000240 U	1.75E+01
W006	11/21/2005	6	2,4,5-TP (Silvex)	0.00360 UJ	0.000240 U	1.75E+01
W007	11/21/2005	4	2,4,5-TP (Silvex)	0.00330 UJ	**0.00150 J**	1.75E+01
W008	11/20/2005	3	2,4,5-TP (Silvex)	**0.230**	0.000240 U	1.75E+01
W009	11/20/2005	5	2,4,5-TP (Silvex)	0.00460 U	0.000240 U	1.75E+01
W010	11/20/2005	5	2,4,5-TP (Silvex)	0.00340 U	0.000240 U	1.75E+01
W011	11/20/2005	3	2,4,5-TP (Silvex)	0.00420 U	0.000240 U	1.75E+01

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	9	2,4,5-TP (Silvex)	0.00210 U	0.000240 U	1.75E+01
W011	11/20/2005	18.5	2,4,5-TP (Silvex)	0.00360 U	0.000240 U	1.75E+01
W012	11/19/2005	6	2,4,5-TP (Silvex)	0.00340 U	0.000240 U	1.75E+01
W013	11/19/2005	5	2,4,5-TP (Silvex)	0.00370 U	0.000240 U	1.75E+01
W014	11/19/2005	5	2,4,5-TP (Silvex)	0.00340 U	0.000240 U	1.75E+01
W015	11/19/2005	1	2,4,5-TP (Silvex)	0.00520 U	0.000240 U	1.75E+01
W016	11/19/2005	5	2,4,5-TP (Silvex)	0.00390 U	0.000240 U	1.75E+01
W017	11/18/2005	3	2,4,5-TP (Silvex)	0.00540 U	0.000240 U	1.75E+01
W017	11/18/2005	7	2,4,5-TP (Silvex)	0.00220 U	0.000240 U	1.75E+01
W018	11/18/2005	6	2,4,5-TP (Silvex)	0.00260 U	0.000240 U	1.75E+01
W019	11/18/2005	4	2,4,5-TP (Silvex)	0.00370 U	0.000240 U	1.75E+01
W020	11/18/2005	5	2,4,5-TP (Silvex)	0.00320 U	0.000240 U	1.75E+01
WDL-101-S	8/14/2002	0.25	2,4,5-TP(Silvex)	**0.399**	NT	NA
WDL-101-S	8/14/2002	2.25	2,4,5-TP(Silvex)	0.00492 U	NT	NA
WDL-101-S	8/14/2002	5	2,4,5-TP(Silvex)	**14.7**	NT	NA
WDL-101-S	8/14/2002	7	2,4,5-TP(Silvex)	0.00502 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	2,4,5-TP(Silvex)	**0.366**	NT	NA
WDL-102-S	8/14/2002	2.25	2,4,5-TP(Silvex)	**0.213**	NT	NA
WDL-102-S	8/14/2002	5.5	2,4,5-TP(Silvex)	**0.0175**	NT	NA
WDL-102-S	8/14/2002	8	2,4,5-TP(Silvex)	0.00449 U	NT	NA
WDL-102-S	8/14/2002	10	2,4,5-TP(Silvex)	0.00359 U	NT	NA
WDL-103-S	8/15/2002	0.25	2,4,5-TP(Silvex)	**0.107**	NT	NA
WDL-103-S	8/15/2002	2.25	2,4,5-TP(Silvex)	0.00327 U	NT	NA
WDL-103-S	8/15/2002	5	2,4,5-TP(Silvex)	0.00507 U	NT	NA
WDL-103-S	8/15/2002	6.75	2,4,5-TP(Silvex)	0.00710 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	2,4,5-TP(Silvex)	0.00425 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,4,5-TP(Silvex)	0.00313 U	NT	NA
WDL-104-S	8/15/2002	2.25	2,4,5-TP(Silvex)	0.00294 U	NT	NA
WDL-104-S	8/15/2002	5	2,4,5-TP(Silvex)	0.00400 U	NT	NA
WDL-104-S	8/15/2002	6.75	2,4,5-TP(Silvex)	0.00310 U	NT	NA
WDL-201-S	2/12/2004	0.25	2,4,5-TP(Silvex)	0.0200 U	0.00100 U	1.75E+01
WDL-201-S	2/12/2004	6	2,4,5-TP(Silvex)	0.316 U	**0.0205 J**	1.75E+01
WDL-202-S	2/12/2004	4	2,4,5-TP(Silvex)	0.00633 U	0.00100 U	1.75E+01
WDL-203-S	2/13/2004	5.75	2,4,5-TP(Silvex)	0.00633 U	0.00100 U	1.75E+01
WDL-204-S	2/12/2004	5	2,4,5-TP(Silvex)	**0.00967**	0.00100 U	1.75E+01
W001	11/21/2005	1	2,4-D	**56.0 J**	**0.00780**	7.21E+01
W002	11/21/2005	5	2,4-D	**5,100 J**	**26.0**	7.21E+01
W003	11/21/2005	7	2,4-D	**19.0 J**	**0.0160**	7.21E+01
W004	11/21/2005	7	2,4-D	**23.0 J**	**0.120**	7.21E+01
W005	11/21/2005	7	2,4-D	**1.10 J**	**0.0240**	7.21E+01
W006	11/21/2005	6	2,4-D	**200 J**	**0.190**	7.21E+01
W007	11/21/2005	4	2,4-D	**190 J**	**0.510**	7.21E+01
W008	11/20/2005	3	2,4-D	**74.0**	**0.00280**	7.21E+01
W009	11/20/2005	5	2,4-D	**0.860**	**0.00520**	7.21E+01
W010	11/20/2005	5	2,4-D	**6.30**	**0.00740**	7.21E+01
W011	11/20/2005	3	2,4-D	**1.10**	**0.00500**	7.21E+01
W011	11/20/2005	9	2,4-D	0.00140 U	0.000170 U	7.21E+01
W011	11/20/2005	18.5	2,4-D	**0.0520**	0.000170 U	7.21E+01
W012	11/19/2005	6	2,4-D	**2.20**	**0.00620**	7.21E+01
W013	11/19/2005	5	2,4-D	**15.0**	**0.0350**	7.21E+01
W014	11/19/2005	5	2,4-D	**22.0**	**0.0330**	7.21E+01
W015	11/19/2005	1	2,4-D	**11.0**	**0.0150**	7.21E+01
W016	11/19/2005	5	2,4-D	**14.0**	**0.0420**	7.21E+01
W017	11/18/2005	3	2,4-D	**12.0**	**0.00480**	7.21E+01
W017	11/18/2005	7	2,4-D	**0.510**	**0.00230 J**	7.21E+01
W018	11/18/2005	6	2,4-D	**170**	**0.0860**	7.21E+01
W019	11/18/2005	4	2,4-D	**2.10**	**0.00310**	7.21E+01

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W020	11/18/2005	5	2,4-D	**3.10**	**0.0130**	7.21E+01
WDL-101-S	8/14/2002	0.25	2,4-D	**123**	NT	NA
WDL-101-S	8/14/2002	2.25	2,4-D	**93.8**	NT	NA
WDL-101-S	8/14/2002	5	2,4-D	**791**	NT	NA
WDL-101-S	8/14/2002	7	2,4-D	**636 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,4-D	**68.7**	NT	NA
WDL-102-S	8/14/2002	2.25	2,4-D	**119**	NT	NA
WDL-102-S	8/14/2002	5.5	2,4-D	**1.01 J**	NT	NA
WDL-102-S	8/14/2002	8	2,4-D	**0.244 J**	NT	NA
WDL-102-S	8/14/2002	10	2,4-D	**0.583**	NT	NA
WDL-103-S	8/15/2002	0.25	2,4-D	**34.4**	NT	NA
WDL-103-S	8/15/2002	2.25	2,4-D	**4.45**	NT	NA
WDL-103-S	8/15/2002	5	2,4-D	**1.59**	NT	NA
WDL-103-S	8/15/2002	6.75	2,4-D	**4.25 J**	NT	NA
WDL-103-S	8/15/2002	8.25	2,4-D	0.00442 U	NT	NA
WDL-104-S	8/15/2002	0.25	2,4-D	**2.41**	NT	NA
WDL-104-S	8/15/2002	2.25	2,4-D	**8.48**	NT	NA
WDL-104-S	8/15/2002	5	2,4-D	**1.41**	NT	NA
WDL-104-S	8/15/2002	6.75	2,4-D	**1.50**	NT	NA
WDL-201-S	2/12/2004	0.25	2,4-D	**50.2 J**	**0.0157 J**	7.21E+01
WDL-201-S	2/12/2004	6	2,4-D	**349 J**	**11.9 J**	7.21E+01
WDL-202-S	2/12/2004	4	2,4-D	**3.75 J**	0.0180 U	7.21E+01
WDL-203-S	2/13/2004	5.75	2,4-D	**0.124 J**	**0.00229**	7.21E+01
WDL-204-S	2/12/2004	5	2,4-D	**1.97 J**	0.00400 U	7.21E+01
W001	11/21/2005	1	2,4-DB	**9.80**	**0.00580**	4.41E+01
W002	11/21/2005	5	2,4-DB	**240 J**	**1.90**	4.41E+01
W003	11/21/2005	7	2,4-DB	**11.0**	**0.00360**	4.41E+01
W004	11/21/2005	7	2,4-DB	**9.40**	**0.0280**	4.41E+01
W005	11/21/2005	7	2,4-DB	**0.250**	0.000300 U	4.41E+01
W006	11/21/2005	6	2,4-DB	**2.60 J**	**0.0170**	4.41E+01
W007	11/21/2005	4	2,4-DB	**1.40 J**	**0.0230**	4.41E+01
W008	11/20/2005	3	2,4-DB	**31.0**	**0.000900 J**	4.41E+01
W009	11/20/2005	5	2,4-DB	**6.20**	**0.0250**	4.41E+01
W010	11/20/2005	5	2,4-DB	**1.90**	**0.0140**	4.41E+01
W011	11/20/2005	3	2,4-DB	**2.30**	**0.00630**	4.41E+01
W011	11/20/2005	9	2,4-DB	**0.0470**	**0.000890 J**	4.41E+01
W011	11/20/2005	18.5	2,4-DB	0.00370 U	0.000300 U	4.41E+01
W012	11/19/2005	6	2,4-DB	**5.90**	**0.00450**	4.41E+01
W013	11/19/2005	5	2,4-DB	**1.90**	**0.0240**	4.41E+01
W014	11/19/2005	5	2,4-DB	**3.20**	**0.0550**	4.41E+01
W015	11/19/2005	1	2,4-DB	**37.0**	**0.00850**	4.41E+01
W016	11/19/2005	5	2,4-DB	**5.70**	**0.0180**	4.41E+01
W017	11/18/2005	3	2,4-DB	**39.0**	**0.00440**	4.41E+01
W017	11/18/2005	7	2,4-DB	**0.190**	**0.00200 J**	4.41E+01
W018	11/18/2005	6	2,4-DB	**4.10**	**0.0670**	4.41E+01
W019	11/18/2005	4	2,4-DB	**4.00**	**0.0430**	4.41E+01
W020	11/18/2005	5	2,4-DB	**4.60**	0.000300 U	4.41E+01
WDL-101-S	8/14/2002	0.25	2,4-DB	**33.4**	NT	NA
WDL-101-S	8/14/2002	2.25	2,4-DB	**63.3**	NT	NA
WDL-101-S	8/14/2002	5	2,4-DB	**21.6**	NT	NA
WDL-101-S	8/14/2002	7	2,4-DB	**28.6 J**	NT	NA
WDL-102-S	8/14/2002	0.5	2,4-DB	**39.3**	NT	NA
WDL-102-S	8/14/2002	2.25	2,4-DB	**23.8**	NT	NA
WDL-102-S	8/14/2002	5.5	2,4-DB	**1.59 J**	NT	NA
WDL-102-S	8/14/2002	8	2,4-DB	**0.513 J**	NT	NA
WDL-102-S	8/14/2002	10	2,4-DB	**0.109**	NT	NA
WDL-103-S	8/15/2002	0.25	2,4-DB	**16.1**	NT	NA
WDL-103-S	8/15/2002	2.25	2,4-DB	**11.2**	NT	NA

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	5	2,4-DB	**2.00**	NT	NA
WDL-103-S	8/15/2002	6.75	2,4-DB	**1.13 J**	NT	NA
WDL-103-S	8/15/2002	8.25	2,4-DB	**0.243**	NT	NA
WDL-104-S	8/15/2002	0.25	2,4-DB	**2.21**	NT	NA
WDL-104-S	8/15/2002	2.25	2,4-DB	**4.67**	NT	NA
WDL-104-S	8/15/2002	5	2,4-DB	**0.588**	NT	NA
WDL-104-S	8/15/2002	6.75	2,4-DB	**0.437**	NT	NA
WDL-201-S	2/12/2004	0.25	2,4-DB	**14.4 J**	**0.0120**	4.41E+01
WDL-201-S	2/12/2004	6	2,4-DB	**10.4**	**0.192 J**	4.41E+01
WDL-202-S	2/12/2004	4	2,4-DB	0.155 U	0.0150 U	4.41E+01
WDL-203-S	2/13/2004	5.75	2,4-DB	**0.194**	**0.00687**	4.41E+01
WDL-204-S	2/12/2004	5	2,4-DB	**0.743**	0.00400 U	4.41E+01
WDL-101-S	8/14/2002	0.25	4-Nitrophenol	0.00438 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	4-Nitrophenol	0.00293 UJ	NT	NA
WDL-101-S	8/14/2002	5	4-Nitrophenol	0.00319 UJ	NT	NA
WDL-101-S	8/14/2002	7	4-Nitrophenol	0.00299 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	4-Nitrophenol	0.00344 U	NT	NA
WDL-102-S	8/14/2002	2.25	4-Nitrophenol	0.00420 U	NT	NA
WDL-102-S	8/14/2002	5.5	4-Nitrophenol	0.00186 U	NT	NA
WDL-102-S	8/14/2002	8	4-Nitrophenol	0.00267 U	NT	NA
WDL-102-S	8/14/2002	10	4-Nitrophenol	0.00214 U	NT	NA
WDL-103-S	8/15/2002	0.25	4-Nitrophenol	0.00485 U	NT	NA
WDL-103-S	8/15/2002	2.25	4-Nitrophenol	0.00195 U	NT	NA
WDL-103-S	8/15/2002	5	4-Nitrophenol	0.00302 U	NT	NA
WDL-103-S	8/15/2002	6.75	4-Nitrophenol	0.00423 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	4-Nitrophenol	0.00253 U	NT	NA
WDL-104-S	8/15/2002	0.25	4-Nitrophenol	0.00186 U	NT	NA
WDL-104-S	8/15/2002	2.25	4-Nitrophenol	0.00175 U	NT	NA
WDL-104-S	8/15/2002	5	4-Nitrophenol	0.00238 U	NT	NA
WDL-104-S	8/15/2002	6.75	4-Nitrophenol	0.00184 U	NT	NA
W001	11/21/2005	1	Bromoxynil	0.00440 U	0.000100 U	NA
W002	11/21/2005	5	Bromoxynil	0.0410 U	0.000100 U	NA
W003	11/21/2005	7	Bromoxynil	0.00350 U	0.000100 U	NA
W004	11/21/2005	7	Bromoxynil	0.00290 U	0.000100 U	NA
W005	11/21/2005	7	Bromoxynil	0.00270 U	0.000100 U	NA
W006	11/21/2005	6	Bromoxynil	0.00540 UJ	0.000100 U	NA
W007	11/21/2005	4	Bromoxynil	0.00490 UJ	0.000100 U	NA
W008	11/20/2005	3	Bromoxynil	0.00640 U	0.000100 U	NA
W009	11/20/2005	5	Bromoxynil	0.00690 U	0.000100 U	NA
W010	11/20/2005	5	Bromoxynil	0.00500 U	0.000100 U	NA
W011	11/20/2005	3	Bromoxynil	0.00630 U	0.000100 U	NA
W011	11/20/2005	9	Bromoxynil	0.00310 U	0.000100 U	NA
W011	11/20/2005	18.5	Bromoxynil	0.00540 U	0.000100 U	NA
W012	11/19/2005	6	Bromoxynil	0.00500 U	0.000100 U	NA
W013	11/19/2005	5	Bromoxynil	0.00550 U	0.000100 U	NA
W014	11/19/2005	5	Bromoxynil	0.00500 U	0.000100 U	NA
W015	11/19/2005	1	Bromoxynil	0.00780 U	0.000100 U	NA
W016	11/19/2005	5	Bromoxynil	0.00580 U	0.000100 U	NA
W017	11/18/2005	3	Bromoxynil	0.00800 U	0.000100 U	NA
W017	11/18/2005	7	Bromoxynil	0.00340 U	0.000100 U	NA
W018	11/18/2005	6	Bromoxynil	0.00390 U	0.000100 U	NA
W019	11/18/2005	4	Bromoxynil	0.00550 U	0.000100 U	NA
W020	11/18/2005	5	Bromoxynil	0.00480 U	0.000100 U	NA
WDL-201-S	2/12/2004	0.25	Bromoxynil	**1.29 J**	0.00200 U	NA
WDL-201-S	2/12/2004	6	Bromoxynil	0.326 UJ	0.00500 U	NA
WDL-202-S	2/12/2004	4	Bromoxynil	**0.0462 NJ**	0.00200 U	NA
WDL-203-S	2/13/2004	5.75	Bromoxynil	0.00651 UJ	0.00200 U	NA
WDL-204-S	2/12/2004	5	Bromoxynil	**0.0140 NJ**	0.00200 U	NA

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	Dalapon	0.00180 UJ	0.000410 UJ	NA
W002	11/21/2005	5	Dalapon	0.0160 UJ	0.000410 UJ	NA
W003	11/21/2005	7	Dalapon	0.00140 UJ	0.000410 UJ	NA
W004	11/21/2005	7	Dalapon	0.00120 UJ	0.000410 UJ	NA
W005	11/21/2005	7	Dalapon	0.00110 UJ	0.000410 UJ	NA
W006	11/21/2005	6	Dalapon	0.00220 UJ	0.000410 UJ	NA
W007	11/21/2005	4	Dalapon	0.00200 UJ	0.000410 UJ	NA
W008	11/20/2005	3	Dalapon	0.00260 UJ	0.000410 UJ	NA
W009	11/20/2005	5	Dalapon	0.00280 UJ	0.000410 UJ	NA
W010	11/20/2005	5	Dalapon	0.00200 UJ	0.000410 UJ	NA
W011	11/20/2005	3	Dalapon	0.00250 UJ	0.000410 UJ	NA
W011	11/20/2005	9	Dalapon	0.00130 UJ	0.000410 UJ	NA
W011	11/20/2005	18.5	Dalapon	0.00220 UJ	0.000410 UJ	NA
W012	11/19/2005	6	Dalapon	0.00200 UJ	0.000410 UJ	NA
W013	11/19/2005	5	Dalapon	0.00220 UJ	0.000410 UJ	NA
W014	11/19/2005	5	Dalapon	0.00200 UJ	0.000410 UJ	NA
W015	11/19/2005	1	Dalapon	0.00310 UJ	0.000410 UJ	NA
W016	11/19/2005	5	Dalapon	0.00230 UJ	0.000410 UJ	NA
W017	11/18/2005	3	Dalapon	0.00320 UJ	0.000410 UJ	NA
W017	11/18/2005	7	Dalapon	0.00140 UJ	0.000410 UJ	NA
W018	11/18/2005	6	Dalapon	0.00160 UJ	0.000410 UJ	NA
W019	11/18/2005	4	Dalapon	0.00220 UJ	0.000410 UJ	NA
W020	11/18/2005	5	Dalapon	0.00190 UJ	0.000410 UJ	NA
WDL-101-S	8/14/2002	0.25	Dalapon	0.00442 U	NT	NA
WDL-101-S	8/14/2002	2.25	Dalapon	0.00295 U	NT	NA
WDL-101-S	8/14/2002	5	Dalapon	0.00321 U	NT	NA
WDL-101-S	8/14/2002	7	Dalapon	0.00301 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dalapon	0.00347 U	NT	NA
WDL-102-S	8/14/2002	2.25	Dalapon	0.00424 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dalapon	0.00187 U	NT	NA
WDL-102-S	8/14/2002	8	Dalapon	0.00269 U	NT	NA
WDL-102-S	8/14/2002	10	Dalapon	0.00216 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dalapon	0.00489 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dalapon	0.00196 U	NT	NA
WDL-103-S	8/15/2002	5	Dalapon	0.00304 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dalapon	0.00426 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Dalapon	0.00255 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dalapon	0.00188 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dalapon	0.00176 U	NT	NA
WDL-104-S	8/15/2002	5	Dalapon	0.00240 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dalapon	0.00186 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dalapon	0.0426 U	0.0100 U	NA
WDL-201-S	2/12/2004	6	Dalapon	0.135 U	0.100 UJ	NA
WDL-202-S	2/12/2004	4	Dalapon	0.135 U	0.0100 UJ	NA
WDL-203-S	2/13/2004	5.75	Dalapon	0.135 U	0.0100 UJ	NA
WDL-204-S	2/12/2004	5	Dalapon	0.135 U	0.0100 UJ	NA
W001	11/21/2005	1	Dicamba	0.00640 U	0.000300 U	NA
W002	11/21/2005	5	Dicamba	0.0590 U	0.000300 U	NA
W003	11/21/2005	7	Dicamba	0.00510 U	0.000300 U	NA
W004	11/21/2005	7	Dicamba	0.00410 U	0.000300 U	NA
W005	11/21/2005	7	Dicamba	0.00390 U	0.000300 U	NA
W006	11/21/2005	6	Dicamba	0.00780 UJ	0.000300 U	NA
W007	11/21/2005	4	Dicamba	0.00710 UJ	0.000300 U	NA
W008	11/20/2005	3	Dicamba	0.00930 U	0.000300 U	NA
W009	11/20/2005	5	Dicamba	0.0100 U	0.000300 U	NA
W010	11/20/2005	5	Dicamba	0.00730 U	0.000300 U	NA
W011	11/20/2005	3	Dicamba	0.00910 U	0.000300 U	NA
W011	11/20/2005	9	Dicamba	0.00450 U	0.000300 U	NA

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	18.5	Dicamba	0.00780 U	0.000300 U	NA
W012	11/19/2005	6	Dicamba	0.00720 U	0.000300 U	NA
W013	11/19/2005	5	Dicamba	0.00790 U	0.000300 U	NA
W014	11/19/2005	5	Dicamba	0.00730 U	0.000300 U	NA
W015	11/19/2005	1	Dicamba	0.0110 U	0.000300 U	NA
W016	11/19/2005	5	Dicamba	0.00830 U	0.000300 U	NA
W017	11/18/2005	3	Dicamba	0.0120 U	0.000300 U	NA
W017	11/18/2005	7	Dicamba	0.00490 U	0.000300 U	NA
W018	11/18/2005	6	Dicamba	0.00570 U	0.000300 U	NA
W019	11/18/2005	4	Dicamba	0.00790 U	0.000300 U	NA
W020	11/18/2005	5	Dicamba	0.00690 U	0.000300 U	NA
WDL-101-S	8/14/2002	0.25	Dicamba	0.00452 U	NT	NA
WDL-101-S	8/14/2002	2.25	Dicamba	0.00302 U	NT	NA
WDL-101-S	8/14/2002	5	Dicamba	0.00328 U	NT	NA
WDL-101-S	8/14/2002	7	Dicamba	0.00308 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dicamba	0.00355 U	NT	NA
WDL-102-S	8/14/2002	2.25	Dicamba	0.00433 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dicamba	0.00192 U	NT	NA
WDL-102-S	8/14/2002	8	Dicamba	0.00275 U	NT	NA
WDL-102-S	8/14/2002	10	Dicamba	0.00220 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dicamba	0.00500 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dicamba	0.00201 U	NT	NA
WDL-103-S	8/15/2002	5	Dicamba	0.00311 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dicamba	0.00436 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Dicamba	0.00261 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dicamba	0.00192 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dicamba	0.00180 U	NT	NA
WDL-104-S	8/15/2002	5	Dicamba	0.00245 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dicamba	0.00190 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dicamba	0.0266 UJ	0.00200 U	NA
WDL-201-S	2/12/2004	6	Dicamba	0.420 UJ	0.00500 U	NA
WDL-202-S	2/12/2004	4	Dicamba	0.00840 UJ	0.00300 U	NA
WDL-203-S	2/13/2004	5.75	Dicamba	0.00840 UJ	0.00200 U	NA
WDL-204-S	2/12/2004	5	Dicamba	0.00840 UJ	0.00200 U	NA
W001	11/21/2005	1	Dichlorprop	0.00320 U	0.000520 U	NA
W002	11/21/2005	5	Dichlorprop	0.0300 U	0.000520 U	NA
W003	11/21/2005	7	Dichlorprop	0.00260 U	0.000520 U	NA
W004	11/21/2005	7	Dichlorprop	0.00210 U	0.000520 U	NA
W005	11/21/2005	7	Dichlorprop	0.00200 U	0.000520 U	NA
W006	11/21/2005	6	Dichlorprop	0.00400 UJ	0.000520 U	NA
W007	11/21/2005	4	Dichlorprop	0.00360 UJ	0.000520 U	NA
W008	11/20/2005	3	Dichlorprop	**0.710**	0.000520 U	NA
W009	11/20/2005	5	Dichlorprop	0.00510 U	0.000520 U	NA
W010	11/20/2005	5	Dichlorprop	0.00370 U	0.000520 U	NA
W011	11/20/2005	3	Dichlorprop	0.00460 U	0.000520 U	NA
W011	11/20/2005	9	Dichlorprop	0.00230 U	0.000520 U	NA
W011	11/20/2005	18.5	Dichlorprop	0.00400 U	0.000520 U	NA
W012	11/19/2005	6	Dichlorprop	0.00370 U	0.000520 U	NA
W013	11/19/2005	5	Dichlorprop	0.00400 U	0.000520 U	NA
W014	11/19/2005	5	Dichlorprop	0.00370 U	0.000520 U	NA
W015	11/19/2005	1	Dichlorprop	**0.280**	0.000520 U	NA
W016	11/19/2005	5	Dichlorprop	0.00420 U	0.000520 U	NA
W017	11/18/2005	3	Dichlorprop	**0.240**	0.000520 U	NA
W017	11/18/2005	7	Dichlorprop	0.00250 U	0.000520 U	NA
W018	11/18/2005	6	Dichlorprop	0.00290 U	0.000520 U	NA
W019	11/18/2005	4	Dichlorprop	0.00400 U	0.000520 U	NA
W020	11/18/2005	5	Dichlorprop	0.00350 U	0.000520 U	NA
WDL-101-S	8/14/2002	0.25	Dichlorprop	**1.71**	NT	NA

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	2.25	Dichlorprop	**0.912**	NT	NA
WDL-101-S	8/14/2002	5	Dichlorprop	0.00529 U	NT	NA
WDL-101-S	8/14/2002	7	Dichlorprop	0.00496 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dichlorprop	**1.43**	NT	NA
WDL-102-S	8/14/2002	2.25	Dichlorprop	**0.742**	NT	NA
WDL-102-S	8/14/2002	5.5	Dichlorprop	0.00309 U	NT	NA
WDL-102-S	8/14/2002	8	Dichlorprop	0.00444 U	NT	NA
WDL-102-S	8/14/2002	10	Dichlorprop	0.00355 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dichlorprop	**0.411**	NT	NA
WDL-103-S	8/15/2002	2.25	Dichlorprop	**0.0585**	NT	NA
WDL-103-S	8/15/2002	5	Dichlorprop	0.00502 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dichlorprop	0.00702 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Dichlorprop	0.00420 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dichlorprop	0.00309 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dichlorprop	0.00291 U	NT	NA
WDL-104-S	8/15/2002	5	Dichlorprop	0.00396 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dichlorprop	0.00306 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dichlorprop	0.212 UJ	0.00100 U	NA
WDL-201-S	2/12/2004	6	Dichlorprop	0.334 UJ	0.00100 U	NA
WDL-202-S	2/12/2004	4	Dichlorprop	0.0669 UJ	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Dichlorprop	0.00669 UJ	0.00100 U	NA
WDL-204-S	2/12/2004	5	Dichlorprop	**0.0400 J**	0.00100 U	NA
W001	11/21/2005	1	Dinoseb	0.00410 UJ	0.000260 UJ	NA
W002	11/21/2005	5	Dinoseb	0.0380 UJ	0.000260 UJ	NA
W003	11/21/2005	7	Dinoseb	0.00330 UJ	0.000260 UJ	NA
W004	11/21/2005	7	Dinoseb	0.00270 UJ	0.000260 UJ	NA
W005	11/21/2005	7	Dinoseb	0.00250 UJ	0.000260 UJ	NA
W006	11/21/2005	6	Dinoseb	0.00500 UJ	0.000260 UJ	NA
W007	11/21/2005	4	Dinoseb	0.00450 UJ	0.000260 UJ	NA
W008	11/20/2005	3	Dinoseb	0.00590 U	0.000260 U	NA
W009	11/20/2005	5	Dinoseb	0.00640 U	0.000260 U	NA
W010	11/20/2005	5	Dinoseb	0.00470 U	0.000260 U	NA
W011	11/20/2005	3	Dinoseb	0.00580 U	0.000260 U	NA
W011	11/20/2005	9	Dinoseb	0.00290 U	0.000260 U	NA
W011	11/20/2005	18.5	Dinoseb	0.00500 U	0.000260 U	NA
W012	11/19/2005	6	Dinoseb	0.00460 U	0.000260 U	NA
W013	11/19/2005	5	Dinoseb	0.00510 U	0.000260 U	NA
W014	11/19/2005	5	Dinoseb	0.00470 U	0.000260 U	NA
W015	11/19/2005	1	Dinoseb	0.00720 U	0.000260 U	NA
W016	11/19/2005	5	Dinoseb	0.00530 U	0.000260 U	NA
W017	11/18/2005	3	Dinoseb	0.00740 U	0.000260 U	NA
W017	11/18/2005	7	Dinoseb	0.00310 U	0.000260 U	NA
W018	11/18/2005	6	Dinoseb	0.00360 U	0.000260 U	NA
W019	11/18/2005	4	Dinoseb	0.00510 U	0.000260 U	NA
W020	11/18/2005	5	Dinoseb	0.00440 U	0.000260 U	NA
WDL-101-S	8/14/2002	0.25	Dinoseb	0.00631 U	NT	NA
WDL-101-S	8/14/2002	2.25	Dinoseb	0.00422 U	NT	NA
WDL-101-S	8/14/2002	5	Dinoseb	0.00459 U	NT	NA
WDL-101-S	8/14/2002	7	Dinoseb	0.00430 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Dinoseb	0.00496 U	NT	NA
WDL-102-S	8/14/2002	2.25	Dinoseb	0.00605 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dinoseb	0.00268 U	NT	NA
WDL-102-S	8/14/2002	8	Dinoseb	0.00385 U	NT	NA
WDL-102-S	8/14/2002	10	Dinoseb	0.00308 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dinoseb	0.00699 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dinoseb	0.00280 U	NT	NA
WDL-103-S	8/15/2002	5	Dinoseb	0.00435 U	NT	NA

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	6.75	Dinoseb	0.00609 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Dinoseb	0.00365 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dinoseb	0.00268 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dinoseb	0.00252 U	NT	NA
WDL-104-S	8/15/2002	5	Dinoseb	0.00343 U	NT	NA
WDL-104-S	8/15/2002	6.75	Dinoseb	0.00266 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dinoseb	0.320 UJ	0.00200 U	NA
WDL-201-S	2/12/2004	6	Dinoseb	0.101 UJ	0.00900 UJ	NA
WDL-202-S	2/12/2004	4	Dinoseb	0.101 UJ	0.00200 UJ	NA
WDL-203-S	2/13/2004	5.75	Dinoseb	0.101 UJ	0.00200 UJ	NA
WDL-204-S	2/12/2004	5	Dinoseb	0.101 UJ	0.00200 UJ	NA
W001	11/21/2005	1	MCPA	**5.90**	0.000190 U	1.62E+00
W002	11/21/2005	5	MCPA	**400 J**	**2.00**	1.62E+00
W003	11/21/2005	7	MCPA	**4.90**	**0.00320**	1.62E+00
W004	11/21/2005	7	MCPA	**4.30**	**0.0230**	1.62E+00
W005	11/21/2005	7	MCPA	**0.140**	**0.00200 J**	1.62E+00
W006	11/21/2005	6	MCPA	**46.0 J**	**0.0570**	1.62E+00
W007	11/21/2005	4	MCPA	**1.70 J**	**0.0160**	1.62E+00
W008	11/20/2005	3	MCPA	**15.0**	0.000190 U	1.62E+00
W009	11/20/2005	5	MCPA	**0.250**	**0.00140 J**	1.62E+00
W010	11/20/2005	5	MCPA	**3.60**	**0.00420**	1.62E+00
W011	11/20/2005	3	MCPA	**1.10**	0.000190 U	1.62E+00
W011	11/20/2005	9	MCPA	0.00300 U	0.000190 U	1.62E+00
W011	11/20/2005	18.5	MCPA	0.00530 U	0.000190 U	1.62E+00
W012	11/19/2005	6	MCPA	**1.40**	0.000190 U	1.62E+00
W013	11/19/2005	5	MCPA	**3.10**	**0.00340**	1.62E+00
W014	11/19/2005	5	MCPA	**2.70**	**0.00330**	1.62E+00
W015	11/19/2005	1	MCPA	**4.00**	**0.00150 J**	1.62E+00
W016	11/19/2005	5	MCPA	**4.70**	**0.00490**	1.62E+00
W017	11/18/2005	3	MCPA	**4.80**	0.000190 U	1.62E+00
W017	11/18/2005	7	MCPA	**0.210**	0.000190 U	1.62E+00
W018	11/18/2005	6	MCPA	**5.90**	**0.00510**	1.62E+00
W019	11/18/2005	4	MCPA	**3.30**	**0.00160 J**	1.62E+00
W020	11/18/2005	5	MCPA	**0.730**	0.000190 U	1.62E+00
WDL-101-S	8/14/2002	0.25	MCPA	**22.3**	NT	NA
WDL-101-S	8/14/2002	2.25	MCPA	**8.86**	NT	NA
WDL-101-S	8/14/2002	5	MCPA	**72.0**	NT	NA
WDL-101-S	8/14/2002	7	MCPA	**73.1 J**	NT	NA
WDL-102-S	8/14/2002	0.5	MCPA	**17.0**	NT	NA
WDL-102-S	8/14/2002	2.25	MCPA	**31.9**	NT	NA
WDL-102-S	8/14/2002	5.5	MCPA	**0.269 J**	NT	NA
WDL-102-S	8/14/2002	8	MCPA	0.00526 U	NT	NA
WDL-102-S	8/14/2002	10	MCPA	0.00421 U	NT	NA
WDL-103-S	8/15/2002	0.25	MCPA	**10.5**	NT	NA
WDL-103-S	8/15/2002	2.25	MCPA	**1.27**	NT	NA
WDL-103-S	8/15/2002	5	MCPA	**0.601**	NT	NA
WDL-103-S	8/15/2002	6.75	MCPA	**1.92 J**	NT	NA
WDL-103-S	8/15/2002	8.25	MCPA	0.00498 U	NT	NA
WDL-104-S	8/15/2002	0.25	MCPA	**0.535**	NT	NA
WDL-104-S	8/15/2002	2.25	MCPA	**1.64**	NT	NA
WDL-104-S	8/15/2002	5	MCPA	**1.90**	NT	NA
WDL-104-S	8/15/2002	6.75	MCPA	**1.78**	NT	NA
WDL-201-S	2/12/2004	0.25	MCPA	2.91 UJ	0.100 U	1.62E+00
WDL-201-S	2/12/2004	6	MCPA	46.0 UJ	1.00 U	1.62E+00
WDL-202-S	2/12/2004	4	MCPA	0.921 UJ	0.100 U	1.62E+00
WDL-203-S	2/13/2004	5.75	MCPA	0.921 UJ	0.100 U	1.62E+00
WDL-204-S	2/12/2004	5	MCPA	0.921 UJ	0.100 U	1.62E+00
W001	11/21/2005	1	MCPP	0.00390 U	**0.00330**	4.25E+00

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W002	11/21/2005	5	MCPP	**19.0 J**	**0.0460**	4.25E+00
W003	11/21/2005	7	MCPP	**0.770**	0.000200 U	4.25E+00
W004	11/21/2005	7	MCPP	**0.330**	0.000200 U	4.25E+00
W005	11/21/2005	7	MCPP	0.00240 U	0.000200 U	4.25E+00
W006	11/21/2005	6	MCPP	**0.420 J**	0.000200 U	4.25E+00
W007	11/21/2005	4	MCPP	0.00440 UJ	0.000200 U	4.25E+00
W008	11/20/2005	3	MCPP	**5.00**	**0.000920 J**	4.25E+00
W009	11/20/2005	5	MCPP	**0.350**	**0.00540**	4.25E+00
W010	11/20/2005	5	MCPP	**0.300**	**0.00330**	4.25E+00
W011	11/20/2005	3	MCPP	**0.580**	**0.00290**	4.25E+00
W011	11/20/2005	9	MCPP	0.00280 U	0.000200 U	4.25E+00
W011	11/20/2005	18.5	MCPP	0.00480 U	0.000200 U	4.25E+00
W012	11/19/2005	6	MCPP	**0.590**	0.000200 U	4.25E+00
W013	11/19/2005	5	MCPP	**0.790**	**0.0130**	4.25E+00
W014	11/19/2005	5	MCPP	**0.280**	**0.00710**	4.25E+00
W015	11/19/2005	1	MCPP	**3.50**	0.000200 U	4.25E+00
W016	11/19/2005	5	MCPP	0.00510 U	0.000200 U	4.25E+00
W017	11/18/2005	3	MCPP	**3.50**	0.000200 U	4.25E+00
W017	11/18/2005	7	MCPP	0.00300 U	0.000200 U	4.25E+00
W018	11/18/2005	6	MCPP	0.00350 U	0.000200 U	4.25E+00
W019	11/18/2005	4	MCPP	**0.310**	**0.00430**	4.25E+00
W020	11/18/2005	5	MCPP	**0.470**	0.000200 U	4.25E+00
WDL-101-S	8/14/2002	0.25	MCPP	**10.5**	NT	NA
WDL-101-S	8/14/2002	2.25	MCPP	**2.59**	NT	NA
WDL-101-S	8/14/2002	5	MCPP	0.00279 U	NT	NA
WDL-101-S	8/14/2002	7	MCPP	0.00262 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	MCPP	**13.0**	NT	NA
WDL-102-S	8/14/2002	2.25	MCPP	**11.3**	NT	NA
WDL-102-S	8/14/2002	5.5	MCPP	**0.249 J**	NT	NA
WDL-102-S	8/14/2002	8	MCPP	0.00235 U	NT	NA
WDL-102-S	8/14/2002	10	MCPP	**0.0479**	NT	NA
WDL-103-S	8/15/2002	0.25	MCPP	**6.00**	NT	NA
WDL-103-S	8/15/2002	2.25	MCPP	**1.15**	NT	NA
WDL-103-S	8/15/2002	5	MCPP	**0.455**	NT	NA
WDL-103-S	8/15/2002	6.75	MCPP	**0.273 J**	NT	NA
WDL-103-S	8/15/2002	8.25	MCPP	0.00222 U	NT	NA
WDL-104-S	8/15/2002	0.25	MCPP	**0.274**	NT	NA
WDL-104-S	8/15/2002	2.25	MCPP	**0.579**	NT	NA
WDL-104-S	8/15/2002	5	MCPP	0.00209 U	NT	NA
WDL-104-S	8/15/2002	6.75	MCPP	0.00162 U	NT	NA
WDL-201-S	2/12/2004	0.25	MCPP	2.89 U	0.100 U	4.25E+00
WDL-201-S	2/12/2004	6	MCPP	45.8 U	1.00 UJ	4.25E+00
WDL-202-S	2/12/2004	4	MCPP	0.915 U	0.100 UJ	4.25E+00
WDL-203-S	2/13/2004	5.75	MCPP	0.915 U	0.100 UJ	4.25E+00
WDL-204-S	2/12/2004	5	MCPP	0.915 UJ	0.100 UJ	4.25E+00
WDL-101-S	8/14/2002	0.25	Pentachlorophenol	0.00564 UJ	NT	NA
WDL-101-S	8/14/2002	2.25	Pentachlorophenol	**0.142 J**	NT	NA
WDL-101-S	8/14/2002	5	Pentachlorophenol	0.00410 UJ	NT	NA
WDL-101-S	8/14/2002	7	Pentachlorophenol	0.00384 UJ	NT	NA
WDL-102-S	8/14/2002	0.5	Pentachlorophenol	**0.0740**	NT	NA
WDL-102-S	8/14/2002	2.25	Pentachlorophenol	0.00541 U	NT	NA
WDL-102-S	8/14/2002	5.5	Pentachlorophenol	0.00239 U	NT	NA
WDL-102-S	8/14/2002	8	Pentachlorophenol	**0.422**	NT	NA
WDL-102-S	8/14/2002	10	Pentachlorophenol	0.00275 U	NT	NA
WDL-103-S	8/15/2002	0.25	Pentachlorophenol	**0.0391**	NT	NA
WDL-103-S	8/15/2002	2.25	Pentachlorophenol	0.00251 U	NT	NA

TABLE C-5
Chlorinated Herbicide Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	5	Pentachlorophenol	0.00389 U	NT	NA
WDL-103-S	8/15/2002	6.75	Pentachlorophenol	0.00544 UJ	NT	NA
WDL-103-S	8/15/2002	8.25	Pentachlorophenol	**0.112 N**	NT	NA
WDL-104-S	8/15/2002	0.25	Pentachlorophenol	0.00240 U	NT	NA
WDL-104-S	8/15/2002	2.25	Pentachlorophenol	0.00225 U	NT	NA
WDL-104-S	8/15/2002	5	Pentachlorophenol	0.00306 U	NT	NA
WDL-104-S	8/15/2002	6.75	Pentachlorophenol	0.00237 U	NT	NA

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.
NJ = The analyte has been presumptively identified; the associated analytical result is estimated.

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W002	11/21/2005	5	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W003	11/21/2005	7	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W004	11/21/2005	7	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W005	11/21/2005	7	4,4'-DDD	0.000262 UJ	0.0000250 UJ	4.00E-02
W006	11/21/2005	6	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W007	11/21/2005	4	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W008	11/20/2005	3	4,4'-DDD	**8.50 N**	0.0000250 U	4.00E-02
W009	11/20/2005	5	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W010	11/20/2005	5	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W011	11/20/2005	3	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W011	11/20/2005	9	4,4'-DDD	**0.00830 J**	0.0000250 U	4.00E-02
W011	11/20/2005	18.5	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W012	11/19/2005	6	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W013	11/19/2005	5	4,4'-DDD	**5.70 N**	0.0000250 U	4.00E-02
W014	11/19/2005	5	4,4'-DDD	0.000262 U	0.0000250 UJ	4.00E-02
W015	11/19/2005	1	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W016	11/19/2005	5	4,4'-DDD	**10.0**	0.0000250 UJ	4.00E-02
W017	11/18/2005	3	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W017	11/18/2005	7	4,4'-DDD	**0.120**	0.0000250 U	4.00E-02
W018	11/18/2005	6	4,4'-DDD	0.000262 U	0.0000250 U	4.00E-02
W019	11/18/2005	4	4,4'-DDD	**7.80 N**	0.0000250 U	4.00E-02
W020	11/18/2005	5	4,4'-DDD	**5.50**	0.0000250 U	4.00E-02
WDL-101-S	8/14/2002	0.25	4,4'-DDD	**1.00 N**	NT	NA
WDL-101-S	8/14/2002	2.25	4,4'-DDD	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	4,4'-DDD	**18.2 N**	NT	NA
WDL-101-S	8/14/2002	7	4,4'-DDD	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	4,4'-DDD	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	4,4'-DDD	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	4,4'-DDD	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	4,4'-DDD	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	4,4'-DDD	**0.175 N**	NT	NA
WDL-103-S	8/15/2002	0.25	4,4'-DDD	**0.714 N**	NT	NA
WDL-103-S	8/15/2002	2.25	4,4'-DDD	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	4,4'-DDD	**0.371 N**	NT	NA
WDL-103-S	8/15/2002	6.75	4,4'-DDD	**41.9 N**	NT	NA
WDL-103-S	8/15/2002	8.25	4,4'-DDD	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	4,4'-DDD	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	4,4'-DDD	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	4,4'-DDD	**1.32**	NT	NA
WDL-104-S	8/15/2002	6.75	4,4'-DDD	**0.235 N**	NT	NA
WDL-201-S	2/12/2004	0.25	4,4'-DDD	0.0132 U	0.000400 U	0.04
WDL-201-S	2/12/2004	6	4,4'-DDD	0.0417 U	0.00200 U	0.04
WDL-202-S	2/12/2004	4	4,4'-DDD	0.00417 UJ	0.000400 U	0.04
WDL-203-S	2/13/2004	5.75	4,4'-DDD	**0.0286 N**	0.000400 U	0.04
WDL-204-S	2/12/2004	5	4,4'-DDD	**1.59 J**	0.000400 U	0.04
W001	11/21/2005	1	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W002	11/21/2005	5	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W003	11/21/2005	7	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W004	11/21/2005	7	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W005	11/21/2005	7	4,4'-DDE	0.000252 UJ	0.0000750 UJ	3.22E-02
W006	11/21/2005	6	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W007	11/21/2005	4	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W008	11/20/2005	3	4,4'-DDE	**6.50 N**	0.0000750 U	3.22E-02
W009	11/20/2005	5	4,4'-DDE	**0.740 J**	0.0000750 U	3.22E-02
W010	11/20/2005	5	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W011	11/20/2005	3	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W011	11/20/2005	9	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W011	11/20/2005	18.5	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W012	11/19/2005	6	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W013	11/19/2005	5	4,4'-DDE	**3.30 N**	0.0000750 U	3.22E-02
W014	11/19/2005	5	4,4'-DDE	0.000252 U	0.0000750 UJ	3.22E-02
W015	11/19/2005	1	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W016	11/19/2005	5	4,4'-DDE	**6.20 N**	0.0000750 UJ	3.22E-02
W017	11/18/2005	3	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W017	11/18/2005	7	4,4'-DDE	**0.0270 J**	0.0000750 U	3.22E-02
W018	11/18/2005	6	4,4'-DDE	0.000252 U	0.0000750 U	3.22E-02
W019	11/18/2005	4	4,4'-DDE	**2.10**	0.0000750 U	3.22E-02
W020	11/18/2005	5	4,4'-DDE	**1.40**	0.0000750 U	3.22E-02
WDL-101-S	8/14/2002	0.25	4,4'-DDE	0.588 U	NT	NA
WDL-101-S	8/14/2002	2.25	4,4'-DDE	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	4,4'-DDE	3.98 U	NT	NA
WDL-101-S	8/14/2002	7	4,4'-DDE	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	4,4'-DDE	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	4,4'-DDE	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	4,4'-DDE	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	4,4'-DDE	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	4,4'-DDE	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	4,4'-DDE	0.346 U	NT	NA
WDL-103-S	8/15/2002	2.25	4,4'-DDE	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	4,4'-DDE	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	4,4'-DDE	0.586 U	NT	NA
WDL-103-S	8/15/2002	8.25	4,4'-DDE	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	4,4'-DDE	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	4,4'-DDE	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	4,4'-DDE	**0.536**	NT	NA
WDL-104-S	8/15/2002	6.75	4,4'-DDE	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	4,4'-DDE	0.0132 U	0.000400 U	0.0322
WDL-201-S	2/12/2004	6	4,4'-DDE	0.0417 U	0.00200 U	0.0322
WDL-202-S	2/12/2004	4	4,4'-DDE	0.00417 UJ	0.000400 U	0.0322
WDL-203-S	2/13/2004	5.75	4,4'-DDE	0.000833 U	0.000400 U	0.0322
WDL-204-S	2/12/2004	5	4,4'-DDE	**0.252 J**	0.000400 U	0.0322
W001	11/21/2005	1	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W002	11/21/2005	5	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W003	11/21/2005	7	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W004	11/21/2005	7	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W005	11/21/2005	7	4,4'-DDT	**2.40 J**	0.000100 UJ	1.50E-02
W006	11/21/2005	6	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W007	11/21/2005	4	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W008	11/20/2005	3	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W009	11/20/2005	5	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W010	11/20/2005	5	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W011	11/20/2005	3	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W011	11/20/2005	9	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W011	11/20/2005	18.5	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W012	11/19/2005	6	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W013	11/19/2005	5	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W014	11/19/2005	5	4,4'-DDT	0.000130 U	0.000100 UJ	1.50E-02
W015	11/19/2005	1	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W016	11/19/2005	5	4,4'-DDT	0.000130 U	0.000100 UJ	1.50E-02
W017	11/18/2005	3	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W017	11/18/2005	7	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W018	11/18/2005	6	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W019	11/18/2005	4	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
W020	11/18/2005	5	4,4'-DDT	0.000130 U	0.000100 U	1.50E-02
WDL-101-S	8/14/2002	0.25	4,4'-DDT	0.588 U	NT	NA
WDL-101-S	8/14/2002	2.25	4,4'-DDT	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	4,4'-DDT	**6.28 N**	NT	NA
WDL-101-S	8/14/2002	7	4,4'-DDT	**18.5**	NT	NA
WDL-102-S	8/14/2002	0.5	4,4'-DDT	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	4,4'-DDT	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	4,4'-DDT	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	4,4'-DDT	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	4,4'-DDT	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	4,4'-DDT	0.346 U	NT	NA
WDL-103-S	8/15/2002	2.25	4,4'-DDT	**0.260**	NT	NA
WDL-103-S	8/15/2002	5	4,4'-DDT	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	4,4'-DDT	0.586 U	NT	NA
WDL-103-S	8/15/2002	8.25	4,4'-DDT	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	4,4'-DDT	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	4,4'-DDT	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	4,4'-DDT	0.161 U	NT	NA
WDL-104-S	8/15/2002	6.75	4,4'-DDT	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	4,4'-DDT	0.0132 U	0.000400 U	0.015
WDL-201-S	2/12/2004	6	4,4'-DDT	0.0417 U	0.00200 U	0.015
WDL-202-S	2/12/2004	4	4,4'-DDT	0.00417 UJ	0.000400 U	0.015
WDL-203-S	2/13/2004	5.75	4,4'-DDT	0.000833 U	0.000400 U	0.015
WDL-204-S	2/12/2004	5	4,4'-DDT	0.00417 UJ	0.000400 U	0.015
W001	11/21/2005	1	Aldrin	0.000114 U	0.0000300 U	NA
W002	11/21/2005	5	Aldrin	0.000114 U	0.0000300 U	NA
W003	11/21/2005	7	Aldrin	0.000114 U	0.0000300 U	NA
W004	11/21/2005	7	Aldrin	0.000114 U	0.0000300 U	NA
W005	11/21/2005	7	Aldrin	0.000114 UJ	0.0000300 UJ	NA
W006	11/21/2005	6	Aldrin	0.000114 U	0.0000300 U	NA
W007	11/21/2005	4	Aldrin	0.000114 U	0.0000300 U	NA
W008	11/20/2005	3	Aldrin	0.000114 U	0.0000300 U	NA
W009	11/20/2005	5	Aldrin	0.000114 U	0.0000300 U	NA
W010	11/20/2005	5	Aldrin	0.000114 U	0.0000300 U	NA
W011	11/20/2005	3	Aldrin	0.000114 U	0.0000300 U	NA
W011	11/20/2005	9	Aldrin	0.000114 U	0.0000300 U	NA
W011	11/20/2005	18.5	Aldrin	0.000114 U	0.0000300 U	NA
W012	11/19/2005	6	Aldrin	0.000114 U	0.0000300 U	NA
W013	11/19/2005	5	Aldrin	0.000114 U	0.0000300 U	NA
W014	11/19/2005	5	Aldrin	0.000114 U	0.0000300 UJ	NA
W015	11/19/2005	1	Aldrin	0.000114 U	0.0000300 U	NA
W016	11/19/2005	5	Aldrin	0.000114 U	0.0000300 UJ	NA
W017	11/18/2005	3	Aldrin	0.000114 U	0.0000300 U	NA
W017	11/18/2005	7	Aldrin	0.000114 U	0.0000300 U	NA
W018	11/18/2005	6	Aldrin	0.000114 U	0.0000300 U	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W019	11/18/2005	4	Aldrin	0.000114 U	0.0000300 U	NA
W020	11/18/2005	5	Aldrin	0.000114 U	0.0000300 U	NA
WDL-101-S	8/14/2002	0.25	Aldrin	0.294 U	NT	NA
WDL-101-S	8/14/2002	2.25	Aldrin	0.200 U	NT	NA
WDL-101-S	8/14/2002	5	Aldrin	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	Aldrin	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	Aldrin	0.462 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aldrin	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	Aldrin	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	Aldrin	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	Aldrin	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aldrin	0.173 U	NT	NA
WDL-103-S	8/15/2002	2.25	Aldrin	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	Aldrin	**0.134 N**	NT	NA
WDL-103-S	8/15/2002	6.75	Aldrin	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aldrin	0.0369 U	NT	NA
WDL-104-S	8/15/2002	0.25	Aldrin	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	Aldrin	0.00118 U	NT	NA
WDL-104-S	8/15/2002	5	Aldrin	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	Aldrin	0.0674 U	NT	NA
WDL-201-S	2/12/2004	0.25	Aldrin	0.0527 U	0.000400 U	NA
WDL-201-S	2/12/2004	6	Aldrin	0.0417 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	Aldrin	0.00417 U	0.000400 U	NA
WDL-203-S	2/13/2004	5.75	Aldrin	**0.0133 J**	0.000400 U	NA
WDL-204-S	2/12/2004	5	Aldrin	0.00417 U	0.000400 U	NA
W001	11/21/2005	1	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W002	11/21/2005	5	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W003	11/21/2005	7	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W004	11/21/2005	7	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W005	11/21/2005	7	alpha-BHC	0.000117 UJ	0.0000400 UJ	2.79E-02
W006	11/21/2005	6	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W007	11/21/2005	4	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W008	11/20/2005	3	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W009	11/20/2005	5	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W010	11/20/2005	5	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W011	11/20/2005	3	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W011	11/20/2005	9	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W011	11/20/2005	18.5	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W012	11/19/2005	6	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W013	11/19/2005	5	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W014	11/19/2005	5	alpha-BHC	0.000117 U	0.0000400 UJ	2.79E-02
W015	11/19/2005	1	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W016	11/19/2005	5	alpha-BHC	0.000117 U	0.0000400 UJ	2.79E-02
W017	11/18/2005	3	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W017	11/18/2005	7	alpha-BHC	**0.00610 J**	0.0000400 U	2.79E-02
W018	11/18/2005	6	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W019	11/18/2005	4	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
W020	11/18/2005	5	alpha-BHC	0.000117 U	0.0000400 U	2.79E-02
WDL-101-S	8/14/2002	0.25	alpha-BHC	0.294 U	NT	NA
WDL-101-S	8/14/2002	2.25	alpha-BHC	0.200 U	NT	NA
WDL-101-S	8/14/2002	5	alpha-BHC	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	alpha-BHC	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	alpha-BHC	0.462 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	2.25	alpha-BHC	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	alpha-BHC	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	alpha-BHC	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	alpha-BHC	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	alpha-BHC	0.173 U	NT	NA
WDL-103-S	8/15/2002	2.25	alpha-BHC	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	alpha-BHC	0.101 U	NT	NA
WDL-103-S	8/15/2002	6.75	alpha-BHC	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	alpha-BHC	0.0369 U	NT	NA
WDL-104-S	8/15/2002	0.25	alpha-BHC	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	alpha-BHC	0.00118 U	NT	NA
WDL-104-S	8/15/2002	5	alpha-BHC	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	alpha-BHC	0.0674 U	NT	NA
WDL-201-S	2/12/2004	0.25	alpha-BHC	0.0132 U	0.000400 U	0.0279
WDL-201-S	2/12/2004	6	alpha-BHC	0.0417 U	0.00200 U	0.0279
WDL-202-S	2/12/2004	4	alpha-BHC	0.00417 U	0.000400 U	0.0279
WDL-203-S	2/13/2004	5.75	alpha-BHC	0.000833 U	0.000400 U	0.0279
WDL-204-S	2/12/2004	5	alpha-BHC	0.00417 U	0.000400 U	0.0279
W001	11/21/2005	1	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W002	11/21/2005	5	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W003	11/21/2005	7	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W004	11/21/2005	7	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W005	11/21/2005	7	alpha-Chlordane	0.000213 UJ	0.0000350 UJ	8.13E-02
W006	11/21/2005	6	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W007	11/21/2005	4	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W008	11/20/2005	3	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W009	11/20/2005	5	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W010	11/20/2005	5	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W011	11/20/2005	3	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W011	11/20/2005	9	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W011	11/20/2005	18.5	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W012	11/19/2005	6	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W013	11/19/2005	5	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W014	11/19/2005	5	alpha-Chlordane	0.000213 U	0.0000350 UJ	8.13E-02
W015	11/19/2005	1	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W016	11/19/2005	5	alpha-Chlordane	0.000213 U	0.0000350 UJ	8.13E-02
W017	11/18/2005	3	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W017	11/18/2005	7	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W018	11/18/2005	6	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W019	11/18/2005	4	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
W020	11/18/2005	5	alpha-Chlordane	0.000213 U	0.0000350 U	8.13E-02
WDL-201-S	2/12/2004	0.25	alpha-Chlordane	0.0527 U	0.000400 U	0.0813
WDL-201-S	2/12/2004	6	alpha-Chlordane	0.167 U	0.00200 U	0.0813
WDL-202-S	2/12/2004	4	alpha-Chlordane	0.00833 U	0.000400 U	0.0813
WDL-203-S	2/13/2004	5.75	alpha-Chlordane	0.00417 U	0.000400 U	0.0813
WDL-204-S	2/12/2004	5	alpha-Chlordane	0.00833 U	0.000400 U	0.0813
W001	11/21/2005	1	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W002	11/21/2005	5	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W003	11/21/2005	7	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W004	11/21/2005	7	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W005	11/21/2005	7	beta-BHC	0.000118 UJ	0.0000200 UJ	8.39E-02
W006	11/21/2005	6	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W007	11/21/2005	4	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W008	11/20/2005	3	beta-BHC	0.000118 U	0.0000200 U	8.39E-02

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W009	11/20/2005	5	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W010	11/20/2005	5	beta-BHC	0.000118 U	**0.0000510 N**	8.39E-02
W011	11/20/2005	3	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W011	11/20/2005	9	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W011	11/20/2005	18.5	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W012	11/19/2005	6	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W013	11/19/2005	5	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W014	11/19/2005	5	beta-BHC	0.000118 U	0.0000200 UJ	8.39E-02
W015	11/19/2005	1	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W016	11/19/2005	5	beta-BHC	0.000118 U	0.0000200 UJ	8.39E-02
W017	11/18/2005	3	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W017	11/18/2005	7	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W018	11/18/2005	6	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W019	11/18/2005	4	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
W020	11/18/2005	5	beta-BHC	0.000118 U	0.0000200 U	8.39E-02
WDL-101-S	8/14/2002	0.25	beta-BHC	0.294 U	NT	NA
WDL-101-S	8/14/2002	2.25	beta-BHC	0.200 U	NT	NA
WDL-101-S	8/14/2002	5	beta-BHC	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	beta-BHC	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	beta-BHC	0.462 U	NT	NA
WDL-102-S	8/14/2002	2.25	beta-BHC	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	beta-BHC	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	beta-BHC	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	beta-BHC	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	beta-BHC	**0.174 N**	NT	NA
WDL-103-S	8/15/2002	2.25	beta-BHC	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	beta-BHC	0.101 U	NT	NA
WDL-103-S	8/15/2002	6.75	beta-BHC	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	beta-BHC	0.0369 U	NT	NA
WDL-104-S	8/15/2002	0.25	beta-BHC	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	beta-BHC	0.00118 U	NT	NA
WDL-104-S	8/15/2002	5	beta-BHC	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	beta-BHC	0.0674 U	NT	NA
WDL-201-S	2/12/2004	0.25	beta-BHC	0.0527 U	0.000400 U	0.0839
WDL-201-S	2/12/2004	6	beta-BHC	0.0417 U	0.00200 U	0.0839
WDL-202-S	2/12/2004	4	beta-BHC	0.00833 U	0.000400 U	0.0839
WDL-203-S	2/13/2004	5.75	beta-BHC	0.00833 U	0.000400 U	0.0839
WDL-204-S	2/12/2004	5	beta-BHC	0.00833 U	0.000400 U	0.0839
WDL-101-S	8/14/2002	0.25	Chlordane (tech)	2.94 U	NT	NA
WDL-101-S	8/14/2002	2.25	Chlordane (tech)	2.00 U	NT	NA
WDL-101-S	8/14/2002	5	Chlordane (tech)	19.9 U	NT	NA
WDL-101-S	8/14/2002	7	Chlordane (tech)	39.8 U	NT	NA
WDL-102-S	8/14/2002	0.5	Chlordane (tech)	4.62 U	NT	NA
WDL-102-S	8/14/2002	2.25	Chlordane (tech)	5.47 U	NT	NA
WDL-102-S	8/14/2002	5.5	Chlordane (tech)	0.266 U	NT	NA
WDL-102-S	8/14/2002	8	Chlordane (tech)	0.366 U	NT	NA
WDL-102-S	8/14/2002	10	Chlordane (tech)	0.687 U	NT	NA
WDL-103-S	8/15/2002	0.25	Chlordane (tech)	1.73 U	NT	NA
WDL-103-S	8/15/2002	2.25	Chlordane (tech)	0.630 U	NT	NA
WDL-103-S	8/15/2002	5	Chlordane (tech)	1.01 U	NT	NA
WDL-103-S	8/15/2002	6.75	Chlordane (tech)	2.93 U	NT	NA
WDL-103-S	8/15/2002	8.25	Chlordane (tech)	0.369 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-104-S	8/15/2002	0.25	Chlordane (tech)	0.663 U	NT	NA
WDL-104-S	8/15/2002	2.25	Chlordane (tech)	0.0118 U	NT	NA
WDL-104-S	8/15/2002	5	Chlordane (tech)	0.805 U	NT	NA
WDL-104-S	8/15/2002	6.75	Chlordane (tech)	0.674 U	NT	NA
W001	11/21/2005	1	delta-BHC	**0.940 N**	0.0000300 U	NA
W002	11/21/2005	5	delta-BHC	0.0000655 U	0.0000300 U	NA
W003	11/21/2005	7	delta-BHC	0.0000655 U	0.0000300 U	NA
W004	11/21/2005	7	delta-BHC	0.0000655 U	0.0000300 U	NA
W005	11/21/2005	7	delta-BHC	0.0000655 UJ	0.0000300 UJ	NA
W006	11/21/2005	6	delta-BHC	0.0000655 U	0.0000300 U	NA
W007	11/21/2005	4	delta-BHC	**2.20 N**	0.0000300 U	NA
W008	11/20/2005	3	delta-BHC	0.0000655 U	0.0000300 U	NA
W009	11/20/2005	5	delta-BHC	0.0000655 U	0.0000300 U	NA
W010	11/20/2005	5	delta-BHC	0.0000655 U	0.0000300 U	NA
W011	11/20/2005	3	delta-BHC	0.0000655 U	0.0000300 U	NA
W011	11/20/2005	9	delta-BHC	0.0000655 U	0.0000300 U	NA
W011	11/20/2005	18.5	delta-BHC	0.0000655 U	0.0000300 U	NA
W012	11/19/2005	6	delta-BHC	0.0000655 U	0.0000300 U	NA
W013	11/19/2005	5	delta-BHC	0.0000655 U	0.0000300 U	NA
W014	11/19/2005	5	delta-BHC	0.0000655 U	0.0000300 UJ	NA
W015	11/19/2005	1	delta-BHC	0.0000655 U	0.0000300 U	NA
W016	11/19/2005	5	delta-BHC	0.0000655 U	0.0000300 UJ	NA
W017	11/18/2005	3	delta-BHC	0.0000655 U	0.0000300 U	NA
W017	11/18/2005	7	delta-BHC	0.0000655 U	0.0000300 U	NA
W018	11/18/2005	6	delta-BHC	0.0000655 U	0.0000300 U	NA
W019	11/18/2005	4	delta-BHC	0.0000655 U	0.0000300 U	NA
W020	11/18/2005	5	delta-BHC	0.0000655 U	0.0000300 U	NA
WDL-101-S	8/14/2002	0.25	delta-BHC	0.294 U	NT	NA
WDL-101-S	8/14/2002	2.25	delta-BHC	0.200 U	NT	NA
WDL-101-S	8/14/2002	5	delta-BHC	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	delta-BHC	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	delta-BHC	0.462 U	NT	NA
WDL-102-S	8/14/2002	2.25	delta-BHC	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	delta-BHC	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	delta-BHC	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	delta-BHC	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	delta-BHC	0.173 U	NT	NA
WDL-103-S	8/15/2002	2.25	delta-BHC	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	delta-BHC	0.101 U	NT	NA
WDL-103-S	8/15/2002	6.75	delta-BHC	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	delta-BHC	0.0369 U	NT	NA
WDL-104-S	8/15/2002	0.25	delta-BHC	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	delta-BHC	0.00118 U	NT	NA
WDL-104-S	8/15/2002	5	delta-BHC	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	delta-BHC	0.0674 U	NT	NA
WDL-201-S	2/12/2004	0.25	delta-BHC	0.0264 U	0.000400 U	NA
WDL-201-S	2/12/2004	6	delta-BHC	0.333 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	delta-BHC	0.00833 U	0.000400 U	NA
WDL-203-S	2/13/2004	5.75	delta-BHC	0.00833 U	0.000400 U	NA
WDL-204-S	2/12/2004	5	delta-BHC	0.00833 U	0.000400 U	NA
W001	11/21/2005	1	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W002	11/21/2005	5	Dieldrin	0.000224 U	0.000100 U	6.07E-03

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W003	11/21/2005	7	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W004	11/21/2005	7	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W005	11/21/2005	7	Dieldrin	0.000224 UJ	0.000100 UJ	6.07E-03
W006	11/21/2005	6	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W007	11/21/2005	4	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W008	11/20/2005	3	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W009	11/20/2005	5	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W010	11/20/2005	5	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W011	11/20/2005	3	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W011	11/20/2005	9	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W011	11/20/2005	18.5	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W012	11/19/2005	6	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W013	11/19/2005	5	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W014	11/19/2005	5	Dieldrin	0.000224 U	0.000100 UJ	6.07E-03
W015	11/19/2005	1	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W016	11/19/2005	5	Dieldrin	0.000224 U	0.000100 UJ	6.07E-03
W017	11/18/2005	3	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W017	11/18/2005	7	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W018	11/18/2005	6	Dieldrin	0.000224 U	0.000100 U	6.07E-03
W019	11/18/2005	4	Dieldrin	**1.50**	0.000100 U	6.07E-03
W020	11/18/2005	5	Dieldrin	**2.00**	0.000100 U	6.07E-03
WDL-101-S	8/14/2002	0.25	Dieldrin	0.588 U	NT	NA
WDL-101-S	8/14/2002	2.25	Dieldrin	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	Dieldrin	3.98 U	NT	NA
WDL-101-S	8/14/2002	7	Dieldrin	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	Dieldrin	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	Dieldrin	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	Dieldrin	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	Dieldrin	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	Dieldrin	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	Dieldrin	0.346 U	NT	NA
WDL-103-S	8/15/2002	2.25	Dieldrin	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	Dieldrin	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	Dieldrin	0.586 U	NT	NA
WDL-103-S	8/15/2002	8.25	Dieldrin	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	Dieldrin	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	Dieldrin	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	Dieldrin	**0.423**	NT	NA
WDL-104-S	8/15/2002	6.75	Dieldrin	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	Dieldrin	0.0132 U	0.000400 U	0.00607
WDL-201-S	2/12/2004	6	Dieldrin	0.0417 U	0.00200 U	0.00607
WDL-202-S	2/12/2004	4	Dieldrin	0.00417 UJ	0.000400 U	0.00607
WDL-203-S	2/13/2004	5.75	Dieldrin	**0.00780 N**	0.000400 U	0.00607
WDL-204-S	2/12/2004	5	Dieldrin	0.0417 UJ	0.000400 U	0.00607
W001	11/21/2005	1	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W002	11/21/2005	5	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W003	11/21/2005	7	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W004	11/21/2005	7	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W005	11/21/2005	7	Endosulfan I	0.000172 UJ	0.0000500 UJ	3.04E+01
W006	11/21/2005	6	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W007	11/21/2005	4	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W008	11/20/2005	3	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W009	11/20/2005	5	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W010	11/20/2005	5	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W011	11/20/2005	3	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W011	11/20/2005	9	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W011	11/20/2005	18.5	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W012	11/19/2005	6	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W013	11/19/2005	5	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W014	11/19/2005	5	Endosulfan I	0.000172 U	0.0000500 UJ	3.04E+01
W015	11/19/2005	1	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W016	11/19/2005	5	Endosulfan I	0.000172 U	0.0000500 UJ	3.04E+01
W017	11/18/2005	3	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W017	11/18/2005	7	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W018	11/18/2005	6	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W019	11/18/2005	4	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
W020	11/18/2005	5	Endosulfan I	0.000172 U	0.0000500 U	3.04E+01
WDL-101-S	8/14/2002	0.25	Endosulfan I	**0.523 N**	NT	NA
WDL-101-S	8/14/2002	2.25	Endosulfan I	0.200 U	NT	NA
WDL-101-S	8/14/2002	5	Endosulfan I	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	Endosulfan I	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	Endosulfan I	0.462 U	NT	NA
WDL-102-S	8/14/2002	2.25	Endosulfan I	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	Endosulfan I	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	Endosulfan I	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	Endosulfan I	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	Endosulfan I	0.173 U	NT	NA
WDL-103-S	8/15/2002	2.25	Endosulfan I	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	Endosulfan I	0.101 U	NT	NA
WDL-103-S	8/15/2002	6.75	Endosulfan I	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	Endosulfan I	**0.172 N**	NT	NA
WDL-104-S	8/15/2002	0.25	Endosulfan I	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	Endosulfan I	0.00118 U	NT	NA
WDL-104-S	8/15/2002	5	Endosulfan I	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	Endosulfan I	0.0674 U	NT	NA
WDL-201-S	2/12/2004	0.25	Endosulfan I	0.0132 U	0.000400 U	30.4
WDL-201-S	2/12/2004	6	Endosulfan I	0.0417 U	0.00200 U	30.4
WDL-202-S	2/12/2004	4	Endosulfan I	0.00417 UJ	0.000400 U	30.4
WDL-203-S	2/13/2004	5.75	Endosulfan I	0.00417 U	0.000400 U	30.4
WDL-204-S	2/12/2004	5	Endosulfan I	0.00417 UJ	0.000400 U	30.4
W001	11/21/2005	1	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W002	11/21/2005	5	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W003	11/21/2005	7	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W004	11/21/2005	7	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W005	11/21/2005	7	Endosulfan II	0.000308 UJ	0.000100 UJ	3.04E+01
W006	11/21/2005	6	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W007	11/21/2005	4	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W008	11/20/2005	3	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W009	11/20/2005	5	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W010	11/20/2005	5	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W011	11/20/2005	3	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W011	11/20/2005	9	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W011	11/20/2005	18.5	Endosulfan II	0.000308 U	0.000100 U	3.04E+01

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W012	11/19/2005	6	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W013	11/19/2005	5	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W014	11/19/2005	5	Endosulfan II	0.000308 U	0.000100 UJ	3.04E+01
W015	11/19/2005	1	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W016	11/19/2005	5	Endosulfan II	0.000308 U	0.000100 UJ	3.04E+01
W017	11/18/2005	3	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W017	11/18/2005	7	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W018	11/18/2005	6	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W019	11/18/2005	4	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
W020	11/18/2005	5	Endosulfan II	0.000308 U	0.000100 U	3.04E+01
WDL-101-S	8/14/2002	0.25	Endosulfan II	0.588 U	NT	NA
WDL-101-S	8/14/2002	2.25	Endosulfan II	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	Endosulfan II	3.98 U	NT	NA
WDL-101-S	8/14/2002	7	Endosulfan II	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	Endosulfan II	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	Endosulfan II	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	Endosulfan II	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	Endosulfan II	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	Endosulfan II	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	Endosulfan II	**0.391 N**	NT	NA
WDL-103-S	8/15/2002	2.25	Endosulfan II	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	Endosulfan II	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	Endosulfan II	0.586 U	NT	NA
WDL-103-S	8/15/2002	8.25	Endosulfan II	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	Endosulfan II	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	Endosulfan II	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	Endosulfan II	0.161 U	NT	NA
WDL-104-S	8/15/2002	6.75	Endosulfan II	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	Endosulfan II	0.0132 U	0.000400 U	30.4
WDL-201-S	2/12/2004	6	Endosulfan II	0.417 U	0.00200 U	30.4
WDL-202-S	2/12/2004	4	Endosulfan II	0.00417 UJ	0.000400 U	30.4
WDL-203-S	2/13/2004	5.75	Endosulfan II	0.000833 U	0.000400 U	30.4
WDL-204-S	2/12/2004	5	Endosulfan II	**0.476 J**	0.000400 U	30.4
W001	11/21/2005	1	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W002	11/21/2005	5	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W003	11/21/2005	7	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W004	11/21/2005	7	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W005	11/21/2005	7	Endosulfan sulfate	0.000217 UJ	0.000165 UJ	NA
W006	11/21/2005	6	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W007	11/21/2005	4	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W008	11/20/2005	3	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W009	11/20/2005	5	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W010	11/20/2005	5	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W011	11/20/2005	3	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W011	11/20/2005	9	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W011	11/20/2005	18.5	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W012	11/19/2005	6	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W013	11/19/2005	5	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W014	11/19/2005	5	Endosulfan sulfate	0.000217 U	0.000165 UJ	NA
W015	11/19/2005	1	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W016	11/19/2005	5	Endosulfan sulfate	0.000217 U	0.000165 UJ	NA
W017	11/18/2005	3	Endosulfan sulfate	0.000217 U	0.000165 U	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W017	11/18/2005	7	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W018	11/18/2005	6	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W019	11/18/2005	4	Endosulfan sulfate	0.000217 U	0.000165 U	NA
W020	11/18/2005	5	Endosulfan sulfate	0.000217 U	0.000165 U	NA
WDL-101-S	8/14/2002	0.25	Endosulfan sulfate	**2.98 N**	NT	NA
WDL-101-S	8/14/2002	2.25	Endosulfan sulfate	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	Endosulfan sulfate	3.98 U	NT	NA
WDL-101-S	8/14/2002	7	Endosulfan sulfate	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	Endosulfan sulfate	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	Endosulfan sulfate	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	Endosulfan sulfate	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	Endosulfan sulfate	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	Endosulfan sulfate	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	Endosulfan sulfate	0.346 U	NT	NA
WDL-103-S	8/15/2002	2.25	Endosulfan sulfate	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	Endosulfan sulfate	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	Endosulfan sulfate	0.586 U	NT	NA
WDL-103-S	8/15/2002	8.25	Endosulfan sulfate	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	Endosulfan sulfate	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	Endosulfan sulfate	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	Endosulfan sulfate	0.161 U	NT	NA
WDL-104-S	8/15/2002	6.75	Endosulfan sulfate	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	Endosulfan sulfate	0.0132 U	0.000400 U	NA
WDL-201-S	2/12/2004	6	Endosulfan sulfate	0.0417 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	Endosulfan sulfate	0.00417 UJ	0.000400 U	NA
WDL-203-S	2/13/2004	5.75	Endosulfan sulfate	0.000833 U	0.000400 U	NA
WDL-204-S	2/12/2004	5	Endosulfan sulfate	0.00417 UJ	0.000400 U	NA
W001	11/21/2005	1	Endrin	0.000293 U	0.0000100 U	4.17E-01
W002	11/21/2005	5	Endrin	0.000293 U	0.0000100 U	4.17E-01
W003	11/21/2005	7	Endrin	0.000293 U	0.0000100 U	4.17E-01
W004	11/21/2005	7	Endrin	0.000293 U	0.0000100 U	4.17E-01
W005	11/21/2005	7	Endrin	0.000293 UJ	0.0000100 UJ	4.17E-01
W006	11/21/2005	6	Endrin	0.000293 U	0.0000100 U	4.17E-01
W007	11/21/2005	4	Endrin	0.000293 U	0.0000100 U	4.17E-01
W008	11/20/2005	3	Endrin	0.000293 U	0.0000100 U	4.17E-01
W009	11/20/2005	5	Endrin	0.000293 U	0.0000100 U	4.17E-01
W010	11/20/2005	5	Endrin	0.000293 U	0.0000100 U	4.17E-01
W011	11/20/2005	3	Endrin	0.000293 U	0.0000100 U	4.17E-01
W011	11/20/2005	9	Endrin	0.000293 U	**0.000260 J**	4.17E-01
W011	11/20/2005	18.5	Endrin	0.000293 U	0.0000100 U	4.17E-01
W012	11/19/2005	6	Endrin	0.000293 U	0.0000100 U	4.17E-01
W013	11/19/2005	5	Endrin	0.000293 U	0.0000100 U	4.17E-01
W014	11/19/2005	5	Endrin	0.000293 U	0.0000100 UJ	4.17E-01
W015	11/19/2005	1	Endrin	0.000293 U	0.0000100 U	4.17E-01
W016	11/19/2005	5	Endrin	0.000293 U	0.0000100 UJ	4.17E-01
W017	11/18/2005	3	Endrin	0.000293 U	0.0000100 U	4.17E-01
W017	11/18/2005	7	Endrin	0.000293 U	0.0000100 U	4.17E-01
W018	11/18/2005	6	Endrin	0.000293 U	0.0000100 U	4.17E-01
W019	11/18/2005	4	Endrin	0.000293 U	0.0000100 U	4.17E-01
W020	11/18/2005	5	Endrin	**1.00**	0.0000100 U	4.17E-01
WDL-101-S	8/14/2002	0.25	Endrin	0.588 U	NT	NA
WDL-101-S	8/14/2002	2.25	Endrin	0.399 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	5	Endrin	3.98 U	NT	NA
WDL-101-S	8/14/2002	7	Endrin	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	Endrin	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	Endrin	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	Endrin	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	Endrin	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	Endrin	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	Endrin	0.346 U	NT	NA
WDL-103-S	8/15/2002	2.25	Endrin	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	Endrin	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	Endrin	0.586 U	NT	NA
WDL-103-S	8/15/2002	8.25	Endrin	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	Endrin	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	Endrin	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	Endrin	0.161 U	NT	NA
WDL-104-S	8/15/2002	6.75	Endrin	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	Endrin	0.0132 U	0.000400 U	0.417
WDL-201-S	2/12/2004	6	Endrin	0.0417 U	0.00200 U	0.417
WDL-202-S	2/12/2004	4	Endrin	0.00417 UJ	0.000400 U	0.417
WDL-203-S	2/13/2004	5.75	Endrin	0.000833 U	0.000400 U	0.417
WDL-204-S	2/12/2004	5	Endrin	0.00833 UJ	0.000400 U	0.417
W001	11/21/2005	1	Endrin aldehyde	0.000172 U	0.000145 UJ	NA
W002	11/21/2005	5	Endrin aldehyde	0.000172 U	0.000145 UJ	NA
W003	11/21/2005	7	Endrin aldehyde	0.000172 U	0.000145 UJ	NA
W004	11/21/2005	7	Endrin aldehyde	0.000172 U	0.000145 UJ	NA
W005	11/21/2005	7	Endrin aldehyde	0.000172 UJ	0.000145 UJ	NA
W006	11/21/2005	6	Endrin aldehyde	0.000172 U	0.000145 UJ	NA
W007	11/21/2005	4	Endrin aldehyde	0.000172 U	0.000145 UJ	NA
W008	11/20/2005	3	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W009	11/20/2005	5	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W010	11/20/2005	5	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W011	11/20/2005	3	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W011	11/20/2005	9	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W011	11/20/2005	18.5	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W012	11/19/2005	6	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W013	11/19/2005	5	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W014	11/19/2005	5	Endrin aldehyde	0.000172 UJ	0.000145 UJ	NA
W015	11/19/2005	1	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W016	11/19/2005	5	Endrin aldehyde	0.000172 UJ	0.000145 UJ	NA
W017	11/18/2005	3	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W017	11/18/2005	7	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W018	11/18/2005	6	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W019	11/18/2005	4	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
W020	11/18/2005	5	Endrin aldehyde	0.000172 UJ	0.000145 U	NA
WDL-101-S	8/14/2002	0.25	Endrin aldehyde	0.588 U	NT	NA
WDL-101-S	8/14/2002	2.25	Endrin aldehyde	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	Endrin aldehyde	**20.2**	NT	NA
WDL-101-S	8/14/2002	7	Endrin aldehyde	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	Endrin aldehyde	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	Endrin aldehyde	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	Endrin aldehyde	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	Endrin aldehyde	0.0732 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-102-S	8/14/2002	10	Endrin aldehyde	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	Endrin aldehyde	0.346 U	NT	NA
WDL-103-S	8/15/2002	2.25	Endrin aldehyde	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	Endrin aldehyde	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	Endrin aldehyde	0.586 U	NT	NA
WDL-103-S	8/15/2002	8.25	Endrin aldehyde	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	Endrin aldehyde	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	Endrin aldehyde	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	Endrin aldehyde	0.161 U	NT	NA
WDL-104-S	8/15/2002	6.75	Endrin aldehyde	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	Endrin aldehyde	**0.206 N**	0.000400 U	NA
WDL-201-S	2/12/2004	6	Endrin aldehyde	0.0417 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	Endrin aldehyde	0.00417 UJ	0.000400 U	NA
WDL-203-S	2/13/2004	5.75	Endrin aldehyde	0.000833 U	0.000400 U	NA
WDL-204-S	2/12/2004	5	Endrin aldehyde	0.00417 UJ	0.000400 U	NA
W001	11/21/2005	1	Endrin Ketone	0.000235 U	0.000120 U	NA
W002	11/21/2005	5	Endrin Ketone	0.000235 U	0.000120 U	NA
W003	11/21/2005	7	Endrin Ketone	0.000235 U	0.000120 U	NA
W004	11/21/2005	7	Endrin Ketone	0.000235 U	0.000120 U	NA
W005	11/21/2005	7	Endrin Ketone	0.000235 UJ	0.000120 UJ	NA
W006	11/21/2005	6	Endrin Ketone	0.000235 U	0.000120 U	NA
W007	11/21/2005	4	Endrin Ketone	0.000235 U	0.000120 U	NA
W008	11/20/2005	3	Endrin Ketone	0.000235 U	0.000120 U	NA
W009	11/20/2005	5	Endrin Ketone	0.000235 U	0.000120 U	NA
W010	11/20/2005	5	Endrin Ketone	0.000235 U	0.000120 U	NA
W011	11/20/2005	3	Endrin Ketone	0.000235 U	0.000120 U	NA
W011	11/20/2005	9	Endrin Ketone	0.000235 U	0.000120 U	NA
W011	11/20/2005	18.5	Endrin Ketone	0.000235 U	0.000120 U	NA
W012	11/19/2005	6	Endrin Ketone	0.000235 U	0.000120 U	NA
W013	11/19/2005	5	Endrin Ketone	0.000235 U	0.000120 U	NA
W014	11/19/2005	5	Endrin Ketone	0.000235 U	0.000120 UJ	NA
W015	11/19/2005	1	Endrin Ketone	0.000235 U	0.000120 U	NA
W016	11/19/2005	5	Endrin Ketone	0.000235 U	0.000120 UJ	NA
W017	11/18/2005	3	Endrin Ketone	0.000235 U	0.000120 U	NA
W017	11/18/2005	7	Endrin Ketone	0.000235 U	0.000120 U	NA
W018	11/18/2005	6	Endrin Ketone	0.000235 U	0.000120 U	NA
W019	11/18/2005	4	Endrin Ketone	0.000235 U	0.000120 U	NA
W020	11/18/2005	5	Endrin Ketone	0.000235 U	0.000120 U	NA
WDL-101-S	8/14/2002	0.25	Endrin Ketone	0.588 U	NT	NA
WDL-101-S	8/14/2002	2.25	Endrin Ketone	0.399 U	NT	NA
WDL-101-S	8/14/2002	5	Endrin Ketone	3.98 U	NT	NA
WDL-101-S	8/14/2002	7	Endrin Ketone	7.96 U	NT	NA
WDL-102-S	8/14/2002	0.5	Endrin Ketone	0.924 U	NT	NA
WDL-102-S	8/14/2002	2.25	Endrin Ketone	1.09 U	NT	NA
WDL-102-S	8/14/2002	5.5	Endrin Ketone	0.0531 U	NT	NA
WDL-102-S	8/14/2002	8	Endrin Ketone	0.0732 U	NT	NA
WDL-102-S	8/14/2002	10	Endrin Ketone	0.137 U	NT	NA
WDL-103-S	8/15/2002	0.25	Endrin Ketone	0.346 U	NT	NA
WDL-103-S	8/15/2002	2.25	Endrin Ketone	0.126 U	NT	NA
WDL-103-S	8/15/2002	5	Endrin Ketone	0.202 U	NT	NA
WDL-103-S	8/15/2002	6.75	Endrin Ketone	0.586 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	8.25	Endrin Ketone	0.0738 U	NT	NA
WDL-104-S	8/15/2002	0.25	Endrin Ketone	0.133 U	NT	NA
WDL-104-S	8/15/2002	2.25	Endrin Ketone	0.00237 U	NT	NA
WDL-104-S	8/15/2002	5	Endrin Ketone	0.161 U	NT	NA
WDL-104-S	8/15/2002	6.75	Endrin Ketone	0.135 U	NT	NA
WDL-201-S	2/12/2004	0.25	Endrin Ketone	0.0132 U	0.000400 U	NA
WDL-201-S	2/12/2004	6	Endrin Ketone	0.0417 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	Endrin Ketone	0.00417 UJ	0.000400 U	NA
WDL-203-S	2/13/2004	5.75	Endrin Ketone	0.000833 U	0.000400 U	NA
WDL-204-S	2/12/2004	5	Endrin Ketone	0.00417 UJ	0.000400 U	NA
W001	11/21/2005	1	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W002	11/21/2005	5	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W003	11/21/2005	7	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W004	11/21/2005	7	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W005	11/21/2005	7	gamma-BHC (Lindane)	0.000129 UJ	0.0000500 UJ	1.46E-01
W006	11/21/2005	6	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W007	11/21/2005	4	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W008	11/20/2005	3	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W009	11/20/2005	5	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W010	11/20/2005	5	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W011	11/20/2005	3	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W011	11/20/2005	9	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W011	11/20/2005	18.5	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W012	11/19/2005	6	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W013	11/19/2005	5	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W014	11/19/2005	5	gamma-BHC (Lindane)	0.000129 U	0.0000500 UJ	1.46E-01
W015	11/19/2005	1	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W016	11/19/2005	5	gamma-BHC (Lindane)	0.000129 U	0.0000500 UJ	1.46E-01
W017	11/18/2005	3	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W017	11/18/2005	7	gamma-BHC (Lindane)	**0.0130 J**	0.0000500 U	1.46E-01
W018	11/18/2005	6	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W019	11/18/2005	4	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
W020	11/18/2005	5	gamma-BHC (Lindane)	0.000129 U	0.0000500 U	1.46E-01
WDL-101-S	8/14/2002	0.25	gamma-BHC (Lindane)	0.294 U	NT	NA
WDL-101-S	8/14/2002	2.25	gamma-BHC (Lindane)	0.200 U	NT	NA
WDL-101-S	8/14/2002	5	gamma-BHC (Lindane)	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	gamma-BHC (Lindane)	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	gamma-BHC (Lindane)	0.462 U	NT	NA
WDL-102-S	8/14/2002	2.25	gamma-BHC (Lindane)	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	gamma-BHC (Lindane)	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	gamma-BHC (Lindane)	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	gamma-BHC (Lindane)	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	gamma-BHC (Lindane)	0.173 U	NT	NA
WDL-103-S	8/15/2002	2.25	gamma-BHC (Lindane)	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	gamma-BHC (Lindane)	0.101 U	NT	NA
WDL-103-S	8/15/2002	6.75	gamma-BHC (Lindane)	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	gamma-BHC (Lindane)	0.0369 U	NT	NA
WDL-104-S	8/15/2002	0.25	gamma-BHC (Lindane)	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	gamma-BHC (Lindane)	0.00118 U	NT	NA
WDL-104-S	8/15/2002	5	gamma-BHC (Lindane)	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	gamma-BHC (Lindane)	0.0674 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	0.25	gamma-BHC (Lindane)	0.0132 U	0.000400 U	0.146
WDL-201-S	2/12/2004	6	gamma-BHC (Lindane)	0.0417 U	0.00200 U	0.146
WDL-202-S	2/12/2004	4	gamma-BHC (Lindane)	0.00417 U	0.000400 U	0.146
WDL-203-S	2/13/2004	5.75	gamma-BHC (Lindane)	0.000833 U	0.000400 U	0.146
WDL-204-S	2/12/2004	5	gamma-BHC (Lindane)	0.00417 U	0.000400 U	0.146
W001	11/21/2005	1	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W002	11/21/2005	5	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W003	11/21/2005	7	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W004	11/21/2005	7	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W005	11/21/2005	7	gamma-Chlordane	0.000155 UJ	0.0000400 UJ	8.13E-02
W006	11/21/2005	6	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W007	11/21/2005	4	gamma-Chlordane	0.000155 U	**0.00120 NJ**	8.13E-02
W008	11/20/2005	3	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W009	11/20/2005	5	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W010	11/20/2005	5	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W011	11/20/2005	3	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W011	11/20/2005	9	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W011	11/20/2005	18.5	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W012	11/19/2005	6	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W013	11/19/2005	5	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W014	11/19/2005	5	gamma-Chlordane	0.000155 U	0.0000400 UJ	8.13E-02
W015	11/19/2005	1	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W016	11/19/2005	5	gamma-Chlordane	0.000155 U	0.0000400 UJ	8.13E-02
W017	11/18/2005	3	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W017	11/18/2005	7	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W018	11/18/2005	6	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W019	11/18/2005	4	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
W020	11/18/2005	5	gamma-Chlordane	0.000155 U	0.0000400 U	8.13E-02
WDL-201-S	2/12/2004	0.25	gamma-Chlordane	0.0132 U	0.000400 U	0.0813
WDL-201-S	2/12/2004	6	gamma-Chlordane	0.0417 U	0.00200 U	0.0813
WDL-202-S	2/12/2004	4	gamma-Chlordane	0.00417 U	0.000400 U	0.0813
WDL-203-S	2/13/2004	5.75	gamma-Chlordane	0.00417 U	0.000400 U	0.0813
WDL-204-S	2/12/2004	5	gamma-Chlordane	0.00417 U	0.000400 U	0.0813
W001	11/21/2005	1	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W002	11/21/2005	5	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W003	11/21/2005	7	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W004	11/21/2005	7	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W005	11/21/2005	7	Heptachlor	0.000165 UJ	0.0000350 UJ	3.16E-02
W006	11/21/2005	6	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W007	11/21/2005	4	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W008	11/20/2005	3	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W009	11/20/2005	5	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W010	11/20/2005	5	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W011	11/20/2005	3	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W011	11/20/2005	9	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W011	11/20/2005	18.5	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W012	11/19/2005	6	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W013	11/19/2005	5	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W014	11/19/2005	5	Heptachlor	0.000165 U	0.0000350 UJ	3.16E-02
W015	11/19/2005	1	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W016	11/19/2005	5	Heptachlor	0.000165 U	0.0000350 UJ	3.16E-02
W017	11/18/2005	3	Heptachlor	0.000165 U	0.0000350 U	3.16E-02

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W017	11/18/2005	7	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W018	11/18/2005	6	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W019	11/18/2005	4	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
W020	11/18/2005	5	Heptachlor	0.000165 U	0.0000350 U	3.16E-02
WDL-101-S	8/14/2002	0.25	Heptachlor	0.294 U	NT	NA
WDL-101-S	8/14/2002	2.25	Heptachlor	0.200 U	NT	NA
WDL-101-S	8/14/2002	5	Heptachlor	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	Heptachlor	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	Heptachlor	0.462 U	NT	NA
WDL-102-S	8/14/2002	2.25	Heptachlor	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	Heptachlor	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	Heptachlor	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	Heptachlor	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	Heptachlor	0.173 UJ	NT	NA
WDL-103-S	sociated analy	2.25	Heptachlor	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	Heptachlor	0.101 U	NT	NA
WDL-103-S	dentified and th	6.75	Heptachlor	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	Heptachlor	0.0369 U	NT	NA
WDL-104-S	8/15/2002	0.25	Heptachlor	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	Heptachlor	0.00118 U	NT	NA
WDL-104-S	8/15/2002	5	Heptachlor	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	Heptachlor	0.0674 U	NT	NA
WDL-201-S	2/12/2004	0.25	Heptachlor	0.0264 U	0.000400 U	0.0316
WDL-201-S	2/12/2004	6	Heptachlor	0.0833 U	0.00200 U	0.0316
WDL-202-S	2/12/2004	4	Heptachlor	0.00833 U	0.000400 U	0.0316
WDL-203-S	2/13/2004	5.75	Heptachlor	0.00833 U	0.000400 U	0.0316
WDL-204-S	2/12/2004	5	Heptachlor	0.00833 U	0.000400 U	0.0316
W001	11/21/2005	1	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W002	11/21/2005	5	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W003	11/21/2005	7	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W004	11/21/2005	7	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W005	11/21/2005	7	Heptachlor epoxide	0.000106 UJ	0.0000400 UJ	6.07E-03
W006	11/21/2005	6	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W007	11/21/2005	4	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W008	11/20/2005	3	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W009	11/20/2005	5	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W010	11/20/2005	5	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W011	11/20/2005	3	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W011	11/20/2005	9	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W011	11/20/2005	18.5	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W012	11/19/2005	6	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W013	11/19/2005	5	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W014	11/19/2005	5	Heptachlor epoxide	0.000106 U	0.0000400 UJ	6.07E-03
W015	11/19/2005	1	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W016	11/19/2005	5	Heptachlor epoxide	0.000106 U	0.0000400 UJ	6.07E-03
W017	11/18/2005	3	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W017	11/18/2005	7	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W018	11/18/2005	6	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W019	11/18/2005	4	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
W020	11/18/2005	5	Heptachlor epoxide	0.000106 U	0.0000400 U	6.07E-03
WDL-101-S	8/14/2002	0.25	Heptachlor epoxide	0.294 U	NT	NA
WDL-101-S	8/14/2002	2.25	Heptachlor epoxide	**0.292 N**	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	5	Heptachlor epoxide	1.99 U	NT	NA
WDL-101-S	8/14/2002	7	Heptachlor epoxide	3.98 U	NT	NA
WDL-102-S	8/14/2002	0.5	Heptachlor epoxide	**0.602 N**	NT	NA
WDL-102-S	8/14/2002	2.25	Heptachlor epoxide	0.547 U	NT	NA
WDL-102-S	8/14/2002	5.5	Heptachlor epoxide	0.0266 U	NT	NA
WDL-102-S	8/14/2002	8	Heptachlor epoxide	0.0366 U	NT	NA
WDL-102-S	8/14/2002	10	Heptachlor epoxide	0.0687 U	NT	NA
WDL-103-S	8/15/2002	0.25	Heptachlor epoxide	0.173 U	NT	NA
WDL-103-S	8/15/2002	2.25	Heptachlor epoxide	0.0630 U	NT	NA
WDL-103-S	8/15/2002	5	Heptachlor epoxide	0.101 U	NT	NA
WDL-103-S	8/15/2002	6.75	Heptachlor epoxide	0.293 U	NT	NA
WDL-103-S	8/15/2002	8.25	Heptachlor epoxide	0.0369 U	NT	NA
WDL-104-S	8/15/2002	0.25	Heptachlor epoxide	0.0663 U	NT	NA
WDL-104-S	8/15/2002	2.25	Heptachlor epoxide	**0.00204**	NT	NA
WDL-104-S	8/15/2002	5	Heptachlor epoxide	0.0805 U	NT	NA
WDL-104-S	8/15/2002	6.75	Heptachlor epoxide	0.0674 U	NT	NA
WDL-201-S	2/12/2004	0.25	Heptachlor epoxide	**0.156 N**	0.000400 U	0.00607
WDL-201-S	2/12/2004	6	Heptachlor epoxide	0.0417 U	0.00200 U	0.00607
WDL-202-S	2/12/2004	4	Heptachlor epoxide	0.00417 U	0.000400 U	0.00607
WDL-203-S	2/13/2004	5.75	Heptachlor epoxide	0.00417 U	0.000400 U	0.00607
WDL-204-S	2/12/2004	5	Heptachlor epoxide	0.00417 U	0.000400 U	0.00607
WDL-201-S	2/12/2004	0.25	Hexachlorobenzene	**0.150**	0.000400 U	NA
WDL-201-S	2/12/2004	6	Hexachlorobenzene	**5.41**	0.00200 U	NA
WDL-202-S	2/12/2004	4	Hexachlorobenzene	**0.0195**	0.000400 U	NA
WDL-203-S	2/13/2004	5.75	Hexachlorobenzene	**0.00268**	0.000400 U	NA
WDL-204-S	2/12/2004	5	Hexachlorobenzene	**0.232**	0.000400 U	NA
W001	11/21/2005	1	Methoxychlor	0.00126 U	0.000200 U	NA
W002	11/21/2005	5	Methoxychlor	0.00126 U	0.000200 U	NA
W003	11/21/2005	7	Methoxychlor	0.00126 U	0.000200 U	NA
W004	11/21/2005	7	Methoxychlor	0.00126 U	0.000200 U	NA
W005	11/21/2005	7	Methoxychlor	0.00126 UJ	0.000200 UJ	NA
W006	11/21/2005	6	Methoxychlor	0.00126 U	0.000200 U	NA
W007	11/21/2005	4	Methoxychlor	0.00126 U	0.000200 U	NA
W008	11/20/2005	3	Methoxychlor	0.00126 U	0.000200 U	NA
W009	11/20/2005	5	Methoxychlor	0.00126 U	0.000200 U	NA
W010	11/20/2005	5	Methoxychlor	0.00126 U	0.000200 U	NA
W011	11/20/2005	3	Methoxychlor	0.00126 U	0.000200 U	NA
W011	11/20/2005	9	Methoxychlor	0.00126 U	0.000200 U	NA
W011	11/20/2005	18.5	Methoxychlor	0.00126 U	0.000200 U	NA
W012	11/19/2005	6	Methoxychlor	0.00126 U	0.000200 U	NA
W013	11/19/2005	5	Methoxychlor	0.00126 U	0.000200 U	NA
W014	11/19/2005	5	Methoxychlor	0.00126 U	0.000200 UJ	NA
W015	11/19/2005	1	Methoxychlor	0.00126 U	0.000200 U	NA
W016	11/19/2005	5	Methoxychlor	0.00126 U	0.000200 UJ	NA
W017	11/18/2005	3	Methoxychlor	0.00126 U	0.000200 U	NA
W017	11/18/2005	7	Methoxychlor	0.00126 U	0.000200 U	NA
W018	11/18/2005	6	Methoxychlor	0.00126 U	0.000200 U	NA
W019	11/18/2005	4	Methoxychlor	0.00126 U	0.000200 U	NA
W020	11/18/2005	5	Methoxychlor	0.00126 U	0.000200 U	NA
WDL-101-S	8/14/2002	0.25	Methoxychlor	2.94 U	NT	NA
WDL-101-S	8/14/2002	2.25	Methoxychlor	2.00 U	NT	NA
WDL-101-S	8/14/2002	5	Methoxychlor	19.9 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	7	Methoxychlor	39.8 U	NT	NA
WDL-102-S	8/14/2002	0.5	Methoxychlor	4.62 U	NT	NA
WDL-102-S	8/14/2002	2.25	Methoxychlor	5.47 U	NT	NA
WDL-102-S	8/14/2002	5.5	Methoxychlor	0.266 U	NT	NA
WDL-102-S	8/14/2002	8	Methoxychlor	0.366 U	NT	NA
WDL-102-S	8/14/2002	10	Methoxychlor	0.687 U	NT	NA
WDL-103-S	8/15/2002	0.25	Methoxychlor	1.73 U	NT	NA
WDL-103-S	8/15/2002	2.25	Methoxychlor	0.630 U	NT	NA
WDL-103-S	8/15/2002	5	Methoxychlor	1.01 U	NT	NA
WDL-103-S	8/15/2002	6.75	Methoxychlor	**17.2**	NT	NA
WDL-103-S	8/15/2002	8.25	Methoxychlor	0.369 U	NT	NA
WDL-104-S	8/15/2002	0.25	Methoxychlor	0.663 U	NT	NA
WDL-104-S	8/15/2002	2.25	Methoxychlor	0.0118 U	NT	NA
WDL-104-S	8/15/2002	5	Methoxychlor	0.805 U	NT	NA
WDL-104-S	8/15/2002	6.75	Methoxychlor	0.674 U	NT	NA
WDL-201-S	2/12/2004	0.25	Methoxychlor	0.0132 U	0.000400 U	NA
WDL-201-S	2/12/2004	6	Methoxychlor	0.0417 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	Methoxychlor	0.00417 UJ	0.000400 U	NA
WDL-203-S	2/13/2004	5.75	Methoxychlor	0.000833 U	0.000400 U	NA
WDL-204-S	2/12/2004	5	Methoxychlor	0.00417 UJ	0.000400 U	NA
W001	11/21/2005	1	Toxaphene	0.0214 U	0.00700 U	NA
W002	11/21/2005	5	Toxaphene	0.0214 U	0.00700 U	NA
W003	11/21/2005	7	Toxaphene	0.0214 U	0.00700 U	NA
W004	11/21/2005	7	Toxaphene	0.0214 U	0.00700 U	NA
W005	11/21/2005	7	Toxaphene	0.0214 UJ	0.00700 UJ	NA
W006	11/21/2005	6	Toxaphene	0.0214 U	0.00700 U	NA
W007	11/21/2005	4	Toxaphene	0.0214 U	0.00700 U	NA
W008	11/20/2005	3	Toxaphene	0.0214 U	0.00700 U	NA
W009	11/20/2005	5	Toxaphene	0.0214 U	0.00700 U	NA
W010	11/20/2005	5	Toxaphene	0.0214 U	0.00700 U	NA
W011	11/20/2005	3	Toxaphene	0.0214 U	0.00700 U	NA
W011	11/20/2005	9	Toxaphene	0.0214 U	0.00700 U	NA
W011	11/20/2005	18.5	Toxaphene	0.0214 U	0.00700 U	NA
W012	11/19/2005	6	Toxaphene	0.0214 U	0.00700 U	NA
W013	11/19/2005	5	Toxaphene	0.0214 U	0.00700 U	NA
W014	11/19/2005	5	Toxaphene	0.0214 U	0.00700 UJ	NA
W015	11/19/2005	1	Toxaphene	0.0214 U	0.00700 U	NA
W016	11/19/2005	5	Toxaphene	0.0214 U	0.00700 UJ	NA
W017	11/18/2005	3	Toxaphene	0.0214 U	0.00700 U	NA
W017	11/18/2005	7	Toxaphene	0.0214 U	0.00700 U	NA
W018	11/18/2005	6	Toxaphene	0.0214 U	0.00700 U	NA
W019	11/18/2005	4	Toxaphene	0.0214 U	0.00700 U	NA
W020	11/18/2005	5	Toxaphene	0.0214 U	0.00700 U	NA
WDL-101-S	8/14/2002	0.25	Toxaphene	29.4 U	NT	NA
WDL-101-S	8/14/2002	2.25	Toxaphene	20.0 U	NT	NA
WDL-101-S	8/14/2002	5	Toxaphene	199 U	NT	NA
WDL-101-S	8/14/2002	7	Toxaphene	398 U	NT	NA
WDL-102-S	8/14/2002	0.5	Toxaphene	46.2 U	NT	NA
WDL-102-S	8/14/2002	2.25	Toxaphene	54.7 U	NT	NA
WDL-102-S	8/14/2002	5.5	Toxaphene	2.66 U	NT	NA
WDL-102-S	8/14/2002	8	Toxaphene	3.66 U	NT	NA
WDL-102-S	8/14/2002	10	Toxaphene	6.87 U	NT	NA

TABLE C-6
Pesticides Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-103-S	8/15/2002	0.25	Toxaphene	17.3 U	NT	NA
WDL-103-S	8/15/2002	2.25	Toxaphene	6.30 U	NT	NA
WDL-103-S	8/15/2002	5	Toxaphene	10.1 U	NT	NA
WDL-103-S	8/15/2002	6.75	Toxaphene	29.3 U	NT	NA
WDL-103-S	8/15/2002	8.25	Toxaphene	3.69 U	NT	NA
WDL-104-S	8/15/2002	0.25	Toxaphene	6.63 U	NT	NA
WDL-104-S	8/15/2002	2.25	Toxaphene	0.118 U	NT	NA
WDL-104-S	8/15/2002	5	Toxaphene	8.05 U	NT	NA
WDL-104-S	8/15/2002	6.75	Toxaphene	6.74 U	NT	NA

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.

TABLE C-7
Polychlorinated Biphenyls Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	Aroclor 1016	0.00830 UR	0.00105 U	NA
W002	11/21/2005	5	Aroclor 1016	0.00830 UR	0.00105 U	NA
W003	11/21/2005	7	Aroclor 1016	0.00830 UR	0.00105 U	NA
W004	11/21/2005	7	Aroclor 1016	0.00830 UR	0.00105 U	NA
W005	11/21/2005	7	Aroclor 1016	0.00830 UR	0.00105 UJ	NA
W006	11/21/2005	6	Aroclor 1016	0.00830 UR	0.00105 U	NA
W007	11/21/2005	4	Aroclor 1016	0.00830 UR	0.00105 U	NA
W008	11/20/2005	3	Aroclor 1016	0.00830 U	0.00105 U	NA
W009	11/20/2005	5	Aroclor 1016	0.00830 U	0.00105 U	NA
W010	11/20/2005	5	Aroclor 1016	0.00830 U	0.00105 U	NA
W011	11/20/2005	3	Aroclor 1016	0.00830 U	0.00105 U	NA
W011	11/20/2005	9	Aroclor 1016	0.00830 U	0.00105 U	NA
W011	11/20/2005	18.5	Aroclor 1016	0.00830 U	0.00105 U	NA
W012	11/19/2005	6	Aroclor 1016	0.00830 U	0.00105 U	NA
W013	11/19/2005	5	Aroclor 1016	0.00830 U	0.00105 U	NA
W014	11/19/2005	5	Aroclor 1016	0.00830 U	0.00105 U	NA
W015	11/19/2005	1	Aroclor 1016	0.00830 U	0.00105 U	NA
W016	11/19/2005	5	Aroclor 1016	0.00830 U	0.00105 U	NA
W017	11/18/2005	3	Aroclor 1016	0.00830 U	0.00105 U	NA
W017	11/18/2005	7	Aroclor 1016	0.00830 U	0.00105 U	NA
W018	11/18/2005	6	Aroclor 1016	0.00830 U	0.00105 U	NA
W019	11/18/2005	4	Aroclor 1016	0.00830 U	0.00105 U	NA
W020	11/18/2005	5	Aroclor 1016	0.00830 U	0.00105 U	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1016	0.0647 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1016	0.109 U	NT	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1016	0.0647 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1016	0.109 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1016	0.0150 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1016	0.0150 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1016	0.0190 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1016	0.00203 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1016	0.0190 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1016	0.00203 U	NT	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1016	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1016	1.00 U	0.00100 U	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1016	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1016	1.00 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1016	0.0400 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1016	0.0400 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1016	0.0200 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1016	0.0200 U	0.00100 U	NA
WDL-204-S	2/12/2004	5	Aroclor 1016	0.200 U	0.00100 UJ	NA
WDL-204-S	2/12/2004	5	Aroclor 1016	0.200 U	0.00100 UJ	NA
W001	11/21/2005	1	Aroclor 1221	0.0105 UR	0.00185 U	NA
W002	11/21/2005	5	Aroclor 1221	0.0105 UR	0.00185 U	NA
W003	11/21/2005	7	Aroclor 1221	0.0105 UR	0.00185 U	NA
W004	11/21/2005	7	Aroclor 1221	0.0105 UR	0.00185 U	NA
W005	11/21/2005	7	Aroclor 1221	0.0105 UR	0.00185 UJ	NA
W006	11/21/2005	6	Aroclor 1221	0.0105 UR	0.00185 U	NA

TABLE C-7
Polychlorinated Biphenyls Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	Aroclor 1221	0.0105 UR	0.00185 U	NA
W008	11/20/2005	3	Aroclor 1221	0.0105 U	0.00185 U	NA
W009	11/20/2005	5	Aroclor 1221	0.0105 U	0.00185 U	NA
W010	11/20/2005	5	Aroclor 1221	0.0105 U	0.00185 U	NA
W011	11/20/2005	3	Aroclor 1221	0.0105 U	0.00185 U	NA
W011	11/20/2005	9	Aroclor 1221	0.0105 U	0.00185 U	NA
W011	11/20/2005	18.5	Aroclor 1221	0.0105 U	0.00185 U	NA
W012	11/19/2005	6	Aroclor 1221	0.0105 U	0.00185 U	NA
W013	11/19/2005	5	Aroclor 1221	0.0105 U	0.00185 U	NA
W014	11/19/2005	5	Aroclor 1221	0.0105 U	0.00185 U	NA
W015	11/19/2005	1	Aroclor 1221	0.0105 U	0.00185 U	NA
W016	11/19/2005	5	Aroclor 1221	0.0105 U	0.00185 U	NA
W017	11/18/2005	3	Aroclor 1221	0.0105 U	0.00185 U	NA
W017	11/18/2005	7	Aroclor 1221	0.0105 U	0.00185 U	NA
W018	11/18/2005	6	Aroclor 1221	0.0105 U	0.00185 U	NA
W019	11/18/2005	4	Aroclor 1221	0.0105 U	0.00185 U	NA
W020	11/18/2005	5	Aroclor 1221	0.0105 U	0.00185 U	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1221	0.277 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1221	0.481 U	NT	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1221	0.277 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1221	0.481 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1221	0.0644 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1221	0.0644 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1221	0.0814 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1221	0.00868 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1221	0.0814 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1221	0.00868 U	NT	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1221	0.506 U	0.00200 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1221	2.00 U	0.00200 U	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1221	0.506 U	0.00200 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1221	2.00 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1221	0.0800 U	0.00200 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1221	0.0800 U	0.00200 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1221	0.0400 U	0.00200 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1221	0.0400 U	0.00200 U	NA
WDL-204-S	2/12/2004	5	Aroclor 1221	0.400 U	0.00200 UJ	NA
WDL-204-S	2/12/2004	5	Aroclor 1221	0.400 U	0.00200 UJ	NA
W001	11/21/2005	1	Aroclor 1232	0.00830 UR	0.00185 U	NA
W002	11/21/2005	5	Aroclor 1232	0.00830 UR	0.00185 U	NA
W003	11/21/2005	7	Aroclor 1232	0.00830 UR	0.00185 U	NA
W004	11/21/2005	7	Aroclor 1232	0.00830 UR	0.00185 U	NA
W005	11/21/2005	7	Aroclor 1232	0.00830 UR	0.00185 UJ	NA
W006	11/21/2005	6	Aroclor 1232	0.00830 UR	0.00185 U	NA
W007	11/21/2005	4	Aroclor 1232	0.00830 UR	0.00185 U	NA
W008	11/20/2005	3	Aroclor 1232	0.00830 U	0.00185 U	NA
W009	11/20/2005	5	Aroclor 1232	0.00830 U	0.00185 U	NA
W010	11/20/2005	5	Aroclor 1232	0.00830 U	0.00185 U	NA
W011	11/20/2005	3	Aroclor 1232	0.00830 U	0.00185 U	NA
W011	11/20/2005	9	Aroclor 1232	0.00830 U	0.00185 U	NA
W011	11/20/2005	18.5	Aroclor 1232	0.00830 U	0.00185 U	NA
W012	11/19/2005	6	Aroclor 1232	0.00830 U	0.00185 U	NA
W013	11/19/2005	5	Aroclor 1232	0.00830 U	0.00185 U	NA

TABLE C-7
Polychlorinated Biphenyls Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W014	11/19/2005	5	Aroclor 1232	0.00830 U	0.00185 U	NA
W015	11/19/2005	1	Aroclor 1232	0.00830 U	0.00185 U	NA
W016	11/19/2005	5	Aroclor 1232	0.00830 U	0.00185 U	NA
W017	11/18/2005	3	Aroclor 1232	0.00830 U	0.00185 U	NA
W017	11/18/2005	7	Aroclor 1232	0.00830 U	0.00185 U	NA
W018	11/18/2005	6	Aroclor 1232	0.00830 U	0.00185 U	NA
W019	11/18/2005	4	Aroclor 1232	0.00830 U	0.00185 U	NA
W020	11/18/2005	5	Aroclor 1232	0.00830 U	0.00185 U	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1232	0.221 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1232	0.374 U	NT	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1232	0.221 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1232	0.374 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1232	0.0514 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1232	0.0514 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1232	0.0650 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1232	0.00693 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1232	0.0650 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1232	0.00693 U	NT	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1232	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1232	1.00 U	0.00100 U	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1232	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1232	1.00 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1232	0.0400 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1232	0.0400 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1232	0.0200 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1232	0.0200 U	0.00100 U	NA
WDL-204-S	2/12/2004	5	Aroclor 1232	0.200 U	0.00100 UJ	NA
WDL-204-S	2/12/2004	5	Aroclor 1232	0.200 U	0.00100 UJ	NA
W001	11/21/2005	1	Aroclor 1242	0.00830 UR	0.00185 U	NA
W002	11/21/2005	5	Aroclor 1242	0.00830 UR	0.00185 U	NA
W003	11/21/2005	7	Aroclor 1242	0.00830 UR	0.00185 U	NA
W004	11/21/2005	7	Aroclor 1242	0.00830 UR	0.00185 U	NA
W005	11/21/2005	7	Aroclor 1242	0.00830 UR	0.00185 UJ	NA
W006	11/21/2005	6	Aroclor 1242	0.00830 UR	0.00185 U	NA
W007	11/21/2005	4	Aroclor 1242	0.00830 UR	0.00185 U	NA
W008	11/20/2005	3	Aroclor 1242	0.00830 U	0.00185 U	NA
W009	11/20/2005	5	Aroclor 1242	0.00830 U	0.00185 U	NA
W010	11/20/2005	5	Aroclor 1242	0.00830 U	0.00185 U	NA
W011	11/20/2005	3	Aroclor 1242	0.00830 U	0.00185 U	NA
W011	11/20/2005	9	Aroclor 1242	0.00830 U	0.00185 U	NA
W011	11/20/2005	18.5	Aroclor 1242	0.00830 U	0.00185 U	NA
W012	11/19/2005	6	Aroclor 1242	0.00830 U	0.00185 U	NA
W013	11/19/2005	5	Aroclor 1242	0.00830 U	0.00185 U	NA
W014	11/19/2005	5	Aroclor 1242	**5.00 J**	0.00185 U	NA
W015	11/19/2005	1	Aroclor 1242	**16.0**	0.00185 U	NA
W016	11/19/2005	5	Aroclor 1242	0.00830 U	0.00185 U	NA
W017	11/18/2005	3	Aroclor 1242	**6.00**	0.00185 U	NA
W017	11/18/2005	7	Aroclor 1242	0.00830 U	0.00185 U	NA
W018	11/18/2005	6	Aroclor 1242	0.00830 U	0.00185 U	NA
W019	11/18/2005	4	Aroclor 1242	0.00830 U	0.00185 U	NA
W020	11/18/2005	5	Aroclor 1242	0.00830 U	0.00185 U	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1242	0.118 U	NT	NA

TABLE C-7
Polychlorinated Biphenyls Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	5	Aroclor 1242	0.200 U	NT	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1242	0.118 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1242	0.200 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1242	0.0275 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1242	0.0275 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1242	0.0347 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1242	0.00371 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1242	0.0347 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1242	0.00371 U	NT	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1242	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1242	1.00 U	0.00100 U	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1242	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1242	1.00 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1242	0.0400 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1242	0.0400 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1242	0.0200 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1242	0.0200 U	0.00100 U	NA
WDL-204-S	2/12/2004	5	Aroclor 1242	0.200 U	0.00100 UJ	NA
WDL-204-S	2/12/2004	5	Aroclor 1242	0.200 U	0.00100 UJ	NA
W001	11/21/2005	1	Aroclor 1248	0.00830 UR	0.00185 U	NA
W002	11/21/2005	5	Aroclor 1248	0.00830 UR	0.00185 U	NA
W003	11/21/2005	7	Aroclor 1248	0.00830 UR	0.00185 U	NA
W004	11/21/2005	7	Aroclor 1248	0.00830 UR	0.00185 U	NA
W005	11/21/2005	7	Aroclor 1248	0.00830 UR	0.00185 UJ	NA
W006	11/21/2005	6	Aroclor 1248	0.00830 UR	0.00185 U	NA
W007	11/21/2005	4	Aroclor 1248	0.00830 UR	0.00185 U	NA
W008	11/20/2005	3	Aroclor 1248	0.00830 U	0.00185 U	NA
W009	11/20/2005	5	Aroclor 1248	0.00830 U	0.00185 U	NA
W010	11/20/2005	5	Aroclor 1248	0.00830 U	0.00185 U	NA
W011	11/20/2005	3	Aroclor 1248	0.00830 U	0.00185 U	NA
W011	11/20/2005	9	Aroclor 1248	0.00830 U	0.00185 U	NA
W011	11/20/2005	18.5	Aroclor 1248	0.00830 U	0.00185 U	NA
W012	11/19/2005	6	Aroclor 1248	0.00830 U	0.00185 U	NA
W013	11/19/2005	5	Aroclor 1248	0.00830 U	0.00185 U	NA
W014	11/19/2005	5	Aroclor 1248	0.00830 U	0.00185 U	NA
W015	11/19/2005	1	Aroclor 1248	0.00830 U	0.00185 U	NA
W016	11/19/2005	5	Aroclor 1248	0.00830 U	0.00185 U	NA
W017	11/18/2005	3	Aroclor 1248	0.00830 U	0.00185 U	NA
W017	11/18/2005	7	Aroclor 1248	0.00830 U	0.00185 U	NA
W018	11/18/2005	6	Aroclor 1248	0.00830 U	0.00185 U	NA
W019	11/18/2005	4	Aroclor 1248	0.00830 U	0.00185 U	NA
W020	11/18/2005	5	Aroclor 1248	0.00830 U	0.00185 U	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1248	**13.9**	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1248	0.497 U	NT	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1248	**13.9**	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1248	0.497 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1248	**3.64**	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1248	**3.64**	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1248	**4.02**	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1248	0.00922 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1248	**4.02**	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1248	0.00922 U	NT	NA

TABLE C-7
Polychlorinated Biphenyls Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	0.25	Aroclor 1248	**7.28**	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1248	1.00 U	0.00100 U	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1248	**7.28**	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1248	1.00 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1248	**0.362**	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1248	**0.362**	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1248	**0.114**	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1248	**0.114**	0.00100 U	NA
WDL-204-S	2/12/2004	5	Aroclor 1248	0.200 U	0.00100 UJ	NA
WDL-204-S	2/12/2004	5	Aroclor 1248	0.200 U	0.00100 UJ	NA
W001	11/21/2005	1	Aroclor 1254	0.00830 UR	0.00185 U	NA
W002	11/21/2005	5	Aroclor 1254	0.00830 UR	0.00185 U	NA
W003	11/21/2005	7	Aroclor 1254	0.00830 UR	0.00185 U	NA
W004	11/21/2005	7	Aroclor 1254	0.00830 UR	0.00185 U	NA
W005	11/21/2005	7	Aroclor 1254	0.00830 UR	0.00185 UJ	NA
W006	11/21/2005	6	Aroclor 1254	0.00830 UR	0.00185 U	NA
W007	11/21/2005	4	Aroclor 1254	0.00830 UR	0.00185 U	NA
W008	11/20/2005	3	Aroclor 1254	0.00830 U	0.00185 U	NA
W009	11/20/2005	5	Aroclor 1254	0.00830 U	0.00185 U	NA
W010	11/20/2005	5	Aroclor 1254	0.00830 U	0.00185 U	NA
W011	11/20/2005	3	Aroclor 1254	0.00830 U	0.00185 U	NA
W011	11/20/2005	9	Aroclor 1254	0.00830 U	0.00185 U	NA
W011	11/20/2005	18.5	Aroclor 1254	0.00830 U	0.00185 U	NA
W012	11/19/2005	6	Aroclor 1254	0.00830 U	0.00185 U	NA
W013	11/19/2005	5	Aroclor 1254	0.00830 U	0.00185 U	NA
W014	11/19/2005	5	Aroclor 1254	0.00830 U	0.00185 U	NA
W015	11/19/2005	1	Aroclor 1254	0.00830 U	0.00185 U	NA
W016	11/19/2005	5	Aroclor 1254	0.00830 U	0.00185 U	NA
W017	11/18/2005	3	Aroclor 1254	0.00830 U	0.00185 U	NA
W017	11/18/2005	7	Aroclor 1254	0.00830 U	0.00185 U	NA
W018	11/18/2005	6	Aroclor 1254	0.00830 U	0.00185 U	NA
W019	11/18/2005	4	Aroclor 1254	0.00830 U	0.00185 U	NA
W020	11/18/2005	5	Aroclor 1254	0.00830 U	0.00185 U	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1254	0.0918 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1254	**4.84**	NT	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1254	0.0918 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1254	**4.84**	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1254	0.0213 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1254	0.0213 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1254	0.0270 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1254	0.00288 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1254	0.0270 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1254	0.00288 U	NT	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1254	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1254	1.00 U	0.00100 U	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1254	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1254	1.00 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1254	0.0400 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1254	0.0400 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1254	0.0200 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1254	0.0200 U	0.00100 U	NA

TABLE C-7
Polychlorinated Biphenyls Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-204-S	2/12/2004	5	Aroclor 1254	0.200 U	0.00100 UJ	NA
WDL-204-S	2/12/2004	5	Aroclor 1254	0.200 U	0.00100 UJ	NA
W001	11/21/2005	1	Aroclor 1260	0.00830 UR	0.00185 U	NA
W002	11/21/2005	5	Aroclor 1260	0.00830 UR	0.00185 U	NA
W003	11/21/2005	7	Aroclor 1260	0.00830 UR	0.00185 U	NA
W004	11/21/2005	7	Aroclor 1260	0.00830 UR	0.00185 U	NA
W005	11/21/2005	7	Aroclor 1260	0.00830 UR	0.00185 UJ	NA
W006	11/21/2005	6	Aroclor 1260	0.00830 UR	0.00185 U	NA
W007	11/21/2005	4	Aroclor 1260	0.00830 UR	0.00185 U	NA
W008	11/20/2005	3	Aroclor 1260	0.00830 U	0.00185 U	NA
W009	11/20/2005	5	Aroclor 1260	0.00830 U	0.00185 U	NA
W010	11/20/2005	5	Aroclor 1260	0.00830 U	0.00185 U	NA
W011	11/20/2005	3	Aroclor 1260	0.00830 U	0.00185 U	NA
W011	11/20/2005	9	Aroclor 1260	0.00830 U	0.00185 U	NA
W011	11/20/2005	18.5	Aroclor 1260	0.00830 U	0.00185 U	NA
W012	11/19/2005	6	Aroclor 1260	0.00830 U	0.00185 U	NA
W013	11/19/2005	5	Aroclor 1260	0.00830 U	0.00185 U	NA
W014	11/19/2005	5	Aroclor 1260	0.00830 U	0.00185 U	NA
W015	11/19/2005	1	Aroclor 1260	0.00830 U	0.00185 U	NA
W016	11/19/2005	5	Aroclor 1260	0.00830 U	0.00185 U	NA
W017	11/18/2005	3	Aroclor 1260	0.00830 U	0.00185 U	NA
W017	11/18/2005	7	Aroclor 1260	0.00830 U	0.00185 U	NA
W018	11/18/2005	6	Aroclor 1260	0.00830 U	0.00185 U	NA
W019	11/18/2005	4	Aroclor 1260	0.00830 U	0.00185 U	NA
W020	11/18/2005	5	Aroclor 1260	0.00830 U	0.00185 U	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1260	0.0918 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1260	0.155 U	NT	NA
WDL-101-S	8/14/2002	0.25	Aroclor 1260	0.0918 U	NT	NA
WDL-101-S	8/14/2002	5	Aroclor 1260	0.155 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1260	0.0213 U	NT	NA
WDL-102-S	8/14/2002	2.25	Aroclor 1260	0.0213 U	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1260	0.0270 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1260	**0.0309**	NT	NA
WDL-103-S	8/15/2002	0.25	Aroclor 1260	0.0270 U	NT	NA
WDL-103-S	8/15/2002	8.25	Aroclor 1260	**0.0309**	NT	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1260	0.253 U	0.00100 U	NA
WDL-201-S	2/12/2004	6	Aroclor 1260	1.00 U	0.00100 U	NA
WDL-201-S	2/12/2004	0.25	Aroclor 1260	0.253 U	0.00100 U	NA

TABLE C-7
Polychlorinated Biphenyls Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-201-S	2/12/2004	6	Aroclor 1260	1.00 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1260	0.0400 U	0.00100 U	NA
WDL-202-S	2/12/2004	4	Aroclor 1260	0.0400 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1260	0.0200 U	0.00100 U	NA
WDL-203-S	2/13/2004	5.75	Aroclor 1260	0.0200 U	0.00100 U	NA
WDL-204-S	2/12/2004	5	Aroclor 1260	0.200 U	0.00100 UJ	NA
WDL-204-S	2/12/2004	5	Aroclor 1260	0.200 U	0.00100 UJ	NA

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.
NJ = The analyte has been presumptively identified; the associated analytical result is estimated.

TABLE C-8
Geochemical Parameters and Petroleum Hydrocarbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W001	11/21/2005	1	Ammonia as Nitrogen	**64.9**	NT	NA
W002	11/21/2005	5	Ammonia as Nitrogen	**11.4**	NT	NA
W003	11/21/2005	7	Ammonia as Nitrogen	**41.4**	NT	NA
W004	11/21/2005	7	Ammonia as Nitrogen	**43.4**	NT	NA
W005	11/21/2005	7	Ammonia as Nitrogen	**37.6 J**	NT	NA
W006	11/21/2005	6	Ammonia as Nitrogen	**110 J**	NT	NA
W007	11/21/2005	4	Ammonia as Nitrogen	**124**	NT	NA
W008	11/20/2005	3	Ammonia as Nitrogen	**85.5**	NT	NA
W009	11/20/2005	5	Ammonia as Nitrogen	**24.3**	NT	NA
W010	11/20/2005	5	Ammonia as Nitrogen	**98.9**	NT	NA
W011	11/20/2005	3	Ammonia as Nitrogen	**156**	NT	NA
W011	11/20/2005	9	Ammonia as Nitrogen	**36.3**	NT	NA
W011	11/20/2005	18.5	Ammonia as Nitrogen	**205**	NT	NA
W012	11/19/2005	6	Ammonia as Nitrogen	**142**	NT	NA
W013	11/19/2005	5	Ammonia as Nitrogen	**177**	NT	NA
W014	11/19/2005	5	Ammonia as Nitrogen	**258**	NT	NA
W015	11/19/2005	1	Ammonia as Nitrogen	**95.2**	NT	NA
W016	11/19/2005	5	Ammonia as Nitrogen	**132**	NT	NA
W017	11/18/2005	3	Ammonia as Nitrogen	**17.2**	NT	NA
W017	11/18/2005	7	Ammonia as Nitrogen	**137**	NT	NA
W018	11/18/2005	6	Ammonia as Nitrogen	**139**	NT	NA
W019	11/18/2005	4	Ammonia as Nitrogen	**181**	NT	NA
W020	11/18/2005	5	Ammonia as Nitrogen	**119**	NT	NA
WDL-101-S	8/14/2002	0.25	Ammonia as Nitrogen	**250**	NT	NA
WDL-101-S	8/14/2002	5	Ammonia as Nitrogen	**320**	NT	NA
WDL-101-S	8/14/2002	2.25	Ammonia as Nitrogen	**290**	NT	NA
WDL-101-S	8/14/2002	7	Ammonia as Nitrogen	**400**	NT	NA
WDL-102-S	8/14/2002	0.5	Ammonia as Nitrogen	**1,500**	NT	NA
WDL-102-S	8/14/2002	2.25	Ammonia as Nitrogen	**4,200**	NT	NA
WDL-102-S	8/14/2002	5.5	Ammonia as Nitrogen	**620**	NT	NA
WDL-102-S	8/14/2002	8	Ammonia as Nitrogen	**350**	NT	NA
WDL-102-S	8/14/2002	10	Ammonia as Nitrogen	**200**	NT	NA
WDL-103-S	8/15/2002	0.25	Ammonia as Nitrogen	**640**	NT	NA
WDL-103-S	8/15/2002	2.25	Ammonia as Nitrogen	**140**	NT	NA
WDL-103-S	8/15/2002	5	Ammonia as Nitrogen	**170**	NT	NA
WDL-103-S	8/15/2002	6.75	Ammonia as Nitrogen	**420**	NT	NA
WDL-103-S	8/15/2002	8.25	Ammonia as Nitrogen	**240**	NT	NA
WDL-104-S	8/15/2002	0.25	Ammonia as Nitrogen	**200**	NT	NA
WDL-104-S	8/15/2002	2.25	Ammonia as Nitrogen	**66.0**	NT	NA
WDL-104-S	8/15/2002	5	Ammonia as Nitrogen	**310**	NT	NA
WDL-104-S	8/15/2002	6.75	Ammonia as Nitrogen	**170**	NT	NA
WDL-201-S	2/12/2004	0.25	Ammonia as Nitrogen	**16.0**	NT	NA
WDL-202-S	2/12/2004	4	Ammonia as Nitrogen	**938**	NT	NA
WDL-203-S	2/13/2004	5.75	Ammonia as Nitrogen	**3.12**	NT	NA
WDL-204-S	2/12/2004	5	Ammonia as Nitrogen	**61.0**	NT	NA
W001	11/21/2005	1	Chloride	**1,320**	NT	NA
W002	11/21/2005	5	Chloride	**2,910**	NT	NA
W003	11/21/2005	7	Chloride	**164**	NT	NA
W004	11/21/2005	7	Chloride	**45.1 J**	NT	NA
W005	11/21/2005	7	Chloride	**49.0 J**	NT	NA
W006	11/21/2005	6	Chloride	**3,480**	NT	NA

TABLE C-8
Geochemical Parameters and Petroleum Hydrocarbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	Chloride	**269**	NT	NA
W008	11/20/2005	3	Chloride	**204**	NT	NA
W009	11/20/2005	5	Chloride	**783**	NT	NA
W010	11/20/2005	5	Chloride	**571**	NT	NA
W011	11/20/2005	3	Chloride	**140**	NT	NA
W011	11/20/2005	9	Chloride	**34.8 J**	NT	NA
W011	11/20/2005	18.5	Chloride	**4,060**	NT	NA
W012	11/19/2005	6	Chloride	**324**	NT	NA
W013	11/19/2005	5	Chloride	**961**	NT	NA
W014	11/19/2005	5	Chloride	**2,220**	NT	NA
W015	11/19/2005	1	Chloride	**197 J**	NT	NA
W016	11/19/2005	5	Chloride	**314**	NT	NA
W017	11/18/2005	3	Chloride	**76.4 J**	NT	NA
W017	11/18/2005	7	Chloride	**36.1 J**	NT	NA
W018	11/18/2005	6	Chloride	**339**	NT	NA
W019	11/18/2005	4	Chloride	**254**	NT	NA
W020	11/18/2005	5	Chloride	**70.8 J**	NT	NA
W001	11/21/2005	1	Diesel Range Organics	**220**	NT	NA
W001	11/21/2005	1	Diesel Range Organics	Detect	NT	NA
W002	11/21/2005	5	Diesel Range Organics	**15,000 J**	NT	NA
W002	11/21/2005	5	Diesel Range Organics	Detect	NT	NA
W003	11/21/2005	7	Diesel Range Organics	**1,100**	NT	NA
W003	11/21/2005	7	Diesel Range Organics	Detect	NT	NA
W004	11/21/2005	7	Diesel Range Organics	**830 J**	NT	NA
W004	11/21/2005	7	Diesel Range Organics	Detect	NT	NA
W005	11/21/2005	7	Diesel Range Organics	**120**	NT	NA
W005	11/21/2005	7	Diesel Range Organics	Detect	NT	NA
W006	11/21/2005	6	Diesel Range Organics	**1,900**	NT	NA
W006	11/21/2005	6	Diesel Range Organics	Detect	NT	NA
W007	11/21/2005	4	Diesel Range Organics	**2,300**	NT	NA
W007	11/21/2005	4	Diesel Range Organics	Detect	NT	NA
W008	11/20/2005	3	Diesel Range Organics	**910**	NT	NA
W008	11/20/2005	3	Diesel Range Organics	Detect	NT	NA
W009	11/20/2005	5	Diesel Range Organics	**510**	NT	NA
W009	11/20/2005	5	Diesel Range Organics	Detect	NT	NA
W010	11/20/2005	5	Diesel Range Organics	**1,900**	NT	NA
W010	11/20/2005	5	Diesel Range Organics	Detect	NT	NA
W011	11/20/2005	3	Diesel Range Organics	**3,600 J**	NT	NA
W011	11/20/2005	3	Diesel Range Organics	Detect	NT	NA
W011	11/20/2005	9	Diesel Range Organics	Non Detect	NT	NA
W011	11/20/2005	18.5	Diesel Range Organics	**28.0 J**	NT	NA
W011	11/20/2005	18.5	Diesel Range Organics	Non Detect	NT	NA
W012	11/19/2005	6	Diesel Range Organics	**990**	NT	NA
W012	11/19/2005	6	Diesel Range Organics	Detect	NT	NA
W013	11/19/2005	5	Diesel Range Organics	**3,800 J**	NT	NA
W013	11/19/2005	5	Diesel Range Organics	Detect	NT	NA
W014	11/19/2005	5	Diesel Range Organics	**2,600**	NT	NA
W014	11/19/2005	5	Diesel Range Organics	Detect	NT	NA
W015	11/19/2005	1	Diesel Range Organics	**560**	NT	NA
W015	11/19/2005	1	Diesel Range Organics	Detect	NT	NA
W016	11/19/2005	5	Diesel Range Organics	**4,800 J**	NT	NA

TABLE C-8
Geochemical Parameters and Petroleum Hydrocarbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W016	11/19/2005	5	Diesel Range Organics	Detect	NT	NA
W017	11/18/2005	3	Diesel Range Organics	**550**	NT	NA
W017	11/18/2005	3	Diesel Range Organics	Detect	NT	NA
W017	11/18/2005	7	Diesel Range Organics	Non Detect	NT	NA
W018	11/18/2005	6	Diesel Range Organics	**1,700**	NT	NA
W018	11/18/2005	6	Diesel Range Organics	Detect	NT	NA
W019	11/18/2005	4	Diesel Range Organics	**2,200**	NT	NA
W019	11/18/2005	4	Diesel Range Organics	Detect	NT	NA
W020	11/18/2005	5	Diesel Range Organics	**180**	NT	NA
W020	11/18/2005	5	Diesel Range Organics	Detect	NT	NA
W001	11/21/2005	1	Gasoline Range Hydrocarbons	**62.0 J**	NT	NA
W001	11/21/2005	1	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W002	11/21/2005	5	Gasoline Range Hydrocarbons	**10,000**	NT	NA
W002	11/21/2005	5	Gasoline Range Hydrocarbons	Detect	NT	NA
W003	11/21/2005	7	Gasoline Range Hydrocarbons	**100.0**	NT	NA
W003	11/21/2005	7	Gasoline Range Hydrocarbons	Detect	NT	NA
W004	11/21/2005	7	Gasoline Range Hydrocarbons	**170**	NT	NA
W004	11/21/2005	7	Gasoline Range Hydrocarbons	Detect	NT	NA
W005	11/21/2005	7	Gasoline Range Hydrocarbons	**19.0 J**	NT	NA
W005	11/21/2005	7	Gasoline Range Hydrocarbons	Detect	NT	NA
W006	11/21/2005	6	Gasoline Range Hydrocarbons	**930**	NT	NA
W006	11/21/2005	6	Gasoline Range Hydrocarbons	Detect	NT	NA
W007	11/21/2005	4	Gasoline Range Hydrocarbons	**640**	NT	NA
W007	11/21/2005	4	Gasoline Range Hydrocarbons	Detect	NT	NA
W008	11/20/2005	3	Gasoline Range Hydrocarbons	**90.0**	NT	NA
W008	11/20/2005	3	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W009	11/20/2005	5	Gasoline Range Hydrocarbons	**44.0**	NT	NA
W009	11/20/2005	5	Gasoline Range Hydrocarbons	Detect	NT	NA
W010	11/20/2005	5	Gasoline Range Hydrocarbons	**270**	NT	NA
W010	11/20/2005	5	Gasoline Range Hydrocarbons	Detect	NT	NA
W011	11/20/2005	3	Gasoline Range Hydrocarbons	**300**	NT	NA
W011	11/20/2005	3	Gasoline Range Hydrocarbons	Detect	NT	NA
W011	11/20/2005	9	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W011	11/20/2005	18.5	Gasoline Range Hydrocarbons	**20.0 J**	NT	NA
W011	11/20/2005	18.5	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W012	11/19/2005	6	Gasoline Range Hydrocarbons	**240**	NT	NA
W012	11/19/2005	6	Gasoline Range Hydrocarbons	Detect	NT	NA
W013	11/19/2005	5	Gasoline Range Hydrocarbons	**460**	NT	NA
W013	11/19/2005	5	Gasoline Range Hydrocarbons	Detect	NT	NA
W014	11/19/2005	5	Gasoline Range Hydrocarbons	**130**	NT	NA
W014	11/19/2005	5	Gasoline Range Hydrocarbons	Detect	NT	NA
W015	11/19/2005	1	Gasoline Range Hydrocarbons	**71.0**	NT	NA
W015	11/19/2005	1	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W016	11/19/2005	5	Gasoline Range Hydrocarbons	**73.0 J**	NT	NA
W016	11/19/2005	5	Gasoline Range Hydrocarbons	Detect	NT	NA
W017	11/18/2005	3	Gasoline Range Hydrocarbons	**31.0 J**	NT	NA
W017	11/18/2005	3	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W017	11/18/2005	7	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W018	11/18/2005	6	Gasoline Range Hydrocarbons	**130**	NT	NA
W018	11/18/2005	6	Gasoline Range Hydrocarbons	Detect	NT	NA
W019	11/18/2005	4	Gasoline Range Hydrocarbons	**51.0 J**	NT	NA
W019	11/18/2005	4	Gasoline Range Hydrocarbons	Detect	NT	NA

TABLE C-8
Geochemical Parameters and Petroleum Hydrocarbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W020	11/18/2005	5	Gasoline Range Hydrocarbons	**13.0**	NT	NA
W020	11/18/2005	5	Gasoline Range Hydrocarbons	Non Detect	NT	NA
W001	11/21/2005	1	Heavy Oil Range Hydrocarbons	**550**	NT	NA
W001	11/21/2005	1	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W002	11/21/2005	5	Heavy Oil Range Hydrocarbons	**7,400 J**	NT	NA
W002	11/21/2005	5	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W003	11/21/2005	7	Heavy Oil Range Hydrocarbons	**1,200**	NT	NA
W003	11/21/2005	7	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W004	11/21/2005	7	Heavy Oil Range Hydrocarbons	**700 J**	NT	NA
W004	11/21/2005	7	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W005	11/21/2005	7	Heavy Oil Range Hydrocarbons	**79.0**	NT	NA
W005	11/21/2005	7	Heavy Oil Range Hydrocarbons	Non Detect	NT	NA
W006	11/21/2005	6	Heavy Oil Range Hydrocarbons	**1,900**	NT	NA
W006	11/21/2005	6	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W007	11/21/2005	4	Heavy Oil Range Hydrocarbons	**1,900**	NT	NA
W007	11/21/2005	4	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W008	11/20/2005	3	Heavy Oil Range Hydrocarbons	**2,100**	NT	NA
W008	11/20/2005	3	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W009	11/20/2005	5	Heavy Oil Range Hydrocarbons	**870**	NT	NA
W009	11/20/2005	5	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W010	11/20/2005	5	Heavy Oil Range Hydrocarbons	**1,600**	NT	NA
W010	11/20/2005	5	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W011	11/20/2005	3	Heavy Oil Range Hydrocarbons	**3,500 J**	NT	NA
W011	11/20/2005	3	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W011	11/20/2005	9	Heavy Oil Range Hydrocarbons	Non Detect	NT	NA
W011	11/20/2005	18.5	Heavy Oil Range Hydrocarbons	**23.0 J**	NT	NA
W011	11/20/2005	18.5	Heavy Oil Range Hydrocarbons	Non Detect	NT	NA
W012	11/19/2005	6	Heavy Oil Range Hydrocarbons	**1,100**	NT	NA
W012	11/19/2005	6	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W013	11/19/2005	5	Heavy Oil Range Hydrocarbons	**3,500 J**	NT	NA
W013	11/19/2005	5	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W014	11/19/2005	5	Heavy Oil Range Hydrocarbons	**1,400**	NT	NA
W014	11/19/2005	5	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W015	11/19/2005	1	Heavy Oil Range Hydrocarbons	**1,100**	NT	NA
W015	11/19/2005	1	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W016	11/19/2005	5	Heavy Oil Range Hydrocarbons	**2,200 J**	NT	NA
W016	11/19/2005	5	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W017	11/18/2005	3	Heavy Oil Range Hydrocarbons	**1,200**	NT	NA
W017	11/18/2005	3	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W017	11/18/2005	7	Heavy Oil Range Hydrocarbons	Non Detect	NT	NA
W018	11/18/2005	6	Heavy Oil Range Hydrocarbons	**1,500**	NT	NA
W018	11/18/2005	6	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W019	11/18/2005	4	Heavy Oil Range Hydrocarbons	**3,300**	NT	NA
W019	11/18/2005	4	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W020	11/18/2005	5	Heavy Oil Range Hydrocarbons	**520**	NT	NA
W020	11/18/2005	5	Heavy Oil Range Hydrocarbons	Detect	NT	NA
W001	11/21/2005	1	Nitrate	0.025 U	NT	NA
W002	11/21/2005	5	Nitrate	0.025 U	NT	NA
W003	11/21/2005	7	Nitrate	0.025 U	NT	NA
W004	11/21/2005	7	Nitrate	0.025 U	NT	NA
W005	11/21/2005	7	Nitrate	0.025 UJ	NT	NA
W006	11/21/2005	6	Nitrate	0.025 U	NT	NA

TABLE C-8
Geochemical Parameters and Petroleum Hydrocarbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W007	11/21/2005	4	Nitrate	0.025 U	NT	NA
W008	11/20/2005	3	Nitrate	0.025 U	NT	NA
W009	11/20/2005	5	Nitrate	0.025 U	NT	NA
W010	11/20/2005	5	Nitrate	0.025 U	NT	NA
W011	11/20/2005	3	Nitrate	0.025 U	NT	NA
W011	11/20/2005	9	Nitrate	0.025 U	NT	NA
W011	11/20/2005	18.5	Nitrate	0.025 U	NT	NA
W012	11/19/2005	6	Nitrate	0.025 U	NT	NA
W013	11/19/2005	5	Nitrate	0.025 U	NT	NA
W014	11/19/2005	5	Nitrate	0.025 U	NT	NA
W015	11/19/2005	1	Nitrate	0.025 U	NT	NA
W016	11/19/2005	5	Nitrate	0.025 U	NT	NA
W017	11/18/2005	3	Nitrate	0.025 U	NT	NA
W017	11/18/2005	7	Nitrate	0.025 U	NT	NA
W018	11/18/2005	6	Nitrate	0.025 U	NT	NA
W019	11/18/2005	4	Nitrate	0.025 U	NT	NA
W020	11/18/2005	5	Nitrate	0.025 U	NT	NA
W001	11/21/2005	1	Sulfate	**9,370**	NT	NA
W002	11/21/2005	5	Sulfate	**675**	NT	NA
W003	11/21/2005	7	Sulfate	**59.7 J**	NT	NA
W004	11/21/2005	7	Sulfate	**17.4 J**	NT	NA
W005	11/21/2005	7	Sulfate	**18.9 J**	NT	NA
W006	11/21/2005	6	Sulfate	**51.9 J**	NT	NA
W007	11/21/2005	4	Sulfate	**50.4 J**	NT	NA
W008	11/20/2005	3	Sulfate	**43.1 J**	NT	NA
W009	11/20/2005	5	Sulfate	**355**	NT	NA
W010	11/20/2005	5	Sulfate	**56.3 J**	NT	NA
W011	11/20/2005	3	Sulfate	**43.6 J**	NT	NA
W011	11/20/2005	9	Sulfate	**20.4 J**	NT	NA
W011	11/20/2005	18.5	Sulfate	0.5 U	NT	NA
W012	11/19/2005	6	Sulfate	**77.9 J**	NT	NA
W013	11/19/2005	5	Sulfate	**66.2 J**	NT	NA
W014	11/19/2005	5	Sulfate	**81.3 J**	NT	NA
W015	11/19/2005	1	Sulfate	**277**	NT	NA
W016	11/19/2005	5	Sulfate	**125**	NT	NA
W017	11/18/2005	3	Sulfate	**145**	NT	NA
W017	11/18/2005	7	Sulfate	**24.8 J**	NT	NA
W018	11/18/2005	6	Sulfate	**78.6**	NT	NA
W019	11/18/2005	4	Sulfate	**139**	NT	NA
W020	11/18/2005	5	Sulfate	**52.2 J**	NT	NA
W001	11/21/2005	1	Sulfide	19.0 UJ	NT	NA
W002	11/21/2005	5	Sulfide	18.0 UJ	NT	NA
W003	11/21/2005	7	Sulfide	18.0 UJ	NT	NA
W004	11/21/2005	7	Sulfide	20.0 UJ	NT	NA
W005	11/21/2005	7	Sulfide	19.0 UJ	NT	NA
W006	11/21/2005	6	Sulfide	18.0 UJ	NT	NA
W007	11/21/2005	4	Sulfide	20.0 UJ	NT	NA
W008	11/20/2005	3	Sulfide	19.0 UJ	NT	NA
W009	11/20/2005	5	Sulfide	19.0 UJ	NT	NA
W010	11/20/2005	5	Sulfide	20.0 UJ	NT	NA
W011	11/20/2005	3	Sulfide	19.0 UJ	NT	NA
W011	11/20/2005	9	Sulfide	19.0 UJ	NT	NA

TABLE C-8
Geochemical Parameters and Petroleum Hydrocarbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
W011	11/20/2005	18.5	Sulfide	20.0 UJ	NT	NA
W012	11/19/2005	6	Sulfide	18.0 UJ	NT	NA
W013	11/19/2005	5	Sulfide	19.0 UJ	NT	NA
W014	11/19/2005	5	Sulfide	20.0 UJ	NT	NA
W015	11/19/2005	1	Sulfide	18.0 UJ	NT	NA
W016	11/19/2005	5	Sulfide	18.0 UJ	NT	NA
W017	11/18/2005	3	Sulfide	19.0 UJ	NT	NA
W017	11/18/2005	7	Sulfide	19.0 UJ	NT	NA
W018	11/18/2005	6	Sulfide	20.0 UJ	NT	NA
W019	11/18/2005	4	Sulfide	20.0 UJ	NT	NA
W020	11/18/2005	5	Sulfide	17.0 UJ	NT	NA
WDL-101-S	8/14/2002	0.25	Sulfide	**572**	NT	NA
WDL-101-S	8/14/2002	5	Sulfide	**261**	NT	NA
WDL-101-S	8/14/2002	2.25	Sulfide	**2,970**	NT	NA
WDL-101-S	8/14/2002	7	Sulfide	13.8 U	NT	NA
WDL-102-S	8/14/2002	0.5	Sulfide	**1,100**	NT	NA
WDL-102-S	8/14/2002	2.25	Sulfide	**929**	NT	NA
WDL-102-S	8/14/2002	5.5	Sulfide	**86.6**	NT	NA
WDL-102-S	8/14/2002	8	Sulfide	**124**	NT	NA
WDL-102-S	8/14/2002	10	Sulfide	**12.5**	NT	NA
WDL-103-S	8/15/2002	0.25	Sulfide	**22.0**	NT	NA
WDL-103-S	8/15/2002	2.25	Sulfide	2.00 U	NT	NA
WDL-103-S	8/15/2002	5	Sulfide	**38.0**	NT	NA
WDL-103-S	8/15/2002	6.75	Sulfide	**200**	NT	NA
WDL-103-S	8/15/2002	8.25	Sulfide	**9.00**	NT	NA
WDL-104-S	8/15/2002	0.25	Sulfide	**4.00**	NT	NA
WDL-104-S	8/15/2002	2.25	Sulfide	**32.0**	NT	NA
WDL-104-S	8/15/2002	5	Sulfide	**210**	NT	NA
WDL-104-S	8/15/2002	6.75	Sulfide	**110**	NT	NA
W001	11/21/2005	1	Total organic carbon	**40,000**	NT	NA
W002	11/21/2005	5	Total organic carbon	**22,200**	NT	NA
W003	11/21/2005	7	Total organic carbon	**9,700**	NT	NA
W004	11/21/2005	7	Total organic carbon	**12,900**	NT	NA
W005	11/21/2005	7	Total organic carbon	**5,700 J**	NT	NA
W006	11/21/2005	6	Total organic carbon	**45,100**	NT	NA
W007	11/21/2005	4	Total organic carbon	**36,400**	NT	NA
W008	11/20/2005	3	Total organic carbon	**57,400**	NT	NA
W009	11/20/2005	5	Total organic carbon	**33,500**	NT	NA
W010	11/20/2005	5	Total organic carbon	**32,900**	NT	NA
W011	11/20/2005	3	Total organic carbon	**38,500**	NT	NA
W011	11/20/2005	9	Total organic carbon	**1,100**	NT	NA
W011	11/20/2005	18.5	Total organic carbon	**46,200**	NT	NA
W012	11/19/2005	6	Total organic carbon	**35,700**	NT	NA
W013	11/19/2005	5	Total organic carbon	**38,200**	NT	NA
W014	11/19/2005	5	Total organic carbon	**38,800**	NT	NA
W015	11/19/2005	1	Total organic carbon	**78,400**	NT	NA
W016	11/19/2005	5	Total organic carbon	**49,700**	NT	NA
W017	11/18/2005	3	Total organic carbon	**39,600**	NT	NA
W017	11/18/2005	7	Total organic carbon	**1,900**	NT	NA
W018	11/18/2005	6	Total organic carbon	**17,800**	NT	NA
W019	11/18/2005	4	Total organic carbon	**38,500**	NT	NA
W020	11/18/2005	5	Total organic carbon	**35,400**	NT	NA
WDL-101-S	8/14/2002	0.25	Total organic carbon	**184,000**	NT	NA

TABLE C-8
Geochemical Parameters and Petroleum Hydrocarbon Analytical Results for Bulk and TCLP Methods
RP - Portland Site

Site Name	Sample Date	Start Depth (feet bwsi)	Constituent Name	Total Concentration (mg/kg)	TCLP Concentration (mg/L)	RBC Screening Value* (mg/L)
WDL-101-S	8/14/2002	5	Total organic carbon	**40,800**	NT	NA
WDL-101-S	8/14/2002	2.25	Total organic carbon	**26,100**	NT	NA
WDL-101-S	8/14/2002	7	Total organic carbon	**66,600**	NT	NA
WDL-102-S	8/14/2002	0.5	Total organic carbon	**102,000**	NT	NA
WDL-102-S	8/14/2002	2.25	Total organic carbon	**114,000**	NT	NA
WDL-102-S	8/14/2002	5.5	Total organic carbon	**12,100**	NT	NA
WDL-102-S	8/14/2002	8	Total organic carbon	**26,700**	NT	NA
WDL-102-S	8/14/2002	10	Total organic carbon	**39,700**	NT	NA
WDL-103-S	8/15/2002	0.25	Total organic carbon	**88,500**	NT	NA
WDL-103-S	8/15/2002	2.25	Total organic carbon	**8,450**	NT	NA
WDL-103-S	8/15/2002	5	Total organic carbon	**4,990**	NT	NA
WDL-103-S	8/15/2002	6.75	Total organic carbon	**160,000**	NT	NA
WDL-103-S	8/15/2002	8.25	Total organic carbon	**34,700**	NT	NA
WDL-104-S	8/15/2002	0.25	Total organic carbon	**10,700**	NT	NA
WDL-104-S	8/15/2002	2.25	Total organic carbon	**4,800**	NT	NA
WDL-104-S	8/15/2002	5	Total organic carbon	**33,900**	NT	NA
WDL-104-S	8/15/2002	6.75	Total organic carbon	**14,000**	NT	NA
WDL-201-S	2/12/2004	0.25	Total organic carbon	**74,300**	NT	NA
WDL-201-S	2/12/2004	6	Total organic carbon	**39,000**	NT	NA
WDL-202-S	2/12/2004	4	Total organic carbon	**12,100**	NT	NA
WDL-203-S	2/13/2004	5.75	Total organic carbon	**3,680**	NT	NA
WDL-204-S	2/12/2004	5	Total organic carbon	**20,500**	NT	NA

Note:
bwsi = below water/sediment interface
mg/kg = milligram per kilogram
mg/L = milligrams per liter
CAS = Chemical abstract service number
Bold = detection at or above Method Detection Limit
= detection exceeds risk based concentration screening level
RBC = Risk based concentration
* = The RBC was calculated for an excavation worker in contact with shallow groundwater
NT = not tested
NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.
R = Indicates that a result has been rejected due to serious QC problems.
U = Not detected at or above the listed method detection limit.
J = The result is estimated.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
UJ = Not detected at or above the method detection limit; the limit is an approximate value.
NJ = An analyte has been presumptively identified and the associated analytical result is estimated.

APPENDIX D

Data Quality Reviews

D-1

Data Quality Review for the West Doane Lake Treatability Study

ATTACHMENT 1

APPENDIX D-1

DATA QUALITY REVIEW FOR THE WEST DOANE LAKE TREATABILITY STUDY RP - PORTLAND SITE

July 2, 2007

Submitted to:

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0-61M-107030/Phase 65/T2

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Table 8 Data Qualifiers for Semivolatile Petroleum Products by DEQ/Ecology Method NWTPH-Dx

Table 9 Data Qualifiers for Metals by EPA 6000/7000 Series Methods

Table 10 Data Qualifiers for TCLP Volatile Organic Compounds by EPA Method 8260B

Table 11 Data Qualifiers for TCLP Chlorinated Herbicides by EPA Method 8151A

Table 12 Data Qualifiers for TCLP Semivolatile Organic Compounds by EPA Method 8270C

Table 13 Data Qualifiers for TCLP Organochlorine Pesticides by EPA Method 8081A

Table 14 Data Qualifiers for TCLP Polychlorinated Biphenyls by EPA Method 8082

Table 15 Data Qualifiers for TCLP Metals by EPA 6000/7000 Series Methods

ACRONYMS

^{o}C	degrees Celsius
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
AMEC	AMEC Earth & Environmental, Inc.
BHC	benzene hexachloride
BS	blank spike
BSD	blank spike duplicate
CAR	certified analytical report
CLP	EPA Contract Laboratory Program
COC	chain of custody
DCAA	dichlorophenylacetic acid
DCB	decachlorobiphenyl
DDD	dichloro diphenyl dichloroethane
DDE	dichloro diphenyl dichloroethylene
DDT	dichloro diphenyl trichloroethane
DEQ	Oregon Department of Environmental Quality
DL	detection limit
DRO	diesel range organics
Ecology	Washington Department of Ecology
EPA	United States Environmental Protection Agency
GRO	gasoline range organics
HCID	hydrocarbon identification
HxCDD	hexachlorodibenzo-p-dioxin
HXCDF	hexachlorodibenzofuran
ID	identification
IDL	instrument detection limit
IS	internal standard
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit

MEK	2-butanone
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate
NWTPH-Dx	Northwest Total Petroleum Hydrocarbons-Diesel
NWTPH-Gx	Northwest Total Petroleum Hydrocarbons-Gasoline
NWTPH-HCID	Northwest Total Petroleum Hydrocarbons-Hydrocarbon Identification
OCDF	octachlorodibenzofuran
OCP	organochlorine pesticide
OSWER	EPA Office of Solid Waste and Emergency Response
PCB	polychlorinated biphenyl
PeCDD	pentachlorodibenzo-p-dioxin
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RP	Rhône-Poulenc
RPD	relative percent difference
RRO	residual range organics
SOP	standard operating procedure
STL	Severn Trent Laboratories, Inc.
SVOC	semivolatile organic compound
TCDD	tetrachlorodibenzo-p-dioxin
TCLP	toxicity characteristic leaching procedure
TCMX	tetrachloro-m-xylene
TFT	trifluorotoluene
WDL TS	West Doane Lake Treatability Study

1.0 INTRODUCTION

Three bulk sediment samples, four sequential leaching batch leach samples, and nineteen aliquots of the treated bulk samples were collected from the Rhône-Poulenc (RP) Portland Site, between February 27, 2006 and March 6, 2006, for the West Doane Lake Treatability Study (WDL TS). The samples were submitted to Severn Trent Laboratories, Inc. (STL) in Seattle, Washington, and STL in Sacramento, California, for analysis.

STL Seattle analyzed the samples by the following methods:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) Method 8260B;
- Chlorinated herbicides (herbicides) by EPA Method 8151A;
- Semivolatile organic compounds (SVOCs) by EPA Method 8270C;
- Organochlorine pesticides (OCPs) by EPA Method 8081A;
- Polychlorinated biphenyls (PCBs) by EPA Method 8082;
- Hydrocarbon identification (HCID) by Oregon Department of Environmental Quality (DEQ)/Washington Department of Ecology (Ecology) Method NWTPH-HCID;
- Gasoline-range organics (GRO) by DEQ/Ecology Method NWTPH-Gx;
- Semivolatile hydrocarbons by DEQ/Ecology Method NWTPH-Dx;
- Metals by EPA Method 6010 and EPA Method 6020; and
- Mercury by EPA Method 7470A and EPA Method 7471.

STL Sacramento analyzed the samples for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (dioxins and furans) by EPA Methods 8280A and 8290.

The bulk samples and treated aliquots of the bulk samples also underwent toxicity characteristic leaching procedure (TCLP) extraction by EPA Method 1311 and analysis using all of the EPA methods listed above. A list of these samples by field sample identification (ID) and laboratory sample ID is presented in Table 1.

2.0 DATA QUALITY REVIEW METHODOLOGY

AMEC Earth & Environmental, Inc. (AMEC) performed this data quality review with reference to EPA guidelines as given in the current EPA functional guidelines for organic and inorganic data review, the EPA Office of Solid Waste and Emergency Response (OSWER) standard operating procedures (SOPs) for inorganic and organic data review (EPA, 1999; EPA, 2004a), and the RP Quality Assurance Project Plan (QAPP) Addendum No. 1 (AMEC, 2002). The EPA guidelines listed above were written specifically for the Contract Laboratory Program (CLP), and have been modified for the purposes of this data quality review where they differ from EPA SW-846 Methods (EPA, 2004b) quality control requirements.

The laboratory's certified analytical report (CAR) and supporting documentation were reviewed to assess the following: holding time compliance; presence or absence of laboratory contamination as demonstrated by method and field blanks; accuracy and bias as demonstrated by recovery of surrogate spikes, laboratory control samples (LCS), and matrix spikes (MS); analytical precision as relative percent difference (RPD) of analyte concentration between replicate samples (i.e., laboratory duplicates) or MS and matrix spike duplicates (MSD); sampling precision as RPD of analyte concentration between field duplicates; calibration performance; and insofar as possible, the degree of conformance to method requirements and good laboratory practices. This data quality review did not include review or validation of the raw analytical data.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all quality control (QC) audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 DEFINITIONS OF QUALIFIERS THAT MAY BE ADDED AS A RESULT OF DATA QUALITY REVIEW

The **U** qualifier indicates that an analyte must be considered to be nondetected at the concentration listed. U qualifiers added during data quality review are typically a result of detection of target analytes in blanks.

The **J** qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during data quality review may indicate a concentration between the method detection limit (MDL) and the reporting limit (RL), or a data limitation related to a QC element that exceeds required acceptance limits.

The **UJ** qualifier indicates the reporting limit is estimated. UJ qualifiers added during data quality review may indicate either a high or low bias related to a QC element that exceeds required acceptance limits.

The **N** qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

The **R** qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

4.0 EXPLANATION OF DATA QUALITY INDICATORS

LCS Recoveries

LCS and laboratory control sample duplicates (LCSDs), also known as blank spike (BS) and blank spike duplicates (BSDs), are aliquots of analyte-free water or Ottawa sand that are spiked with the analytes of interest for an analytical method or a representative subset of those analytes. The spiked water or sand is then processed through the same extraction, concentration, cleanup, and analytical procedures as the samples they accompany. LCS recovery and precision are indications of a laboratory's ability to successfully perform an analytical method in an interference-free matrix. LCS recoveries should generally be within 70 to 130% acceptance limits for organic analytes and 80 to 120% for inorganic analytes.

MS Recoveries

MSs and MSDs are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are indications of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related. MS recoveries

should generally be within 60 to 140% acceptance limits for organic analytes and 75 to 125% acceptance limits for inorganic analytes.

Surrogate Spike Recoveries

Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process. Surrogate recoveries generally should be within 70 to 130% acceptance limits in interference-free matrices (blanks, LCS/LCSD) and 60 to 140% acceptance limits in field samples.

Blank Concentrations

Laboratory blanks are aliquots of analyte free water that are processed by the laboratory using exactly the same procedures as the field samples. Laboratory blanks are used to monitor for contamination introduced by the laboratory during sample preparation and analysis.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

5.1 Sample Receipt at STL Seattle

All samples were received at STL Seattle at measured temperatures of 4 degrees centigrade (ºC) ±2ºC and in good condition.

5.2 Sample Receipt at STL Sacramento

All samples were received at STL Sacramento at measured temperatures of 4ºC ± 2ºC. Specific details of sample receipt condition and chain of custody (COC) anomalies are described below:

- The coolers containing samples TS-1, TS-2, TS-3, TS-1-WDLSS-1A, TS-1-WDLSS-1B, TS-1-WDLSS-1C, TS-1-WDLSS-1D, TS-2-WDLSS-1A, TS-2-WDLSS-1B, TS-2-WDLSS-1C, TS-2-WDLSS-1D, TS-3-WDLSS-1A, TS-3-WDLSS-1B, TS-3-WDLSS-1C, TS-3-WDLSS-1D, Cycle 1 W003, and Cycle 2 W003 were received with temperatures of 0ºC. STL Sacramento did not indicate that the samples were frozen or otherwise compromised. In AMEC's professional opinion, data usability is not adversely affected by the low cooler temperatures.

6.0 SPECIFIC DATA QUALITY REVIEW FINDINGS FOR EACH ANALYTICAL METHOD

Sections 6.1 to 6.10 of this data quality review contain narrative descriptions of data quality limitations for total analyses. Definitions of data qualifiers added during review may be found in Section 3. Summaries of specific qualifiers added to each affected sample as a result of the data review findings are presented in Tables 2 through 9.

6.1 Total Volatile Organic Compounds by EPA Method 8260B

VOC data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified VOC results is found in Table 2.

6.1.1 Holding Time

All samples from this event were analyzed for VOCs within the recommended maximum holding time of 14 days from sample collection until analysis, except as described below:

- Sample TS-1 was sampled on February 27, 2006, but was not analyzed until March 15, 2006, two days past the maximum recommended fourteen day holding time. AMEC J qualified all detected results and UJ qualified all nondetected results from this sample because of the holding time exceedance. (**J/UJ**-HT)

6.1.2 Laboratory Blanks

Target analytes should not be found in blank samples. Results greater than the method reporting limit (MRL), but less than 5 times the concentration found in the blank, or 10 times the amount found in the blank for methylene chloride, acetone, and 2-butanone, have been U qualified. Results between the instrument detection limit (IDL) and MRL, and less than 5 or 10 times the amount found in the blank have been U qualified at the MRL concentration.

No target analytes were detected in the laboratory blanks associated with VOC analysis, except as described below:

- Iodomethane (180 micrograms per kilogram [µg/kg]), acetone (260 µg/kg), ethylbenzene (5.4 µg/kg), m,p-xylene (15 µg/kg), o-xylene (5.8 µg/kg), and 1,2,3-trichlorobenzene (12 µg/kg) were detected in laboratory blank MB 580-4760. Specific limitations include the following:

- AMEC U qualified the iodomethane, o-xylene, and 1,2,3-trichlorobenzene results from sample TS-3. (**U**-MB)
- AMEC U qualified the 1,2,3-trichlorobenzene results from samples TS-2 and TS-1. (**U**-MB)
- The other iodomethane, acetone, ethylbenzene, m,p-xylene, o-xylene, and 1,2,3-trichlorobenzene results were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.

- Toluene and hexachlorobutadiene were detected in laboratory blank MB 580-5890 at concentrations of 0.089 micrograms per liter (µg/L) and 0.068 µg/L, respectively. AMEC U qualified the detected toluene results from sample Cycle 1 W003 and W003 Cycle 3 because the sample concentrations were less than 5 times the concentration detected in the blank. (**U**-MB)

6.1.3 LCS/LCSD Recoveries

All LCS/LCSD recoveries associated with VOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- Chloroethane recoveries were low at 23% and 17% in LCS/LCSD 580-4760. AMEC UJ qualified the nondetected chloroethane results from samples TS-3, TS-2, and TS-1 because of a possible low bias in the analytical results. (**UJ**-LL)
- Isopropylbenzene recovery was high at 131% in LCSD 580-4760. Isopropylbenzene was not detected in the associated samples, and data usability is not adversely affected by the high bias.
- Bromomethane (150%/143%) and 2-ethyl-1-hexanol (154%/173%) recoveries were high in LCS/LCSD 580-5890. Specific limitations are described below:
  - AMEC J qualified the detected 2-ethyl-1-hexanol results from samples Cycle 1 W003, Cycle 2 W003, W003 Cycle 3, and W003 Cycle 4 because of possible high bias in the analytical results. (**J**-HL)
  - The bromomethane recoveries were high and this analyte was not detected in the associated sample. Data usability is not adversely affected.

6.1.4 Surrogate Recovery

All surrogate recoveries associated with VOC analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described below:

- Recovery of the surrogate compound trifluorotoluene (TFT) was low at 9% in sample TS-1. All other surrogate recoveries were greater than 90% and the data were previously qualified for a holding time exceedance. In AMEC's professional opinion, further qualification is not necessary.

6.1.5 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.2 Total Chlorinated Herbicides by EPA Method 8151A

Herbicide data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified herbicide results is presented in Table 3.

6.2.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 14 days, and analyzed within 40 days of extraction.

6.2.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with herbicide analysis.

6.2.3 LCS/LCSD Recoveries

LCS/LCSD recoveries were within the QAPP-specified 70 to 130% acceptance limits except as described below:

- Dalapon and bromoxynil recoveries were low in LCS/LCSD 580-4610. Specific limitations are described below:

- Dalapon recoveries were low at 43% in the LCS and 42% in the LCSD. AMEC UJ qualified the nondetected dalapon results from the samples TS-3, TS-2, and TS-1 because of a possible low bias in the analytical results. (**UJ**-LL)
- Bromoxynil recovery was low at 69% in the LCS, but acceptable at 75% in the LCSD. The average recovery is acceptable at 72%, and in AMEC's professional opinion, data usability is not adversely affected.

- Dalapon recoveries were low in LCS/LCSD 580-5624 at 37% and 41%, respectively. AMEC UJ qualified the nondetected dalapon results from samples Cycle 1 W003, Cycle 2 W003, W003 Cycle 3, and W003 Cycle 4 because of possible low bias in the analytical results. (**UJ**-LL)

6.2.4 Surrogate Recovery

All surrogate recoveries associated with herbicide analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described below:

- Recovery of the surrogate compound 2,4-dichlorophenylacetic acid (2,4-DCAA) was low at 53% in sample TS-2. AMEC J qualified the detected results and UJ qualified the nondetected results from this sample because of possible low bias in the analytical results. (**J**/**UJ**-LS)

6.2.5 MS/MSD Recoveries

Recoveries were within the QAPP-specified 60 to 140% acceptance limits in all MSs associated with herbicide analysis, except as described below:

Dalapon, MCPP, dichloroprop, and 2,4-DB recoveries were outside of acceptance limits in the MS/MSD performed on sample TS-2. Specific limitations are described below:

- Dalapon recoveries were low at 40% in the MS and 41% in the MSD. AMEC UJ qualified the nondetected dalapon result from sample TS-2 because of a possible low bias in the analytical result. (**UJ**-LM)
- MCPP recovery was acceptable at 65% in the MS, but low at 55% in the MSD. The average recovery is acceptable at 60%, and in AMEC's professional opinion, data usability is not adversely affected.

- Dichlorprop recovery was acceptable at 61% in the MS, but low at 55% in the MSD. The average recovery is low at 58%. AMEC J qualified the detected dichloroprop result from sample TS-2 because of possible low bias in the analytical result. (**J**-LM)
- 2,4-DB recoveries were high at 179% in the MS and 225% in the MSD. Data usability is not adversely affected because the background 2,4-DB concentration in the unspiked sample, at 15,000 µg/kg, was more than 9 times the spike concentration of 1,620 µg/kg.

6.2.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.3 Total Semivolatile Organic Compounds by EPA Method 8270C

SVOC results from this event may be considered usable with the limitations described below. A summary of qualified SVOC results is presented in Table 4.

6.3.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 14 days, and analyzed within 40 days of extraction.

6.3.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with SVOC analysis.

6.3.3 LCS/LCSD Recoveries

All LCS recoveries associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- Benzyl alcohol, butyl benzyl phthalate, 3,3'-dichlorobenzidine, and benzo(g,h,i)perylene recoveries were outside of acceptance limits in LCS/LCSD 580-4633. Specific limitations are described below:

- Benzyl alcohol recovery was low at 68% in the LCS, but acceptable at 76% in the LCSD. The average recovery is acceptable at 72%. In AMEC's professional opinion, data usability is not adversely affected.
- Butyl benzyl phthalate recovery was low at 67% in the LCS, but acceptable at 80% in the LCSD. The average recovery is acceptable at 73.5%. In AMEC's professional opinion, data usability is not adversely affected.
- 3,3'-dichlorobenzidine recoveries were low at 64% in the LCS and 67% in the LCSD. AMEC J qualified the detected 3,3'-dichlorobenzidine results from sample TS-3 and UJ qualified the nondetected 3,3'-dichlorobenzidine results from samples TS-2 and TS-1 because of possible low bias in the analytical results. (**J**/**UJ**-LL)
- Benzo(g,h,i)perylene recovery was acceptable at 124% in the LCS, but high at 138% in the LCSD. The average recovery is slightly high at 131%. In AMEC's professional opinion data usability is not adversely affected.

- Phenol (26%/23%), benzyl alcohol (56%/50%), 2-methylphenol (64%/63%), 3&4-methylphenol (53%/52%), and 4-nitrophenol (35%/30%) recoveries were low in LCS/LCSD 580-5565. Specific limitations are described below:
  - AMEC J qualified the detected phenol and 2-methyl phenol results from samples Cycle 1 W003 and Cycle 2 W003 because of possible low bias in the analytical results. (**J**-LL)
  - AMEC J qualified the detected 3&4-methylphenol result from sample Cycle 1 W003 and UJ qualified the nondetected 3&4-methylphenol result from sample Cycle 2 W003 because of possible low bias in the analytical results. (**J**-LL)
  - AMEC UJ qualified the nondetected benzyl alcohol and 4-nitrophenol results from Cycle 1 W003 and Cycle 2 W003 because of possible low bias in the analytical results. (**UJ**-LL)

- Phenol (25%/22%), benzyl alcohol (48%/46%), 2-methylphenol (59%/56%), bis(2-chloroisopropyl)ether (73%/66%), 3&4-methylphenol (51%/49%), n-nitrosodi-n-propylamine (70%/67%), 2-nitrophenol (72%/68%), 4-chloro-3-methylphenol (70%/65%), hexachlorocyclopentadiene (64%/61%), 2,4,5-trichlorophenol (69%/67%), 4-nitrophenol (33%/30%), 4,6-dinitro-2-methylphenol (68%/69%), pentachlorophenol (64%/61%), butylbenzylphthalate (70%/69%), and bis(2-ethylhexyl)phthalate (67%/64%) recoveries were low in LCS/LCSD 580-5658. Specific limitations are described below:

- AMEC J qualified the detected 2-methyl phenol and 2,4,5-trichlorophenol results from samples W003 Cycle 3 and W003 Cycle 4 because of possible low bias in the analytical results. (**J**-LL)
- AMEC J qualified the detected phenol result from sample W003 Cycle 3 and UJ qualified the nondetected phenol result from sample W003 Cycle 4 because of possible low bias in the analytical results. (**J**-LL)
- AMEC UJ qualified the nondetected benzyl alcohol, bis(2-chloroisopropyl)ether, 3&4-methylphenol, n-nitrosodi-n-propylamine, 4-chloro-3-methylphenol, hexachlorocyclopentadiene, 4-nitrophenol, 4,6-dinitro-2-methylphenol, pentachlorophenol, and bis(2-ethylhexyl)phthalate results from W003 Cycle 3 and W003 Cycle 4 because of possible low bias in the analytical results. (**UJ**-LL)
- The average 2-nitrophenol (70%) and butylbenzylphthalate (70%) recoveries were within QC acceptance limits. In AMEC's professional opinion, data usability is not adversely affected.

6.3.4 MS/MSD Recoveries

All MS/MSD recoveries associated with SVOC analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- 1,3-dichlorobenzene (-122%/-56%), 1,4-dichlorobenzene (-1060%/-748%), 1,2-dichlorobenzene (-3520%/-2560%), 2-methylphenol (33%/94%), 2,4-dichlorophenol (-761%/-492%), 1,2,4-trichlorobenzene (-19%/22%), naphthalene (-464%/-449%), 2,4,6-trichlorophenol (-307%/-171%), 2,4,5-trichlorophenol (-74%/-30%), 3-nitroaniline (1305/145%), and 3,3'-dichlorobenzidine (138%/151%) recoveries were outside of acceptance limits in the MS/MSD performed on sample TS-1. Specific limitations are described below:
  - 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 2-methylphenol, 2,4-dichlorophenol, 1,2,4-trichlorobenzene, naphthalene, 2,4,6-trichlorophenol, and 2,4,5-trichlorophenol concentrations in the unspiked sample were greater than the spike concentration. Data usability is not adversely affected.
  - 3-nitroaniline and 3,3'-dichlorobenzidine recoveries were high and these analytes were not detected in sample TS-1. Data usability is not adversely affected.

6.3.5 Surrogate Recovery

All surrogate recoveries associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described below. As specified in EPA Method 8270C, up to one surrogate from each extraction fraction may be outside of acceptance limits without affecting data usability.

- Recovery of the surrogate compound 2,4,6-tribromophenol was low at 57% in sample TS-3. Data usability is not adversely affected.
- Recovery of the surrogate compound 2-fluorophenol was high at 280% in sample TS-1. Data usability is not adversely affected.
- Recoveries of the surrogate compounds phenol-d_5 and 2-fluorophenol were low at 51% and 59%, respectively, in sample Cycle 1 W003. AMEC J qualified the detected acid extractable compounds (phenols) and UJ qualified the nondetected phenols from this sample because of a possible low bias in the analytical results (**J**/**UJ**-LS).

6.3.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.4 Total Organochlorine Pesticides by EPA Method 8081A

OCP data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified OCP results is presented in Table 5.

6.4.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 14 days and analyzed within 40 days of extraction.

6.4.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with the analysis of these samples for OCPs.

6.4.3 LCS/LCSD Recoveries

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with OCP analysis, except as described below:

- Delta-benzene hexachloride (BHC) (64%/71%), 4,4- dichloro diphenyl dichloroethylene (DDE) (65%/71%), 4,4-dichloro diphenyl trichloroethane (DDT) (65%/71%), endosulfan I (66%/72%), heptachlor epoxide (67%/72%), endrin ketone (68%/74%), alpha-chlordane (64%/69%), and gamma-chlordane (66%/72%) recoveries were low in LCS and/or LCSD 580-5717. Specific limitations are described below:
  - AMEC J qualified the detected delta-BHC, 4,4-DDE, 4,4-DDT, endosulfan I, heptachlor epoxide, alpha-chlordane, and gamma-chlordane results from sample W003 Cycle 3 because of possible low bias in the analytical results. (**J**-LL)
  - AMEC J qualified the detected 4,4-DDE, 4,4-DDT, endosulfan I, and alpha-chlordane results, and UJ qualified the nondetected delta-BHC, heptachlor epoxide, and gamma-chlordane results from sample W003 Cycle 4 because of possible low bias in the analytical results. (**J**-LL)
  - The average endrin ketone recovery was acceptable at 72%. In AMEC's professional opinion, data usability is not adversely affected.

6.4.4 Surrogate Recovery

Surrogate recoveries associated with analysis of these samples for OCPs were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- The surrogate compounds tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCB) were not recovered from samples TS-3 and TS-2. The samples were analyzed at 1:10 dilutions, which may have reduced the surrogate concentrations below the analytical detection limit. It is not possible to evaluate the potential effects of the low surrogate recoveries on data usability, and AMEC did not qualify any of the data.
- The surrogate compounds TCMX and DCB were not recovered from sample TS-1. The sample was analyzed at a 1:1000 dilution, which may have reduced the surrogate concentrations below the analytical detection limit. It is not possible to evaluate the potential effects of the low surrogate recoveries on data usability, and AMEC did not qualify any of the data.

- Recovery of the surrogate compound TCMX was slightly high at 131% in LCS 580-4642. The LCS analyte recoveries were acceptable and in AMEC's professional opinion the high surrogate recovery does not adversely affect data usability.

6.4.5 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.5 Total Polychlorinated Biphenyls by EPA Method 8082

PCB data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified PCB results is presented in Table 6.

6.5.1 Holding Time

All samples were extracted within the EPA recommended maximum holding times of 14 days, and analyzed within 40 days of extraction.

6.5.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with PCB analysis.

6.5.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with PCB analysis.

6.5.4 Surrogate Recovery

Surrogate recoveries associated with PCB analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- Recovery of the surrogate compound DCB was high at 158% in sample TS-1. Target analytes were not detected in this sample, and data usability is not adversely affected.

6.5.5 MS/MSD Recoveries

Recoveries were within the QAPP-specified 60 to 140% acceptance limits in all MS associated with PCB analysis, except as described below:

- Aroclor 1260 was not recovered in the matrix spike performed on sample TS-1. AMEC R qualified and rejected the nondetected Aroclor 1260 result from this sample because of a lack of analyte recovery. (**R**-MS)

6.6 Total Dioxins and Furans by EPA Method 8280A and 8290

Dioxins and furans data from this event may be considered usable with the limitations and qualifications described below. A summary of qualified dioxins and furans results may be found in Table 7.

6.6.1 Holding Time

All samples were extracted within the method-recommended 30 days of sample collection, and analyzed within 45 days of extraction.

6.6.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with dioxin and furan analysis.

6.6.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with dioxins and furans analysis.

6.6.4 Internal Standard Recoveries

Internal standard (IS) recoveries associated with dioxin and furan analysis were within the method-specified 25 to 150% acceptance limits.

6.6.5 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.7 Hydrocarbon Identification by DEQ/Ecology Method NWTPH-HCID

HCID data from the WDL TS may be considered usable with the limitations and exceptions described below. HCID serves as a tool for the qualitative identification of petroleum hydrocarbons, and as such, HCID results do not warrant qualification for QC exceedances.

6.7.1 Holding Time

All samples were analyzed within the EPA recommended maximum holding time of 14 days.

6.7.2 Surrogate Recovery

Surrogate recoveries associated with HCID analysis were within the method-specified 50 to 150% acceptance limits.

6.7.3 Laboratory Duplicate Precision

RPDs between detected results were less than the QAPP-specified maximum of 30% in the laboratory duplicates associated with these samples.

6.8 Volatile Petroleum Products by DEQ/Ecology Method NWTPH-Gx

GRO data from this event may be considered usable without qualification.

6.8.1 Holding Time

All samples were analyzed within the EPA-recommended maximum holding time of 14 days.

6.8.2 Laboratory Blanks

GRO was not detected in the laboratory blanks associated with these samples, except as described below:

- GRO was detected at a concentration of 1.2 milligrams per kilogram (mg/kg) in laboratory blank 580-4651. The GRO concentrations detected in the samples were more than 5 times the concentration detected in the blank and data usability is not adversely affected.

6.8.3 LCS/LCSD Recovery and Precision

Recovery and precision for LCS/LCSDs associated with GRO were acceptable.

6.8.4 Surrogate Recovery

Surrogate recoveries associated with GRO were within the method-specified 50 to 150% acceptance limits, except as described below:

- The surrogate compound TFT was not recovered from sample TS-1. The sample was analyzed at a tenfold dilution, which may have reduced the surrogate concentration below the analytical detection limit. Data usability is not adversely affected.

6.9 Semivolatile Petroleum Products by DEQ/Ecology Method NWTPH-Dx

Diesel-range organics (DRO) and residual range organics (RRO) data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified DRO and RRO results is presented in Table 8.

6.9.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 14 days, and analyzed within 40 days from extraction.

6.9.2 Laboratory Blanks

DRO and RRO were not detected in the laboratory blanks associated with these samples, except as described below.

- DRO and RRO were detected in laboratory blank MB 580-4613 at concentrations of 8.8 mg/kg and 8.7 mg/kg, respectively. The DRO and RRO concentrations detected in the samples were more than 5 times the concentration detected in the blank and data usability is not adversely affected.
- DRO and RRO were detected in laboratory blank MB 580-5697 at concentrations of 0.13 micrograms per Liter (mg/L) and 0.074 mg/L, respectively. These analytes were either not detected in the associated samples, or the sample concentrations were greater than 5 times the associated blank concentration. Data usability is not adversely affected.

6.9.3 LCS/LCSD Recovery and Precision

Recovery and precision for LCS/LCSDs associated with DRO and RRO analyses were acceptable.

6.9.4 Surrogate Recovery

Surrogate recoveries associated with DRO and RRO analyses were within the method-specified 50 to 150% acceptance limits.

6.9.5 MS/MSD Recoveries

Recoveries were within the method-specified 50 to 150% acceptance limits in all MS associated with analysis of these samples for NWTPH-Dx, except as described below:

DRO (-32%/-112%) and RRO (17%/-26%) recoveries were low in the MS/MSD performed on sample TS-1. The DRO and RRO concentrations detected in the unspiked sample were greater than the spike concentration and data usability is not adversely affected.

6.9.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.10 Total Metals by EPA Methods 6010B, 6020, and 7471A

Metals data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified metals results is presented in Table 9.

6.10.1 Holding Time

All samples were analyzed for mercury within the recommended technical holding time of 28 days and for all other metals within the recommended technical holding time of 180 days.

6.10.2 Laboratory Blanks

Target analytes should not be found in blank samples. When the concentration detected in the blank is less than the MRL, concentrations in associated samples greater than the MRL, but less than 5 times the concentration detected in the blank have been U qualified by AMEC. When the absolute concentration detected in the blank is greater than the MRL, concentrations in associated samples greater than the MRL, but less than 10 times the concentration detected in the blank have been U qualified by AMEC. In both cases, sample concentrations between the IDL and MRL, and less than 5 or 10 times the concentration detected in the blank have been U qualified at the MRL concentration.

Target analytes were not detected in the laboratory blanks associated with these samples, except as described below:

- Boron was detected in laboratory blank MB 580-4588 at a concentration of 8.5 mg/kg. The boron concentrations detected in the samples were more than 5 times the concentration detected in the blank and data usability is not adversely affected.
- Lead (0.0016 mg/kg), antimony (0.012 mg/kg), barium (0.0019 mg/kg), manganese (0.015 mg/kg), molybdenum (0.014 mg/kg), nickel (0.00070 mg/kg), thallium (0.0019 mg/kg), and zinc (0.012 mg/kg) were detected in laboratory blank MB 580-4588. The analyte concentrations detected in the samples were more than 5 times the concentrations detected in the blank and data usability is not adversely affected.
- Aluminum (0.055 mg/L), magnesium (0.11 mg/L), potassium (0.044 mg/L), lead (0.000033 mg/L), and nickel (0.000017 mg/L) were detected in laboratory blank MB 580-5830. AMEC U qualified the detected magnesium results from samples Cycle 1 W003, Cycle 2 W003, W003 Cycle 3, and W003 Cycle 4 because the concentrations in the samples were less than 5 times the concentration detected in the associated blank. (**U**-MB)

6.10.3 LCS Recovery

Recoveries were acceptable in all LCS associated with metals analysis.

6.10.4 MS/MSD Recoveries

The method-specified acceptance limits for metals MS recoveries are 75 to 125%. However, spike recovery limits are not applicable when the sample concentration exceeds the spike concentration by a factor of four or more.

Precision and recovery were acceptable in all MS associated with metals analysis, except as described below:

- Aluminum (537%/529%), calcium (143%/203%), iron (164%/134%), and magnesium (177%/259%) recoveries were high in the MS/MSD performed on sample TS-3. In all cases, the background analyte concentrations in the unspiked sample were more than 8 times the spike concentrations and data usability is not adversely affected.
- Lead (133%/96%), chromium (105%/-32%), manganese (138%/-149%), and zinc (146%/122%) recoveries were outside of acceptance limits in the MS/MSD performed on sample TS-3. Specific limitations are described below:
  - AMEC J qualified the lead and zinc results from sample TS-3 because of possible high bias in the analytical results. (**J**-HM)
  - The background chromium and magnesium concentrations in the unspiked sample were more than ten times the spike concentration and data usability is not adversely affected.
- Calcium (151%/157%) and sodium (50%/150%) recoveries were outside acceptance limits in the MS analysis of sample Cycle 1 W003. Specific limitations are described below:
  - AMEC J qualified the detected calcium results from samples Cycle 1 W003 and Cycle 2 W003 because of possible high bias in the analytical results. (**J**-HM)
  - AMEC J qualified the detected sodium results from samples Cycle 1 W003 and Cycle 2 W003 because of possible bias in the analytical results. The bias could not be determined because of a low recovery in the MS and high recovery in the MSD. (**J**-MI)

6.10.5 Laboratory Duplicate Precision

EPA CLP acceptance limits for duplicate sample analyses are 20% RPD for sample concentrations greater than or equal to 5 times the MRL. A control limit of ± MRL is used if either the sample or duplicate result is less than five times the MRL.

The laboratory duplicates exhibited acceptable precision, except as described below:

- There was 23% RPD between the primary and duplicate vanadium concentrations in the laboratory duplicate performed on sample TS-3. AMEC J qualified the vanadium result from this sample because of the poor analytical precision. (**J**-HD)
- There was 39% RPD between the primary and duplicate vanadium concentrations in the laboratory duplicate performed on sample Cycle 1 W003. AMEC J qualified the detected vanadium result from this sample because of poor analytical precision. (**J**-HD)

6.10.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and IDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.0 SPECIFIC DATA VALIDATION FINDINGS FOR EACH TCLP ANALYTICAL METHOD

Sections 7.1 to 7.7 of this Data Quality Review report contain narrative descriptions of data review findings and data quality limitations. Definitions of data qualifiers added during review may be found in Section 3. Summaries of specific qualifiers added to each affected sample as a result of the data review findings are presented in Tables 10 through 15.

7.1 TCLP Volatile Organic Compounds by EPA Method 8260B

TCLP VOC data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified TCLP VOC results is presented in Table 10.

7.1.1 Holding Time

All samples underwent preparatory extraction for VOC analysis within seven days of TCLP extraction, and were analyzed within 40 days of extraction.

7.1.2 Laboratory Blanks

Target analytes should not be found in blank samples. Results greater than the MRL, but less than 5 times the concentration found in the blank, or 10 times the amount

found in the blank for methylene chloride, acetone, and 2-butanone, have been U qualified. Results between the IDL and MRL, and less than 5 or 10 times the amount found in the blank have been U qualified at the MRL concentration.

No target analytes were detected in the laboratory blanks associated with VOC analysis, except as described below:

- Iodomethane (2,100 µg/L), acetone (500 µg/L), and 1,4-dichlorobenzene (27 µg/L) were detected in laboratory blank MB 580-4623. Specific limitations are described below:
  - AMEC U qualified the iodomethane and 1,4-dichlorobenzene results from sample TS-3. (**U**-MB)
  - AMEC U qualified the iodomethane results from samples TS-2 and TS-1. (**U**-MB)
  - AMEC U qualified the iodomethane and acetone results from sample W003-CFB-28day. (**U**-MB)
  - The other acetone and 1,4-dichlorobenzene results were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank and data usability is not adversely affected.
- Chloromethane (170 µg/L), bromomethane (390 µg/L), iodomethane (3,000 µg/L), 2-butanone (MEK)(850 µg/L), 1,2-dibromo-3-chloropropane (82 µg/L), 4-isopropyltoluene (36 µg/L), and naphthalene (82 µg/L) were detected in laboratory blank MB 580-6088. Specific limitations are described below:
  - AMEC U qualified the chloromethane, bromomethane, iodomethane, and MEK results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D. (**U**-MB)
- Chloromethane (170 µg/L), bromomethane (430 µg/L), bromochloromethane (81 µg/L), iodomethane (3,100 µg/L), acetone (590 µg/L), toluene (52 µg/L), MEK (870 µg/L), 1,4-dichlorobenzene (29 µg/L), 1,2-dibromo-3-chloropropane (52 µg/L), 1,2,4-trichlorobenzene (52 µg/L), 1,2,3-trichlorobenzene (52 µg/L), hexachlorobutadiene (40 µg/L), and naphthalene (76 µg/L) were detected in laboratory blank MB 580-6088. Specific limitations are described below:

- AMEC U qualified the chloromethane, bromomethane, iodomethane, toluene, MEK, 1,2-dibromo-3-chloropropane, 1,2,4-trichlorobenzene, and naphthalene results from sample TS-1 WDLSS-1A. (**U**-MB).
- AMEC U qualified the chloromethane, bromomethane, iodomethane, acetone, toluene, MEK, 1,2,4-trichlorobenzene, and 1,2,3-trichlorobenzene results from sample TS-1 WDLSS-1B. (**U**-MB)
- AMEC U qualified the chloromethane, bromomethane, iodomethane, acetone, toluene, MEK, 1,2,4-trichlorobenzene, 1,2,3-trichlorobenzene, and naphthalene results from sample TS-1 WDLSS-1C. (**U**-MB)
- AMEC U qualified the chloromethane, bromomethane, iodomethane, acetone, toluene, MEK, and naphthalene results from sample TS-1 WDLSS-1D. (**U**-MB)
- AMEC U qualified the chloromethane, bromomethane, iodomethane, acetone, toluene, MEK, 1,4-dichlorobenzene, 1,2,3-trichlorobenzene, and naphthalene results from sample TS-2 WDLSS-1A. (**U**-MB)
- AMEC U qualified the chloromethane, bromomethane, iodomethane, MEK, 1,4-dichlorobenzene, and naphthalene results from sample TS-2 WDLSS-1B. (**U**-MB)
- AMEC U qualified the chloromethane, bromomethane, iodomethane, toluene, MEK, 1,4-dichlorobenzene, 1,2,3-trichlorobenzene, and naphthalene results from sample TS-2 WDLSS-1C. (**U**-MB).
- AMEC U qualified the chloromethane, bromomethane, iodomethane, 1,4-dichlorobenzene, 1,2,3-trichlorobenzene, hexachlorobutadiene, and naphthalene results from sample TS-2 WDLSS-1D. (**U**-MB)

7.1.3 LCS Recovery

All LCS recoveries associated with VOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- 1,2,3-trichloropropane recovery was high at 136% in LCS 580-6088. This analyte was not detected in the associated samples, and data usability is not adversely affected.
- Dichlorodifluoromethane (135%), chloroethane (141%), trichlorofluoromethane (137%), 1,1-dichloroethane (131%), 1,2-dichloropropane (131%), and 2-ethyl-1-hexanol (151%) recoveries were high in LCS 580-6019. AMEC J qualified the detected 1,1-dichloroethane result from

sample TS-1 WDLSS-1C and the 2-ethyl-1-hexanol results from samples TS-1 WDLSS-1A, TS-1 WDLSS-1B, TS-1 WDLSS-1C, and TS-1 WDLSS-1D because of possible high bias in the analytical results. (**J**-HL)

7.1.4 Surrogate Recovery

Recoveries of all surrogates associated with VOCs were acceptable.

7.1.5 MS Recovery

All MS recoveries associated with analysis of samples from this project for VOCs were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- MEK and acetone recoveries were low at 64% and 59%, respectively, in the MS performed on sample W003-CFB-28day. AMEC UJ qualified the acetone and MEK results from this sample because of a possible low bias in the analytical results. (**UJ**-LM)

7.1.6 Laboratory Duplicate Precision

RPDs between detected results were less than the QAPP-specified maximum of 30% in the laboratory duplicates associated with these samples, except as described below:

- There was 61% RPD between the primary and duplicate 1,2-dichlorobenzene concentrations in the duplicate analysis of sample W003-CFB-28day. Both concentrations were less than the MRL of 500 µg/L, and data usability is not adversely affected.

7.1.7 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.2 TCLP Chlorinated Herbicides by EPA Method 8151A

TCLP herbicide data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified TCLP herbicide data is presented in Table 11.

7.2.1 Holding Time

All samples underwent preparatory extraction for herbicides analysis within seven days of TCLP extraction, and were analyzed within 40 days of extraction.

7.2.2 Laboratory Blanks

No target analytes were detected in the laboratory and rinsate blanks associated with herbicide analysis.

7.2.3 LCS/LCSD Recoveries

LCS/LCSD recoveries were within the QAPP-specified 70 to 130% acceptance limits except as described below:

- Dalapon and dinoseb recoveries were low in LCS/LCSD 580-4644. Specific limitations are described below:
  - Dalapon recoveries were low at 37% in the LCS and 33% in the LCSD. AMEC UJ qualified the nondetected dalapon results from samples TS-3, TS-2, and TS-1 because of a possible low bias in the analytical results. (**UJ**-LL)
  - Dinoseb recovery was low at 67% in the LCS, but acceptable at 73% in the LCSD. The average recovery is acceptable at 70% and in AMEC's professional opinion data usability is not adversely affected.
- Dalapon (40%/31%), dicamba (68%73%), MCPP (61%/63%), 2,4-D (55%/54%), pentachlorophenol (55%/59%), 2,4,5-TP (Silvex) (64%/63%), and 2,4,5-T (59%/60%) recoveries were low in LCS/LCSD 580-5855. Specific limitations are described below:
  - AMEC J qualified the detected MCPP and 2,4-D results and UJ qualified the nondetected dalapon, pentachlorophenol, and Silvex (2,4,5-TP) results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because of possible low bias in the analytical results. (**UJ**-LL)
  - AMEC J qualified the detected 2,4,5-T results from samples TS-3 WDLSS-1A and TS-3 WDLSS-1C and UJ qualified the nondetected 2,4,5-T results from samples TS-3 WDLSS-1B and TS-3 WDLSS-1D because of possible low bias in the analytical results. (**UJ**-LL)

- The average dicamba recovery was acceptable at 71%. In AMEC's professional opinion, data usability is not adversely affected.

- Dinoseb recoveries were low in LCS/LCSD 580-5650 at 21% and 24%, respectively. AMEC UJ qualified the nondetected dinoseb results from samples TS-1 WDLSS-1A, TS-1 WDLSS-1B, TS-1 WDLSS-1C, TS-1 WDLSS-1D, TS-2 WDLSS-1A, TS-2 WDLSS-1B, TS-2 WDLSS-1C, and TS-2 WDLSS-1D because of possible low bias in the analytical results. (**UJ**-LL)

7.2.4 Surrogate Recovery

All surrogate recoveries associated with herbicide analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described below:

- 2,4-DCAA recoveries were low in samples TS-1 WDLSS-1A (48%), TS-1 WDLSS-1B (44%), TS-1 WDLSS-1C (46%), and TS-1 WDLSS-1D (48%). AMEC J qualified the detected herbicide results and UJ qualified the nondetected herbicide results from these samples because of possible low bias in the analytical results. (**J**-LS)

7.2.5 MS Recovery

Recoveries were within the QAPP-specified 60 to 140% acceptance limits in all MS associated with analysis of these samples for herbicides, except as described below:

- Dalapon recovery was low at 44% in the MS performed on sample TS-3. AMEC UJ qualified the nondetected dalapon result from this sample because of possible low bias in the analytical result. (**UJ**-LM)
- Dalapon recovery was low at 35% in MS analysis of sample TS-3 WDLSS-1D. AMEC UJ qualified the nondetected dalapon result from this sample because of possible low bias in the analytical result. (**UJ**-LM)
- All recoveries except for dinoseb were low (0% to 51%) in the MS analysis of sample TS-1 WDLSS-1A. Specific limitations are described below:
  - AMEC J qualified the detected MCPP, 2,4-DB, dichloroprop, pentachlorophenol, and Silvex results from this sample because of possible low bias in the analytical results due to matrix interference. (**J**-LM)

- AMEC UJ qualified the nondetected dalapon, 4-nitrophenol, and dicamba results from this sample because of possible low bias in the analytical results due to matrix interference. (**UJ**-LM)
- The MCPA, 2,4-D, 2,4,5-T, and bromoxynil concentrations in the unspiked sample were more than 4 times the spike amount. Data usability is not adversely affected.

7.2.6 Laboratory Duplicate Precision

RPDs between detected results were less than the QAPP-specified maximum of 30% in the laboratory duplicates associated with these samples.

7.2.7 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.3 TCLP Semivolatile Organic Compounds by EPA Method 8270C

TCLP SVOC results data from this event may be considered usable with the limitations described below. A summary of qualified TCLP SVOC results is presented in Table 12.

7.3.1 Holding Time

All samples underwent preparatory extraction for SVOC analysis within seven days of TCLP extraction, and were analyzed within 40 days of extraction.

7.3.2 Laboratory Blanks

Target analytes should not be found in blank samples. Results greater than the MRL, but less than 5 times the concentration found in the blank have been U qualified. Results between the detection limit (DL) and MRL, and less than 5 times the amount found in the blank have been U qualified at the MRL concentration. Target analytes were not detected in the laboratory blanks associated with these samples, except as described below:

- Bis(2-ethylhexyl)phthalate was detected at a concentration of 15 µg/L in laboratory blank 580-4623. AMEC U qualified the detected bis(2-ethylhexyl)phthalate results from samples TS-3, TS-2, and TS-1. (**U**-MB)
- Diethyl phthalate and di-n-butyl phthalate were detected in method blank MB 580-5844 at concentrations of 13 µg/L and 19 µg/L, respectively. AMEC U qualified the detected diethyl phthalate and di-n-butyl phthalate results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because the concentrations in the samples were less than 5 times the concentration detected in the associated blank. (**U**-MB)

7.3.3 LCS/LCSD Recoveries

All LCS/LCSD recoveries associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- n-Nitrosodi-n-propylamine (54%/108%), 4-chloroaniline (50%/125%), 2-nitroaniline (10%/105%), 3-nitroaniline (0%/109%), 4-nitroaniline (17%/111%), and n-nitrosodiphenylamine (4%/132%) recoveries were low in LCS 580-5844, but acceptable in the associated LCSD (except for the high nitrosodiphenylamine LCSD recovery). In addition, carbazole recovery was high in the LCSD at 183%, but acceptable in the LCS at 121%. Specific limitations are described below:
  - AMEC UJ qualified the nondetected n-nitrosodi-n-propylamine, 4-chloroaniline, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, and n-nitrosodiphenylamine results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because of possible low bias in the analytical results. It should be noted that AMEC did not reject the results associated with the very low (<10%) LCS recoveries because the recoveries of the LCSD were acceptable. It appears the very low recoveries in the LCS were due to an anomaly and not to a system failure. (**UJ**-LL)
  - The carbazole recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected.
- Phenol(61%/52%), benzyl alcohol (64%/59%), 3&4-methylphenol (74%/66%), n-nitrosodi-n-propylamine (64%/66%), hexachloroethane (70%/68%), nitrobenzene (73%/66%), isophorone (67%/63%), bis(2-chloroethoxy)methane (61%/68%), 4-chloroaniline (20%/28%), hexachlorobutadiene (69%/65%), 4-chloro-3-methylphenol (73%/68%), 2-methylnaphthalene (71%/69%), hexachlorocyclopentadiene (71%/64%), 2,4,6-trichlorophenol (72%/60%),

2-nitroaniline (54%/54%), acenaphthylene (67%/68%), 3-nitroaniline (25%/30%), 4-nitroaniline (25%/38%), 4-bromophenyl phenyl ether (69%/68%), hexachlorobenzene (65%/69%), pentachlorophenol (67%/63%), bis (2-ethylhexyl)phthalate (69%/65%), and benzo(b)fluoranthene (66%/61%) recoveries were low in LCS and/or LCSD 580-5635. Specific limitations are described below:

- AMEC J qualified the detected phenol and 2,4,6-trichlorophenol results and UJ qualified the nondetected benzyl alcohol, n-nitrosodi-n-propylamine, hexachloroethane, nitrobenzene, isophorone, bis(2-chloroethoxy)methane, 4-chloroaniline, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, acenaphthylene, 3-nitroaniline, 4-nitroaniline, 4-bromophenyl phenyl ether, hexachlorobenzene, pentachlorophenol, bis(2-ethylhexyl)phthalate, and benzo(b)fluoranthene results from sample TS-1 WDLSS-1A. (**J**/**UJ**-LL)
- AMEC J qualified the detected phenol, 2,4,6-trichlorophenol, and pentachlorophenol results and UJ qualified the nondetected benzyl alcohol, n-nitrosodi-n-propylamine, hexachloroethane, nitrobenzene, isophorone, bis(2-chloroethoxy)methane, 4-chloroaniline, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, acenaphthylene, 3-nitroaniline, 4-nitroaniline, 4-bromophenyl phenyl ether, hexachlorobenzene, bis(2-ethylhexyl)phthalate, and benzo(b)fluoranthene results from samples TS-1 WDLSS-1B, TS-1 WDLSS-1C, and TS-1 WDLSS-1D. (**J**/**UJ**-LL).
- AMEC J qualified the detected phenol, n-nitrosodi-n-propylamine, and 2,4,6-trichlorophenol, and UJ qualified the nondetected benzyl alcohol, hexachloroethane, nitrobenzene, isophorone, bis(2-chloroethoxy)methane, 4-chloroaniline, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, acenaphthylene, 3-nitroaniline, 4-nitroaniline, 4-bromophenyl phenyl ether, hexachlorobenzene, pentachlorophenol, bis(2-ethylhexyl)phthalate, and benzo(b)fluoranthene results from sample TS-2 WDLSS-1A. (**J**/**UJ**-LL)
- AMEC J qualified the detected phenol result and UJ qualified the nondetected benzyl alcohol, hexachloroethane, n-nitrosodi-n-propylamine, nitrobenzene, isophorone, 2,4,6-trichlorophenol, bis(2-chloroethoxy)methane, 4-chloroaniline, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, acenaphthylene, 3-nitroaniline, 4-nitroaniline, 4-bromophenyl phenyl ether, hexachlorobenzene, pentachlorophenol, bis(2-ethylhexyl)phthalate, and

benzo(b)fluoranthene results from samples TS-2 WDLSS-1B, TS-2 WDLSS-1C, and TS-2 WDLSS-1D. (**J**/**UJ**-LL)

- Average 3&4-methylphenol, 2-methylnaphthalene, and 4-chloro-3-methylphenol recoveries were within acceptance limits. In AMEC's professional opinion, data usability is not adversely affected.

7.3.4 MS Recovery

All MS recoveries associated with SVOC analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- Benzyl alcohol (56%), naphthalene (49%), 4-chloroaniline (38%), 2-nitroaniline (12%), 3-nitroaniline (1%), 4-nitroaniline (13%), and 3,3'-dichlorobenzidine (5%) were low in the MS performed on sample W003-CFB-28day. Specific limitations are described below:
  - AMEC UJ qualified the nondetected benzyl alcohol, 4-chloroaniline, 2-nitroaniline, and 4-nitroaniline results from sample W003-CFB-28day because of possible low bias in the analytical results. (**UJ**-LM)
  - AMEC J qualified the detected naphthalene result from sample W003-CFB-28day because of possible low bias in the analytical result. (**J**-LM)
  - AMEC R qualified and rejected the nondetected 3-nitroaniline and 3,3'-dichlorobenzidine results from sample W003-CFB-28day because of the extremely low analyte recoveries. (**R**-MS)

- Benzyl alcohol (38%), bis(2-chloroethoxy)methane (40%), 4-chloroaniline (51%), 2-nitroaniline (9%), 3-nitroaniline (0%), 4-nitroaniline (14%), n-nitrosodiphenylamine (28%), di-n-octylphthalate (159%), benzo(a)pyrene (151%), indeno(1,2,3-cd)pyrene (170%), dibenzo(a,h)anthracene (186%), benzo(g,h,i)perylene (163%), carbazole (5%), benzo(b)fluoranthene (177%), and benzo(k)fluoranthene (167%) recoveries were outside acceptance limits in the MS performed on sample TS-3 WDLSS-1B. Specific limitations are described below:
  - AMEC R qualified and rejected the nondetected 2-nitroaniline, 3-nitroaniline, and carbazole results from sample TS-3 WDLSS-1B because the presence or absence of these compounds could not be determined as demonstrated by the very low (<10%) MS recoveries. (**R**-MS)
  - AMEC UJ qualified the nondetected benzyl alcohol, bis(2-chloroethoxy)methane, 4-chloroaniline, 4-nitroaniline, and

n-nitrosodiphenylamine results from sample TS-3 WDLSS-1B because of possible low bias in the analytical results. (**UJ**-LM)

- The di-n-octylphthalate, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, benzo(b)fluoranthene, and benzo(k)fluoranthene recoveries were high and these analytes were not detected in the associated sample. Data usability is not adversely affected.

- 1,4-Dichlorobenzene (0%), 1,2-dichlorobenzene (0%), 2,4-dichlorophenol (0%), naphthalene (0%), 4-chloroaniline (21%), 2,4,6-trichlorophenol (19%), 2,4,5-trichlorophenol (51%), 3-nitroaniline (33%), 2,4-dinitrophenol (49%), 4-nitroaniline (39%), and n-nitrosodiphenylamine (20%) recoveries were outside acceptance limits in the MS analysis of sample TS-1 WDLSS-1D. Specific limitations are described below:
  - AMEC J qualified the detected naphthalene and 2,4,5-trichlorophenol results from this sample due to possible matrix interference. (**J**-MI)
  - AMEC UJ qualified the nondetected 4-chloroaniline, 3-nitroaniline, 2,4-dinitrophenol, 4-nitroaniline, and n-nitrosodiphenylamine results from this sample due to possible matrix interference. (**UJ**-MI)
  - The 1,4-dichlorobenzene, 1,2-dichlorobenzene, 2,4-dichlorophenol, and 2,4,6-trichlorophenol concentrations were more than 4 times the spike amount added. Data usability is not adversely affected.

7.3.5 Laboratory Duplicate Precision

RPDs between detected results were less than the QAPP-specified maximum of 30% in the laboratory duplicates associated with these samples.

7.3.6 Surrogate Recoveries

All surrogate recoveries associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described below:

- Recovery of the surrogate compound phenol-d_5 was low at 59% in sample TS-3. Up to one surrogate from each fraction can be outside of acceptance limits without affecting data quality and data usability is not adversely affected.
- Recoveries of the surrogate compounds 2-fluorophenol and phenol-d_5 were low at 3% and 56%, respectively in sample TS-2. AMEC J qualified the detected phenols

and UJ qualified the nondetected phenols from this sample because of possible analytical bias in the analytical results. (**J**/**UJ**-LS)

- Recovery of the surrogate compound 2-fluorophenol was high at 217% in sample TS-1. Up to one surrogate from each fraction can be outside of acceptance limits without affecting data quality and data usability is not adversely affected.
- Recovery of the surrogate compound 2-fluorophenol was extremely low at 5% in sample W003-CFB-28day. In AMEC's professional opinion, the extremely low recovery warrants qualifying all phenols results from this sample. (**J**/**UJ**-LS)
- Recoveries of the surrogate compounds 2-fluorophenol (23%), 2,4,6-tribromophenol (37%), and phenol-d_5 (36%) were low in sample TS-1 WDLSS-1A. AMEC J qualified the detected phenols and UJ qualified the nondetected phenols from this sample because of possible analytical bias in the analytical results. (**J**/**UJ**-LS)

7.3.7 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.4 TCLP Organochlorine Pesticides by EPA Method 8081A

TCLP OCP data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified TCLP OCP results is presented in Table 13.

7.4.1 Holding Time

All samples underwent preparatory extraction for OCP analysis within seven days of TCLP extraction, and were analyzed within 40 days of extraction.

7.4.2 Laboratory Blanks

Target analytes should not be found in blank samples. Results greater than the MRL, but less than 5 times the concentration found in the blank have been U qualified. Results between the IDL and MRL, and less than 5 or 10 times the amount found in the blank have been U qualified at the MRL concentration.

No target analytes were detected in the laboratory blanks associated with the analysis of these samples for OCPs, except as described below:

- Endrin was detected at a concentration of 0.00073 mg/L in laboratory blank MB 580-4668. AMEC U qualified the endrin results from samples TS-3, TS-2, TS-1, and W003-CFB-28day. (**U**-MB)
- Endrin was detected in laboratory blank MB 580-5857 at a concentration of 0.00033 mg/L. AMEC U qualified the detected endrin result from sample TS-3 WDLSS-1D because the concentration in the sample was less than 5 times the concentration in the associated blank. (**U**-MB)

7.4.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with OCP analysis.

7.4.4 Surrogate Recovery

Surrogate recoveries associated with analysis of these samples for OCPs were within the QAPP-specified 60 to 140% acceptance limits.

7.4.5 MS Recovery

Recoveries were within the QAPP-specified 60 to 140% acceptance limits in all MSs associated with OCP, except as described below:

- 4,4'-dichloro diphenyl dichloroethane(DDD) (175%), endosulfan sulfate (150%), and endrin (145%) recoveries were high in the MS performed on sample W003-CFB-28day. These analytes were not detected in the unspiked sample, and data usability is not adversely affected.
- Endosulfan sulfate and endrin aldehyde recoveries were high in the MS performed on sample TS-2 WDLSS-1D at 146% and 156%, respectively. These analytes were not detected in the associated sample, and data usability is not adversely affected.

7.4.6 Laboratory Duplicate Precision

RPDs between detected results were less than the QAPP-specified maximum of 30% in the laboratory duplicates associated with these samples, except as described below:

- There was 39% RPD between the endrin concentrations detected in the laboratory duplicates performed on sample W003-CFB-28day. Both detected concentrations were less than the MRL of 2.0 mg/L and data usability is not adversely affected.

7.4.7 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.5 TCLP Polychlorinated Biphenyls by EPA Method 8082

TCLP PCB data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified TCLP PCB results is presented in Table 14.

7.5.1 Holding Time

All samples underwent preparatory extraction for PCB analysis within seven days of TCLP extraction, and were analyzed within 40 days of extraction.

7.5.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with PCB analysis.

7.5.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with the analysis of these samples for PCBs.

7.5.4 Surrogate Recovery

Surrogate recoveries associated with PCB analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- TCMX and DCB recoveries were low in sample TS-2 WDLSS-1C at 57% and 49%, respectively. AMEC UJ qualified the nondetected PCB results from this sample because of possible low bias in the analytical results. (**UJ**-LS)

7.5.5 MS/MSD Recoveries

All MS recoveries associated with PCB analysis were within the QAPP-specified 60 to 140% acceptance limits.

7.5.6 Laboratory Duplicate Precision

RPDs between detected results were less than the QAPP-specified maximum of 30% in the laboratory duplicates associated with these samples.

7.6 TCLP Dioxins and Furans by EPA Method 8290

TCLP dioxins and furans data from this event may be considered usable without qualification.

7.6.1 Holding Time

All samples underwent preparatory extraction for dioxin and furan analysis within 30 days of TCLP extraction and all samples were analyzed within 45 days of extraction.

7.6.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with dioxin and furan analysis.

7.6.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with dioxin and furan analysis, except as described below:

- 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) (143%), 1,2,3,7,8-pentachlorodibenzo-p-dioxin (PeCDD) (138%), 1,2,3,4,7,8-hexachlorodibenzo-p-dioxin (HxCDD) (142%), 1,2,3,4,7,8-hexachlorodibenzofuran (HxCDF) (139%), and octachlorodibenzofuran (OCDF) (179%) recoveries were high in LCS G6C290000-113. Although the recoveries were high, these analytes were not detected in the associated samples. Data usability is not adversely affected.

7.6.4 Internal Standard Recoveries

Surrogate recoveries associated with analysis of these samples for dioxins and furans were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- Recovery of the internal standard $^{13}C_{12}$-OCDD was low at 46% in the LCS associated with samples TS-3, TS-2, and TS-1. Target analyte recoveries were either acceptable or high in the LCS. IS recoveries were acceptable, and no target analytes were detected, for all associated samples. In AMEC's professional opinion, data usability is not adversely affected.

7.7 TCLP Metals by EPA Methods 6010B, 6020, and 7470A

TCLP metals data from this event may be considered usable with the limitations and exceptions described below. A summary of qualified TCLP metals results is presented in Table 15.

7.7.1 Holding Time

All samples were analyzed for mercury within the recommended technical holding time of 28 days and for all other metals within the recommended technical holding time of 180 days.

7.7.2 Laboratory Blanks

Target analytes should not be found in blank samples. When the concentration detected in the blank is less than the MRL, concentrations in associated samples greater than the MRL, but less than 5 times the concentration detected in the blank have been U qualified by AMEC. When the absolute concentration detected in the blank is greater than the MRL, concentrations in associated samples greater than the MRL, but less than 10 times the concentration detected in the blank have been U qualified by AMEC. In both cases, sample concentrations between the IDL and MRL, and less than 5 or 10 times the concentration detected in the blank have been U qualified at the MRL concentration.

Target analytes were not detected in the laboratory blanks associated with these samples, except as described below:

- Barium (0.00031 mg/L), boron (0.065 mg/L), silver (0.0023 mg/L), and zinc (0.0075 mg/L) were detected in laboratory blank MB 580-4625. Specific limitations are described below:
  - AMEC U qualified the zinc result from sample TS-3 and the boron results from samples TS-2 and W003-CFB-28day because the concentrations detected in the samples were less the 5 times the concentration detected in the blank. (**U**-MB)
  - Barium and silver were not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
- Barium (0.0020 mg/L), cadmium (0.00037 mg/L), calcium (0.054 mg/L), chromium (0.0015 mg/L), cobalt (0.0014 mg/L), nickel (0.0064 mg/L), potassium (0.082 mg/L), selenium (0.0059 mg/L), vanadium (0.00086 mg/L), boron (0.12 mg/L), iron (0.049 mg/L), magnesium (0.14 mg/L), and silver (0.0017 mg/L), were detected in laboratory blank MB 580-5820. Specific limitations are described below:
  - Barium, cadmium, calcium, chromium, cobalt, nickel, potassium, selenium, and vanadium either were not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
  - AMEC U qualified the detected boron results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because the concentrations detected in the samples were less the 5 times the concentration detected in the blank. (**U**-MB)
  - AMEC U qualified the detected iron and magnesium results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because the concentrations detected in the samples were less the 5 times the concentrations detected in the blank. (**U**-MB)
  - AMEC U qualified the detected silver results from samples TS-3 WDLSS-1B and TS-3 WDLSS-1D because the concentrations detected in the samples were less the 5 times the concentration detected in the blank. (**U**-MB)
- Barium and magnesium were detected at concentrations of 0.00016 mg/L and 0.049 mg/L; respectively in laboratory blank MB 580-5630. AMEC U qualified the detected magnesium results from samples TS-1 WDLSS-1B and TS-1 WDLSS-1C

because the concentrations detected in the samples were less the 5 times the concentrations detected in the blank. (**U**-MB)

7.7.3 LCS Recovery

Recoveries were acceptable in all LCSs associated with metals analysis.

7.7.4 MS/MSD Recoveries

All MS recoveries associated with metals analysis were within the QAPP-specified 60 to 140% acceptance limits.

7.7.5 Laboratory Duplicate Precision

EPA CLP acceptance limits for duplicate sample analyses are 20% RPD for sample concentrations greater than or equal to 5 times the MRL. A control limit of ± MRL is used if either the sample or duplicate result is less than 5 times the MRL.

The laboratory duplicates exhibited acceptable precision, except as described below:

- There was 43% RPD between the silver results and 36% RPD between the thallium results in the laboratory duplicate performed on sample TS-2. Specific limitations are described below:
  - AMEC J qualified the silver result from sample TS-2 because of the high RPD between the primary and duplicate results. (**J**-HD)
  - Both thallium concentrations were less than the MRL of 0.05 mg/L and data usability is not adversely affected.
- There was 61% RPD between the primary and duplicate arsenic concentrations in the laboratory duplicate performed on sample TS-3 WDLSS-1A. AMEC J qualified the detected arsenic result from this sample because of potential bias due to analytical imprecision. (**J**-HD)

7.7.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and IDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

8.0 SUMMARY AND CONCLUSIONS

Data generated for the WDL TS are of acceptable quality and are usable with the addition of the qualifiers listed in Tables 2 through 15, except for the six rejected results described below.

A total of 5,102 results underwent data validation. Six results (0.1%) were rejected during data quality review, and the overall completeness of the data set exceeded 95%.

In addition, 507 results (9.9%) were J qualified, 346 results (6.8%) were UJ qualified, and 128 results (2.5%) were U qualified.

The following results were rejected during data quality review:

Total PCBs

AMEC R qualified and rejected the nondetected Aroclor 1260 result from sample TS-1 because the analyte could not be recovered in the MS performed on this sample.

TCLP SVOCs

- AMEC R qualified and rejected the nondetected TCLP 3-nitroaniline and 3,3'-dichlorobenzidine results from sample W003-CFB-28day because of extremely low (< 10%) analyte recoveries in the matrix spike performed on this sample.
- AMEC R qualified and rejected the nondetected TCLP 2-nitroaniline, 3-nitroaniline, and carbazole results from sample TS-3 WDLSS-1B because of extremely low analyte recoveries in the matrix spike performed on this sample.

The remainder of the data is generally usable and of good quality, with the qualifications listed below.

Total VOCs

- AMEC J qualified all detected VOC results and UJ qualified all nondetected VOC results from sample TS-1 because of an exceeded analytical holding time.
- AMEC U qualified detected iodomethane, o-xylene, 1,2,3-trichlorobenzene, and/or toluene results from samples TS-3, TS-2, TS-1, Cycle 1 W003 and W003 Cycle 3 because of analyte detections in the associated laboratory blanks.

- AMEC UJ qualified the nondetected chloroethane results from samples TS-3, TS-2, and TS-1 because of low LCS/LCSD recoveries.
- AMEC J qualified the detected 2-ethyl-1-hexanol results from samples Cycle 1 W003, Cycle 2 W003, W003 Cycle 3, and W003 Cycle 4 because of high LCS/LCSD recoveries.

Total Herbicides

- AMEC UJ qualified the nondetected dalapon results from samples TS-3, TS-2, TS-1, Cycle 1 W003, Cycle 2 W003, W003 Cycle 3, and W003 Cycle 4 because of low LCS/LCSD recoveries.
- AMEC J qualified the detected herbicide results and UJ qualified the nondetected herbicide results from sample TS-2 because of low surrogate recovery.
- AMEC UJ qualified the nondetected dalapon result and J qualified the detected dichloroprop result from sample TS-2 because of low MS recovery.

Total SVOCs

- AMEC J qualified detected results and UJ qualified nondetected results for 3,3'-dichlorobenzidine in samples TS-3, TS-2, and TS-1 because of low LCS recovery.
- AMEC J qualified detected results and UJ qualified nondetected results for phenol, benzyl alcohol, 2-methylphenol, 3&4-methylphenol, and 4-nitrophenol in samples Cycle 1 W003 and Cycle 2 W003 because of low LCS recoveries.
- AMEC J qualified detected results and UJ qualified nondetected results for phenol, benzyl alcohol, 2-methylphenol, bis(2-chloroisopropyl)ether, 3&4-methylphenol, n-nitrosodi-n-propylamine, 4-chloro-3-methylphenol, hexachlorocyclopentadiene, 2,4,5-trichlorophenol, 4-nitrophenol, 4,6-dinitro-2-methylphenol, pentachlorophenol, and bis(2-ethylhexyl)phthalate in samples W003 Cycle 3 and W003 Cycle 4 because of low LCS recoveries.
- AMEC J qualified detected phenols results and UJ qualified nondetected phenols results from sample Cycle 1 W003 because of low surrogate recoveries.

Total OCPs

- AMEC J qualified detected results and UJ qualified nondetected results for delta-BHC, 4,4'-DDE, 4,4'-DDT, endosulfan I, heptachlor epoxide, alpha chlordane,

and gamma chlordane in samples W003 Cycle 3 and W003 Cycle 4 because of low LCS recoveries.

Total Metals

- AMEC U qualified detected magnesium results from samples Cycle 1 W003, Cycle 2 W003, W003 Cycle 3, and W003 Cycle 4 because of analyte detections in the associated laboratory blank.
- AMEC J qualified detected lead and zinc results from sample TS-3 and the calcium result from sample Cycle 2 W003 because of high MS recoveries.
- AMEC J qualified the detected sodium result from sample Cycle 2 W003 because of variable MS recoveries.
- AMEC J qualified the detected vanadium results from samples TS-3 and Cycle 1 W003 because of high RPDs between the primary and laboratory duplicate concentrations.

TCLP VOCs

- AMEC U qualified detected iodomethane, 1,4-dichlorobenzene, and/or acetone results from samples TS-3, TS-2 and TS-1 because of analyte detections in the associated laboratory blank.
- AMEC U qualified detected chloromethane, bromomethane, iodomethane, and MEK results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because of analyte detections in the associated laboratory blank.
- AMEC U qualified detected chloromethane, bromomethane, iodomethane, acetone, toluene, MEK, 1,2-dibromo-3-chloropropane, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, 1,2,3-trichlorobenzene, hexachlorobutadiene, and/or naphthalene results from samples TS-1 WDLSS-1A, TS-1 WDLSS-1B, TS-1 WDLSS-1C, TS-1 WDLSS-1D, TS-2 WDLSS-1A, TS-2 WDLSS-1B, TS-2 WDLSS-1C, and TS-2 WDLSS-1D because of analyte detections in the associated laboratory blank.
- AMEC J qualified detected 1,1-dichloroethane results from samples TS-1 WDLSS-1C, TS-2 WDLSS-1C, TS-2 WDLSS-1D, and detected 2-ethyl-1-hexanol results from samples TS-1 WDLSS-1A, TS-1 WDLSS-1B, TS-1 WDLSS-1C, and TS-1 WDLSS-1D because of high LCS recoveries.

- AMEC UJ qualified the nondetected acetone and MEK results from sample W003-CFB-28day because of low MS recoveries.

TCLP Herbicides

- AMEC UJ qualified the nondetected dalapon results from samples TS-3, TS-2, and TS-1 because of low LCS/LCSD recoveries.
- AMEC J qualified detected results and UJ qualified nondetected results for dalapon, MCPP, 2,4-D, pentachlorophenol, 2,4,5-TP, and 2,4,5-T in samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because of low LCS/LCSD recoveries.
- AMEC UJ qualified nondetected dinoseb results from samples TS-1 WDLSS-1A, TS-1 WDLSS-1B, TS-1 WDLSS-1C, TS-1 WDLSS-1D, TS-2 WDLSS-1A, TS-2 WDLSS-1B, TS-2 WDLSS-1C, and TS-2 WDLSS-1D because of low LCS/LCSD recoveries.
- AMEC J qualified detected herbicide results and UJ qualified nondetected herbicide results from samples TS-1 WDLSS-1A, TS-1 WDLSS-1B, TS-1 WDLSS-1C, and TS-1 WDLSS-1D because of low surrogate recovery.
- AMEC UJ qualified the nondetected dalapon results from samples TS-3 and TS-3 WDLSS-1D because of low MS recoveries.
- AMEC J qualified detected results and UJ qualified nondetected results for MCPP, dichloroprop, pentachlorophenol, 2,4,5-TP, dalapon, 4-nitrophenol, and dicamba from sample TS-1 WDLSS-1A because of low MS recoveries.

TCLP SVOCs

- AMEC U qualified detected bis(2-ethylhexyl)phthalate results from samples TS-3, TS-2, and TS-1 and detected diethyl phthalate and di-n-butyl phthalate results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because of analyte detections in the associated laboratory blanks.
- AMEC UJ qualified nondetected results and J qualified detected results for phenol, benzyl alcohol, n-nitrosodi-n-propylamine, hexachloroethane, nitrobenzene, isophorone, bis(2-chloroethoxy)methane, 4-chloroaniline, hexachlorobutadiene, hexachlorocyclopentadiene, 2,4,6-trichlorophenol, 2-nitroaniline, acenaphthylene, 3-nitroaniline, 4-nitroaniline, 4-bromphenyl phenyl ether, hexachlorobenzene, pentachlorophenol, bis(2-ethylhexyl)phthalate, and benzo(b)fluoranthene in

samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D because of low LCS/LCSD recoveries.

- AMEC UJ qualified nondetected benzyl alcohol, 4-chloroaniline, 2-nitroaniline, and 4-nitroaniline results and J qualified the detected naphthalene result from sample W003-CFB-28day because of low MS recoveries.
- AMEC UJ qualified nondetected benzyl alcohol, bis(2-chloroethoxy)methane, 4-chloroaniline, 4-nitroaniline, and n-nitrosodiphenylamine results from sample TS-3 WDLSS-1B because of low MS recoveries.
- AMEC J qualified detected naphthalene and 2,4,5-trichlorophenol results and UJ qualified nondetected 4-chloroaniline, 3-nitroaniline, 2,4-dinitrophenol, 4-nitroaniline, and n-nitrosodiphenylamine results from sample TS-1 WDLSS-1D because of low MS recoveries.
- AMEC J qualified detected phenols results and UJ qualified nondetected phenols results from samples TS-2, W003-CFB-28day, and TS-1 WDLSS-1A because of low surrogate recoveries.

TCLP OCPs

- AMEC U qualified the detected endrin results from samples TS-3, TS-2, TS-1, W003-CFB-28day, and TS-3 WDLSS-1D because of analyte detections in the associated laboratory blanks.

TCLP PCBs

- AMEC UJ qualified the nondetected PCB results from sample TS-2 WDLSS-1C because of low surrogate recoveries.

TCLP Metals

- AMEC U qualified the detected zinc result from sample TS-3; detected boron results from samples TS-2, W003-CFB-28day, TS-3 WDLSS-1A, TS-3 WDLSS-1C, and TS-3 WDLSS-1D; detected iron and magnesium results from samples TS-3 WDLSS-1A, TS-3 WDLSS-1B, TS-3 WDLSS-1C, and TS-3 WDLSS-1D; detected silver results from samples TS-3 WDLSS-1B and TS-3 WDLSS-1D; and detected magnesium results from samples TS-1 WDLSS-1B and TS-1 WDLSS-1C because of analyte detections in the associated laboratory blanks.

- AMEC J qualified the silver result from sample TS-2 and the arsenic result from sample TS-3 WDLSS-1A because of high RPDs between the primary and duplicate concentrations in the laboratory duplicates.

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LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Data Quality Review for the West Doane Lake Treatability Study is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
Field Samples Submitted to STL Seattle and
STL Sacramento with Corresponding Laboratory IDs
West Doane Lake Treatability Study
RP - Portland Site

Field Sample ID	Sample Date	STL Seattle Sample ID	STL Sacramento Sample ID
TS-3	3/6/2006	580-1773-1	G6C100396-001
TS-2	3/2/2006	580-1773-2	G6C100396-002
TS-1	2/27/2006	580-1773-3	G6C100396-003
W003-CFB-28 day	3/2/2006	580-1773-4	-
TS-1 WDLSS-1A	3/27/2006	580-2120-1	G6D080185-001
TS-1 WDLSS-2A	3/28/2006	-	G6D080185-002
TS-1 WDLSS-3A	3/28/2006	-	G6D080185-003
TS-1 WDLSS-4A	3/28/2006	-	G6D080185-004
TS-1 WDLSS-1B	3/28/2006	580-2120-2	-
TS-1 WDLSS-1C	3/28/2006	580-2120-3	-
TS-1 WDLSS-1D	3/28/2006	580-2120-4	-
TS-2 WDLSS-1A	3/28/2006	580-2120-5	G6D080185-005
TS-2 WDLSS-2A	3/31/2006	-	G6D080185-006
TS-2 WDLSS-3A	3/31/2006	-	G6D080185-007
TS-2 WDLSS-4A	3/31/2006	-	G6D080185-008
TS-2 WDLSS-1B	3/31/2006	580-2120-6	-
TS-2 WDLSS-1C	3/31/2006	580-2120-7	-
TS-2 WDLSS-1D	3/31/2006	580-2120-8	-
Cycle 1 W003	4/4/2006	580-2161-1	G6D120268-001
Cycle 2 W003	4/4/2006	580-2161-2	G6D120268-002
TS-3 WDLSS-1A	4/5/2006	580-2161-3	G6D120268-003
TS-3 WDLSS-1B	4/5/2006	580-2161-4	G6D120268-004
TS-3 WDLSS-1C	4/5/2006	580-2161-5	G6D120268-005
TS-3 WDLSS-1D	4/5/2006	580-2161-6	G6D120268-006
W003 Cycle 3	4/6/2006	580-2182-1	G6D130247-001
W003 Cycle 4	4/7/2006	580-2182-2	G6D130247-002

EPA = United States Environmental Protection Agency
STL = Severn Trent Laboratories
ID = Identification

TABLE 2
Data Qualifiers for Volatile Organic Compounds by EPA Method 8260B
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
1,1,1,2-Tetrachloroethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,1,1-Trichloroethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,1,2,2-Tetrachloroethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,1,2-Trichloroethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloroethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloroethene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloropropene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichlorobenzene	**UJ MB, HT**	**U MB**	**U MB**	**J DL**	(none)	(none)	(none)
1,2,3-Trichloropropane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trichlorobenzene	**J HT**	**J DL**	**J DL**	**J DL**	(none)	**J DL**	(none)
1,2,4-Trimethylbenzene	**J HT**	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**
1,2-Dibromo-3-chloropropane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dibromoethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	**J HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichloroethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichloropropane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,3,5-Trimethylbenzene	**J HT**	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**
1,3-Dichlorobenzene	**J HT**	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**
1,3-Dichloropropane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
1,4-Dichlorobenzene	**J HT**	(none)	(none)	(none)	**J DL**	(none)	**J DL**
2,2-Dichloropropane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
2-Butanone (MEK)	**UJ HT**	(none)	(none)	NT	NT	NT	NT
2-Chlorotoluene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
2-Ethyl-1-hexanol	**J HT**	(none)	(none)	**J HL**	**J HL**	**J HL**	**J HL**
2-Hexanone	**UJ HT**	(none)	(none)	NT	NT	NT	NT
4-Chlorotoluene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
4-Isopropyltoluene	**J DL, HT**	**J DL**	**J DL**	(none)	(none)	(none)	(none)
4-methyl-2-pentanone (MIBK)	**UJ HT**	(none)	(none)	NT	NT	NT	NT
Acetone	**UJ HT**	(none)	(none)	NT	NT	NT	NT
Benzene	**J DL, HT**	**J DL**	**J DL**	**J DL**	(none)	**J DL**	**J DL**
Bromobenzene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Bromochloromethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Bromodichloromethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Bromoform	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Bromomethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Carbon disulfide	**UJ HT**	(none)	**J DL**	NT	NT	NT	NT
Carbon tetrachloride	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Chlorobenzene	**J DL, HT**	**J DL**	(none)	**J DL**	**J DL**	**J DL**	**J DL**
Chloroethane	**UJ HT, LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)
Chloroform	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Chloromethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
cis-1,2-Dichloroethene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
cis-1,3-Dichloropropene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Dibromochloromethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Dibromomethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Dichlorodifluoromethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Ethylbenzene	**J HT**	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**
Hexachlorobutadiene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Iodomethane	**UJ HT**	(none)	**U MB**	NT	NT	NT	NT

TABLE 2
Data Qualifiers for Volatile Organic Compounds by EPA Method 8260B
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
Isobutyl Alcohol	**UJ HT**	(none)	(none)	**J DL**	(none)	(none)	(none)
Isopropylbenzene	**J DL, HT**	**J DL**	**J DL**	**J DL**	(none)	**J DL**	(none)
m,p-Xylene	**J HT**	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**
Methylene chloride	**UJ HT**	(none)	**J DL**	(none)	(none)	(none)	(none)
Naphthalene	**J DL, HT**	**J DL**	**J DL**	(none)	(none)	(none)	(none)
n-Butylbenzene	**UJ HT**	(none)	(none)	(none)	(none)	**J DL**	(none)
n-Propylbenzene	**J HT**	(none)	**J DL**	**J DL**	(none)	**J DL**	**J DL**
o-Xylene	**J DL, HT**	(none)	**U MB**	**J DL**	(none)	**J DL**	**J DL**
sec-Butylbenzene	**J DL, HT**	**J DL**	**J DL**	(none)	(none)	(none)	(none)
Styrene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
tert-Butylbenzene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Tetrachloroethene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Toluene	**UJ HT**	**J DL**	**J DL**	**U MB**	(none)	**U MB**	(none)
trans-1,2-Dichloroethene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
trans-1,3-Dichloropropene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Trichloroethene	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Trichlorofluoromethane	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)
Vinyl chloride	**UJ HT**	(none)	(none)	(none)	(none)	(none)	(none)

EPA = United States Environmental Protection Agency

Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
MB = Method blank contamination
HT = Holding time exceedence
LL = Low laboratory control sample recovery
NT = Not tested
U = Not detected at or above the concentration listed
J = The associated result is quantitatively uncertain
UJ = Not detected at or above the concentration listed; and the listed concentration is an approximate value

TABLE 3
Data Qualifiers for Chlorinated Herbicides by EPA Method 8151A
West Doane Lake Treatabilty Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
2,4,5-T	(none)	**J LS**	(none)	(none)	(none)	(none)	(none)
2,4,5-TP (Silvex)	(none)	**J LS**	(none)	(none)	(none)	(none)	(none)
2,4-D	(none)	**J LS**	(none)	(none)	(none)	(none)	(none)
2,4-DB	(none)	**J LS**	(none)	(none)	(none)	(none)	(none)
4-Nitrophenol	NT	NT	NT	(none)	(none)	(none)	(none)
Bromoxynil	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)
Dalapon	**UJ LL**	**UJ LL, LS, LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dicamba	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)
Dichloroprop	(none)	**J LS, LM**	(none)	(none)	(none)	(none)	(none)
Dinoseb	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)
MCPA	(none)	**J LS**	(none)	(none)	(none)	(none)	(none)
MCPP	(none)	**J LS**	(none)	(none)	(none)	(none)	**J DL**
Pentachlorophenol	NT	NT	NT	(none)	(none)	(none)	(none)

EPA = United States Environmental Protection Agency
Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
LL = Low laboratory control sample recovery
LM = Low matrix spike recovery
LS = Low surrogate recovery
NT = Not tested
U = Not detected at or above the concentration listed
J = The associated result is quantitatively uncertain
UJ = Not detected at or above the concentration listed; and the listed concentration is an approximate value

TABLE 4
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
West Doane Lake Stabilization Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
1,2,4-Trichlorobenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3-Dichlorobenzene	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)
1,4-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1-Methylnaphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,6-Tetrachlorophenol	(none)	(none)	(none)	NT	NT	NT	NT
2,3,5,6-Tetrachlorophenol	(none)	(none)	(none)	NT	NT	NT	NT
2,4,5-Trichlorophenol	(none)	(none)	(none)	**J LS**	(none)	**J LL**	**J LL**
2,4,6-Trichlorophenol	(none)	**J DL**	(none)	**J LS**	**J DL**	(none)	(none)
2,4-Dichlorophenol	(none)	(none)	(none)	**J LS**	(none)	(none)	(none)
2,4-Dimethylphenol	(none)	(none)	**J DL**	**UJ LS**	(none)	(none)	(none)
2,4-Dinitrophenol	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)
2,4-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,6-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chloronaphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chlorophenol	(none)	(none)	**J DL**	**J LS**	(none)	**J DL**	**J DL**
2-Methyl-4,6-dinitrophenol	(none)	(none)	(none)	**UJ LS**	(none)	**J LL**	**J LL**
2-Methylnaphthalene	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
2-Methylphenol	(none)	(none)	(none)	**J LL,LS**	**J LL**	**J LL**	**J LL**
2-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Nitrophenol	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)
3,3'-Dichlorobenzidine	**UJ LL**	**UJ LL**	**J DL, LL**	(none)	(none)	(none)	(none)
3/4-Cresol	(none)	(none)	**J DL**	**J LL,LS**	**UJ LL**	**J LL**	**J LL**
3-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Bromophenyl phenyl ether	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
4-Chloro-3-methylphenol	(none)	(none)	(none)	**J LS**	**J DL**	**J LL**	**J LL**
4-Chloroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Chlorophenyl phenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Nitrophenol	(none)	(none)	(none)	**J LL,LS**	**J LL**	**J LL**	**J LL**
Acenaphthene	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)
Acenaphthylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Anthracene	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	(none)
Benzo(a)anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(a)pyrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(b)fluoranthene	(none)	(none)	(none)	NT	NT	NT	NT
Benzo(g,h,i)perylene	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Benzo(k)fluoranthene	(none)	**J DL**	(none)	NT	NT	NT	NT
Benzofluorantthenes	NT	NT	NT	(none)	(none)	(none)	(none)
Benzoic acid	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)
Benzyl alcohol	(none)	(none)	(none)	**J LL,LS**	**J LL**	**J LL**	**J LL**
Bis(2-Chloroethoxy) methane	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-Chloroethyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-chloroisopropyl) Ether	(none)	(none)	(none)	(none)	(none)	**J LL**	**J LL**
bis(2-Ethylhexyl) phthalate	(none)	(none)	**J DL**	(none)	(none)	**J LL**	**J LL**
Butylbenzylphthalate	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**
Carbazole	NT	NT	NT	(none)	(none)	(none)	(none)
Chrysene	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Dibenzo(a,h)anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibenzofuran	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Diethylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 4
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
West Doane Lake Stabilization Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
Dimethylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Di-n-butylphthalate	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)
Di-n-octyl phthalate	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Fluoranthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Fluorene	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)
Hexachlorobenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorocyclopentadiene	(none)	(none)	(none)	(none)	(none)	**J LL**	**J LL**
Hexachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Indeno(1,2,3-cd)pyrene	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)
Isophorone	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Nitrobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
N-Nitrosodi-n-propyl amine	(none)	(none)	(none)	(none)	(none)	**J LL**	**J LL**
N-Nitrosodiphenylamine	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Pentachlorophenol	**J DL**	(none)	(none)	**UJ LS**	(none)	**J LL**	**J LL**
Phenanthrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Phenol	(none)	(none)	(none)	**J LL,LS**	**J LL**	**J LL**	**UJ LL**
Pyrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)

EPA = United States Environmental Protection Agency

Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
LL = Low laboratory control sample recovery
LS = Low surrogate recovery
NT = not tested
U = Not detected at or above the concentration listed
J = The associated result is quantitatively uncertain
UJ = Not detected at or above the concentration listed; and the listed concentration is an approximate value

TABLE 5
Data Qualifiers for OCPs by EPA Method 8081A
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
4,4'-DDD	(none)	(none)	(none)	(none)	(none)	NT	(none)
4,4'-DDE	(none)	(none)	(none)	(none)	(none)	**J LL**	**J LL**
4,4'-DDT	(none)	(none)	(none)	**J DL**	(none)	**J LL**	**J LL**
Aldrin	(none)	(none)	(none)	(none)	(none)	(none)	(none)
alpha-BHC	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)
alpha-Chlordane	**J DL**	(none)	(none)	(none)	(none)	**J LL**	**J LL**
beta-BHC	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	(none)
delta-BHC	**J DL**	(none)	**J DL**	(none)	(none)	**J LL**	**UJ LL**
Dieldrin	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Endosulfan I	(none)	(none)	(none)	**J DL**	**J DL**	**J LL**	**J LL**
Endosulfan II	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)
Endosulfan sulfate	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)
Endrin	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	(none)
Endrin aldehyde	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Endrin Ketone	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**
gamma-BHC (Lindane)	**J DL**	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)
gamma-Chlordane	**J DL**	(none)	(none)	(none)	(none)	**J LL**	**UJ LL**
Heptachlor	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)
Heptachlor epoxide	(none)	(none)	**J DL**	(none)	(none)	**J LL**	**UJ LL**
Methoxychlor	(none)	(none)	(none)	(none)	(none)	NT	(none)
Toxaphene	(none)	(none)	(none)	(none)	(none)	NT	(none)

OCP = organochlorine pesticide
EPA = United States Environmental Protection Agency
Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
LL = Low laboratory control sample recovery
LS = Low surrogate recovery
NT = Not tested
J = The associated result is quantitatively uncertain
UJ = Not detected at or above the the concentration listed; and the listed concentration is an approximate value

TABLE 6
Data Qualifiers for Polychlorinated Biphenyls by EPA Method 8082
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3
Aroclor 1016	(none)	(none)	(none)
Aroclor 1221	(none)	(none)	(none)
Aroclor 1232	(none)	(none)	(none)
Aroclor 1242	(none)	(none)	(none)
Aroclor 1248	(none)	(none)	(none)
Aroclor 1254	(none)	(none)	(none)
Aroclor 1260	**R MS**	(none)	(none)

EPA = United States Environmental Protection Agency
Qualifier Reason Code Definitions:
MS = Matrix Spike recovery is less than 20%

TABLE 7
Data Qualifiers for Dioxins and Furans by EPA Methods 8280A and 8290
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
1,2,3,4,6,7,8,9-OCDD	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8,9-OCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8,9-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,7,8-TCDD	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)
2,3,7,8-TCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total TCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total TCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
J = The associated result is quantitatively uncertain

TABLE 8
Data Qualifiers for Semivolatile Petroleum Products by DEQ/Ecology Method NWTPH-Dx
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
Diesel Range Organics	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Residual Range Hydrocarbons	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)

DEQ = United States Department of Environmental Quality

NWTPH-DX = Northwest Total Petroleum Hydrocarbons - Diesel

Qualifier Reason Code Definitions:

DL = Detected concentration is betweeen method detection limit and method reporting limit

TABLE 9
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
West Doane Lake Treatability Study
RP - Portland Site

Analytical Method	Analyte	TS-1	TS-2	TS-3	Cycle 1 W003	Cycle 2 W003	W003 Cycle 3	W003 Cycle 4
6010B	Aluminum	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6010B	Boron	**J DL**	**J DL**	**J DL**	NT	NT	NT	NT
6010B	Calcium	(none)	(none)	(none)	**J HM**	**J HM**	(none)	(none)
6010B	Iron	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**
6010B	Magnesium	(none)	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**
6010B	Manganese	NT	NT	NT	(none)	(none)	(none)	(none)
6010B	Potassium	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6010B	Sodium	(none)	(none)	(none)	**J MI**	**J MI**	(none)	(none)
6010B	Zinc	NT	NT	NT	**J DL**	**J DL**	**J DL**	**J DL**
6020	Antimony	(none)	(none)	(none)	NT	NT	NT	NT
6020	Arsenic	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
6020	Barium	(none)	(none)	(none)	NT	NT	NT	NT
6020	Beryllium	(none)	(none)	**J DL**	NT	NT	NT	NT
6020	Cadmium	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**
6020	Chromium	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)
6020	Cobalt	(none)	(none)	(none)	NT	NT	NT	NT
6020	Copper	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Lead	(none)	(none)	**J HM**	**J DL**	**J DL**	**J DL**	(none)
6020	Manganese	(none)	(none)	(none)	NT	NT	NT	NT
6020	Molybdenum	(none)	(none)	(none)	NT	NT	NT	NT
6020	Nickel	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Selenium	(none)	(none)	**J DL**	NT	NT	NT	NT
6020	Silver	(none)	(none)	(none)	NT	NT	NT	NT
6020	Thallium	**J DL**	**J DL**	**J DL**	NT	NT	NT	NT
6020	Vanadium	(none)	(none)	**J HD**	**J HD**	(none)	(none)	(none)
6020	Zinc	(none)	(none)	**J HM**	NT	NT	NT	NT

EPA = United States Environmental Protection Agency

Qualifier Reason Code Definitions:

DL = Detected concentration is betweeen method detection limit and method reporting limit

HD = High laboratory duplicate relative percent difference

HM = High matrix spike recovery

MB = Method blank contamination

MI = Matrix Interference

NT = Not tested

TABLE 10
Data Qualifiers for TCLP Volatile Organic Coumpounds by EPA Method 8260B
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
1,1,1,2-Tetrachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1,1-Trichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1,2,2-Tetrachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1,2-Trichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloroethane	(none)	(none)	**J HL**	(none)	**J DL**	(none)	(none)	**J HL**	**J HL**	**J DL**	**J DL**	(none)	(none)	(none)	**J DL**	(none)
1,1-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichlorobenzene	(none)	**U MB**	**U MB**	(none)	(none)	**U MB**	(none)	**U MB**	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trichlorobenzene	**U MB**	**U MB**	**U MB**	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trimethylbenzene	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)
1,2-Dibromo-3-chloropropane	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
1,2-Dibromoethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**
1,2-Dichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3,5-Trimethylbenzene	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)
1,3-Dichlorobenzene	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3-Dichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,4-Dichlorobenzene	(none)	**J DL**	(none)	**J DL**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)	(none)	(none)	(none)	**U MB**	(none)
2,2-Dichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Butanone (MEK)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**UJ LM**
2-Chlorotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Ethyl-1-hexanol	**J HL**	**J HL**	**J HL**	**J HL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Hexanone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Chlorotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Isopropyltoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-methyl-2-pentanone (MIBK)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Acetone	(none)	**U MB**	**U MB**	**U MB**	(none)	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	**U MB**
Benzene	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromochloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)
Bromodichloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoform	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromomethane	**U MB**	**U MB**	**U MB**	**U MB**	**J DL**	**U MB**	**U MB**	**U MB**	**U MB**	**J DL**	**U MB**	**U MB**	**U MB**	**U MB**	**J DL**	**J DL**
Carbon disulfide	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Carbon tetrachloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chlorobenzene	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroform	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloromethane	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)
cis-1,2-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
cis-1,3-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 10
Data Qualifiers for TCLP Volatile Organic Coumpounds by EPA Method 8260B
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
Dibromochloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibromomethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichlorodifluoromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Ethylbenzene	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**U MB**	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)
Iodomethane	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
Isobutyl Alcohol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Isopropylbenzene	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
m,p-Xylene	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)
Methylene chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	**U MB**	(none)	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
n-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
n-Propylbenzene	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)
o-Xylene	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)
sec-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Styrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
tert-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Tetrachloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toluene	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**U MB**	(none)	**U MB**	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)
trans-1,2-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
trans-1,3-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Trichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Trichlorofluoromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vinyl chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

EPA = United States Environmental Protection Agency

Qualifier Reason Code Definitions:

DL = Detected concentration is betweeen method detection limit and method reporting limit

HL = High laboratory control sample recovery

MB = Method blank contamination

TABLE 11
Data Qualifiers for TCLP Chlorinated Herbicides by EPA Method 8151A
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
2,4,5-T	**J LS**	**J LS**	**J LS**	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	**J LL**	**UJ LL**	**J LL**	**UJ LL**	(none)	(none)
2,4,5-TP (Silvex)	**J LS,LM**	**J LS**	**J LS**	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)
2,4-D	**J LS**	**J LS**	**J LS**	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	**J LL**	**J LL**	**J LL**	**J LL**	(none)	(none)
2,4-DB	**J LS,LM**	**J LS**	**J LS**	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Nitrophenol	**UJ LS,LM**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoxynil	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dalapon	**UJ LS,LM**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LL**	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL,LM**	**UJ LL, LM**	(none)
Dicamba	**UJ LS,LM**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichloroprop	**J LS,LM**	**J LS**	**J LS**	**UJ LS**	(none)	**J DL**	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Dinoseb	**UJ LL,LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
MCPA	**J LS**	**J LS**	**J LS**	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
MCPP	**J LS,LM**	**J LS**	**J LS**	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	**J LL**	**J LL**	**J LL**	**J LL**	(none)	(none)
Pentachlorophenol	**J LS,LM**	**J LS**	**J LS**	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)

EPA = United States Environmental Protection Agency
TCLP = toxicity characteristic leaching procedure
Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
HL = High laboratory control sample recovery
LL = Low laboratory control sample recovery
LM = Low matrix spike recovery
LS = Low surrogate recovery

TABLE 12
Data Qualifiers for TCLP Semivolatile Organic Compounds by EPA Method 8270C
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
1,2,4-Trichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,4-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1-Methylnaphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,6-Tetrachlorophenol	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,5,6-Tetrachlorophenol	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
2,4,5-Trichlorophenol	**J LS**	(none)	(none)	**J LM**	(none)	(none)	(none)	(none)	(none)	**J DL, LS**	(none)	(none)	(none)	(none)	(none)	**J DL, LS**
2,4,6-Trichlorophenol	**J LL,LS**	**J LL**	**J LL**	**J LL**	(none)	**J LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
2,4-Dichlorophenol	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J LS**	(none)	(none)	(none)	(none)	(none)	**J LS**
2,4-Dimethylphenol	**UJ LS**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
2,4-Dinitrophenol	**UJ LS**	(none)	(none)	**UJ LM**	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
2,4-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,6-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chloronaphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chlorophenol	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J LS**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL, LS**
2-Methyl-4,6-dinitrophenol	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
2-Methylnaphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Methylphenol	**J LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J LS**	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J LS**
2-Nitroaniline	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**R LM**	**UJ LL**	**UJ LL**	(none)	**UJ LM**
2-Nitrophenol	**UJ LS**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**J DL**	**UJ LS**
3,3'-Dichlorobenzidine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**R MS**
3/4-Cresol	**J LS**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL, LS**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**UJ LS**
3-Nitroaniline	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL,LM**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**R LM**	**UJ LL**	**UJ LL**	(none)	**R MS**
4-Bromophenyl phenyl ether	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Chloro-3-methylphenol	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
4-Chloroaniline	**UJ LL**	(none)	(none)	**UJ LM**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**	(none)	**UJ LM**
4-Chlorophenyl phenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Nitroaniline	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL,LM**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL,LM**	**UJ LL**	**UJ LL**	(none)	**UJ LM**
4-Nitrophenol	**UJ LS**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
Acenaphthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Acenaphthylene	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(a)anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(a)pyrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(b)fluoranthene	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(g,h,i)perylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(k)fluoranthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzofluorantthenes	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	(none)	(none)	(none)	(none)	NT	NT
Benzoic acid	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzyl alcohol	**UJ LL,LS**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	**UJ LM**	(none)	(none)	(none)	**UJ LM**
Bis(2-Chloroethoxy) methane	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	**UJ LM**	(none)	(none)	(none)	(none)
Bis(2-Chloroethyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-chloroisopropyl) Ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
bis(2-Ethylhexyl) phthalate	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**U MB**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**U MB**	(none)	(none)	(none)	(none)	**U MB**	(none)
Butylbenzylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 12
Data Qualifiers for TCLP Semivolatile Organic Compounds by EPA Method 8270C
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
Carbazole	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	(none)	**R LM**	(none)	(none)	NT	NT
Chrysene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibenzo(a,h)anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibenzofuran	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Diethylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)
Dimethylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Di-n-butylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)
Di-n-octyl phthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Fluoranthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Fluorene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobenzene	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobutadiene	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorocyclopentadiene	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachloroethane	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Indeno(1,2,3-cd)pyrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Isophorone	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	(none)	(none)	**J LM**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J LM**
Nitrobenzene	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
N-Nitrosodi-n-propyl amine	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**J LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)
N-Nitrosodiphenylamine	(none)	(none)	(none)	**UJ LM**	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL,LM**	**UJ LL**	**UJ LL**	(none)	(none)
Pentachlorophenol	**UJ LL,LS**	**J LL**	**J LL**	**J LL**	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
Phenanthrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Phenol	**J LL,LS**	**J LL**	**J LL**	**J LL**	(none)	**J LL**	**J LL**	**J LL**	**J LL**	**J DL, LS**	(none)	(none)	(none)	(none)	(none)	**UJ LS**
Pyrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

EPA = United States Environmental Protection Agency
TCLP = toxicity characteristic leaching procedure
Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
LL = Low laboratory control sample recovery
LM = Low matrix spike recovery
LS = Low surrogate recovery
MB = Method blank contamination
NT = Not tested

TABLE 13
Data Qualifiers for TCLP Organochlorine Pesticides by EPA Method 8081A
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
4,4'-DDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4,4'-DDE	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4,4'-DDT	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aldrin	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
alpha-BHC	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
alpha-Chlordane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
beta-BHC	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
delta-BHC	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dieldrin	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endosulfan I	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endosulfan II	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endosulfan sulfate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endrin	**J DL**	**J DL**	**J DL**	**J DL**	**U MB**	(none)	(none)	(none)	(none)	**U MB**	(none)	**J DL**	(none)	**U MB**	**U MB**	**U MB**
Endrin aldehyde	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endrin Ketone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
gamma-BHC (Lindane)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
gamma-Chlordane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Heptachlor	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Heptachlor epoxide	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Methoxychlor	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toxaphene	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	(none)	(none)	(none)	(none)	NT	NT

EPA = United States Environmental Protection Agency
TCLP = toxicity characteristic leaching procedure
Qualifier Reason Code Definitions:
DL = Detected concentration is betweeen method detection limit and method reporting limit
MB = Method blank contamination
NT = Not tested

TABLE 14
Data Qualifiers for TCLP Polychlorinated Biphenyls by EPA Method 8082
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
Aroclor 1016	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1221	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1232	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1242	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1248	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1254	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1260	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

EPA = United States Environmental Protection Agency

TCLP - toxicity characteristic leaching procedure

Qualifier Reason Code Definitions:

LS = Low surrogate recovery

TABLE 15
Data Qualifiers for TCLP Metals by EPA 6000/7000 Series Methods
West Doane Lake Treatability Study
RP - Portland Site

Analyte	TS-1 WDLSS-1A	TS-1 WDLSS-1B	TS-1 WDLSS-1C	TS-1 WDLSS-1D	TS-1	TS-2 WDLSS-1A	TS-2 WDLSS-1B	TS-2 WDLSS-1C	TS-2 WDLSS-1D	TS-2	TS-3 WDLSS-1A	TS-3 WDLSS-1B	TS-3 WDLSS-1C	TS-3 WDLSS-1D	TS-3	W003-CFB-28 day
Aluminum	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)
Antimony	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	**J DL**
Arsenic	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J HD**	**J DL**	**J DL**	**J DL**	(none)	**J DL**
Barium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Beryllium	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Boron	(none)	**J DL**	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	**J DL**	**U MB**	**U MB**	**J DL**	**U MB**	**U MB**	**J DL**	**U MB**
Cadmium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Calcium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chromium	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Cobalt	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Copper	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
Iron	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)
Lead	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Magnesium	(none)	**U MB**	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)
Manganese	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**
Molybdenum	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Nickel	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Potassium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Selenium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Silver	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J HD**	(none)	**U MB**	(none)	**U MB**	(none)	(none)
Thallium	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)
Vanadium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Zinc	**J DL**	**J DL**	**J DL**	**J DL**	(none)	**J DL**	**J DL**	**J DL**	**J DL**	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**U MB**	(none)

EPA = United States Environmental Protection Agency

TCLP = Toxicity characteristic leaching procedure

Qualifier Reason Code Definitions:

DL = Detected concentration is betweeen method detection limit and method reporting limit

HD = High laboratory duplicate relative percent difference

MB = Method blank contamination

D-2

Data Quality Review for the West Doane Lake Treatability Study
W Series Samples

ATTACHMENT 1

APPENDIX D-2

DATA QUALITY REVIEW FOR THE WEST DOANE LAKE TREATABILITY STUDY DATA W SERIES SAMPLES RP - PORTLAND SITE

July 3, 2007

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0-61M-107030/Phase 65/T2

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ACRONYMS

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
AMEC	AMEC Earth & Environmental, Inc.
BFB	bromofluorobenzene
BS	blank spike
BSD	blank spike duplicate
CAR	certified analytical report
CLP	EPA Contract Laboratory Program
COC	chain of custody
DCB	decachlorobiphenyl
DEQ	Oregon Department of Environmental Quality
DQR	data quality review
DRO	diesel range organics
Ecology	Washington Department of Ecology
EPA	U.S. Environmental Protection Agency
GRO	gasoline range organics
HCID	hydrocarbon identification
ID	identification
IDL	instrument detection limit
IS	internal standard
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
mg/kg	milligrams per kilogram
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate

NWTPH Dx	Northwest Total Petroleum Hydrocarbons Diesel
NWTPH Gx	Northwest Total Petroleum Hydrocarbons Gasoline
ºC	degrees Centigrade
OCP	organochlorine pesticide
OSWER	EPA Office of Solid Waste and Emergency Response
PCB	Polychlorinated biphenyl
PeCDF	pentachlorodibenzofuran
pg/L	picograms per liter
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RP	Rhône Poulenc
RPD	relative percent difference
RRO	residual range organics
SDG	sample delivery group
SOP	standard operating procedure
STL-SAC	Severn Trent Laboratories, Inc. - Sacramento
STL-SEA	Severn Trent Laboratories, Inc. - Seattle
SVOC	semivolatile organic compound
TCDF	tetrachlorodibenzofuran
TCLP	toxicity characteristic leaching procedure
TCMX	tetrachloro-m-xylene
TFT	trifluorotoluene
VOC	volatile organic compound
WDL TS	West Doane Lake Treatability Study

1.0 INTRODUCTION

Twenty-three sediment samples were collected from the Rhône-Poulenc (RP) Portland Site from November 18, 2005 to November 21, 2005, for the 2006 West Doane Lake Treatability Study (WDL TS). The 23 primary samples and 4 trip blanks were submitted to Severn Trent Laboratories, Inc. (STL) in Seattle, Washington (STL-SEA), and STL in Sacramento, California (STL-SAC) for analysis.

STL-SAC analyzed samples by the following methods:

- Metals by United States Environmental Protection Agency (EPA) Method 6010B and EPA Method 6020;
- Mercury by EPA Method 7471A;
- Semivolatile organic compounds (SVOCs) by EPA Method 8270C;
- Polychlorinated biphenyls (PCBs) by EPA Method 8082;
- Organochlorine pesticides (OCPs) by EPA Method 8081A; and
- Dioxins and furans by EPA Method 8280A.

STL-SEA analyzed the samples by the following methods:

- Volatile organic compounds (VOCs) by EPA Method 8260B;
- Chlorinated herbicides (herbicides) by EPA Method 8151A;
- Gasoline range organics (GRO) by Oregon Department of Environmental Quality (DEQ)/Washington Department of Ecology (Ecology) Method NWTPH-Gx;
- Semivolatile hydrocarbons by DEQ/Ecology Method NWTPH-Dx;
- Hydrocarbon identification (HCID) by DEQ/Ecology Method NWTPH-HCID; and
- General chemistry parameters by various methods.

The samples also underwent toxicity characteristic leaching procedure (TCLP) extraction by EPA Method 1311. STL-SAC analyzed the TCLP leachates by the following methods:

- Metals by EPA Method 6010B and EPA Method 6020;
- Mercury by EPA Method 7471A;
- SVOCs by EPA Method 8270C;

- PCBs by EPA Method 8082;
- OCPs by EPA Method 8081A; and
- Dioxins and furans by EPA Method 8290.

STL-SEA analyzed the TCLP leachates by the following methods:

- VOCs by EPA Method 8260B; and
- Herbicides by EPA Method 8151A.

A list of the samples by sample location, field sample identification (ID), and laboratory sample ID is presented in Table 1.

2.0 DATA QUALITY REVIEW METHODOLOGY

AMEC Earth & Environmental, Inc. (AMEC) performed this data quality review (DQR) with reference to EPA guidelines as given in the current EPA functional guidelines for organic and inorganic data review, the EPA Office of Solid Waste and Emergency Response (OSWER) standard operating procedures (SOPs) for inorganic and organic data review (EPA, 1999; EPA, 2004a), and the RP Quality Assurance Project Plan (QAPP) Addendum No. 1 (AMEC, 2002). The EPA guidelines listed above were written specifically for the Contract Laboratory Program (CLP), and have been modified for the purposes of this data quality review where they differ from EPA SW-846 Methods (EPA, 2004b) quality control requirements.

The laboratory's certified analytical report (CAR) and supporting documentation were reviewed to assess the following: chain of custody (COC) compliance; holding time compliance; presence or absence of laboratory contamination as demonstrated by method and field blanks; accuracy and bias as demonstrated by recovery of surrogate spikes, laboratory control samples (LCS), and matrix spikes (MS); analytical precision as relative percent difference (RPD) of analyte concentration between replicate samples (i.e., laboratory duplicates) or MS and matrix spike duplicates (MSD); sampling precision as RPD of analyte concentration between field duplicates; and insofar as possible, the degree of conformance to method requirements and good laboratory practices. This data quality review did not include review or validation of the raw analytical data.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all quality control (QC) audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 DEFINITIONS OF QUALIFIERS THAT MAY BE ADDED AS A RESULT OF DATA QUALITY REVIEW

The **U** qualifier indicates that an analyte must be considered to be nondetected at the concentration listed. U qualifiers added during data quality review are typically a result of detection of target analytes in blanks.

The **J** qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during data quality review may indicate a concentration between the method detection limit (MDL) and the reporting limit (RL), or a data limitation related to a QC element that exceeds required acceptance limits.

The **UJ** qualifier indicates the reporting limit is estimated. UJ qualifiers added during data quality review may indicate either a high or low bias related to a QC element that exceeds required acceptance limits.

The **N** qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

The **R** qualifier indicates that a result has been rejected because of serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

4.0 EXPLANATION OF DATA QUALITY INDICATORS

LCS Recoveries

LCS and laboratory control sample duplicates (LCSDs), also known as blank spike (BS) and blank spike duplicates (BSDs), are aliquots of analyte-free water or Ottawa sand that are spiked with the analytes of interest for an analytical method or a representative subset of those analytes. The spiked water or sand is then processed through the same extraction, concentration, cleanup, and analytical procedures as the samples they accompany. LCS recovery and precision are indications of a laboratory's ability to successfully perform an analytical method in an interference-free matrix. LCS recoveries should generally be within 70 to 130% acceptance limits for organic analytes and 80 to 120% for inorganic analytes.

MS Recoveries

MS and MSD are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are indications of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related. MS recoveries should generally be within 60 to 140% acceptance limits for organic analytes and 75 to 125% acceptance limits for inorganic analytes.

Surrogate Spike Recoveries

Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process. Surrogate recoveries generally should be within 70 to 130% acceptance limits in interference-free matrices (blanks, LCS/LCSD) and 60 to 140% acceptance limits in field samples.

Blank Concentrations

Blank samples are aliquots of analyte free water or Ottawa sand that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results. The two types of blanks employed for this project are:

- Laboratory blanks are aliquots of analyte free water that are processed by the laboratory using exactly the same procedures as the field samples. Laboratory blanks are used to monitor for contamination introduced by the laboratory during sample preparation and analysis.
- Trip blanks are aliquots of analyte free water that are placed in sample containers at the analytical laboratory and are then sent into the field with the sample containers that are used to collect field samples. Trip blanks are not opened in the field, but accompany the field samples back to the laboratory where they are analyzed as samples. Trip blanks are used to monitor for contamination that result

from sample shipping and storage. For the purpose of this project, trip blanks are prepared and analyzed for VOCs only.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

5.1 Sample Receipt at STL-SEA

All samples were received at STL-SEA at measured temperatures of 4 degrees centigrade (ºC) ±2ºC and in good condition.

5.2 Sample Receipt at STL-SAC

All samples were received at STL-SAC at measured temperatures of 4ºC ± 2ºC. Specific details of sample receipt condition and COC anomalies are described below:

- According to the STL-SAC Lot Receipt Checklist, about half of the samples in sample delivery group (SDG) G5K220334 arrived at the laboratory with cracked outer lids. Sample IDs were not given for the affected samples. There was no indication that sample integrity was compromised; data usability is not adversely affected.
- Sample W005 (519-01) was received broken at STL-SAC. AMEC J qualified all detected results and UJ qualified all nondetected results for the analyses performed for this sample at STL-SAC because of possible analyte loss or cross contamination. (**J**/**UJ**-BB)

6.0 SPECIFIC DATA QUALITY REVIEW FINDINGS FOR EACH ANALYTICAL METHOD—SEDIMENT SAMPLES

Sections 6.1 to 6.11 of this Data Quality Review contain narrative descriptions of data quality review findings and data quality limitations. Definitions of data qualifiers added during review may be found in Section 3. Summaries of specific qualifiers added to each affected sample as a result of the data review findings are presented in Tables 2 through 11.

6.1 Volatile Organic Compounds by EPA Method 8260B

VOC data from West Doane Lake Treatability Study may be considered usable with the limitations and exceptions described below. Summaries of qualified VOC results are presented in Table 2.

6.1.1 Holding Time

All samples from this event were analyzed for VOCs within the recommended maximum holding time of 7 days for unpreserved aqueous samples and 14 days for preserved aqueous samples and soil samples.

6.1.2 Blanks

Target analytes should not be detected in blank samples. Results greater than the method reporting limit (MRL), but less than 5 times the concentration detected in the blank, or ten times the amount detected in the blank for methylene chloride, acetone, and 2-butanone, have been U qualified. Results between the instrument detection limit (IDL) and MRL, and less than 5 or 10 times the amount detected in the blank have been U qualified at the MRL concentration.

Laboratory Blanks

Target analytes detected in the laboratory blanks associated with the analysis of these samples for VOCs are described below:

- Iodomethane (90 micrograms per kilogram [µg/kg]), toluene (1.8 µg/kg), m,p-xylene (7 µg/kg), and naphthalene (1.2 µg/kg) were detected in laboratory blank MB 580-1901/1-A. Specific limitations include the following:
  - AMEC U qualified the detected iodomethane results from samples W005 (519-01) and W001 (523-01) because the detected concentrations were less than 5 times the concentration detected in the blank. (**U**-MB)
  - AMEC U qualified the detected toluene result from sample W005 (519-01) because the detected concentration was less than 5 times the concentration detected in the blank. (**U**-MB)
- Toluene (2 µg/Kg), m,p-xylene (6.1 µg/Kg), and naphthalene (5.7 µg/Kg) were detected in laboratory blank MB 580-1901/1-A. Specific limitations are described below:

- AMEC U qualified the detected toluene and m&p-xylene results from samples W017 7-11 (505-01), W011 18.5-20 (511-01), and W011 9-10 (512-01) because the detected concentrations were less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected naphthalene results from samples W020 (501-01) and W017 7-11 (505-01) because the detected concentrations were less than 5 times the concentration detected in the blank. (**U**-MB)

Trip Blanks

No target analytes were detected in the trip blanks associated with VOC analysis of these samples, except as described in below:

- Iodomethane was detected in trip blank 501-03 at a concentration of 2.8 micrograms per liter (µg/L). This analyte was either not detected in the associated samples or was detected at a concentration greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
- Iodomethane was detected in trip blank 506-03 at a concentration of 2.7 µg/L. This analyte was either not detected in the associated samples or was detected at a concentration greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
- Methylene chloride was detected in trip blank 511-03 at a concentration of 0.26 µg/L. This analyte was either not detected in the associated samples or was detected at a concentration greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
- Iodomethane was detected in trip blank 517-03 at a concentration of 2.8 µg/L. This analyte was either not detected in the associated samples or was detected at a concentration greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.

6.1.3 Laboratory Duplicate

STL-SEA analyzed sample W001 (523-01) in duplicate. RPDs between detected results were less than the QAPP-specified maximum of 30% except for chlorobenzene (33%), n-propylbenzene (55%), methylene chloride (43%), 1,3,5-trimethylbenzene (61%), 1,2,4-trimethylbenzene (61%), 1,3-dichlorobenzene (49%), 1,4-dichlorobenzene (47%), 1,2-dichlorobenzene (50%), isopropylbenzene (41%),

1,2,4-trichlorobenzene (78%), 1,2,3-trichlorobenzene (69%), sec-butylbenzene (54%), and 2-ethyl-1-hexanol (77%). Specific limitations are described below:

- The difference between analyte concentrations for isopropylbenzene, sec-butylbenzene, and 1,2,3-trichlorobenzene were within ± the MRL acceptance limits. Data usability is not adversely affected.
- AMEC J qualified the chlorobenzene, n-propylbenzene, methylene chloride, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and 2-ethyl-1-hexanol results because of poor analytical precision. (**J**-HD)

6.1.4 LCS Recovery

All LCS recoveries associated with VOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- Bromomethane (24%/22%), 1,2-dibromo-3-chloropropane (67%/63%), chloroethane (17%/13%), isopropylbenzene (131%/127%), sec-butylbenzene (131%/132%), 4-isopropyltoluene (130%/133%), 4-chlorotoluene (130%/132%) and styrene (130%/132%) recoveries were outside acceptance limits in LCS/LCSD 580-1887/4-A. Specific limitations are described below:
  - AMEC J qualified detected results and UJ qualified nondetected results for bromomethane, 1,2-dibromo-3-chloropropane, and chloroethane in samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of possible low bias in the analytical data. (**J/UJ**-LL)
  - AMEC J qualified detected results for isopropylbenzene, sec-butylbenzene and 4-isopropyltoluene in samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01) and W008 (516-01) because of possible high bias in the analytical data.
  - 4-chlorotoluene and styrene recoveries were high and these analytes were not detected in the associated samples. Data usability is not adversely affected.
- Dichlorodifluoromethane (30%/ 35%), bromomethane (23%/24%), chloroethane (11%/9%), isopropylbenzene (138%/138%), 4-isopropyltoluene (135%/133%), and

dichlorodifluoromethane (69%/70%) recoveries were outside acceptance limits in LCS/LCSD 580-1902/2. Specific limitations are described below:

- AMEC J qualified detected results and UJ qualified nondetected results for dichlorodifluoromethane, bromomethane, and chloroethane in samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of possible low bias in the analytical data. (**J/UJ**-LL)
- AMEC J qualified detected results for isopropylbenzene for sample W001 (523-01) and 4-isopropyltoluene for samples W003 (521-01), W002 (522-01), and W001 (523-01) because of possible high bias in the analytical data.
- The average dichlorodifluoromethane recovery was acceptable at 70%, and in AMEC's professional opinion, data usability is not adversely affected.

6.1.5 Surrogate Recoveries

All surrogate compound recoveries associated with VOC analysis were acceptable.

6.1.6 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits and RPDs were less than the QAPP-specified maximum of 30% for all MS associated with VOC analysis, except as described below:

- Bromomethane (6%), chloroethane (19%), dichlorodifluoromethane (25%), chloromethane (55%), vinyl chloride (54%), trichlorofluoromethane (54%), 1,1-dichloroethene (59%), 2,2-dichloropropane (43%), bromochloromethane (58%), carbon tetrachloride (44%), 1,2-dichloroethane (57%), bromodichloromethane (58%), cis-1,3-dichloropropene (23%), trans-1,3-dichloropropene (24%), tetrachloroethene (58%), dibromochloromethane (50%), bromoform (44%), 1,1,2,2-tetrachloroethane (42%), 1,2-dibromo-3-chloropropane (55%), 1,2,4-trichlorobenzene (56%), naphthalene (49%), and n-butylbenzene (212%) recoveries were outside acceptance limits in the MS performed on W008 (516-01). Specific limitations are described below:
  - AMEC R qualified and rejected the nondetected bromomethane result in the original sample because of possible low bias in the analytical results due to matrix interference. (**R**-MS)
  - AMEC J qualified detected results and UJ qualified nondetected results of chloroethane, dichlorodifluoromethane, chloromethane, vinyl chloride,

trichlorofluoromethane, carbon tetrachloride, 1,1-dichloroethene, 2,2-dichloropropane, bromochloromethane, 1,2-dichloroethane, bromodichloromethane, cis-1,3-dichloropropene, trans-1,3-dichloropropene, tetrachloroethene, dibromochloromethane, bromoform, 1,1,2,2-tetrachloroethene, 1,2-dibromo-3-chloropropane, 1,2,4-trichlorobenzene, and naphthalene in the original sample because of possible low analytical bias. (**J/UJ**-LM)

- n-Butylbenzene recovery was high and this analyte was not detected in the original sample. Data usability is not adversely affected.

6.1.7 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

No QC data except a laboratory duplicate was provided for 2-ethyl-1-hexanol. AMEC R qualified and rejected all nondetected results and J qualified all detected results for this analyte in all samples because of uncertainty in the accuracy and precision of the laboratory data. (**R/J**-NQ)

The laboratory E qualified the detected 1,2-dichlorobenzene results from samples W011 3-4 (513-01) and W013 (509-01) because of analyte concentrations exceeding the instrument's calibration range. No further dilutions were performed. These samples were also analyzed for 1,2-dichlorobenzene by EPA Method 8270 with detected concentrations within the instrument's calibration range. The RPDs between 1,2-dichlorobenzene results from methods 8260B and 8270C for samples W011 3-4 (513-01) and W013 (509-01) were 20% and 67%, respectively. Specific limitations are described below:

- AMEC J qualified the method 8260B 1,2-dichlorobenzene results from samples W011 3-4 (513-01) and W013 (509-01) because of analytical uncertainty in concentrations greater than the instrument's calibration range. (**J**-UC)

6.2 Chlorinated Herbicides by EPA Method 8151A

Herbicide data from the West Doane Lake Treatability Study may be considered usable with the limitations and exceptions described below. Summaries of qualified herbicide results are presented in Table 3.

6.2.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 14 days for soils, and analyzed within 40 days of extraction.

6.2.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with herbicide analysis.

6.2.3 LCS Recovery

LCS recoveries were within the QAPP-specified 70 to 130% acceptance limits except as described below:

- Dalapon recoveries were low at 42% each in LCS/LCSD 580-1882/2A. AMEC UJ qualified the nondetected dalapon results from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of possible low bias in the analytical results. (**UJ**-LL)
- Dalapon (63%/55%), 2,4-D (68%/61%), Silvex (2,4,5-TP) (66%/68%), and dinoseb (66%/64%) recoveries were low in LCS/LCSD 580-1886/2A. AMEC J qualified detected results and UJ qualified nondetected results of these analytes in samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of possible low bias in the analytical results. (**J/UJ**-LL)

6.2.4 Surrogate Recoveries

All surrogate recoveries associated with herbicide were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described below:

- Recoveries of the surrogate compound 2,4-dichlorophenylacetic acid (2,4-DCAA) were low in samples W007 (517-01) and W006 (518-01) at 50% and 39%, respectively. AMEC J qualified the detected results and UJ qualified the nondetected results from these samples because of possible low bias in the analytical results. (**J**/**UJ**-LS)

- Recovery of the surrogate compound 2,4-DCAA was high at 249% in sample W002 (522-01). AMEC J qualified the detected results from this sample because of possible high bias in the analytical results. (**J**-HS)

6.2.5 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30%, for all MSs associated with herbicide analysis, except as described below:

- Dalapon (34%/29%), 2,4-D (15%/75%) and dinoseb (75%/57%) recoveries were outside of acceptance limits in the MS/MSD performed on sample W020 (501-01). Specific limitations are described below:
  - AMEC UJ qualified the nondetected dalapon result from sample W020 (501-01) because of a possible low bias in the analytical result. (**UJ**-LM)
  - The background 2,4-D concentration in the unspiked sample was greater than the spike concentration. In AMEC's professional opinion, data usability is not adversely affected.
  - The average dinoseb recovery was acceptable at 66%, and the RPD between the MS and MSD was acceptable at 30%. In AMEC's professional opinion, data usability is not adversely affected.
- Dalapon (46%/46%), 2,4-D (192%/194%), and dinoseb (61%/55%) recoveries were outside of acceptance limits in the MS/MSD performed on sample W005 (519-01). Specific limitations are presented below:
  - AMEC UJ qualified the nondetected dalapon result from sample W005 (519-01) because of a possible low bias in the analytical result. (**UJ**-LM)
  - The background 2,4-D concentration in the unspiked sample was greater than the spike concentration. In AMEC's professional opinion data usability is not adversely affected.
  - The average dinoseb recovery was low at 56%. AMEC UJ qualified the nondetected dinoseb result from sample W005 (519-01) because of a possible low bias in the analytical result. (**UJ**-LM)

6.2.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables.

6.3 Semivolatile Organic Compounds by EPA Method 8270C

SVOC data from the WDL TS may be considered usable with the limitations described below. Summaries of qualified SVOC results are presented in Table 4.

6.3.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 14 days for soil and analyzed within 45 days of extraction, except as described below:

- Samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) were originally extracted and analyzed within the maximum recommended holding time, but several QC parameters were outside of acceptance limits for all samples. The samples were re-extracted twenty-two days after collection and analyzed on December 14, 2005. Results from the re-extracted samples were comparable to the original results, but had fewer QC exceedances. The results from the re-extracted samples will be reported. Although results from both extractions were comparable, AMEC UJ qualified all nondetected SVOC results and J qualified all detected SVOC results from these samples because of the holding time exceedance. (**J/UJ**-HT)

6.3.2 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with these samples.

6.3.3 LCS Recovery

All LCS recoveries associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- Benzo(k)fluoranthene (68%), bis(2-chloroethoxy)methane (65%), bis(2-chlorethyl)ether (64%), bis(2-chloroisopropyl)ether (57%), 4-chloroanaline (36%), 2-chloronaphthalene (69%), 2-chlorophenol (64%), 1,2-dichlorobenzene (65%), 1,3-dichlorobenzene (58%), 1,4-dichlorobenzene (61%), 3,3'-dichlorobenzidine (54%), 2,4-dimethylphenol (69%), dimethyl phthalate (68%),

2-methyl-4,6-dinitrophenol (55%), 2,4-dinitrophenol (52%), hexachlorobutadiene (62%), hexachlorocylcopentadiene (67%), hexachloroethane (54%), 2-methylphenol (68%), naphthalene (67%), 3-nitroaniline (56%), nitrobenzene (67%), 2-nitrophenol (66%), phenol (67%), and 1,2,4-trichlorobenzene (63%) recoveries were low in LCS sample G5K290000-204. AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes in samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of possible low bias in the analytical results. (**J/UJ**-LL)

- Bis(2-chloroisopropyl)ether (49%), 4-chloroanaline (38%), 2-chlorophenol (64%), 1,3-dichlorobenzene (64%), 1,4-dichlorobenzene (64%), 3,3'-dichlorobenzidine (63%), 2-methyl-4,6-dinitrophenol (67%), 2,4-dinitrophenol (67%), hexachlorocylcopentadiene (66%), hexachloroethane (58%), naphthalene (66%), 3-nitroaniline (64%), and 4-nitrophenol (68%) recoveries were low in the LCS sample G5L130000-359 analyzed on December 14, 2005. AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes in samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of possible low bias in the analytical results. (**J/UJ**-LL)

6.3.4 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits and RPDs were less than the QAPP-specified maximum of 30% for all MS associated with SVOC analysis, except as described below:

- 4-chloroanaline (50/48%), 4-chloro-3-methylphenol (52/48%), 2-chlorophenol (52/46%), dibenzo(a,h)anthracene (57/59%), 1,2-dichlorobenzene (0/76%), 1,3-dichlorobenzene (55/68%), 1,4-dichlorobenzene (47/83%), 3,3'-dichlorobenzidine (56/55%), 2,4-dichlorophenol (55/87%), dimethyl phthalate (59/55%), 2-methyl-4,6-dinitrophenol (0/0%), 2,4-dinitrophenol (0/0%) hexachlorocylcopentadiene (4.5/0%), 4-nitrophenol (0/0%), and pentachlorophenol (0/0%) recoveries were outside of acceptance limits in the MS/MSD performed on sample W007 (517-01) analyzed on 12/14/2005. Specific limitations are described below:
    - 2-methyl-4,6-dinitrophenol, 2,4-dinitrophenol, hexachlorocylcopentadiene, 4-nitrophenol, and pentachlorophenol had very low or no analyte recoveries.

AMEC R qualified and rejected the nondetected results for these analytes in sample W007 (517-01) because of possible analyte suppression due to matrix interference. (**R**-MS)

- 1,2-dichlorobenzene was not recovered in the MS, but recovery was acceptable at 76% in the MSD. The detected 1,2-dichlorobenzene concentration for the original sample was over two times greater than the spike concentration. Data usability is not adversely affected.

- AMEC J qualified the detected 4-chloro-3-methylphenol, and 1,4-dichlorobenzene results in the original sample because of possible low bias in the analytical results. (**J**-LM)

  - AMEC UJ qualified the nondetected 2-chlorophenol, dibenzo(a,h)anthracene, 3,3'-dichlorobenzidine, and dimethyl phthalate results because of possible low bias in the analytical results. (**UJ**-LM)

  - 1,3-Dichlorobenzene recovery was low in the MS at 55%, but acceptable in the MSD at 68%. The average recovery was acceptable at 62%, and the RPD between the MS and MSD was acceptable at 16%. In AMEC's professional opinion, data usability is not adversely affected.

  - 2,4-Dichlorophenol recovery was low in the MS at 55%, but acceptable in the MSD at 87%. The average recovery was acceptable at 71%, and the RPD between the MS and MSD was acceptable at 6.3%. In AMEC's professional opinion, data usability is not adversely affected.

- MS/MSD sample W011 9-10 (512-01) was originally reported as not being spiked with target analytes 4-chloroaniline, 3,3'-dichlorobenzidine and 3-nitroaniline, although these analytes were recovered from the MS/MSD and were nondetected in the original sample. Upon further investigation, the laboratory made an error in reporting this MS/MSD. A corrected report was issued on March 21, 2007.

- 4-chloroaniline (37%/37%), 3,3'-dichlorobenzidine (60%/53%), 1,3-dichlorobenzene (58%/61%), 2-methyl-4,6-dinitrophenol (66%/54%), 2,4-dinitrophenol (54%/52%), hexachlorocylcopentadiene (14%/17%), hexachloroethane (51%/54%), and pentachlorophenol (64%/51%) recoveries were low in the MS/MSD performed on sample W011 9-10 (512-01). AMEC UJ qualified the nondetected results of these analytes from the original sample because of possible low bias in the analytical results. (**UJ**-LM)

- No surrogates were recovered from MSD sample W007 (517-01) analyzed on 12/14/2005. The laboratory qualified the surrogate results as "not reported due to

sample dilution", although the sample was not otherwise reported as being analyzed at a dilution. Surrogate recoveries in the original sample and MSD W007 (517-01) were acceptable. Data usability is not adversely affected.

6.3.5 Surrogate Recoveries

All samples were diluted eight- to ten-fold because of high analyte concentrations and/or matrix interference, possibly reducing surrogate concentrations below analytical detection limits. It was not possible to evaluate the possible effects of low surrogate recoveries on data usability. No data qualifications have been made as a result of surrogate recovery exceedances.

6.3.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.4 Organochlorine Pesticides by EPA Method 8081A

OCP data from the WDL TS project may be considered usable with the limitations and exceptions described below. Summaries of qualified OCP results are presented in Table 5.

6.4.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 14 days for solid samples, and analyzed within 40 days of extraction.

6.4.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with OCP analysis.

6.4.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with OCP analysis, except as described below:

- Endrin aldehyde recovery was low at 64% in LCS G5L010000-090. AMEC UJ qualified the nondetected endrin aldehyde results from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016

(506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of possible low bias in the analytical results. (**UJ**-LL)

6.4.4 Surrogate Recoveries

Surrogate recoveries associated with analysis of these samples for OCPs were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- Surrogate compounds decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCMX) were not recovered from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01) and W008 (516-01), W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), W001 (523-01), and MS/MSD W007 (517-01). The affected samples were diluted fivefold or greater because of matrix interference. The dilutions may have reduced surrogate concentrations below analytical detection limits. It was not possible to evaluate the potential effects of low surrogate recoveries on data usability. No data qualifications have been made as a result of surrogate recovery exceedances.

6.4.5 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30%, for all MSs associated with OCP analysis, except as described below:

- No analytes or surrogates were recovered from the MS/MSD performed on sample W007 (517-01). The MS/MSD pair was diluted 200-fold because of matrix interference, as described in the SDG G5K230224 case narrative. Data usability could not be fully evaluated because of high dilution. No data qualifications were made as a result of exceedances from this MS/MSD.

6.4.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

The laboratory PG qualified detected delta-BHC in samples W001 (523-01) and W007 (517-01); detected 4,4'-dichloro diphenyl ethylene (DDE) in samples W013 (509-01), W016 (506-01), and W008 (516-01); and detected 4,4'-dichloro diphenyl dichloroethane (DDD) in samples W013 (509-01), W008 (516-01), and W019 (502-01) because of greater than 40% difference between original and confirmation analyses. AMEC N qualified the results because of possible bias in the data. (**N**-SC)

6.5 Polychlorinated Biphenyls by EPA Method 8082

PCB data from the WDL TS project may be considered usable with the limitations and exceptions described below. Summaries of qualified PCBs results are presented in Table 6.

6.5.1 Holding Time

All samples were extracted within the EPA recommended maximum holding times of 14 days for solid samples and analyzed within 40 days of extraction.

6.5.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with the analysis of these samples for PCBs.

6.5.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCS associated with the analysis of these samples for PCBs, except as described below:

- Aroclors 1016 and 1260 were not recovered from LCS sample G5L010000-093. The SDG G5K230224 case narrative indicates that the samples were re-extracted eight days out of holding time with acceptable QC reports and similar sample results, but this data was not reported. AMEC R qualified and rejected all nondetected Aroclor results from samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of unacceptable LCS recovery. (**R**-BS)

6.5.4 Surrogate Recoveries

Surrogate recoveries associated with analysis of these samples for PCBs were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- The surrogate compounds DCB and TCMX were not recovered from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), W008 (516-01), MS W007 (517-01), W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01) and W001 (523-01). These samples were diluted fivefold or greater, possibly reducing surrogate concentrations below analytical detection limits. It was not possible to evaluate the possible effects of low surrogate recoveries on data usability. No data qualifications have been made as a result of surrogate recovery exceedances.
- Recovery of surrogate compounds DCB and TCMX were high at 223% and 146%, respectively in sample W014 (508-01). AMEC J qualified the detected Aroclor 1242 result from this sample because of a possible high bias in the analytical results. (**J**-HS)
- Recovery of surrogate compounds DCB and TCMX were high at 223% and 146%, respectively in LCS G5L010000-093. Surrogate recoveries were high, but no target analytes were detected in the LCS sample. AMEC did not qualify any data based on the high LCS surrogate recoveries.

6.5.5 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30% for all MS associated with analysis of these samples for PCBs, except as described below:

- No analytes or surrogates were recovered from the MS/MSD performed on sample W007 (517-01). The sample had been diluted 100-fold prior to analysis because of matrix interference. Data usability could not be fully evaluated because of high dilution. No data qualifications were made as a result of exceedances from this MS/MSD.

6.6 Hydrocarbon Identification by DEQ/Ecology Method NWTPH-HCID

HCID data from the WDL TS may be considered usable with the limitations and exceptions described below. HCID serves as a tool for qualitative identification of petroleum hydrocarbons, and as such, HCID results do not warrant qualification for QC exceedances. The data qualifiers added during the review of northwest total petroleum hydrocarbons - gasoline (NWTPH-Gx) and northwest total petroleum

hydrocarbons - diesel (NWTPH-Dx) results may be found in Section 6.7 and Section 6.8, respectively.

6.6.1 Holding Time

All samples were extracted within the DEQ recommended maximum holding time of 14 days for soil samples and analyzed within 45 days from extraction.

6.6.2 Laboratory Blanks

HCID compounds were not detected in the laboratory blanks associated with these samples.

6.6.3 Surrogate Recoveries

Surrogate recoveries associated with HCID analysis were within the method-specified 50 to 150% acceptance limits, except as described below:

- Recovery of the surrogate compound 4-BFB was less than 50% in samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W015 (507-01), W014 (508-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), W008 (516-01), W006 (518-01), and W001 (523-01).
- Recovery of the surrogate compound o-terphenyl was less than 50% in samples W020 (501-01), W018 (503-01), W017 3-4 (504-01), W016 (506-01), W015 (507-01), W012 (510-01), W011 18.5-20 (511-01), W011 3-4 (513-01), W010 (514-01), W002 (522-01), and W001 (523-01).
- Recovery of the surrogate compound 4-BFB was high at 373% in sample W002 (522-01). The high surrogate recovery is likely because of high analyte detections.

6.7 Volatile Petroleum Products by DEQ/Ecology Method NWTPH-Gx

GRO data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified GRO results are presented in Table 7.

6.7.1 Holding Time

All samples were analyzed within the DEQ recommended maximum holding time of 14 days.

6.7.2 Laboratory Blanks

Target analytes should not be detected in blank samples. Results greater than the MRL, but less than 5 times the concentration detected in the blank have been U qualified. Target analytes were not detected in laboratory blanks, except as described below.

- GRO was detected in method blank MB 580-1901/1-A at a concentration of 2 milligrams per kilogram (mg/kg). Analyte concentrations detected in the associated samples were greater than 5 times the concentration detected in the blank; data usability is not adversely affected.
- GRO was detected in method blank MB 580-1887/1-A at a concentration of 1.5 mg/kg. Analyte concentrations detected in the associated samples were greater than 5 times the concentration detected in the blank; data usability is not adversely affected.

6.7.3 LCS/LCSD Recoveries

Recovery and precision for LCS/LCSDs associated with GRO analysis were within the method-specified 50 to 150% acceptance limits.

6.7.4 Laboratory Duplicate

RPDs of duplicate analyses were below the QAPP-specified maximum of 30%, except as described below:

- There was 68% RPD between the primary and duplicate GRO results in the laboratory duplicate performed on sample W011 18.5-20 (511-01). AMEC J qualified the GRO result from this sample because of poor analytical precision. (**J**-HD)
- There was 44% RPD between the primary and duplicate GRO results in the laboratory duplicate performed on sample W001 (523-01). AMEC J qualified the GRO result from this sample because of the analytical precision. (**J**-HD)

6.7.5 Surrogate Recoveries

Surrogate recoveries associated with GRO analysis were within the method-specified 50 to 150% acceptance limits, except as described below

- The surrogate compound trifluorotoluene (TFT) was not recovered from samples W006 (518-01), W004 (520-01), and W002 (522-01) because of sample dilution. No data qualifications were made as a result of surrogate recovery exceedances.
- TFT recovery was low at 48% in samples W017 3-4 (504-01). AMEC J qualified the detected GRO result from this sample because of possible low bias in the analytical result. (**J**-LS)
- Recoveries of surrogate compounds TFT (52%), 4-bromofluorobenzene (4-BFB; 32%), 1-chloro-3-fluorobezene (33%), and pentafluorobenzene (42%) were low in sample W016 (506-01). AMEC J qualified the detected GRO result from this sample because of possible low bias in the analytical result. (**J**-LS)
- 4-BFB and 1-chloro-3-fluorobezene recoveries were high in samples W022 (502-01) and W005 (519-01). AMEC J qualified the detected GRO results from these samples because of possible high bias in the analytical results. (**J**-HS)
- 4-BFB and 1-chloro-3-fluorobezene recoveries were high at 154% and 145%, respectively, in LCSD 580-1901/4-A. Analyte recovery in the LCS was within acceptable limits; data usability is not adversely affected.

6.7.6 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30%, for all MSs associated with GRO analysis.

6.7.7 Data Reporting

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

Samples W017 7-11 (505-01) and W011 9-10 (512-01) were not analyzed for GRO because the analyte was not detected during HCID analysis.

6.8 Semivolatile Petroleum Products by DEQ/Ecology Method NWTPH-Dx

Diesel range organics (DRO) and residual range organics (RRO) data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified DRO and RRO results are presented in Table 8.

6.8.1 Holding Time

All samples were extracted within the DEQ recommended maximum holding time of 14 days for soil samples and analyzed within 45 days from extraction.

6.8.2 Laboratory Blanks

DRO and RRO were not detected in the laboratory blanks associated with these samples, except as described below:

- DRO was detected in method blank MB 580-1832/1-B at a concentration of 14 mg/kg. Analyte concentrations detected in associated samples were greater than 5 times that detected in the blank; data usability is not adversely affected.

6.8.3 LCS/LCSD Recoveries

Recovery and precision for LCS/LCSDs associated with DRO and RRO analyses were acceptable.

6.8.4 Laboratory Duplicate

RPDs of duplicate analyses were within the QAPP-specified limit of 30%, except as described below:

- There was 61% RPD between the primary and duplicate DRO results in the laboratory duplicate performed on sample W004 (520-01). AMEC J qualified the DRO result from this sample because of poor analytical precision. (**J**-HD)
- There was 65% RPD between the primary and duplicate RRO results in the laboratory duplicate performed on sample W004 (520-01). AMEC J qualified the RRO result from this sample because of poor analytical precision. (**J**-HD)

6.8.5 Surrogate Recoveries

Surrogate recoveries associated with DRO and RRO analyses were within the method-specified 50 to 150% acceptance limits, except as described below:

- Recovery of the surrogate compound o-terphenyl was less than 50% in samples W016 (506-01), W013 (509-01), W011 3-4 (513-01), and W002 (522-01). AMEC J qualified the detected results and UJ qualified the nondetected results from these samples because of possible low bias in the analytical results. (**J/UJ**-LS)

- Recoveries of the surrogate compound o-terphenyl were low at 42% and 46% in the MS/MSD performed on sample W016 (506-01). Surrogate recovery was low in the original sample and results have been qualified.

6.8.6 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30%, for all MSs associated with DRO and RRO, except as described below:

- DRO recoveries were high at 215% and 160% in the MS/MSD performed on sample W016 (506-01). DRO concentration in the unspiked sample was greater than four times the spike concentration. Data usability is not adversely affected.
- RRO recovery was acceptable at 96% in the MS performed on sample W016 (506-01), but high at 276% in the MSD. AMEC J qualified the detected RRO result in the original sample. (**J**-HM)

6.8.7 Data Reporting

Samples W017 7-11 (505-01) and W011 9-10 (512-01) were not analyzed for DRO or RRO because these analytes were not detected during HCID analysis.

6.9 Metals by EPA 6010B/6020 and EPA 7471A

Metals data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified metals results may be found in Table 9.

6.9.1 Holding Time

All samples were analyzed for mercury within the recommended technical holding time of 28 days and for all other metals within the recommended technical holding time of 180 days.

6.9.2 Blanks

Target analytes should not be detected in blank samples. When the concentration detected in the blank is less than the MRL, concentrations in associated samples greater than the MRL, but less than 5 times the concentration detected in the blank have been U qualified by AMEC. When the absolute concentration detected in the

blank is greater than the MRL, concentrations in associated samples greater than the MRL, but less than ten times the concentration detected in the blank have been U qualified by AMEC. In both cases, sample concentrations between the IDL and MRL, and less than 5 or 10 times the concentration detected in the blank have been U qualified at the MRL concentration.

Target analyte concentrations detected in laboratory blanks associated with metals analysis are described below:

- Boron (0.82 mg/kg), calcium (8.0 mg/kg), iron (2.0 mg/kg), and sodium (8.2 mg/kg) were detected in method blank G5L090000-182. Specific limitations are described below:
  - AMEC U qualified the boron results from samples W011 18.5-20 (511-01) and W011 9-10 (512-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
- Aluminum (1.8 mg/kg), barium (0.041 mg/kg), copper (0.048 mg/kg), lead (0.029 mg/kg), manganese (0.093 mg/kg), molybdenum (0.014 mg/kg), nickel (0.032 mg/kg) and zinc (0.16 mg/kg) were detected in method blank G5L090000-175. Analytes detected in the blank were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
- Calcium (10.2 mg/kg), iron (1.2 mg/kg), magnesium (9.0 mg/kg), and sodium (9.3 mg/kg) were detected in method blank G5L010000-213. Analytes detected in the blank were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
- Barium (0.043 mg/kg), copper (0.11 mg/kg), and zinc (0.12 mg/kg) were detected in method blank G5L070000-161. Analytes detected in the blank were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.

6.9.3 LCS Recovery

Recoveries were acceptable in all LCSs associated with metals analysis.

6.9.4 MS/MSD Recovery and Precision

Recovery was within the method-specified 75 to 125% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30% for all MS associated with metals analysis, except as described below:

- Aluminum, antimony, arsenic, barium, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, vanadium, and zinc recoveries were outside of acceptance limits in the MS/MSD performed on sample W019 (502-01). Specific limitations are described below:
  - The background aluminum, barium, chromium, copper, lead, manganese, molybdenum, nickel, and zinc concentrations in the unspiked sample were more than four times the spike concentrations. Data usability is not adversely affected.
  - Antimony recoveries were high at 412% and 202% in the MS and MSD, respectively. AMEC J qualified the detected antimony result in the original sample because of possible high bias due to matrix interference. (**J**-HM)
  - Arsenic recoveries were acceptable at 77% in the MS, but low at 71% in the MSD. The average recovery was low at 74%. AMEC J qualified the detected arsenic result in the original sample because of possible low bias due to matrix interference. (**J**-LM)
  - Cobalt recoveries were low at 13% in the MS, but acceptable at 93% in the MSD. The average recovery was unacceptable at 53%, and the RPD between MS and MSD was high at 34%. AMEC J qualified the detected cobalt result in the original sample because of possible high bias due to matrix interference. (**J**-LM, HD)
  - Selenium recoveries were acceptable at 86% in the MS, but low at 70% in the MSD. The average recovery was acceptable at 76%. Data usability is not adversely affected.
  - Vanadium recoveries were high at 149% in the MS, but acceptable at 107% in the MSD. The average recovery was high at 128%. AMEC J qualified the detected vanadium result in the original sample because of possible high bias due to matrix interference. (**J**-HM)
- Calcium, iron, and magnesium recoveries were outside of acceptance limits in the MS/MSD performed on sample W020 (501-01). Specific limitations are described below:

- Calcium and iron recoveries were high. In both cases, the background analyte concentrations in the unspiked sample were more than 4 times the spike concentrations. Data usability is not adversely affected.
- Magnesium recovery was acceptable at 68% in the MS but low at 31% in the MSD. The average recovery was low at 50%. AMEC J qualified the detected magnesium result in the original sample because of possible low bias due to matrix interference. (**J**-LM)

- Aluminum, arsenic, barium, chromium, iron, lead, manganese, molybdenum, vanadium, and zinc recoveries were outside of acceptance limits in the MS/MSD performed on sample W006 (518-01). Specific limitations are described below:
  - Aluminum, barium, lead, manganese, and zinc recoveries were high in the MS/MSD performed on sample W006 (518-01). In all cases, the background analyte concentrations in the unspiked sample were more than 4 times the spike concentrations. Data usability is not adversely affected.
  - Arsenic (231%/370%), molybdenum (158%/150%), and vanadium (209%/157%) recoveries were high. AMEC J qualified the detected results for these analytes in the original sample because of possible high bias due to matrix interference. (**J**-HM)
  - Chromium recoveries were acceptable at 113% in the MS, but high at 257% in the MSD. The average recovery was high at 185%. AMEC J qualified the detected chromium result in the original sample because of possible high bias due to matrix interference. (**J**-HM)
  - The background iron concentration in the unspiked sample was more than 4 times the spike concentrations. Data usability is not adversely affected.
  - Nickel recovery was acceptable at 106% in the MS, but high at 345% in the MSD. The average recovery was high at 226%. AMEC J qualified the detected nickel result in the original sample because of possible high bias due to matrix interference. (**J**-HM)

6.9.5 Data Reporting and Analytical Procedures

The laboratory B qualified detected results with concentrations between the RL and IDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.10 General Chemistry by Various Methods

General chemistry data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified metals results may be found in Table 10.

6.10.1 Holding Time

All analyses were performed within the method-recommended holding times.

6.10.2 Laboratory Blanks

Target analytes were not detected in laboratory blanks for any of the general chemistry analyses.

6.10.3 LCS Recovery

Recoveries were acceptable in all LCSs associated with analysis of these samples for general chemistry methods, except as described below.

- Sulfide recovery was low at 42% in LCS 580-2575/2-A and at 43% in LCSD 580-2575/3-A. AMEC UJ qualified all nondetected results for this analyte in samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01). (**J/UJ**-LL)
- Sulfide recovery was low at 41% in LCS 580-2535/2-A and at 47% in LCSD 580-2535/3-A. AMEC UJ qualified all nondetected results for this analyte in samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), and W015 (507-01). (**J/UJ**-LL)
- Sulfide recovery was low at 54% in LCS 580-2572/2-A and at 47% in LCSD 580-2572/3-A. AMEC UJ qualified all nondetected results for this analyte in samples W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01). (**J/UJ**-LL)

6.10.4 MS/MSD Recovery and Precision

Recoveries were within the QAPP-specified 60 to 140% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30% for all MSs associated with analysis for general chemistry methods, except as described below:

- Sulfide recovery was low at 45% in the MS performed on sample W020 (501-01). AMEC UJ qualified the nondetected result for this analyte in the original sample. (**UJ**-LM)
- Sulfide recovery was low at 50% in the MS performed on W012 (510-01). AMEC UJ qualified the nondetected result for this analyte in the original sample. (**UJ**-LM)
- Sulfide recovery was low at 37% in the MS performed on W006 (518-01). AMEC UJ qualified the nondetected result for this analyte in the original sample. (**UJ**-LM)

6.10.5 Data Reporting and Analytical Procedures

The laboratory B qualified detected results with concentrations between the RL and IDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.11 Dioxins and Furans by EPA Method 8280A

Dioxins and furans data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified metals results may be found in Table 11.

6.11.1 Holding Time

All samples were extracted within the method-specified holding time of 30 days from sample collection until extraction, and all extracts were analyzed within the method specified time of 45 days from extraction until analysis.

6.11.2 Laboratory Blanks

Target analytes were not detected in the laboratory blanks associated with the analysis of these samples.

6.11.3 LCS Recovery

Recovery of all analytes was within the QAPP-specified acceptance limits of 70-130%.

6.11.4 Internal Standard Recoveries

Internal standard (IS) recoveries associated with dioxins and furans analysis were within the method-specified 25% to 150% acceptance limits, except as described below:

- Recovery of the IS ^{13}C-2,3,7,8- tetrachlorodibenzofuran (TCDF) was low at 23% in sample W004 (520-01). AMEC J qualified the detected 2,3,7,8-TCDF, total TCDF, and total pentachlorodibenzofuran (PeCDF) results in this sample because of possible high bias as demonstrated by low IS recovery. (**J**-LI)

6.11.5 MS/MSD Recovery and Precision

Recoveries were within the QAPP-specified 60 to 140% acceptance limits and RPDs were less than the QAPP-specified maximum of 30% for all MSs associated with dioxins and furans analysis, except as described below:

- STL performed MS and MSD on sample W020 (501-01). 2,3,7,8-TCDF was not recovered in the MS and recovered at 3.4% in the MSD. The concentration detected in the unspiked sample was approximately 8 times greater than the spike concentration. Data usability is not adversely affected.

6.11.6 Data Reporting

STL-SAC J qualified data when the individual congener concentration was less than the instrument's lowest calibration level. All of STL's J qualifiers are appropriate and should be applied to the final data. (**J**-DL)

STL-SAC E qualified the 2,3,7,8-TCDF results from samples W002 (522-01), W006 (518-01), W016 (506-01), and W019 (502-01) as estimated results because of concentrations exceeding the instrument's calibration range. Diluted samples were not analyzed. AMEC J qualified the 2,3,7,8-TCDF results from these samples. (**J**-UC)

7.0 SPECIFIC DATA QUALITY REVIEW FINDINGS FOR EACH ANALYTICAL METHOD—TOXICITY CHARACTERISTIC LEACHING PROCEDURE SAMPLES

Sections 7.1 to 7.7 of this Data Quality Review report contain narrative descriptions of data review findings and data quality limitations. Definitions of data qualifiers added during review may be found in Section 3. Summaries of specific qualifiers added to each affected sample as a result of the data review findings are presented in Tables 12 through 18.

7.1 TCLP Volatile Organic Compounds by EPA Method 8260B

VOC data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified VOC results are presented in Table 12.

7.1.1 Holding Time

EPA Method 1311 recommends TCLP extraction within 14 days of sample collection and preparatory extraction within 7 days of TCLP extraction for organic compounds. All samples were leached and analyzed within the appropriate time range.

7.1.2 Laboratory Blanks

Target analytes should not be detected in blank samples. Results greater than the MRL, but less than 5 times the concentration detected in the blank, or ten times the amount detected in the blank for methylene chloride, acetone, and 2-butanone, have been U qualified. Results between the IDL and MRL, and less than 5 or 10 times the amount detected in the blank have been U qualified at the MRL concentration.

No target analytes were detected in the laboratory blanks associated with VOC analysis, except as described below:

- Iodomethane and bromomethane were detected at concentrations of 1,500 µg/L and 340 µg/L, respectively, in laboratory blank MB 580-2903/3. Specific limitations are described below:
  - AMEC U qualified the detected iodomethane results from samples W007 (517-01), W006 (518-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01). (**U**-MB)
  - AMEC U qualified the detected bromomethane results from samples W007 (517-01) and W002 (522-01). (**U**-MB)
- Bromomethane (360 µg/L), iodomethane (1600 µg/L), carbon disulfide (47 µg/L), and 1,2,4-trichlorobenzene (78 µg/L) were detected in laboratory blank MB 580-2089/3. Specific limitations are described below:
  - AMEC U qualified the detected bromomethane results from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 7-11 (505-01), W016 (506-01), and W008 (516-01). (**U**-MB)

- AMEC U qualified the detected iodomethane results from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01). (**U**-MB)
- AMEC U qualified the detected carbon disulfide results from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 7-11 (505-01), and W016 (506-01). (**U**-MB)
- AMEC U qualified the detected 1,2,4-trichlorobenzene results from samples W020 (501-01), W019 (502-01), and W018 (503-01). (**U**-MB)

7.1.3 Laboratory Duplicate

RPDs of duplicate analyses were less than the QAPP-specified maximum of 30%.

7.1.4 LCS Recovery

All LCS recoveries associated with VOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- Dichlorodifluoromethane recovery was low at 69% in LCS 580-2089/1. AMEC J qualified detected dichlorodifluoromethane results and UJ qualified nondetected dichlorodifluoromethane results from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of a possible low bias in the analytical results. (**J/UJ**-LL)

7.1.5 Surrogate Recoveries

Recoveries of all surrogates associated with VOC analysis were acceptable.

7.1.6 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits, and RPDs were less than the QAPP-specified maximum of 30% for all MSs associated with VOC analysis, except as described below:

- Chloroform recovery was low at 57% in the MS performed on sample W001 (523-01). AMEC UJ qualified the nondetected result for this analyte in the original sample. (**UJ**-LM)
- Bromochloromethane recovery was high at 165%, and the analyte was not detected in the original sample. Data usability is not adversely affected.

7.1.7 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and the MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.2 TCLP Chlorinated Herbicides by EPA Method 8151A

Herbicide data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified herbicide results are presented in Table 13.

7.2.1 Holding Time

EPA Method 1311 recommends TCLP extraction within 14 days of sample collection, and preparatory extraction within 7 days of TCLP extraction, for organic compounds. All samples were leached, extracted, and analyzed within the appropriate time range.

7.2.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with herbicide analysis.

7.2.3 LCS Recovery

LCS recoveries were within the QAPP-specified 70 to 130% acceptance limits except as described below:

- Dalapon, dinoseb, and bromoxynil recoveries were low in LCS/LCSD 580-1946/2-A. Specific limitations are described below:
  - Dalapon recoveries were low at 66% in the LCS, but acceptable at 70% in the LCSD. The average recovery was low at 68%, and AMEC UJ qualified the nondetected dalapon results from samples W007 (517-01), W006 (518-01),

W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of a possible low bias in the analytical results. (**UJ**-LL)

- Dinoseb recoveries were low at 56% in the LCS and 42% in the LCSD. AMEC UJ qualified the nondetected dinoseb results from samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of a possible low bias in the analytical results. (**UJ**-LL)
- Bromoxynil recovery was acceptable in the LCS at 73%, but low at 68% in the LCSD. The average recovery was acceptable at 71%. In AMEC's professional opinion data usability is not adversely affected.

- Dalapon recoveries were low in LCS/LCSD 580-1937/2-A at 69% and 60%, respectively. AMEC UJ qualified the nondetected dalapon results from samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of possible low bias in the analytical results. (**UJ**-LL)

7.2.4 Surrogate Recoveries

All surrogate recoveries associated with herbicide analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices.

7.2.5 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits and RPDs were less than the QAPP-specified maximum of 30% for all MSs associated with herbicide analysis, except as described below:

- Dinoseb recovery was low at 34% in the MS performed on W005 (519-01). AMEC UJ qualified the nondetected result of this analyte in the original sample. (**UJ**-LM)

7.2.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.3 TCLP Semivolatile Organic Compounds by EPA Method 8270C

TCLP SVOC data from the WDL TS may be considered usable with the limitations described below. Summaries of qualified SVOC results are presented in Table 14.

7.3.1 Holding Time

Dates of TCLP extraction were not provided. EPA Method 1311 recommends TCLP extraction within 14 days of sample collection and preparatory extraction within 7 days of TCLP extraction for organic compounds. All TCLP leachates were extracted for SVOC analysis within 21 days of sampling and analyzed within 40 days of preparatory extraction.

7.3.2 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with these samples.

7.3.3 LCS Recovery

All LCS recoveries associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described below:.

- Hexachloroethane and 2-methylphenol recoveries were both low at 63% in LCS G5L090000-277. AMEC UJ qualified nondetected results and J qualified detected results for hexachloroethane and 2-methylphenol in samples W020 (501-01), W019 (502-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of possible low bias in the analytical results. (**J/UJ**-LL)
- 1,4-dichlorobenzene (64%), hexachloroethane (58%), and 2-methylphenol (59%) recoveries were low in LCS G5L090000-277. AMEC J qualified detected results and UJ qualified nondetected results for these analytes in samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of possible low bias in the analytical results. (**J/UJ**-LL)

7.3.4 MS/MSD Recovery and Precision

Recovery was within the QAPP-specified 60 to 140% acceptance limits and RPDs were less than the QAPP-specified maximum of 30% for all MSs associated with SVOC analysis, except as described below:

- 1,4-dichlorobenzene, hexachloroethane, and naphthalene recoveries were outside of acceptance limits in the MS/MSD performed on sample W020 (501-01). Specific limitations are described below:
  - 1,4-Dichlorobenzene recovery was low at 58% in the MS, but acceptable at 75% in the MSD. The average recovery was acceptable at 67%, and the RPD between the MS and MSD was acceptable at 26%. In AMEC's professional opinion data usability, is not adversely affected.
  - Hexachloroethane recovery was low at 52% in the MS, but acceptable at 67% in the MSD. The average recovery was acceptable at 60%, and the RPD between the MS and MSD was acceptable at 26%. In AMEC's professional opinion data usability, is not adversely affected.
  - Naphthalene recovery was low at 59% in the MS, but acceptable at 71% in the MSD . The average recovery was acceptable at 65%, and the RPD between the MS and MSD was acceptable at 18%. In AMEC's professional opinion, data usability is not adversely affected.
- Hexachloroethane recovery was low at 55% and 57% in the MS/MSD performed on sample W007 (517-01). AMEC UJ qualified the nondetected hexachloroethane result in the original sample because of possible low bias due to matrix interference. (**UJ**-LM)

7.3.5 Surrogate Recoveries

Recoveries of all surrogates associated with SVOC analysis were acceptable, except as described below. As specified in EPA Method 8270C, up to one surrogate from each extraction fraction may be outside of acceptance limits without affecting data usability.

- Recoveries of the surrogate compounds 2-fluorophenol and phenol-d_5 were less than 60% in samples W020 (501-01), W019 (502-01), W018 (503-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), W008 (516-01), W007 (517-01), W006 (518-01), W005

(519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) AMEC J qualified all detected results and UJ qualified all nondetected results for the acid extractable compounds (phenols) in the associated samples. (**J/UJ**-LS)

- Recoveries of the surrogate compounds 2-fluorobiphenyl, phenol-d_5, and nitrobenzene-d_5 were low in sample W017 3-4 (504-01). AMEC J qualified all detected results and UJ qualified all nondetected results from this sample because of a possible low bias in the analytical data. (**J/UJ**-LS)
- Recoveries of the surrogate compounds 2-fluorobiphenyl and phenol-d_5 were less than 60% in samples G5L090000-277-MB, G5L090000-277-LCS, W020 (501-01) MS, G5L090000-379-MB, G5L090000-379-LCS, and W007 (517-01) MS/MSD. According to EPA Method 8270C, up to one surrogate from each fraction can be outside of acceptance limits without affecting data usability. No data qualifications were made as a result of surrogate recovery excursions for the associated samples.
- No surrogate compounds were recovered in sample W002 (522-01). This sample was diluted ten-fold, and the effect on data usability could not be fully evaluated. AMEC did not qualify the data based on the lack of surrogate recoveries.

7.3.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

According to the STL-SAC case narratives associated with these samples, di-n-octyl-phthalate recovery was outside of the recommended control limits in the daily continuing calibration verification. This may represent a high bias for all phthalate compounds. All phthalate compounds were nondetected for these samples, and data usability is not adversely affected by the possible high bias in the analytical results.

7.4 TCLP Organochlorine Pesticides by EPA Method 8081A

OCP data from the WDL TS project may be considered usable with the limitations and exceptions described below. Summaries of qualified OCP results are presented in Table 15.

7.4.1 Holding Time

Dates of TCLP extraction were not provided. EPA Method 1311 recommends TCLP extraction within 14 days of sample collection and preparatory extraction within 7 days of TCLP extraction for organic compounds. All TCLP leachates were extracted for SVOC analysis within 21 days of sampling and analyzed within 40 days of preparatory extraction.

7.4.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with OCP analysis.

7.4.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with OCP analysis, except as described below:

- Endrin aldehyde recovery was low at 65% in LCS sample G5L090000-365. AMEC UJ qualified the nondetected endrin aldehyde results from samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because of possible low bias in the analytical results. (**UJ**-LL)

7.4.4 Surrogate Recoveries

Surrogate recoveries associated with OCP analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- Surrogate compounds DCB and TCMX were not recovered from the MS/MSD performed on sample W006 (518-01) or from samples W002 (522-01) and W006 (518-01) because of sample dilution. The effect on data usability cannot be fully evaluated and AMEC did not qualify any of the data.
- DCB recovery was low at 42% in sample W016 (506-01). AMEC UJ qualified the nondetected results in this sample because of possible low bias in the analytical results. (**UJ**-LS)
- DCB recovery was low at 34% in sample W014 (508-01). AMEC J qualified detected results and UJ qualified nondetected results in this sample because of possible low bias in the analytical results. (**J/UJ**-LS)

- DCB recovery was high at 143% in sample W015 (507-01). Recovery was high and no target analytes were detected. Data usability is not adversely affected.
- TCMX recoveries were high in samples W018 (503-01), W013 (509-01), W012 (510-01), W011 3-4 (513-01), and W004 (520-01). Recoveries were high and no target analytes were detected in these samples. Data usability is not adversely affected.
- TCMX recovery was high at 250% in sample W007 (517-01). AMEC J qualified detected analytes in this sample because of possible high bias in the analytical results. (**J**-HS).

7.4.5 MS/MSD Recovery and Precision

Precision and recovery were within the QAPP-specified 60 to 140% acceptance limits in all MSs associated with OCP analysis, except as described below:

- No analytes or surrogates were recovered from the MS/MSD performed on sample W006 (518-01). The sample was diluted ten-fold prior to analysis. The dilution may have reduced spike concentrations to below the MRL. Effect on data usability is indeterminate, and data has not been qualified.
- Alpha-chlordane (143/138%), endosulfan I (152/126%), gamma-chlordane (465/453%), and heptachlor epoxide (204/194%) recoveries were high in the MS/MSD performed on sample W019 (502-01). Recoveries were high and these analytes were not detected in the original sample. Data usability is not adversely affected.

7.4.6 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

The laboratory PG qualified detected beta-BHC in sample W010 (514-01) and gamma-chlordane in sample W007 (517-01) because of greater than 40% difference between original and confirmation analyses. Only one set of data was provided. AMEC N qualified the results as being presumptively identified. (**N**-SC)

7.5 TCLP Polychlorinated Biphenyls by EPA method 8082

PCB data from the WDL TS project may be considered usable with the limitations and exceptions described below. Summaries of qualified PCB results are presented in Table 16.

7.5.1 Holding Time

Dates of TCLP extraction were not provided. EPA Method 1311 recommends TCLP extraction within 14 days of sample collection and preparatory extraction within 7 days of TCLP extraction for organic compounds. All TCLP leachates were extracted for SVOC analysis within 21 days of sampling and analyzed within 40 days of preparatory extraction.

7.5.2 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with PCB analysis.

7.5.3 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with PCB analysis.

7.5.4 Surrogate Recoveries

Surrogate recoveries associated with PCB analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- Surrogate compounds DCB and TCMX were not recovered in samples W001 (523-01), W002 (522-01), W003 (521-01), W004 (520-01), W006 (518-01), W012 (510-01), W013 (509-01), W014 (508-01), W016 (506-01), W017 7-11 (505-01), W017 3-4 (504-01), W018 (503-01), and W019 (502-01) because of fivefold sample dilution. The dilution may have reduced the surrogate compound concentrations to below the MRL. Effect on data usability is indeterminate, and data has not been qualified.

7.5.5 MS/MSD Recovery and Precision

Precision and recovery were within the QAPP-specified 60 to 140% acceptance limits in all MSs associated with PCB analysis, except as described below.

- Aroclor 1016 recoveries were high at 156% and 163%, and Aroclor 1260 recoveries were high at 142% and 143%, in the MS/MSD performed on sample W018 (503-01). Recoveries were high and no Aroclors were detected in the original sample. Data usability is not adversely affected.

7.6 TCLP Metals by EPA 6010B/6020 and EPA 7471A

Metals data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified metals results may be found in Table 17.

7.6.1 Holding Time

All samples were extracted and analyzed for mercury within the recommended technical holding time of 28 days and for all other metals within the recommended technical holding time of 180 days.

7.6.2 Laboratory Blanks

Target analytes should not be detected in blank samples. When the concentration detected in the blank is less than the MRL, concentrations in associated samples greater than the MRL, but less than 5 times the concentration detected in the blank have been U qualified by AMEC. When the absolute concentration detected in the blank is greater than the MRL, concentrations in associated samples greater than the MRL, but less than ten times the concentration detected in the blank have been U qualified by AMEC. In both cases, sample concentrations between the IDL and MRL, and less than 5 or 10 times the concentration detected in the blank have been U qualified at the MRL concentration.

Target analyte concentrations in laboratory blanks associated with metals are described below:

- Cobalt (0.000059 mg/L), manganese (0.0019 mg/L), nickel (0.0041 mg/L), copper (0.0051 mg/L), zinc (0.054 mg/L), barium (0.059 mg/L), chromium (0.002 mg/L), lead (0.026 mg/L), thallium (0.0032 mg/L), antimony (0.0068 mg/L), arsenic (0.00098mg/L), and vanadium (0.0048 mg/L) were detected in method blank G5L090000-175. Specific limitations are described below:
    - Cobalt, manganese, arsenic, and barium were either not detected in the associated samples or were detected at concentrations greater than 5 times

the concentrations detected in the blank. Data usability is not adversely affected.

- AMEC U qualified the detected copper, antimony, vanadium, zinc, and lead results from samples W020 (501-01), W019 (502-01), and W017 3-4 (504-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected nickel and thallium results from sample W020 (501-01) because the concentrations detected in the sample were less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected chromium result from sample W017 3-4 (504-01) because the concentration detected in the sample was less than 5 times the concentration detected in the blank. (**U**-MB)

- Boron and calcium were detected at concentrations of 0.027 mg/L and 0.38 mg/L, respectively, in method blank G5L120000-182. These analytes were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentrations detected in the blank. Data usability is not adversely affected.
- Cobalt (0.000071mg/L), manganese (0.004 mg/L), nickel (0.0078 mg/L), copper (0.002 mg/L), zinc (0.16 mg/L), barium (0.22 mg/L), chromium (0.0045 mg/L), lead (0.00056 mg/L), thallium (0.0019 mg/L), and selenium (0.0026 mg/L) were detected in method blank G5L120000-203. Specific limitations are described below:
  - Cobalt, manganese, and nickel were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
  - AMEC U qualified the detected copper and zinc results from samples W018 (503-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), and W013 (509-01) because the concentrations in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
  - AMEC U qualified the detected barium results from samples W018 (503-01) W017 7-11 (505-01), W016 (506-01), and W014 (508-01) because the concentrations detected in the associated samples were less than 5 times the concentration detected in the blank. (**U**-MB)
  - AMEC U the qualified detected chromium results from samples W017 7-11 (505-01), W016 (506-01), and W015 (507-01) because the concentrations

detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)

- AMEC U qualified the detected lead result from sample W015 (507-01) because the concentration detected in the sample was less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected thallium result from sample W018 (503-01) because the concentration detected in the sample was less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected selenium results from samples W018 (503-01), W017 7-11 (505), W016 (506-01), W015 (507-01), W014 (508-01), and W013 (509-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)

- Boron was detected at a concentration of 0.08 mg/L in method blank G5L120000-245. AMEC U qualified the detected boron results from samples W017 7-11 (505-01), W016 (506-01), W014 (508-01), and W013 (509-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
- Calcium was detected at a concentration of 0.38 mg/L in method blank G5L120000-245. Calcium was either not detected in the associated samples or was detected at a concentration of greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
- Copper (0.0048 mg/L), zinc (0.11 mg/L), barium (0.16 mg/L), chromium (0.0011 mg/L), manganese (0.0012 mg/L), lead (0.0003 mg/L), selenium (0.0019 mg/L), nickel (0.0025 mg/L), and thallium (0.0023 mg/L) were detected in method blank G5L120000-249. Specific implications are described below:
  - AMEC U qualified the detected of copper, zinc, barium, and chromium results from samples W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
  - Manganese was either not detected in the associated samples or was detected at a concentration of greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
  - AMEC U qualified the detected lead results from samples W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W009 (515-01), and W008 (516-

01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)

- AMEC U qualified the detected nickel and thallium results from sample W011 18.5-20 (511-01) because the concentration detected in the sample was less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected selenium results from samples W012 (510-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)

- Boron (0.04 mg/L) and calcium (0.019 mg/L) were detected in method blank G5L120000-260. Specific limitations include the following:
  - AMEC U qualified the detected boron results for samples W011 18.5-20 (511-01), W011 9-10 (512-01), W010 (514-01), and W009 (515-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
  - Calcium was either not detected or detected at a concentration greater than 5 times the concentration detected in the blank for the associated samples. Data usability is not adversely affected.

- Aluminum (0.5 mg/L), antimony (0.00058 mg/L), cobalt (0.00012 mg/L), copper (0.0009 mg/L), manganese (0.0032 mg/L), molybdenum (0.0032 mg/L), nickel (0.0034 mg/L), thallium (0.00083 mg/L), vanadium (0.0059 mg/L), zinc (0.17 mg/L), arsenic (0.0044 mg/L), barium (0.29 mg/L), chromium (0.14 mg/L), lead (0.00048 mg/L), and selenium (0.0017 mg/L) were detected in method blank G5L130000-294. Specific limitations are described below:
  - Antimony, manganese, molybdenum, nickel, and arsenic were either not detected in the associated samples or were detected at concentrations greater than 5 times the concentrations detected in the blank. Data usability is not adversely affected.
  - AMEC U qualified the detected aluminum, zinc, barium, and chromium results from samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)

- AMEC U qualified the detected copper results from samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W002 (522-01), and W001 (523-01) because the detected concentrations in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected thallium results from samples W007 (517-01) and W004 (520-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected vanadium results from samples W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected selenium results from samples W007 (517-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
- AMEC U qualified the detected lead results from sample W001 (523-01) because the concentration detected in the sample was less than 5 times the concentration detected in the blank. (**U**-MB)

- Boron (0.079 mg/L) and calcium (0.035 mg/L) were detected in method blank G5L120000-260. Specific limitations include the following:
  - AMEC U qualified the detected boron results from samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U**-MB)
  - Calcium either was not detected in the associated samples or was detected at a concentration of greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.

7.6.3 LCS Recovery

Recoveries were acceptable in all LCSs associated with metals analysis.

7.6.4 MS/MSD Recovery and Precision

Precision and recovery were acceptable in all MSs associated with metals analysis.

7.6.5 Data Reporting and Analytical Procedures

The laboratory B qualified detected results with concentrations between the RL and IDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

It is not appropriate to analyze TCLP extracts for sodium because the extraction fluid contains sodium hydroxide. Sodium was detected at concentrations greater than the MRL in all method blanks, and sodium recovery was high in all LCSs associated with these samples. AMEC R qualified and rejected all detected sodium results from these samples. (**R**-IM)

7.7 TCLP Dioxins and Furans by EPA Method 8290

Dioxins and furans data from the WDL TS may be considered usable with the limitations and exceptions described below. Summaries of qualified dioxins and furans results may be found in Table 18.

7.7.1 Holding Time

All samples were extracted within the method-specified holding time of 30 days from sample collection until extraction and all extracts were analyzed within the method specified time of 45 days from extraction until analysis.

7.7.2 Laboratory Blanks

Target analytes were not detected in the laboratory blanks associated with dioxins and furans analysis, except as described below:

- Method blank G5L120000-303 was analyzed four times. No analytes were detected in three of the runs. Total TCDF (270 picograms per liter [pg/L]) and total PeCDF (94 pg/L) were recovered in one run and were used to qualify data. Specific limitations are described below:
    - AMEC U qualified the detected total TCDF results from samples W020 (501-01), W018 (503-01), W017 3-4 (504-01), W017 7-11 (505-01), W016 (506-01), W015 (507-01), W014 (508-01), W013 (509-01), W012 (510-01), W011 18.5-20 (511-01), W011 9-10 (512-01), W011 3-4 (513-01), W010 (514-01), W009 (515-01), and W008 (516-01) because of analyte concentrations less than 5 times the concentration detected in the blank. (**U**-MB)

- AMEC U qualified the detected total PeCDF results from samples W019 (502-01), W017 7-11 (505-01), W014 (508-01), W013 (509-01), W012 (510-01) and W008 (516-01) because of analyte concentrations less than 5 times the concentration detected in the blank. (**U**-MB)

7.7.3 LCS Recovery

Recoveries were acceptable in all LCSs associated with dioxins and furans analysis.

7.7.4 Internal Standard Recoveries

Internal standard recoveries associated with analysis of these samples for dioxins and furans were within the method-specified 25 to 150% acceptance limits.

7.7.5 Data Reporting

STL-SAC J qualified data when the individual congener concentration was less than the instrument's lowest calibration level. All of STL's J qualifiers are appropriate and should be applied to the final data.

8.0 SUMMARY AND CONCLUSIONS

Data generated for the WDL TS are of acceptable quality and are usable with the addition of the qualifiers listed in Tables 2 through 18.

A total of 10,814 results underwent data validation. Ninety-one results (0.8%) were rejected during data quality review, and the overall completeness of the data set exceeded 95%.

In addition, 946 results (8.7%) were J qualified, 1,423 results (13%) were UJ qualified, 226 results (2.1%) were U qualified, 9 results (~0.1%) were N qualified, and 1 result (~0.01%) was NJ qualified.

The following results were rejected during data quality review.

Total VOCs

- Bromomethane recovery was less than 10% in the VOC MS/MSD performed on sample W008 (516-01). AMEC R qualified and rejected the nondetected bromomethane result from sample W008 (516-01) because of possible analyte suppression due to matrix interference. (See Section 6.1.6)

- No QC data was provided for the VOC analyte 2-ethyl-1-hexanol except for laboratory duplicate analyses. AMEC R qualified and rejected all nondetected results and J qualified all detected results for this analyte in all samples because of a lack of appropriate QC. (See Section 6.1.7)

Total SVOCs

- 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, hexachlorocylcopentadiene, 4-nitrophenol, and pentachlorophenol recoveries were less than 10% in the SVOC MS/MSD performed on sample W007 (517-01). AMEC R qualified and rejected the nondetected results for these analytes in the original sample because of possible analyte suppression due to matrix interference. (See Section 6.3.4)

Total PCBs

- Aroclors 1016 and 1260 were not recovered from LCS G5L010000-093, associated with samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01). AMEC R qualified and rejected the nondetected Aroclor results from these samples. (See Section 6.5.3)

TCLP Metals

- TCLP sodium results for all samples were rejected. The TCLP extraction fluid contains sodium hydroxide; therefore it is not appropriate to analyze TCLP leachates for sodium.

The remainder of the data is generally usable and of good quality, with the exceptions described below.

- The laboratories J qualified detected results with concentrations between the MRL and MDL. STL-SAC B qualified detected metals results with concentrations between the RL and IDL. AMEC concurs that these results are quantitative estimates and J qualified these results on Tables 2 through 18.
- The laboratories E qualified detected results that exceeded the instrument's calibration range. AMEC concurs that these results are quantitative estimates if no further dilutions were performed, and J qualified these results on Tables 2 through 18.

- Sample W005 (519-01) broke in transit to STL-SAC. AMEC J qualified all detected results and UJ qualified all nondetected results for analyses performed on this sample at STL-SAC. (See Section 5.2)

Total VOCs

- Target analytes were detected in VOC method blanks associated with several samples. AMEC U qualified detected analyte concentrations less than 5 times the concentration detected in the method blanks. (See Section 6.1.2)
- RPDs for several analytes exceeded acceptance limits in the laboratory duplicate VOC analysis performed on sample W001 (523-01). AMEC J qualified results for these analytes. (See Section 6.1.3)
- VOC LCS/LCSD recoveries were outside of acceptance limits for several analytes. AMEC J qualified detected results and UJ detected nondetected results for these analytes for the affected samples. (See Section 6.1.4)
- VOC MS recoveries for several analytes were outside of acceptance limits in the spike performed on sample W008 (516-01). AMEC J qualified detected results and UJ detected nondetected results for these analytes in the original sample. (See Section 6.1.6)

Total Herbicides

- Herbicide LCS/LCSD recoveries for several analytes were outside of acceptance limits. AMEC J qualified detected results and UJ detected nondetected results for these analytes in the affected samples. (See Section 6.2.3)
- Herbicide surrogate compound recoveries were outside acceptance limits in samples W007 (517-01), W006 (518-01), and W002 (522-01). AMEC J qualified detected results and UJ detected nondetected herbicide results in the affected samples. (See Section 6.2.4)
- Herbicide MS recoveries were outside acceptance limits for several analytes in the spikes performed on samples W005 (519-01) and W020 (501-01). AMEC J qualified detected results and UJ detected nondetected results for these analytes in the affected samples. (See Section 6.2.5)

Total SVOCs

- The laboratory extracted samples W007 (517-01), W006 (518-01), W005 (519-01), W004 (520-01), W003 (521-01), W002 (522-01), and W001 (523-01) within the

method-specified holding time of 14 days, but several QC parameters were outside of acceptance limits for all samples. The laboratory re-extracted the samples 22 days after collection. The results from the re-extracted samples were comparable to the original results, but had fewer QC exceedances. Data from the re-extracted samples were reported. AMEC J qualified all detected SVOC results and UJ qualified all nondetected results of SVOCs in these samples because of the holding time exceedance. (See Section 6.3.1)

- SVOC LCS recoveries for several analytes were outside of acceptance limits. AMEC J qualified detected results and UJ qualified nondetected results for these analytes in the affected samples. (See Section 6.3.3)
- SVOC MS recoveries for several analytes in the spike performed on sample W007 (517-01) were outside of acceptance limits. AMEC J qualified detected results and UJ detected nondetected results for these analytes in the original sample. (See Section 6.3.4)

Total OCPs

- Endrin aldehyde recovery was low in an OCP LCS. AMEC J qualified detected results and UJ detected nondetected results for this analyte in the affected samples. (See Section 6.4.4)
- The difference between OCP results for primary and secondary column analysis of delta-BHC, 4,4'-DDE, or 4,4'-DDT was greater than 40% in several samples. AMEC N qualified the results for the affected samples. (See Section 6.4.6)

Total PCBs

- Surrogate recovery was high for PCBs in sample W014 (508-01). AMEC J qualified detected Aroclor 1242 in this sample because of possible high bias in the analytical results. (See Section 6.5.4)

Total GRO

- RPDs between duplicate GRO samples exceeded the acceptance limits in samples W001 (523-01) and W011 18.5-20 (511-01). AMEC J qualified GRO results in these samples because of possible bias in the analytical data. (See Section 6.7.4)
- Surrogate recoveries were outside of acceptance limits in several NWTPH-Gx samples. AMEC J qualified detected GRO results in these samples because of possible bias in the analytical data. (See Section 6.7.5)

Total DRO and RRO

- RPDs between laboratory duplicate NWTPH-Dx samples exceeded the acceptance limits in sample W004 (520-01). AMEC J qualified DRO and RRO results in this sample because of possible bias in the analytical data. (See Section 6.8.4)
- Surrogate o-terphenyl recovery was low in several NWTPH-Dx samples. AMEC J qualified detected results and UJ qualified nondetected DRO and RRO results in the affected samples. (See Section 6.8.5)
- RRO recovery was high in the NWTPH-Dx MS performed on sample W016 (506-01). AMEC J qualified the detected RRO result in the original sample because of possible bias in the analytical data. (See Section 6.8.6)

Total Metals

- Target analytes were detected in the metals method blanks associated with several samples. AMEC U qualified the detected results that were less than 5 times the concentration detected in the blanks. (See Section 6.9.2)
- Metals MS/MSD recoveries for several analytes were outside of acceptance limits in the spikes performed on samples W006 (518-01), W019 (502-01), and W020 (501-01). AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes in the affected samples. (See Section 6.9.4)

Total General Chemistry Parameters

- Sulfide recoveries were low in the LCSs associated with all samples. AMEC J qualified the detected sulfide results and UJ qualified nondetected sulfide results in all samples. (See Section 6.10.3)
- Sulfide recovery was low in the MSs performed on several samples. AMEC UJ qualified the nondetected sulfide results in the original samples. (See Section 6.10.4)

Total Dioxins and Furans

- Recovery of an IS was low in sample W004 (520-01). AMEC J qualified the detected 2,3,7,8-TCDF, total TCDF, and total PeCDF results in this sample because of possible high bias as demonstrated by low IS recovery.

TCLP VOCs

- Target analytes were detected in the TCLP VOC method blanks associated with several samples. AMEC U qualified the detected results that were less than 5 times the concentration detected in the method blanks. (See Section 7.1.2)
- Dichlorodifluoromethane recovery was low in a TCLP VOC LCS. AMEC J qualified detected results and UJ qualified nondetected results for this analyte in the affected samples. (See Section 7.1.4)
- Chloroform recovery was low in the TCLP VOC MS performed on sample W001 (523-01). AMEC UJ qualified the nondetected result for this analyte in the original sample. (See Section 7.1.6)

TCLP Herbicides

- TCLP herbicide LCS/LCSD recoveries for several analytes were outside of acceptance limits. AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes in the affected samples. (See Section 7.2.3)
- Dinoseb recovery was low in the TCLP herbicide MS performed on sample W005 (519-01). AMEC UJ qualified the nondetected dinoseb result in the original sample. (See Section 7.2.5)

TCLP SVOCs

- TCLP SVOC LCS/LCSD recoveries for several analytes were outside of acceptance limits. AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes in the affected samples. (See Section 7.3.3)
- TCLP SVOC acid-fraction surrogate recoveries were low for all samples. AMEC J qualified the detected results and UJ qualified the nondetected results of phenol compounds in the affected samples. (See Section 7.3.5)
- TCLP SVOC surrogate recoveries were low in sample W017 3-4 (504-01). AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes in this sample. (See Section 7.3.5)

TCLP OCPs

- Endrin aldehyde recovery was low in a TCLP OCP LCS/LCSD. AMEC J qualified the detected results and UJ qualified the nondetected results for this analyte in the affected samples. (See Section 7.4.3)
- Surrogate recoveries were low in the TCLP OCP samples W014 (508-01) and W016 (506-01). AMEC J qualified detected results and UJ qualified nondetected results in these samples. Surrogate recoveries were high for sample W007 (517-01). AMEC J qualified detected results in this sample. (See Section 7.4.4)
- The difference between TCLP OCP results for primary and secondary column analysis of delta-BHC and gamma-chlordane were greater than 40% in samples W010 (514-01) and W007 (517-01), respectively. AMEC N qualified the results in the affected samples. (See Section 7.4.6)

TCLP Metals

- Several target analytes were detected in the TCLP metals blanks. AMEC U qualified detected analyte concentrations less than 5 times the concentration detected in the blanks, if the detected blank concentration was less than the MRL, or at concentrations of less than ten times the detected blank concentration if the concentration in the blanks were above the MRL. (See Section 7.6.2)

TCLP Dioxins and Furans

- Total TCDF and total PeCDF were detected in the TCLP dioxins and furans method blanks associated with several samples. AMEC U qualified results of these analytes that were detected in associated samples at less than 5 times the concentration detected in the blank. (See Section 7.7.2)

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LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Data Quality Review for the West Doane Lake Treatability Study is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
Field Samples Submitted to STL-SEA and STL-SAC with Corresponding Laboratory IDs
West Doane Lake Treatability Study
RP - Portland

Sample Location	Sample Number	STL-SEA Laboratory Sample Number	STL-SAC Laboratory Sample Number
W001	523-01	580-684-8	G5K230224-008
W002	522-01	580-684-7	G5K230224-007
W003	521-01	580-684-6	G5K230224-006
W004	520-01	580-684-5	G5K230224-005
W005	519-01	580-684-4	G5K230224-004
W006	518-01	580-684-3	G5K230224-003
W007	517-01	580-684-2	G5K230224-002
W008	516-01	580-683-19	G5K220334-019
W009	515-01	580-683-18	G5K220334-018
W010	514-01	580-683-17	G5K220334-017
W011 3-4	513-01	580-683-16	G5K220334-016
W011 9-10	512-01	580-683-15	G5K220334-015
W011 18.5-20	511-01	580-683-14	G5K220334-014
W012	510-01	580-683-12	G5K220334-012
W013	509-01	580-683-11	G5K220334-011
W014	508-01	580-683-10	G5K220334-010
W015	507-01	580-683-9	G5K220334-009
W016	506-01	580-683-7	G5K220334-007
W017 7-11	505-01	580-683-6	G5K220334-006
W017 3-4	504-01	580-683-5	G5K220334-005
W018	503-01	580-683-4	G5K220334-004
W019	502-01	580-683-3	G5K220334-003
W020	501-01	580-683-2	G5K220334-002
Trip Blank	501-03	580-683-1	G5K220334-001
Trip Blank	506-03	580-683-8	G5K220334-008
Trip Blank	511-03	580-683-13	G5K220334-013

Notes:

ID = identification

STL - SAC = Severn Trent Laboratories, Inc. - Sacramento

STL - SEA = Severn Trent Laboratories, Inc. - Seattle

TABLE 2
Data Qualifiers for Volatile Organic Coumpounds by EPA Method 8260B
West Doane Lake Treatability Study
RP- Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017 3-4	(505-01) W017 7-11	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011 18.5-20	(512-01) W011 9-10	(513-01) W011 3-4	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
1,1,2,2-Tetrachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichlorobenzene	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	J DL	J DL	J DL
1,2,3-Trichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trichlorobenzene	(none)	(none)	(none)	J DL	J DL	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J LM	J DL	(none)	J DL	(none)	(none)	(none)	J HD
1,2,4-Trimethylbenzene	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J HD
1,2-Dibromo-3-chloropropane	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dibromoethane	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J UC	(none)	(none)	(none)	J UC	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J HD
1,2-Dichloroethane	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3,5-Trimethylbenzene	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J HD
1,3-Dichlorobenzene	(none)	(none)	(none)	J DL	J DL	J DL	J DL	(none)	(none)	(none)	J DL	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J HD
1,4-Dichlorobenzene	(none)	(none)	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J HD
2,2-Dichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Butanone (MEK)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)
2-Chlorotoluene	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Ethyl-1-hexanol	R NQ	R NQ	J NQ	J NQ	J NQ	J NQ	R NQ	J NQ	J NQ	R NQ	R NQ	R NQ	R NQ	R NQ	J NQ	R NQ	J NQ	J NQ	J NQ	J NQ	J DL, NQ	J NQ	J NQ,HD
4-Isopropyltoluene	J HL,DL	J HL	J HL	J HL,DL	(none)	J HL	J HL,DL	J HL,DL	J HL	J HL	(none)	(none)	(none)	J HL,DL	J HL,DL	J HL	(none)	J HL,DL	(none)	(none)	J HL,DL	J HL,DL	J HL,DL
Acetone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	J DL
Benzene	J DL	(none)	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	J DL	(none)	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	(none)
Bromochloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromodichloromethane	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoform	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromomethane	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	R LM	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL
Carbon disulfide	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)	J DL	J DL	(none)	J DL	J DL	J DL	J DL	(none)	(none)	(none)	(none)	J DL	J DL	(none)	J DL
Carbon tetrachloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	(none)	(none)	J DL	J DL	(none)	(none)	(none)	J DL	J HD
Chloroethane	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL
Chloroform	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloromethane	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
cis-1,2-Dichloroethene	(none)	(none)	(none)	J DL	(none)	(none)	J DL	(none)	J DL	J DL	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	J DL
cis-1,3-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibromochloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichlorodifluoromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL
Ethylbenzene	J DL	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	J DL	(none)	(none)	J DL	J DL	(none)	(none)
Iodomethane	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	J DL	(none)	(none)	U MB	(none)	(none)	(none)	U MB
Isopropylbenzene	J HL,DL	J HL,DL	J HL	J HL,DL	(none)	J HL	J HL,DL	J HL	J HL	J HL	(none)	(none)	J HL,DL	J HL,DL	J HL,DL	J HL,DL	(none)	(none)	(none)	(none)	(none)	(none)	J HL
m,p-Xylene	J DL	(none)	(none)	(none)	U MB	(none)	(none)	(none)	(none)	(none)	U MB	U MB	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Methylene chloride	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	J DL	(none)	J DL	(none)	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	(none)	(none)	J HD
Naphthalene	U MB	(none)	(none)	J DL	U MB	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	J DL	J LM	J DL	J DL	J DL	J DL	J DL	J DL	J DL
n-Propylbenzene	J DL	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J HD
o-Xylene	J DL	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	J DL	(none)	J DL	J DL	J DL	(none)	(none)
sec-Butylbenzene	J HL,DL	J HL	J HL	J HL,DL	(none)	J HL	J HL,DL	J HL	J HL	J HL	(none)	(none)	J HL,DL	J HL,DL	J HL,DL	J HL,DL	(none)	J DL	J DL	(none)	J DL	J DL	J DL
Tetrachloroethene	(none)	(none)	J DL	(none)	(none)	J DL	(none)	J DL	(none)	J DL	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toluene	J DL	(none)	(none)	J DL	U MB	(none)	(none)	(none)	(none)	(none)	U MB	U MB	J DL	J DL	J DL	J DL	J DL	J DL	U MB	J DL	J DL	J DL	J DL
trans-1,3-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Trichloroethene	(none)	J DL	(none)	J DL	(none)	J DL	J DL	J DL	(none)	(none)	(none)	(none)	J DL	J DL	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)
Trichlorofluoromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vinyl chloride	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	UJ LM	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Qualifier Reason Code Definitions:

DL = Detected concentration is between method detection limit and method reporting limit
HD = High laboratory duplicate relative percent difference
HL = High laboratory control sample recovery
HS = High surrogate recovery
LL = Low laboratory control sample recovery
LM = Low matrix spike recovery
LS = Low surrogate recovery
MB = Method blank contamination
NQ = No quality control results related to this data
UC = Upper calibration level exceeded

TABLE 3
Data Qualifiers for Chlorinated Herbicides by EPA Method 8151A
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
2,4,5-T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,4,5-TP (Silvex)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,4-D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,4-DB	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoxynil	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dalapon	**UJ LL,LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dicamba	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichloroprop	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dinoseb	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
MCPA	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
MCPP	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
2,4,5-T	(none)	(none)	(none)	(none)	**J LS**	**J LS**	(none)	(none)	(none)	**J HS**	(none)
2,4,5-TP (Silvex)	(none)	(none)	(none)	(none)	**UJ LL,LS**	**UJ LL,LS**	**UJ LL**	**UJ LL**	**UJ LL**	**J LL,HS**	**UJ LL**
2,4-D	(none)	(none)	(none)	(none)	**J LL,LS**	**J LL,LS**	**J LL**	**J LL**	**J LL**	**J LL,HS**	**J LL**
2,4-DB	(none)	(none)	(none)	(none)	**J LS**	**J LS**	(none)	(none)	(none)	**J HS**	(none)
Bromoxynil	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**	(none)	(none)	(none)	(none)	(none)
Dalapon	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL,LS**	**UJ LL,LS**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dicamba	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**	(none)	(none)	(none)	(none)	(none)
Dichloroprop	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**	(none)	(none)	(none)	(none)	(none)
Dinoseb	(none)	(none)	(none)	(none)	**UJ LL,LS**	**UJ LL,LS**	**UJ LL,LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
MCPA	(none)	(none)	(none)	(none)	**J LS**	**J LS**	(none)	(none)	(none)	**J HS**	(none)
MCPP	(none)	(none)	(none)	(none)	**UJ LS**	**J LS**	(none)	(none)	(none)	**J HS**	(none)

Qualifier Reason Code Definitions:

HS = High surrogate recovery
LL = Low laboratory control sample recovery
LM = Low matrix spike recovery
LS = Low surrogate recovery

TABLE 4
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
1,2,4-Trichlorobenzene	J LL,DL	J LL,DL	J LL,DL	UJ LL	UJ LL	J LL,DL	UJ LL	J LL,DL	J LL,DL	UJ LL	UJ DL	UJ LL	J LL,DL	J LL,DL	J LL,DL	J LL,DL	J DL,HT,LM	J HT	UJ BB,HT	J DL,HT	UJ HT	J HT	UJ HT
1,2-Dichlorobenzene	J LL,DL	UJ LL	J LL	UJ LL	UJ LL	J LL,DL	J LL,DL	J LL	J LL	J LL	UJ LL	UJ LL	J LL	J LL	J LL	J LL	J HT	J HT	UJ BB,HT	J HT	J HT	J HT	J DL,HT
1,3-Dichlorobenzene	UJ LL	UJ LL	J LL,DL	UJ LL	UJ LL	UJ LL	UJ LL	J LL,DL	J LL,DL	J LL,DL	UJ LL	UJ LL,LM	J LL,DL	J LL	UJ LL	J LL,DL	J LL,HT	J LL,HT	UJ LL,BB,HT	J LL,DL,HT	J LL,DL	J LL,HT	J LL,DL,HT
1,4-Dichlorobenzene	J LL,DL	UJ LL	J LL	UJ LL	UJ LL	UJ LL	UJ LL	J LL	J LL	J LL	UJ LL	UJ LL	J LL	J LL	J LL,DL	J LL	J LL,LM,HT	J LL,HT	UJ BB,LL,HT	J LL,HT	J LL,DL,HT	J LL,HT	J LL,DL,HT
2,4,5-Trichlorophenol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	J DL	(none)	(none)	(none)	J DL	(none)	(none)	J HT	J HT	UJ BB,HT	UJ HT	UJ HT	J HT	UJ HT
2,4,6-Trichlorophenol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	J HT	UJ HT
2,4-Dichlorophenol	J DL	(none)	(none)	J DL	J DL	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	J HT	J HT	J BB,HT	J HT	J HT	J HT	J HT
2,4-Dimethylphenol	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
2,4-Dinitrophenol	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM	UJ LL	UJ LL	UJ LL	UJ LL	R MS,HT,LL	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
2,4-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
2,6-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
2-Chloronaphthalene	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
2-Chlorophenol	UJ LL	J LL,DL	J LL,DL	UJ LL	UJ LL	UJ LL	UJ LL	J LL,DL	J LL,DL	UJ LL	UJ LL	UJ LL	UJ LL	J LL,DL	J LL,DL	J LL,DL	UJ LL,LM,HT	UJ LL,HT	UJ BB,LL,HT	J LL,DL,HT	J LL,DL	UJ LL,HT	J LL,DL,HT
2-Methyl-4,6-dinitrophenol	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	R MS,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
2-Methylnaphthalene	J DL	(none)	J DL	(none)	(none)	J DL	J DL	(none)	J DL	(none)	(none)	(none)	(none)	(none)	J DL	J DL	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	J DL,HT	J DL,HT
2-Methylphenol	J LL,DL	J LL	J LL,DL	UJ LL	UJ LL	J LL,DL	UJ LL	J LL,DL	J LL,DL	J LL,DL	UJ LL	UJ LL	UJ LL	J LL,DL	UJ LL	UJ LL	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	J DL	J HT	UJ HT
2-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
2-Nitrophenol	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
3,3'-Dichlorobenzidine	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
3-Nitroaniline	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
4-Bromophenyl phenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
4-Chloro-3-methylphenol	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	J LM,HT	J HT	J DL,BB,HT	J DL,HT	J HT	J HT	J HT
4-Chloroaniline	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
4-Chlorophenyl phenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
4-Methylphenol (P-Cresol)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
4-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
4-Nitrophenol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	R MS,LL,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
Acenaphthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	(none)	(none)	J DL	J DL	(none)	(none)	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Acenaphthylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	J DL	(none)	(none)	J DL	J DL	(none)	(none)	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	J DL,HT
Benzo(a)anthracene	J DL	(none)	J DL	J DL	(none)	J DL	J DL	J DL	J DL	J DL	(none)	(none)	J DL	J DL	J DL	(none)	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	J DL,HT	J DL,HT
Benzo(a)pyrene	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	J DL	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Benzo(b)fluoranthene	(none)	(none)	J DL	J DL	(none)	(none)	(none)	J DL	J DL	(none)	(none)	(none)	(none)	J DL	J DL	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Benzo(g,h,i)perylene	J DL	(none)	J DL	(none)	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Benzo(k)fluoranthene	J LL	J LL	J LL,DL	J LL,DL	UJ LL	J LL	UJ LL	J LL,DL	J LL,DL	UJ LL	UJ LL	UJ LL	UJ LL	J LL,DL	J LL,DL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Bis(2-Chloroethoxy) methane	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Bis(2-Chloroethyl) ether	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Bis(2-Chloroisopropyl) ether	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
bis(2-Ethylhexyl) phthalate	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Butylbenzylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Chrysene	(none)	(none)	J DL	J DL	(none)	(none)	(none)	J DL	J DL	J DL	(none)	(none)	J DL	J DL	J DL	(none)	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	J DL,HT	UJ HT
Dibenzo(a,h)anthracene	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LM,HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Dibenzofuran	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Diethylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Dimethylphthalate	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LM,HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Di-n-butylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Di-n-octyl phthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Fluoranthene	J DL	(none)	J DL	J DL	(none)	J DL	J DL	J DL	J DL	J DL	(none)	(none)	J DL	J DL	J DL	J DL	J DL,HT	J DL,HT	UJ BB,HT	UJ HT	UJ HT	J DL,HT	J DL,HT
Fluorene	J DL	J DL	J DL	(none)	(none)	J DL	(none)	J DL	J DL	J DL	(none)	(none)	J DL	(none)	J DL	J DL	J HT	J HT	UJ BB,HT	UJ HT	UJ HT	J DL,HT	J DL,HT
Hexachlorobenzene	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	J DL	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	J HT	UJ HT
Hexachlorobutadiene	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
Hexachlorocyclopentadiene	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM	UJ LL	UJ LL	UJ LL	UJ LL	R MS,HT,LL	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
Hexachloroethane	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,LM	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL,HT	UJ LL,HT	UJ BB,LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT	UJ LL,HT
Indeno(1,2,3-cd)pyrene	J DL	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Isophorone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Naphthalene	J LL	J LL	J LL	J LL,DL	UJ LL	J DL,LL	J LL	J LL	J LL	J LL,DL	UJ LL	UJ LL	UJ LL	J LL	UJ LL	UJ LL	J LL,HT	J LL,HT	J LL,DL,BB,HT	J LL,HT	J LL,HT	J LL,HT	J LL,DL,HT
Nitrobenzene	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
N-Nitrosodi-n-propyl amine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
N-Nitrosodiphenylamine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Pentachlorophenol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ-LM	(none)	(none)	(none)	(none)	R MS,HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Phenanthrene	J DL	J DL	J DL	J DL	(none)	J DL	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	J HT	J HT	UJ BB,HT	UJ HT	UJ HT	J DL,HT	J DL,HT
Phenol	UJ LL	J LL,DL	J LL,DL	UJ LL	UJ LL	UJ LL	UJ LL	J LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ HT	UJ HT	UJ BB,HT	UJ HT	UJ HT	UJ HT	UJ HT
Pyrene	(none)	(none)	J DL	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	J DL	J HT	J HT	UJ BB,HT	UJ HT	UJ HT	J DL,HT	J DL,HT

Qualifier Reason Code Definitions:

BB = Broken bottle
DL = Detected concentration is between method detection limit and method reporting limit
HL = High laboratory control sample recovery
HT = Holding time exceedance
LL = Low laboratory control sample recovery
MS = Matrix spike recovery less than 15%

TABLE 5
Data Qualifiers for OCPs by EPA Method 8081A
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
4,4'-DDD	(none)	**N SC**	(none)	(none)	(none)	(none)	(none)	(none)	**N SC**	(none)	(none)	**J DL**
4,4'-DDE	(none)	(none)	(none)	(none)	**J DL**	**N SC**	(none)	(none)	**N SC**	(none)	(none)	(none)
4,4'-DDT	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aldrin	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
alpha-BHC	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
alpha-Chlordane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
beta-BHC	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
delta-BHC	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dieldrin	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endosulfan I	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endosulfan II	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endosulfan sulfate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endrin	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Endrin aldehyde	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Endrin Ketone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
gamma-BHC (Lindane)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
gamma-Chlordane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Heptachlor	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Heptachlor epoxide	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Methoxychlor	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toxaphene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 5
Data Qualifiers for OCPs by EPA Method 8081A
West Doane Lake Treatability Study
RP - Portland

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
4,4'-DDD	(none)	(none)	(none)	**N SC**	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
4,4'-DDE	(none)	(none)	**J DL**	**N SC**	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
4,4'-DDT	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Aldrin	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
alpha-BHC	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
alpha-Chlordane	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
beta-BHC	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
delta-BHC	(none)	(none)	(none)	(none)	**N SC**	(none)	**UJ BB**	(none)	(none)	(none)	**N SC**
Dieldrin	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endosulfan I	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endosulfan II	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endosulfan sulfate	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endrin	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endrin aldehyde	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endrin Ketone	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
gamma-BHC (Lindane)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
gamma-Chlordane	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Heptachlor	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Heptachlor epoxide	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Methoxychlor	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Toxaphene	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)

Notes:

OCP = Organochlorine pesticide

Qualifier Reason Code Definitions:

BB = Broken bottle

DL = Detected concentration is between method detection limit and method reporting limit

LL = Low laboratory control sample recovery

SC = Greater than 40% difference between primary and secondary column analyses

TABLE 6
Data Qualifiers for PCBs by EPA Method 8082
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
Aroclor 1016	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1221	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1232	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1242	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J HS**	(none)	(none)	(none)	(none)
Aroclor 1248	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1254	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1260	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
Aroclor 1016	(none)	(none)	(none)	(none)	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**
Aroclor 1221	(none)	(none)	(none)	(none)	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**
Aroclor 1232	(none)	(none)	(none)	(none)	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**
Aroclor 1242	(none)	(none)	(none)	(none)	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**
Aroclor 1248	(none)	(none)	(none)	(none)	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**
Aroclor 1254	(none)	(none)	(none)	(none)	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**
Aroclor 1260	(none)	(none)	(none)	(none)	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**	**R BS**

Notes:

PCBs = Poly-chlorinated biphenyls

Qualifier Reason Code Definitions:

BS = Blank spikes with unacceptable recovery

HS = High surrogate recovery

TABLE 7
Data Qualifiers for Volatile Petroleum Products by DEQ/Ecology Method NWTPH-Gx
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(513-01) W011
Gasoline Range Organics	(none)	**J HS**	(none)	**J LS**	**J LS**	(none)	(none)	(none)	(none)	**J HD**	(none)

Analyte	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
Gasoline Range Organics	(none)	(none)	(none)	(none)	(none)	**J HS**	(none)	(none)	(none)	**J HD**

Notes:

NWTPH-Gx = Northwest Total Petroleum Hydrocarbons - Gasoline

Qualifier Reason Code Definitions:

HD = High laboratory duplicate relative percent difference
HS = High surrogate recovery
LS = Low surrogate recovery

TABLE 8
Data Qualifiers for Semivolatile Petroleum Products by DEQ/Ecology Method NWTPH-Dx
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(513-01) W011
Diesel Range Organics	(none)	(none)	(none)	(none)	**J LS**	(none)	(none)	**J LS**	(none)	(none)	**J LS**
Residual Range Organics	(none)	(none)	(none)	(none)	**J LS,HM**	(none)	(none)	**J LS**	(none)	(none)	**J LS**

Analyte	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
Diesel Range Organics	(none)	(none)	(none)	(none)	(none)	(none)	**J HD**	(none)	**J LS**	(none)
Residual Range Organics	(none)	(none)	(none)	(none)	(none)	(none)	**J HD**	(none)	**J LS**	(none)

Notes:

NWTPH-DX = Northwest Total Petroleum Hydrocarbons - Diesel

Qualifier Reason Code Definitions:

HD = High laboratory duplicate relative percent difference
HM = High matrix spike recovery
LS = Low surrogate recovery

TABLE 9
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
West Doane Lake Treatability Study
RP - Portland

Analytical Method	Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011
6020	Aluminum	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Antimony	(none)	**J HM**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**
6020	Arsenic	(none)	**J LM**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Barium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Beryllium	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
6010B	Boron	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**	**U MB**
6020	Cadmium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**
6010B	Calcium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Chromium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Cobalt	(none)	**J LM,HD**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Copper	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6010B	Iron	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Lead	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Lithium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6010B	Magnesium	**J LM**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Manganese	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
7471A	Mercury	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**
6020	Molybdenum	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Nickel	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6010B	Potassium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Selenium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6010B	Silver	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)
6020	Silver	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
6010B	Sodium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Thallium	(none)	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	**J DL**	(none)	**J DL**	**J DL**
6020	Vanadium	(none)	**J HM**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
6020	Zinc	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 9
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
West Doane Lake Treatability Study
RP - Portland

Analyte	(512-01) W011	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
Aluminum	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Antimony	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Arsenic	(none)	(none)	(none)	(none)	(none)	(none)	**J HM**	**J BB**	(none)	(none)	(none)	(none)
Barium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Beryllium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Boron	**U MB**	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	**J BB**	**J DL**	**J DL**	**J DL**	**J DL**
Cadmium	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	**J BB,DL**	(none)	(none)	(none)	(none)
Calcium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Chromium	(none)	(none)	(none)	(none)	(none)	(none)	**J HM**	**J BB**	(none)	(none)	(none)	(none)
Cobalt	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Copper	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Iron	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Lead	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Lithium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Magnesium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Manganese	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Mercury	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Molybdenum	(none)	(none)	(none)	(none)	(none)	(none)	**J HM**	**J BB**	(none)	(none)	(none)	(none)
Nickel	(none)	(none)	(none)	(none)	(none)	(none)	**J HM**	**J BB**	(none)	(none)	(none)	(none)
Potassium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Selenium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Silver	(none)	**J DL**	**J DL**	**J DL**	**J DL**	NT	NT	NT	NT	NT	NT	NT
Silver	NT	NT	NT	NT	NT	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Sodium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Thallium	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	**UJ BB**	**J DL**	(none)	**J DL**	**J DL**
Vanadium	(none)	(none)	(none)	(none)	(none)	(none)	**J HM**	**J BB**	(none)	(none)	(none)	(none)
Zinc	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)

Qualifier Reason Code Definitions:

BB = Broken bottle
DL = Detected concentration is betweeen method detection limit and method reporting limit
HD = High laboratory duplicate relative percent difference
HM = High matrix spike recovery
LM = Low matrix spike recovery
MB = Method blank contamination

Notes:

NT = Not tested

TABLE 10
Data Qualifiers for General Chemistry Parameters by Various Methods
West Doane Lake Treatability Study
RP - Portland

Analytical Method	Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
160.4	Total Volatile Solids	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
300.0	Chloride	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**
300.0	Nitrate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
300.0	Sulfate	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)	**J DL**
350.1	Ammonia as Nitrogen	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
9034	Sulfide	**UJ LL,LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL,LM**	**UJ LL**	**UJ LL**
9060	Total Organic Carbon	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
9045C	pH	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Analytical Method	Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
160.4	Total Volatile Solids	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
300.0	Chloride	(none)	(none)	(none)	(none)	(none)	(none)	**J BB,DL**	**J DL**	(none)	(none)	(none)
300.0	Nitrate	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
300.0	Sulfate	**J DL**	**J DL**	(none)	**J DL**	**J DL**	**J DL**	**J BB,DL**	**J DL**	**J DL**	(none)	(none)
350.1	Ammonia as Nitrogen	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
9034	Sulfide	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL,LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
9060	Total Organic Carbon	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
9045C	pH	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)

Qualifier Reason Code Definitions:

BB = Broken bottle
DL = Detected concentration is between method detection limit and method reporting limit
LM = Low matrix spike recovery
LL = Low laboratory control sample recovery

TABLE 11
Data Qualifiers for Dioxins and Furans by EPA Method 8280B
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
1,2,3,4,6,7,8,9-OCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8,9-OCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8,9-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,7,8-TCDD	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,7,8-TCDF	(none)	**J UC**	(none)	**J DL**	(none)	**J UC**	(none)	(none)	(none)	(none)	(none)	(none)
Total HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total TCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total TCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 11
Data Qualifiers for Dioxins and Furans by EPA Method 8280B
West Doane Lake Treatability Study
RP - Portland

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
1,2,3,4,6,7,8,9-OCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8,9-OCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	**J DL**	(none)
1,2,3,4,7,8,9-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
2,3,4,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
2,3,4,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
2,3,7,8-TCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
2,3,7,8-TCDF	(none)	(none)	(none)	(none)	(none)	**J UC**	**UJ BB**	**J LI**	(none)	**J UC**	(none)
Total HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	**J LI**	(none)	(none)	(none)
Total TCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total TCDF	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	**J LI**	(none)	(none)	(none)

Qualifier Reason Code Definitions:

BB = Broken bottle

DL = Detected concentration is between method detection limit and method reporting limit

LI = Low internal standard recovery

UC = Upper calibration level exceeded

TABLE 12
Data Qualifiers for Volatile Organic Coumpounds by EPA Method 8260B (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
1,1,1,2-Tetrachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1,1-Trichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1,2,2-Tetrachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1,2-Trichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,1-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trichlorobenzene	**U MB**	**U MB**	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
1,2,4-Trimethylbenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	(none)
1,2-Dibromo-3-chloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dibromoethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	**J DL**
1,2-Dichloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3,5-Trimethylbenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	**J DL**	(none)
1,3-Dichlorobenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	**J DL**	(none)
1,3-Dichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,4-Dichlorobenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
2,2-Dichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Butanone (MEK)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chlorotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Ethyl-1-hexanol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Hexanone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Chlorotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Isopropyltoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-methyl-2-pentanone (MIBK)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Acetone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Bromobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromochloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromodichloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoform	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromomethane	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**U MB**	**U MB**	(none)	(none)	(none)	(none)	**U MB**	(none)
Carbon disulfide	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Carbon tetrachloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroform	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LM**
Chloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
cis-1,2-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
cis-1,3-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibromochloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibromomethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichlorodifluoromethane	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Ethylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	(none)
Hexachlorobutadiene	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Iodomethane	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**
Isobutyl Alcohol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Isopropylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
m,p-Xylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	(none)
Methylene chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
n-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
n-Propylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
o-Xylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	(none)
sec-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Styrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
tert-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Tetrachloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
trans-1,2-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
trans-1,3-Dichloropropene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Trichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Trichlorofluoromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vinyl chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Qualifier Reason Code Definitions:

DL = Detected concentration is between method detection limit and method reporting limit

LM = Low matrix spike recovery

Notes:

TCLP = toxicty characteristic leaching procedure

TABLE 12
Data Qualifiers for Volatile Organic Coumpounds by EPA Method 8260B (TCLP)
West Doane Lake Treatability Study
RP - Portland

LL = Low laboratory control sample recovery

MB = Method blank contamination

TABLE 13
Data Qualifiers for Chlorinated Herbicides by EPA Method 8151A (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
2,4,5-T	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**	(none)	(none)	(none)
2,4,5-TP (Silvex)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,4-D	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,4-DB	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**
Bromoxynil	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dalapon	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dicamba	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichloroprop	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dinoseb	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
MCPA	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
MCPP	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
2,4,5-T	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**	(none)	**J DL**
2,4,5-TP (Silvex)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
2,4-D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,4-DB	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoxynil	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dalapon	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dicamba	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichloroprop	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dinoseb	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL**	**UJ LL,LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
MCPA	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
MCPP	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Notes:

TCLP = Toxicity characteristic leaching procedure

Qualifier Reason Code Definitions:

LL = Low laboratory control sample recovery

LM = Low matrix spike recovery

DL = Detected concentration is between method detection limit and method reporting limit

TABLE 14
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
1,2,4-Trichlorobenzene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	J DL	J DL	(none)	(none)
1,2-Dichlorobenzene	(none)	J DL	(none)	UJ LS	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	(none)	J BB	(none)	(none)	(none)	J DL
1,3-Dichlorobenzene	(none)	(none)	J DL	UJ LS	(none)	(none)	(none)	(none)	J DL	J DL	(none)	(none)	J DL	J DL	(none)	(none)	J DL	J DL	UJ BB	(none)	J DL	J DL	(none)
1,4-Dichlorobenzene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J LL	J LL	J LL,DL,BB	J LL	J LL	J LL	UJ LL
2,4,5-Trichlorophenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	J LS,DL	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
2,4,6-Trichlorophenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	J LS,DL	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
2,4-Dichlorophenol	UJ LS	J LS	J LS	UJ LS	J LS	J LS	UJ LS	J LS	J LS	J LS	UJ LS	UJ LS	J LS	J LS	J LS	UJ LS	J LS	J LS	J LS,BB	J LS	J LS	UJ LS	UJ LS
2,4-Dimethylphenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
2,4-Dinitrophenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
2,4-Dinitrotoluene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
2,6-Dinitrotoluene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
2-Chloronaphthalene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
2-Chlorophenol	UJ LS	J LS,DL	J LS	UJ LS	UJ LS	UJ LS	UJ LS	J LS,DL	J LS	UJ LS	UJ LS	UJ LS	J LS,DL	J LS,DL	J LS,DL	UJ LS	J LS	UJ LS	J LS,DL,BB	J LS	J LS,DL	UJ LS	UJ LS
2-Methyl-4,6-dinitrophenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
2-Methylnaphthalene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	J DL	UJ BB	(none)	(none)	(none)	(none)
2-Methylphenol	UJ LL,LS	J LL,LS,DL	J LL,LS	UJ LL,LS	UJ LL,LS	UJ LL,LS	UJ LL,LS	UJ LL,LS	J LL,LS,DL	UJ LL,LS	UJ LL,LS	UJ LL,LS	J LL,LS,DL	J LL,LS,DL	J LL,LS,DL	UJ LL,LS	J LL,LS,DL	J LL,LS	J LL,LS,DL,BB	J LL,LS,DL	UJ LL,LS	J LL,LS,DL	UJ LL,LS
2-Nitroaniline	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
2-Nitrophenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
3,3'-Dichlorobenzidine	UJ LS	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
3-Nitroaniline	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
4-Bromophenyl phenyl ether	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
4-Chloro-3-methylphenol	UJ LS	J LS	J LS	UJ LS	UJ LS	J LS,DL	J LS,DL	J LS	J LS	J LS	UJ LS	UJ LS	J LS	J LS	J LS,DL	UJ LS	UJ LS	J LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
4-Chloroaniline	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
4-Chlorophenyl phenyl ether	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
4-Methylphenol (P-Cresol)	UJ LS	J LS,DL	J LS,DL	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	J LS,DL	J LS,DL	UJ LS	UJ LS	UJ LS	J LS,DL	UJ LS	UJ LS	J LS,DL	J LS,DL	UJ LS,BB	J LS,DL	UJ LS	J LS,DL	UJ LS
4-Nitroaniline	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
4-Nitrophenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
Acenaphthene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Acenaphthylene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Anthracene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Benzo(a)anthracene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Benzo(a)pyrene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Benzo(b)fluoranthene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Benzo(g,h,i)perylene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Benzo(k)fluoranthene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Bis(2-Chloroethoxy) methane	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Bis(2-Chloroethyl) ether	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Bis(2-Chloroisopropyl) ether	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	UJ BB	(none)	(none)	(none)	(none)
bis(2-Ethylhexyl) phthalate	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Butylbenzylphthalate	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Chrysene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Dibenzo(a,h)anthracene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Dibenzofuran	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Diethylphthalate	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Dimethylphthalate	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Di-n-butylphthalate	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	UJ BB	(none)	(none)	(none)	(none)
Di-n-octyl phthalate	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Fluoranthene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Fluorene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Hexachlorobenzene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Hexachlorocyclopentadiene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Hexachloroethane	UJ LL	UJ LL	UJ LL	UJ LL,LS	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LM,LL	UJ LL	UJ LL,BB	UJ LL	UJ LL	UJ LL	UJ LL
Indeno(1,2,3-cd)pyrene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Isophorone	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Naphthalene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	UJ BB	J DL	J DL	(none)	(none)
Nitrobenzene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
N-Nitrosodi-n-propyl amine	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
N-Nitrosodiphenylamine	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Pentachlorophenol	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
Phenanthrene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
Phenol	UJ LS	J LS,DL	J LS	UJ LS	UJ LS	UJ LS	UJ LS	J LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS,BB	UJ LS	UJ LS	UJ LS	UJ LS
Pyrene	(none)	(none)	(none)	UJ LS	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)

Qualifier Reason Code Definitions:

BB = Broken bottle
DL = Detected concentration is between method detection limit and method reporting limit
LL = Low laboratory control sample recovery
MS/MSD = Matrix spike/matrix spike duplicate
LS = Low surrogate recovery
LM = Low MS/MSD recovery

Notes:

TCLP = Toxicity characteristic leaching procedure

TABLE 15
Data Qualifiers for OCPs by EPA Method 8081A (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
4,4'-DDD	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
4,4'-DDE	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
4,4'-DDT	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Aldrin	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
alpha-BHC	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
alpha-Chlordane	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
beta-BHC	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
delta-BHC	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Dieldrin	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Endosulfan I	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Endosulfan II	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Endosulfan sulfate	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Endrin	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	**J DL**
Endrin aldehyde	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Endrin Ketone	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
gamma-BHC (Lindane)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
gamma-Chlordane	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Heptachlor	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Heptachlor epoxide	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Methoxychlor	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)
Toxaphene	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)	**UJ LS**	(none)	(none)	(none)	(none)

TABLE 15
Data Qualifiers for OCPs by EPA Method 8081A (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
4,4'-DDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
4,4'-DDE	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
4,4'-DDT	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Aldrin	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
alpha-BHC	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
alpha-Chlordane	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
beta-BHC	(none)	**N SC**	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
delta-BHC	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Dieldrin	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endosulfan I	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endosulfan II	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endosulfan sulfate	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endrin	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Endrin aldehyde	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL**	**UJ LL,BB**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Endrin Ketone	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
gamma-BHC (Lindane)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
gamma-Chlordane	(none)	(none)	(none)	(none)	**NJ SC,HS**	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Heptachlor	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Heptachlor epoxide	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Methoxychlor	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Toxaphene	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)

Notes:

OCP = Organochlorine pesticide
TCLP = Toxicity characteristic leaching procedure

Qualifier Reason Code Definitions:

BB = Broken bottle
DL = Detected concentration is between method detection limit and method reporting limit
HS = High surrogate recovery
LL = Low laboratory control sample recovery
LS = Low surrogate recovery
SC = Second column identification nondetect

TABLE 16
Data Qualifiers for PCBs by EPA Method 8082 (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
Aroclor 1016	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1221	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1232	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1242	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1248	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1254	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Aroclor 1260	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
Aroclor 1016	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Aroclor 1221	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Aroclor 1232	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Aroclor 1242	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Aroclor 1248	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Aroclor 1254	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Aroclor 1260	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)

Notes:

PCB = Polychlorinated biphenyl

TCLP = Toxicity characteristic leaching procedure

Qualifier Reason Code Definitions:

BB = Broken bottle

TABLE 17
Data Qualifiers for Metals by EPA 6000/7000 Series Methods (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analytical Method	Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
1311/6010B	Boron	**J DL**	**J DL**	**J DL**	(none)	**U MB**	**U MB**	**J DL**	**U MB**	**U MB**	**J DL**	**U MB**	**U MB**
1311/6010B	Calcium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1311/6010B	Iron	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1311/6010B	Magnesium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**
1311/6010B	Potassium	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**
1311/6010B	Sodium	**R IM**	**R IM**	**R IM**	**R IM**	**R IM**	**R IM**	**R IM**	**R IM**	**R IM**	**R IM**	**R IM**	**U MB**
1311/6020	Aluminum	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**
1311/6020	Antimony	**U MB**	**U MB**	**J DL**	**U MB**	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**	(none)	**J DL**
1311/6020	Arsenic	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**
1311/6020	Barium	(none)	(none)	**U MB**	(none)	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
1311/6020	Beryllium	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**	**J DL**
1311/6020	Cadmium	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1311/6020	Chromium	(none)	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)	**U MB**	**U MB**	**U MB**
1311/6020	Cobalt	**J DL**	**J DL**	**J DL**	(none)	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)
1311/6020	Copper	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
1311/6020	Lead	**U MB**	**U MB**	(none)	**U MB**	(none)	**J DL**	**U MB**	**J DL**	**J DL**	**U MB**	**U MB**	**U MB**
1311/6020	Manganese	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1311/6020	Molybdenum	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**
1311/6020	Nickel	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**U MB**	(none)
1311/6020	Selenium	**J DL**	**J DL**	**U MB**	**J DL**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	(none)	**U MB**
1311/6020	Silver	**J DL**	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**	**J DL**	(none)	**J DL**
1311/6020	Thallium	**U MB**	(none)	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**U MB**	(none)
1311/6020	Vanadium	**U MB**	**U MB**	**J DL**	**U MB**	**J DL**	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**
1311/6020	Zinc	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
1311/7471A	Mercury	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 17
Data Qualifiers for Metals by EPA 6000/7000 Series Methods (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analytical Method	Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
1311/6010B	Boron	J DL	U MB	U MB	J DL	U MB	U MB	U MB	U MB	U MB	U MB	U MB
1311/6010B	Calcium	(none)	(none)	(none)	(none)	(none)	(none)	J BB	(none)	(none)	(none)	(none)
1311/6010B	Iron	(none)	(none)	(none)	(none)	(none)	(none)	J BB	(none)	(none)	(none)	(none)
1311/6010B	Magnesium	(none)	(none)	(none)	(none)	J DL	(none)	J DL,BB	(none)	(none)	(none)	(none)
1311/6010B	Potassium	J DL	J DL	(none)	J DL	J DL	(none)	J DL,BB	J DL	J DL	J DL	J DL
1311/6010B	Sodium	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB
1311/6020	Aluminum	(none)	(none)	(none)	(none)	U MB	U MB	U MB	U MB	U MB	U MB	U MB
1311/6020	Antimony	(none)	J DL	J DL	J DL	(none)	(none)	J DL,BB	J DL	(none)	J DL	J DL
1311/6020	Arsenic	(none)	(none)	(none)	(none)	(none)	(none)	J BB	(none)	(none)	(none)	(none)
1311/6020	Barium	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB
1311/6020	Beryllium	(none)	(none)	(none)	(none)	J DL	J DL	J DL,BB	J DL	J DL	J DL	(none)
1311/6020	Cadmium	(none)	(none)	(none)	(none)	(none)	(none)	UJ BB	(none)	(none)	(none)	(none)
1311/6020	Chromium	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB
1311/6020	Cobalt	(none)	J DL	J DL	J DL	J DL	(none)	J BB	(none)	(none)	(none)	J DL
1311/6020	Copper	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	J DL	U MB	U MB
1311/6020	Lead	J DL	J DL	U MB	U MB	J DL	(none)	J BB	(none)	(none)	(none)	U MB
1311/6020	Manganese	(none)	(none)	(none)	(none)	(none)	(none)	J BB	(none)	(none)	(none)	(none)
1311/6020	Molybdenum	(none)	(none)	(none)	(none)	(none)	(none)	J BB	(none)	(none)	(none)	(none)
1311/6020	Nickel	(none)	(none)	(none)	(none)	(none)	(none)	J BB	(none)	(none)	(none)	(none)
1311/6020	Selenium	U MB	U MB	U MB	U MB	U MB	(none)	U MB	U MB	U MB	U MB	U MB
1311/6020	Silver	(none)	J DL	(none)	(none)	J DL	J DL	J DL,BB	(none)	(none)	J DL	J DL
1311/6020	Thallium	(none)	(none)	(none)	(none)	U MB	(none)	UJ BB	U MB	(none)	(none)	(none)
1311/6020	Vanadium	J DL	(none)	J DL	J DL	(none)	(none)	U MB	U MB	U MB	U MB	U MB
1311/6020	Zinc	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB	U MB
1311/7471A	Mercury	(none)	(none)	(none)	(none)	(none)	J BB	(none)	(none)	(none)	(none)	(none)

Notes:

TCLP = Toxicity characteristic leaching procedure

Qualifier Reason Code Definitions:

BB = Broken bottle

DL = Detected concentration is between method detection limit and method reporting limit

IM = Inappropriate analytical method for this

MB = Method blank contamination

TABLE 18
Data Qualifiers for Dioxins and Furans by EPA Method 8290B (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(501-01) W020	(502-01) W019	(503-01) W018	(504-01) W017	(505-01) W017	(506-01) W016	(507-01) W015	(508-01) W014	(509-01) W013	(510-01) W012	(511-01) W011	(512-01) W011
1,2,3,4,6,7,8,9-OCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8,9-OCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8,9-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,7,8-TCDD	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**	(none)	(none)	(none)
2,3,7,8-TCDF	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Total HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total PeCDF	(none)	**U MB**	(none)	(none)	**U MB**	(none)	(none)	**U MB**	**U MB**	(none)	(none)	(none)
Total TCDD	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Total TCDF	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**

TABLE 18
Data Qualifiers for Dioxins and Furans by EPA Method 8290B (TCLP)
West Doane Lake Treatability Study
RP - Portland

Analyte	(513-01) W011	(514-01) W010	(515-01) W009	(516-01) W008	(517-01) W007	(518-01) W006	(519-01) W005	(520-01) W004	(521-01) W003	(522-01) W002	(523-01) W001
1,2,3,4,6,7,8,9-OCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8,9-OCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,6,7,8-HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	**J DL**	(none)
1,2,3,4,6,7,8-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,7,8,9-HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,4,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8,9-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
1,2,3,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
2,3,4,6,7,8-HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
2,3,4,7,8-PeCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
2,3,7,8-TCDD	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
2,3,7,8-TCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total HpCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total HpCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total HxCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total HxCDF	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total PeCDD	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BB**	(none)	(none)	(none)	(none)
Total PeCDF	(none)	(none)	(none)	**U MB**	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Total TCDD	(none)	(none)	(none)	(none)	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)
Total TCDF	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)	**J BB**	(none)	(none)	(none)	(none)

Notes:

TCLP = Toxicity characteristic leaching procedure

Qualifier Reason Code Definitions:

BB = Broken bottle

DL = Detected concentration is between method detection limit and method reporting limit

MB = Method blank contamination

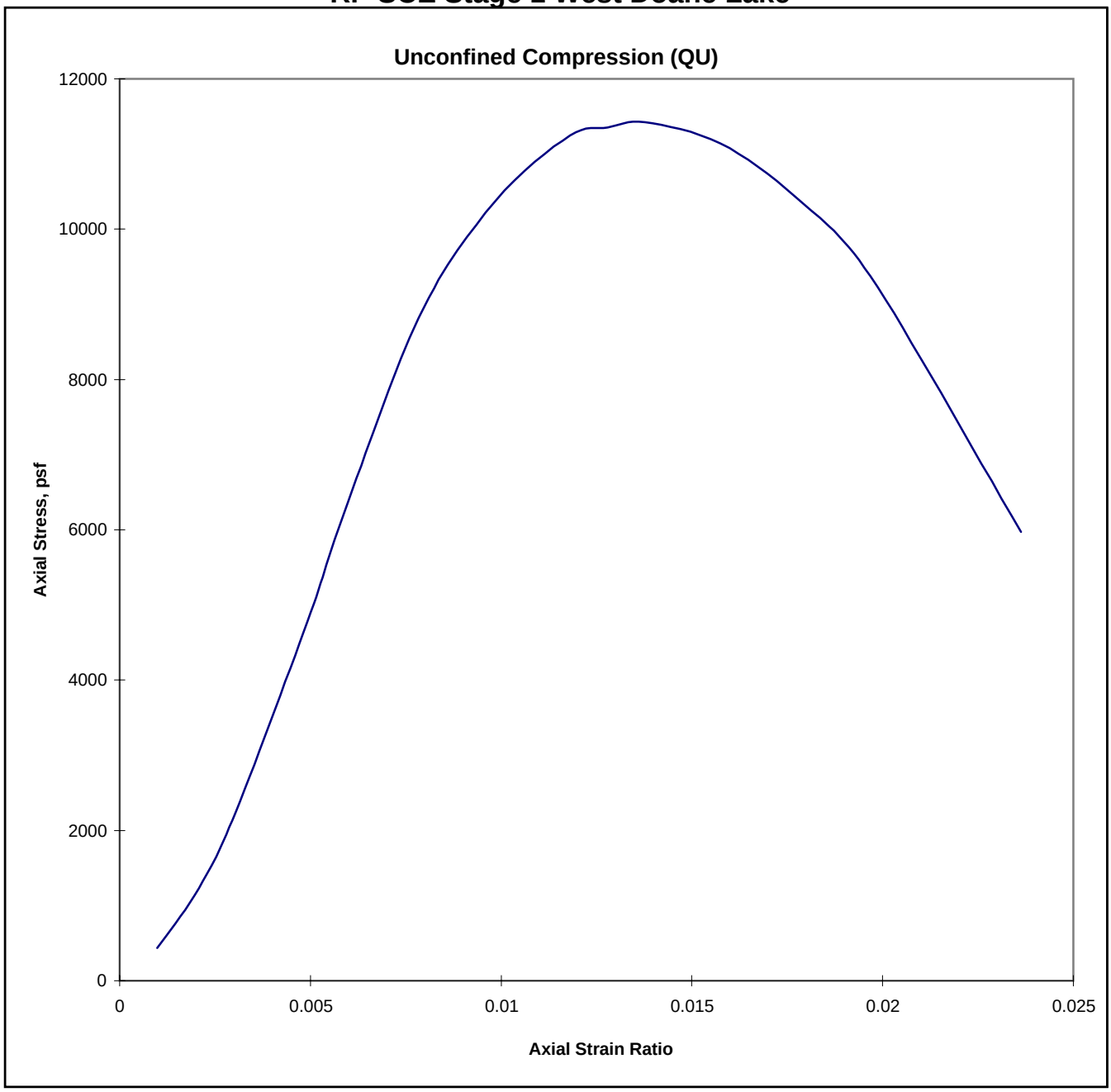
APPENDIX E

Analytical Laboratory Data Reports (CD format)

APPENDIX F

Soil Technology Physical Testing Report and Tables

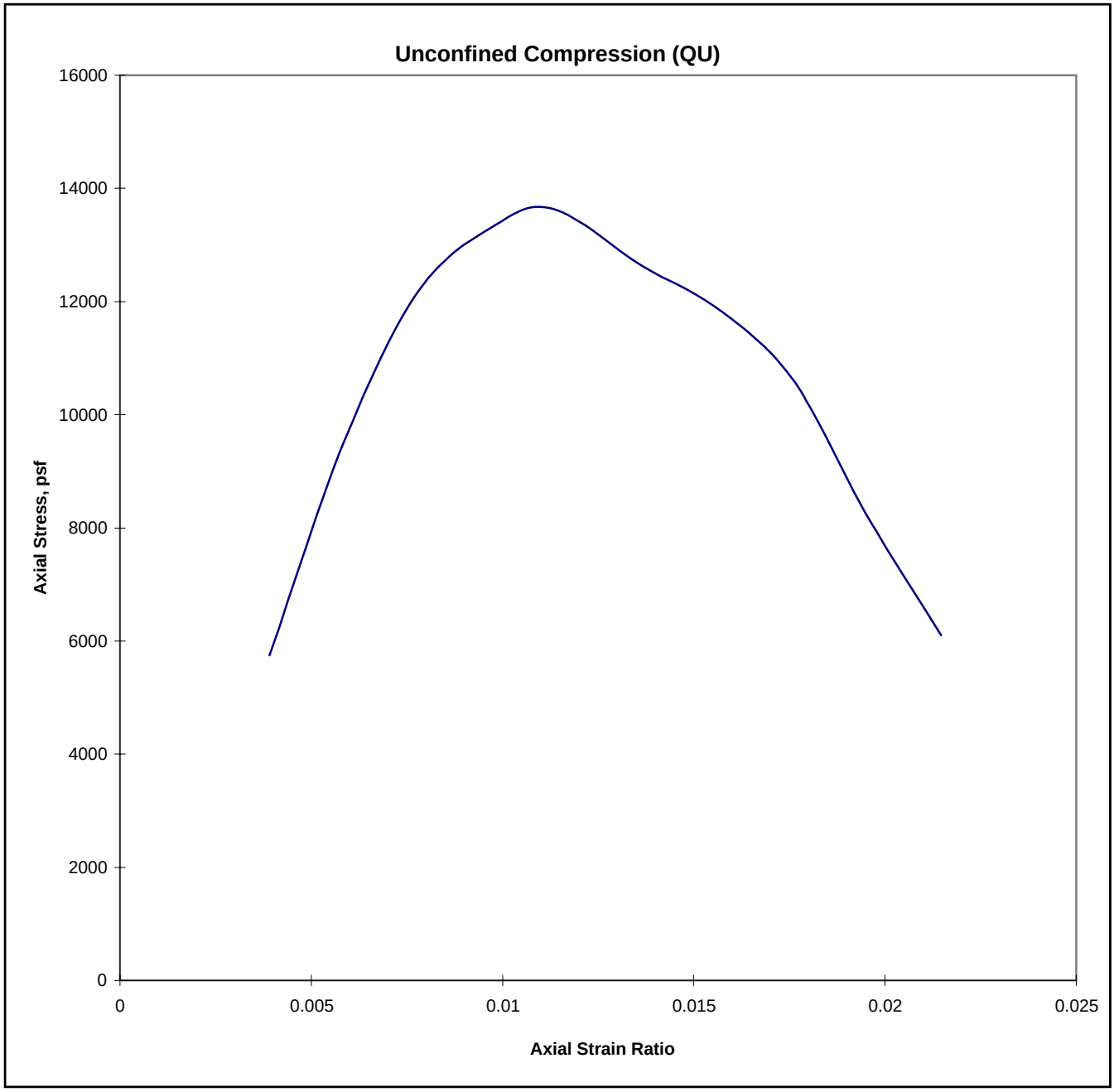
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1A	WDLSS	1A	61	101	63	11,426	0.01378	10	0	5

Soil Technology
J-06-2135

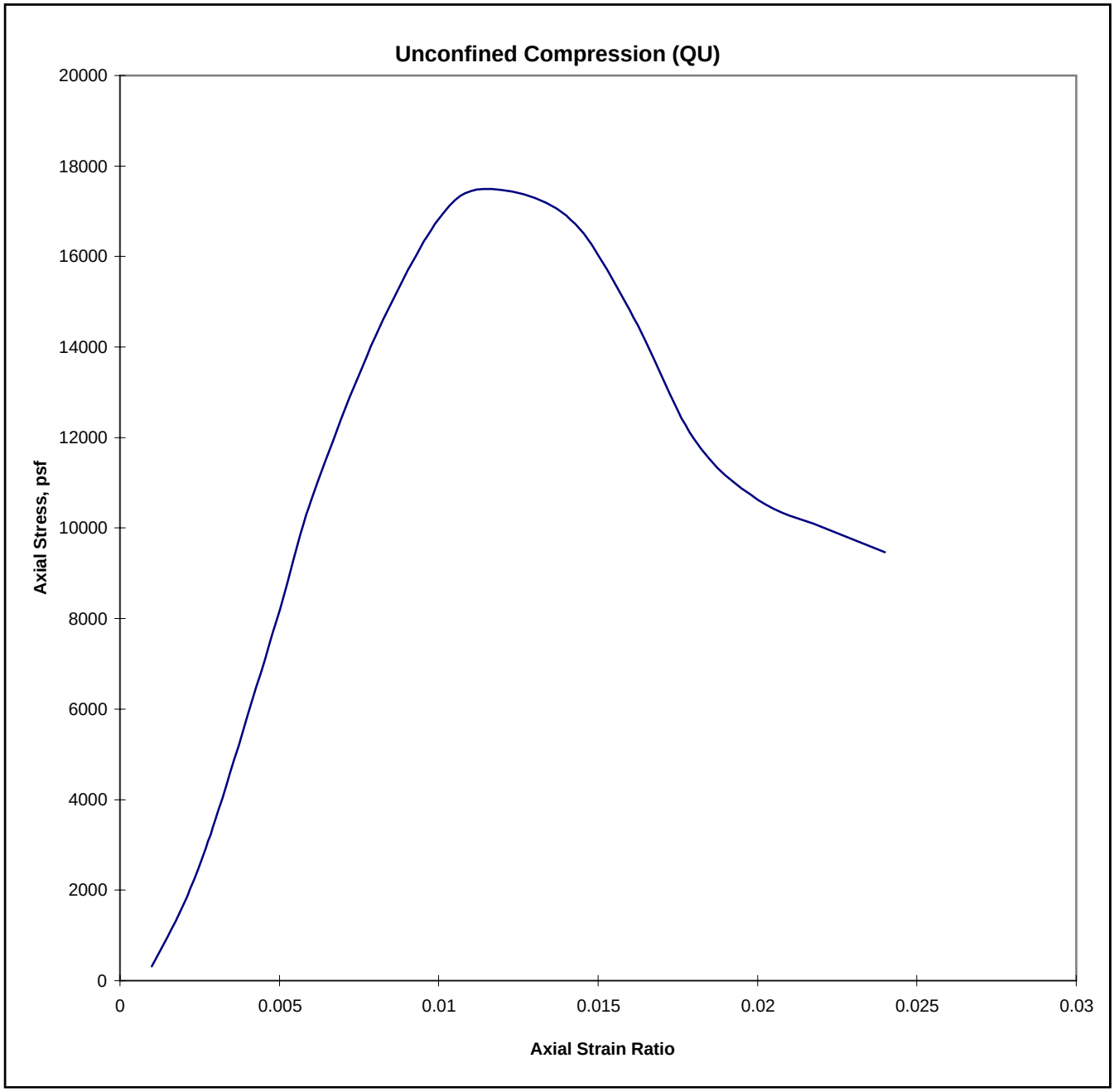
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1A	WDLSS	1A	60	94	59	13,635	0.01132	10	0	5

Soil Technology
J-06-2135

AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1A	WDLSS	1A	60	100	63	17,493	0.0114	10	0	5

Soil Technology
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AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
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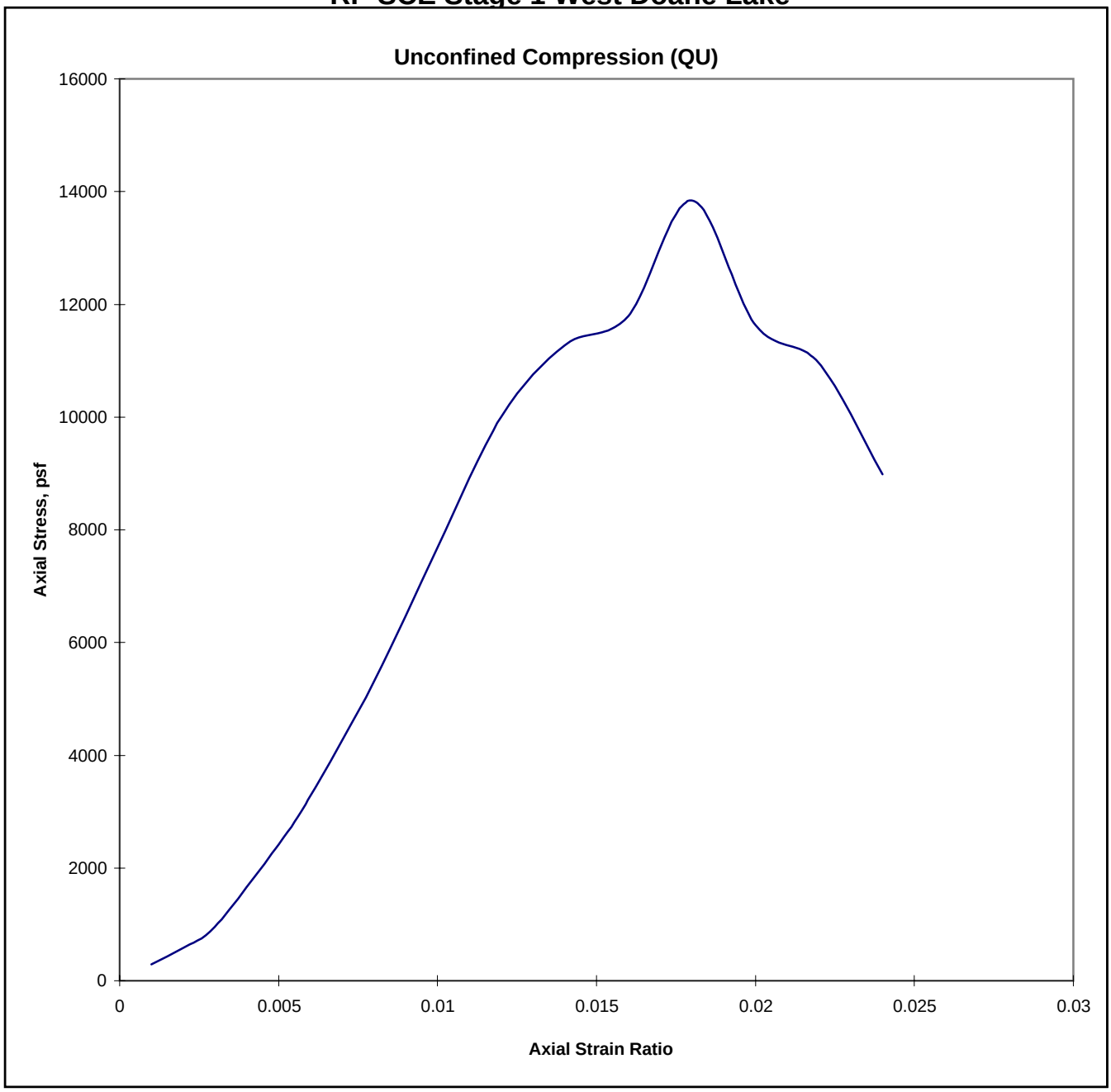

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1B	WDLSS	1B	53	102	67	13,844	0.018	10	10	5

Soil Technology
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AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
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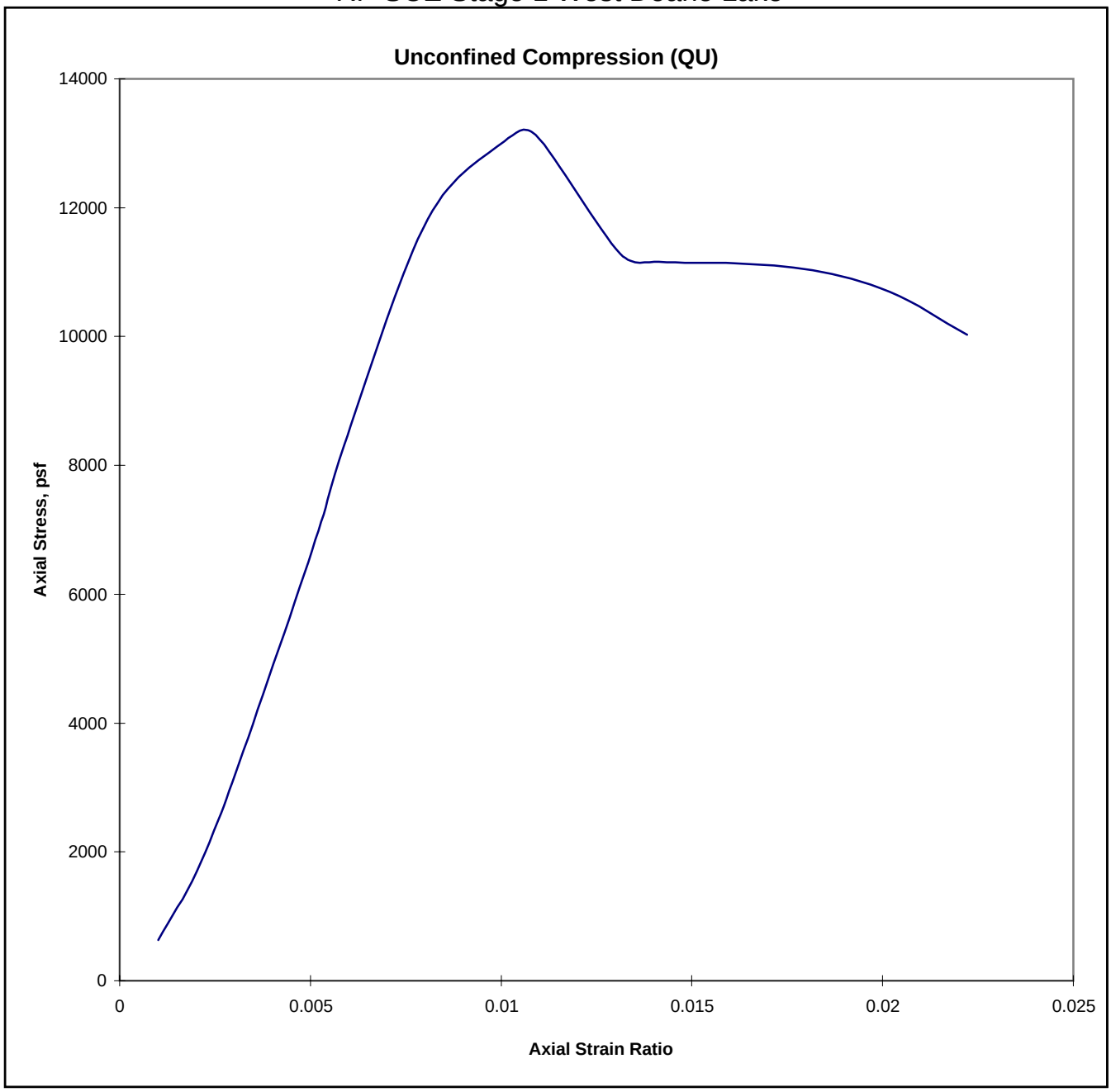

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1B	WDLSS	1B	52	102	67	13,133	0.0109	10	10	5

Soil Technology
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Project No. 0-61M-107030 P65-T2
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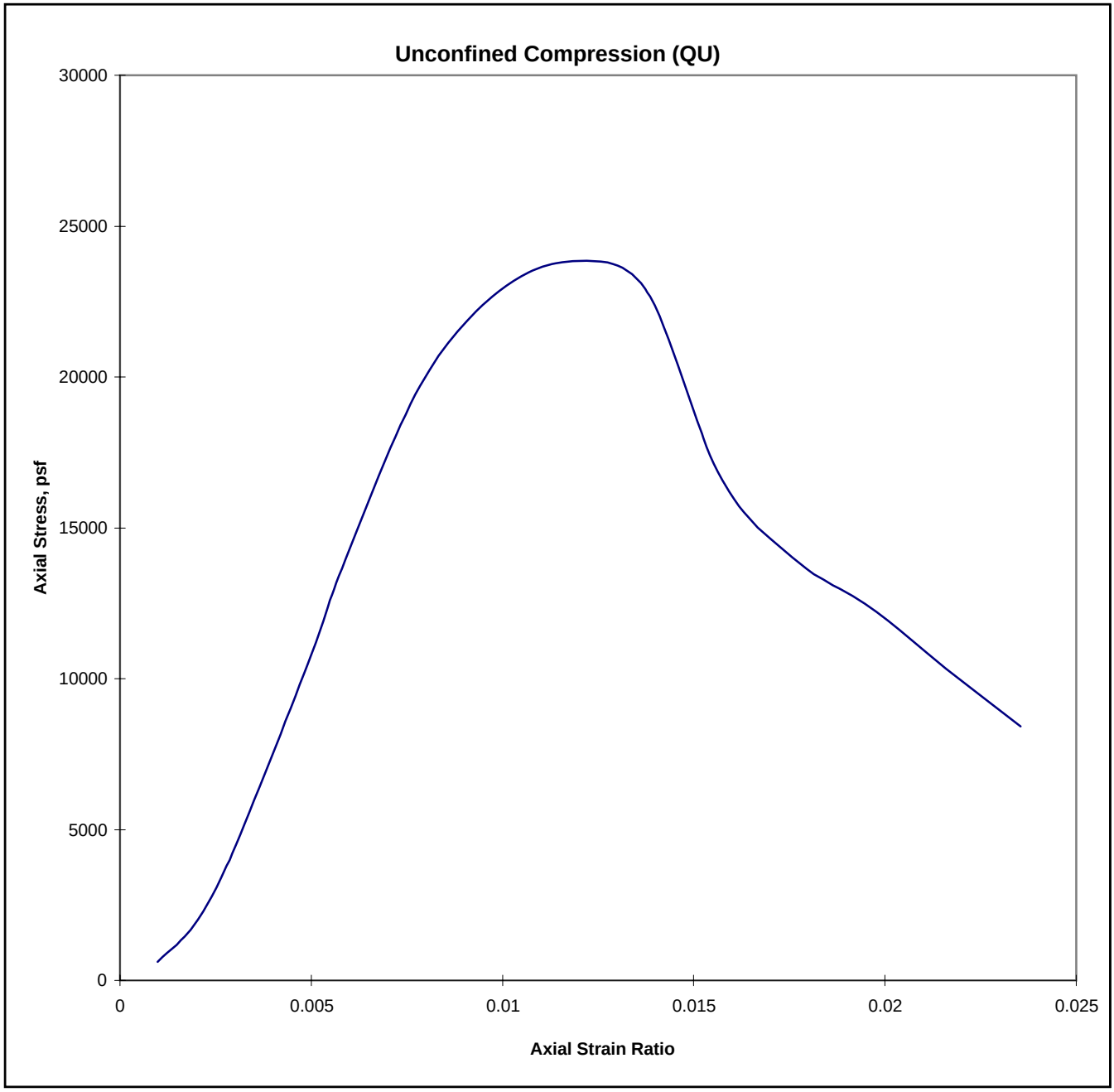

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1B	WDLSS	1B	53	103	44	23,824	0.011774	10	10	5

Soil Technology
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Project No. 0-61M-107030 P65-T2
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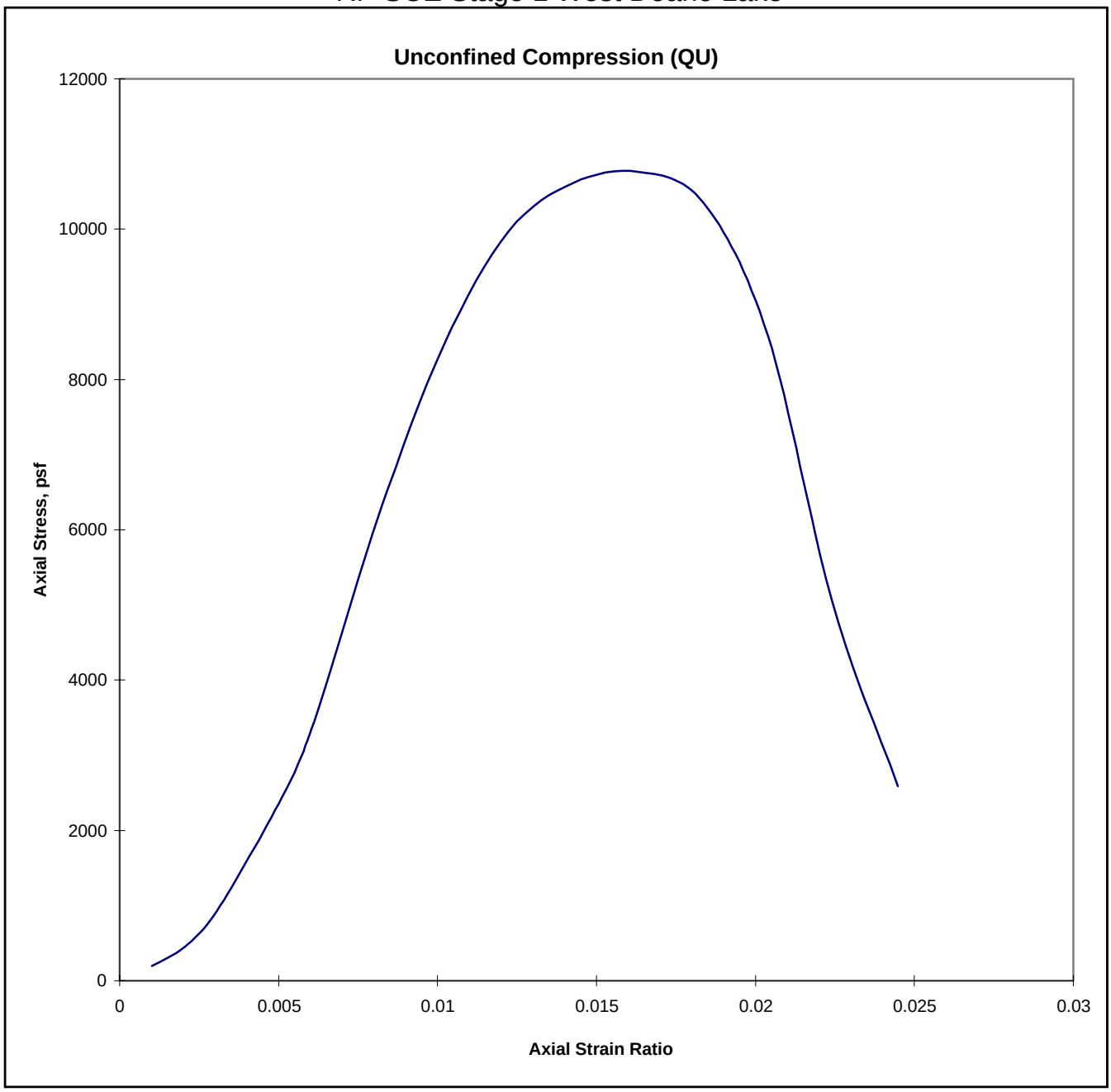

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1C	WDLSS	1C	59	97	61	10,762	0.01836	10	0	10

Soil Technology
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AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
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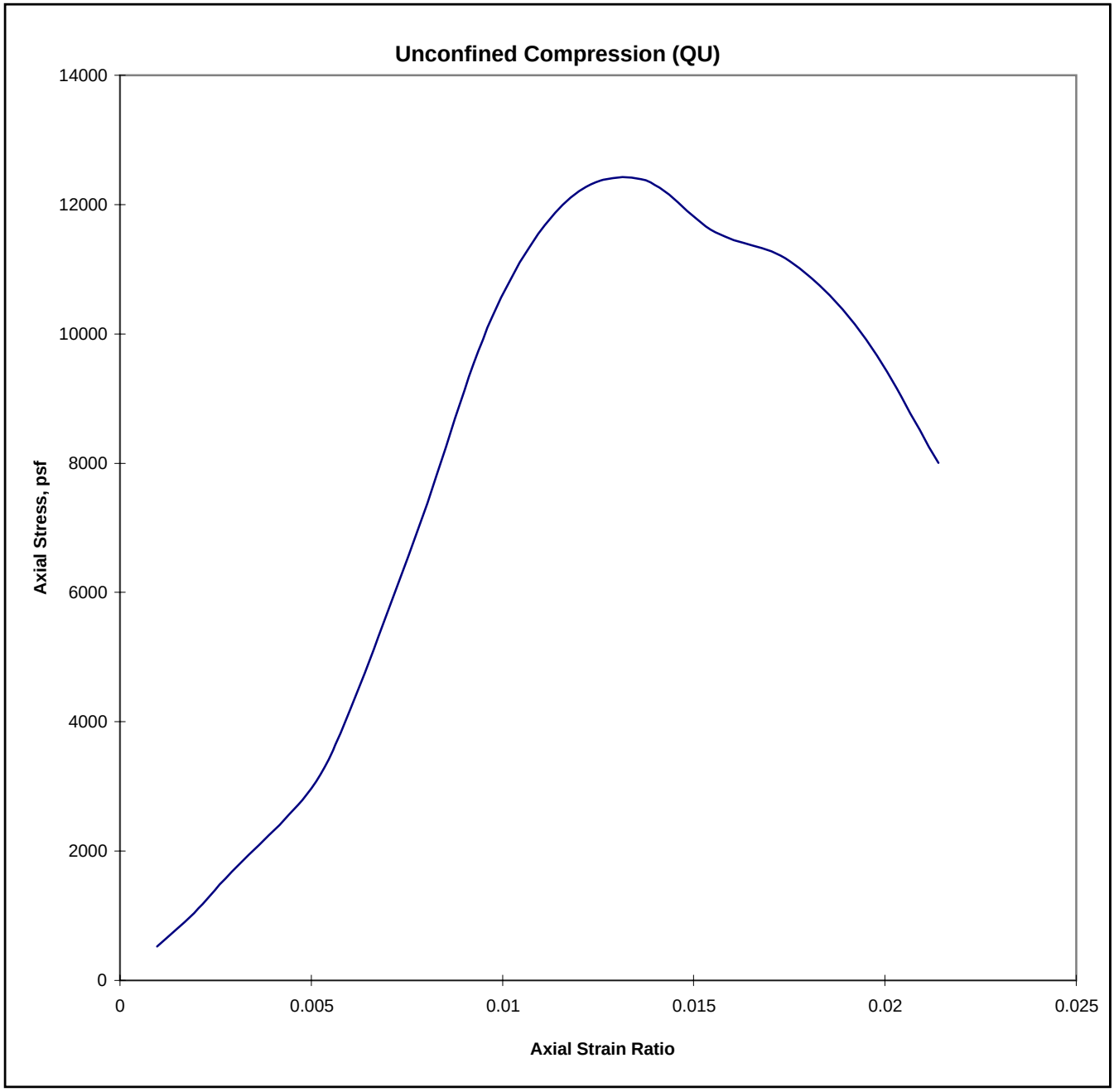

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1C	WDLSS	1C	59	101	63	12,394	0.013619	10	0	10

Soil Technology
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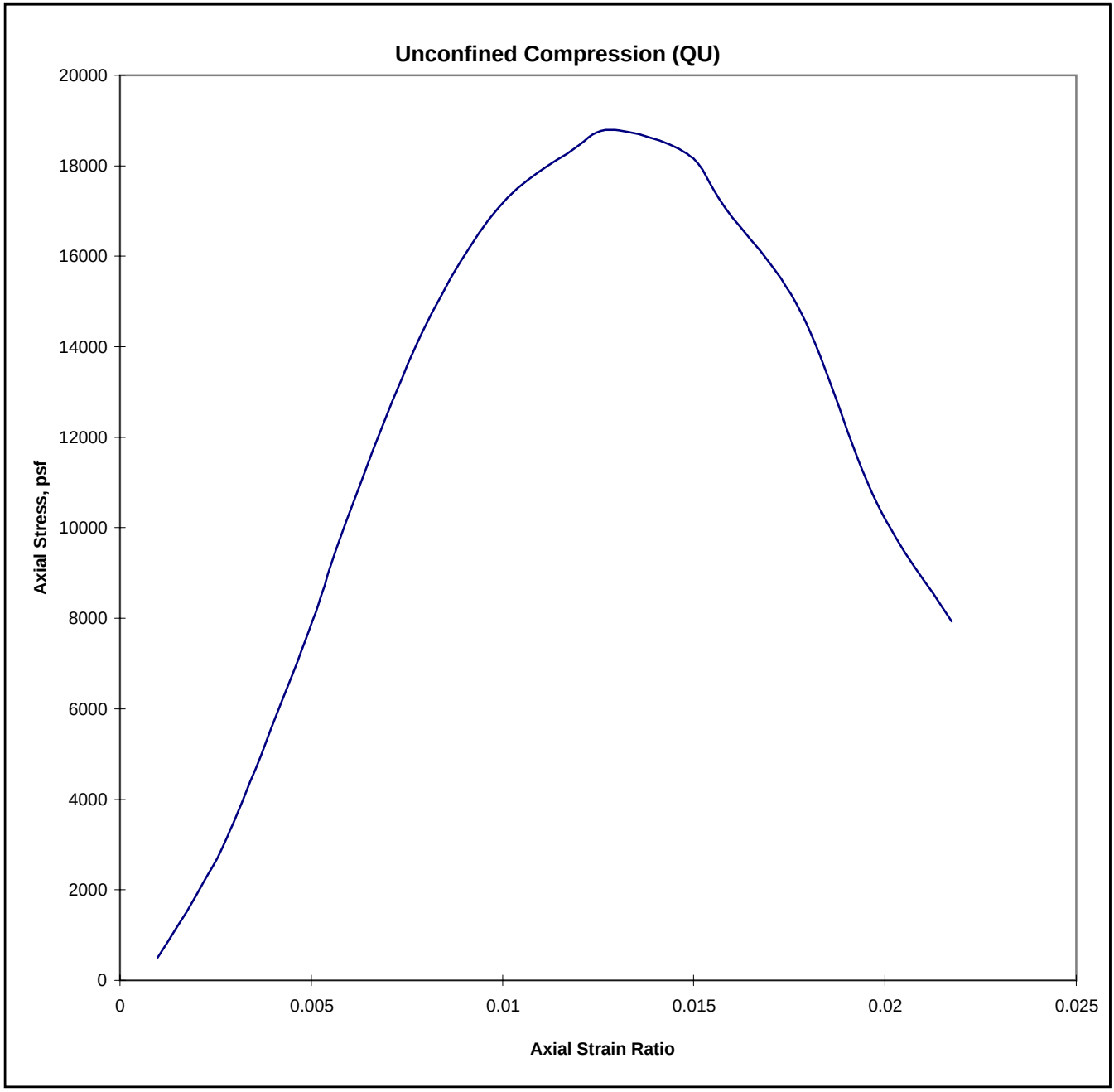
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1C	WDLSS	1C	45	102	70	18,795	0.012851	10	0	10

Soil Technology
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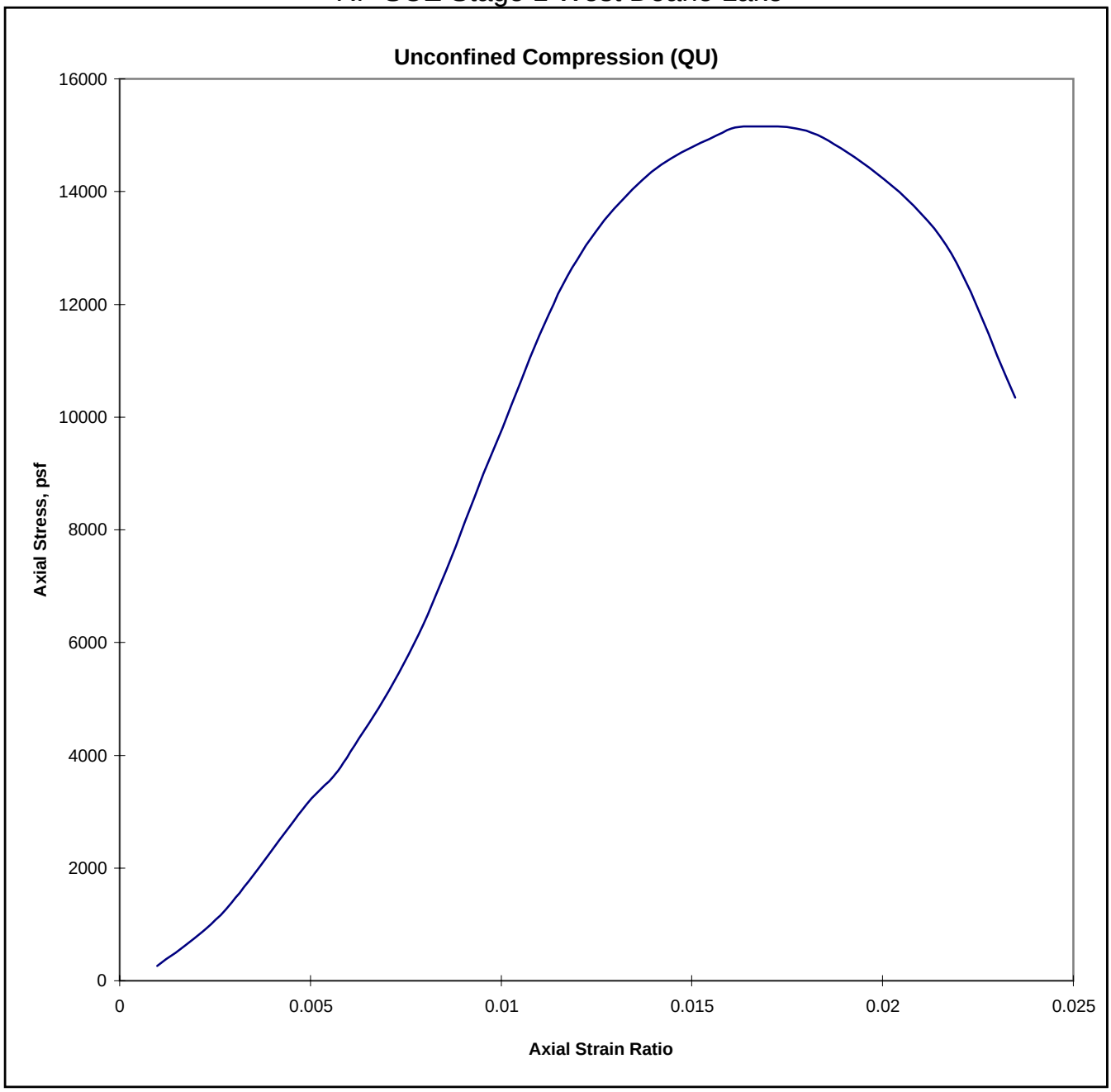
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1D	WDLSS	1D	56	101	64	15,156	0.016624	20	10	10

Soil Technology
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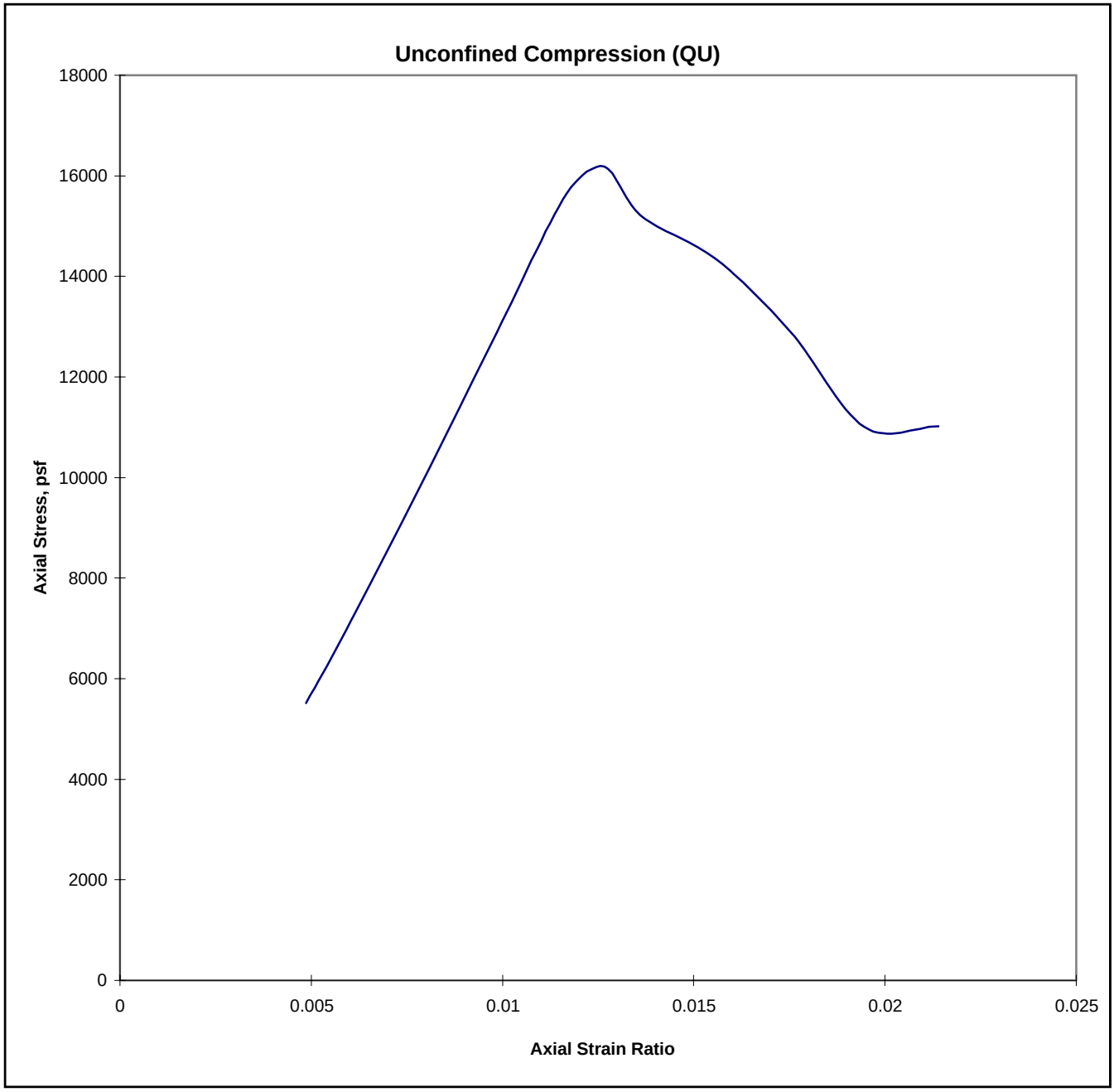
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1D	WDLSS	1D	54	101	65	16,188	0.012646	20	10	10

Soil Technology
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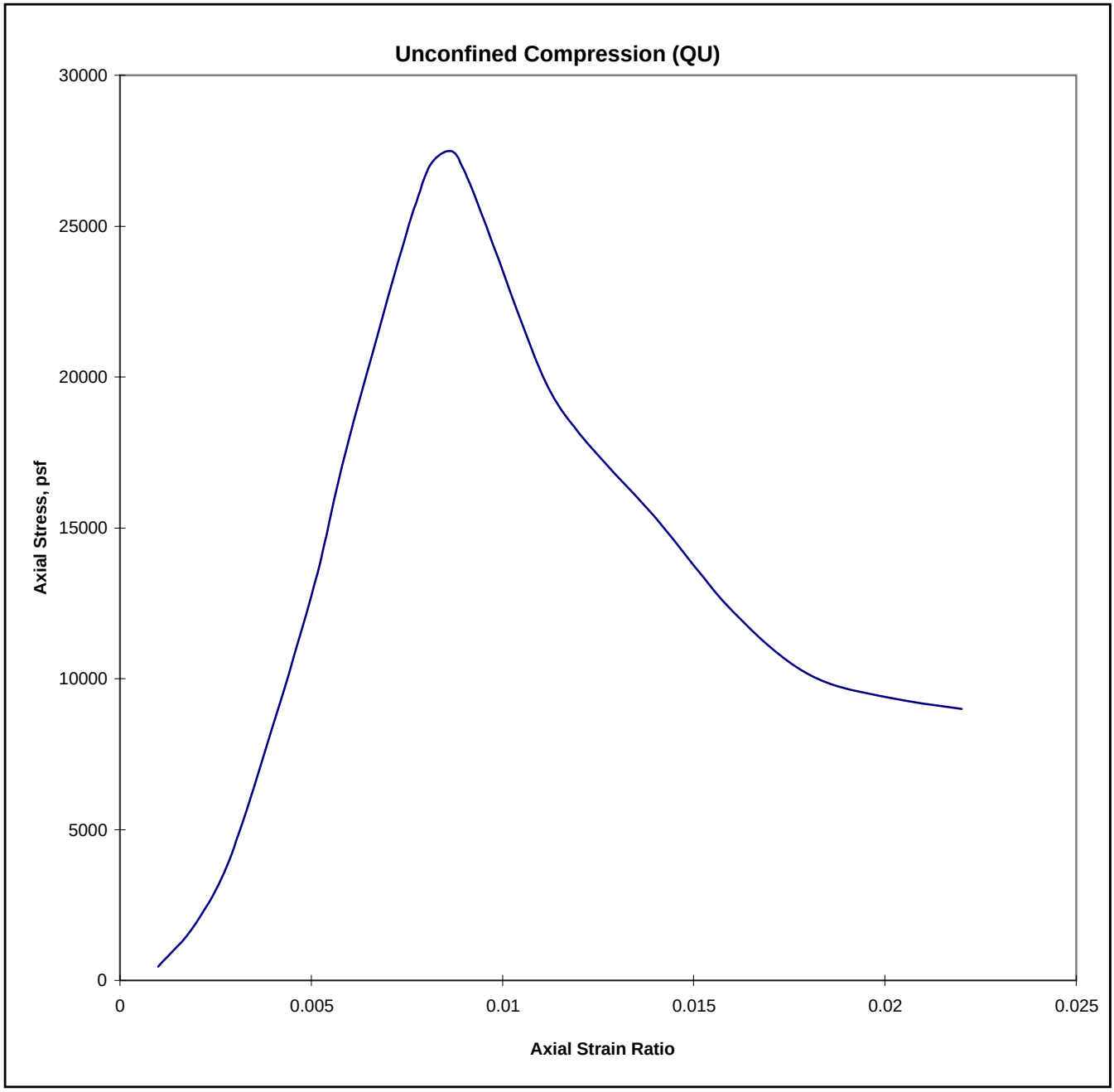
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-1-1D	WDLSS	1D	53	102	67	27,339	0.0088	20	10	10

Soil Technology
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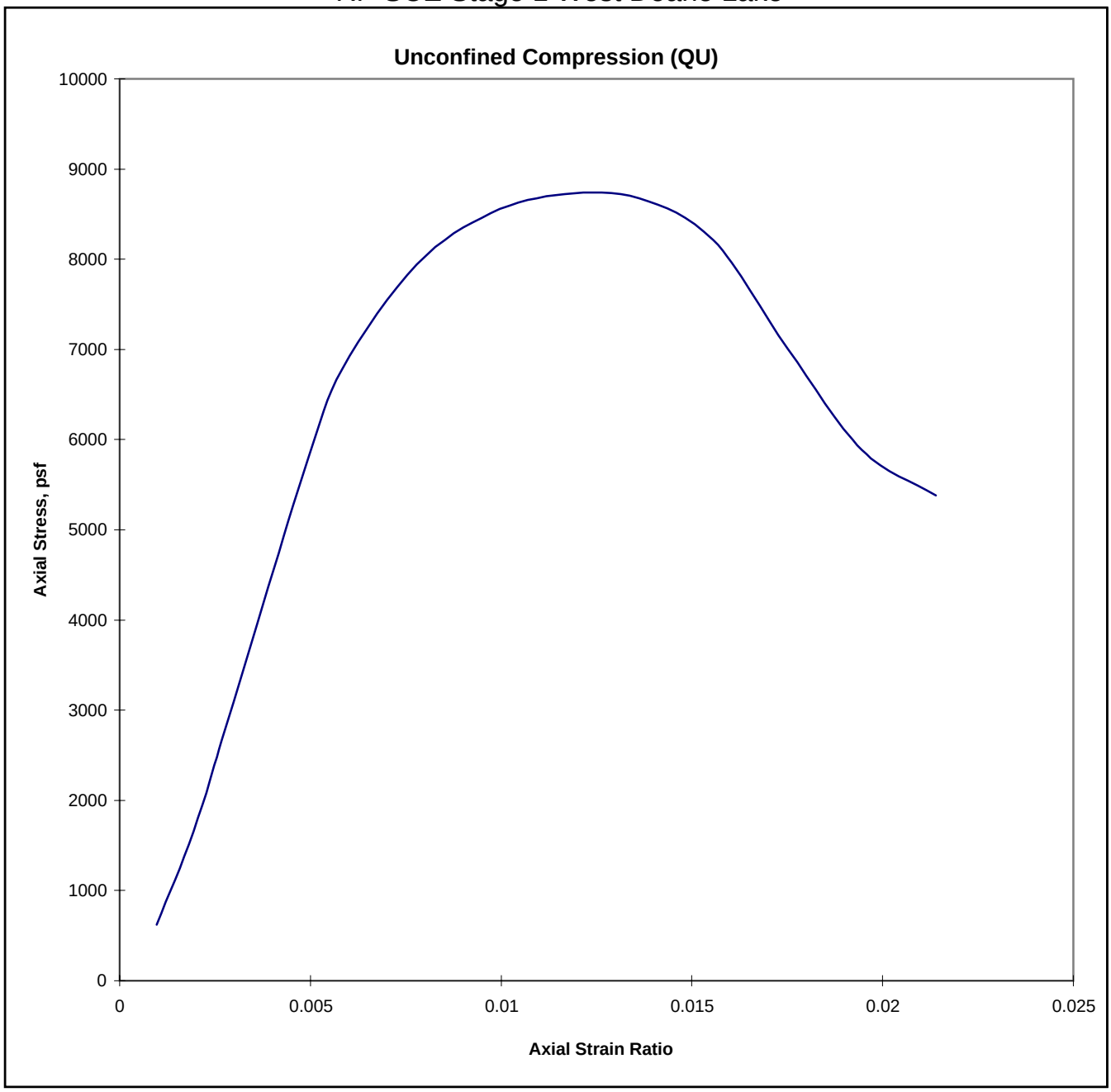
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1A	WDLSS	1A	96	87	44	8,720	0.011673	10	0	5

Soil Technology
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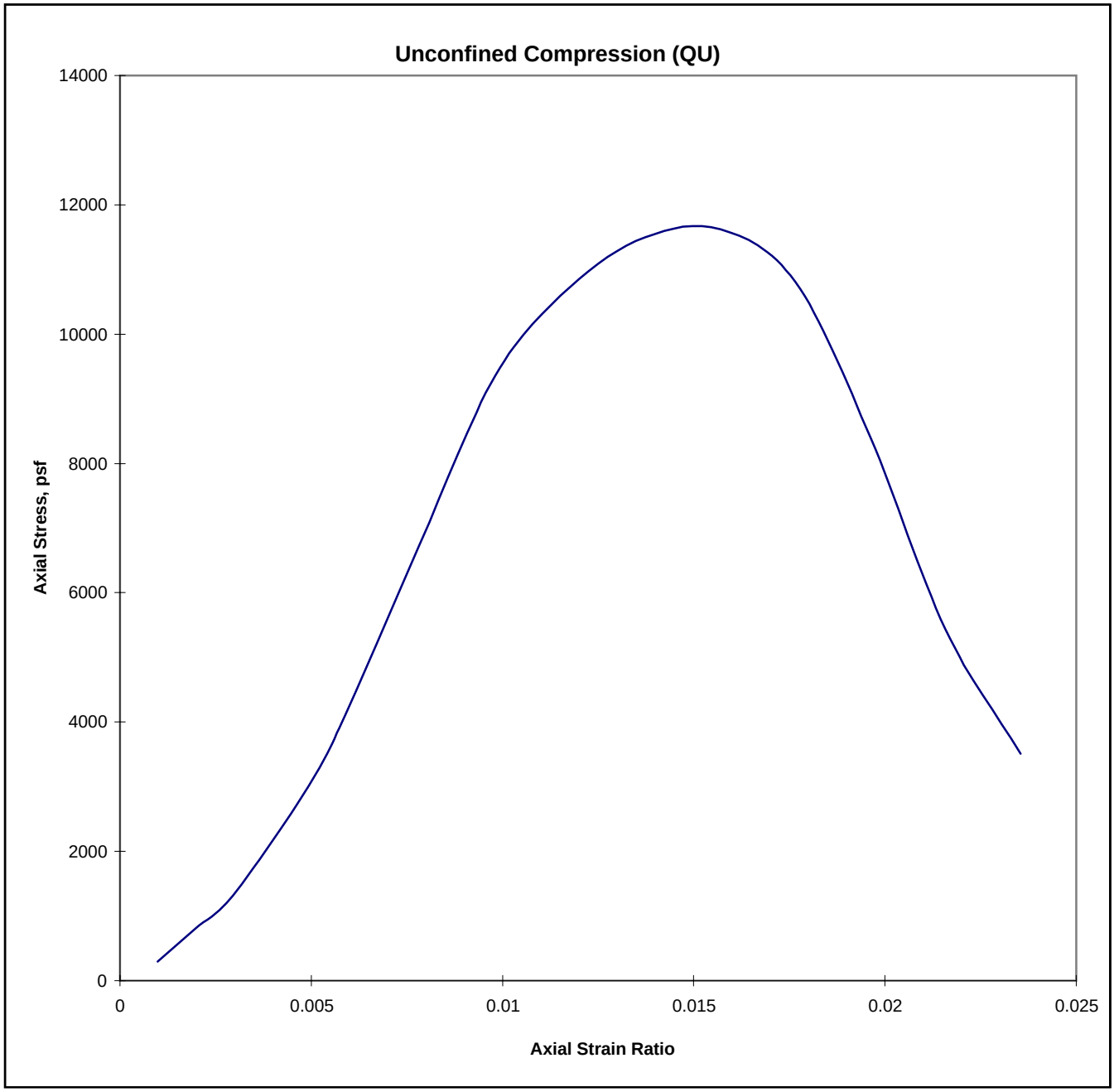
AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1A	WDLSS	1A	95	92	47	11,618	0.015696	10	0	5

Soil Technology
J-06-2135

AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
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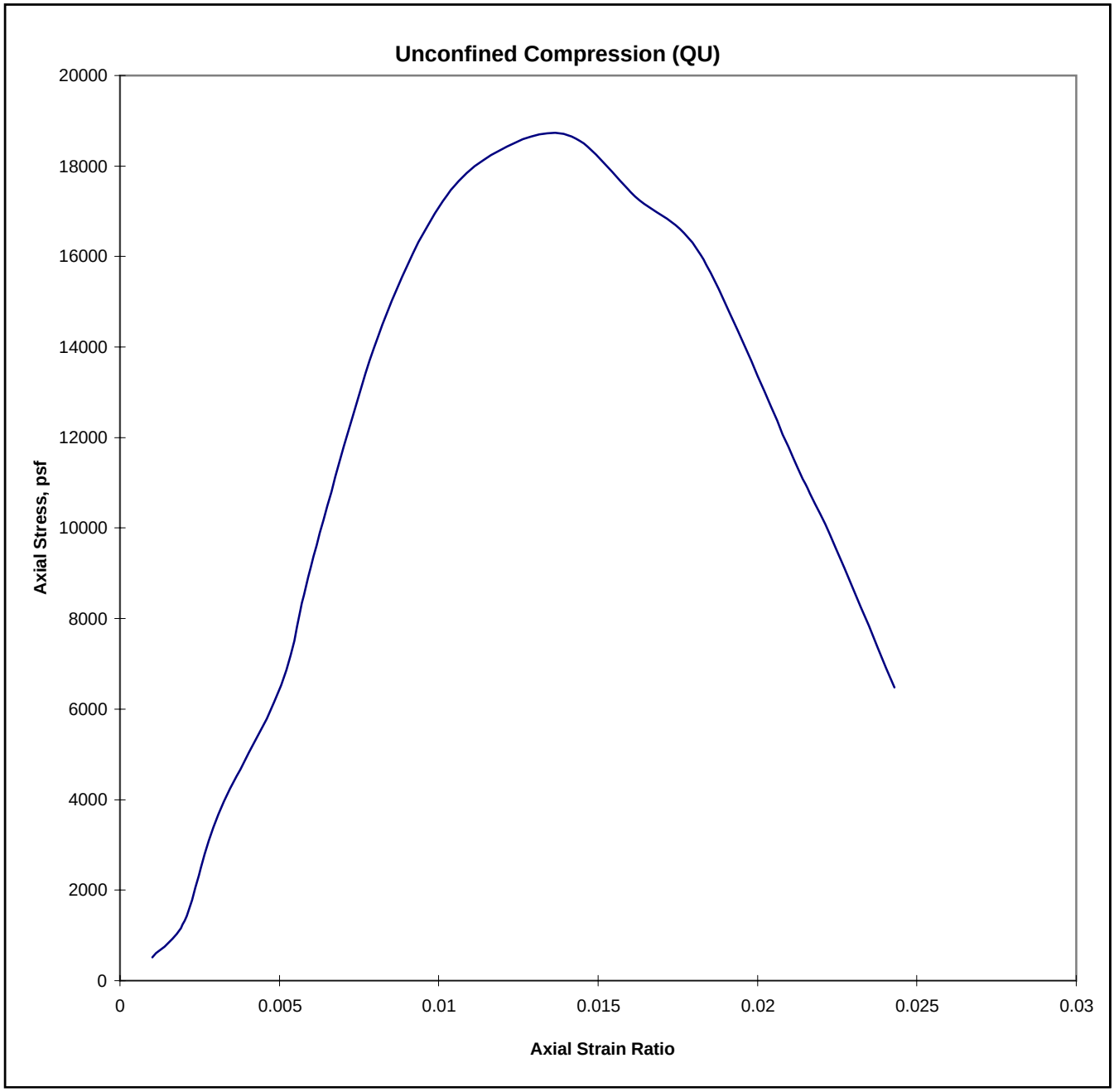

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1A	WDLSS	1A	95	89	45	19,286	0.01417	10	0	5

Soil Technology
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Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
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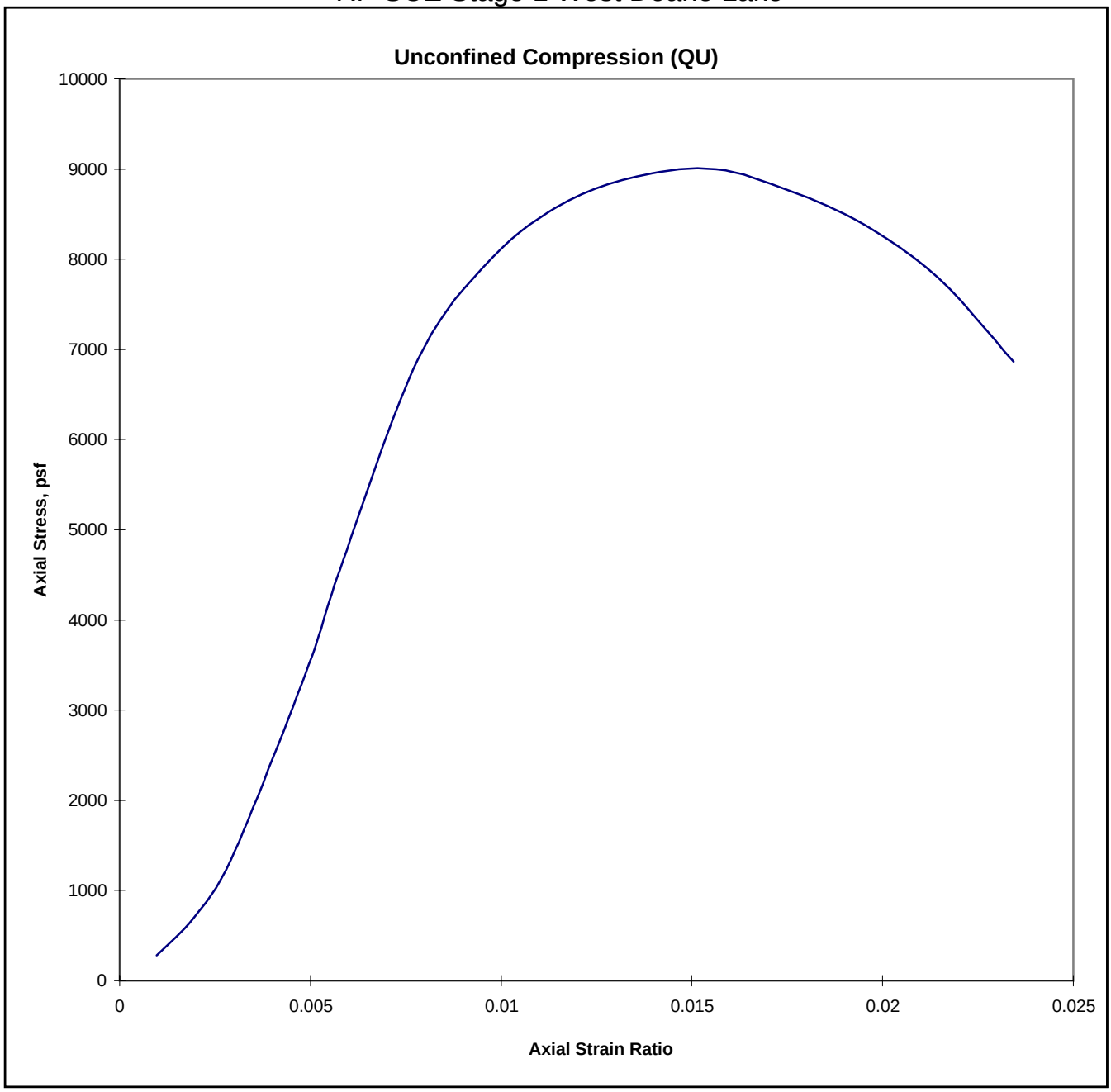

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1B	WDLSS	1B	82	89	49	8,995	0.015625	10	10	5

Soil Technology
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Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
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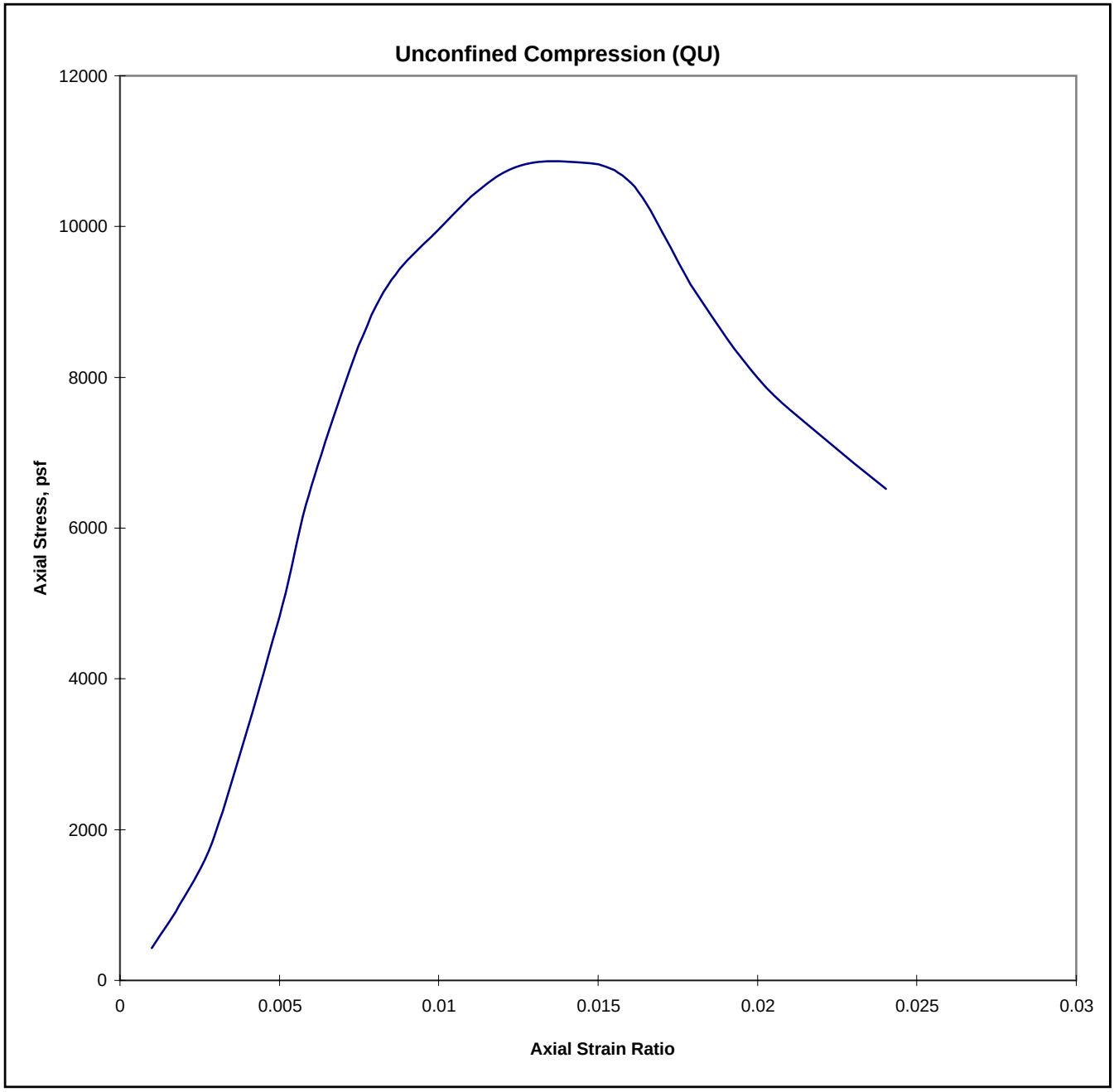

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1B	WDLSS	1B	82	91	50	10,859	0.01402	10	10	5

Soil Technology
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Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
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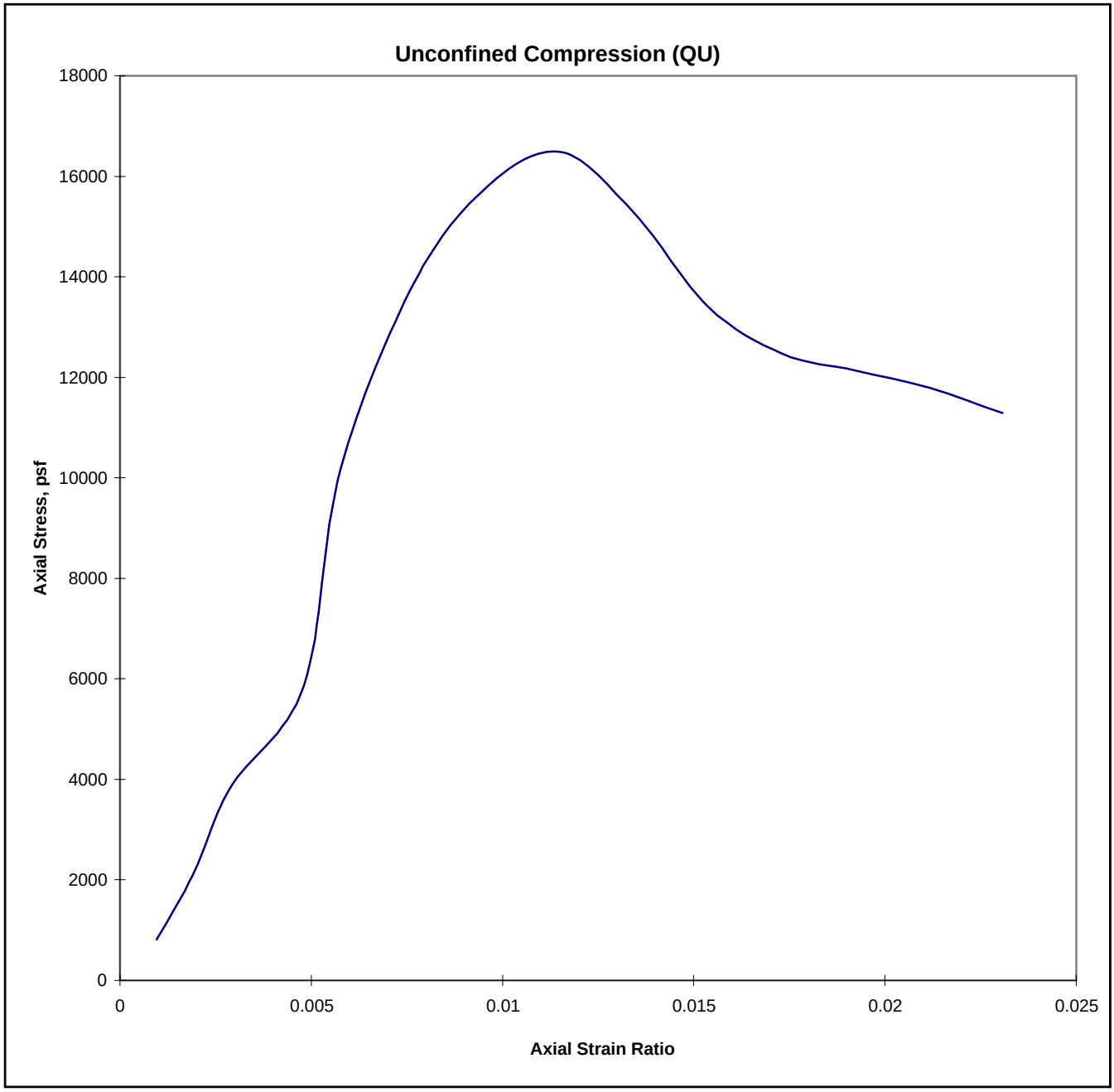

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1B	WDLSS	1B	82	92	51	16,484	0.011538	10	10	5

Soil Technology
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Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
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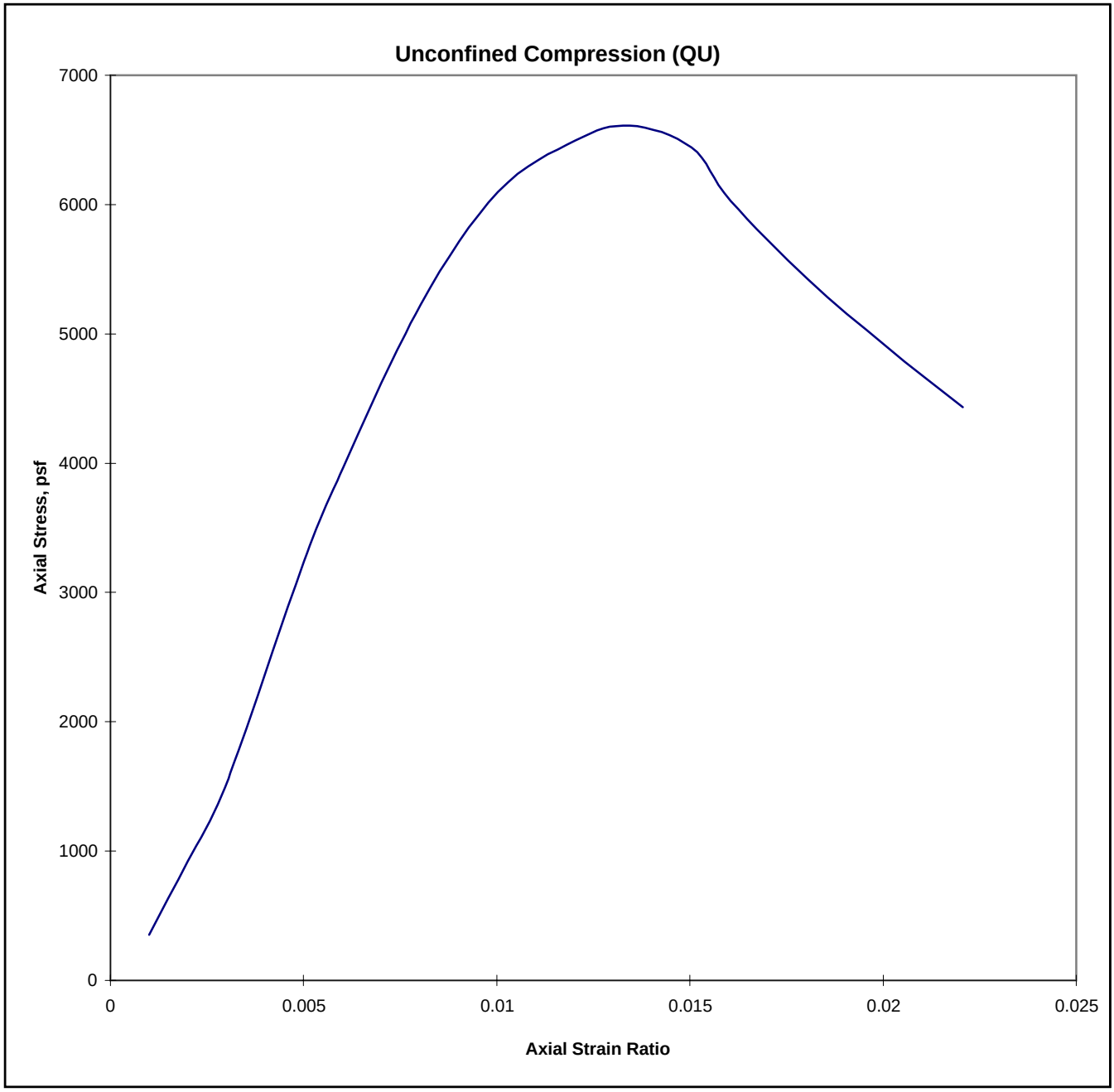

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1C	WDLSS	1C	101	85	42	6,611	0.01344	10	0	10

Soil Technology
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Project No. 0-61M-107030 P65-T2
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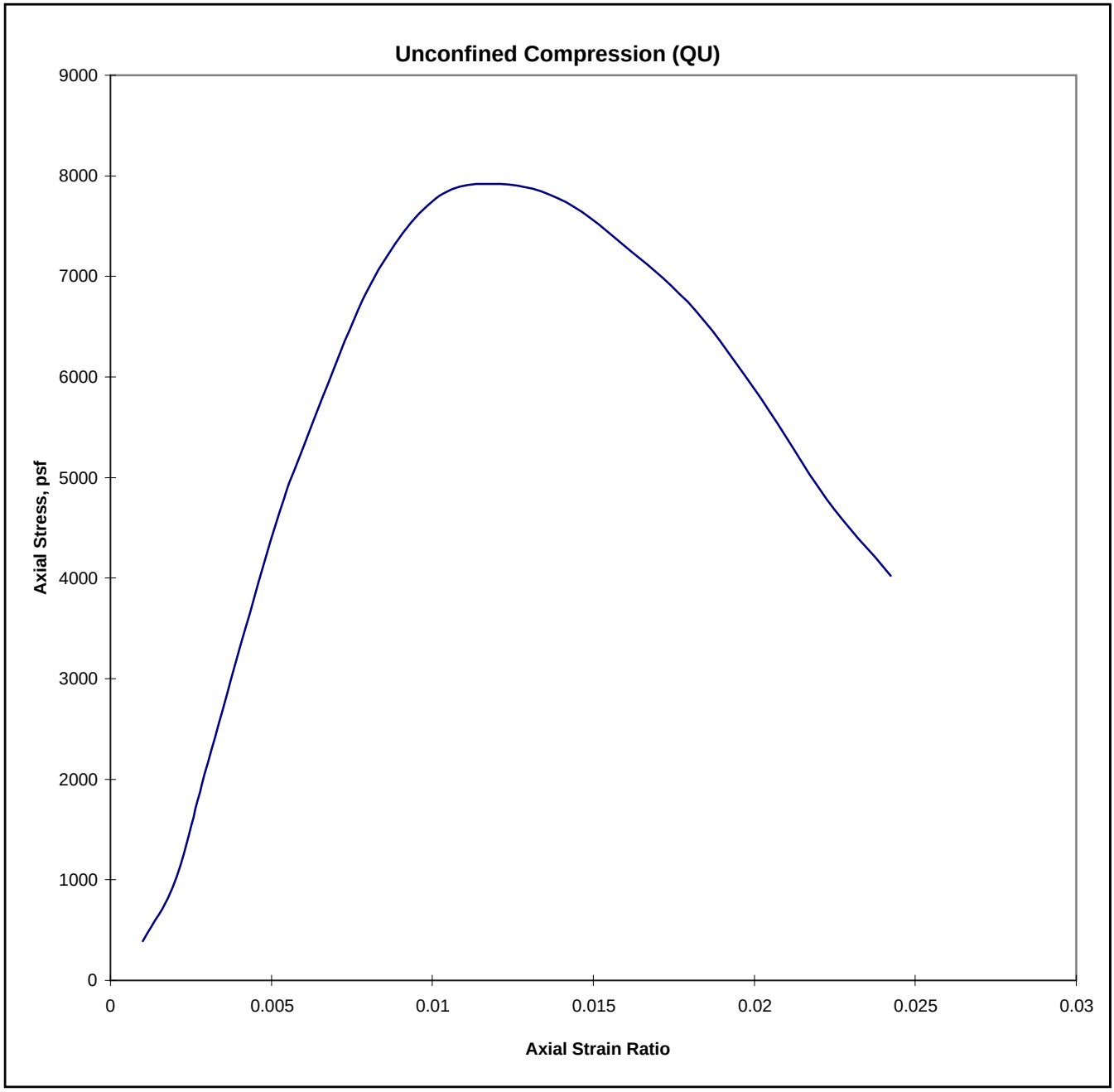

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1C	WDLSS	1C	101	87	43	7,918	0.012121	10	0	10

Soil Technology
J-06-2135

AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
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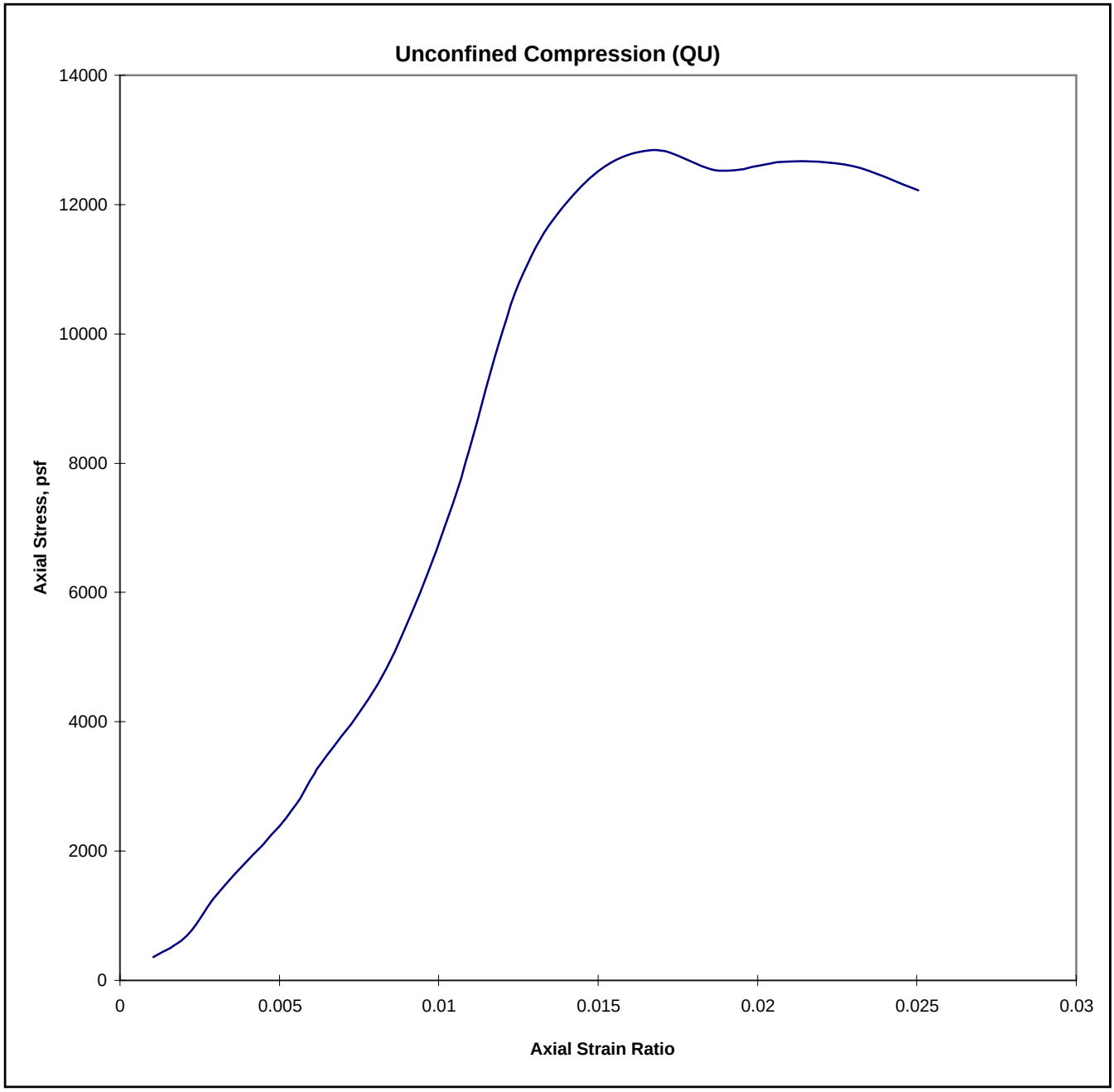

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1C	WDLSS	1C	101	88	44	12,843	0.016701	10	0	10

Soil Technology
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Project No. 0-61M-107030 P65-T2
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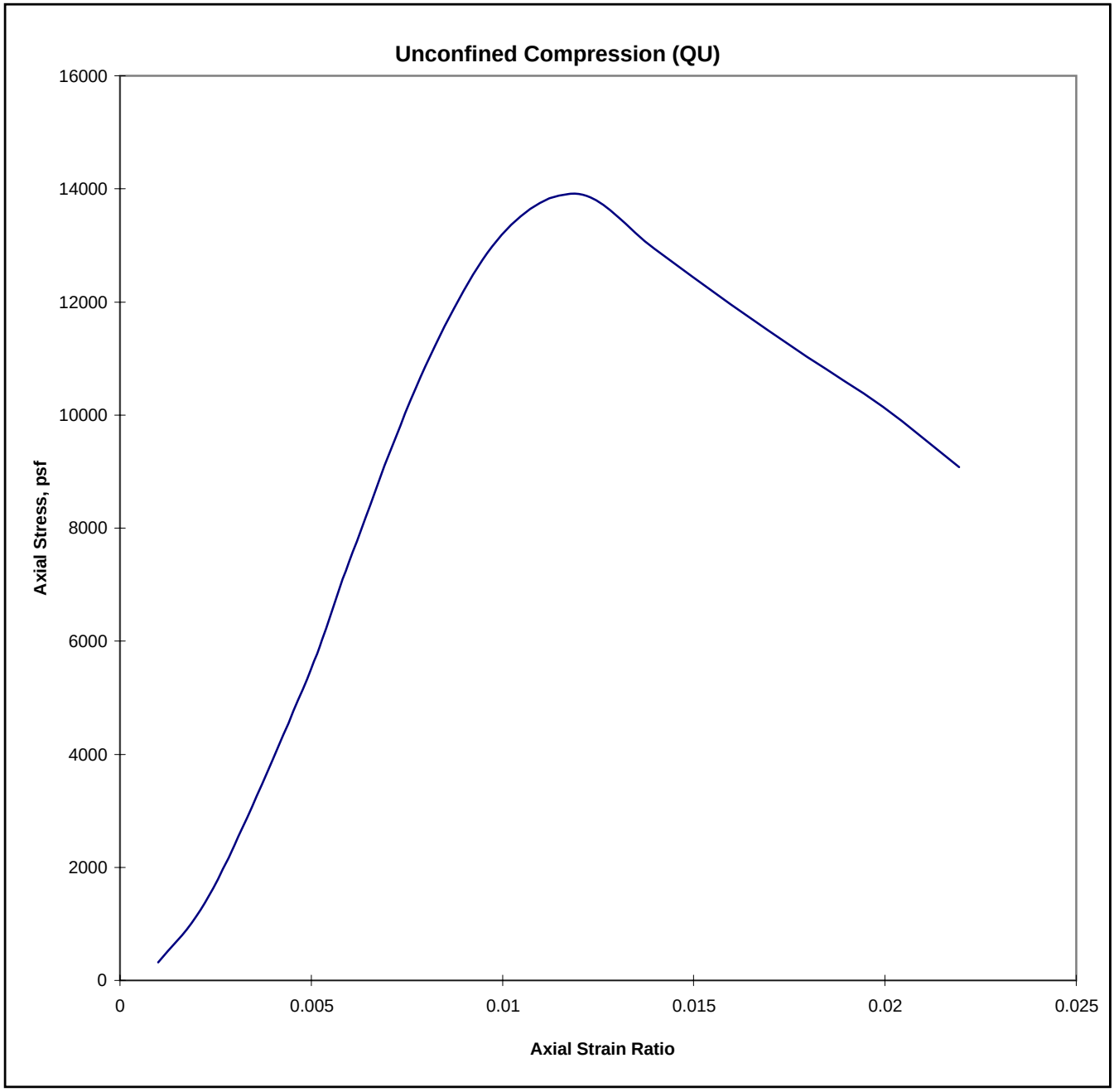

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		3 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1D	WDLSS	1D	72	90	52	13,907	0.011969	20	10	10

Soil Technology
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Project No. 0-61M-107030 P65-T2
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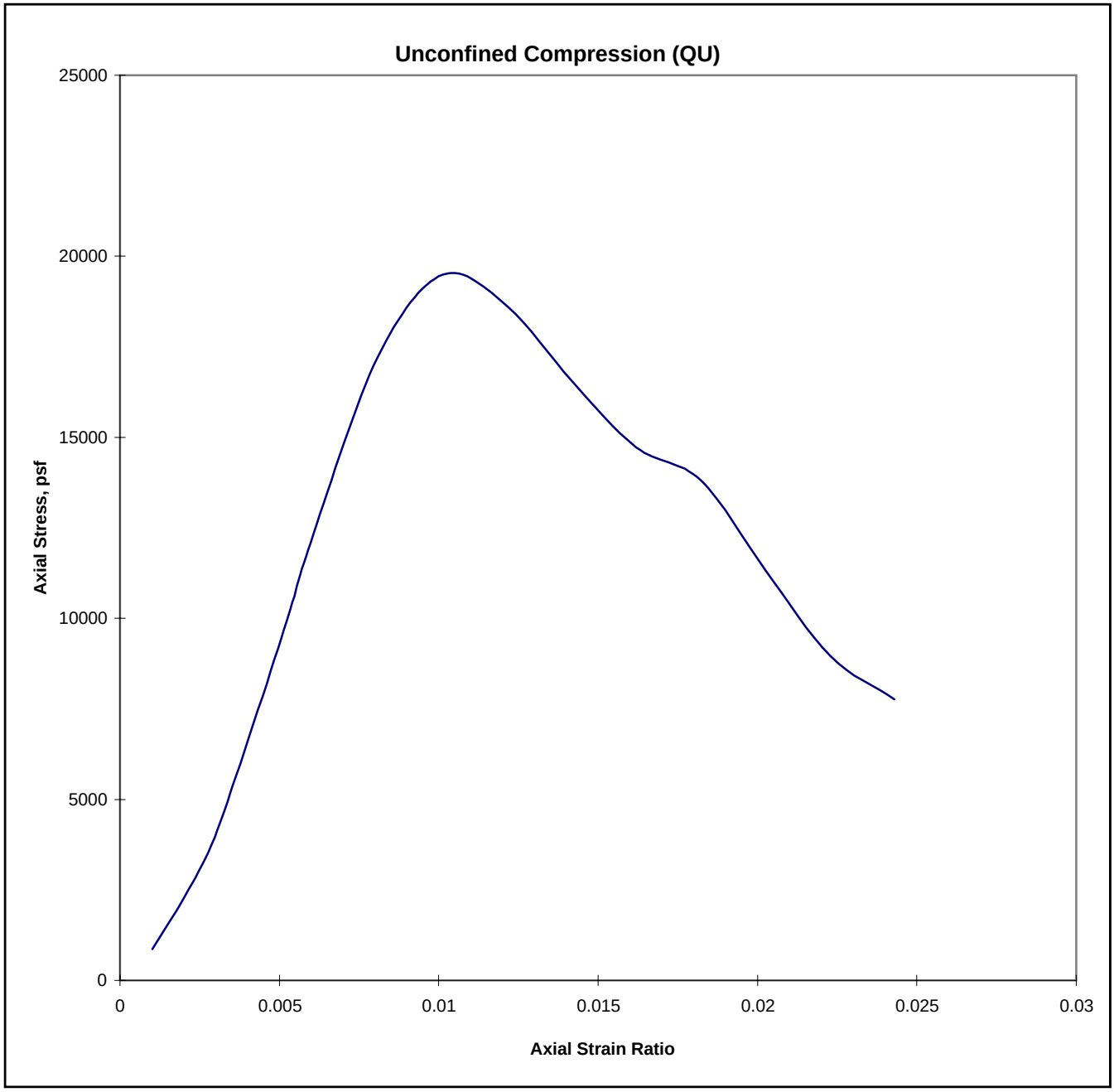

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1D	WDLSS	1D	71	91	53	19,499	0.010126	20	10	10

Soil Technology
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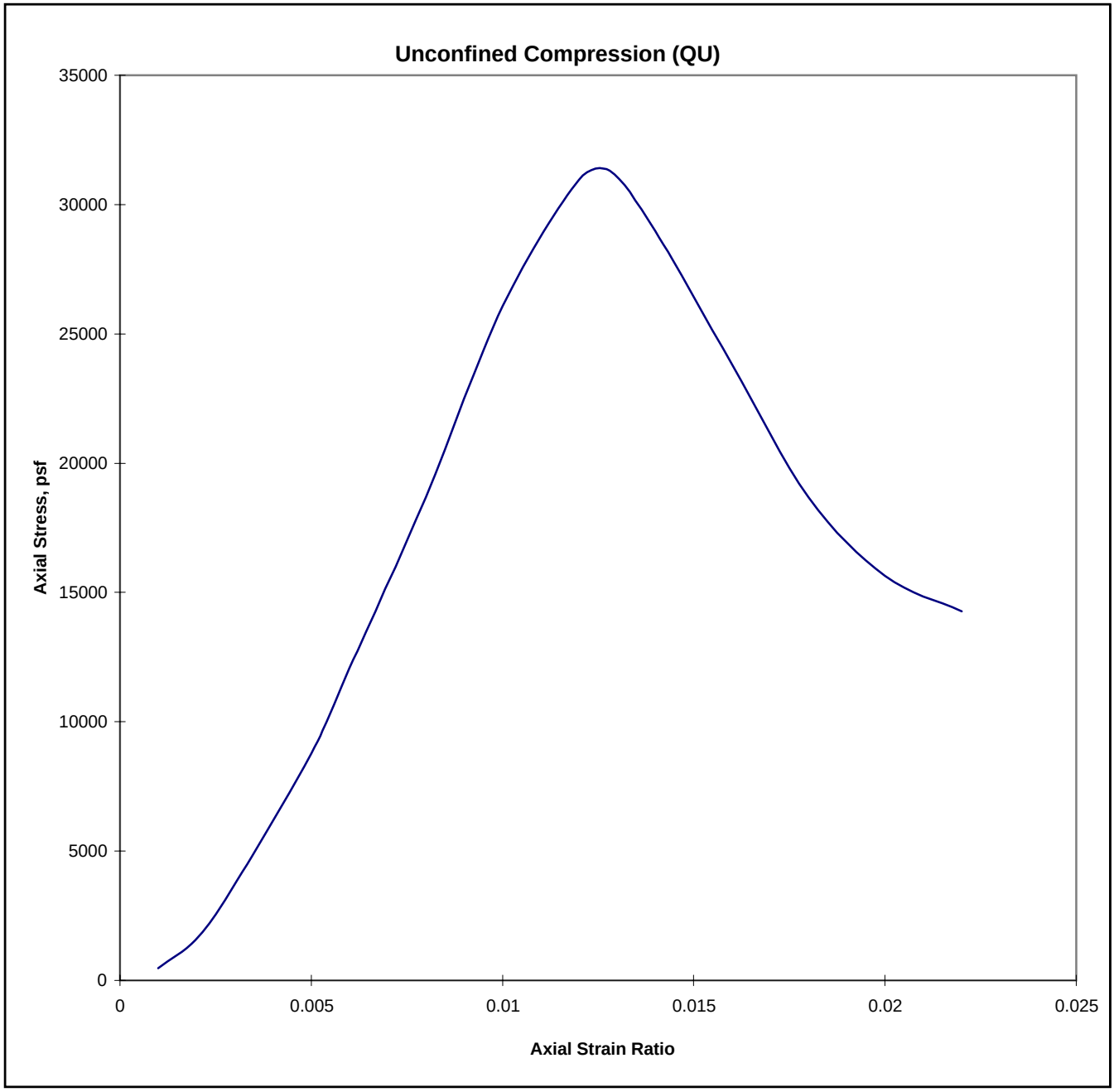

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-2-1D	WDLSS	1D	70	95	56	31,305	0.0128	20	10	10

Soil Technology
J-06-2135

Standard Lab Procedure for WDLSS Test Mix Design

All test mixtures were blended in a stainless steel container and mixed with a stainless steel spoon. Materials which contacted the sample were previously decontaminated by washing with Citrinox and then rinsed 3 times with tap water. Mixing took place in a clean, hooded lab bench area lined with a new, clean bench liner. All contaminated materials and waste sediments were held in reserve for return to AMEC personnel.

Various combinations of cement, fly ash and bentonite were added to WDL sediment samples. In each mixture, the cement was added first, followed by fly ash, and lastly bentonite. Each addition was mixed well before the addition of another constituent. In some cases, tap water was added to the mixture when the sediment became too difficult to stir. After test mold solidification, it was noticed that some small morsels of powder were found with-in the final mixture. Because bentonite was added last, when the mixture was stiff, it is expected that any incidences of powder are bentonite.

After all necessary additions were made and the sediment was homogenized, the sediment was placed in new, clean, white poly-eurethane (PE) plastic molds. The approximate dimentions are listed below. The molds were filled by adding about 100 ml of sediment at a time and then tapping the container on the countertop to remove any trapped air. This was repeated until the container was filled. Finally the mold was leveled off with a stainless steel spatula to make a smooth edge that was level with the top of the PE mold. Each mold was covered with a wet paper towel, placed in a 1 gallon plastic zip-lock bag, sealed, and maintained at room temperature until further analysis. Exceptionally, with the mold prepared for air monitoring, a wet paper towel was not used. The excess test mixture sediment was placed in zip-lock bags, sealed, and stored at room temperature.

<u>6 Cylinders were Molded:</u>
UCS-3 day (2.5 in. diameter x 5 in. length)
UCS-7 day (2.5 in. diameter x 5 in. length)
UCS-28 day (2.5 in. diameter x 5 in. length)
Wet/Dry durability - 28 day (2.75 in. diameter x 5in. length)
Hydraulic Conductivity - 28 day (2.75 in. diameter x 5in. length)
Air monitoring (2.75 in. diameter x 5in. length)

See corresponding results for further details and data regarding these tests.

TEST MIX DESIGN
WDLSS TS-1: Mix 1A

Start Time of Mixing: 2/27/06 10:30 am
Start Time of Molding: 2/27/06 11:10 am

Initial calculated water content (gravimetric dry %): 81
Volume of sample: 5.21 Liters (1.367 gal)
Weight of sample: 7918 g (17.46 lb)
Volume of water added during mixing: 75 ml (.0198 gal)
Calculated water content including added water (gravimetric dry %): 83

	Cement	Fly Ash	Bentonite
Mix Requirements by volume	10 %	0 %	5 %
Actual volume added	521 ml (.138 gal)	0 ml	261 ml (.0690 gal)
Name of constituent added	Ashgrove Cement Type I-II	-	Bara-Kade 90

Other comments: PID readings during mixing were 10-12 ppm. Water was added during bentonite mixture, when the sediment was too difficult to stir. When sediment was moved between the large drum and the 1.21 L sample container, the PID meter read a maximum of 70ppm, averaging 4-10ppm. Sample was transferred from the drum to the plastic 5.21 liter sample container on 2/27/06.

TEST MIX DESIGN
WDLSS TS-1: Mix 1B

Start Time of Mixing: 2/28/06 10:00 am
Start Time of Molding: 2/28/06 10:45 am

Initial calculated water content (gravimetric dry %): 81
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 7937 g (17.50 lb)
Volume of water added during mixing: 75 ml (.0198 gal)
Calculated water content including added water (gravimetric dry %): 83

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements	10 %	10 %	5 %
Actual volume added	521 ml (.138 gal)	521 ml	261 ml (.0690 gal)
Name of constituent added	Ashgrove Cement Type I-II	Centralia Plant, Class F	Bara-Kade 90

Other comments: PID readings during mixing were 18-20 ppm. Water was added during bentonite mixture, when the sediment was too difficult to stir. Sample was transferred from the drum to the plastic 5.21 liter sample container on 2/27/06.

TEST MIX DESIGN
WDLSS TS-1: Mix 1C

Start Time of Mixing: 2/28/06 2:40 pm
Start Time of Molding: 2/28/06 3:30 pm

Initial calculated water content (gravimetric dry %): 81
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 7800 g (17.19 lb)
Volume of water added during mixing: 100 ml (.0264 gal)
Calculated water content including added water (gravimetric dry %): 82

	Cement	Fly Ash	Bentonite
Mix Requirements	10 %	0 %	10 %
Actual volume added	521 ml (.138 gal)	0 ml	521 ml (.138 gal)
Name of constituent added	Ashgrove Cement Type I-II	-	Bara-Kade 90

Other comments: Water was added during bentonite mixture, when the sediment was too difficult to stir. Sample was transferred from the drum to the plastic 5.21 liter sample container on 2/27/06.

TEST MIX DESIGN
WDLSS TS-1: Mix 1D

Start Time of Mixing: 2/28/06 4:18 pm
Start Time of Molding: 2/28/06 5:00 pm

Initial calculated water content (gravimetric dry %): 81
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 8075 g (17.80 lb)
Volume of water added during mixing: 900 ml (.238 gal)
Calculated water content including added water (gravimetric dry %): 101

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements	20 %	10 %	10 %
Actual volume added	1042 ml (.275 gal)	521 ml (.138 gal)	521 ml (.138 gal)
Name of constituent added	Ashgrove Cement Type I-II	Centralia Plant, Class F	Bara-Kade 90

Other comments: PID readings during mixing were 0.4-0.7 ppm. Water was added during bentonite mixture, when the sediment was too difficult to stir. Sample was transferred from the drum to the plastic 5.21 liter sample container on 2/27/06.

TEST MIX DESIGN
WDLSS TS-2: Mix 1A

Start Time of Mixing: 3/3/06 9:30 am
Start Time of Molding: 3/3/06 10:15 am

Initial calculated water content (gravimetric dry %): 142
Volume of sample: 5.21 Liters (1.367 gal)
Weight of sample: 7022 g (15.48 lb)
Volume of water added during mixing: 0 ml (0 gal)
Calculated water content including added water (gravimetric dry %): no change

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements by volume	10 %	0 %	5 %
Actual volume added	521 ml (.138 gal)	0 ml	261 ml (.0690 gal)
Name of constituent added	Ashgrove Cement Type I-II	-	Bara-Kade 90

Other comments: PID readings during mixing were 1.7 ppm. When sediment was moved between the large drum and the 1.21 L sample container, the PID meter read a maximum of 17 ppm, averaging 2-3ppm. Sample was transferred from the drum to the plastic 5.21 liter sample container on 3/2/06. No need to add water, the sediment sample had very high water content.

TEST MIX DESIGN
WDLSS TS-2: Mix 1B

Start Time of Mixing: 3/3/06 11:00 am
Start Time of Molding: 3/3/06 12:00 pm

Initial calculated water content (gravimetric dry %): 142
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 7135 g (15.73 lb)
Volume of water added during mixing: 0 ml (0 gal)
Calculated water content including added water (gravimetric dry %): no change

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements	10 %	10 %	5 %
Actual volume added	521 ml (.138 gal)	521 ml (.138 gal)	261 ml (.0690 gal)
Name of constituent added	Ashgrove Cement Type I-II	Centralia Plant, Class F	Bara-Kade 90

Other comments: PID readings during mixing were 0.3-0.5 ppm. Sample was transferred from the drum to the plastic 5.21 liter sample container on 3/2/06. No need to add water, the sediment sample had very high water content.

TEST MIX DESIGN
WDLSS TS-2: Mix 1C

Start Time of Mixing: 3/3/06 1:50 pm
Start Time of Molding: 3/3/06 2:35 pm

Initial calculated water content (gravimetric dry %): 142
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 7105 g (15.66 lb)
Volume of water added during mixing: 370 ml (.0978 gal)
Calculated water content including added water (gravimetric dry %): 155

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements by volume	10 %	0 %	10 %
Actual volume added	521 ml (.138 gal)	0 ml	521 ml (.138 gal)
Name of constituent added	Ashgrove Cement Type I-II	-	Bara-Kade 90

Other comments: PID readings during mixing were 1.5-1.7 ppm. Water was added during bentonite mixture, when the sediment was too difficult to stir. Sample was transferred from drum to the plastic 5.21 liter sample container on 3/2/06.

TEST MIX DESIGN
WDLSS TS-2: Mix 1D

Start Time of Mixing: 3/3/06 3:22 pm
Start Time of Molding: 3/3/06 4:00 pm

Initial calculated water content (gravimetric dry %): 142
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 7156 g (15.77 lb)
Volume of water added during mixing: 480 ml (.127 gal)
Calculated water content including added water (gravimetric dry %): 158

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements by volume	20 %	10 %	10 %
Actual volume added	1042 ml (.275 gal)	521 ml (.138 gal)	521 ml (.138 gal)
Name of constituent added	Ashgrove Cement Type I-II	Centralia Plant, Class F	Bara-Kade 90

Other comments: PID readings during mixing were 0 ppm. Water was added during bentonite mixture, when the sediment was too difficult to stir. Sample was transferred from drum to the plastic 5.21 liter sample container on 3/2/06.

TEST MIX DESIGN
WDLSS TS-3: Mix 1A

Start Time of Mixing: 3/6/06 9:00 am
Start Time of Molding: 3/6/06 9:45 am

Initial calculated water content (gravimetric dry %): 72
Volume of sample: 5.21 Liters (1.367 gal)
Weight of sample: 8384 g (18.48 lb)
Volume of water added during mixing: 186 ml (0.0491 gal)
Calculated water content including added water (gravimetric dry %): 76

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements by volume	10 %	0 %	5 %
Actual volume added	521 ml (.138 gal)	0 ml	261 ml (.0690 gal)
Name of constituent added	Ashgrove Cement Type I-II	-	Bara-Kade 90

Other comments: PID readings during mixing were 1 – 0.1 ppm. When sediment was moved between the large drum and the 1.21 L sample container, the PID meter read a maximum of 1.7 ppm. Sample was transferred from the drum to the plastic 5.21 liter sample container on 3/6/06.

TEST MIX DESIGN
WDLSS TS-3: Mix 1B

Start Time of Mixing: 3/3/06 10:10 am
Start Time of Molding: 3/3/06 11:05 pm

Initial calculated water content (gravimetric dry %): 72
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 8386 g (18.49 lb)
Volume of water added during mixing: 256 ml (0.0676 gal)
Calculated water content including added water (gravimetric dry %): 77

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements	10 %	10 %	5 %
Actual volume added	521 ml (.138 gal)	521 ml (.138 gal)	261 ml (.0690 gal)
Name of constituent added	Ashgrove Cement Type I-II	Centralia Plant, Class F	Bara-Kade 90

Other comments: PID readings during mixing were 0 ppm. Sample was transferred from the drum to the plastic 5.21 liter sample container on 3/6/06. Water was added to the mixture during bentonite mixing.

TEST MIX DESIGN
WDLSS TS-3: Mix 1C

Start Time of Mixing: 3/8/06 2:20 pm
Start Time of Molding: 3/8/06 3:10 pm

Initial calculated water content (gravimetric dry %): 72
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 8526 g (18.80 lb)
Volume of water added during mixing: 571 ml (.151 gal)
Calculated water content including added water (gravimetric dry %): 84

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements by volume	10 %	0 %	10 %
Actual volume added	521 ml (.138 gal)	0 ml	521 ml (.138 gal)
Name of constituent added	Ashgrove Cement Type I-II	-	Bara-Kade 90

Other comments: PID readings during mixing were 0.5 – 0.7 ppm. Water was added during bentonite mixture, when the sediment was too difficult to stir. Sample was transferred from drum to the plastic 5.21 liter sample container on 3/6/06.

TEST MIX DESIGN
WDLSS TS-1: Mix 1D

Start Time of Mixing: 3/3/06 3:55 pm
Start Time of Molding: 3/3/06 4:45 pm

Initial calculated water content (gravimetric dry %): 72
Volume of sample: 5.21 Liters (1.376 gal)
Weight of sample: 8400g (18.52 lb)
Volume of water added during mixing: 1000 ml (.264 gal)
Calculated water content including added water (gravimetric dry %): 92

	Cement	**Fly Ash**	**Bentonite**
Mix Requirements by volume	20 %	10 %	10 %
Actual volume added	1042 ml (.275 gal)	521 ml (.138 gal)	521 ml (.138 gal)
Name of constituent added	Ashgrove Cement Type I-II	Centralia Plant, Class F	Bara-Kade 90

Other comments: PID readings during mixing were 4.0 – 5.0 ppm. Water was added during bentonite mixture, when the sediment was too difficult to stir. Sample was transferred from drum to the plastic 5.21 liter sample container on 3/6/06.

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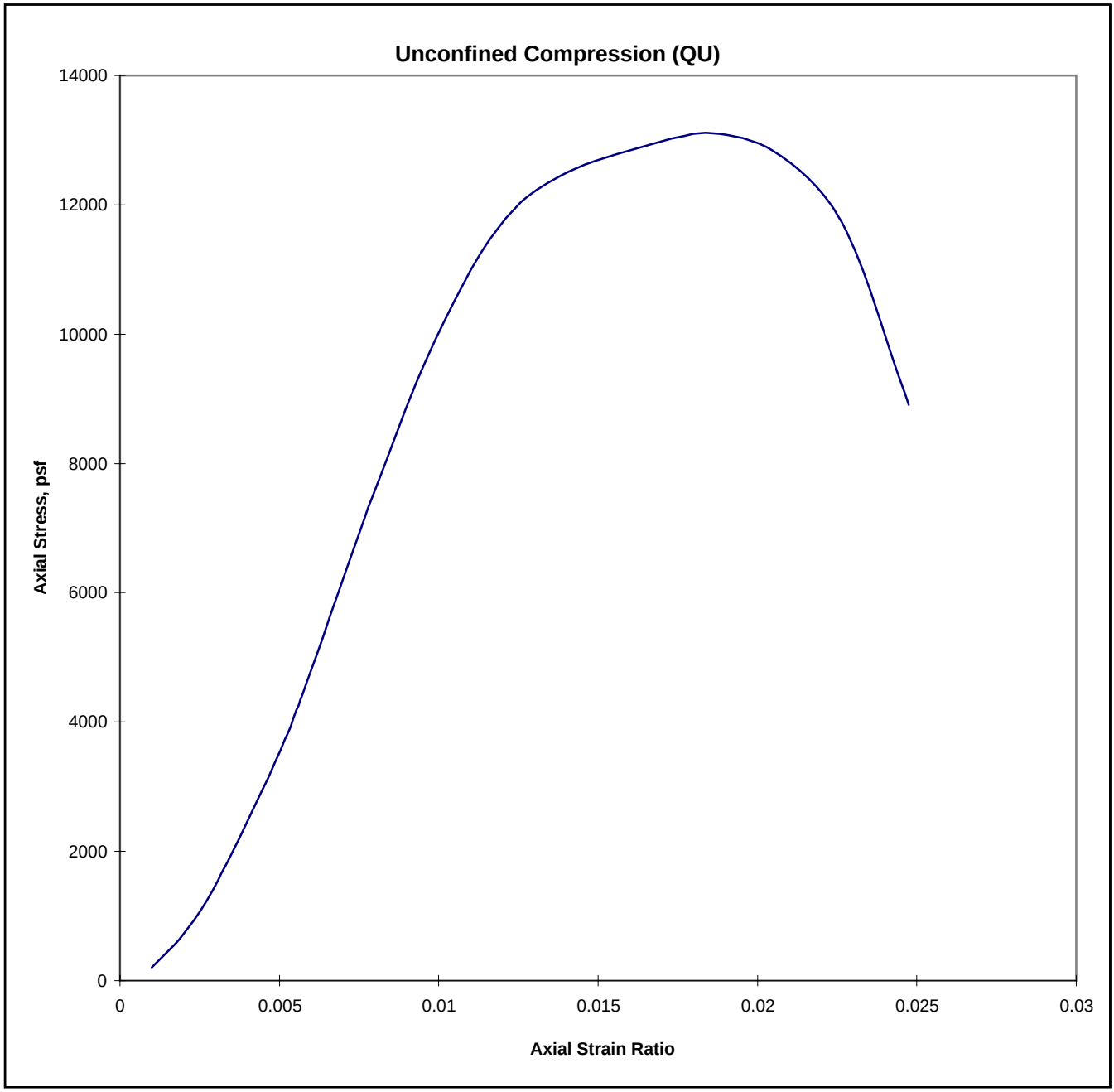

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		5 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1A	WDLSS	1A	59	104	65	13,095	0.018801	10	0	5

Soil Technology
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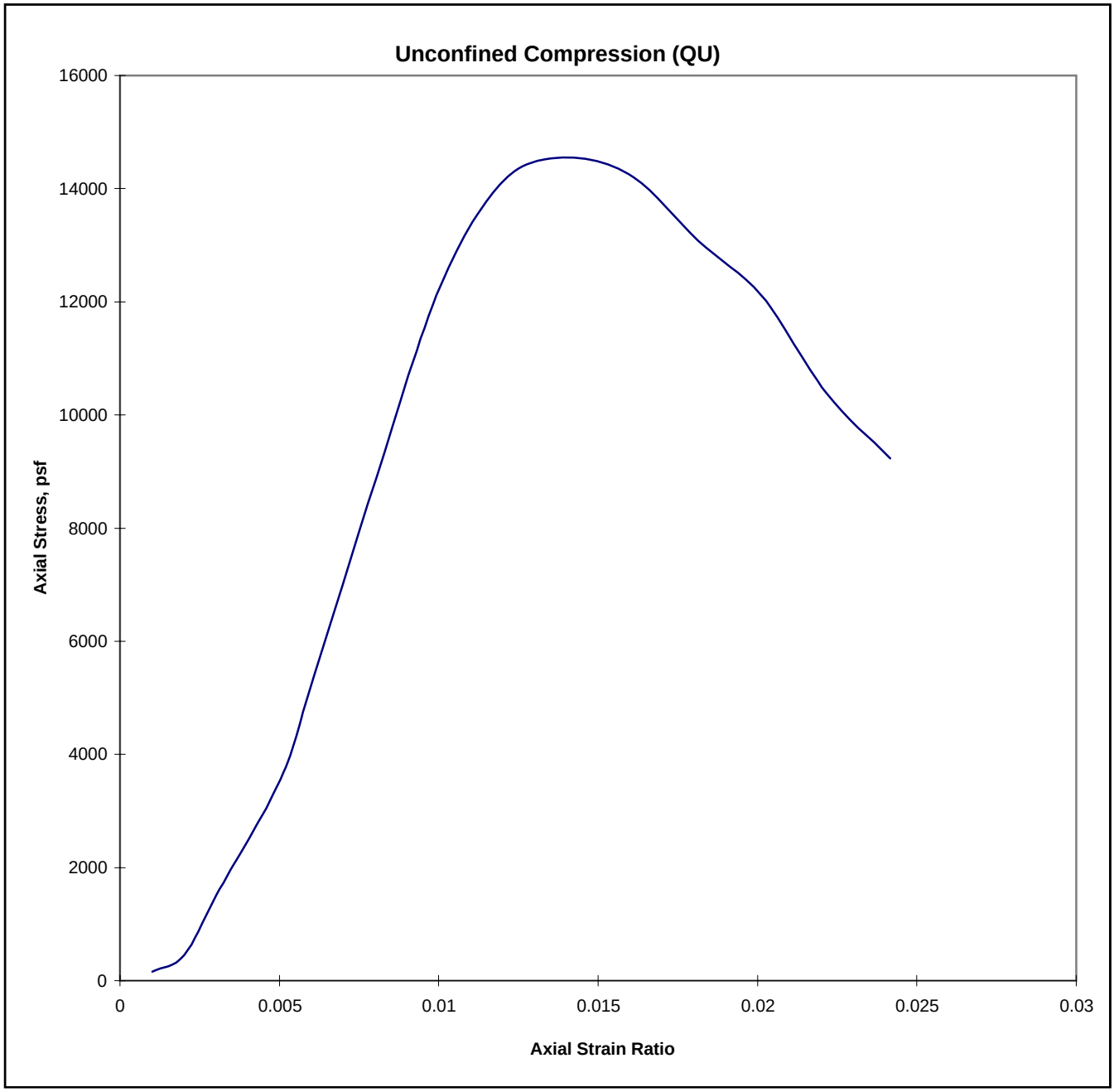

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1A	WDLSS	1A	59	101	64	14,549	0.014094	10	0	5

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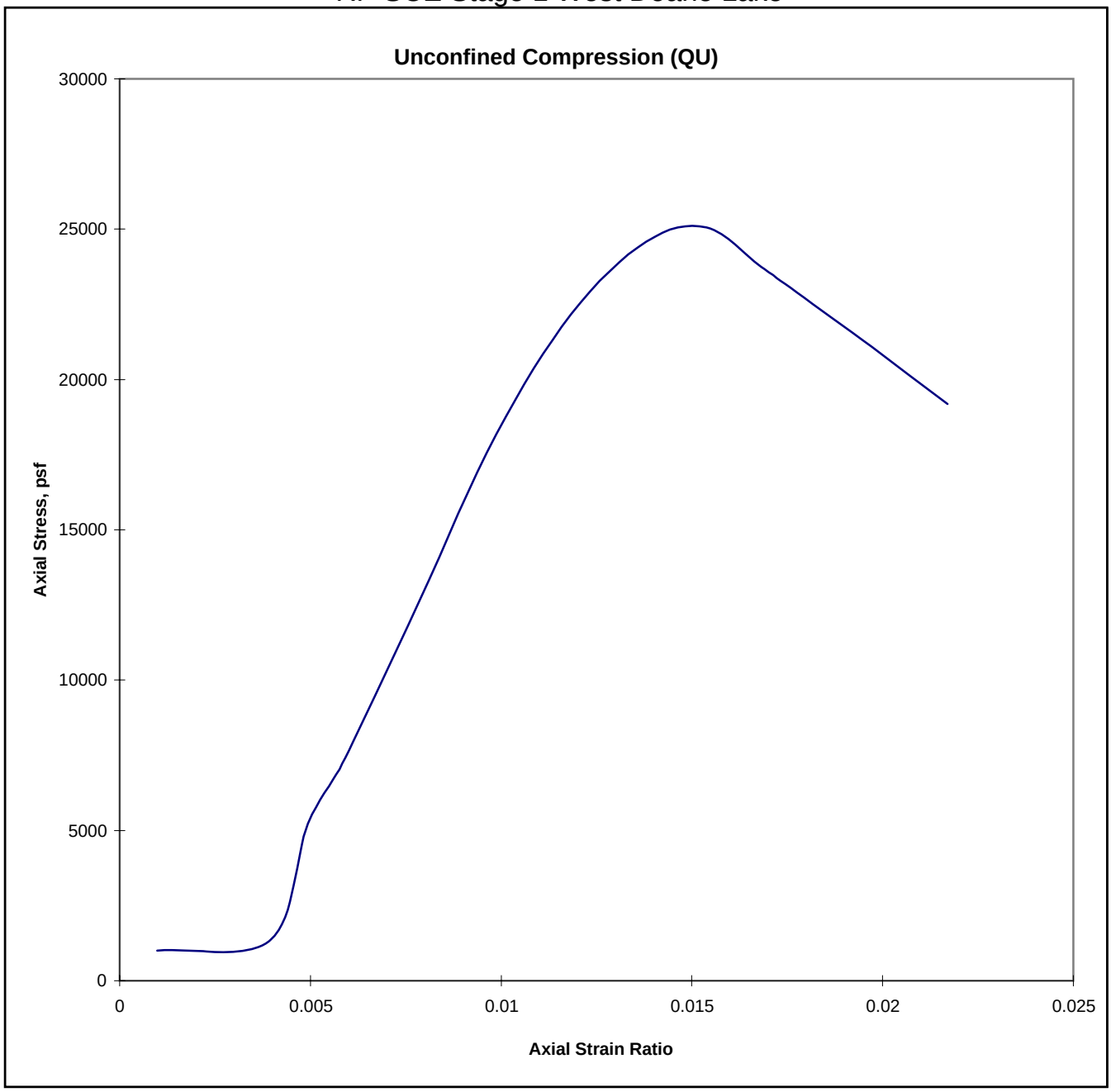

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1A	WDLSS	1A	59	104	66	25,066	0.015385	10	0	5

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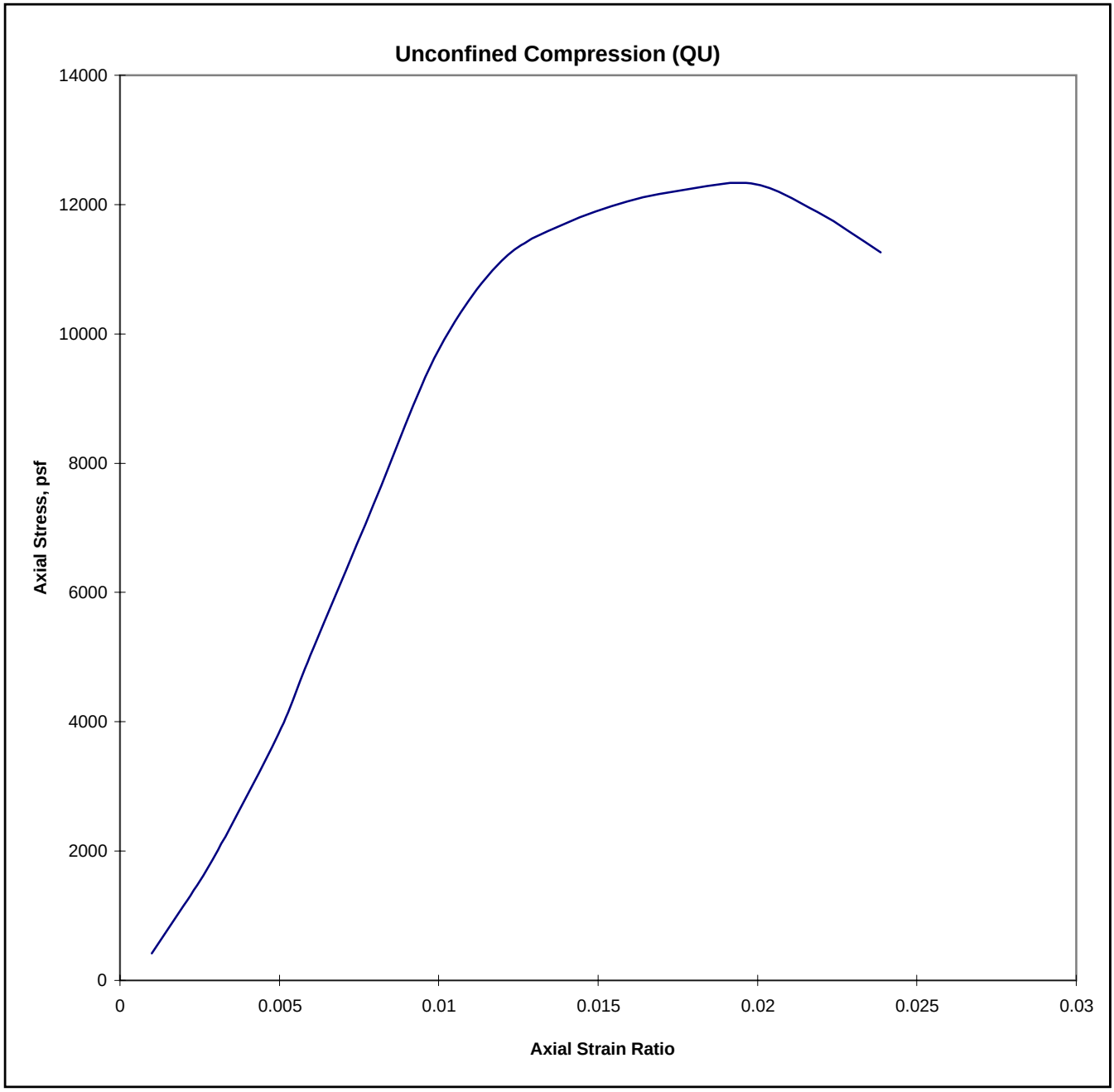

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		5 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1B	WDLSS	1B	54	101	66	12,318	0.019893	10	10	5

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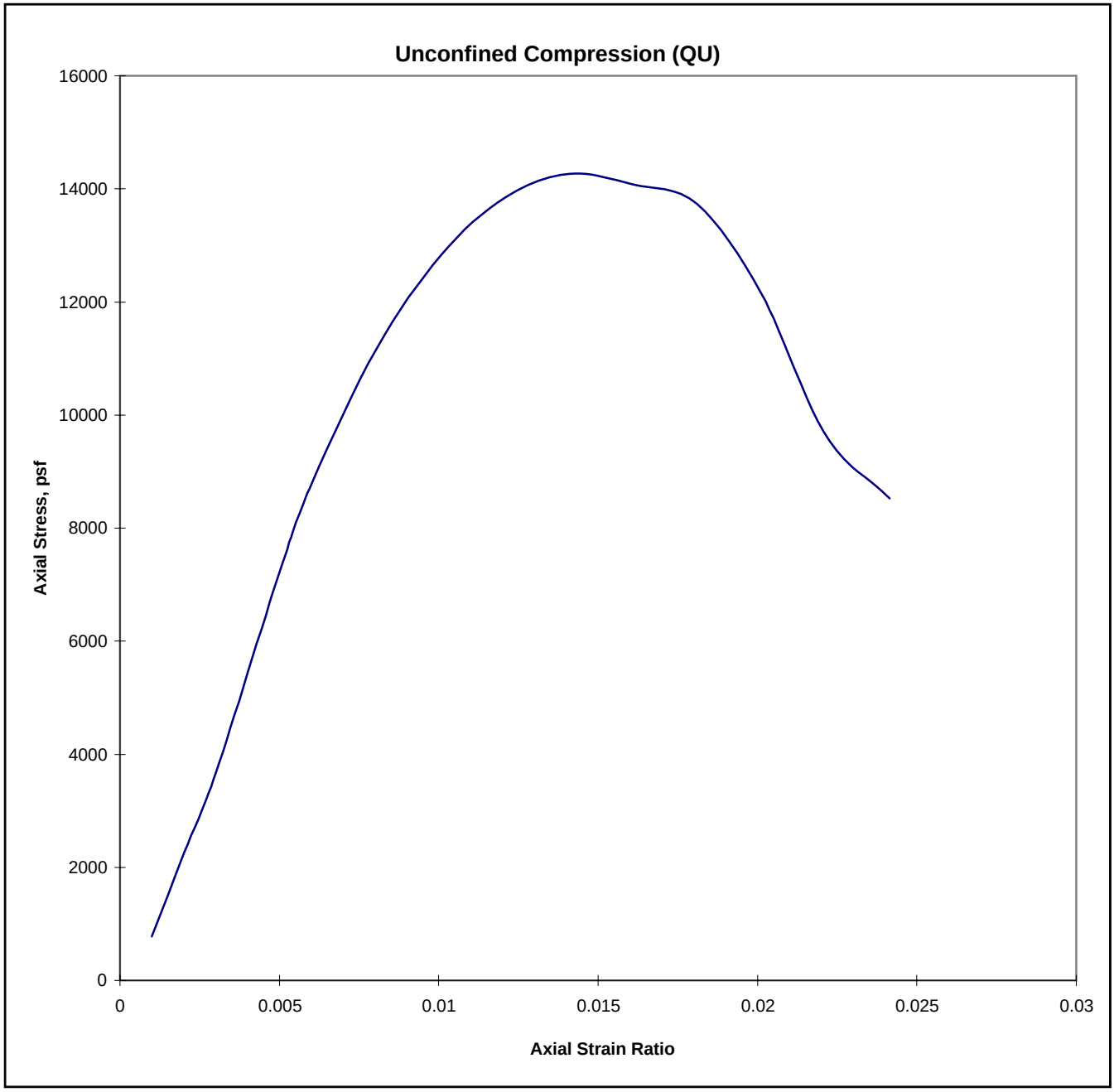

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1B	WDLSS	1B	54	102	66	12,641	0.01402	10	10	5

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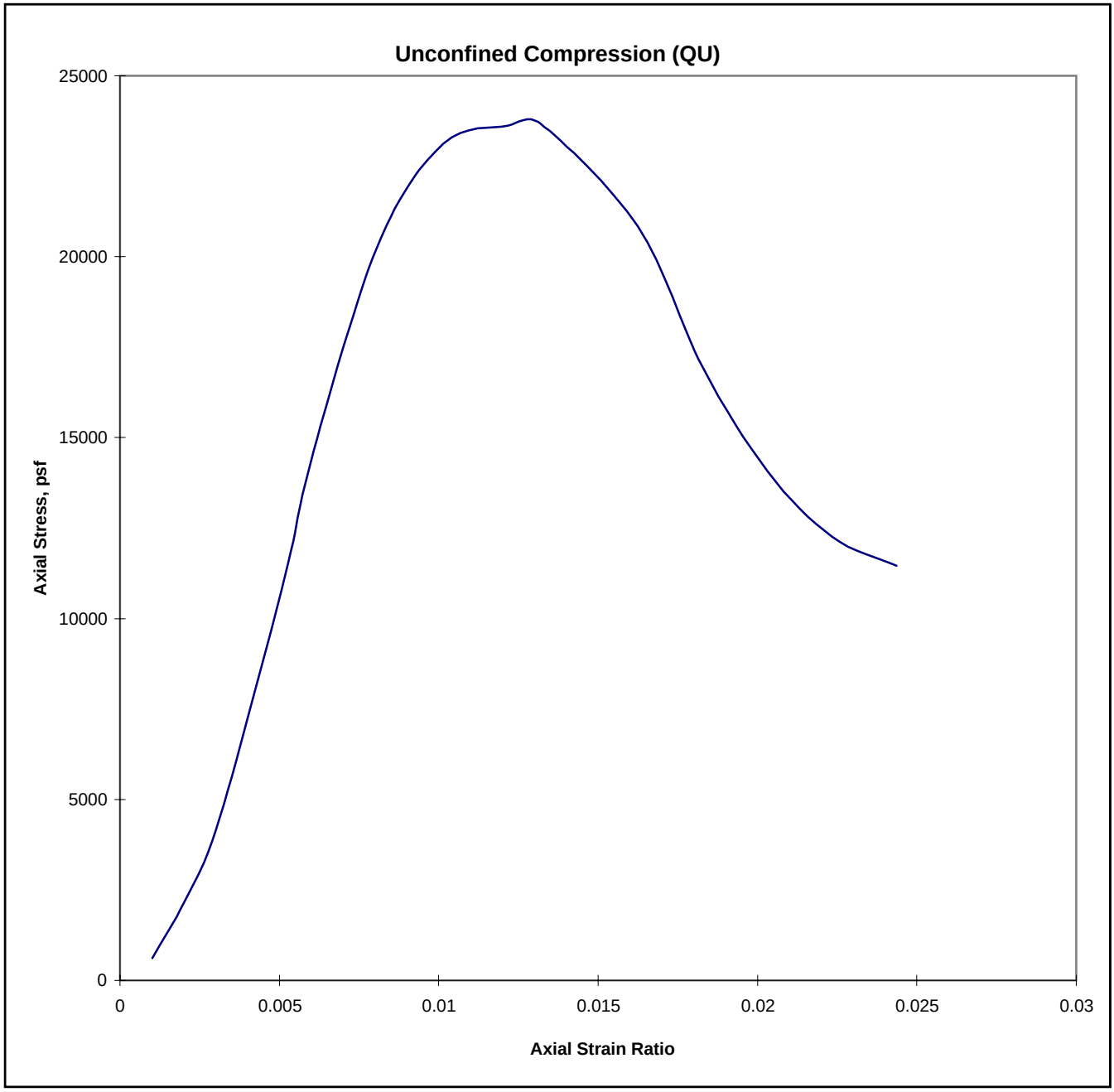

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1B	WDLSS	1B	53	102	67	23,687	0.013195	10	10	5

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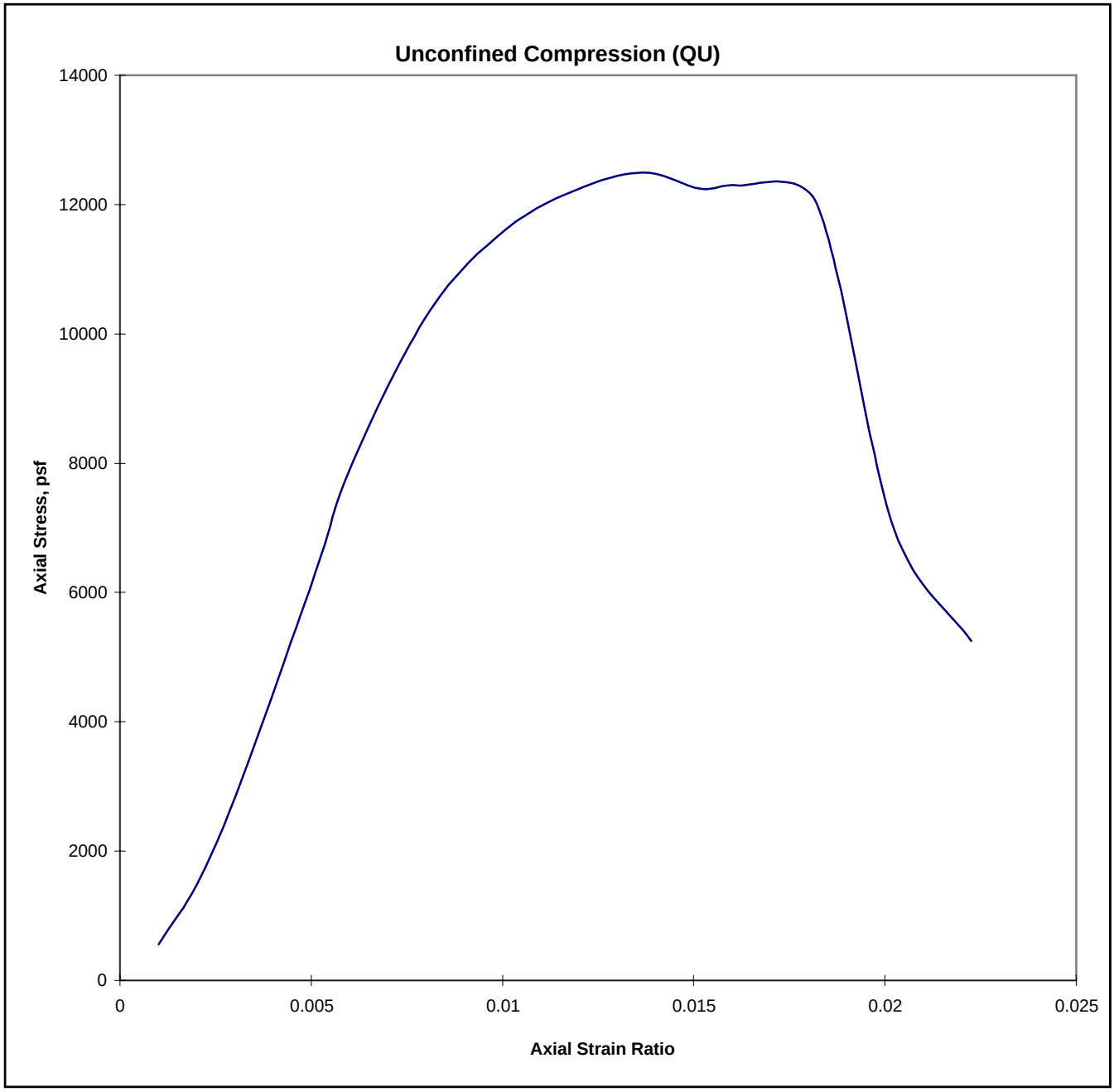

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		5 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1C	WDLSS	1C	63	101	62	12,487	0.01376	10	0	10

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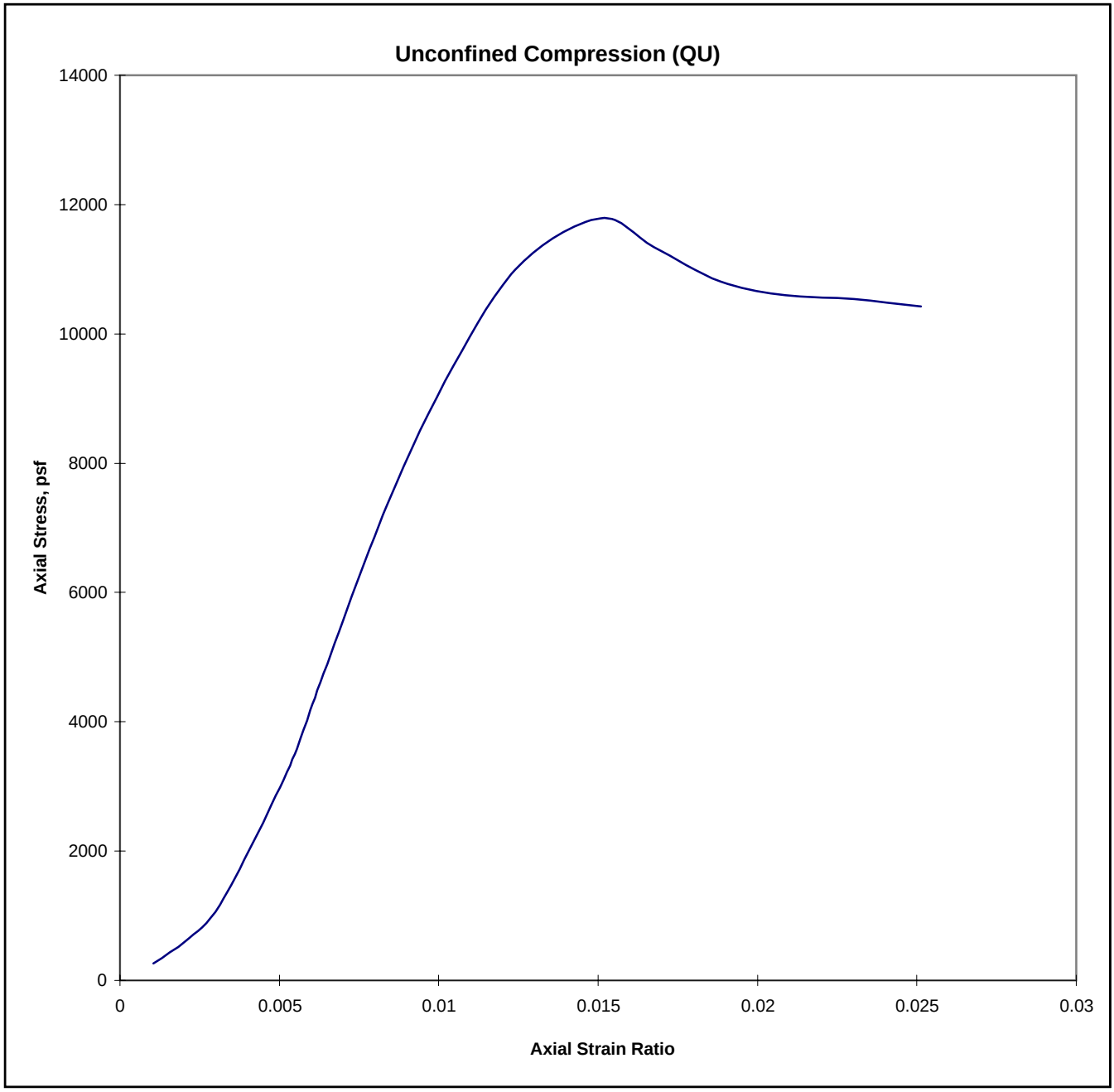

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1C	WDLSS	1C	64	101	62	11,783	0.015072	10	0	10

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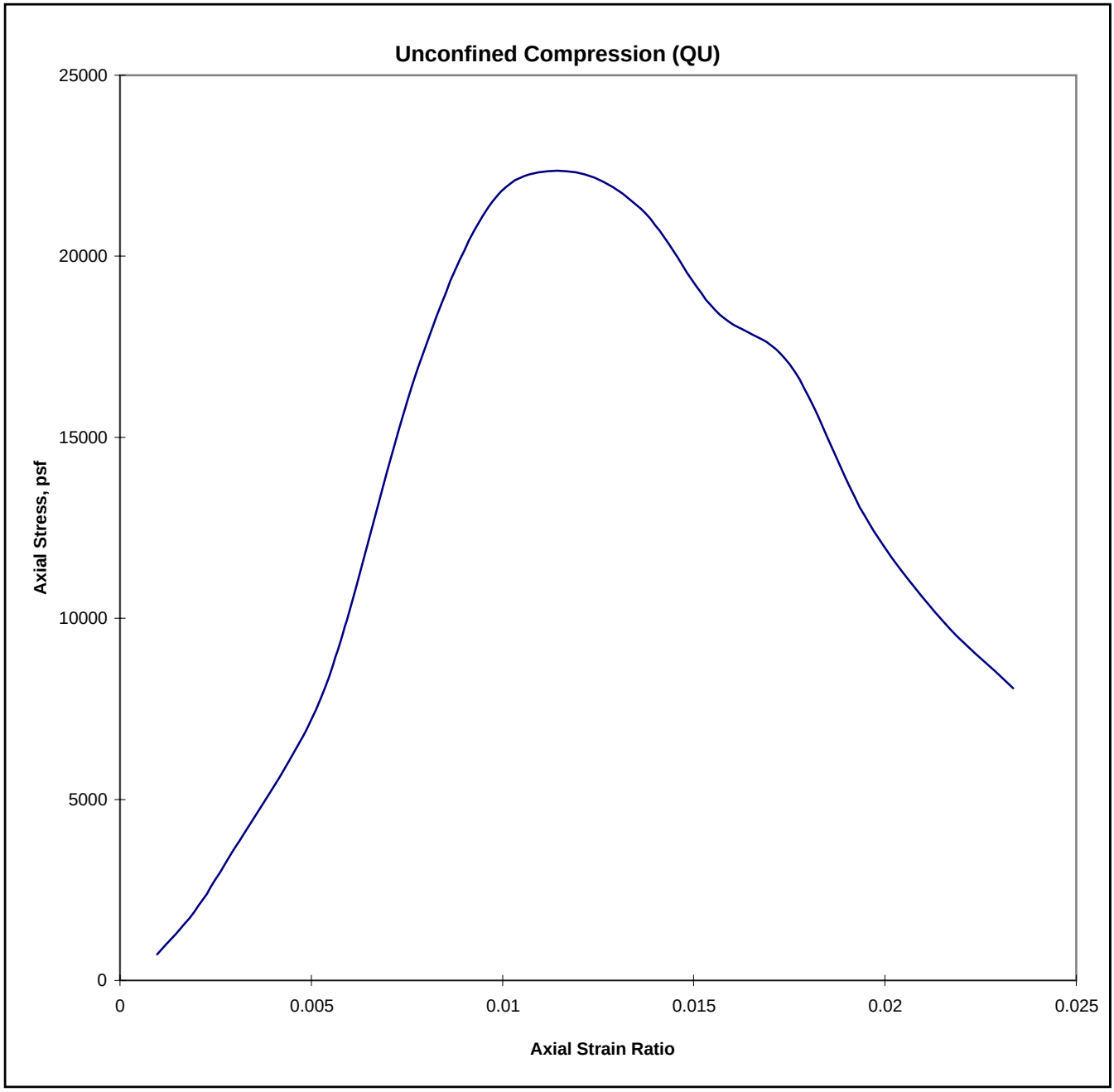

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1C	WDLSS	1C	59	100	60	22,353	0.011673	10	0	10

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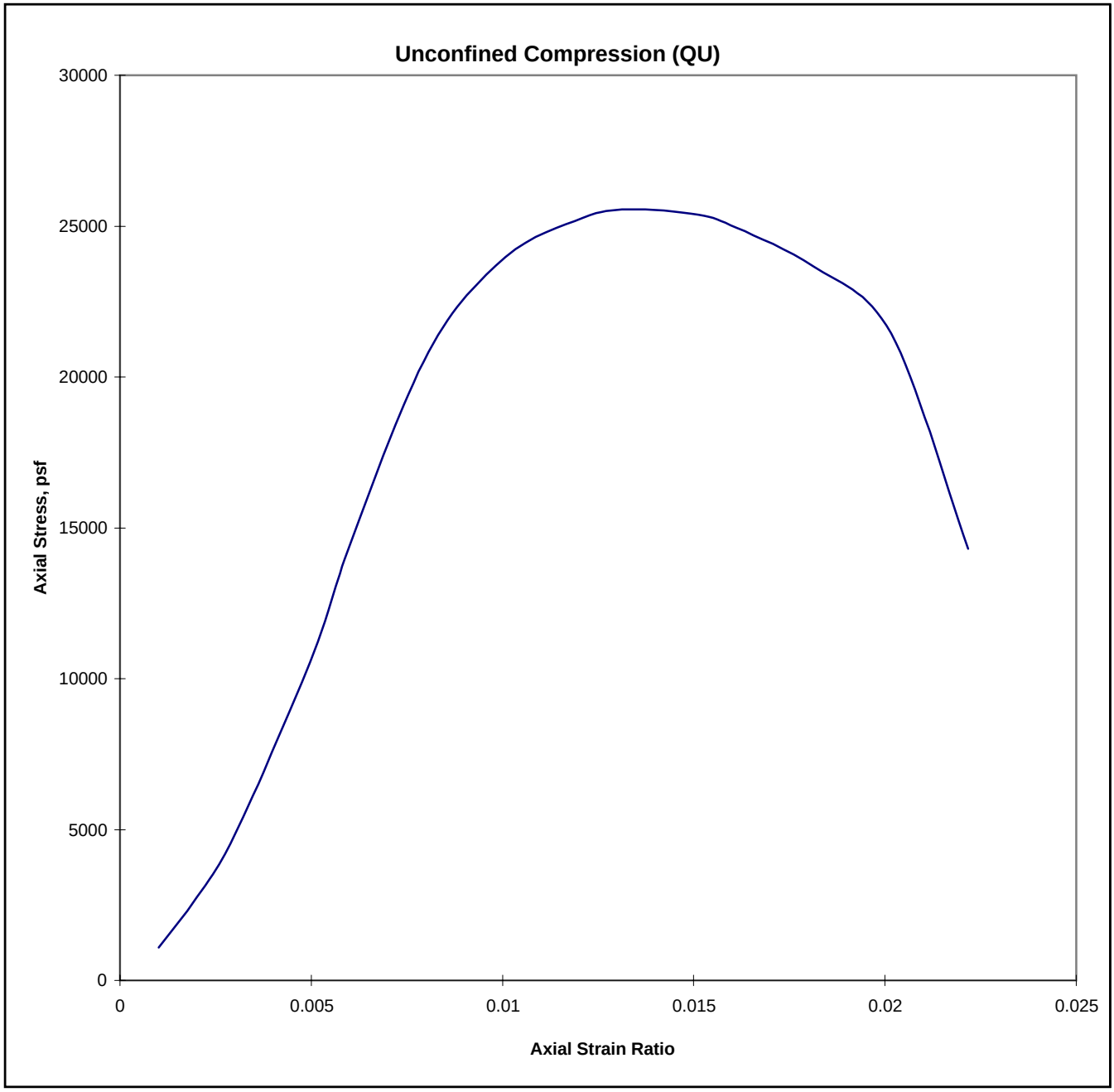

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		5 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1D	WDLSS	1D	54	104	68	25,561	0.013306	20	10	10

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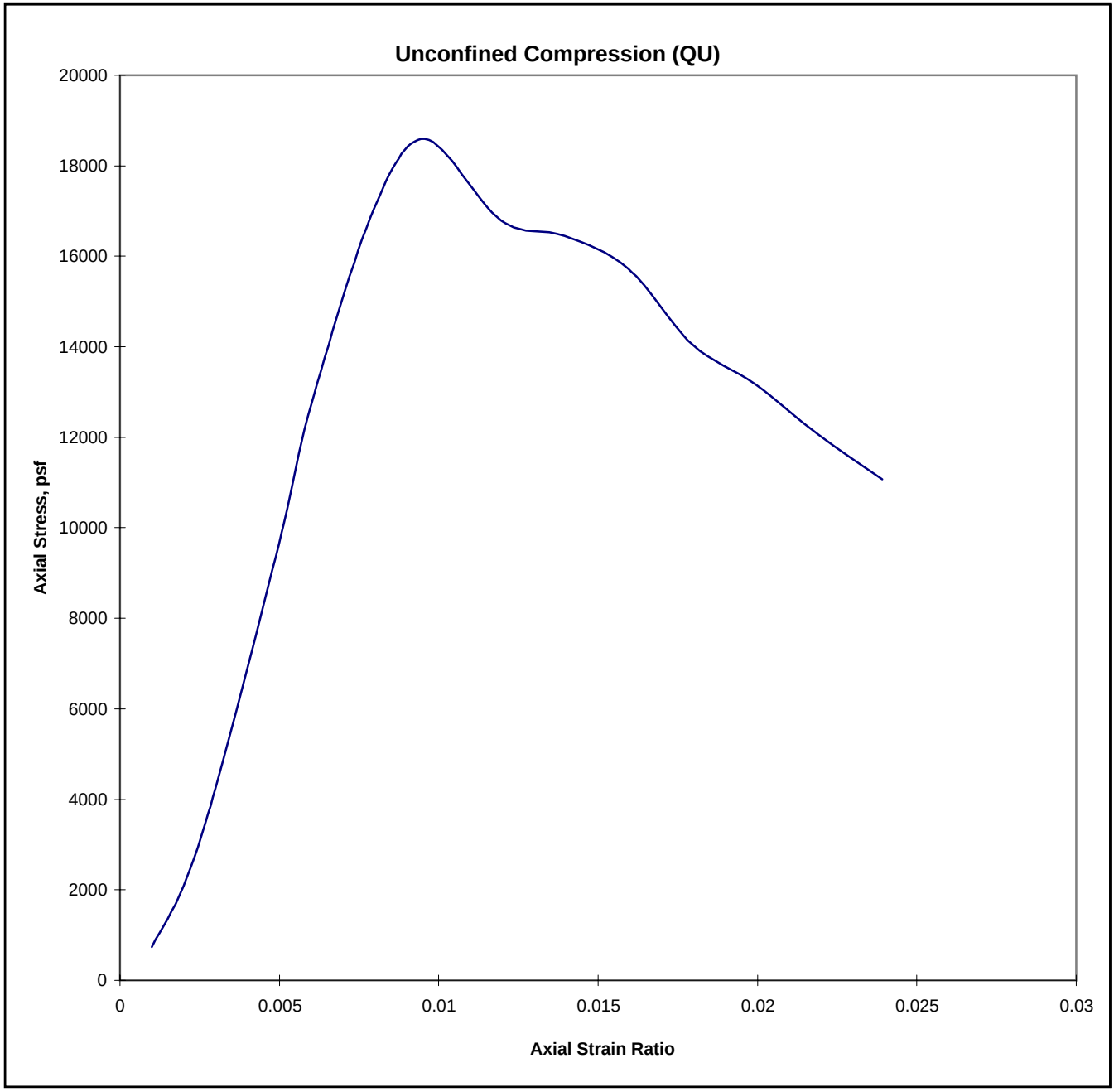

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1D	WDLSS	1D	53	106	69	18,598	0.009567	20	10	10

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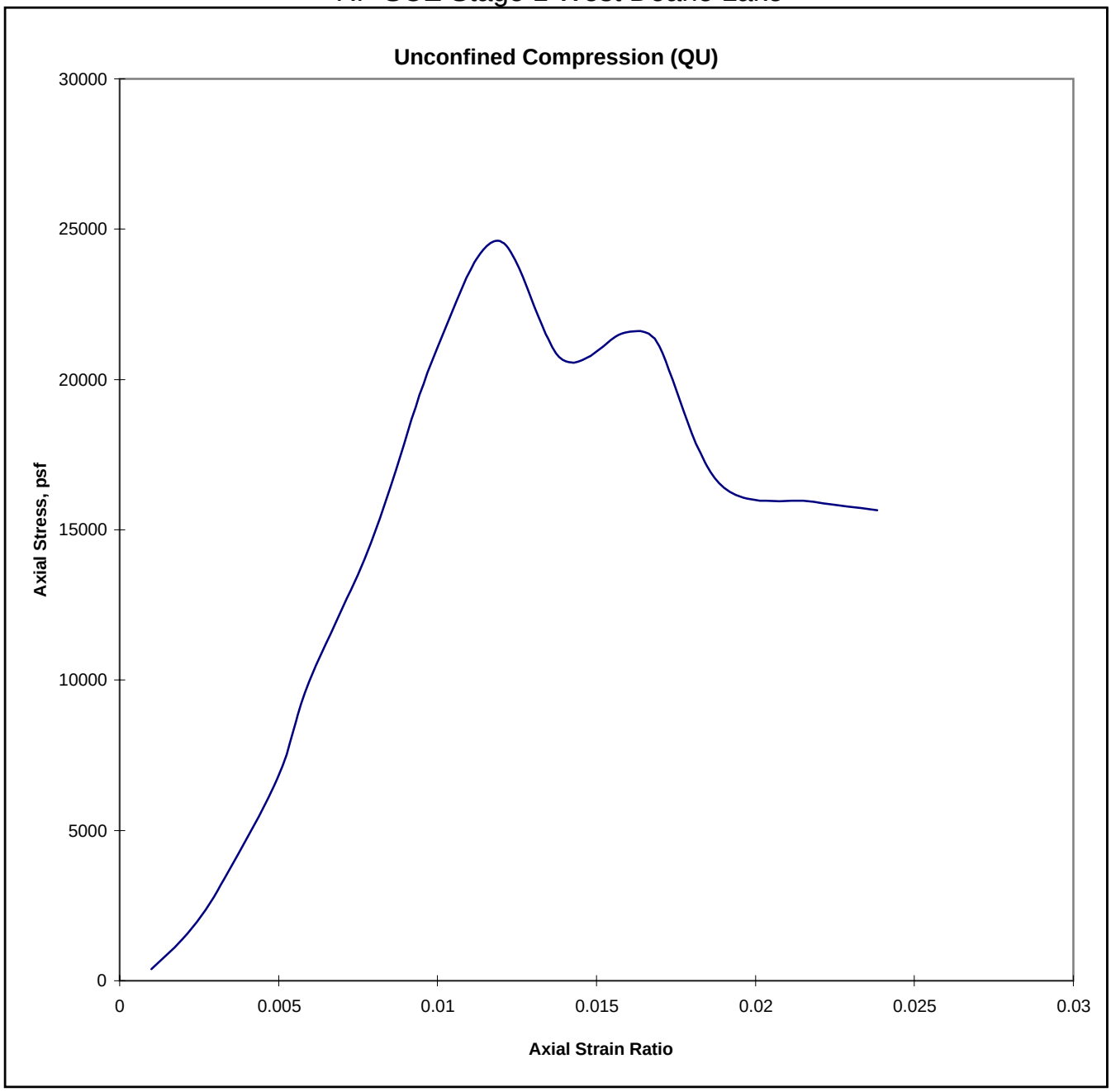

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	FlyA	Bent
TS-3-1D	WDLSS	1D	53	103	67	24,625	0.011913	20	10	10

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AMEC Earth & Environmental, Inc.
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Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake

Flexible Wall Hydraulic Conductivity of S/S 28 Day Cure Specimens
Table 1

Sample Identification	Water Content %		Wet Density (Pcf)		Saturation[1]		Hydraulic Conductivity[2] (cm/sec)
	Before	After	Before	After	Before	After	
TS-1 WDLSS 1A	61	64	99	99	.95	.97	6×10^{-8}
TS-1 WDLSS 1B	52	55	102	104	.94	.98	6×10^{-8}
TS-1 WDLSS 1C	57	59	102	102	.96	.98	7×10^{-8}
TS-1 WDLSS 1D	55	59	102	103	.96	1.0	9×10^{-9}
TS-2 WDLSS 1A	82	86	91	93	.93	.98	2×10^{-8}
TS-2 WDLSS 1B	73	77	92	93	.90	.94	2×10^{-8}
TS-2 WDLSS 1C	101	106	89	90	.97	1.0	$< 1 \times 10^{-8}$ [3]
TS-2 WDLSS 1D	61	64	95	97	.89	.94	$< 1 \times 10^{-8}$ [3]
TS-3 WDLSS 1A	55	58	103	105	.96	1.0	$< 1 \times 10^{-8}$ [3]
TS-3 WDLSS 1B	51	53	104	106	.95	.99	2×10^{-8}
TS-3 WDLSS 1C	64	67	99	100	.96	1.0	3×10^{-8}
TS-3 WDLSS 1D	47	50	107	105	.96	.97	2×10^{-8}

[1] Specific gravity assumed 2.7
[2] Average Saturated Hydraulic Conductivity Using Tap Water
[3] Reported as < 1 x 10-8 cm/sec at or near system detection limit

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Flexible Wall Hydraulic Conductivity Test Parameters
Table 2

Exploration Number	Triaxial Pressure (psi)			Average Effective Confining Stress	Gradient (*i*)
	Cell	HW	TW	(psi)	
TS-1 WDLSS 1A	35	30.5	29.5	5.0	12
TS-1 WDLSS 1B	35	30.5	29.5	5.0	9
TS-1 WDLSS 1C	35	30.5	29.5	5.0	10
TS-1 WDLSS 1D	35	30.5	29.5	5.0	10
TS-2 WDLSS 1A	35	30.5	29.5	5.0	9
TS-2 WDLSS 1B	35	30.5	29.5	5.0	8
TS-2 WDLSS 1C	35	30.5	29.5	5.0	9
TS-2 WDLSS 1D	35	30.5	29.5	5.0	10
TS-3 WDLSS 1A	35	30.5	29.5	5.0	8
TS-3 WDLSS 1B	35	30.5	29.5	5.0	10
TS-3 WDLSS 1C	35	30.5	29.5	5.0	10
TS-3 WDLSS 1D	35	30.5	29.5	5.0	11

HW = Head Water; TW = Tail Water; ***i*** = h/l

AMEC Earth & Environmental, Inc.
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Flexible Wall Hydraulic Conductivity of Remolded TS-1, TS-2, TS-3 Bulk Drum Samples as Received
Table 1

Sample Identification	Water Content %		Wet Density (Pcf)			Saturation[1]	Hydraulic Conductivity[2] (cm/sec)
	Before	After	Before	After	Before	After	
TS-1 Baseline - consol. stress 1 psi	75	51	98	109	1.0	1.0	4×10^{-7}
TS-1 Baseline - consol. stress 2 psi							2×10^{-7}
TS-2 Baseline - consol. stress 1 psi	138	80	82	87	.95	.87	8×10^{-8}
TS-2 Baseline - consol. stress 2 psi							6×10^{-8}
TS-3 Baseline - consol. stress 1 psi	76	55	98	113	1.0	1.0	2×10^{-7}
TS-3 Baseline - consol. stress 2 psi							2×10^{-7}

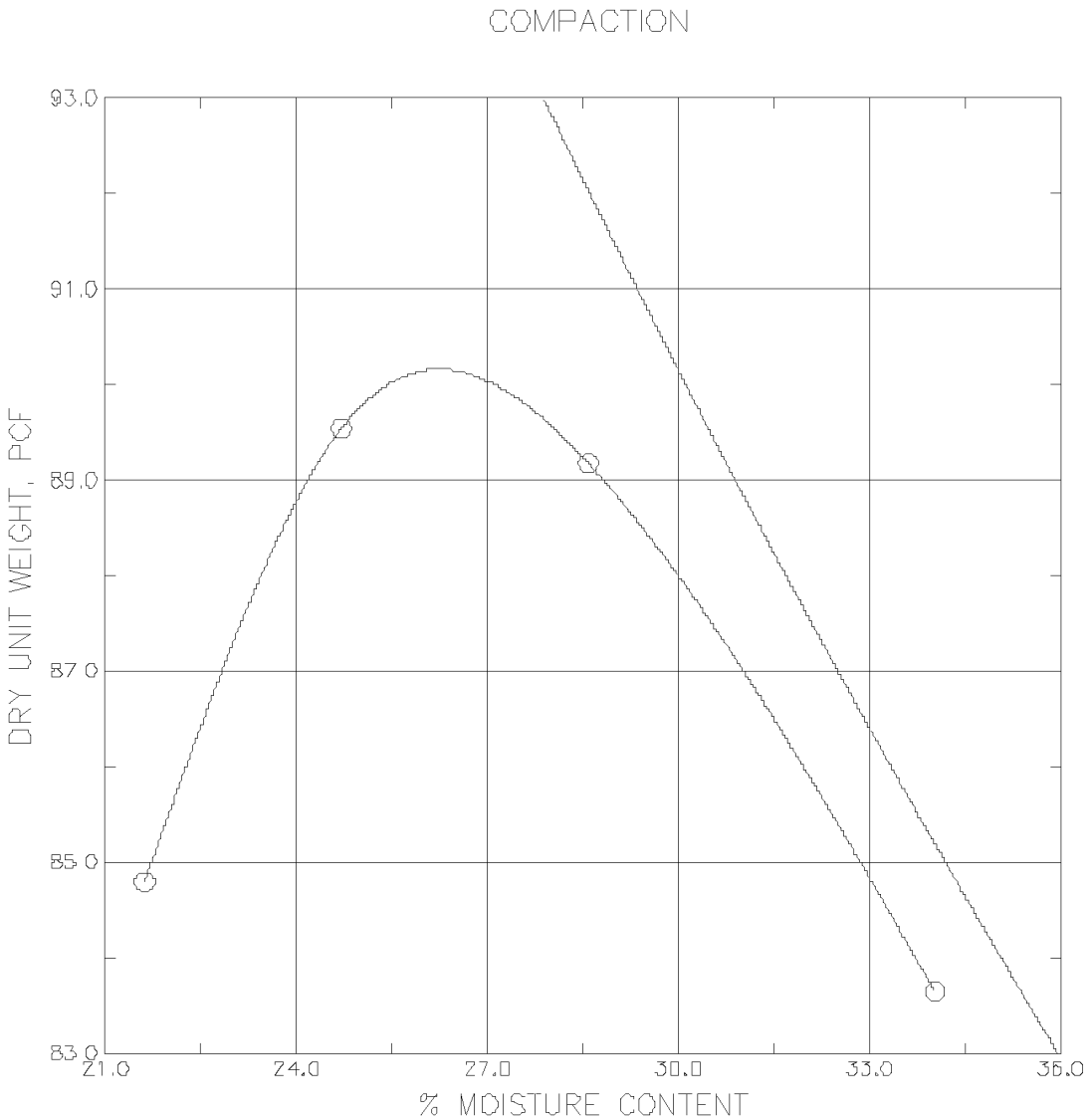
[1] Specific gravity assumed 2.7
[2] Average Saturated Hydraulic Conductivity Using Tap Water
Confining stress of 1 psi is calculated in-situ depth of 3.5 ft assuming wet density of 105 pcf minus the unit wt. of water (62.4 pcf)
Confining stress of 2 psi is calculated in-situ depth of 7 ft assuming wet density of 105 pcf minus the unit wt. of water (62.4 pcf)

Flexible Wall Hydraulic Conductivity Test Parameters
Table 2

Exploration Number	Triaxial Pressure (psi)			Average Effective Confining Stress
	Cell	HW	TW	(psi)
TS-1, TS-2, TS-3 Baseline - consol. stress 2 psi	32.0	30.2	29.8	2
TS-1, TS-2, TS-3 Baseline - consol. stress 1 psi	31.0	30.0	30.0	1

HW = Head Water; TW = Tail Water; ***i*** = h/l: Gradients (***i***) used were 7-9

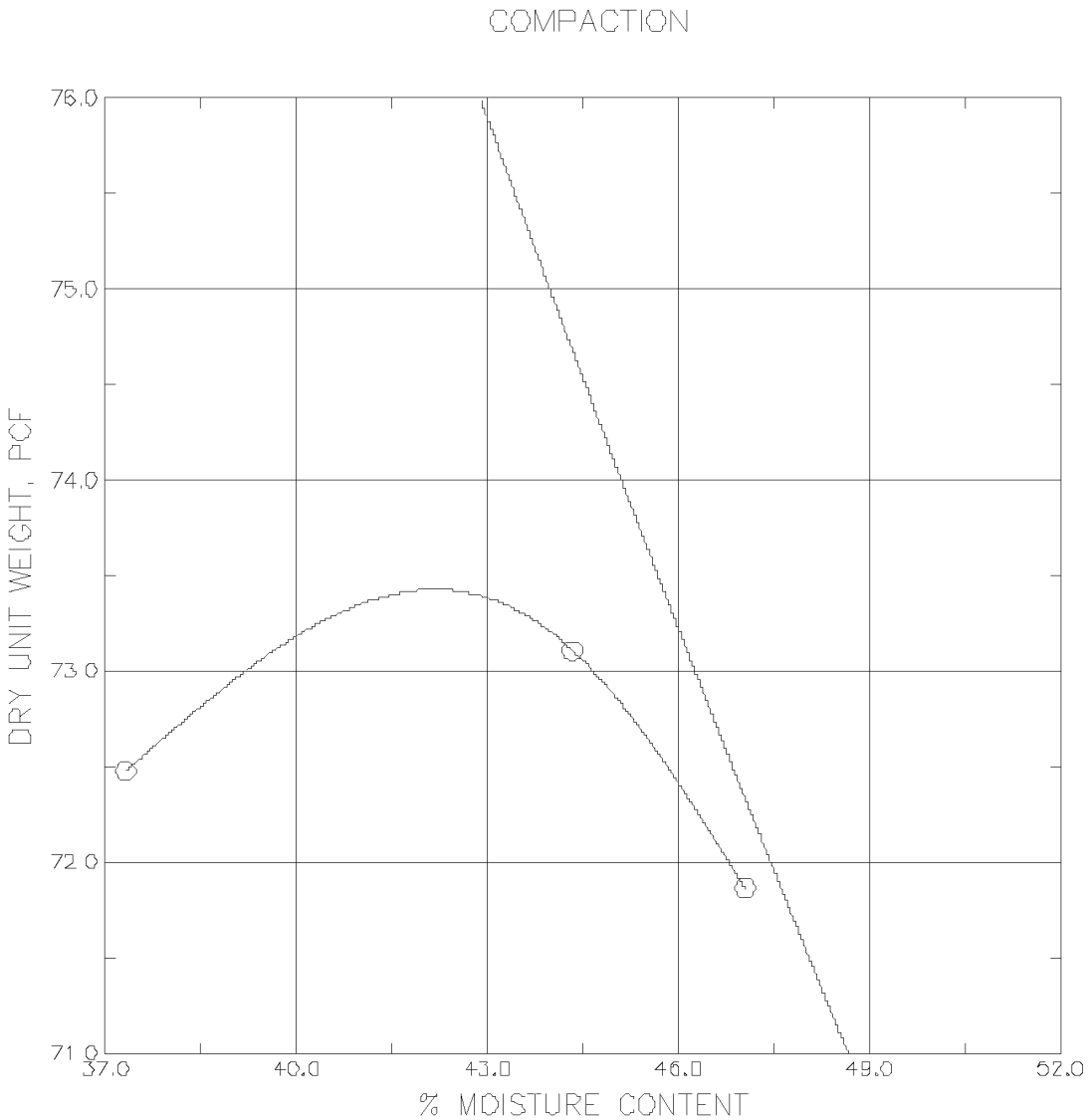
SOIL TECHNOLOGY Standard Proctor ASTM D-698	Boring No WDLSS Sample No. : WDLSS TS1 Tested by : KAS Filename WDLSSTS1	Project : West Doane Lake Treatability Study RP-Portland Project No.: 06-2135 Location : RP-Portland Site Date: Tue Jun 06 2006



Sample Description	: Dark grey clay w/silt
Compaction Test Designation	: ASTM D698-A
Maximum Dry Density	: 90.2 PCF
Optimum Moisture Content	: 26.3 %

Figure 1

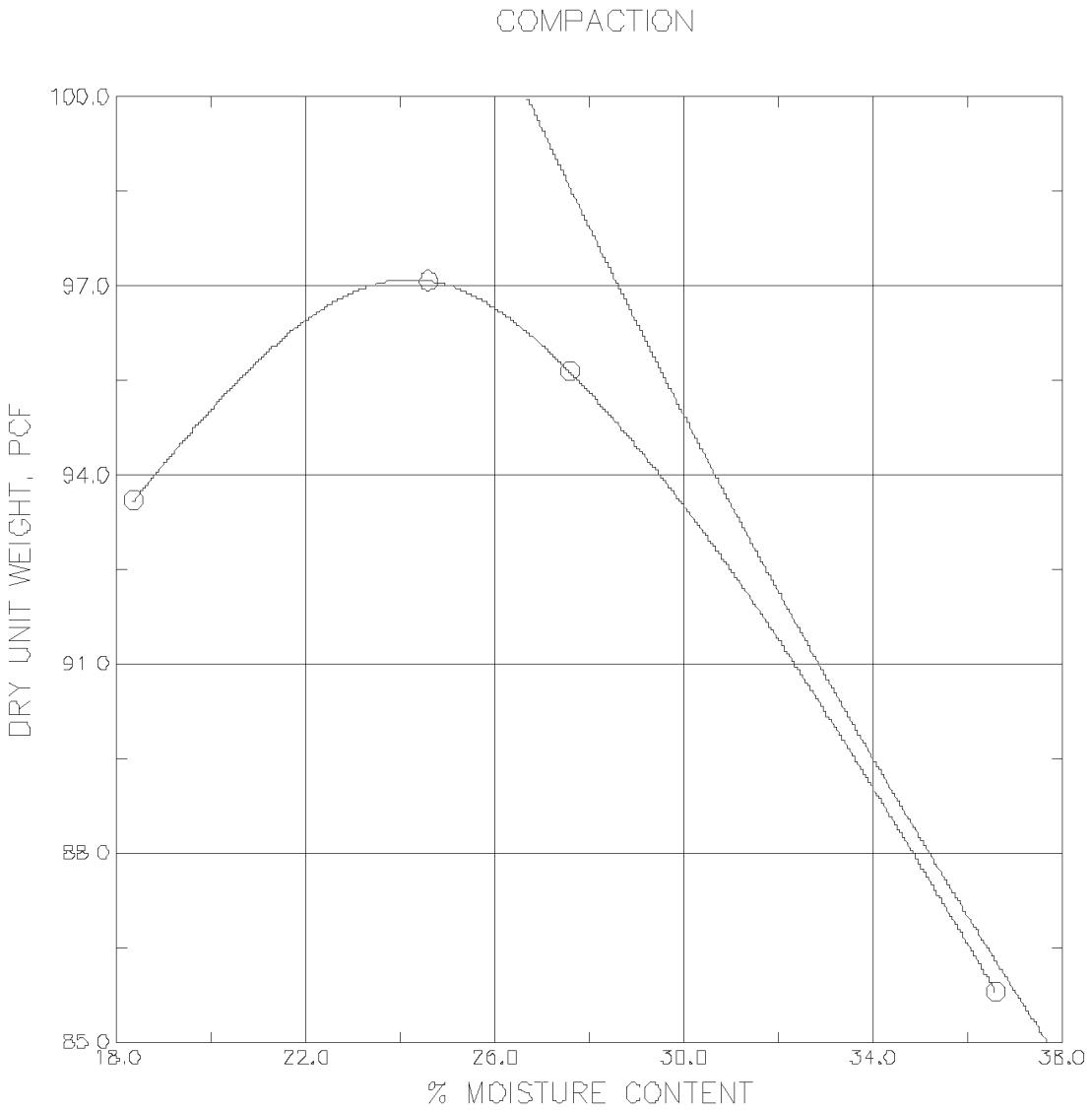
SOIL TECHNOLOGY Standard Proctor ASTM D-698	Boring No WDLSS Sample No. : WDLSS TS2 Tested by : R52 Filename WDLSSTS2	Project : West Doane Lake Treatability Study RP-Portland Project No.: 06-2135 Location : RP-Portland Site Date: Tue Jun 06 2006



Sample Description : Dark grey black silt
Compaction Test Designation : ASTM D698-A
Maximum Dry Density : 73.4 PCF
Optimum Moisture Content : 42.2 %

Figure 1

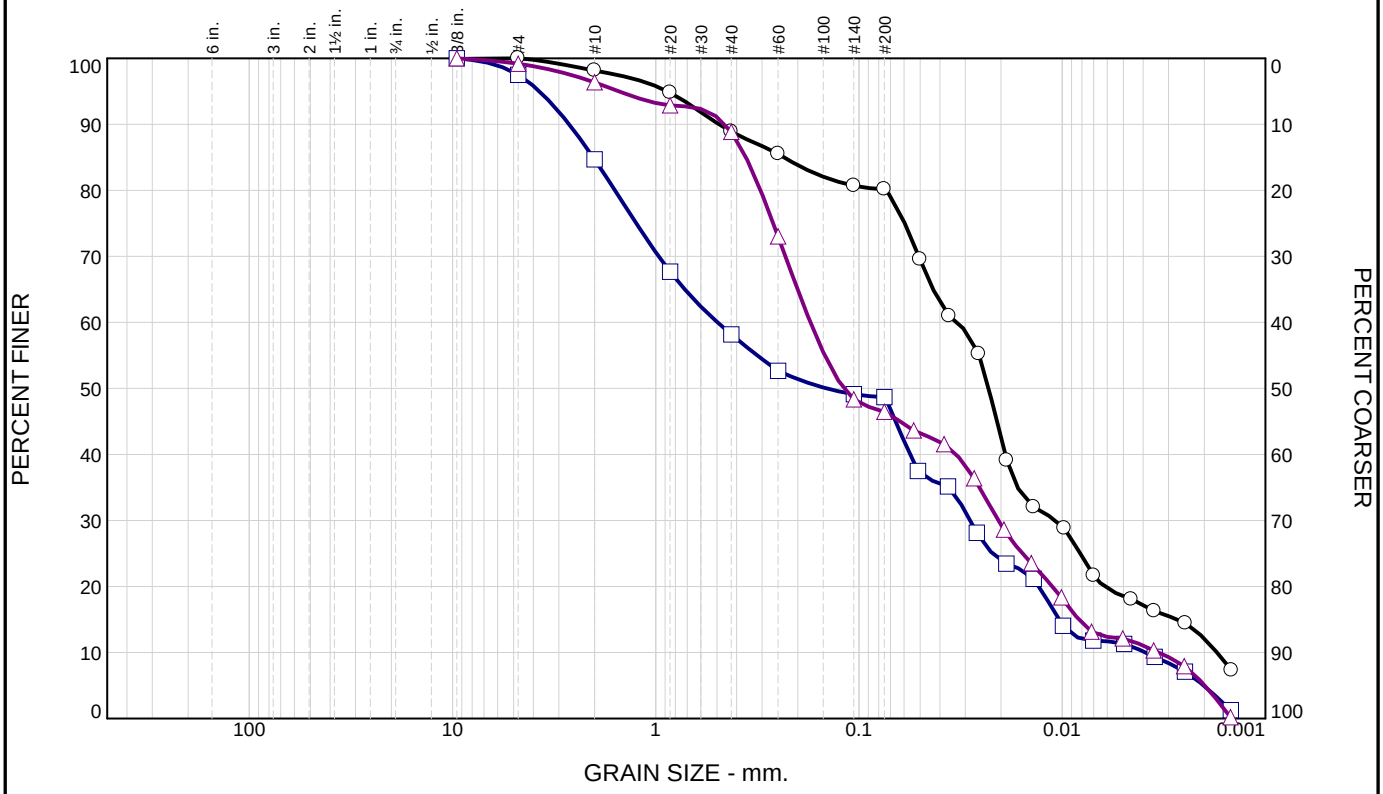
SOIL TECHNOLOGY Standard Proctor ASTM D-698	Boring No WDLSS Sample No. : WDLSS TS3 Tested by : KAS Filename WDLSSTS3	Project : West Doane Lake Treatability Study RP-Portland Project No.: 06-2135 Location : RP-Portland Site Date: Tue Jun 06 2006



Sample Description	: Dark grey silt
Compaction Test Designation	: ASTM D698-A
Maximum Dry Density	: 97.1 PCF
Optimum Moisture Content	: 24.2 %

Figure 1

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	0.0	19.8	61.6	18.6	MH	A-7-5(18)	31	51
□	0.0	2.5	48.8	37.4	11.3	SC	A-7-5(19)	34	82
△	0.0	0.8	52.7	34.4	12.1	SC	A-6(3)	23	37

SIEVE inches size	PERCENT FINER ○	□	△
.375	99.9	100.0	100.0
	GRAIN SIZE		
D_{60}	0.0333	0.4964	0.1735
D_{30}	0.0107	0.0285	0.0206
D_{10}	0.0017	0.0039	0.0034
	COEFFICIENTS		
C_c	1.98	0.42	0.73
C_u	19.22	127.52	51.55

SIEVE number size	PERCENT FINER ○	□	△
#4	100.0	97.5	99.2
#10	98.1	84.7	96.4
#20	94.8	67.7	92.9
#40	88.9	58.2	88.9
#60	85.5	52.7	73.0
#140	80.7	49.1	48.3
#200	80.2	48.7	46.5

Material Description

○ Sandy silty clay

□ Silty sand

△ Silty sand

REMARKS:

○ Black,wet, with substanial organics

□ Black, wet, with substanial organics

△ Black, wet, with substanial organics

○ Source of Sample: Baseline Depth: Drum sample Sample Number: TS-1

□ Source of Sample: Baseline Depth: Drum sample Sample Number: TS-2

△ Source of Sample: Baseline Depth: Drum sample Sample Number: TS-3

SOIL TECHNOLOGY

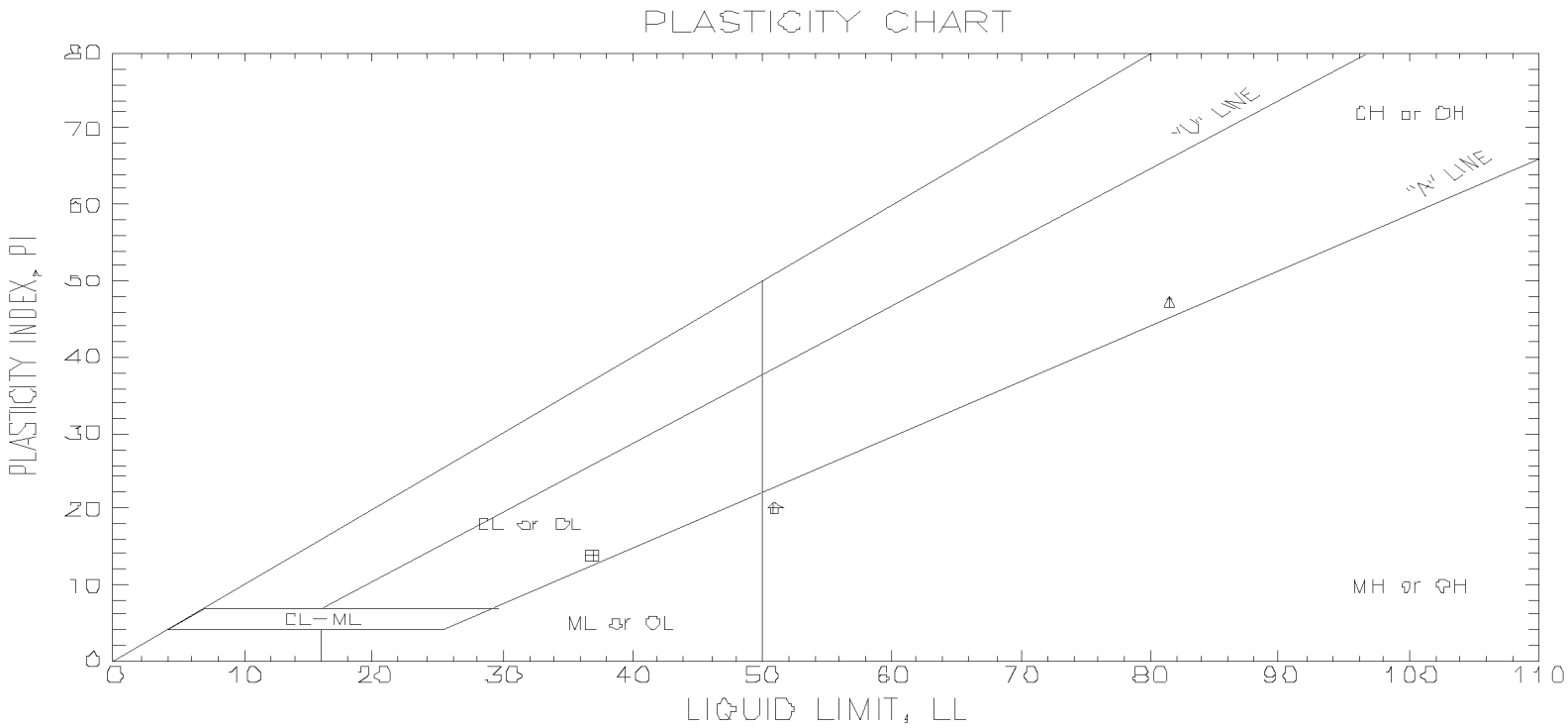
Client: AMEC Earth and Environmental, Inc.

Project: West Doane Lake, RP-Portland Site Project Stage 1 Baseline Testing J-06-2135

Project No.: 0-61M-107030 P65 T1 Figure 1

SOIL TECHNOLOGY
ATTERBERG LIMITS
ASTM D-4318

Project : West Doane Lake Treatability Study RP-Portland
Project No. : 06-2135
Location : RP-Portland Site
Date : Mon May 22 2006



Symbol	Sample Number	Water Content	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification
○	WDLSS TS1 81		51	31	20	(ML) Sandy Silt
△	WDLSS TS2 142		81	34	47	(SM) Silty Sand
□	WDLSS TS3 72		37	23	14	(SM) Silty Sand

Figure 1

AMEC Earth and Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. TDX – 003
RP SCE Stage 1 West Doane Lake

Sample Management

Three 20 gal drum samples were collected in the field on 2/1/06, 1/31/06, and 1/30/06 for samples TS-1, TS-2, and TS-3 respectively. The samples were each packaged inside a plastic bag within a 20 gal drum, which was within a 50 gal drum. Drum samples arrived at the Soil Technology laboratory on 2/8/06. Samples were maintained in the laboratory at approximately 18℃ until smaller samples were removed from the drums.

The drums were opened to retrieve the samples for the analytical laboratory and treatability study on 2/27/06, 3/02/06, and 3/6/06 for TS-1, TS-2 and TS-3 respectively (see tables). When the drum was opened, measurements of the air escaping the drum were recorded using the PID meter (see tables). The sediment was homogenized within the drum and then removed from the drum using stainless steel spoons. All utensils that contacted the sediment sample had been previously decontaminated. The decontamination method entailed a wash with citronox solution, a rinse 3 times with DI water, a rinse with methanol and another 3 times rinse with DI water.

While the drum was opened to retrieve the analytical samples, 4 larger 5.1 liter samples were also retrieved from each drum to perform the treatability study. The samples were transferred into 5.1 liter decontaminated plastic containers with zero headspace. The decontamination method for plastic sample containers entailed a wash with citronox solution, a rinse 3 times with DI water, a rinse with nitric acid, a rinse with methanol and another 3 times rinse with DI water. Samples remained in the plastic containers 1 to 2 days (see tables) at 18℃ until the test mix design was implemented.

The loss of VOC's were tracked by taking PID measurements each time the sample drum was opened. The values are recorded in the table below.

All PID values are in ppm.
NA = Not Applicable because the inner sample drum was not opened.

TS -1		
Date	**Inner Drum**	**Outer Drum**
2/8/06	NA	10
2/20/06	NA	0.5 – 0.8
2/21/06	NA	50
2/27/06	23.0	0.5
Analytical lab sample: 2/27/06		

Test molds mixed A: 2/27/06
Test mold mixed B, C, D: 2/28/06

TS – 2		
Date	**Inner Drum**	**Outer Drum**
2/20/06	NA	8
2/21/06	NA	0.5
3/2/06	17.0	0
Analytical lab sample: 3/02/06		
Test molds mixed A, B, C, D: 3/03/06		

TS- 3		
Date	**Inner Drum**	**Outer Drum**
2/21/06	NA	80
3/6/06	1.7	0
Analytical lab sample: 3/06/06		
Test molds mixed A, B, C, D: 3/08/06		

AMEC Earth & Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake

Sequential Batch Leach Test
pH, Eh, and Conductivity values

Sample Name	Temperature (°Celsius)	pH	Eh (milli-volt)	Conductivity (milli-MHO)
W003 – cycle 1	21.2	11.83	- 245	5.25
W003 – cycle 2	20.0	12.24	- 250	3.49
W003 – cycle 3	14.5	11.84	- 253	1.702

Comments: The sample liquid was a bright straw yellow color. Upon addition of the preservation acid, the samples instantly changed to a bright pink color. A precipitate formed and dropped out of solution and the color changed back to almost colorless after about 24 hours. The samples that were not preserved also lost their yellow color and changed to only a very slight brown color after about 24 hours.

AMEC Earth & Environmental, Inc.
Project No. 0-61M-107030 P65-T2, Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake
Wet / Dry Durability Results (ASTM D-559)

WDLSS TS1, Mix 1A ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 0% fly ash, 5% bentonite
Day 3 Specimen Water Content (%)	61
Molded Specimen Density (wet)	101
Maximum Volume Change (Specimen 1) (% of original volume)	94
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	63
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	7
Comments: Mold did not break throughout the test	

WDLSS TS1, Mix 1B ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 10% fly ash, 5% bentonite
Day 3 Specimen Water Content (%)	53
Molded Specimen Density (wet)	102
Maximum Volume Change (Specimen 1) (% of original volume)	93
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	54
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	5
Comments: Mold did not break throughout the test	

WDLSS TS1, Mix 1C ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 0% fly ash, 10% bentonite
Day 3 Specimen Water Content (%)	59
Molded Specimen Density (wet)	97
Maximum Volume Change (Specimen 1) (% of original volume)	(82)* test failure
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	(59)* test failure
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	(2)* test failure
Comments: * Specimen 1 broke in cycle 2, and specimen 2 broke in cycle 10.	

WDLSS TS1, Mix 1D ADMIXTURE

Designed Component Composition (% by volume)	20 % cement, 10% fly ash, 10% bentonite
Day 3 Specimen Water Content (%)	56
Molded Specimen Density (wet)	101
Maximum Volume Change (Specimen 1) (% of original volume)	94
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	56
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	1
Comments: Mold did not break throughout the test	

WDLSS TS2, Mix 1A ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 0% fly ash, 5% bentonite
Day 3 Specimen Water Content (%)	96
Molded Specimen Density (wet)	87
Maximum Volume Change (Specimen 1) (% of original volume)	(84)* test failure
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	(83)* test failure
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	test failure
Comments: * Specimen 1 broke in cycle 11, and specimen 2 broke in cycle 1.	

WDLSS TS2, Mix 1B ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 10% fly ash, 5% bentonite
Day 3 Specimen Water Content (%)	82
Molded Specimen Density (wet)	89
Maximum Volume Change (Specimen 1) (% of original volume)	(84)* test failure
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	(75)* test failure
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	test failure
Comments: *Specimen 1 broke in cycle 4, and specimen 2 broke in cycle 1.	

WDLSS TS2, Mix 1C ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 0% fly ash, 10% bentonite
Day 3 Specimen Water Content (%)	101
Molded Specimen Density (wet)	85
Maximum Volume Change (Specimen 1) (% of original volume)	(80)* test failure
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	(102)* test failure
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	test failure
Comments: * Specimen 1 broke in cycle 4, and specimen 2 broke in cycle 1.	

WDLSS TS2, Mix 1D ADMIXTURE

Designed Component Composition (% by volume)	20 % cement, 10% fly ash, 10% bentonite
Day 3 Specimen Water Content (%)	72
Molded Specimen Density (wet)	90
Maximum Volume Change (Specimen 1) (% of original volume)	91
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	62
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	5
Comments: Mold did not break throughout the test	

WDLSS TS3, Mix 1A ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 0% fly ash, 5% bentonite
Day 3 Specimen Water Content (%)	59
Molded Specimen Density (wet)	104
Maximum Volume Change (Specimen 1) (% of original volume)	(94)* test failure
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	(55)* test failure
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	(12)* test failure
Comments: *Specimen 1 broke in cycle 9, and specimen 2 broke in cycle 3.	

WDLSS TS3, Mix 1B ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 10% fly ash, 5% bentonite
Day 3 Specimen Water Content (%)	54
Molded Specimen Density (wet)	101
Maximum Volume Change (Specimen 1) (% of original volume)	90
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	51
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	12
Comments: Mold did not break throughout cycle	

WDLSS TS3, Mix 1C ADMIXTURE

Designed Component Composition (% by volume)	10 % cement, 0% fly ash, 10% bentonite
Day 3 Specimen Water Content (%)	63
Molded Specimen Density (wet)	101
Maximum Volume Change (Specimen 1) (% of original volume)	(92)* test failure
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	(64)* test failure
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	(8)* test failure
Comments: * Specimen 1 broke in cycle 4, and specimen 2 broke in cycle 2.	

WDLSS TS3, Mix 1D ADMIXTURE

Designed Component Composition (% by volume)	20 % cement, 10% fly ash, 10% bentonite
Day 3 Specimen Water Content (%)	54
Molded Specimen Density (wet)	104
Maximum Volume Change (Specimen 1) (% of original volume)	92
Maximum Water Content (Specimen 1) (% based on orig. oven dry weight)	47
Soil / ADMIX Mass Loss (Specimen 2) (% of original oven dry)	5
Comments: Mold did not break throughout the test	

TABLE 2
Required Laboratory Observations for TS-1
West Doane Lake Treatabiltiy Study Work Plan
RP - Portland Site

TS-1						
Day 1			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of day			**02/28/2006**	**03/01/2006**	**03/01/2006**	**03/01/2006**
Hydrogen Sulfide Off-gas	Gastec Tube	PEL<20 ppm	NT	NT	NT	NT
Methane Off-gas[1]	Draeger Tube Method	TWA<10 ppm	NT	NT	NT	NT
Oxygen Content	Gastec Tube Method	>19.5 %	23	>24	>24	>24
VOC off-gas	PID meter	> 20 ppm	2.2	2.5	4.2	3.4
Temperature (C)	Infra-red	NA	19.9	20.6	20.3	20.4
Additional Comments						
Day 3 March 2, 2006			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of day			**03/02/2006**	**03/03/2006**	**03/03/2006**	**03/03/2006**
Hydrogen Sulfide Off-gas	Gastec Tube	PEL<20 ppm	NT	NT	NT	NT
Methane Off-gas[1]	Draeger Tube Method	TWA<10 ppm	NT	NT	NT	NT
Oxygen Content	Gastec Tube Method	>19.5 %	>24.0	>24.0	>24.0	>24.0
VOC off-gas	PID meter	<20 ppm	2-5.4 max	1.8 ppm	1.8 ppm	4.2 ppm
Temperature (C)	Infra-red	NA	20.4	20.3	21.9	20.3
UCS	ASTM D1633-90	> 50 psi	79	96	75	105
Moisture Content (Free Liquid)	ASTM D2216-90	No Free Liquid	61	53	59	56
Volume Change	$V=\pi \cdot D^2/4 \cdot h$	ΔV < 25%	0	0	0	0
Additional Comments			PID slowly increases over time			
Day 7			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/06/2006**	**03/07/2006**	**03/07/2006**	**03/07/2006**
Temperature	Infra-red	NA	19.4	19.2	19.4	19.5
UCS	ASTM D1633-90	> 50 psi	95	91	86	113
Moisture Content (Free Liquid)	ASTM D2216-90	No Free Liquid	60	52	59	54
Volume Change	$V=\pi \cdot D^2/4 \cdot h$	ΔV < 25%	0	0	0	0
Additional Comments						
Day 28			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of day			**03/27/2006**	**03/28/2006**	**03/28/2006**	**03/28/2006**
Wet/Dry Dur.	D-559		in progress	in progress	FAILED	in progress
K20	ASTM 5084	< 1x 10-7cm/sec	5.9 x 10 -8	5.9 x 10 -8	6.7 x 10 -8	8.8 x 10 -9
UCS	ASTM D1633-90	> 50 psi	121	165	131	190
Additional Comments						

Notes:
ppm = parts per million
psi = pounds per square inch
PID = photoionization detector
UCS = unconfined compressive strength
ASTM = American Society of Testing Materials
NT = Non Detectable
NA = Not Applicable
PEL = Permissible Exposure Limit
TWA = Time Weighted Average
V = volume
D = diameter
h = cylinder height
Δ = change from initial measurement
1 = Natural Gases Draeger Tubes

TABLE 3
Required Laboratory Observations For TS-2
West Doane Lake Treatabiltiy Study Work Plan
RP - Portland Site

TS-2						
Day 1			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/04/2006**	**03/04/2006**	**03/04/2006**	**03/04/2006**
Hydrogen Sulfide Off-gas	Gastec Tube	PEL<20 ppm	NT	NT	NT	NT
Methane Off-gas[1]	Draeger Tube Method	TWA<10 ppm	NT	NT	NT	NT
Oxygen Content	Gastec Tube Method	>19.5 %	> 24%	> 24%	> 24%	> 24%
VOC off-gas	PID meter	<20 ppm	0.1	0.7	0.5	0.8
Temperature (C)	Infra-red	NA	19.3	19.1	19.2	19.1
Additional Comments						
Day 3			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/06/2006**	**03/06/2006**	**03/06/2006**	**03/06/2006**
Hydrogen Sulfide Off-gas	Gastec Tube Method	PEL<20 ppm	NT	NT	NT	NT
Methane Off-gas[1]	Draeger Tube Method	TWA<10 ppm	NT	NT	NT	NT
Oxygen Content	Gastec Tube Method	>19.5 %	20.0%	20.5%	20.5%	20.0%
VOC off-gas	PID meter	<20 ppm	0-.1ppm	1.7-4.0 ppm	0.9-4.6 ppm	2.5 - 6.8 ppm
Temperature	Infra-red	NA	19.2	19.4	19.4	19.7
UCS	ASTM D1633-90	> 50 psi	61	62	46	97
Moisture Content (Free Liquid)	ASTM D2216-90	No Free Liquid	96	82	101	72
Volume Change	$V=\pi \cdot D^2/4 \cdot h$	ΔV < 25%	0	0	0	0
Additional Comments			dark gray	dark gray	dark gray	dark gray
Day 7			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/10/2006**	**03/10/2006**	**03/10/2006**	**03/10/2006**
Temperature	Calibrated	NA	18.1	17.6	18.1	18
UCS	ASTM D1633-90	> 50 psi	81	75	55	135
Moisture Content (Free Liquid)	ASTM D2216-90	No Free Liquid	95	82	101	71
Volume Change	$V=\pi \cdot D^2/4 \cdot h$	ΔV < 25%	0	0	0	0
Additional Comments						
Day 28			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/31/2006**	**03/31/2006**	**03/31/2006**	**03/31/2006**
Wet/Dry Dur.	D-559		FAILED	FAILED	FAILED	in progress
K20	ASTM 5084		1.8×10^{-8}	1.5×10^{-8}	$< 1.0 \times 10^{-8}$	$< 1.0 \times 10^{-8}$
UCS	ASTM D1633-90	> 50 psi	134	115	89	217
Additional Comments						

Notes:
ppm = parts per million
psi = pounds per square inch
PID = photoionization detector
UCS = unconfined compressive strength
ASTM = American Society of Testing Materials
NA = Not Applicable
NT = Non Detectable

PEL = Permissible Exposure Limit
TWA = Time Weighted Average
V = volume
D = diameter
h = cylinder height
Δ = change from initial measurement
1 = Natural Gases Draeger Tubes

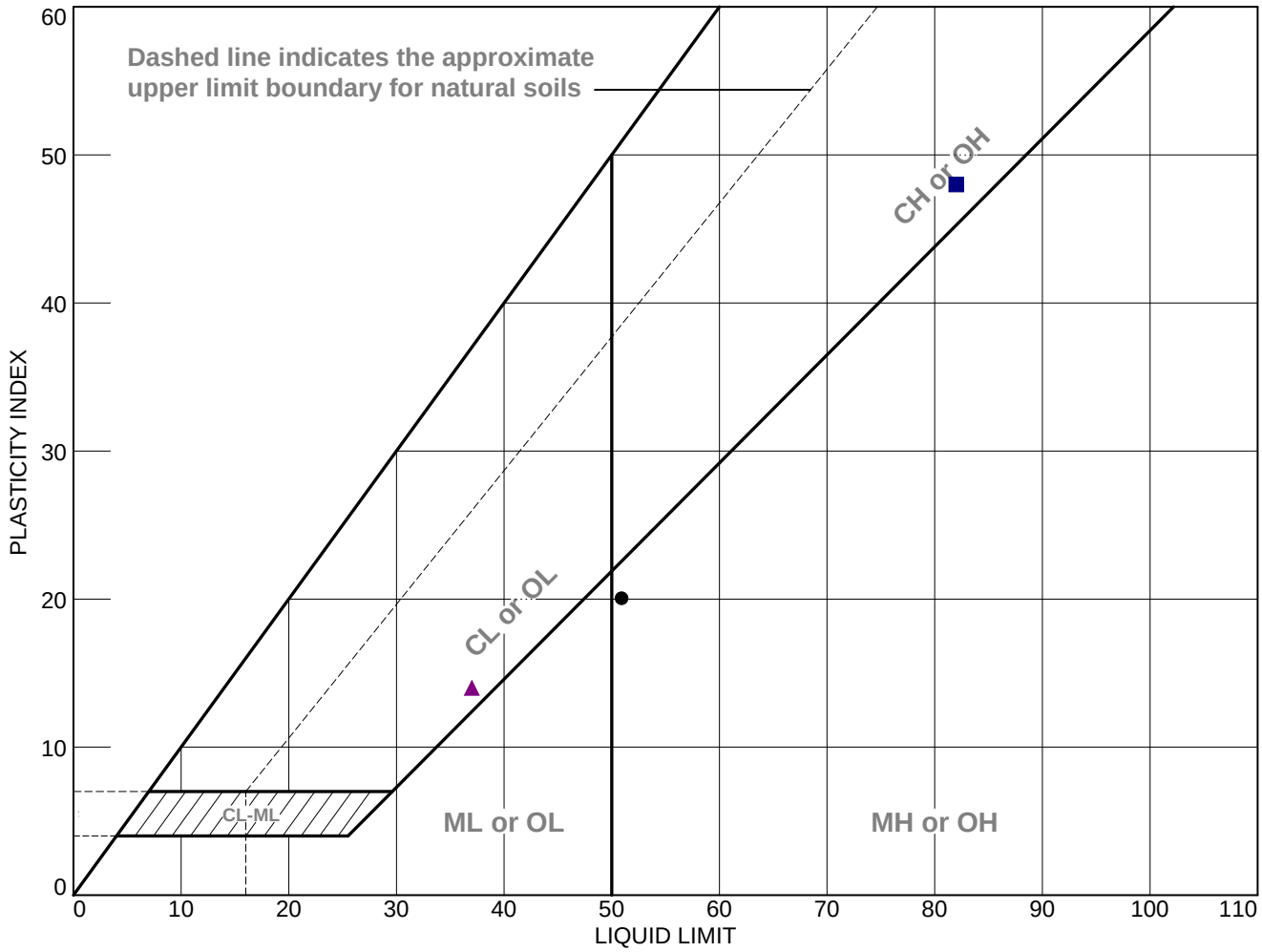
TABLE 4
Required Laboratory Observations For TS-3
West Doane Lake Treatabiltiy Study Work Plan
RP - Portland Site

TS-3						
Day 1			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/09/2006**	**03/09/2006**	**03/09/2006**	**03/09/2006**
Hydrogen Sulfide Off-gas	Gastec Tube Method	PEL<20 ppm	NT	NT	NT	NT
Methane Off-gas[1]	Draeger Tube Method	TWA<10 ppm	NT	NT	NT	NT
Oxygen Content	Gastec Tube Method	>19.5 %	20.0	20.2	20.0	20.0
VOC off-gas	PID meter	<20 ppm	0.1	0.4	1.4 - 1.7	2.9
Temperature	Infra-red	NA	17.1	19.3	17.8	20.4
Additional Comments: Power outage, lab was colder than usual. Lab temp 14.4 C(water 1L)						
Day 3 (DAY 5 actual)			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/13/2006**	**03/13/2006**	**03/13/2006**	**03/13/2006**
Hydrogen Sulfide Off-gas	Gastec Tube Method	PEL<20 ppm	NT	NT	NT	NT
Methane Off-gas[1]	Draeger Tube Method	TWA<10 ppm	NT	NT	NT	NT
Oxygen Content	Gastec Tube Method	>19.5 %	20	20.2	19.8	19.5
VOC off-gas	PID meter	<20 ppm	.1 - .3	.3 - 5.8	.3 - .4	.3 - 2.0
Temperature	Infra-red	NA	18.3	17.9	17.6	17.9
UCS	ASTM D1633-90	> 50 psi	91	86	87	178
Moisture Content (Free Liquid)	ASTM D2216-90	No Free Liquid	59	54	63	54
Volume Change	$V=\pi \cdot D^2/4 \cdot h$	ΔV < 25%				
Additional Comments: Power was out on 3/11/06, therefore readings were done on 3/13/06. Air readings done on USC molds, bags were not opened						
Day 7			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**03/15/2006**	**03/15/2006**	**03/15/2006**	**03/15/2006**
Temperature	Calibrated Thermometer	NA	18.8	18.8	18.3	18.3
UCS	ASTM D1633-90	> 50 psi	101	88	82	129
Moisture Content (Free Liquid)	ASTM D2216-90	No Free Liquid	59	54	64	53
Volume Change	$V=\pi \cdot D^2/4 \cdot h$	ΔV < 25%	0	0	0	0
Additional Comments						
Day 28			**Test Reagent Mixure**			
Property	**Method**	**Limit**	**WDLSS 1A**	**WDLSS 1B**	**WDLSS 1C**	**WDLSS 1D**
Date of Day			**04/05/2006**	**04/05/2006**	**04/05/2006**	**04/05/2006**
Wet/Dry Dur.	D-559		FAILED	in progress	FAILED	in progress
K20	ASTM 5084		1.3 x 10 -8	1.8 x 10 -8	3.2 x 10 -8	< 1x 10 -8
UCS	ASTM D1633-90	> 50 psi	174	164	155	171
Additional Comments						

Notes:
ppm = parts per million
psi = pounds per square inch
PID = photoionization detector
UCS = unconfined compressive strength
ASTM = American Society of Testing Materials
NA = Not Applicable
NT = Non Detectable

PEL = Permissible Exposure Limit
TWA = Time Weighted Average
V = volume
D = diameter
h = cylinder height
Δ = change from initial measurement
1 = Natural Gases Draeger Tubes

ATTERBERG LIMITS (ASTM D-4318)



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Baseline	TS-1	Drum sample	81.1	31	51	20	MH
■	Baseline	TS-2	Drum sample	142	34	82	48	SC
▲	Baseline	TS-3	Drum sample	71.8	23	37	14	SC

SOIL TECHNOLOGY

Client: AMEC Earth and Environmental, Inc.

Project: West Doane Lake, RP-Portland Site Project Stage 1 Baseline Testing J-06-2135

Project No.: 0-61M-107030 P65 T1 **Figure** 1

ATTACHMENT 2

West Doane Lake Phase 4 Treatability Study

ATTACHMENT 2

WEST DOANE LAKE
PHASE 4 TREATABILITY STUDY
RP – PORTLAND SITE

September 11, 2007

Submitted to:

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Northwest Region
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0-61M-107030/Phase 65/T2

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Appendix B Data Validation Report

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1.0 INTRODUCTION

Phase 4 of the West Doane Lake (WDL) Treatability Study (TS) was conducted in general accordance with the WDL TS Work Plan (AMEC, 2005). Mix design optimization included the addition of granular activated carbon (GAC) to the preferred solidification mix, in attempt to produce additional reduction in constituent leaching from the solidified mass. Phase 4 also was designed to simulate anticipated field conditions in the laboratory through modified sequential batch leach testing (SBLT). Prior to selecting the appropriate mix optimization additive, the first three phases of bench-scale testing were evaluated (Phase 1, 2, and 3 of the WDL TS). This Phase 4 TS is being used in conjunction with, and as supporting material to, the WDL TS and Draft WDL Engineering Evaluation/Cost Analysis (WDL EE/CA).

Phase 1 of the WDL TS evaluated the physical and chemical characteristics of WDL bulk sediment. Phase 2 included the collection of three representative WDL samples (TS-1, TS-2, and TS-3; Figure 1), and characterized WDL sediment prior to the addition of various solidification/stabilization (S/S) admixtures. In Phase 3 of the TS, the above-mentioned TS samples were treated by adding various proportions of Portland cement, bentonite, and fly ash. Results of physical and chemical bench scale laboratory tests conducted during Phase 3 of the TS indicated that Mix A (10% by volume Portland cement and 5% by volume bentonite) was the preferred solidification mix. In Phase 4, the preferred solidification mix was optimized (Mix E) through the addition of 1% GAC by volume (Appendix A). The addition of GAC was intended to reduce the potential for organic compounds to leach from treated sediment. To evaluate the effectiveness of activated carbon on mix performance, two laboratory tests intended to simulate the leaching environment at the site were conducted.

2.0 WDL PHASE 4 TREATABILITY STUDY

The purpose of the Phase 4 TS was to provide quantitative information that could be used to evaluate the effectiveness of S/S technology as an interim remedial action measure (IRAM) at WDL; specifically sequential batch leach testing to more accurately duplicate conditions of the solidified sediments and constituent mobility through the addition of GAC. GAC literature about carbon suggests that its use would likely reduce leaching potential of target WDL organic constituents of concern (COCs) (e.g., herbicides). The bench-scale simulation of field conditions was conducted using two tests. The first test evaluated a stagnant volume of water surrounding a solidified monolith. The second test evaluated the volumetric exchange of water around a solidified monolith. These two tests are referred to hereafter as stagnant and flush, respectively.

The scope of work completed during the Phase 4 TS included the following:

- Optimization of Mix A through the addition of GAC (Mix E);
- Physical and chemical characterization testing of Mix E;
- Chemical testing of simulated stagnant and flush field conditions for treated samples;
- Data reporting of chemical and physical testing results; and
- Comparison of optimization and field simulation results with existing TS data.

2.1 Mix Optimization

The initial S/S reagent mix ratios were selected based on review of published mix designs in available literature (i.e., case studies of the implementation of S/S) that have been effective for treatment of contaminated soils and sediment. The initial S/S reagent mix ratios for Phase 3 used various percentages of Portland cement, fly ash, and bentonite (Table 1). The properties of the stabilization agents are discussed in Section 5.3 of the WDL TS Work Plan (AMEC, 2005).

Evaluation of chemical data from the four mix designs (Mix A through Mix D) demonstrated that Mix A outperformed mixes B through D. The TS demonstrated that all the admixtures provided a suitable solidification matrix for creating a hard, dense impermeable monolith capable of isolating most COCs. However, the TS data also indicated that optimization of Mix A could potentially further improve the stabilization potential, and lessen the degree of organic COC leaching.

Although the TS suggested Mix A would be the preferred S/S mix for WDL sediment, the following data gaps were identified: (1) aggressive toxicity characteristic leaching procedure (TCLP) testing likely is not indicative of site-specific field conditions; and (2) mix designs were not optimized to capture organics that were not immobilized by the S/S admixtures.

Given that Mix A was the preferred S/S design, further mix optimization was attempted by adding 1% GAC by volume to Mix A to create Mix E. Research studies have demonstrated that GAC acts as a sorbent for organics, including herbicides (Ward and Getzen, 1970).

Additional testing was conducted to compare Mix E results with existing Phase 3 TS data. The mix optimization findings are summarized in Section 4.0 below.

2.2 Mix E Physical and Chemical Testing

Physical and chemical bench-scale tests conducted on Mix E consisted of:

- Physical Characterization Tests
  - Unconfined compressive strength (UCS)
  - Hydraulic conductivity
- Chemical Characterization Tests
  - TCLP for metals by US Environmental Protection Agency (EPA) Methods 6010B, 6020, and 7471A;
  - TCLP chlorinated herbicides by EPA Method 8151A;
  - TCLP organochlorine pesticides by EPA Method 8081A;
  - TCLP polychlorinated biphenyls (PCBs) by EPA Method 8082;
  - TCLP volatile organic compounds (VOCs) by EPA Method 8260B;
  - TCLP dioxins/furans by EPA Method 8290; and
  - TCLP semi-volatile organic compounds (SVOCs) including phenols, by EPA Method 8270C.

Performance criteria for chemical testing parameters were established using the site-specific risk-based concentrations (RBCs) for worker exposure (AMEC, 2006). The RBCs are presented in Table 1 of the WDL TS. The physical and chemical test results are discussed in Sections 4.1 and 4.2.

2.3 Laboratory Simulations - Modified ANSI/ANS-16.1-1986

The modified SBLT procedures selected for Phase 4 were two test methods described in the Modified ANSI (American National Standards Institute) Test ANSI/ANS-16.1-1986, which provides a standardized method for measuring the ability of a solidified mass to impede the release of COCs. Leaching of COCs measured during Phase 3 of the TS may be partially attributable to TCLP sample preparation. TCLP was originally employed for Phase 3 bench-scale testing because it is a commonly accepted test procedure utilized to evaluate S/S technology. TCLP involves crushing a sample so that the resultant material passes through a 9.5 millimeter sieve. Crushing the solidified sample exposes more surface area and, therefore, is not truly representative of WDL conditions following S/S activities. Under field conditions, only the exterior surface area of the solidified mass would be in contact with groundwater. In addition, TCLP tests were developed to evaluate leachate potential of a waste material in a landfill site where the pH is considerably lower and, as a result, the mobility of certain contaminants may be higher. The two versions of the Modified ANSI Test used in Phase 4, stagnant test and the flush test, are described later in this section.

The SBLT was conducted on WDL TS sample TS-1 (considered the "worst-case" sample in terms of constituent concentration) for each mix design (Mix A, Mix B, Mix C, Mix D, and Mix E). Representative test samples of the S/S reagent mix designs were prepared as homogeneous monolithic cylinders and placed individually in unreactive leach test vessels. The test leachant consisted of demineralized water kept at temperatures between 17.5 and 27.5° Celsius (C). Accelerating conditions (i.e. elevated temperatures) were not utilized in this evaluation.

Stagnant Test

The stagnant test simulates a system where motionless (stagnant) water is in contact with a treated sediment monolith. Six molds were prepared per mix design (total of 30 molds) and were cured for seven days prior to testing. Each mold was individually placed in a leach test vessel and water (leachant) was added at a water to surface area ratio of 10:1 ±0.2. The leachant was then decanted for sampling at the time interval designated for each test vessel (5, 10, 15, 20, 25, and 30 days). Each mold was discarded after the leachant had been decanted.

Flush Test

The flush test simulates a system where water is flowing by a treated sediment monolith. Flush testing evaluated a volume of water surrounding the solidified mass that was exchanged every five days during the test period. The chemical concentrations were measured over "flushes" or exchanges of water by sampling the decanted water at designated time intervals (5, 10, 15, 20, 25, and 30 days). One mold was prepared per mix design and were cured for seven days prior to testing. The leachant was added to the leach test vessel at a water to surface area ratio of 10:1 ±0.2. The water was allowed to remain in the vessel of each mix design for five days and was then decanted for sampling. This process was repeated on the same solidified sample so that water was exchanged every five days for a 30 day period.

3.0 DATA QUALITY EVALUATION

AMEC validated 100% of the analytical results generated as part of the WDL Phase 4 TS. Data validation reports are provided in Appendix B. In addition, all data entered into the project database from electronic data deliverables were verified against hard copy laboratory reports. Electronic copies of the laboratory data reports are provided in Appendix C.

4.0 ANALYTICAL RESULTS

This section presents the physical and chemical analytical data collected as part of the WDL Phase 4 TS. Mix E testing results are discussed in the sections that follow. For comparison purposes, the tables referenced below include physical and chemical analytical results for all five mix designs.

4.1 Mix E Physical Characterization Results

UCS was conducted in general accordance with American Society of Testing Materials (ASTM) D1633-00 (*Standard Test Method for Compressive Strength of Molded Soil-Cement Cylinders*). The UCS data were used to evaluate the strength of the treated sediment samples. The UCS performance criteria specified in the WDL TS WP was at least 50 pounds per square inch (psi). This strength value is based on EPA recommendations and allows for pressure induced by overburden material and heavy equipment (Spence, 2004). Samples that did not exhibit the minimum UCS of 50 psi were considered to have "failed" during laboratory testing. UCS test results are presented in Table 2. UCS stress/strain curves prepared by Soil Technology are provided in Appendix A.

Mix E UCS was tested on day 7, day 14, and day 28. A strength of 71.4 psi was achieved after a 7 day cure. Strengths achieved after a 14 day cure and a 28 day cure were 86.2 psi and 111 psi, respectively. Mix E passed the strength requirement of 50 psi for all curing periods tested.

Hydraulic conductivity was measured using ASTM D5084-00 (*Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter*). ASTM D5084-00 Method C (Falling Head, Rising Tailwater Elevation) was used in the permeability calculation for each sample cylinder (See WDL TS, Attachment 1 of WDL EE/CA). Hydraulic conductivity is the rate of discharge of water, assuming laminar flow, through porous media under a hydraulic gradient. A hydraulic conductivity performance criteria equal to or less than $1x10^{-7}$ centimeters per second (cm/sec) was specified in the WP.

The hydraulic conductivity of Mix E was measured to be $4x10^{-8}$ cm/sec under a confining stress of 5 psi. Five (5) psi correlates to an in-situ depth of 17.5 feet. The hydraulic conductivity measured for Mix E passed the performance criteria. Hydraulic conductivity data are summarized in Table 3 and the original spreadsheet provided by Soil Technology is presented in Appendix A.

4.2 Mix E Chemical Characterization Analytical Results

The purpose of TCLP testing was to evaluate the stability of the mix designs containing WDL COCs against simulated harsh environmental conditions. Phase 2 bulk and TCLP analytical results are presented in the left hand columns of Table 4 for TS-1. Phases 3 and 4 TCLP analytical results are presented in the right hand columns of Table 4 for each mix design. Analytical results with detections are indicated by bold text only, while constituent concentrations detected in excess of an RBC are bolded and shaded. Data validation reports and analytical data reports (compact disc format) are provided in Appendices B and C, respectively. A brief summary of TCLP results is provided below:

Metals

Evaluation of the metals data for TS-1 Mix E indicated that out of eight metals tested, two (barium and chromium) were detected. None of the metals detected exceeded the respective RBC. Metals TCLP data are summarized in Table 4.

Insecticides

Evaluation of pesticide data for TS-1 Mix E indicated that 9 of the 21 pesticides tested were detected. 4,4-DDD was detected at a concentration above its RBC. Insecticide TCLP data are summarized in Table 4.

Herbicides

Evaluation of herbicide data for TS-1 Mix E indicated that 7 out of 10 herbicides tested were detected. Only MCPA (2.3 milligrams per liter [mg/l] was detected at a concentration above its RBC of 1.62 mg/l. Herbicide TCLP data are summarized in Table 4.

Volatile Organic Compounds

Evaluation of VOC data for TS-1 Mix E indicated that 4 of the 66 VOCs tested were detected. No VOCs were detected at concentrations above the RBCs. VOC TCLP data are summarized in Table 4.

Semi-Volatile Organic Compounds

Evaluation of SVOC data for TS-1 Mix E indicated that 14 of the 41 SVOCs tested were detected, but all were below the respective RBCs. SVOC TCLP data are summarized in Table 4.

Dioxins/Furans

Evaluation of dioxin/furan data for TS-1 Mix E indicated that 1 of the 17 dioxin/furan congeners tested were detected. No dioxin/furans were detected above the RBCs. Dioxin/furan TCLP data are summarized in Table 4.

4.3 Laboratory Simulation - Modified ANSI

This section describes the analytical results collected from the Modified ANSI testing. Results of pH, metals, and chlorinated herbicide analytical results for both the stagnant and flush testing are presented in the sections that follow.

4.3.1 Stagnant Test Analytical Results

Leachate from the Modified ANSI stagnant test was analyzed for pH, metals, and chlorinated herbicides. Analytical results are presented in Tables 6 through 11. In keeping with the TS, only arsenic, 2,4-D and MCPA were identified as indicator compounds and discussed within the text. Refer to the tables for a summary of all analytical findings.

pH Results

The pH results of leachate from each S/S mix design sampled during the Modified ANSI stagnant test are presented in Table 5 and summarized as follows:

- Mix A results ranged from 10.68 (5 day test) to 11.58 (15 and 30 day tests);
- Mix B results ranged from 11.46 (25 day test) to 11.81 (5 day test);
- Mix C results ranged from 11.3 (5 day test) to 11.89 (25 day test);
- Mix D results ranged from 11.17 (10 day test) to 11.54 (30 day test); and
- Mix E results ranged from 11.13 (10 day test) to 11.36 (30 day test).

Metals Analytical Results

Evaluation of arsenic stagnant analytical results showed that concentrations were below the site-specific RBC (5.81 mg/l) for each testing interval and each mix design.

Herbicides Analytical Results

Evaluation of 2,4-D stagnant analytical results indicated that concentrations were below the site-specific RBC (72.1 mg/l) for each testing interval and each mix design. Overall, the 2,4-D concentrations increased in leachates that were in contact with the treated samples the longest.

Evaluation of MCPA stagnant analytical results indicated that concentrations were above the site-specific RBC (1.62 mg/l) for each testing interval and each mix design except the Mix E 15-day sample which decreased to 0.53 mg/l. Overall, the MCPA concentrations show an increasing trend over time.

4.3.2 Flush Test Analytical Results

Leachate from the Modified ANSI flush test was analyzed for pH, metals, and chlorinated herbicides. Analytical results are presented in Tables 12 through 17. In keeping with the TS, only arsenic, 2,4-D and MCPA were identified as indicator compounds and discussed within the text. Refer to the tables for a summary of all analytical findings.

pH Results

The pH results of leachate from each S/S mix design sampled during the Modified ANSI flush test are presented in Table 5 and summarized as follows:

- Mix A results ranged from 10.69 (5 day test) to 10.97 (10 day test);
- Mix B results ranged from 10.97 (30 day test) to 11.38 (10 day test);
- Mix C results ranged from 10.59 (30 day test) to 11.24 (5 day test);
- Mix D results ranged from 10.83 (30 day test) to 11.7 (5 day test); and
- Mix E results ranged from 10.74 (30 day test) to 11.57 (15 day test).

Metals Analytical Results

Evaluation of arsenic flush analytical results indicated that concentrations were below the site-specific RBC for each testing interval and mix design.

Herbicides Analytical Results

Evaluation of 2,4-D flush analytical results indicated concentrations were below the site-specific RBC for each testing interval and mix design. Overall, the 2,4-D concentrations showed a decrease in concentration over time.

Evaluation of MCPA flush analytical results indicated concentrations generally were below the site-specific RBC for each testing interval and mix design. At day 5, mix designs A, B, C, and E showed MCPA concentrations above the RBC. After 10 days, concentrations decreased below the RBC with the exception of the Mix E 15-day sample. Mix D concentrations were below the RBCs throughout the testing duration. A decrease in MCPA concentrations with time was observed in the samples.

5.0 CONCLUSIONS

Based on Phase 4 testing, the following conclusions have been drawn regarding the TS.

- Flush testing would appear to be more representative of WDL hydrogeological conditions where site water level evaluation has indicated a flux in groundwater between WDL and the surrounding formation. The flush testing represents groundwater flowing by a monolith at a slow rate, whereas the stagnant testing is more representative of a monolith surrounded by motionless water.
- pH results ranged from 10.59 to 11.7. It is common for the pH of a cement-treated material to increase during the initial stages of treatment. During these early stages, a temporary gel is created by the interaction of calcium ions with the available alumina or silica (originating either from the cement or dissolved from the host sediment/sludge). Once these reaction gels have been formed, the pH typically equilibrates and will fall with time. pH in cement-treated material initially may be between 10.5 and 11.5, but will typically drop to 9.5 or 10 once fully cured. This pH fluctuation during the curing process is likely responsible for the erratic leaching of chemicals observed in several of the mix designs using the flush and stagnant test procedures.
- As indicated by the flush test, MCPA and 2,4-D concentrations decrease over time following treatment application. It is anticipated that MCPA and 2,4-D concentrations would behave in a similar fashion during WDL S/S implementation.
- Although there was a detection of 2,3,7,8-TCDD in Mix E's TCLP results, Mix E performed better in solidifying and stabilizing the majority of WDL COCs.
- Mix E is the preferred mix design and is comprised of 10% Portland cement, 5% bentonite, and 1% GAC.

The Phase 4 TS findings suggest that Mix E is an adequate design for consideration in solidifying and stabilizing WDL. The overall findings also suggest that S/S technology is feasible for binding constituents like herbicides.

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LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This West Doane Lake Phase 4 Treatability Study is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

AMEC services have been performed in accordance with the normal and reasonable standard of care exercised by similar professionals performing services under similar conditions and geographic locations. Except for our stated standard of care, no other warranties or guarantees are offered as part of AMEC's contracted services.

Finally, it should be noted that no subsurface exploration can be thorough enough to exclude the possible presence of hazardous materials or wastes at a given site. In cases where contaminants have not been discovered through exploration, this should not be construed as a guarantee that contaminants do not exist. Where sample collection and testing have been performed, AMEC's professional opinions are based in part on the interpretation of data from discrete sampling locations that may not represent conditions at unsampled locations.

TABLES

TABLE 1
Solidification/Stabilization Mix Ratios
WDL Phase 4 Treatability Study
RP - Portland Site

Mixture ID*	% Portland Cement	% Fly Ash	% Bentonite	% Granular Activated Carbon (GAC)
A	10	0	5	0
B	10	10	5	0
C	10	0	10	0
D	20	10	10	0
E	10	0	5	1

Notes:
WDL = West Doane Lake
ID = identification
* Mix A through Mix D were initial admixtures from Phase 3 of the WDL Treatability Study

TABLE 2
Unconfined Compressive Strength Results Summary
WDL Phase 4 Treatability Study
RP - Portland Site

Sample ID	UCS (psi)					Performance Criteria (psi)
	Day 3	Day 5	Day 7	Day 14	Day 28	
TS-1 WDLSS-1A	79	--	95	--	121.5	≥ 50
TS-1 WDLSS-1B	96	--	91	--	165	≥ 50
TS-1 WDLSS-1C	75	--	86	--	130.5	≥ 50
TS-1 WDLSS-1D	105	--	112	--	190	≥ 50
TS-1 WDLSS-1E	--	--	71.4	86.2	111	≥ 50
TS-2 WDLSS-1A	60.6	--	81	--	134	≥ 50
TS-2 WDLSS-1B	62.5	--	75.4	--	114.5	≥ 50
TS-2 WDLSS-1C	45.9	--	55	--	89	≥ 50
TS-2 WDLSS-1D	96.6	--	135	--	217	≥ 50
TS-3 WDLSS-1A	--	91	101	--	174	≥ 50
TS-3 WDLSS-1B	--	86	88	--	164.5	≥ 50
TS-3 WDLSS-1C	--	87	82	--	155	≥ 50
TS-3 WDLSS-1D	--	177.5	129	--	171	≥ 50

Notes:

= shaded cell indicates performance criteria failure

-- = not tested

ID = identification

psi = pounds per square inch

UCS = unconfined compressive strength

WDL = West Doane Lake

TABLE 3
Hydraulic Conductivity Results Summary
WDL Phase 4 Treatability Study
RP - Portland Site

Sample ID	Hydraulic Conductivity (cm/sec) Untreated 1 psi Consolidated Stress	Hydraulic Conductivity (cm/sec) Untreated 2 psi Consolidated Stress	Hydraulic Conductivity (cm/sec) Treated 5 psi Consolidated Stress	Performance Criteria (cm/sec)
TS-1 WDLSS-1A	4.00E-07 (TS-1)	2.00E-07 (TS-1)	6.00E-08	≤1.00E-07
TS-1 WDLSS-1B			7.00E-08	≤1.00E-07
TS-1 WDLSS-1C			7.00E-08	≤1.00E-07
TS-1 WDLSS-1D			1.00E-08	≤1.00E-07
TS-1 WDLSS-1E			4.00E-08	≤1.00E-07
TS-2 WDLSS-1A	8.00E-08 (TS-2)	6.00E-08 (TS-2)	2.00E-08	≤1.00E-07
TS-2 WDLSS-1B			2.00E-08	≤1.00E-07
TS-2 WDLSS-1C			< 1.00E-08*	≤1.00E-07
TS-2 WDLSS-1D			< 1.00E-08*	≤1.00E-07
TS-3 WDLSS-1A	2.00E-07 (TS-3)	2.00E-07 (TS-3)	< 1.00E-08*	≤1.00E-07
TS-3 WDLSS-1B			2.00E-08	≤1.00E-07
TS-3 WDLSS-1C			3.00E-08	≤1.00E-07
TS-3 WDLSS-1D			2.00E-08	≤1.00E-07

Notes:
psi = pounds per square inch
cm/sec = centimeters per second
* Reported as < 1.00E-08 cm/sec at or near system detection limit
WDL = West Doane Lake

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)								
Aluminum	**1'6000**	**0.035 J**	**1.2**	**0.95**	**0.8**	**2.2**	NT	1.25E+05
Antimony	**12**	**0.056**	0.003 U	0.003 U	0.003 U	0.003 U	NT	4.98E+01
Arsenic	**61**	**0.063**	**0.041 J**	**0.026 J**	**0.023 J**	**0.0052 J**	0.011 U	5.81E+00
Barium	**160**	**0.39**	**0.33**	**0.47**	**0.32**	**0.79**	**0.31**	2.49E+04
Beryllium	**0.61**	0.00005 U	0.00005 U	0.00005 U	0.00005 U	**0.00015 J**	NT	2.49E+02
Boron	**54 J**	**0.047 J**	0.017 U	**0.61 J**	0.017 U	**0.19 J**	NT	2.49E+04
Cadmium	**0.6**	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.018 U	6.23E+01
Calcium	**25'000**	**660**	**800**	**780**	**780**	**750**	NT	NA
Chromium	**72**	**0.0035 J**	**0.049**	**0.053**	**0.055**	**0.028**	**0.049**	3.74E+02
Cobalt	**15**	**0.037**	**0.00057 J**	**0.00064 J**	**0.00062 J**	**0.00043 J**	NT	6.23E+03
Copper	**52**	0.00065 U	**0.022**	**0.02**	**0.023**	**0.042**	NT	4.98E+03
Iron	**26'000**	**14**	0.015 U	0.015 U	0.015 U	**0.028 J**	NT	3.74E+04
Lead	**560**	**0.02**	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.001 U	NA
Magnesium	**3800**	**11**	0.021 U	0.038 U	0.028 U	0.021 U	NT	NA
Manganese	**490**	**4.7**	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NT	2.99E+03
Mercury	**0.62**	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0006 U	3.74E+01
Molybdenum	**84**	**0.25**	**1.5**	**1.3**	**1.4**	**0.91**	NT	6.23E+02
Nickel	**130**	**0.5**	**0.093**	**0.076**	**0.076**	**0.065**	NT	1.25E+04
Potassium	**780**	**5.6**	**16**	**16**	**15**	**22**	NT	NA
Selenium	**1.9**	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.0044 U	0.009 U	6.23E+02
Silver	**0.46**	**0.029**	0.00083 U	0.00083 U	0.00083 U	0.00083 U	0.0008 U	1.04E+03
Sodium	**3'700**	NT	NT	NT	NT	NT	NT	NA
Thallium	**0.18 J**	**0.023 J**	**0.063**	**0.069**	**0.067**	**0.065**	NT	8.22E+00
Vanadium	**120**	0.00025 U	**0.11**	**0.16**	**0.13**	**0.043**	NT	1.25E+02
Zinc	**230**	**0.0082**	**0.011 J**	**0.011 J**	**0.01 J**	**0.0075 J**	NT	6.23E+04

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
Organochlorine Insecticides/PCBS (EPA Method 8081/8082)								
4,4'-DDD	**22**	0.1 U	1 U	1 U	1 U	1 U	**0.24 J**	4.00E-02
4,4'-DDE	0.37 U	0.11 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.008 N**	3.22E-02
4,4'-DDT	0.42 U	0.19 U	1.9 U	1.9 U	1.9 U	1.9 U	**0.005 NJ**	1.50E-02
Aldrin	0.17 U	0.13 U	1.3 U	1.3 U	1.3 U	1.3 U	**0.0008 J**	NA
alpha-BHC	**0.29 J**	0.13 U	1.3 U	1.3 U	1.3 U	1.3 U	0.0001 U	2.79E-02
alpha-Chlordane	**1.4 J**	0.12 U	1.2 U	1.2 U	1.2 U	1.2 U	**0.041**	8.13E-02
Aroclor 1016	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NT	NA
Aroclor 1221	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NT	NA
Aroclor 1232	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NT	NA
Aroclor 1242	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NT	NA
Aroclor 1248	0.051 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	NT	NA
Aroclor 1254	0.028 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NT	NA
Aroclor 1260	0.028 UR	0.00024 U	0.00024 U	0.00024 U	0.00024 U	0.00024 U	NT	NA
beta-BHC	**0.73 J**	0.21 U	2.1 U	2.1 U	2.1 U	2.1 U	0.0002 U	8.39E-02
delta-BHC	**0.3 J**	0.095 U	0.95 U	0.95 U	0.95 U	0.95 U	**0.002 NJ**	NA
Dieldrin	**6.8**	0.12 U	1.2 U	1.2 U	1.2 U	1.2 U	0.0001 U	6.07E-03
Endosulfan I	**22**	0.11 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.046 N**	3.04E+01
Endosulfan II	0.42 U	0.13 U	1.3 U	1.3 U	1.3 U	1.3 U	0.0001 U	3.04E+01
Endosulfan sulfate	0.55 U	0.17 U	1.7 U	1.7 U	1.7 U	1.7 U	0.0002 U	NA
Endrin	**1.8 J**	0.00079 U	**0.015 J**	**0.015 J**	**0.013 J**	**0.019 J**	**0.016 NJ**	4.17E-01
Endrin aldehyde	0.4 U	1.1 U	11 U	11 U	11 U	11 U	0.001 U	NA
Endrin Ketone	**0.58 J**	0.12 U	1.2 U	1.2 U	1.2 U	1.2 U	0.0001 U	NA
gamma-BHC (Lindane)	**0.33 J**	**0.00023 J**	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0001 U	1.46E-01
gamma-Chlordane	**1.5 J**	0.11 U	1.1 U	1.1 U	1.1 U	1.1 U	NT	8.13E-02
Heptachlor	**0.32 J**	0.00029 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	**0.0003**	3.16E-02
Heptachlor epoxide	0.2 U	0.00014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0001 U	6.07E-03
Methoxychlor	2.1 U	0.0013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.001 U	NA
Toxaphene	16 U	NT	NT	NT	NT	NT	0.009 U	NA
Total Chlordane	NT	NT	NT	NT	NT	NT	0.002 U	

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151A)								
2,4,5-T	**74**	**0.47**	**17 J**	**17 J**	**15 J**	**12 J**	**1.4**	4.21E+01
2,4,5-TP (Silvex)	**2.1**	**0.019**	**0.27 J**	**0.25 J**	**0.27 J**	**0.29 J**	**0.033**	1.75E+01
2,4-D	**890**	**8.7**	**180 J**	**180 J**	**200 J**	**150 J**	**16**	7.21E+01
2,4-DB	**89**	**0.39**	**11 J**	**11 J**	**9.3 J**	**8.1 J**	**0.91**	4.41E+01
4-Nitrophenol	NT	0.00028 U	0.0024 UJ	0.0024 UJ	0.0024 UJ	0.0024 UJ	NT	NA
Bromoxynil	0.049 U	0.001 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NT	NA
Dalapon	0.02 UJ	0.00041 UJ	0.0043 UJ	0.0043 UJ	0.0043 UJ	0.0043 UJ	0.0004 UJ	NA
Dicamba	0.071 U	0.0003 U	0.0022 UJ	0.0022 UJ	0.0022 UJ	0.0022 UJ	0.0002 U	NA
Dichlorprop	**0.88**	**0.012**	**0.17 J**	**0.16 J**	**0.21 J**	0.0023 UJ	**0.021**	NA
Dinoseb	0.045 U	0.00026 U	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0055 UJ	0.0006 U	NA
MCPA	**90**	**0.81**	**32 J**	**26 J**	**29 J**	**20 J**	**2.3**	1.62E+00
MCPP	**3**	**0.047**	**0.34 J**	**0.31 J**	**0.33 J**	**0.51 J**	**0.066**	4.25E+00
Pentachlorophenol	NT	**0.0033**	**0.031 J**	**0.15 J**	**0.035 J**	**0.18 J**	NT	5.22E-02
Volatile Organic Compounds (EPA Method 8260B)								
1,1,1,2-Tetrachloroethane	0.14 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.037 UJ	NA
1,1,1-Trichloroethane	0.11 UJ	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.055 U	NA
1,1,2,2-Tetrachloroethane	0.2 UJ	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	0.055 U	NA
1,1,2-Trichloroethane	0.18 UJ	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	0.038 UJ	NA
1,1-Dichloroethane	0.15 UJ	**0.095 J**	0.039 U	0.039 U	**0.039 J**	0.039 U	NT	1.07E+02
1,1-Dichloroethene	0.17 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.049 U	NA
1,1-Dichloropropene	0.094 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NA
1,2,3-Trichlorobenzene	0.56 UJ	0.024 U	0.024 U	0.035 U	0.032 U	0.024 U	0.045 U	7.43E-01
1,2,3-Trichloropropane	0.15 UJ	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.055 U	NA
1,2,4-Trichlorobenzene	**1.6 J**	**0.051 J**	0.055 U	0.053 U	0.056 U	0.048 U	0.023 U	7.45E-01
1,2,4-Trimethylbenzene	**4.7 J**	**0.43 J**	**0.29 J**	**0.26 J**	**0.29 J**	**0.25 J**	**0.049 J**	1.34E+00
chloropropane	0.4 UJ	0.037 U	0.038 U	0.037 U	0.037 U	0.037 U	0.22 U	3.17E-01

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
1,2-Dibromoethane	0.12 UJ	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.038 U	NA
1,2-Dichlorobenzene	**48 J**	**5.7**	**3.4**	**2.6**	**3.1**	**2.5**	**0.63 J**	3.61E+01
1,2-Dichloroethane	0.11 UJ	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.1 UJ	NA
1,2-Dichloropropane	0.14 UJ	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.046 U	NA
1,3,5-Trimethylbenzene	**2.2 J**	**0.18 J**	**0.12 J**	**0.1 J**	**0.12 J**	**0.097 J**	0.039 U	1.34E+00
1,3-Dichlorobenzene	**2 J**	**0.24 J**	**0.15 J**	**0.11 J**	**0.13 J**	**0.11 J**	0.02 UJ	1.49E+01
1,3-Dichloropropane	0.12 UJ	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.05 UJ	NA
1,4-Dichlorobenzene	**13 J**	**1.4**	**0.65**	**0.49 J**	**0.58**	**0.49 J**	0.026 UJ	1.72E+00
2,2-Dichloropropane	0.12 UJ	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.14 U	NA
2-Butanone (MEK)	2.4 UJ	0.41 U	0.78 U	0.74 U	0.86 U	0.88 U	0.6 U	1.14E+03
2-Chlorotoluene	0.17 UJ	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.03 UJ	NA
2-Ethyl-1-hexanol	**12 J**	1.3 U	**3.3 J**	**2.6 J**	**2.3 J**	**2.1 J**	1.1 UJ	NA
2-Hexanone	1.1 UJ	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.17 U	NA
4-Chlorotoluene	0.12 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.049 UJ	NA
4-Isopropyltoluene	**0.36 J**	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.039 U	NA
(MIBK)	0.51 UJ	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.22 U	NA
Acetone	0.48 UJ	0.37 U	0.37 U	0.5 U	0.39 U	0.81 U	0.55 U	7.27E+02
Benzene	**0.068 J**	**0.033 J**	0.026 U	0.026 U	0.026 U	0.026 U	0.05 UJ	1.67E+00
Bromobenzene	0.15 UJ	0.053 U	0.053 U	0.053 U	0.053 U	0.053 U	0.04 UJ	NA
Bromochloromethane	0.17 UJ	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.07 UJ	NA
Bromodichloromethane	0.048 UJ	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.038 UJ	NA
Bromoform	0.17 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.038 UJ	NA
Bromomethane	0.46 UJ	**0.45 J**	0.39 U	0.4 U	0.29 U	0.35 U	0.12 UJ	1.13E+00
Carbon disulfide	0.092 UJ	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.033 U	1.27E+02
Carbon tetrachloride	0.1 UJ	0.041 U	0.041 U	0.041 U	0.041 U	0.041 U	0.035 U	NA
Chlorobenzene	**0.87 J**	**0.17 J**	0.039 U	0.039 U	0.039 U	0.039 U	0.032 U	1.13E+01
Chloroethane	0.12 UJ	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.095 U	1.87E+01
Chloroform	0.087 UJ	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	0.034 UJ	7.05E-01
Chloromethane	0.32 UJ	0.06 U	0.19 U	0.15 U	0.19 U	0.2 U	0.09 UJ	2.03E+01
cis-1,2-Dichloroethene	0.13 UJ	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	0.04 UJ	NA
cis-1,3-Dichloropropene	0.095 UJ	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 UJ	NA
Dibromochloromethane	0.076 UJ	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.055 UJ	NA

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
Dibromomethane	0.13 UJ	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.065 UJ	NA
Dichlorodifluoromethane	0.13 UJ	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.065 U	NA
Ethylbenzene	**1.9 J**	**0.36 J**	**0.13 J**	**0.12 J**	**0.13 J**	**0.12 J**	**0.046 J**	1.05E+02
Hexachlorobutadiene	0.1 UJ	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.07 U	4.02E-01
Iodomethane	0.52 UJ	2 U	2.3 U	2.3 U	2.3 U	2.3 U	0.22 UJ	NA
Isobutylalcohol	6.3 UJ	14 U	14 U	14 U	14 U	14 U	7 U	2.40E+02
Isopropylbenzene	**0.5 J**	0.033 U	**0.091 J**	**0.099 J**	**0.085 J**	**0.11 J**	0.042 UJ	4.85E+01
m,p-Xylene	**7.4 J**	**1.2**	**0.44 J**	**0.36 J**	**0.45 J**	**0.36 J**	**0.11 J**	2.18E+01
Methylene chloride	0.094 UJ	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.045 UJ	NA
Naphthalene	**0.51 J**	0.035 U	0.043 U	0.035 U	0.038 U	0.041 U	0.035 U	3.53E+01
n-Butylbenzene	0.31 UJ	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.049 UJ	1.03E+01
n-Propylbenzene	**1.4 J**	**0.093 J**	**0.061 J**	**0.054 J**	**0.067 J**	**0.051 J**	0.035 U	1.77E+01
o-Xylene	**1.3 J**	**0.27 J**	**0.11 J**	**0.086 J**	**0.11 J**	**0.085 J**	0.034 UJ	2.18E+01
sec-Butylbenzene	**0.36 J**	0.042 U	0.042 U	0.042 U	0.042 U	0.042 U	0.02 U	NA
Styrene	0.087 UJ	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.031 UJ	NA
tert-Butylbenzene	0.097 UJ	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	0.024 U	NA
Tetrachloroethene	0.14 UJ	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.044 U	NA
Toluene	0.08 UJ	0.031 U	0.039 U	0.034 U	0.036 U	0.046 U	0.033 UJ	2.05E+02
trans-1,2-Dichloroethene	0.11 UJ	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.037 UJ	NA
trans-1,3-Dichloropropene	0.086 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.041 UJ	NA
Trichloroethene	0.13 UJ	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.037 UJ	NA
Trichlorofluoromethane	0.097 UJ	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.044 U	NA
Vinyl chloride	0.16 UJ	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.09 U	NA

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
Semi Volatile Organic Compounds (EPA Method 8270C)								
1,2,4-Trichlorobenzene	**2.2**	**0.046**	**0.037**	**0.033**	**0.032**	**0.03**	**0.025**	0.745
1,2-Dichlorobenzene	**62**	**4.2**	**2.4**	**2.2**	**2.3**	**2**	**1.8**	36.1
1,3-Dichlorobenzene	**3.5**	**0.19**	**0.11**	**0.095**	**0.11**	**0.087**	**0.068**	14.9
1,4-Dichlorobenzene	**18**	**1**	**0.57**	**0.52**	**0.53**	**0.48**	**0.34**	1.72E+00
1-Methylnaphthalene	**0.31**	**0.0089**	**0.0068**	**0.0058**	**0.0068**	**0.0062**	0.0005 U	3.40E+00
2,3,4,6-Tetrachlorophenol	0.019 U	0.011 U	0.011 UJ	0.011 U	0.011 U	0.011 U	0.0008 U	1.92E+01
2,3,5,6-Tetrachlorophenol	**0.49**	**0.027**	**0.017 J**	**0.043**	**0.046**	**0.035**	**0.056 J**	4.56E+01
2,4,5-Trichlorophenol	**3.5**	**0.16**	**0.15 J**	**0.28**	**0.32**	**0.27 J**	**0.39**	1.55E+02
2,4,6-Trichlorophenol	**11**	**0.87**	**0.45 J**	**0.9 J**	**0.98 J**	**0.74 J**	**1.4**	9.86E+00
2,4-Dichlorophenol	**21**	**2.3**	**0.99 J**	**2.1**	**2.4**	**1.8**	**3.2**	9.76E+00
2,4-Dimethylphenol	0.0054 U	**0.019 J**	0.015 UJ	0.015 U	0.015 U	0.015 U	0.002 U	1.49E+02
2,4-Dinitrophenol	0.14 U	0.075 U	0.075 UJ	0.075 U	0.075 U	0.075 UJ	0.006 UJ	NA
2,4-Dinitrotoluene	0.012 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.001 U	NA
2,6-Dinitrotoluene	0.012 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.001 U	NA
2-Chloronapthalene	0.0056 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.00077 U	0.0003 U	7.55E+01
2-Chlorophenol	**1.7**	**0.2**	**0.081 J**	**0.15**	**0.18**	**0.13**	**0.17**	4.99E+01
2-Methyl-4,6-dinitrophenol	0.094 U	0.066 U	0.066 UJ	0.066 U	0.066 U	0.066 U	0.005 UJ	NA
2-Methylnaphthalene	**0.28**	**0.007 J**	**0.0059 J**	**0.0064 J**	**0.0068 J**	**0.0056 J**	0.0006 U	3.45E+00
2-Methylphenol	**4.4**	**0.5**	**0.34 J**	**0.36**	**0.38**	**0.29**	**0.33**	5.65E+02
2-Nitroaniline	0.011 U	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.001 U	NA
2-Nitrophenol	0.0074 U	**0.011 J**	0.0056 UJ	0.0056 U	0.0056 U	0.0056 U	0.002 U	NA
3,3'-Dichlorobenzidine	0.042 UJ	0.014 U	0.014 U	0.014 U	0.014 U	0.014 U	0.016 UJ	NA
3/4-Cresol	**0.15**	**0.015 J**	**0.0089 J**	**0.011 J**	**0.011 J**	**0.0093 J**	**0.01 J**	5.65E+01
3-Nitroaniline	0.028 U	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.006 UJ	NA
4-Bromophenylphenyl ether	**0.059 J**	0.0028 U	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.0028 UJ	0.001 U	NA
4-Chloro-3-methylphenol	0.0028 U	0.004 U	0.004 UJ	0.004 U	0.004 U	0.004 U	NT	NA
4-Chloroaniline	0.047 U	0.0048 U	0.0048 UJ	0.0048 U	0.0048 U	0.0048 UJ	0.002 UJ	NA
4-Chlorophenylphenyl ether	0.011 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.001 U	NA
4-Nitroaniline	0.058 U	0.0081 U	0.0081 UJ	0.0081 UJ	0.0081 UJ	0.0081 UJ	0.002 UJ	NA

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
4-Nitrophenol	0.093 U	**0.026 J**	0.017 UJ	0.017 U	0.017 U	0.017 U	0.016 UJ	NA
Acenaphthene	**0.058**	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0014 U	0.0001 U	NA
Acenaphthylene	0.0074 U	0.0011 U	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0003 U	NA
Anthracene	**0.018 J**	0.00066 U	0.00066 U	0.00066 U	0.00066 U	0.00066 U	0.0002 U	NA
Benzo(a)anthracene	**0.046**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0003 U	NA
Benzo(a)pyrene	**0.078**	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.0003 U	NA
Benzo(b)fluoranthene	**0.059**	0.0011 U	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0011 UJ	0.0005 U	NA
Benzo(ghi)perylene	**0.041**	0.00069 U	0.00069 U	0.00069 U	0.00069 U	0.00069 U	0.0006 U	NA
Benzo(k)fluoranthene	0.0093 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.00073 U	0.0006 U	NA
Benzofluoranthenes	NT	NT	NT	NT	NT	NT	0.0006 U	NA
Benzoic acid	0.21 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.002 UJ	5.79E+04
Benzyl alcohol	0.0081 U	0.0037 U	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.0037 UJ	0.001 U	1.26E+04
methane	0.028 U	0.0031 U	0.0031 UJ	0.0031 UJ	0.0031 UJ	0.0031 UJ	0.001 U	NA
Bis(2-Chloroethyl) ether	0.035 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.002 U	NA
Bis(2-chloroisopropyl) Ether	**0.49**	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0009 U	NA
bis(2-Ethylhexyl) phthalate	0.052 U	0.008 U	0.006 UJ	0.006 UJ	0.006 UJ	0.006 UJ	0.003 U	7.42E-02
Butylbenzylphthalate	**0.049 J**	**0.0065 J**	0.0019 U	**0.022 J**	**0.012 J**	0.0019 U	0.002 U	1.40E+02
Carbazole	NT	NT	NT	NT	NT	NT	0.0009 UJ	NA
Chrysene	**0.047**	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.0005 U	NA
Dibenzo(a,h)anthracene	**0.037**	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.00099 U	0.0005 U	NA
Dibenzofuran	0.0061 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.001 U	NA
Diethylphthalate	0.027 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0022 U	0.0009 UJ	9.56E+03
Dimethylphthalate	0.014 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.001 U	NA
Di-n-butylphthalate	0.052 U	**0.014 J**	**0.0061 J**	**0.026**	**0.007 J**	**0.0036 J**	**0.006 J**	1.35E+02

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	**Mix B**	**Mix C**	**Mix D**	**Mix E**	
Di-n-octyl phthalate	0.0096 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.002 U	NA
Fluoranthene	**0.089**	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.00074 U	0.0003 U	NA
Fluorene	**0.093**	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.00091 U	0.0004 U	NA
Hexachlorobenzene	**1**	0.0038 U	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.0008 U	NA
Hexachlorobutadiene	0.01 U	0.0078 U	0.0078 UJ	0.0078 UJ	0.0078 UJ	0.0078 UJ	0.002 U	4.02E-01
Hexachlorocyclopentadiene	0.0084 U	0.0052 U	0.0052 UJ	0.0052 UJ	0.0052 UJ	0.0052 UJ	0.001 U	NA
Hexachloroethane	0.012 U	0.0075 U	0.0075 UJ	0.0075 UJ	0.0075 UJ	0.0075 UJ	0.001 U	NA
Indeno(1,2,3-cd)pyrene	**0.027 J**	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.0005 U	NA
Isophorone	0.0039 U	0.0023 U	0.0023 UJ	0.0023 UJ	0.0023 UJ	0.0023 UJ	0.001 U	NA
Naphthalene	**4.1**	**0.43**	**0.3**	**0.43**	**0.52**	**0.39 J**	**0.5**	3.53E+01
Nitrobenzene	0.03 U	0.0017 U	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0008 U	3.09E+00
N-Nitrosodi-n-propyl amine	0.0067 U	0.0029 U	0.0029 UJ	0.0029 UJ	0.0029 UJ	0.0029 UJ	0.002 U	3.42E-01
N-Nitrosodiphenylamine	0.0045 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 UJ	0.001 U	NA
Pentachlorophenol	**0.17 J**	0.011 U	0.011 UJ	**0.013 J**	**0.017 J**	**0.011 J**	0.001 UJ	5.22E-02
Phenanthrene	**0.17**	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0002 U	NA
Phenol	**2.3**	**0.18**	**0.091 J**	**0.14 J**	**0.089 J**	**0.11 J**	**0.081 J**	6.39E+03
Pyrene	**0.12**	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.00084 U	0.0002 U	NA
Pyridine							0.012 UJ	

TABLE 4
Phases 2, 3 and 4 Bulk and TCLP Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 02/27/2006 Phase 2 Bulk Sediment (untreated) (mg/kg)	TS-1 02/27/2006 Phase 2 Leachate (untreated) (mg/L)	TS-1 WDLSS-1A 03/27/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1B 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1C 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-1D 03/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDL-SS-14E-UCS-28 11/10/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentrations (mg/L)
			Mix A	Mix B	Mix C	Mix D	Mix E	
Dioxins/Furans (EPA Method 8280/8290)								
1,2,3,4,6,7,8,9-OCDD	**0.023**	5.2E-07 U	0.0000013 U	0.00000094 U	0.0000008 U	0.0000007 U	0.000000034 U	NA
1,2,3,4,6,7,8,9-OCDF	**0.019**	7.1E-07 U	0.0000007 U	0.0000005 U	0.00000049 U	0.00000042 U	0.00000001 U	NA
1,2,3,4,6,7,8-HpCDD	**0.0025**	1.5E-07 U	0.00000053 U	0.00000069 U	0.00000046 U	0.0000004 U	0.000000004 U	NA
1,2,3,4,6,7,8-HpCDF	**0.0043**	7.2E-07 U	0.00000053 U	0.00000078 U	0.00000037 U	0.00000047 U	0.0000000036 U	NA
1,2,3,4,7,8,9-HpCDF	0.00035 U	5.4E-07 U	0.00000044 U	0.00000048 U	0.0000003 U	0.00000027 U	0.0000000027 U	NA
1,2,3,4,7,8-HxCDD	0.00061 U	4.3E-07 U	0.0000005 U	0.00000046 U	0.00000018 U	0.00000021 U	0.0000000042 U	NA
1,2,3,4,7,8-HxCDF	0.0005 U	2.1E-07 U	0.00000044 U	0.000000048 U	0.00000015 U	0.00000028 U	0.0000000039 U	NA
1,2,3,6,7,8-HxCDD	0.00083 U	5.8E-07 U	0.00000059 U	0.00000054 U	0.00000022 U	0.00000024 U	0.0000000038 U	NA
1,2,3,6,7,8-HxCDF	0.00063 U	2.8E-07 U	0.00000021 U	0.00000047 U	0.00000019 U	0.00000028 U	0.0000000037 U	NA
1,2,3,7,8,9-HxCDD	0.00048 U	4.6E-07 U	0.00000025 U	0.0000011 U	0.000001 U	0.00000099 U	0.0000000037 U	NA
1,2,3,7,8,9-HxCDF	0.00074 U	2.9E-07 U	0.00000031 U	0.00000041 U	0.00000014 U	0.00000017 U	0.0000000041 U	NA
1,2,3,7,8-PeCDD	0.00029 U	9.2E-07 U	0.00000041 U	0.00000034 U	0.00000029 U	0.0000002 U	0.0000000031 U	NA
1,2,3,7,8-PeCDF	**0.011**	1.7E-07 U	0.00000021 U	0.00000015 U	0.00000013 U	0.0000001 U	0.000000002 U	NA
2,3,4,6,7,8-HxCDF	0.00028 U	2.8E-07 U	0.000000016 U	0.000000042 U	0.00000014 U	0.00000026 U	0.000000004 U	NA
2,3,4,7,8-PeCDF	0.00039 U	1.7E-07 U	0.0000002 U	0.00000017 U	0.00000012 U	0.000000095 U	0.0000000019 U	NA
2,3,7,8-TCDD	**0.019**	2.4E-07 U	0.0000001 U	0.00000013 U	0.000000091 U	0.000000068 U	**0.000000014**	1.41E-08
2,3,7,8-TCDF	**0.17**	5.9E-08 U	0.00000045 U	0.00000078 U	0.00000055 U	0.00000035 U	0.0000000042 U	NA

Notes:
EPA = United States Environmental Protection Agency
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
NA = Not applicable; no risk-based calculations (RBC) calculated because either no toxicity data are available or analyte was not detected in leachate.
NT = not tested
TCLP = Toxicity Characteristic Leaching Procedure
J = The associated analytical result is quantitatively uncertain; indicative of a data limitation related to a QC element that exceeds required acceptance limits.
N = An analyte has been presumptively identified. The associated analytical result is both qualitatively and quantitatively uncertain.
R = Indicates that a result has been rejected due to serious quality control (QC) problems; it is not possible to determine whether the analyte is present or absent.
U = The analytical result must be considered to be nondetect at the concentration listed.
UJ = The analyte was not detected at a concentration above the method reporting limit. However, the reporting limit is approximate and may be inaccurate or imprecise.
= exceeds RBCs
Bold = detected
WDL = West Doane Lake

TABLE 5
pH Analytical Results for Modified ANSI/ANS-16.1-1986 Test
WDL Phase 4 Treatability Study
RP - Portland Site

Sample ID		Stagnant Test				Flush Test			
		Test ID	Date	pH	Temp (°C)	Test ID	Date	pH	Temp (°C)
Mix A	TS-1-WDLSS-A	5 day- STG	10/23/2006	10.68	20.1	5 day - Flush	10/23/2006	10.69	20.1
	TS-1-WDLSS-A	10 day- STG	10/28/2006	11.37	19.5	10 day - Flush	10/28/2006	10.97	19.3
	TS-1-WDLSS-A	15 day- STG	11/02/2006	11.58	19.3	15 day - Flush	11/02/2006	10.89	18.9
	TS-1-WDLSS-A	20 day- STG	11/09/2006	11.5	20	20 day - Flush	11/09/2006	10.89	19.9
	TS-1-WDLSS-A	25 day- STG	11/12/2006	11.45	19	25 day - Flush	11/12/2006	10.96	19
	TS-1-WDLSS-A	30 day- STG	11/17/2006	11.58	19.1	30 day - Flush	11/17/2006	10.74	18.9
Mix B	TS-1-WDLSS-B	5 day- STG	10/24/2006	11.81	20.1	5 day - Flush	10/24/2006	11.26	19.7
	TS-1-WDLSS-B	10 day- STG	10/29/2006	11.56	19.2	10 day - Flush	10/29/2006	11.38	18.7
	TS-1-WDLSS-B	15 day- STG	11/03/2006	11.59	19	15 day - Flush	11/03/2006	11.02	18.7
	TS-1-WDLSS-B	20 day- STG	11/09/2006	11.62	19.7	20 day - Flush	11/09/2006	11.11	19.4
	TS-1-WDLSS-B	25 day- STG	11/13/2006	11.46	19.2	25 day - Flush	11/13/2006	11.02	19
	TS-1-WDLSS-B	30 day- STG	11/18/2006	11.49	19.4	30 day - Flush	11/18/2006	10.97	19.1
Mix C	TS-1-WDLSS-C	5 day- STG	10/25/2006	11.3	19.5	5 day - Flush	10/25/2006	11.24	19.4
	TS-1-WDLSS-C	10 day- STG	10/30/2006	11.45	19	10 day - Flush	10/30/2006	11.22	18.8
	TS-1-WDLSS-C	15 day- STG	11/04/2006	11.56	19.2	15 day - Flush	11/04/2006	11.09	18.7
	TS-1-WDLSS-C	20 day- STG	11/09/2006	11.59	18.9	20 day - Flush	11/09/2006	11.09	18.2
	TS-1-WDLSS-C	25 day- STG	11/14/2006	11.89	19.1	25 day - Flush	11/14/2006	10.87	19
	TS-1-WDLSS-C	30 day- STG	11/19/2006	11.45	19.2	30 day - Flush	11/19/2006	10.59	19
Mix D	TS-1-WDLSS-D	5 day- STG	10/25/2006	11.47	19.6	5 day - Flush	10/25/2006	11.7	19.5
	TS-1-WDLSS-D	10 day- STG	10/30/2006	11.17	18.8	10 day - Flush	10/30/2006	11.13	18.8
	TS-1-WDLSS-D	15 day- STG	11/04/2006	11.26	18.4	15 day - Flush	11/04/2006	11.52	18.4
	TS-1-WDLSS-D	20 day- STG	11/09/2006	11.37	18.1	20 day - Flush	11/09/2006	11.05	18
	TS-1-WDLSS-D	25 day- STG	11/14/2006	11.39	18.8	25 day - Flush	11/14/2006	10.95	18.4
	TS-1-WDLSS-D	30 day- STG	11/19/2006	11.54	18.8	30 day - Flush	11/19/2006	10.83	18.7
Mix E	TS-1-WDLSS-E	5 day- STG	10/25/2006	11.26	20	5 day - Flush	10/25/2006	11.36	19.8
	TS-1-WDLSS-E	10 day- STG	10/30/2006	11.13	19.5	10 day - Flush	10/30/2006	11.09	19.5
	TS-1-WDLSS-E	15 day- STG	11/04/2006	11.27	19	15 day - Flush	11/04/2006	11.57	19.3
	TS-1-WDLSS-E	20 day- STG	11/09/2006	11.34	18.9	20 day - Flush	11/09/2006	10.93	18.8
	TS-1-WDLSS-E	25 day- STG	11/14/2006	11.3	19.1	25 day - Flush	11/14/2006	10.8	19.3
	TS-1-WDLSS-E	30 day- STG	11/19/2006	11.36	19.2	30 day - Flush	11/19/2006	10.74	19.1

Notes:
ID = identification
ANSI/ANS = American National Standards Institute
°C = degrees Celsius

TABLE 6
5-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-2A 10/23/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-2B 10/24/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-2C 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-2D 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/25/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**1.60**	**2.00**	**1.90**	**1.10**	**1.90**	1.25E+05
Antimony	**0.00500**	**0.00500**	**0.00500**	**0.00200**	**0.00500**	4.98E+01
Arsenic	**0.00400**	**0.00700**	**0.00900**	**0.000700 J**	**0.00700**	5.81E+00
Barium	**0.0680**	**0.0880**	**0.0710**	**0.260**	**0.0710**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.110 U	0.0170 U	0.0170 U	0.0170 U	2.49E+04
Cadmium	**0.0000700 J**	**0.000100 J**	0.0000400 U	**0.0000400 J**	**0.0000500 J**	6.23E+01
Calcium	**89.0**	**87.0**	**85.0**	**120**	**95.0**	NA
Chromium	**0.00500**	**0.00200 J**	**0.00200**	**0.00200**	**0.00200**	3.74E+02
Cobalt	**0.000600 J**	**0.000500 J**	**0.000500 J**	**0.000700 J**	**0.000500 J**	6.23E+03
Copper	**0.00900**	**0.00700**	**0.00400**	**0.00400**	**0.00300**	4.98E+03
Iron	**0.0190 J**	**0.0370 J**	0.0150 U	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00700**	**0.00300**	**0.00300**	**0.00400**	**0.00300**	NA
Magnesium	0.0210 U	0.210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.00100 J**	**0.000600 J**	**0.000700 J**	**0.000700 J**	0.000500 U	2.99E+03
Mercury	**0.0000700 J**	**0.00100**	**0.00100**	**0.000700 J**	**0.00100**	3.74E+01
Molybdenum	**0.680**	**0.600**	**0.770**	**0.320**	**0.720**	6.23E+02
Nickel	**0.0330**	**0.0130**	**0.0140**	**0.0190**	**0.0150**	1.25E+04
Potassium	**6.80**	**6.80**	**5.70**	**13.0**	**7.10**	NA
Selenium	**0.00700**	**0.00400**	**0.00600**	**0.00200**	**0.00500**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**190**	**180**	**210**	**180**	**190**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.00900**	**0.0120**	**0.0120**	**0.00300**	**0.00800**	1.25E+02
Zinc	**0.00400 J**	**0.00200 J**	**0.00400 J**	**0.00200 J**	**0.00300 J**	6.23E+04

TABLE 6
5-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-2A 10/23/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-2B 10/24/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-2C 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-2D 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/25/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**1.00 J**	**1.10 J**	**0.970 J**	**0.640 J**	**1.00 J**	4.21E+01
2,4,5-TP(Silvex)	**0.0370 J**	**0.0430 J**	**0.0590 J**	**0.0330 J**	**0.0300 J**	1.75E+01
2,4-D	**25.0 J**	**24.0 J**	**28.0 J**	**16.0 J**	**19.0 J**	7.21E+01
2,4-DB	**0.270 J**	**0.330 J**	**0.900 J**	**0.250 J**	**0.400 J**	4.41E+01
4-Nitrophenol	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	NA
Dichlorprop	**0.0260 J**	**0.0300 J**	**0.0320 J**	**0.0210 J**	**0.0220 J**	NA
Dinoseb	0.00500 UJ	0.00500 UJ	0.00500 UJ	0.00500 UJ	0.00500 UJ	NA
MCPA	**2.30 J**	**2.40 J**	**2.50 J**	**2.00 J**	**2.20 J**	1.62E+00
MCPP	**0.110 J**	**0.100 J**	**0.100 J**	**0.0810 J**	**0.0830 J**	4.25E+00
Pentachlorophenol	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	5.20E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

NT = not tested

RBC = risk-based calculation

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 7
10-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-3A 10/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-3B 10/29/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-3C 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-3D 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/30/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**2.30**	**2.90**	**2.50**	**1.80**	**2.70**	1.25E+05
Antimony	**0.00600**	**0.00800**	**0.00900**	**0.00400**	**0.00700**	4.98E+01
Arsenic	0.00600 U	0.00900 U	**0.0150**	0.000600 U	0.00700 U	5.81E+00
Barium	**0.0670**	**0.100**	**0.0660**	**0.310**	**0.0790**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0370 U	0.130 U	0.0170 U	0.0780 U	0.0170 U	2.49E+04
Cadmium	0.0000400 U	**0.0000900 J**	**0.000200 J**	0.0000400 U	**0.000100 J**	6.23E+01
Calcium	**98.0**	**100**	**88.0**	**140**	**110**	NA
Chromium	**0.00600**	**0.00400**	**0.0100 J**	**0.00600**	**0.00400**	3.74E+02
Cobalt	**0.000600 J**	**0.000500 J**	**0.000500 J**	**0.000700 J**	**0.000400 J**	6.23E+03
Copper	**0.00200**	**0.00100 J**	**0.00200**	**0.00200**	**0.00100 J**	4.98E+03
Iron	**0.0560 J**	**0.0310 J**	0.0150 U	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00400**	**0.00300**	**0.00300**	**0.00500**	**0.00300**	NA
Magnesium	0.310 U	0.130 U	0.200 U	0.0290 U	0.0420 U	NA
Manganese	**0.000900 J**	**0.000500 J**	**0.000800 J**	**0.000700 J**	**0.000600 J**	2.99E+03
Mercury	**0.000500**	**0.00200**	**0.00200**	**0.00100**	**0.00200**	3.74E+01
Molybdenum	**0.890**	**0.870**	**1.00**	**0.460**	**0.900**	6.23E+02
Nickel	**0.0350**	**0.0150**	**0.0140**	**0.0200**	**0.0160**	1.25E+04
Potassium	**9.50**	**8.20**	**6.80**	**17.0**	**9.40**	NA
Selenium	**0.00400**	**0.00400**	**0.00500**	**0.00300**	**0.00400**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**290**	**270**	**250**	**270**	**260**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000600 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.00300**	**0.0110**	**0.0100 J**	**0.000500 J**	**0.00700**	1.25E+02
Zinc	**0.00300 J**	**0.00300 J**	**0.00300 J**	**0.00400 J**	**0.00300 J**	6.23E+04

TABLE 7
10-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-3A 10/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-3B 10/29/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-3C 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-3D 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/30/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**1.40 J**	**1.80 J**	**1.80 J**	**0.890 J**	**1.20 J**	4.21E+01
2,4,5-TP (Silvex)	**0.0540 J**	**0.0610 J**	**0.0650 J**	**0.0450 J**	**0.0340 J**	1.75E+01
2,4-D	**32.0**	**37.0**	**38.0**	**24.0**	**31.0**	7.21E+01
2,4-DB	**0.320 J**	**0.410 J**	**0.530 J**	**0.270 J**	**0.310 J**	4.41E+01
4-Nitrophenol	0.00200 U	0.00200 U	0.00300 U	0.00200 U	0.00200 U	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	**0.0370 J**	**0.0390 J**	**0.0420 J**	**0.0290 J**	**0.0260 J**	NA
Dinoseb	0.00600 U	0.00600 U	0.00600 U	0.00600 U	0.00600 U	NA
MCPA	**3.70**	**4.10**	**3.90**	**2.40**	**3.00**	1.62E+00
MCPP	**0.130 J**	**0.150 J**	**0.160 J**	**0.110 J**	**0.0960 J**	4.25E+00
Pentachlorophenol	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

NT = not tested

RBC = risk-based calculation

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 8
15-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-4A 11/02/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-4B 11/03/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-4C 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-4D 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/04/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**2.60**	**3.20**	**2.90**	**2.00**	**3.00**	1.25E+05
Antimony	**0.00600**	**0.00900**	**0.0100**	**0.00200**	**0.00800**	4.98E+01
Arsenic	**0.00500 J**	**0.00800**	**0.0120**	0.000400 U	**0.00600**	5.81E+00
Barium	**0.0710**	**0.100**	**0.0600**	**0.290**	**0.0790**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.160 U	0.0170 U	0.0370 U	0.0170 U	2.49E+04
Cadmium	**0.000200 J**	**0.000200 J**	**0.000200 J**	0.0000400 U	**0.000100 J**	6.23E+01
Calcium	**110**	**98.0**	**72.0**	**120**	**110**	NA
Chromium	**0.00500**	**0.00500**	**0.00600**	**0.00600**	**0.00600**	3.74E+02
Cobalt	**0.000700 J**	**0.000600 J**	**0.000600 J**	**0.000900 J**	**0.000600 J**	6.23E+03
Copper	**0.00200**	**0.00300**	**0.00300**	**0.00400**	**0.00200 J**	4.98E+03
Iron	**0.0360 J**	**0.0250 J**	0.0150 U	**0.0200 J**	0.0150 U	3.74E+04
Lead	**0.00200**	**0.00300**	**0.00200**	**0.00200**	**0.00400**	NA
Magnesium	0.0770 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.00100 J**	**0.000400 J**	**0.000500 J**	**0.000500 J**	**0.000600 J**	2.99E+03
Mercury	**0.000800**	**0.00100**	**0.00200**	**0.000800**	**0.00200**	3.74E+01
Molybdenum	**1.00**	**1.00**	**1.20**	**0.510**	**1.10**	6.23E+02
Nickel	**0.0380**	**0.0200**	**0.0180**	**0.0260**	**0.0220**	1.25E+04
Potassium	**9.90**	**10.0**	**8.50**	**21.0**	**11.0**	NA
Selenium	**0.00400**	**0.00400**	**0.00500**	**0.00300**	**0.00400**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**280**	**280**	**310**	**290**	**290**	NA
Thallium	0.0000300 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	0.0140 U	**0.0230**	**0.0190**	0.000300 U	**0.0130**	1.25E+02
Zinc	**0.00300 J**	**0.00300 J**	**0.00300 J**	**0.00400 J**	**0.00400 J**	6.23E+04

TABLE 8
15-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-4A 11/02/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-4B 11/03/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-4C 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-4D 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/04/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**1.80 J**	**1.60 J**	**2.10 J**	**0.870 J**	**0.200 J**	4.21E+01
2,4,5-TP (Silvex)	**0.0810 J**	**0.0730 J**	**0.0930 J**	**0.0430 J**	0.00200 U	1.75E+01
2,4-D	**42.0 J**	**39.0**	**40.0**	**19.0**	**4.80**	7.21E+01
2,4-DB	**0.560 J**	**0.480 J**	**0.530 J**	**0.250 J**	**0.0730 J**	4.41E+01
4-Nitrophenol	**0.00200 R**	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dalapon	**0.00400 R**	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	**0.00200 R**	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	**0.0690 J**	**0.0560 J**	**0.0690 J**	**0.0370 J**	0.00200 U	NA
Dinoseb	**0.00500 R**	0.00600 U	0.00600 U	0.00500 U	0.00600 U	NA
MCPA	**6.30 J**	**5.60**	**6.70**	**3.30**	**0.530 J**	1.62E+00
MCPP	**0.220 J**	**0.190 J**	**0.230 J**	**0.130 J**	**0.0150 J**	4.25E+00
Pentachlorophenol	**0.00200 R**	0.00200 U	0.00200 U	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

RBC = risk-based concentration

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 9
20-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-5A 11/07/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-5B 11/08/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-5C 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-5D 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/09/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**2.40**	**3.00**	**2.70**	**1.80**	**3.40**	1.25E+05
Antimony	**0.00800**	**0.0110**	**0.0120**	**0.00500**	**0.0100**	4.98E+01
Arsenic	**0.00500**	**0.00600**	**0.0120**	0.000400 U	**0.00500**	5.81E+00
Barium	**0.0740**	**0.130**	**0.0680**	**0.340**	**0.110**	2.49E+04
Beryllium	0.000200 U	**0.000200**	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.100 U	0.0170 U	0.0690 U	0.0170 U	2.49E+04
Cadmium	**0.0000900**	**0.000300**	**0.0000900 J**	0.0000400 U	**0.000300 J**	6.23E+01
Calcium	**83.0**	**94.0**	**81.0**	**120**	**110**	NA
Chromium	**0.00700 J**	**0.00700 J**	**0.00500 J**	**0.00700 J**	**0.00600 J**	3.74E+02
Cobalt	**0.000800 J**	**0.000800 J**	**0.000700 J**	**0.00100 J**	**0.000900 J**	6.23E+03
Copper	**0.00300**	**0.00200 J**	**0.00200**	**0.00600**	**0.0230**	4.98E+03
Iron	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00500**	**0.00200 J**	**0.00200**	**0.00500**	**0.0140**	NA
Magnesium	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.00100 J**	**0.000500 J**	**0.000500 J**	**0.000500 J**	**0.00100 J**	2.99E+03
Mercury	**0.000300**	**0.00100**	**0.00200**	**0.000600**	**0.000300**	3.74E+01
Molybdenum	**1.20**	**1.30**	**1.30**	**0.650**	**1.50**	6.23E+02
Nickel	**0.0440**	**0.0250**	**0.0180**	**0.0390**	**0.0430**	1.25E+04
Potassium	**9.30**	**9.30**	**7.70**	**20.0**	**10.0**	NA
Selenium	**0.00900**	**0.00900**	**0.00900**	**0.00600**	**0.0100**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**260**	**270**	**300**	**300**	**280**	NA
Thallium	0.0000200 U	0.0000200 U	**0.0000300 J**	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.0140**	**0.0260**	**0.0170**	**0.00400**	**0.0230**	1.25E+02
Zinc	**0.00600**	**0.00500 J**	**0.00400 J**	**0.00800**	**0.00700**	6.23E+04

TABLE 9
20-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-5A 11/07/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-5B 11/08/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-5C 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-5D 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/09/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**1.80**	**2.00**	**2.50**	**1.30**	**1.80**	4.21E+01
2,4,5-TP (Silvex)	**0.0720**	**0.0880**	**0.0930**	**0.0690**	**0.0610**	1.75E+01
2,4-D	**37.0**	**41.0**	**42.0**	**30.0**	**41.0**	7.21E+01
2,4-DB	**0.570**	**0.660**	**0.720**	**0.480**	**0.700**	4.41E+01
4-Nitrophenol	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	**0.0620**	**0.0570**	**0.0780**	**0.0520**	**0.0480**	NA
Dinoseb	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	NA
MCPA	**5.10**	**5.70**	**6.10**	**3.80**	**5.60**	1.62E+00
MCPP	**0.160**	**0.190**	**0.200 J**	**0.160 J**	**0.150**	4.25E+00
Pentachlorophenol	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

NT = not tested

RBC = risk-based concentration

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 10
25-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-6A 11/12/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-6B 11/13/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-6C 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-6D 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/14/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**3.10**	**3.00**	**2.90**	**2.00**	**2.70**	1.25E+05
Antimony	**0.00800**	**0.0100**	**0.0130**	**0.00400**	**0.0100**	4.98E+01
Arsenic	**0.00500**	**0.00900**	**0.0140**	0.000400 U	**0.00700**	5.81E+00
Barium	**0.0760**	**0.0950**	**0.0650**	**0.370**	**0.0740**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.130 U	0.0170 U	0.120 U	0.0170 U	2.49E+04
Cadmium	**0.000400 J**	**0.000400 J**	**0.000100 J**	**0.0000600 J**	0.0000400 U	6.23E+01
Calcium	**82.0**	**63.0**	**73.0**	**120**	**74.0**	NA
Chromium	**0.00600**	**0.00600**	**0.00500**	**0.00500**	**0.00500**	3.74E+02
Cobalt	**0.000700 J**	**0.000700 J**	**0.000600 J**	**0.00100 J**	**0.000600 J**	6.23E+03
Copper	**0.00300**	**0.00200**	**0.00200**	**0.00500**	**0.00200**	4.98E+03
Iron	0.0190 U	0.0150 U	0.0250 U	0.0210 U	0.0150 U	3.74E+04
Lead	**0.00400**	**0.00200**	**0.00100 J**	**0.00800**	**0.00300**	NA
Magnesium	0.0210 U	0.0210 U	0.0430 U	0.0210 U	0.0210 U	NA
Manganese	**0.000500 J**	**0.000500 J**	**0.000400 J**	**0.000500 J**	**0.000700 J**	2.99E+03
Mercury	**0.000300**	**0.000600**	**0.00200**	**0.000400**	**0.00100**	3.74E+01
Molybdenum	**1.30**	**1.30**	**1.40**	**0.630**	**1.30**	6.23E+02
Nickel	**0.0430**	**0.0270**	**0.0220**	**0.0320**	**0.0260**	1.25E+04
Potassium	**9.40**	**9.50**	**8.00**	**21.0**	**9.70**	NA
Selenium	**0.00600**	**0.00600**	**0.00800**	**0.00400**	**0.00600**	6.23E+02
Silver	0.000800 UJ	0.000800 UJ	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**290**	**290**	**320**	**320**	**280**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.0170**	**0.0300**	**0.0200**	**0.00400**	**0.0200**	1.25E+02
Zinc	**0.00400 J**	**0.00300 J**	**0.00400 J**	**0.00400 J**	**0.00300 J**	6.23E+04

TABLE 10
25-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-6A 11/12/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-6B 11/13/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-6C 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-6D 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/14/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**1.50 J**	**1.90**	**2.00**	**1.20**	**1.60**	4.21E+01
2,4,5-TP (Silvex)	**0.0710 J**	**0.0790**	**0.0990**	**0.0630**	**0.0500**	1.75E+01
2,4-D	**32.0 J**	**40.0**	**30.0**	**34.0**	**39.0**	7.21E+01
2,4-DB	**0.0670 J**	**0.540**	**0.700**	**0.400**	**0.470**	4.41E+01
4-Nitrophenol	0.00200 UJ	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 UJ	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	**0.0380 J**	**0.0520**	**0.0460**	**0.0410**	**0.0380**	NA
Dinoseb	0.00500 UJ	0.00500 U	0.00500 U	0.00500 U	0.00500 U	NA
MCPA	**3.70 J**	**4.80**	**3.70**	**3.90**	**4.60**	1.62E+00
MCPP	**0.120 J**	**0.180**	**0.160**	**0.170**	**0.140**	4.25E+00
Pentachlorophenol	0.00200 UJ	0.00200 U	0.00200 U	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

NT = not tested

RBC = risk-based concentration

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 11
30-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-7A 11/17/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-7B 11/18/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-7C 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-7D 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/19/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**2.90**	**3.40**	**3.30**	**2.50**	**3.00**	1.25E+05
Antimony	**0.0100**	**0.0100**	**0.0110**	0.00300 U	**0.00900**	4.98E+01
Arsenic	**0.00800**	**0.0100**	**0.0120**	0.000400 U	**0.0100**	5.81E+00
Barium	**0.0710**	**0.100**	**0.0760**	**0.410**	**0.0780**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.180 U	0.0170 U	0.0780 U	0.0170 U	2.49E+04
Cadmium	**0.000200 J**	0.0000400 U	**0.000200 J**	**0.000100 J**	**0.000300 J**	6.23E+01
Calcium	**73.0**	**62.0**	**72.0**	**130**	**74.0**	NA
Chromium	**0.00900 J**	**0.00800 J**	**0.00800**	**0.00700**	**0.00800 J**	3.74E+02
Cobalt	**0.000800 J**	**0.000800 J**	**0.000800 J**	**0.00100 J**	**0.000800 J**	6.23E+03
Copper	**0.00900**	**0.00400**	**0.00200**	**0.00800**	**0.00400**	4.98E+03
Iron	**0.0390 J**	**0.0350 J**	**0.0390 J**	**0.0450 J**	**0.0290 J**	3.74E+04
Lead	**0.00500**	**0.00300**	**0.00300**	**0.0110 J**	**0.00700**	NA
Magnesium	**0.0210 J**	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.000600 J**	0.00100 U	0.000800 U	0.00200 U	0.00700 U	2.99E+03
Mercury	0.0000600 U	**0.000400**	**0.00100**	**0.000200 J**	**0.000800**	3.74E+01
Molybdenum	**1.40**	**1.40**	**1.70**	**0.780**	**1.40**	6.23E+02
Nickel	**0.0540**	**0.0320**	**0.0290**	**0.0410**	**0.0360**	1.25E+04
Potassium	**10.0**	**9.90**	**8.00**	**24.0**	**10.0**	NA
Selenium	**0.00700**	**0.00800**	**0.0110**	**0.00600**	**0.00800**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**290**	**280**	**320**	**330**	**290**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.0210**	**0.0350**	**0.0290**	**0.0110**	**0.0220**	1.25E+02
Zinc	0.000300 U	0.000300 U	0.000300 U	0.000300 U	0.000300 U	6.23E+04

TABLE 11
30-Day Stagnant Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-7A 11/17/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-7B 11/18/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-7C 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-7D 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/19/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**2.00**	**2.30**	**2.70**	**1.20**	**1.90**	4.21E+01
2,4,5-TP (Silvex)	**0.0920**	**0.0930**	**0.0950**	**0.0620**	**0.0620**	1.75E+01
2,4-D	**40.0**	**35.0**	**37.0**	**33.0**	**39.0**	7.21E+01
2,4-DB	**0.580**	**0.620**	**0.680**	**0.390**	**0.630**	4.41E+01
4-Nitrophenol	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dalapon	0.00400 U	0.00400 U	0.00400 U	0.00400 U	0.00400 U	NA
Dicamba	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	**0.0610**	**0.0660**	**0.0690**	**0.0430**	**0.0450**	NA
Dinoseb	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	NA
MCPA	**5.20**	**5.50**	**6.10**	**4.00**	**5.10**	1.62E+00
MCPP	**0.210**	**0.220**	**0.210**	**0.170**	**0.170**	4.25E+00
Pentachlorophenol	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

RBC = risk-based concentration

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 12
5-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-8A 10/23/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-8B 10/24/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-8C 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-8D 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/25/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**1.70**	**2.00**	**1.90**	**1.10**	**1.90**	1.25E+05
Antimony	**0.00500**	**0.00700**	**0.00600**	**0.00200 J**	**0.00600**	4.98E+01
Arsenic	**0.00500**	**0.00700**	**0.0100**	0.000400 U	**0.00900**	5.81E+00
Barium	**0.0690**	**0.0920**	**0.0670**	**0.280**	**0.0720**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.110 U	0.0170 U	0.0170 U	0.0170 U	2.49E+04
Cadmium	**0.0000800 J**	0.0000400 U	**0.0000600 J**	0.0000400 U	**0.000100 J**	6.23E+01
Calcium	**89.0**	**88.0**	**83.0**	**130**	**93.0**	NA
Chromium	**0.00400**	**0.00200 J**	**0.00200 J**	**0.00300**	**0.00200 J**	3.74E+02
Cobalt	**0.000600 J**	**0.000500 J**	**0.000500 J**	**0.000700 J**	**0.000500 J**	6.23E+03
Copper	**0.00600**	**0.00600**	**0.00400**	**0.00500**	**0.00400**	4.98E+03
Iron	0.0150 U	**0.0150 J**	0.0150 U	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00500**	**0.00300**	**0.00300**	**0.00400**	**0.00300**	NA
Magnesium	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.000800 J**	**0.000600 J**	**0.000600 J**	**0.000600 J**	0.000600 U	2.99E+03
Mercury	**0.000400**	**0.00100**	**0.00100 J**	**0.000700**	**0.00100**	3.74E+01
Molybdenum	**0.710**	**0.650**	**0.790**	**0.340**	**0.700**	6.23E+02
Nickel	**0.0290**	**0.0140**	**0.0140**	**0.0200**	**0.0150**	1.25E+04
Potassium	**6.90**	**6.90**	**5.70**	**13.0**	**7.40**	NA
Selenium	**0.00500**	**0.00400**	**0.00600**	**0.00300**	**0.00500**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**190**	**190**	**210**	**190**	**200**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.0100**	**0.00900**	**0.0140**	**0.00400**	**0.0100**	1.25E+02
Zinc	**0.00400 J**	**0.00200 J**	**0.00200 J**	**0.00200 J**	**0.00300 J**	6.23E+04

TABLE 12
5-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-8A 10/23/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-8B 10/24/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-8C 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-8D 10/25/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/25/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**1.20 J**	**0.920 J**	**1.10 J**	**0.640 J**	**0.990 J**	4.21E+01
2,4,5-TP (Silvex)	**0.0550 J**	**0.0400 J**	**0.0470 J**	**0.0320 J**	**0.0300 J**	1.75E+01
2,4-D	**25.0 J**	**26.0 J**	**31.0 J**	**17.0 J**	**24.0 J**	7.21E+01
2,4-DB	**0.460 J**	**0.240 J**	**0.330 J**	**0.270 J**	**0.390 J**	4.41E+01
4-Nitrophenol	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	0.00200 UJ	NA
Dichlorprop	**0.0430 J**	**0.0210 J**	**0.0300 J**	**0.0200 J**	**0.0200 J**	NA
Dinoseb	0.00500 UJ	0.00500 UJ	0.00500 UJ	0.00500 UJ	0.00500 UJ	NA
MCPA	**2.50 J**	**2.60 J**	**2.90 J**	**1.60 J**	**2.20 J**	1.62E+00
MCPP	**0.140 J**	**0.0830 J**	**0.100 J**	**0.0860 J**	**0.0760 J**	4.25E+00
Pentachlorophenol	0.00200 UJ	**0.00700 J**	0.00200 UJ	0.00200 UJ	0.00200 UJ	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

RBC = risk-based concentration

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 13
10-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-9A 10/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-9B 10/29/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-9C 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-9D 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/30/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**1.60**	**2.10**	**1.70**	**1.70**	**2.00**	1.25E+05
Antimony	**0.00500**	**0.00500**	**0.00800**	**0.00300**	**0.00500**	4.98E+01
Arsenic	0.00100 U	0.00100 U	0.00500 U	0.000400 U	0.000400 U	5.81E+00
Barium	**0.0500**	**0.0760**	**0.0460**	**0.200**	**0.0530**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.0250 U	0.0170 U	0.0170 U	0.0170 U	2.49E+04
Cadmium	**0.0000900 J**	0.0000400 U	0.0000400 U	0.0000400 U	0.0000400 U	6.23E+01
Calcium	**84.0**	**81.0**	**68.0**	**100**	**76.0**	NA
Chromium	**0.00600**	**0.00600**	**0.00900**	**0.00600**	**0.00500**	3.74E+02
Cobalt	**0.000200 J**	**0.000200 J**	**0.000200 J**	**0.000300 J**	**0.000200 J**	6.23E+03
Copper	**0.00400**	**0.00400**	**0.00300**	**0.00500**	**0.00500**	4.98E+03
Iron	**0.0230 J**	**0.170 J**	0.0150 U	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00300**	**0.00300**	**0.00300**	**0.00500**	**0.00400**	NA
Magnesium	0.270 U	0.210 U	0.0210 U	0.0310 U	0.0210 U	NA
Manganese	**0.000800 J**	**0.00100 J**	**0.000600 J**	**0.000800 J**	**0.000600 J**	2.99E+03
Mercury	**0.0000800 J**	**0.000200 J**	**0.000200**	0.0000600 U	0.0000600 U	3.74E+01
Molybdenum	**0.280**	**0.300**	**0.330**	**0.150**	**0.300**	6.23E+02
Nickel	**0.0110**	**0.00800**	**0.00800**	**0.00900**	**0.00800**	1.25E+04
Potassium	**3.80**	**4.10**	**2.90 J**	**6.50**	**3.70**	NA
Selenium	**0.00200 J**	**0.00200 J**	**0.00200**	**0.00200 J**	**0.00300**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**62.0**	**65.0**	**64.0**	**57.0**	**56.0**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000300 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.00400**	**0.0110**	**0.0130**	**0.000300**	**0.00700**	1.25E+02
Zinc	**0.00300 J**	**0.00400 J**	**0.00200 J**	**0.00400 J**	**0.00300 J**	6.23E+04

TABLE 13
10-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-9A 10/28/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-9B 10/29/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-9C 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-9D 10/30/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 10/30/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**0.370**	**0.440**	**0.520**	**0.250**	**0.380**	4.21E+01
2,4,5-TP (Silvex)	**0.0140 J**	**0.0160 J**	**0.0190 J**	**0.0110 J**	**0.0120 J**	1.75E+01
2,4-D	**8.60**	**9.40**	**11.0**	**6.70**	**10.0**	7.21E+01
2,4-DB	**0.0840 J**	**0.130 J**	**0.140 J**	**0.0760 J**	**0.110 J**	4.41E+01
4-Nitrophenol	0.00300 U	0.00200 U	0.00200 U	0.00300 U	0.00200 U	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	**0.00700 J**	**0.00800 J**	**0.00900 J**	**0.00600 J**	**0.00700 J**	NA
Dinoseb	0.00600 U	0.00600 U	0.00500 U	0.00600 U	0.00500 U	NA
MCPA	**0.960**	**1.10**	**0.990**	**0.730**	**1.10**	1.62E+00
MCPP	**0.0280**	**0.0360**	**0.0360**	**0.0280**	**0.0310**	4.25E+00
Pentachlorophenol	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

RBC = risk-based concentration

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 14
15-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-10A 11/02/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-10B 11/03/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-10C 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-10D 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/04/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**1.40**	**1.70**	**1.50**	**2.10**	**1.70**	1.25E+05
Antimony	**0.0700 J**	**0.00400**	**0.00400**	**0.00200**	**0.00400**	4.98E+01
Arsenic	**0.0250**	**0.00200 J**	**0.00400**	0.000400 U	0.000400 U	5.81E+00
Barium	**0.400 J**	**0.0640**	**0.0410**	**0.140**	**0.0430**	2.49E+04
Beryllium	0.00200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	2.49E+04
Cadmium	0.000400 U	0.0000400 U	**0.000100 J**	**0.0000500 J**	0.0000400 U	6.23E+01
Calcium	**70.0**	**67.0**	**64.0**	**76.0**	**72.0**	NA
Chromium	**0.0880 J**	**0.00700**	**0.00800**	**0.0100**	**0.00800**	3.74E+02
Cobalt	**0.00200 J**	**0.000200 J**	**0.000400 J**	**0.000400 J**	**0.000200 J**	6.23E+03
Copper	**0.0670 J**	**0.00800**	**0.00800**	**0.00800**	**0.00700**	4.98E+03
Iron	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.0150 U	3.74E+04
Lead	**0.0200 J**	**0.00300**	**0.00300**	**0.00200**	**0.00200**	NA
Magnesium	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.00600 J**	**0.000500 J**	**0.000600 J**	**0.000600 J**	**0.000600 J**	2.99E+03
Mercury	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	3.74E+01
Molybdenum	**2.10 J**	**0.210**	**0.230**	**0.110**	**0.210**	6.23E+02
Nickel	**0.110 J**	**0.00800**	**0.00900**	**0.00900**	**0.00900**	1.25E+04
Potassium	**2.60 J**	**2.60 J**	**2.30 J**	**4.80**	**2.70 J**	NA
Selenium	**0.0180 J**	**0.00100 J**	**0.00200 J**	0.00100 U	**0.00100 J**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**30.0**	**30.0**	**34.0**	**34.0**	**31.0**	NA
Thallium	0.000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.150 J**	**0.0200**	**0.0140**	**0.00700**	**0.0160**	1.25E+02
Zinc	**0.0220 J**	**0.00400 J**	**0.00500 J**	**0.00400 J**	**0.00400 J**	6.23E+04

TABLE 14
15-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-10A 11/02/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-10B 11/03/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-10C 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-10D 11/04/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/04/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**0.380 J**	**0.0740 J**	**0.320**	**0.190 J**	**1.40 J**	4.21E+01
2,4,5-TP (Silvex)	**0.0160 J**	**0.00400 J**	**0.0130 J**	**0.0100 J**	**0.0460**	1.75E+01
2,4-D	**5.60**	**1.40 J**	**6.00**	**4.80 J**	**40.0 J**	7.21E+01
2,4-DB	**0.110 J**	**0.0180 J**	**0.110**	**0.0730 J**	**0.450 J**	4.41E+01
4-Nitrophenol	0.00200 U	0.00200 UJ	0.00300 U	0.00200 UJ	0.00300 U	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 U	0.00200 UJ	0.00200 U	0.00200 UJ	0.00200 U	NA
Dichlorprop	**0.0130 J**	0.00200 UJ	**0.0100 J**	0.00200 UJ	**0.0500**	NA
Dinoseb	0.00600 U	0.00500 UJ	0.00600 U	0.00500 UJ	0.00600 U	NA
MCPA	**0.990 J**	**0.190 J**	**0.800**	**0.490 J**	**4.40 J**	1.62E+00
MCPP	**0.0320 J**	**0.00800 J**	**0.0280 J**	**0.0170 J**	**0.110 J**	4.25E+00
Pentachlorophenol	0.00200 U	0.00200 UJ	0.00200 U	0.00200 UJ	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

RBC = risk-based concentration

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 15
20-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-11A 11/07/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-11B 11/08/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-11C 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-11D 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/09/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**0.940**	**1.20**	**0.930**	**1.70**	**1.30**	1.25E+05
Antimony	**0.00500**	**0.00400**	**0.00600**	**0.00300**	**0.00500**	4.98E+01
Arsenic	0.000400 U	**0.000700 J**	0.000400 U	0.000400 U	0.000400 U	5.81E+00
Barium	**0.0370**	**0.0620**	**0.0350**	**0.140**	**0.0450**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	2.49E+04
Cadmium	0.0000400 U	**0.0000900 J**	0.0000400 U	0.0000400 U	0.0000400 U	6.23E+01
Calcium	**58.0**	**54.0**	**53.0**	**75.0**	**61.0**	NA
Chromium	**0.00900**	**0.00800**	**0.00800**	**0.00800**	**0.00800**	3.74E+02
Cobalt	**0.000200 J**	**0.000200 J**	**0.000200 J**	**0.000300 J**	**0.000200 J**	6.23E+03
Copper	**0.00700**	**0.00800**	**0.00700**	**0.00700**	**0.00900**	4.98E+03
Iron	0.0150 U	0.0150 U	0.0150 U	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00200 J**	**0.00200**	**0.00200**	**0.00200 J**	**0.00200**	NA
Magnesium	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.000600 J**	**0.000500 J**	**0.000600 J**	**0.000600 J**	**0.000600 J**	2.99E+03
Mercury	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	3.74E+01
Molybdenum	**0.170**	**0.180**	**0.180**	**0.0980**	**0.190**	6.23E+02
Nickel	**0.0100**	**0.00800**	**0.00700**	**0.00800**	**0.00900**	1.25E+04
Potassium	**1.80 J**	**1.90 J**	**1.50 J**	**3.60**	**1.90 J**	NA
Selenium	**0.00300**	**0.00200 J**	**0.00200**	**0.00200**	**0.00200**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**16.0**	**17.0**	**19.0**	**21.0**	**17.0**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.0140**	**0.0200**	**0.0150**	**0.00900**	**0.0180**	1.25E+02
Zinc	**0.00600**	**0.00400 J**	**0.00400 J**	**0.00500**	**0.00700**	6.23E+04

TABLE 15
20-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-11A 11/07/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-11B 11/08/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-11C 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-11D 11/09/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/09/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**0.240 J**	**0.220**	**0.250 J**	**0.130 J**	**0.200**	4.21E+01
2,4,5-TP (Silvex)	0.00200 U	0.00200 U	**0.0140 J**	0.00200 U	0.00200 U	1.75E+01
2,4-D	**5.20 J**	**4.60**	**4.10 J**	**3.40 J**	**5.00**	7.21E+01
2,4-DB	**0.0980 J**	**0.0810**	**0.100 J**	**0.0580 J**	**0.0950**	4.41E+01
4-Nitrophenol	0.00200 U	0.00200 U	0.00200 UJ	0.00200 U	0.00200 U	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 U	0.00200 U	0.00200 UJ	0.00200 U	0.00200 U	NA
Dichlorprop	0.00200 U	0.00200 U	0.00200 UJ	0.00200 U	0.00200 U	NA
Dinoseb	0.00500 U	0.00500 U	0.00500 UJ	0.00500 U	0.00500 U	NA
MCPA	**0.550 J**	**0.500**	**0.520 J**	**0.330 J**	**0.540**	1.62E+00
MCPP	**0.0180 J**	**0.0160 J**	**0.0180 J**	**0.0170 J**	**0.0160 J**	4.25E+00
Pentachlorophenol	0.00200 U	0.00200 U	0.00200 UJ	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

RBC = risk-based concentration

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 16
25-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-12A 11/12/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-12B 11/13/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-12C 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-12D 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/14/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**0.870**	**1.00**	**0.780**	**1.40**	**0.990**	1.25E+05
Antimony	**0.00500**	**0.00400**	**0.00800**	0.00300 U	**0.00500**	4.98E+01
Arsenic	0.000400 U	**0.00300 J**	**0.00300**	0.000400 U	**0.00200**	5.81E+00
Barium	**0.0320**	**0.0540**	**0.0300**	**0.110**	**0.0360**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	2.49E+04
Cadmium	0.0000400 U	0.0000400 U	**0.0000500 J**	0.0000400 U	**0.0000600 J**	6.23E+01
Calcium	**52.0**	**49.0**	**47.0**	**64.0**	**52.0**	NA
Chromium	**0.00800**	**0.00700**	**0.00700**	**0.00800**	**0.00700**	3.74E+02
Cobalt	**0.000200 J**	**0.000200 J**	**0.000200 J**	**0.000200 J**	**0.000200 J**	6.23E+03
Copper	**0.00700**	**0.00700**	**0.00800**	**0.00700**	**0.00800**	4.98E+03
Iron	0.0150 U	0.0150 U	**0.0150 J**	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00100 J**	**0.00100 J**	**0.00200 J**	**0.00200 J**	**0.00200 J**	NA
Magnesium	0.0210 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.000700 J**	**0.000500 J**	**0.000600 J**	**0.000900 J**	**0.00100 J**	2.99E+03
Mercury	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	3.74E+01
Molybdenum	**0.140**	**0.150**	**0.150**	**0.0800**	**0.150**	6.23E+02
Nickel	**0.00900**	**0.00700**	**0.00700**	**0.00700**	**0.00800**	1.25E+04
Potassium	**1.50 J**	**1.40 J**	**1.20 J**	**2.90 J**	**1.60 J**	NA
Selenium	**0.00200 J**	0.00100 U	**0.00100 J**	**0.00100 J**	0.00100 U	6.23E+02
Silver	0.000800 UJ	0.000800 UJ	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**12.0**	**12.0**	**13.0**	**16.0**	**11.0**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.0140**	**0.0220**	**0.0140**	**0.0100**	**0.0150**	1.25E+02
Zinc	**0.00400 J**	**0.00300 J**	**0.00400 J**	**0.00400 J**	**0.00400 J**	6.23E+04

TABLE 16
25-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-12A 11/12/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-12B 11/13/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-12C 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-12D 11/14/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/14/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**0.180 J**	**0.200**	**0.210**	**0.120**	**0.180**	4.21E+01
2,4,5-TP (Silvex)	**0.00900 J**	**0.00800 J**	0.00200 U	0.00200 U	**0.00500 J**	1.75E+01
2,4-D	**4.60 J**	**5.80**	**5.40**	**4.70**	**5.20**	7.21E+01
2,4-DB	**0.0690 J**	**0.0680**	**0.0950**	**0.0460**	**0.0660**	4.41E+01
4-Nitrophenol	0.00200 UJ	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dalapon	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	0.00400 UJ	NA
Dicamba	0.00200 UJ	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	0.00200 UJ	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dinoseb	0.00500 UJ	0.00500 U	0.00500 U	0.00500 U	0.00500 U	NA
MCPA	**0.390 J**	**0.430**	**0.380**	**0.300**	**0.420**	1.62E+00
MCPP	**0.0120 J**	**0.0120 J**	**0.00900 J**	**0.0120 J**	**0.0110 J**	4.25E+00
Pentachlorophenol	0.00200 UJ	0.00200 U	0.00200 U	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

RBC = risk-based concentration

J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

TABLE 17
30-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-13A 11/17/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-13B 11/18/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-13C 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-13D 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/19/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Metals (EPA Method 6000/7000 Series)						
Aluminum	**0.860**	**1.10**	**0.830**	**1.50**	**0.990**	1.25E+05
Antimony	0.00400 U	0.00400 U	0.00400 U	0.00200 U	0.00400 U	4.98E+01
Arsenic	**0.000500 J**	0.000400 U	**0.00200**	0.000400 U	**0.00600**	5.81E+00
Barium	**0.0270**	**0.0490**	**0.0300**	**0.110**	**0.0320**	2.49E+04
Beryllium	0.000200 U	0.000200 U	0.000200 U	0.000200 U	0.000200 U	2.49E+02
Boron	0.0170 U	0.0170 U	0.0170 U	0.0170 U	0.0170 U	2.49E+04
Cadmium	0.0000400 U	0.0000400 U	0.0000400 U	0.0000400 U	0.0000400 U	6.23E+01
Calcium	**46.0**	**44.0**	**41.0**	**56.0**	**46.0**	NA
Chromium	**0.0120**	**0.00900**	**0.0100**	**0.0100**	**0.00900**	3.74E+02
Cobalt	**0.000100 J**	**0.000200 J**	**0.000200 J**	**0.000200 J**	**0.000200 J**	6.23E+03
Copper	**0.00700**	**0.00800**	**0.00700**	**0.00700**	**0.00700**	4.98E+03
Iron	0.0150 U	0.0150 U	**0.0300 J**	0.0150 U	0.0150 U	3.74E+04
Lead	**0.00100 J**	**0.00100 J**	**0.00100 J**	**0.000900 J**	**0.00200 J**	NA
Magnesium	0.140 U	0.0210 U	0.0210 U	0.0210 U	0.0210 U	NA
Manganese	**0.00100 J**	**0.00100 J**	0.000900 U	0.000900 U	0.00100 U	2.99E+03
Mercury	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	0.0000600 U	3.74E+01
Molybdenum	**0.110 J**	**0.140**	**0.140**	**0.0770**	**0.130**	6.23E+02
Nickel	**0.00800**	**0.00700**	**0.00700**	**0.00700**	**0.00700**	1.25E+04
Potassium	**0.970 J**	**0.930 J**	**0.610 J**	**2.20 J**	**0.840 J**	NA
Selenium	**0.00200 J**	**0.00100 J**	**0.00200 J**	**0.00100 J**	**0.00100 J**	6.23E+02
Silver	0.000800 U	0.000800 U	0.000800 U	0.000800 U	0.000800 U	1.04E+03
Sodium	**7.90**	**9.10**	**9.50**	**12.0**	**8.60**	NA
Thallium	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	0.0000200 U	8.22E+00
Vanadium	**0.0120**	**0.0210**	**0.0170**	**0.00700**	**0.0190**	1.25E+02
Zinc	**0.00200 J**	**0.000500 J**	**0.00300 J**	**0.00200 J**	**0.00300 J**	6.23E+04

TABLE 17
30-Day Flush Analytical Results for TS-1
WDL Phase 4 Treatability Study
RP - Portland Site

Chemical Name	TS-1 WDLSS-13A 11/17/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-13B 11/18/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-13C 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-13D 11/19/2006 Phase 3 Leachate (treated) (mg/L)	TS-1 WDLSS-14E 11/19/2006 Phase 4 Leachate (treated) (mg/L)	Risk-Based Concentration (RBC) (mg/L)
	Mix A	Mix B	Mix C	Mix D	Mix E	
Chlorinated Herbicides (EPA Method 8151)						
2,4,5-T	**0.190**	**0.190**	**0.190**	**0.120**	**0.140**	4.21E+01
2,4,5-TP (Silvex)	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	1.75E+01
2,4-D	**4.50**	**5.20**	**3.40**	**4.10**	**3.90**	7.21E+01
2,4-DB	**0.0670**	**0.0620**	**0.0820**	**0.0460**	**0.0560**	4.41E+01
4-Nitrophenol	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dalapon	0.00400 U	0.00400 U	0.00400 U	0.00400 U	0.00400 U	NA
Dicamba	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dichlorprop	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	NA
Dinoseb	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	NA
MCPA	**0.350**	**0.360**	**0.340**	**0.260**	**0.320**	1.62E+00
MCPP	**0.0100 J**	**0.0110 J**	**0.0120 J**	**0.0120 J**	**0.00900 J**	4.25E+00
Pentachlorophenol	0.00200 U	0.00200 U	**0.00900 J**	0.00200 U	0.00200 U	5.22E-02

Notes:

= exceeds RBCs

Bold = detected

EPA = United States Environmental Protection Agency

mg/L = milligrams per liter

NT = not tested

NA = Not applicable; no RBC calculated because either no toxicity data are available or analyte was not detected in leachate.

RBC = risk-based concentration

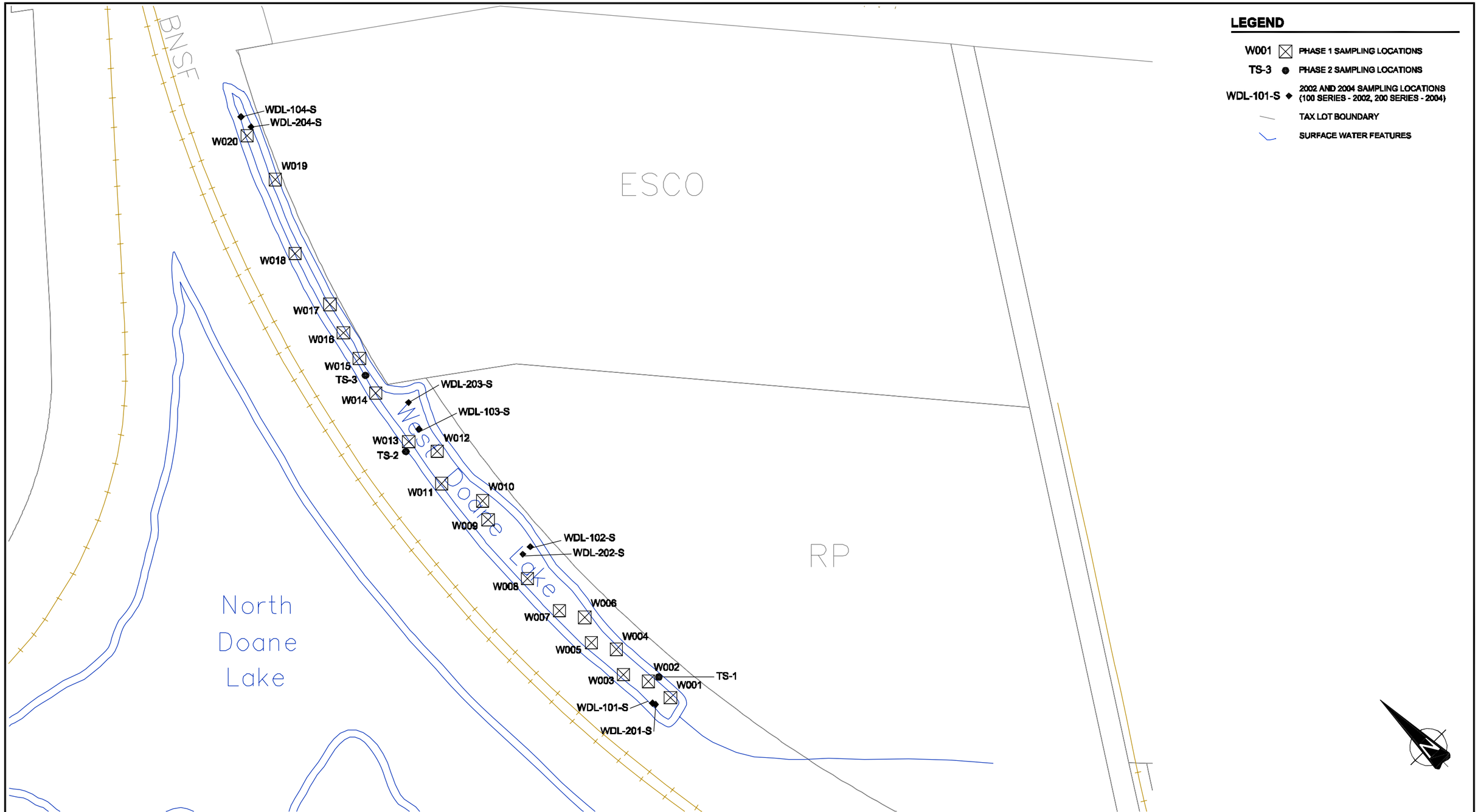
J = The result is estimated.

U = Not detected at or above the listed method detection limit.

UJ = Not detected at or above the method detection limit; the limit is an approximate value.

WDL = West Doane Lake

FIGURES



NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

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7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY:	DD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	1" = 125'

PROJECT: RP - PORTLAND SITE

TITLE: WEST DOANE LAKE SEDIMENT SAMPLING LOCATIONS

DATE:	AUGUST 2007
PROJECT NO:	0-61M-10703-0 P-65 T-2
REV. NO.:	-
FIGURE No.	1

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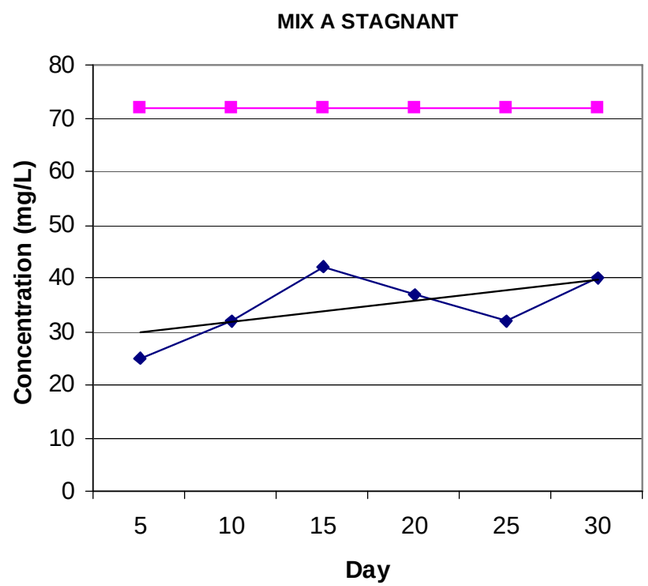

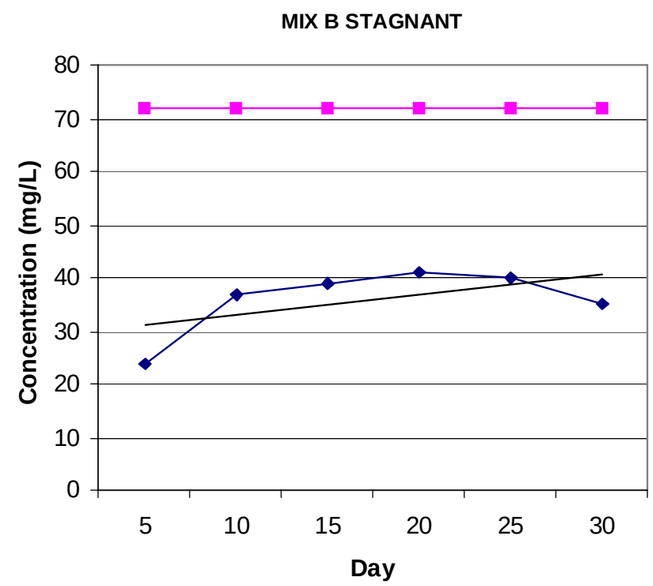

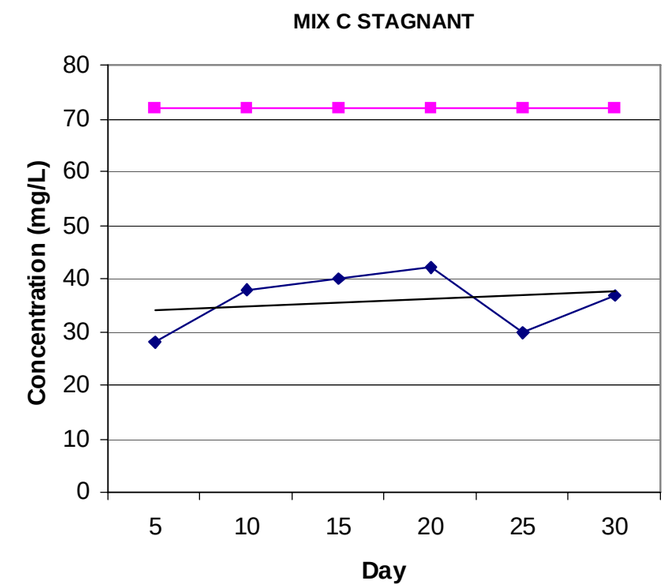

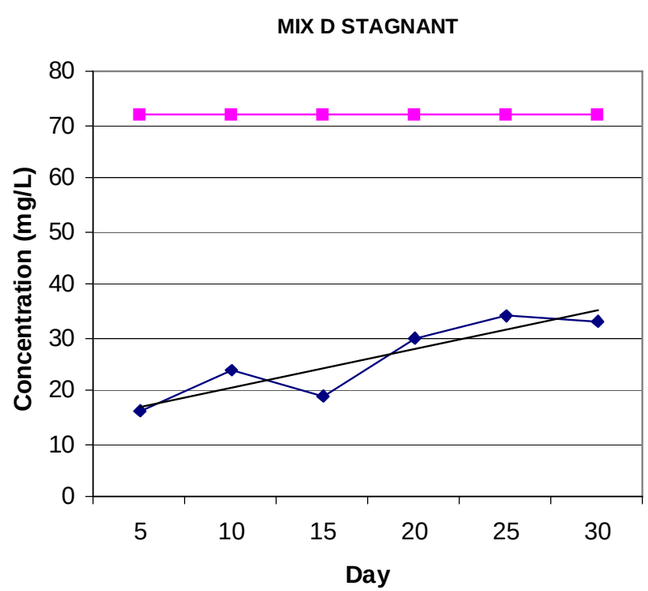

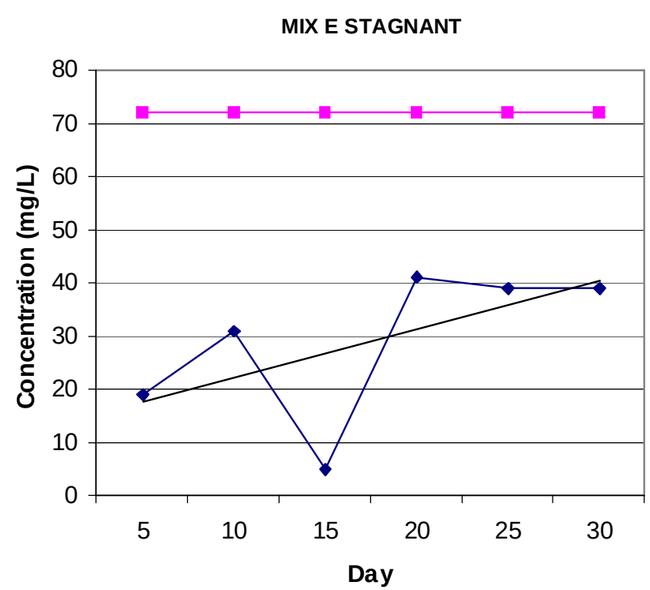

LEGEND

- 2,4-D CONCENTRATION
- RISK-BASED CONCENTRATION, 72.1 mg/L
- LINEAR (2,4-D)

mg/L MILLIGRAMS PER LITER

2,4-D 2,4-DICHLOROPHENOXYACETIC ACID

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

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DWN BY:	DD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	-

PROJECT: RP - PORTLAND SITE

TITLE: TREND PLOT FOR 2,4-D STAGNANT

DATE:	AUGUST 2007
PROJECT NO:	0-61M-10703-0 P-65 T-2
REV. NO.:	-
FIGURE No.	2

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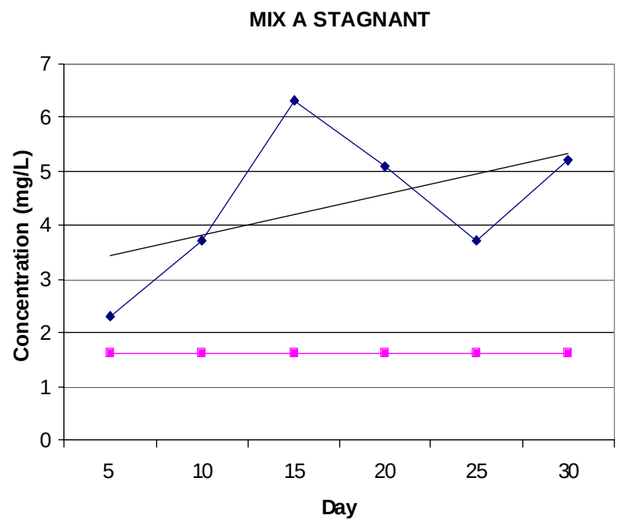

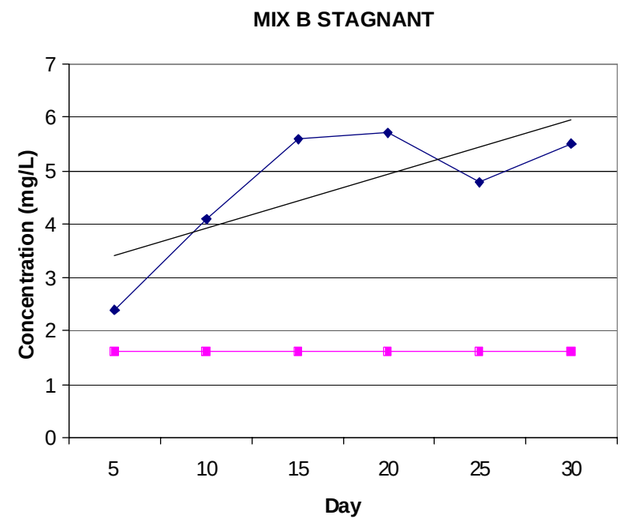

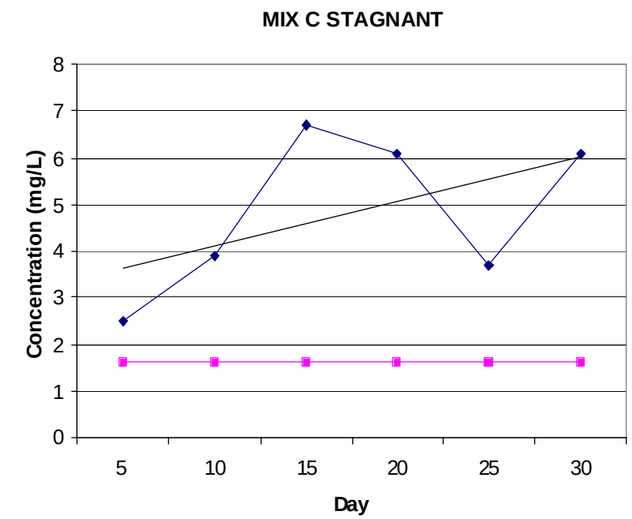

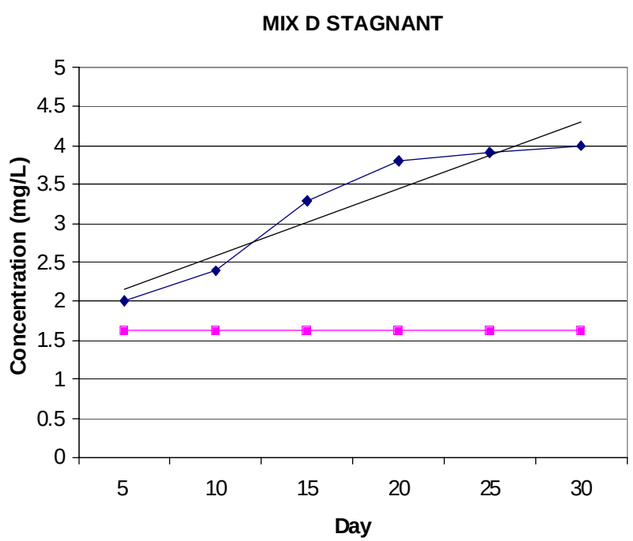

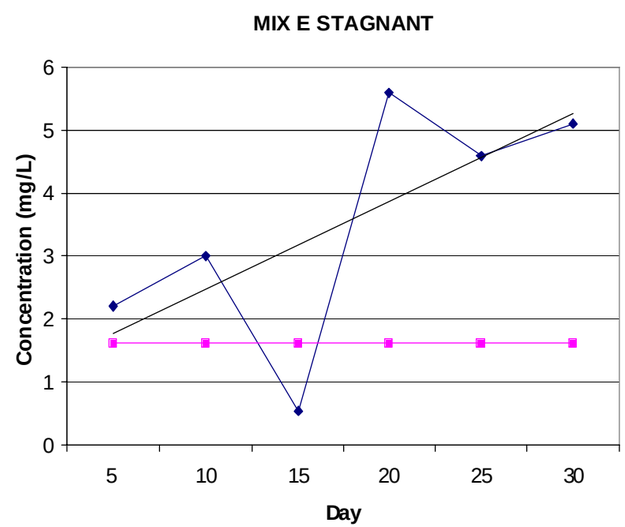

LEGEND

- MCPA CONCENTRATION
- RISK-BASED CONCENTRATION, 1.62 mg/L
- LINEAR (MCPA)
- mg/L MILLIGRAMS PER LITER
- MCPA 2-METHYL-4-CHLOROPHENOXYACETIC ACID

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

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DWN BY:	DD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	-

PROJECT: RP - PORTLAND SITE

TITLE: TREND PLOT FOR MCPA STAGNANT

DATE:	AUGUST 2007
PROJECT NO:	0-61M-10703-0 P-65 T-2
REV. NO.:	-
FIGURE No.	3

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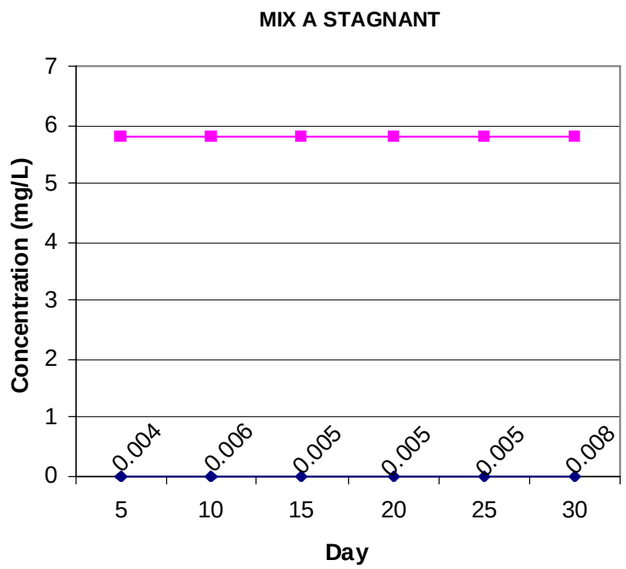

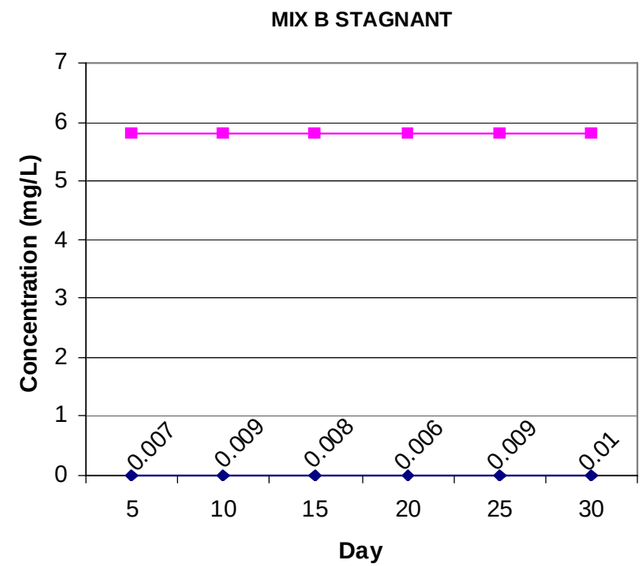

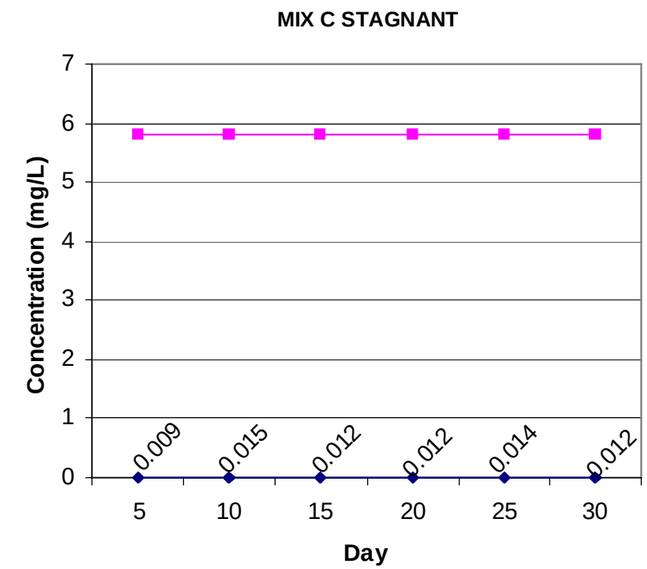

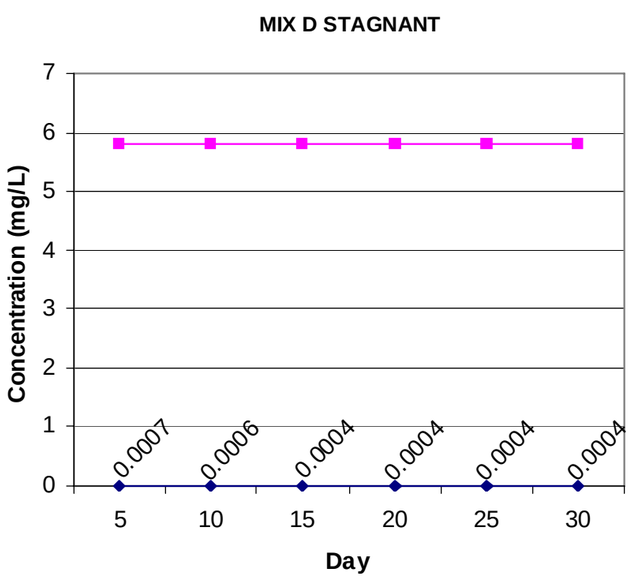

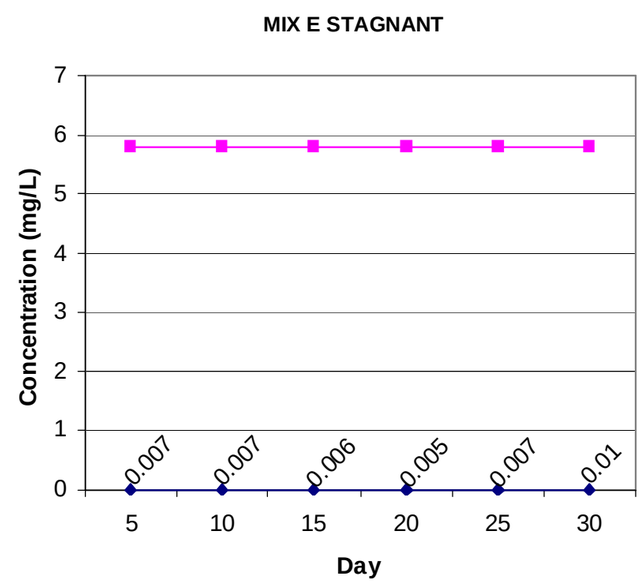

LEGEND

- ARSENIC CONCENTRATION
- RISK-BASED CONCENTRATION, 5.81 mg/L
- mg/L MILLIGRAMS PER LITER

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

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DWN BY:	DD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	-

PROJECT: RP - PORTLAND SITE

TITLE: TREND PLOT FOR ARSENIC STAGNANT

DATE:	AUGUST 2007
PROJECT NO:	0-61M-10703-0 P-65 T-2
REV. NO.:	-
FIGURE No.	4

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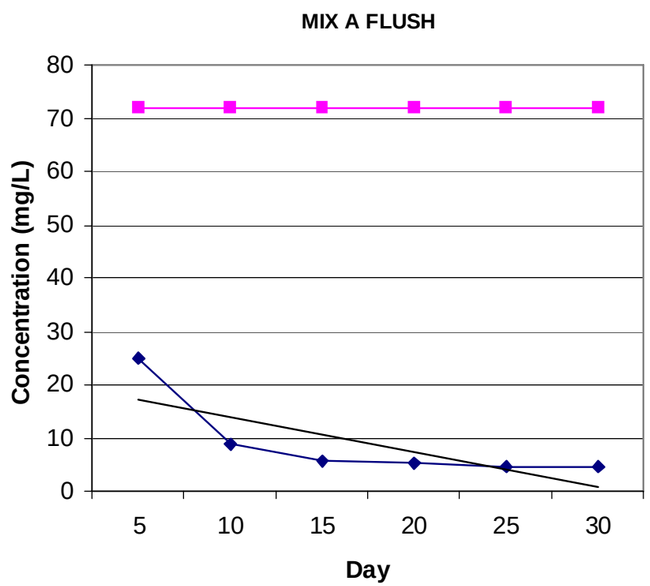

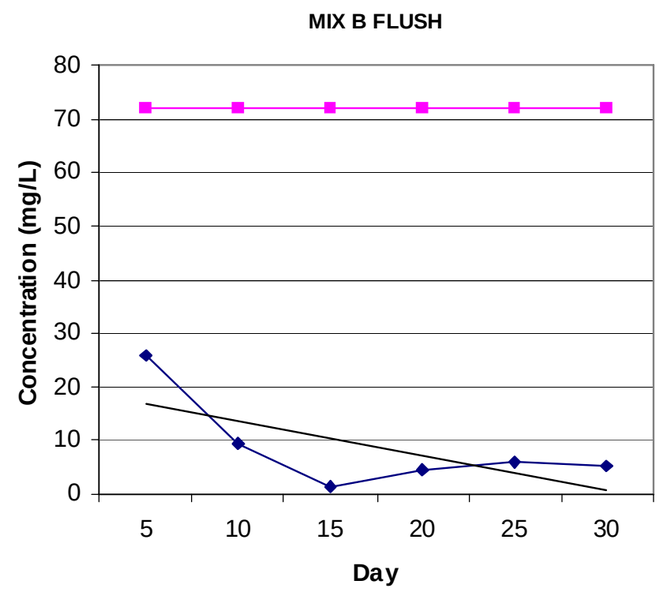

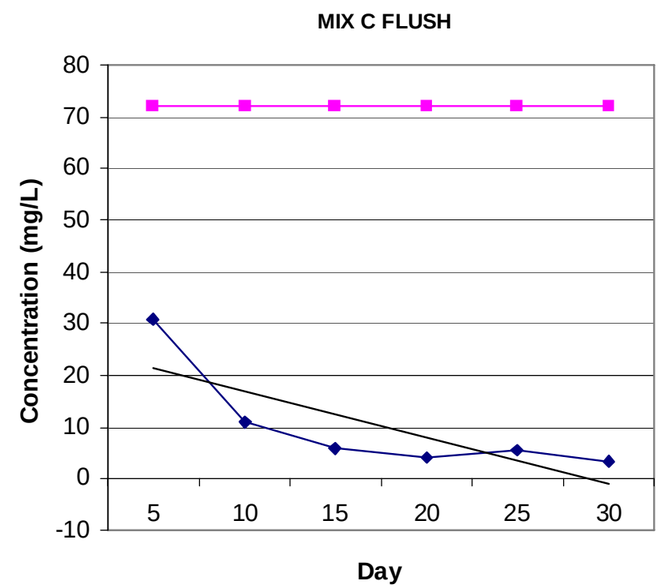

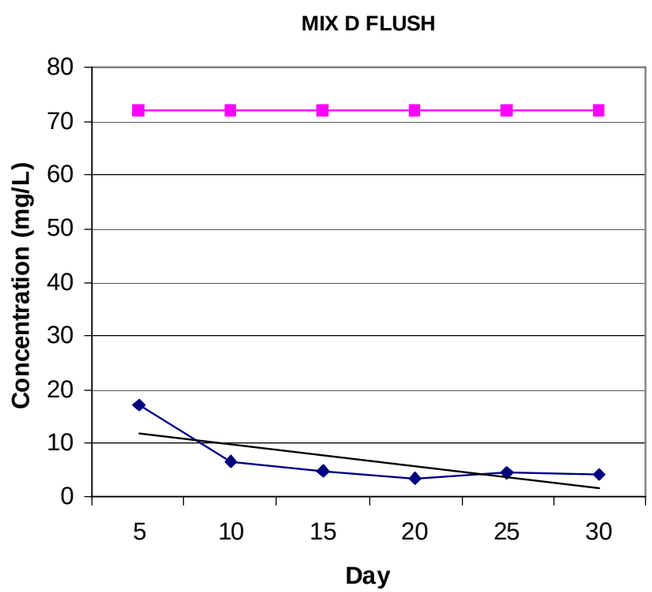

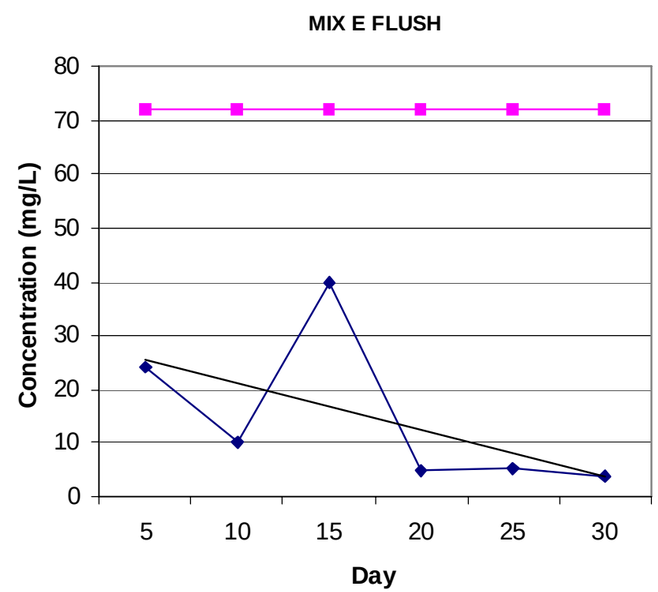

LEGEND

- 2,4-D CONCENTRATION
- RISK-BASED CONCENTRATION, 72.1 mg/L
- LINEAR (2,4-D)

mg/L MILLIGRAMS PER LITER

2,4-D 2,4-DICHLOROPHENOXYACETIC ACID

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

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DWN BY:	DD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	NOT TO SCALE

PROJECT: RP - PORTLAND SITE

TITLE: TREND PLOT FOR 2,4-D FLUSH

DATE:	AUGUST 2007
PROJECT NO:	0-61M-10703-0 P-65 T-2
REV. NO.:	-
FIGURE No.	5

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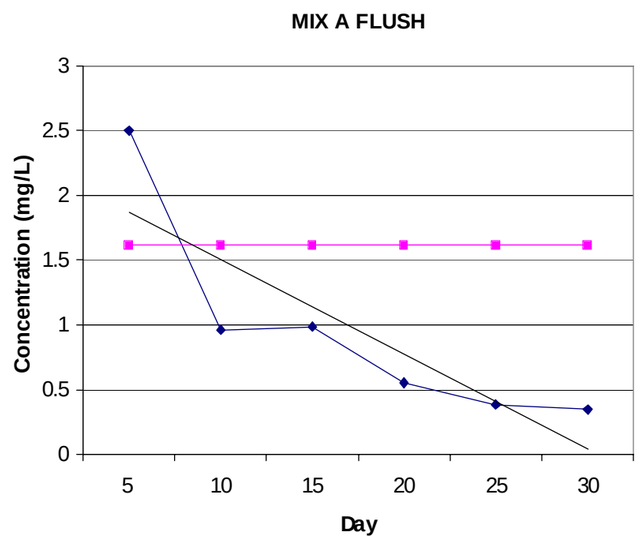

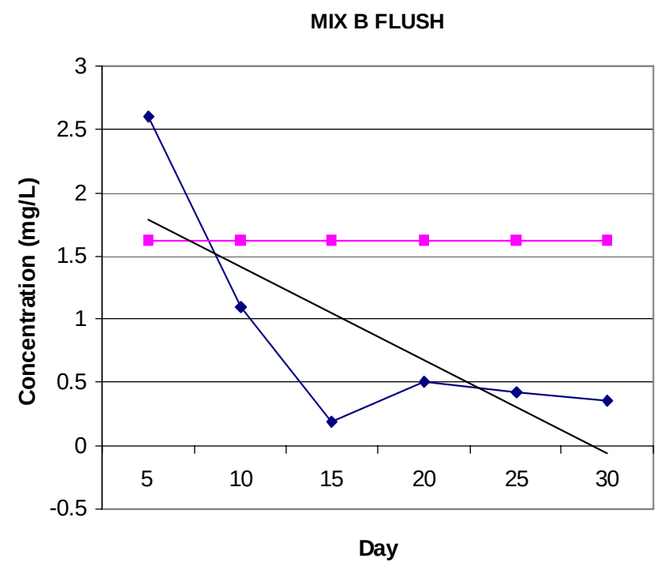

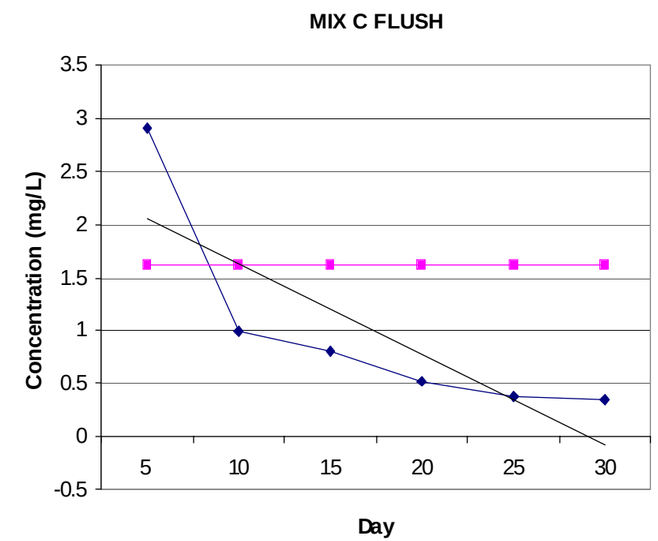

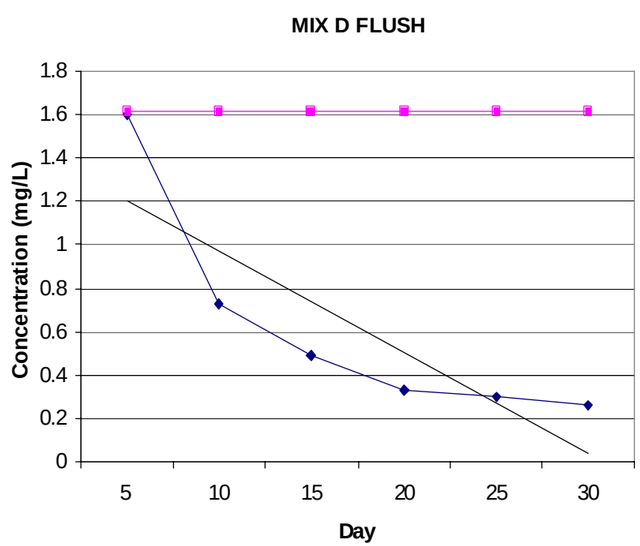

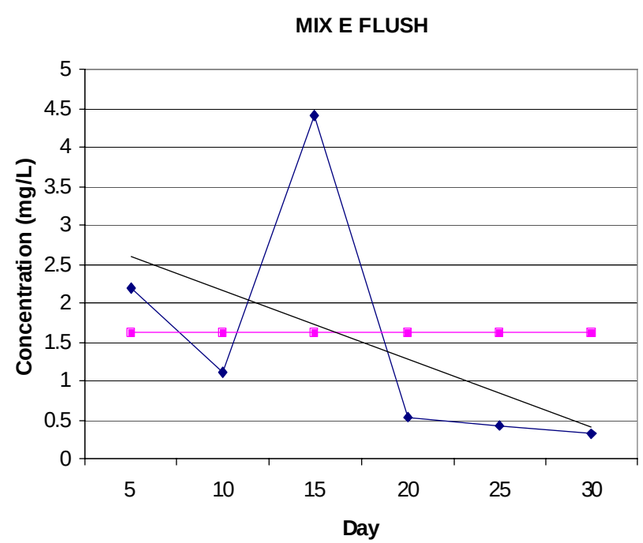

LEGEND

- MCPA CONCENTRATION
- RISK-BASED CONCENTRATION, 1.62 mg/L
- LINEAR (MCPA)
- mg/L MILLIGRAMS PER LITER
- MCPA 2-METHYL-4-CHLOROPHENOXYACETIC ACID

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

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DWN BY:	DD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	NOT TO SCALE

PROJECT: RP - PORTLAND SITE

TITLE: TREND PLOT FOR MCPA FLUSH

DATE:	AUGUST 2007
PROJECT NO:	0-61M-10703-0 P-65 T-2
REV. NO.:	1
FIGURE No.	6

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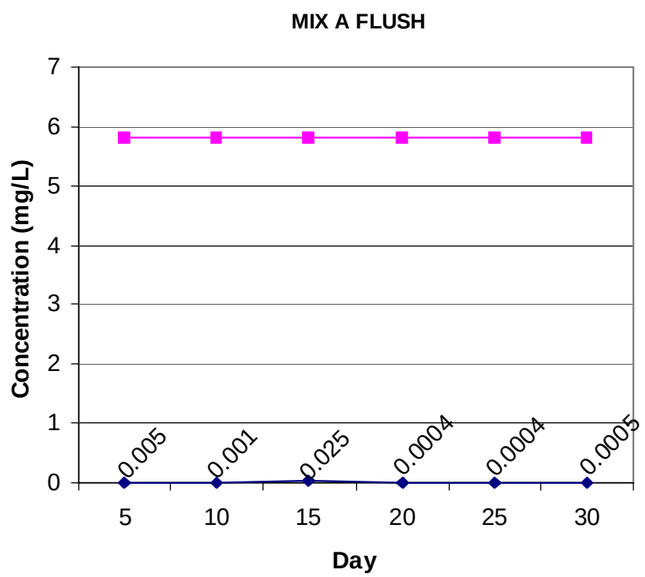
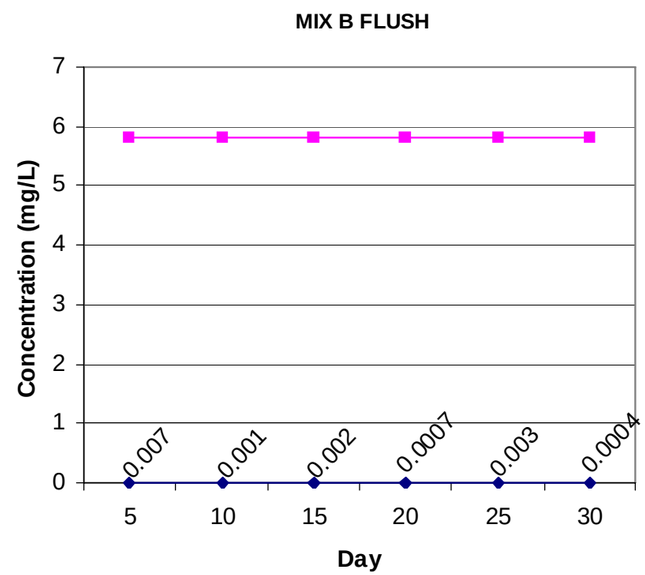
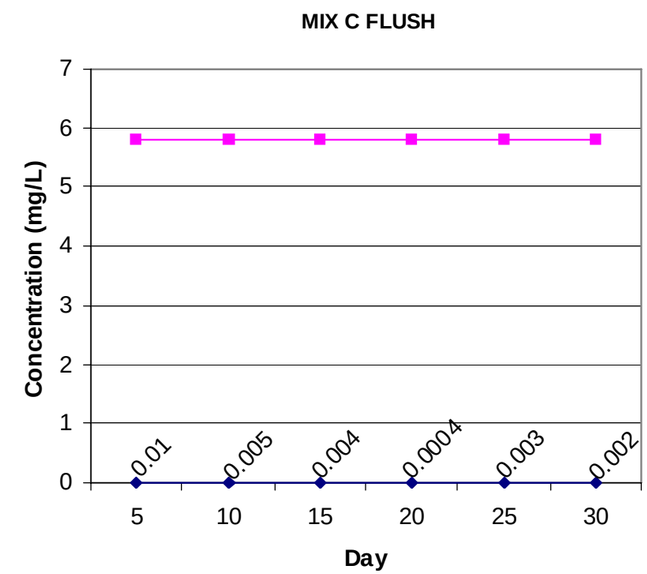
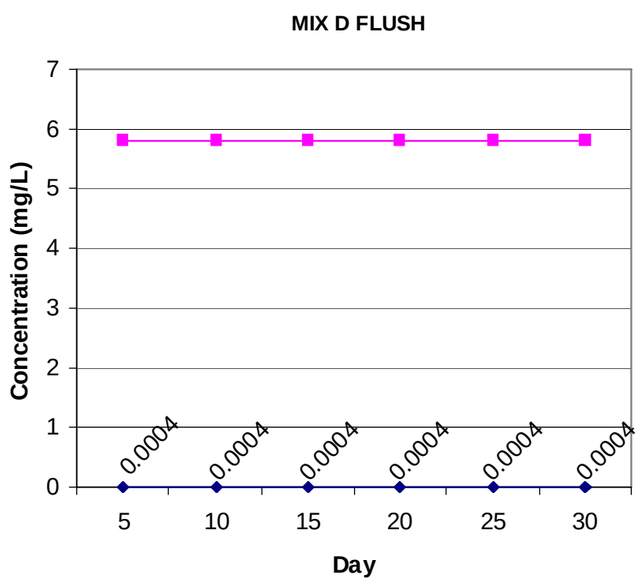
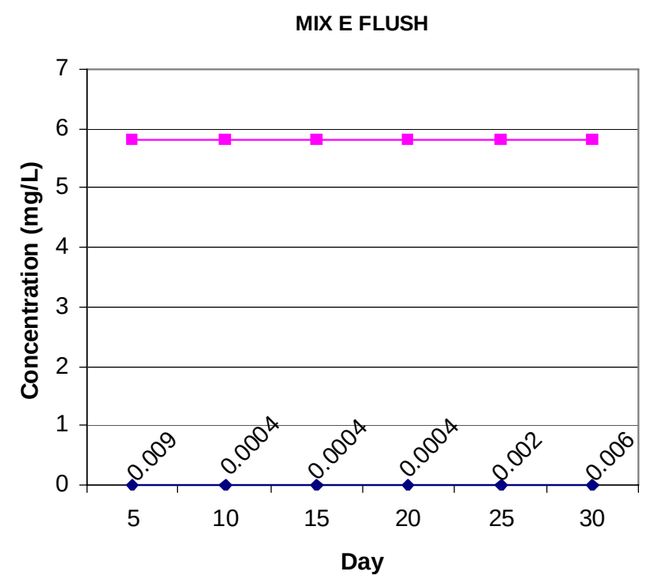










LEGEND

- ARSENIC CONCENTRATION
- RISK-BASED CONCENTRATION, 5.81 mg/L
- mg/L MILLIGRAMS PER LITER

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY:	DD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	NOT TO SCALE

PROJECT: RP - PORTLAND SITE

TITLE: TREND PLOT FOR ARSENIC FLUSH

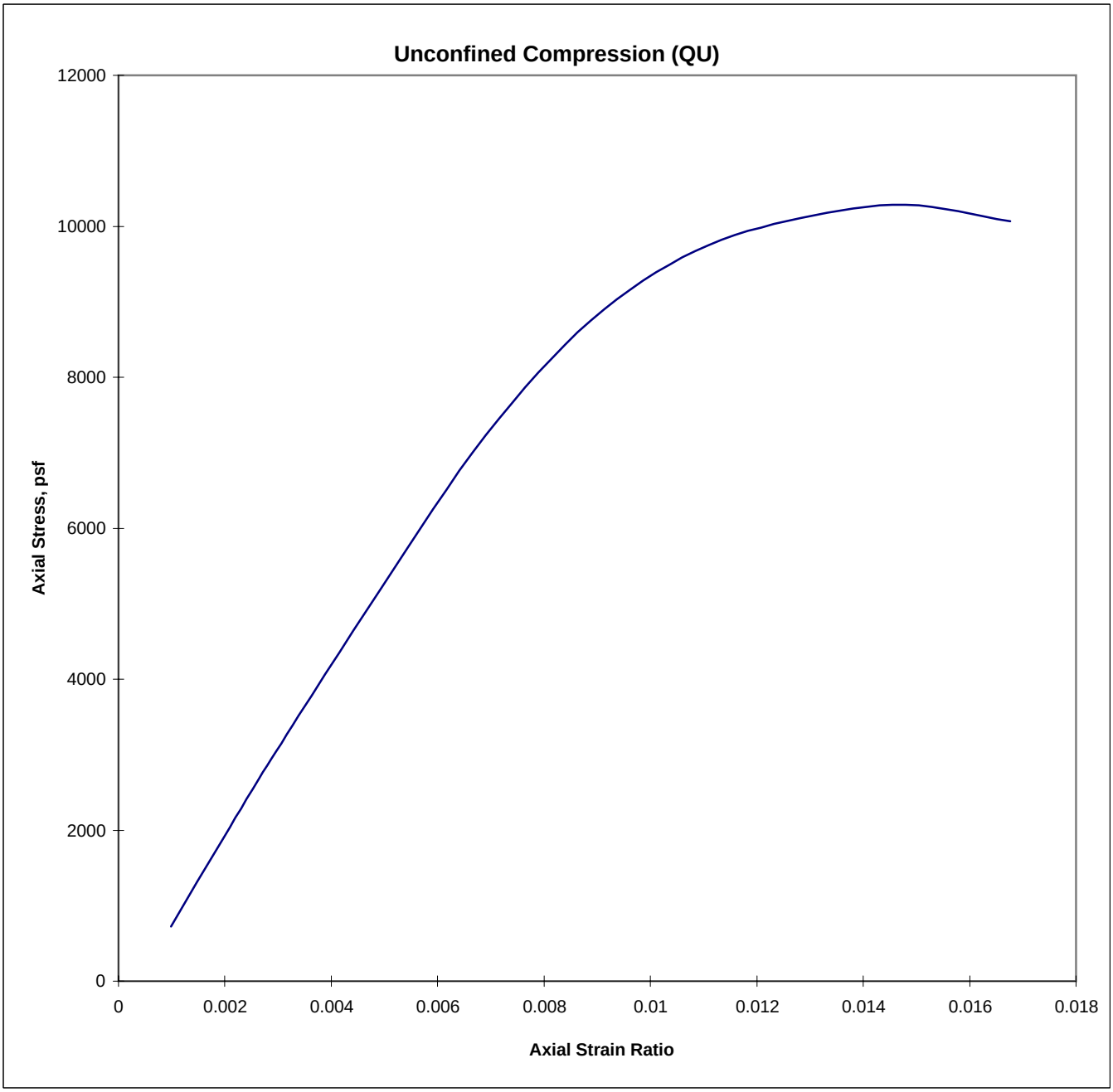
DATE:	AUGUST 2007
PROJECT NO:	0-61M-10703-0 P-65 T-2
REV. NO.:	-
FIGURE No.	7

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_2_WDL_Ph 4_TS_Figs\FIGURE_7_ARSENIC FLUSH.dwg – Layout1 – Aug. 31, 2007 11:56am – laura.mccoy

APPENDIX A

Physical Testing Data Reports
(UCS Plots, Hydraulic Conductivity, Soil Mix Volumes and Weights, pH)

AMEC Earth Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake



Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		7 Day		Wet	Dry			Cem.	Carb.	Bent
TS-1	WDLSS	1E	63	99	61	10,284	0.014793	10	1	5

Soil Technology
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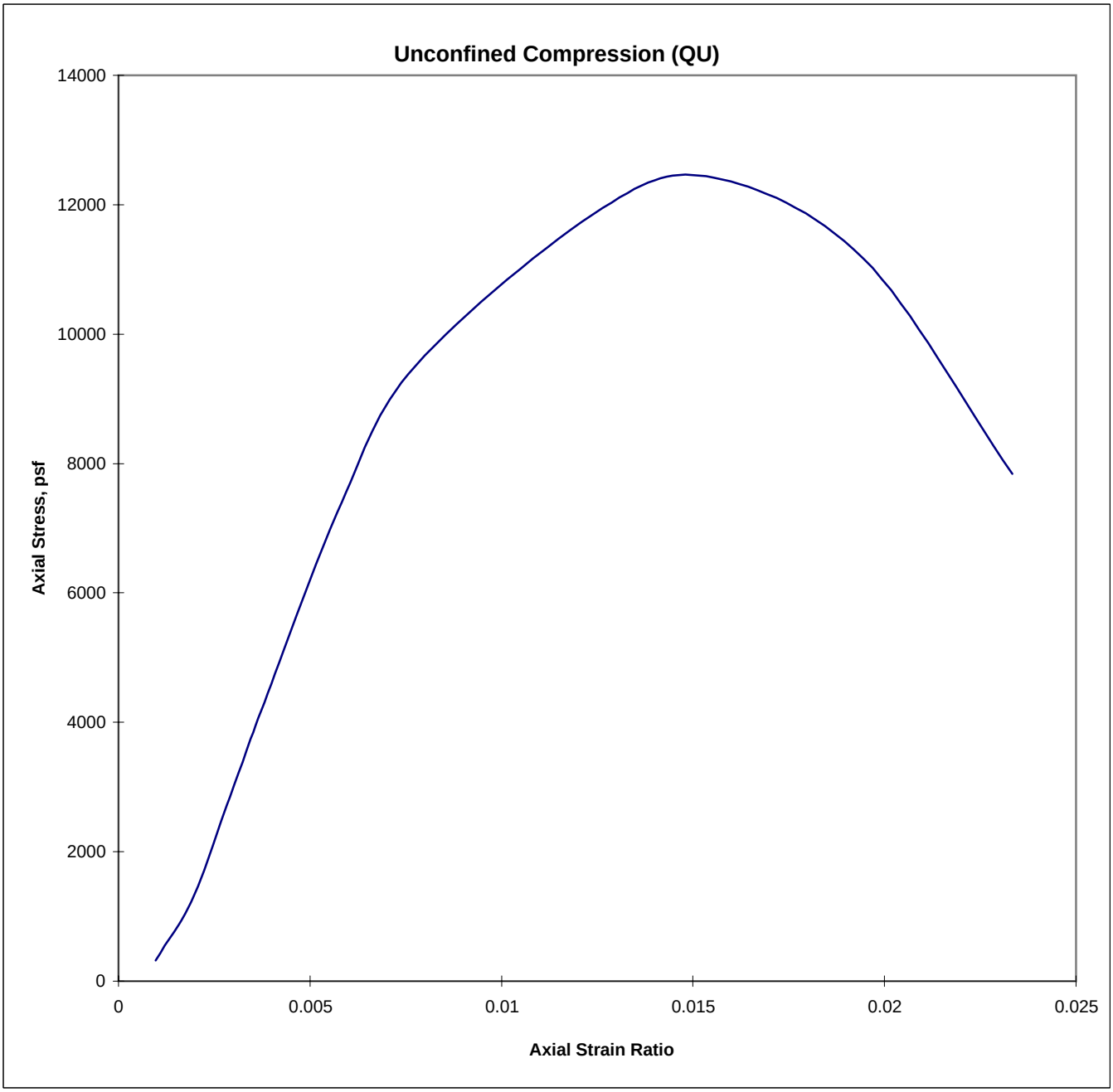

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		14 Day		Wet	Dry			Cem.	Carb.	Bent
TS-1	WDLSS	1E	63	96	59	12,418	0.01555	10	1	5

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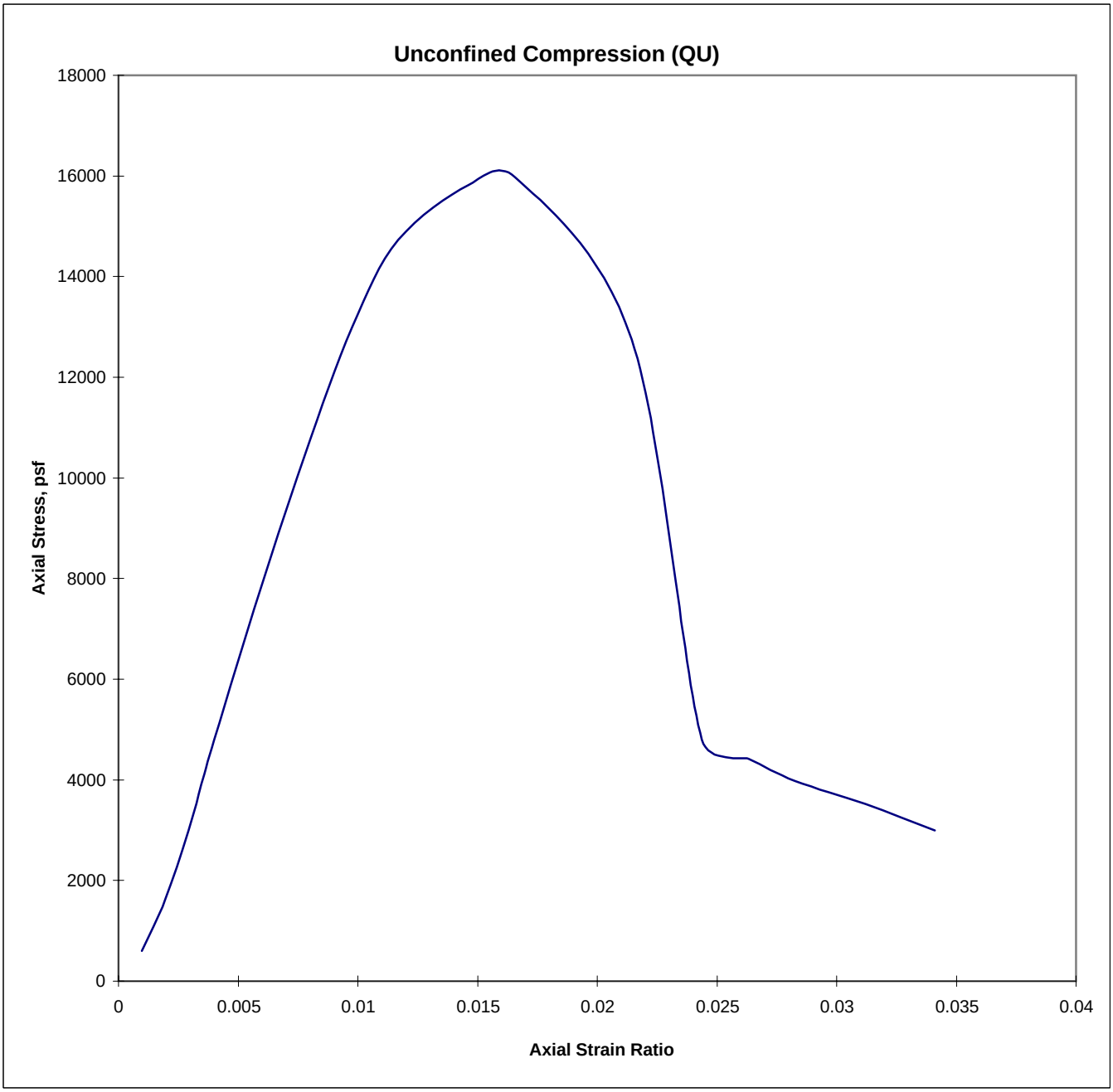

Boring Number	Sample Number	Mix number	Moisture Content %	Density pcf		Compressive Strength psf	Strain at Failure	Admixure Components		
		28 Day		Wet	Dry			Cem.	Carb.	Bent
TS-1	WDLSS	14 E	63	96	59	15,978	0.01657	10	1	5

Soil Technology
J-06-2135

AMEC Earth & Environmental, Inc.
Project No. 0-61M-107030 P65-T2
Task Order No. PDX-003
RP SCE Stage 1 West Doane Lake

Flexible Wall Hydraulic Conductivity of S/S 28 Day Cure Specimens
Table 1

Sample Identification	Water Content %		Wet Density (Pcf)		Saturation[1]		Hydraulic Conductivity[2] (cm/sec)
	Before	After	Before	After	Before	After	
TS-1 WDLSS 1A	61	64	99	99	.95	.97	6×10^{-8}
TS-1 WDLSS 1B	52	55	102	104	.94	.98	6×10^{-8}
TS-1 WDLSS 1C	57	59	102	102	.96	.98	7×10^{-8}
TS-1 WDLSS 1D	55	59	102	103	.96	1.0	9×10^{-9}
TS-2 WDLSS 1A	82	86	91	93	.93	.98	2×10^{-8}
TS-2 WDLSS 1B	73	77	92	93	.90	.94	2×10^{-8}
TS-2 WDLSS 1C	101	106	89	90	.97	1.0	$< 1 \times 10^{-8}$ [3]
TS-2 WDLSS 1D	61	64	95	97	.89	.94	$< 1 \times 10^{-8}$ [3]
TS-3 WDLSS 1A	55	58	103	105	.96	1.0	$< 1 \times 10^{-8}$ [3]
TS-3 WDLSS 1B	51	53	104	106	.95	.99	2×10^{-8}
TS-3 WDLSS 1C	64	67	99	100	.96	1.0	3×10^{-8}
TS-3 WDLSS 1D	47	50	107	105	.96	.97	2×10^{-8}
TS-1 WDLSS 1E	64	67	98	100	.96	1.0	4×10^{-8}

[1] Specific gravity assumed 2.7
[2] Average Saturated Hydraulic Conductivity Using Tap Water
[3] Reported as < 1 x 10-8 cm/sec at or near system detection limit

Flexible Wall Hydraulic Conductivity Test Parameters
Table 2

Exploration Number	Triaxial Pressure (psi)			Average Effective Confining Stress	Gradient (*i*)
	Cell	HW	TW	(psi)	
TS-1 WDLSS 1A	35	30.5	29.5	5.0	12
TS-1 WDLSS 1B	35	30.5	29.5	5.0	9
TS-1 WDLSS 1C	35	30.5	29.5	5.0	10
TS-1 WDLSS 1D	35	30.5	29.5	5.0	10
TS-2 WDLSS 1A	35	30.5	29.5	5.0	9
TS-2 WDLSS 1B	35	30.5	29.5	5.0	8
TS-2 WDLSS 1C	35	30.5	29.5	5.0	9
TS-2 WDLSS 1D	35	30.5	29.5	5.0	10
TS-3 WDLSS 1A	35	30.5	29.5	5.0	8
TS-3 WDLSS 1B	35	30.5	29.5	5.0	10
TS-3 WDLSS 1C	35	30.5	29.5	5.0	10
TS-3 WDLSS 1D	35	30.5	29.5	5.0	11
TS-1 WDLSS 1E	35	30.5	29.5	5.0	12

HW = Head Water; TW = Tail Water; ***i*** = h/l

RP-PROJECT
WDL TREATABILITY STUDY S/S TS-1 ANSI/ANS-16.1 MODIFIED LEACHING
AMEC Earth & Environmental

Mix ID	Date/ Time	Total Time to Make Molds	Sed. Vol. (L)	Sed. Wt (g)	Cement			Fly Ash			Bentonite			Activated Carbon			Water Added (ml)
					Vol. ml	Wt (g)	% by vol.	Vol. ml	Wt (g)	% by vol.	Vol. ml	Wt (g)	% by vol.	Vol. ml	Wt (g)	% by vol.	Vol. ml
TS-1-WDLSS-A	10/11/06 14:45	25 min	4.0	6511	400	500	10.0	0	0	0	200	187	5.0	0	0	0	100
TS-1-WDLSS-B	10/12/06 14:40	40 min	4.0	6504	400	504	10.0	400	516	10.0	200	177	5.0	0	0	0	196
TS-1-WDLSS-C	10/13/06 10:25	50 min	4.0	6514	400	504	10.0	0	0	0	400	354	10.0	0	0	0	338
TS-1-WDLSS-D	10/13/06 12:45	35 min	4.0	6503	800	1003	20	400	515	10.0	400	351	10.0	0	0	0	516
TS-1-WDLSS-E	10/13/06 15:25	45 min	4.0	6506	400	504	10.0	0	0	0	200	187	5.0	40	23.4	1.0	100

ANSI Modified Leach Test
SAMPLE DATA

	Sample ID	Date	pH	Temp (C)	Wet Density (pcf)	Comments
TS-1-WDLSS-A	5 day- STG	10/23/06	10.68	20.1		
TS-1-WDLSS-A	5 day – Flush	10/23/06	10.69	20.1		
TS-1-WDLSS-A	5 day – Flush-DUP	10/23/06	10.74	20.1		
TS-1-WDLSS-B	5 day- STG	10/24/06	11.81	20.1		
TS-1-WDLSS-B	5 day – Flush	10/24/06	11.26	19.7		
TS-1-WDLSS-B	5 day – Flush-DUP	10/24/06	11.56	20.2		
TS-1-WDLSS-C	5 day- STG	10/25/06	11.30	19.5		
TS-1-WDLSS-C	5 day – Flush	10/25/06	11.24	19.4		
TS-1-WDLSS-C	5 day – Flush-DUP	10/25/06	11.17	19.7		
TS-1-WDLSS-D	5 day- STG	10/25/06	11.47	19.6		
TS-1-WDLSS-D	5 day – Flush	10/25/06	11.70	19.5		
TS-1-WDLSS-D	5 day – Flush-DUP	10/25/06	11.41	19.5		
TS-1 WDLSS-E	5 day- STG	10/25/06	11.26	20.0		
TS-1 WDLSS-E	5 day – Flush	10/25/06	11.36	19.8		
TS-1 WDLSS-E	5 day – Flush-DUP	10/25/06	11.27	19.9		
TS-1-WDLSS-A	10 day- STG	10/28/06	11.37	19.5		
TS-1-WDLSS-A	10 day – Flush	10/28/06	10.97	19.3		
TS-1-WDLSS-A	10 day – Flush-DUP	10/28/06	11.11	19.1		
TS-1-WDLSS-B	10 day- STG	10/29/06	11.56	19.2		
TS-1-WDLSS-B	10 day – Flush	10/29/06	11.38	18.7		
TS-1-WDLSS-B	10 day – Flush-DUP	10/29/06	11.16	18.8		
TS-1-WDLSS-C	10 day- STG	10/30/06	11.45	19.0		
TS-1-WDLSS-C	10 day – Flush	10/30/06	11.22	18.8		
TS-1-WDLSS-C	10 day – Flush-DUP	10/30/06	10.96	18.8		
TS-1-WDLSS-D	10 day- STG	10/30/06	11.17	18.8		
TS-1-WDLSS-D	10 day – Flush	10/30/06	11.13	18.8		
TS-1-WDLSS-D	10 day – Flush-DUP	10/30/06	11.16	19.0		
TS-1 WDLSS-E	10 day- STG	10/30/06	11.13	19.5		
TS-1 WDLSS-E	10 day – Flush	10/30/06	11.09	19.5		
TS-1 WDLSS-E	10 day – Flush-DUP	10/30/06	10.90	19.9		

ANSI Modified Leach Test
SAMPLE DATA

	Sample ID	Date	pH	Temp (C)	Wet Density (pcf)	Comments
TS-1-WDLSS-A	15 day- STG	11/2/06	11.58	19.3		
TS-1-WDLSS-A	15 day – Flush	11/2/06	10.89	18.9		
TS-1-WDLSS-A	15 day – Flush-DUP	11/2/06	10.76	18.8		
TS-1-WDLSS-B	15 day- STG	11/3/06	11.59	19.0		
TS-1-WDLSS-B	15 day – Flush	11/3/06	11.02	18.7		
TS-1-WDLSS-B	15 day – Flush-DUP	11/3/06	10.91	18.7		
TS-1-WDLSS-C	15 day- STG	11/4/06	11.56	19.2		
TS-1-WDLSS-C	15 day – Flush	11/4/06	11.09	18.7		
TS-1-WDLSS-C	15 day – Flush-DUP	11/4/06	10.80	18.3		
TS-1-WDLSS-D	15 day- STG	11/4/06	11.26	18.4		
TS-1-WDLSS-D	15 day – Flush	11/4/06	11.52	18.4		
TS-1-WDLSS-D	15 day – Flush-DUP	11/4/06	11.05	18.6		
TS-1 WDLSS-E	15 day- STG	11/4/06	11.27	19.0		
TS-1 WDLSS-E	15 day – Flush	11/4/06	11.57	19.3		
TS-1 WDLSS-E	15 day – Flush-DUP	11/4/06	11.08	19.3		
TS-1-WDLSS-A	20 day- STG	11/9/06	11.5	20.0		
TS-1-WDLSS-A	20 day – Flush	11/9/06	10.89	19.9		
TS-1-WDLSS-A	20 day – Flush-DUP	11/9/06	10.78	19.7		
TS-1-WDLSS-B	20 day- STG	11/9/06	11.62	19.7		
TS-1-WDLSS-B	20 day – Flush	11/9/06	11.11	19.4		
TS-1-WDLSS-B	20 day – Flush-DUP	11/9/06	10.93	19.4		
TS-1-WDLSS-C	20 day- STG	11/9/06	11.59	18.9		
TS-1-WDLSS-C	20 day – Flush	11/9/06	11.09	18.2		
TS-1-WDLSS-C	20 day – Flush-DUP	11/9/06	10.95	18.1		
TS-1-WDLSS-D	20 day- STG	11/9/06	11.37	18.1		
TS-1-WDLSS-D	20 day – Flush	11/9/06	11.05	18.0		
TS-1-WDLSS-D	20 day – Flush-DUP	11/9/06	11.14	18.2		

ANSI Modified Leach Test
SAMPLE DATA

	Sample ID	Date	pH	Temp (C)	Wet Density (pcf)	Comments
TS-1 WDLSS-E	20 day- STG	11/9/06	11.34	18.9		
TS-1 WDLSS-E	20 day – Flush	11/9/06	10.93	18.8		
TS-1 WDLSS-E	20 day – Flush-DUP	11/9/06	10.88	18.8		
TS-1 WDLSS-A	25 day- STG	11/12/06	11.45	19.0		
TS-1 WDLSS-A	25 day – Flush	11/12/06	10.96	19.0		
TS-1 WDLSS-A	25 day – Flush-DUP	11/12/06	10.95	19.0		
TS-1 WDLSS-B	25 day- STG	11/13/06	11.46	19.2		
TS-1 WDLSS-B	25 day – Flush	11/13/06	11.02	19.0		
TS-1 WDLSS-B	25 day – Flush-DUP	11/13/06	10.85	18.9		
TS-1 WDLSS-C	25 day- STG	11/14/06	11.89	19.1		
TS-1 WDLSS-C	25 day – Flush	11/14/06	10.87	19.0		
TS-1 WDLSS-C	25 day – Flush-DUP	11/14/06	10.77	18.8		
TS-1 WDLSS-D	25 day- STG	11/14/06	11.39	18.8		
TS-1 WDLSS-D	25 day – Flush	11/14/06	10.95	18.4		
TS-1 WDLSS-D	25 day – Flush-DUP	11/14/06	10.91	18.6		
TS-1 WDLSS-E	25 day- STG	11/14/06	11.30	19.1		
TS-1 WDLSS-E	25 day – Flush	11/14/06	10.80	19.3		
TS-1 WDLSS-E	25 day – Flush-DUP	11/14/06	10.71	19.0		
TS-1 WDLSS-A	30 day- STG	11/17/06	11.58	19.1		
TS-1 WDLSS-A	30 day – Flush	11/17/06	10.74	18.9		
TS-1 WDLSS-A	30 day – Flush-DUP	11/17/06	10.74	19.1		

ANSI Modified Leach Test
SAMPLE DATA

	Sample ID	**Date**	**pH**	**Temp (C)**	**Wet Density (pcf)**	**Comments**
TS-1 WDLSS-B	30 day- STG	11/18/06	11.49	19.4		
TS-1 WDLSS-B	30 day – Flush	11/18/06	10.97	19.1		
TS-1 WDLSS-B	30 day – Flush-DUP	11/18/06	10.83	19.1		
TS-1 WDLSS-C	30 day- STG	11/19/06	11.45	19.2		
TS-1 WDLSS-C	30 day – Flush	11/19/06	10.59	19.0		
TS-1 WDLSS-C	30 day – Flush-DUP	11/19/06	10.53	18.9		
TS-1 WDLSS-D	30 day- STG	11/19/06	11.54	18.8		
TS-1 WDLSS-D	30 day – Flush	11/19/06	10.83	18.7		
TS-1 WDLSS-D	30 day – Flush-DUP	11/19/06	10.88	18.5		
TS-1 WDLSS-E	30 day- STG	11/19/06	11.36	19.2		
TS-1 WDLSS-E	30 day – Flush	11/19/06	10.74	19.1		
TS-1 WDLSS-E	30 day – Flush-DUP	11/19/06	10.71	19.0		

APPENDIX B

Data Validation Report

DATA VALIDATION REPORT FOR THE WEST DOANE LAKE PHASE 4 TREATABILITY STUDY RP - PORTLAND SITE

STL Seattle Job Number 580-4254-1

July 2, 2007

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0-61M-107030/Phase 65

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Table 7 Summary of Data Validation Findings

ACRONYMS

%D	percent deviation or percent drift in relative response
%RSD	percent relative standard deviation
AMEC	AMEC Earth & Environmental, Inc.
BS	blank spike
BSD	blank spike duplicate
CAR	certified analytical report
CCAL	continuing calibration
CCB	continuing calibration blank
CCV	continuing calibration verification
CLP	EPA Contract Laboratory Program
COC	chain-of-custody
DCB	decachlorobiphenyl
DEQ	Oregon Department of Environmental Quality
EPA	United States Environmental Protection Agency
GC	gas chromatography
GC/MS	gas chromatograph/mass spectrometer
HpCDD	heptachlorodibenzo-p-dioxin
HpCDF	heptachlorodibenzofuran
HxCDD	hexachlorodibenzo-p-dioxin
HxCDF	hexachlorodibenzofuran
ICAL	Initial calibration
ICS	interference check sample
ICV	initial calibration verification
ID	identification
IDL	instrument detection limit
IS	internal standard
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit

mg/L	milligrams per liter
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate
OCDD	octachlorodibenzo-p-dioxin
OCDF	octachlorodibenzofuran
OCP	organochlorine insecticide
OSWER	EPA Office of Solid Waste and Emergency Response
PCDD	polychlorinated dibenzo-p-dioxin
PCDF	polychlorinated dibenzofuran
PeCDD	pentachlorodibenzo-p-dioxin
PeCDF	pentachlorodibenzofuran
pg/L	picograms per liter
PQL	practical quantitation limit
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RF	response factor
RP	Rhône Poulenc
RPD	relative percent difference
RRF	relative response factor
SDG	sample delivery group
SOP	standard operating procedure
STL	Severn Trent Laboratories, Inc.
SVOC	semivolatile organic compound
TCDD	tetrachlorodibenzo-p-dioxin
TCDF	tetrachlorodibenzofuran
TCLP	toxicity characteristic leaching procedure
VOC	volatile organic compound

1.0 INTRODUCTION

Six sequential batch leachate samples and one treated sediment sample were collected from the Rhône-Poulenc (RP) Portland Site, between November 10 and November 13, 2006, for the West Doane Lake Treatability Study. The samples included five primary samples and two field duplicates which were submitted to Severn Trent Laboratories, Inc. (STL) in Seattle, Washington for analysis. The samples were given Job Number 580-4254-1.

STL prepared the treated sediment sample using toxicity characteristic leaching procedure (TCLP) extraction according to United States Environmental Protection Agency (EPA) Method 1311. The leachate was analyzed for the following methods:

- Volatile organic compounds (VOC) by EPA Method 8260B;
- Chlorinated herbicides (herbicide) by EPA Method 8151A;
- Semivolatile organic compounds (SVOC) by EPA Method 8270C;
- Organochlorine insecticides (OCP) by EPA Method 8081A;
- Metals by EPA Method 6010B; and
- Mercury by EPA Method 7470A.

STL submitted the treated sediment sample to STL Sacramento in West Sacramento, California (STL-Sacramento) for TCLP extraction and analysis of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDDs/PCDFs) by EPA Method 8290.

STL analyzed the six sequential batch leachate samples for the following methods:

- Metals by EPA Methods 6010B and 6020;
- Mercury by EPA Method 7470A; and
- Herbicides by EPA Method 8151A.

A list of these samples by field sample identification (ID) and laboratory sample ID is presented in Table 1.

2.0 DATA VALIDATION METHODOLOGY

This data validation has been performed with reference to EPA guidelines as given in the April 1992 final version of Guidance for Data Usability in Risk Assessment, the current EPA functional guidelines for organic and inorganic data review (EPA, 1999; 2002), and the EPA Office of Solid Waste and Emergency Response (OSWER) standard operating procedures (SOPs) for inorganic and organic data review. The EPA guidelines listed above were written specifically for the Contract Laboratory Program (CLP), and have been modified for the purposes of this data validation where they differ from EPA SW-846 Methods quality control requirements (EPA, 2004).

AMEC Earth & Environmental, Inc.'s (AMEC's) methodology exceeded the validation procedures specified in the Oregon Department of Environmental Quality (DEQ)-approved Revised Quality Assurance Project Plan (QAPP), dated June 13, 2001 (AMEC, 2001), and the QAPP Addendum No. 1, dated August 1, 2002 (AMEC, 2002). The laboratory's certified analytical report (CAR) and supporting documentation were reviewed to assess the following: chain of custody (COC) compliance; holding time compliance; presence or absence of laboratory contamination as demonstrated by laboratory blanks; accuracy and bias as demonstrated by recovery of surrogate spikes, laboratory control samples (LCSs), and matrix spikes (MSs); analytical precision as relative percent difference (RPD) of analyte concentration between replicate samples (i.e., laboratory duplicates) or MS and matrix spike duplicates (MSDs); sampling precision as RPD of analyte concentration between field duplicates; calibration performance; and insofar as possible, the degree of conformance to method requirements and good laboratory practices.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all quality control (QC) audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 EXPLANATION OF DATA QUALITY INDICATORS

LCS Recoveries

LCS and laboratory control sample duplicates (LCSDs), also known as blank spike (BS) and blank spike duplicates (BSDs), are aliquots of analyte-free water that are spiked with the analytes of interest for an analytical method or a representative subset of those analytes. The spiked water is then processed through the same extraction, concentration, cleanup, and analytical procedures as the samples they accompany.

LCS recovery and precision are indications of a laboratory's ability to successfully perform an analytical method in an interference-free matrix. LCS recoveries should generally be within 70 to 130% acceptance limits for organic analytes and 80 to 120% for inorganic analytes.

MS Recoveries

MSs and MSDs are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are indications of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related. MS recoveries should generally be within 60 to 140% acceptance limits for organic analytes and 75 to 125% acceptance limits for inorganic analytes.

Internal Standard Recoveries

Internal standards (ISs) are compounds that are added to a sample extract after all preparatory steps are completed and before instrumental analysis. These compounds serve as standards for qualitative analysis using relative retention time and quantitative analysis using relative response factors (RRFs). Methods that use IS calibration include requirements for changes in response to the IS relative to continuing calibration (CCAL) standards or the initial calibration (ICAL).

For EPA Methods 8260B and 8270C, IS response must fall between 50 and 200% of its response from the associated 12-hour CCAL. For EPA Method 8290, IS response must be between 40 and 135% of its response from the associated ICAL. For Method 6020, IS response must be between 30 and 120% of its response from the associated ICAL. Because the area of the IS is used in the denominator of the equation used for calculating analyte concentrations, a low response may indicate a possible positive analytical bias, and a high response may indicate a possible negative analytical bias.

Surrogate Spike Recoveries

Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process. Surrogate recoveries generally should be within 70 to 130% acceptance limits in interference-free matrices (blanks, LCS/LCSD) and 60 to 140% acceptance limits in field samples.

Field Duplicate Results

Field duplicates are replicate samples collected at the same location and submitted in blind form to the laboratory. Field duplicates provide an indication of the reproducibility of the sampling and analysis procedures for a given sample matrix, including heterogeneity of the sample itself. RPDs between aqueous field duplicate results should be less than 30%. For soil samples with analyte concentrations greater than 5 times the method reporting limit (MRL), the RPD should be less than 50%. For soil samples with analyte concentrations less than 5 times the MRL, the absolute difference between primary and duplicate results should be less than or equal to the corresponding MRL. A summary of field duplicate detections may be found in Table 2.

Laboratory Blank Concentrations

Laboratory blanks are aliquots of analyte free water that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results. Laboratory Blanks are processed by the laboratory using exactly the same procedures as the field samples. Laboratory blanks are used to monitor for contamination introduced by the laboratory during sample preparation and analysis.

4.0 DEFINITIONS OF DATA QUALIFIERS ADDED AS A RESULT OF DATA VALIDATION FINDINGS

The definition for data qualifiers added by AMEC during the data validation process may be found below and in Table 3.

The **U** qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.

The **UJ** qualifier indicates the reporting limit is estimated. UJ qualifiers added during validation may indicate either a high or low bias related to a QC element that exceeds required acceptance limits.

The **J** qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation may indicate a concentration between the method detection limit (MDL) and the MRL or sample reporting limit (RL), or a data limitation related to a QC element that exceeds required acceptance limits.

The **N** qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

The **R** qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

5.1 Sample Receipt at STL

All samples were received at STL in good condition.

6.0 SPECIFIC DATA VALIDATION FINDINGS FOR EACH ANALYTICAL METHOD - TREATED SEDIMENT SAMPLE

Sections 6.1 to 6.6 of this report contain narrative descriptions of data validation findings and data quality limitations for soil sample TS-1-WDLSS-14E-UCS-28. Definitions of data qualifiers added during validation may be found in Section 4.0 and Table 3. Summaries of specific qualifiers added to each affected sample as a result of the data validation findings are presented in Tables 4 and 5.

6.1 TCLP Chlorinated Herbicides by EPA Method 8151A

TCLP herbicide data from sample TS-1-WDLSS-14E-UCS-28 may be considered usable with the limitations and exceptions described below. Summaries of qualified herbicide results are presented in Table 4.

6.1.1 Holding Time

The sample was extracted within the EPA recommended maximum holding time of 14 days for soil and analyzed within 40 days of extraction.

6.1.2 Initial Calibration

The ICAL associated with analysis of sample TS-1-WDLSS-14E-UCS-28 for herbicides was acceptable and met all method criteria.

6.1.3 Continuing Calibration

CCAL performance is evaluated in terms of %D, which corresponds to percent deviation (average response factor [RF] models) or percent drift (regression fit models) from the average ICAL response. To facilitate understanding of CCAL effects on data quality to the end user, %D has been expressed as percent recovery in this narrative.

CCAL recoveries should fall within 85 to 115% acceptance limits. All CCALs associated with the analysis of this sample for herbicides were acceptable and met all method-specified acceptance criteria.

6.1.4 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with this sample for herbicides.

6.1.5 LCS Recovery

LCS recoveries were within the QAPP-specified 70 to 130% acceptance limits except as described below:

- Dalapon recoveries were low at 59% in the LCS and at 61% in the LCSD associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. AMEC UJ qualified the nondetected dalapon result from this sample because of possible low bias in the analytical result. (**UJ**-LL)

6.1.6 Surrogate Recoveries

All surrogate recoveries associated with herbicide analysis of this sample were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices.

6.1.7 MS/MSD Recovery and Precision

MS/MSD recoveries were within the QAPP-specified 60 to 140% acceptance limits, and RPDs between MS and MSDs were less than the QAPP-specified 30% in the MS associated with herbicide analysis of this sample.

6.2 TCLP Metals by EPA Method 6010B and EPA Method 7470A

TCLP metals data from sample TS-1-WDLSS-14E-UCS-28 may be considered usable with the limitations and exceptions described below. Summaries of qualified metals results may be found in Table 5.

6.2.1 Holding Time

The sample was analyzed for mercury within the recommended 28 days technical holding time and for all other metals within the recommended 180 days technical holding time.

6.2.2 Initial Calibration

The ICAL associated with the metals analysis of this sample was acceptable.

6.2.3 Initial Calibration Verification

EPA acceptance limits for metals initial calibration verification (ICV) are 90 to 110%. The ICV associated with the analysis of this sample was acceptable.

6.2.4 Continuing Calibration Verification

EPA acceptance limits for metals continuing calibration verifications (CCVs) are 90 to 110%. CCVs associated with reported data from the analysis of this sample was acceptable.

6.2.5 Inductively Coupled Plasma Interference Check Sample

All interference check sample (ICS) recoveries were within the method-specified 80 to 120% acceptance limits.

6.2.6 Laboratory Blanks

Target analytes should not be found in blank samples. When the absolute concentration detected in the blank is less than the MRL, concentrations in associated samples greater than the MRL but less than five times the concentration detected in the blank have been U qualified by AMEC. When the absolute concentration detected in the blank is greater than the MRL, concentrations in associated samples greater than the MRL but less than ten times the concentration detected in the blank have been U qualified by AMEC. In both cases, sample concentrations between the instrument detection limit (IDL) and MRL, and less than 5 or 10 times the concentration detected in the blank have been U qualified at the MRL concentration.

A list of target analytes detected in laboratory blanks may be found in Table 6. Detected target analyte concentrations that resulted in qualification of the analytical data are described below:

- Arsenic (0.0058 milligrams per liter [mg/L]), barium (0.0008 mg/L), cadmium (0.0067 mg/L), and silver (0.0013 mg/L) were detected at concentrations below the MRL in the method blank associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. AMEC U qualified the detected arsenic and cadmium results from this sample because the concentrations detected in the sample were less than five times the concentrations detected in the associated method blank. (**U**-MB)
- Arsenic (0.007 mg/L), barium (0.0015 mg/L), cadmium (0.0069 mg/L), chromium (0.0015 mg/L), lead (0.0042 mg/L), and selenium (0.0073 mg/L) were detected in a continuing calibration blank (CCB) associated with sample TS-1-WDLSS-14E-UCS-28. AMEC U qualified the detected selenium result from this sample because the detected concentration was less than five times the concentration detected in the associated calibration blank. (**U**-CB)

6.2.7 LCS Recovery

All LCS recoveries were within method-specified 80 to 120% acceptance limits.

6.2.8 MS Recovery

The method-specified acceptance limits for metals MS recoveries are 75 to 125%. However, spike recovery limits are not applicable when the sample concentration exceeds the spike concentration by a factor of four or more.

All MS/MSD recoveries were within acceptance limits, and RPDs between MS and MSDs were less than the QAPP-specified 30% in the MS associated with metals analysis of this sample.

6.2.9 Laboratory Duplicates

EPA CLP acceptance limits for duplicate sample analyses are ±20% RPD for sample concentrations greater than or equal to five times the MRL. A control limit of ± MRL is used if either the sample or duplicate result is less than five times the MRL.

The laboratory duplicate associated with the analysis of this sample for TCLP metals exhibited acceptable precision.

6.3 TCLP Volatile Organic Compounds by EPA Method 8260B

TCLP VOC data from sample TS-1-WDLSS-14E-UCS-28 may be considered usable with the limitations and exceptions described below. Summaries of qualified VOC results are presented in Table 4.

6.3.1 Holding Time

The sample was extracted within the EPA recommended maximum holding time of 14 days for soil and analyzed within 40 days of extraction.

6.3.2 Initial Calibration

RRFs for volatile compounds must be greater than or equal to 0.010, and the percent relative standard deviation (%RSD) of the initial calibration RRFs must be 15% or less for an ICAL to be considered valid.

All criteria were met for the ICALs associated with VOC analysis of this sample, except as described below:

- Chloromethane (35.5%), bromomethane (21.2%), iodomethane (52.0%), methylene chloride (42.3%), trans-1,2-dichloroethene (22.0%), cis-1,2-dichloroethene (27.0%), bromochloromethane (40.7%), chloroform (24.1%), benzene (23.4%), 1,2-dichloroethane (31.8%), trichloroethene (17.6%), dibromomethane (26.5%), bromodichloromethane (24.9%), cis-1,3-dichloropropene (25.9%), toluene (24.5%), trans-1,3-dichloropropene (22.7%), 1,1,2-trichloroethane (23.9%),1,3-dichloropropane (25.9%), dibromochloromethane (16.2%), 1,1,1,2-tetrachloroethane (29.5%), m,p-xylene (16.22%), o-xylene

(20.6%), styrene (18.7%), bromoform (16.2%), bromobenzene (20.9%), 2-chlorotoluene (17.1%), 4-chlorotoluene (30.6%), 1,2,4-trimethylbenzene (15.9%), 1,3-dichlorobenzene (24.7%), 2-ethyl-1-hexanol (84.4%), 1,4-dichlorobenzene (24.8%), n-butylbenzene (17.8%), and 1,2-dichlorobenzene (24.3%) %RSDs exceeded the acceptance limit for the ICAL associated with sample TS-1-WDLSS-14E-UCS-28. AMEC J qualified the detected m,p-xylene, 1,2,4-trimethylbenzene, and 1,2-dichlorobenzene results and UJ qualified the nondetected results for the remaining analytes from this sample because of imprecision in the initial calibration. (**J/UJ**-BC)

6.3.3 Initial Calibration Verification

ICV recoveries should fall within 80 to 120% acceptance limits. ICV associated with the VOC analysis of this sample was acceptable, except as described below:

- Bromomethane (78.2%), iodomethane (59.2%), methylene chloride (72.2%), and 2-ethyl-1-hexanol (9.6%) recoveries were low in the ICV associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. AMEC UJ qualified the nondetected results for these analytes from this sample because of possible low bias in the analytical data. (**UJ**-LV)

6.3.4 Continuing Calibration

CCAL recoveries should fall within 80 to 120% acceptance limits. All criteria were met for the CCAL associated with VOC analysis of this sample, except as described below:

- Bromomethane (78.4%), iodomethane (77.2%), dibromochloromethane (74.2%), bromoform (64.6%), and 2-ethyl-1hexanol (70.9%) recoveries were low in the CCAL associated with sample TS-1-WDLSS-14E-UCS-28. AMEC UJ qualified the nondetected results for these analytes in the associated sample because of possible low bias in the analytical data. (**UJ**-LC)

6.3.5 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with VOC analysis of these samples.

6.3.6 LCS Recovery

All LCS recoveries associated with VOC analysis of this sample were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- Isopropylbenzene recovery was low at 69% in the LCS associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. AMEC UJ qualified the nondetected isopropylbenzene result from this sample because of possible low bias in the analytical data. (**UJ**-LL)

6.3.7 Surrogate Standard Recoveries

Recoveries of all surrogate compounds associated with VOC analysis of this sample were acceptable.

6.3.8 Internal Standard Recoveries

Recovery of all ISs associated with VOC analysis of this sample were between 50 and 200% of the response in the associated CCAL standard.

6.3.9 MS/MSD Recovery and Precision

MS/MSD recoveries were within the QAPP-specified 60 to 140% acceptance limits, and RPDs between MS and MSDs were less than the QAPP-specified 30% in the MS associated with VOC analysis of this sample.

6.3.10 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.4 TCLP Semivolatile Organic Compounds by EPA Method 8270C

TCLP SVOC data from sample TS-1-WDLSS-14E-UCS-28 may be considered usable with the limitations described below. Summaries of qualified SVOC results are presented in Table 4.

6.4.1 Holding Time

The sample was extracted within the EPA recommended maximum holding time of 14 days for soil and analyzed within 40 days of extraction.

6.4.2 Initial Calibration

All criteria were met for the ICALs associated with SVOC analysis of this sample.

6.4.3 Initial Calibration Verification

ICV recoveries should fall within 80 to 120% acceptance limits. All criteria were met for the ICVs associated with SVOC analysis of this sample, except as described below:

- Pyridine (22.3%), benzoic acid (17.8%), 2,4-dinitrophenol (20.9%), 4-nitrophenol (19.2%), 2,3,5,6-tetrachlorophenol (77.0%), diethyl phthalate (66.8%), 4,6-dinitro-2-methylphenol (25.3%), 3-nitroaniline (0%), and 3,3'-dichlorobenzidine (51.7%) recoveries were low in the ICV associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. Specific limitations are described below:
  - AMEC J qualified the detected 2,3,5,6-tetrachlorophenol result and UJ qualified the nondetected results for the remaining analytes from this sample because of possible low bias in the analytical results. (**J/UJ**-LV)
  - According to an e-mail from Terri Torres at STL dated February 21, 2007, 3-nitroaniline was not recovered from the ICV because the ICV and CCV were evaluated using a quadratic curve, while sample TS-1-WDLSS-14E-UCS-28 and the associated LCS were evaluated using a linear curve. Because 3-nitroaniline recovery was acceptable in the LCS, AMEC did not reject the nondetected 3-nitroaniline result from this sample.
- 4-chloroaniline recovery was high at 142.1% in the ICV associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. The recovery was high, and this analyte was not detected in the associated sample. Data usability is not adversely affected.

6.4.4 Continuing Calibration

CCAL recoveries should fall within 80 to 120% acceptance limits. All criteria were met for the CCALs associated with SVOC analysis of this sample, except as described below:

- Pyridine (78.6%), benzoic acid (71.0%), 4-chloroaniline (54.0%), 3-nitroaniline (0.6%), diethyl phthalate (63.5%), 4-nitroaniline (56.8%), 4,6-dinitro-2-methylphenol (71.1%), and carbazole (71.0%) recoveries were low in the CCV associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. AMEC UJ qualified the nondetected results of these analytes from this sample because of possible low bias in the analytical results. (**UJ**-LC)
- Benzyl alcohol (78.9%), 4-chloroaniline (54.7%), 3-nitroaniline (0.5%), diethyl phthalate (66.2%), 4-nitroaniline (18.2%), 4,6-dinitro-2-methylphenol (57.2%), and 3,3'-dichlorobenzidine (57.3%) recoveries were low in the CCV associated with the analysis of a dilution of sample TS-1-WDLSS-14E-UCS-28. These analytes were not reported from the diluted sample, and data usability is not adversely affected.

6.4.5 Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with these samples.

6.4.6 LCS Recovery

All LCS recoveries associated with SVOC analysis of this sample were within the QAPP-specified 70 to 130% acceptance limits, except as described below:

- Phenol (66%/56%), pentachlorophenol (62%/65%), pyridine (18%/43%), benzoic acid (19%/12%), 4-chloroaniline (52%/52%), hexachlorocyclopentadiene (60%/79%), 2,4-dinitrophenol (62%/49%), 4-nitrophenol (26%/20%), diethyl phthalate (61%/63%), 4-nitroaniline (68%/81%), and 3,3'-dichlorobenzidine (64%/66%) recoveries were low in the LCS/LCSD associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. Specific limitations are described below:
    - The average hexachlorocyclopentadiene and 4-nitroaniline recoveries were acceptable at 70 and 75% respectively. Data usability is not adversely affected.

- AMEC J qualified the detected phenol result and UJ qualified the nondetected pentachlorophenol, pyridine, benzoic acid, 4-chloroaniline, 2,4-dinitrophenol, 4-nitrophenol, diethyl phthalate, and 3,3'-dichlorobenzidine results from this sample because of possible low bias in the analytical data. (**J/UJ**-LL)

6.4.7 MS/MSD Recovery and Precision

MS/MSD recoveries were within the QAPP-specified 60 to 140% acceptance limits, and RPDs between MS and MSDs were less than the QAPP-specified 30% in the MS associated with SVOC analysis of this sample.

6.4.8 Internal Standard Recoveries

IS recoveries associated with SVOC analysis of this sample were within the method-specified 50 to 200% acceptance limits.

6.4.9 Surrogate Recoveries

Recoveries of all surrogate compounds should be within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices. As specified in EPA Method 8270C, up to one surrogate from each extraction fraction may be outside of acceptance limits without affecting data usability.

- All surrogate recoveries associated with SVOC analysis of this sample were acceptable, except as described below:
  - Recovery of surrogate compound phenol-d_5 was low at 59% in sample TS-1-WDLSS-14E-UCS-28. The recoveries of all other surrogate compounds were acceptable, and data usability is not adversely affected.
  - Recoveries of surrogate compound phenol-d_5 were low at 59% in the method blank and at 50% in the LSCD associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. The recoveries of all other surrogate compounds and target analytes were acceptable in these QC samples. Data usability is not adversely affected.

6.4.10 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

6.5 TCLP Organochlorine Insecticides by EPA Method 8081A

TCLP OCP data from sample TS-1-WDLSS-14E-UCS-28 may be considered usable with the limitations and exceptions described below. Summaries of qualified OCP results are presented in Table 4.

6.5.1 Holding Time

The sample was extracted within the EPA recommended maximum holding time of 14 days for soil and analyzed within 40 days of extraction.

6.5.2 4,4'-DDT/Endrin Breakdown

Breakdown is a measure of the amount of decomposition that 4,4′-DDT and endrin undergo when analyzed on the gas chromatography (GC) column. Excessive breakdown is an indication that the chromatographic system is contaminated, chemically active, or too hot. Breakdown is measured by injecting a mixture of 4,4'-DDT and endrin into the GC and dividing the sum of the areas of the breakdown products (4,4'-DDE and 4,4'-DDD for 4,4'-DDT, and endrin aldehyde and endrin ketone for endrin) by the sums of the areas of the breakdown products and the parent compounds. Breakdown must be less than 15% for analysis to proceed and data to be fully usable. 4,4′-DDT and endrin breakdown was less than 15% each day that sample TS-1-WDLSS-14E-UCS was analyzed for OCPs.

The 4,4'-DDT/endrin breakdown associated with the analysis of this sample was acceptable.

6.5.3 Initial Calibration

The ICAL associated with OCP analysis of this sample was acceptable.

6.5.4 Initial Calibration Verification

ICV recoveries should fall within 80 to 120% acceptance limits. All criteria were met for the ICV associated with the analysis of this sample, except as described below.

- Endrin aldehyde recovery was high at 122% in the ICV associated with sample TS-1-WDLSS-14E-UCS. Although recovery was high, endrin aldehyde was not detected in this sample. Data usability is not adversely affected by the possible high bias.

6.5.5 Continuing Calibration

CCAL recoveries should fall within 85 to 115% acceptance limits. All CCALs associated with OCP analysis of this sample were acceptable, except as described below:

- Delta-BHC (74.6%/71.4%) and endrin (83.7%/73.8%) recoveries were low in the CCALs associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. AMEC J qualified the detected endrin and delta-BHC results from this sample because of possible low bias in the analytical results. (**J**-LC)

6.5.6 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with OCP analysis of this sample.

6.5.7 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with OCP analysis of this sample, except as described below:

- 4,4'-DDT recoveries were low in the LCS and LCSD at 64 and 61%, respectively. AMEC J qualified the detected 4,4'-DDT result from sample TS-1-WDLSS-14E-UCS-28 because of possible low bias in the analytical results. (**J**-LL)
- Alpha-chlordane (69%/71%) and endrin ketone (71%/69%) recoveries were low in the LCS and LCSD. The average recovery for both analytes was acceptable at 70%. Data usability is not adversely affected.

6.5.8 Surrogate Recoveries

Surrogate recoveries associated with OCP analysis of this sample were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- Recovery of the surrogate compound decachlorobiphenyl (DCB) was low at 50% in the method blank associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. DCB recovery was acceptable in the associated sample, and data usability is not adversely affected.
- Recoveries of the surrogate compound DCB were low at 55% in the LCS and at 53% in the LCSD associated with the analysis of sample TS-1-WDLSS-14E-UCS-28. Recoveries of all analytes were acceptable in the LCS and LCSD, and DCB recovery was acceptable in the associated sample. Data usability is not adversely affected.

6.5.9 MS/MSD Recovery and Precision

MS/MSD recoveries were within the QAPP-specified 60 to 140% acceptance limits, and RPDs between MS and MSDs were less than the QAPP-specified 30% in the MS associated with OCP analysis of this sample.

6.5.10 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

There was greater than 40% RPD between delta-BHC, endosulfan I, 4,4'-DDE, endrin, and 4,4'-DDT results from the primary and secondary column analysis for sample TS-1-WDLSS-14E-UCS-28. AMEC N qualified the detected results of these analytes from this sample because their presence is uncertain. (**N**-SC)

The laboratory E qualified the detected 4,4'-DDD result from sample TS-1-WDLSS-14E-UCS-28 because the result exceeded the instrument's calibration range. No dilution was performed. AMEC concurs that this result is a quantitative estimate and J qualified the detected 4,4'-DDD result from this sample on the data tables. (**J**-UC)

6.6 TCLP Dioxins and Furans by EPA Method 8290

TCLP dioxins and furans data from sample TS-1-WDLSS-14E-UCS-28 may be considered usable without qualification.

6.6.1 Holding Time

The sample was extracted within the method-specified holding time of 30 days from sample collection until extraction and analyzed within 45 days of extraction.

6.6.2 GC/MS Performance Checks and Initial Calibration

Analysis of dioxins and furans in this sample on the primary analytical column was conducted under an initial calibration that met method-specified acceptance limits for ion abundance ratios and percent relative standard deviations for all target compounds.

6.6.3 Calibration Verification

Response factors in the calibration verification standards were within the method-specified limits of ± 20% of the mean values established in the initial calibration for unlabeled analytes and ± 30% for labeled analytes.

6.6.4 Laboratory Blank

Octachlorodibenzo-p-dioxin (OCDD) was detected in the laboratory blank associated with this sample at a concentration of 58 picograms per liter (pg/L). OCDD was not detected in the sample and data usability is not adversely affected.

6.6.5 Recovery of C-13 Labeled Isotope Dilution Standards Used as Internal Standards

EPA Method 8290 uses an isotope dilution procedure for calculation of analyte concentrations. A total of 12 carbon or chlorine labeled PCDD and PCDF isomers are added to the sample or extract to monitor different aspects of the procedure. Of the 12 labeled isomers added, 9 are used as IS for calculation of analytical results. IS recovery problems affect all analytical results that are calculated using the affected IS, and not just the corresponding nonlabeled isomer.

Qualification of data based on IS results can seem counterintuitive in that low IS recovery implies a possible high bias in the calculated result, and high IS recovery can imply a possible low bias. The reason for is that low recovery implies lower than expected area counts for the IS, and high recovery implies higher than expected area counts. The area of the IS appears in the denominator of the equation for calculation of results using the IS technique; therefore, low IS area counts lead to high results for any calculation based on that IS, and high IS area counts lead to low results for any calculation based on that IS.

Recovery and performance of carbon labeled isotope dilution standards used as IS in all field and QC samples were within method-specified limits.

6.6.6 Instrument Recovery Internal Standards

The instrument recovery standards $^{13}C_{12}$-1,2,3,4-TCDD and $^{13}C_{12}$-1,2,3,7,8,9-HxCDD are added to sample extracts and standards before injection into the gas chromatograph/mass spectrometer (GC/MS). The instrument recovery standards are used to determine the recovery efficiency of the extraction and cleanup procedures, to determine if the GC/MS sensitivity and response are stable during the analytical run, and to determine if the same amount of extract was injected into the GC/MS (EPA, 1996). The $^{13}C_{12}$-1,2,3,4-TCDD recovery standard is used to calculate recoveries of the tetrachlorodibenzo-p-dioxin (TCDD), tetrachlorodibenzofuran (TCDF), pentachlorodibenzo-p-dioxin (PeCDD), and pentachlorodibenzofuran (PeCDF) IS. The $^{13}C_{12}$-1,2,3,7,8,9-HxCDD recovery standard is used to calculate recoveries of the hexachlorodibenzo-p-dioxin (HxCDD), hexachlorodibenzofuran (HxCDF), heptachlorodibenzo-p-dioxin (HpCDD), heptachlorodibenzofuran (HpCDF), OCDD, and octachlorodibenzofuran (OCDF) IS.

Recovery of the sums of the instrument recovery standards in all field and QC samples were within method requirements of 25 to 400% of initial area counts.

6.6.7 Laboratory Control Sample

Analyte recoveries in the LCS associated with this sample were within method-specified acceptance limits.

6.6.8 Surrogate Recovery

STL-Sacramento includes the cleanup standard $^{37}Cl_4$-2,3,7,8-TCDD in the spiking solution added to samples. This isomer can be used in a manner analogous to a

surrogate compound in order to monitor cleanup efficiency. No data are qualified based on recovery of the $^{37}Cl_4$-2,3,7,8-TCDD cleanup standard unless recoveries of other labeled compounds are also outside acceptance limits.

7.0 SPECIFIC DATA VALIDATION FINDINGS FOR EACH ANALYTICAL METHOD - SEQUENTIAL BATCH LEACHATE SAMPLES

Sections 7.1 and 7.2 of this report contain narrative descriptions of data validation findings and data quality limitations for the six sequential batch leachate samples from this sample delivery group (SDG). The field sample ID numbers for the SDG may be found in Table 1. Definitions of data qualifiers added during validation may be found in Section 4.0 and Table 3. Summaries of specific qualifiers added to each affected sample as a result of the data validation findings are presented in Tables 4 and 5.

7.1 Chlorinated Herbicides by Method EPA 8151A

Herbicide data from this SDG may be considered usable with the limitations and exceptions described below. Summaries of qualified herbicide results are presented in Table 4.

7.1.1 Holding Time

All samples were extracted within the EPA recommended maximum holding time of 7 days for water and analyzed within 40 days of extraction, except as described below:

- Samples TS-1-WDLSS-6A-25DAY-STG, TS-1-WDLSS-12A-25-DAY-FL, and TS-1-WDLSS-12A-25DAY-FL-DUP were collected on November 12, 2006. The laboratory extracted these samples on November 20, 2006, one day past the method-recommended holding time. AMEC J qualified the detected herbicide results and UJ qualified the nondetected herbicide results from these samples because of possible bias in the analytical results due to holding time exceedance. (**J/UJ**-HT)

7.1.2 Initial Calibration

All ICALs associated with herbicide analysis of samples from this SDG were acceptable and met all method criteria.

7.1.3 Continuing Calibration

CCAL recoveries should fall within 85 to 115% acceptance limits. All ICALs associated with herbicide analysis of samples from this SDG were acceptable and met all method criteria.

7.1.4 Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with herbicide analysis of samples from this SDG.

7.1.5 LCS Recovery

LCS recoveries were within the QAPP-specified 70 to 130% acceptance limits except as described below:

- Dalapon recoveries were low at 63% in the LCS and at 69% in the LCSD associated with the analysis of this SDG. AMEC UJ qualified the nondetected dalapon results from samples TS-1-WDLSS-6A-25DAY-STG, TS-1-WDLSS-12A-25DAY-FL, TS-1-WDLSS-12A-25DAY-FL-DUP, TS-1-WDLSS-6B-25DAY-STG, TS-1-WDLSS-12B-25DAY-FL, and TS-1-WDLSS-12B-25DAY-FL because of possible low bias in the analytical data. (**UJ**-LL)

7.1.6 Surrogate Recoveries

All surrogate recoveries associated with herbicide analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices.

7.1.7 MS/MSD Recovery and Precision

MS/MSD recoveries were within the QAPP-specified 60 to 140% acceptance limits, and RPDs between MS and MSDs were less than the QAPP-specified 30% in the MS associated with herbicide analysis.

7.1.8 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables. (**J**-DL)

7.2 Total Recoverable Metals by EPA 6000/7000-Series Methods

Metals data from this SDG may be considered usable with the limitations and exceptions described below. Summaries of qualified metals results may be found in Table 5.

7.2.1 Holding Time

All samples were analyzed for mercury within the recommended 28 days technical holding time and for all other metals within the recommended 180 days technical holding time.

7.2.2 Initial Calibration

All ICALs associated with metals analysis of this SDG were acceptable.

7.2.3 Initial Calibration Verification

EPA acceptance limits for metals ICVs are 90 to 110%. ICVs associated with the metals analysis of this SDG were acceptable.

7.2.4 Continuing Calibration Verification

EPA acceptance limits for metals CCVs are 90 to 110%. CCVs associated with metals analysis of this SDG were acceptable.

7.2.5 Inductively Coupled Plasma Interference Check Sample

All ICS recoveries were within the method-specified 80 to 120% acceptance limits.

7.2.6 Laboratory Blanks

Target analytes should not be found in blank samples. When the concentration detected in the blank is less than the MRL, concentrations in associated samples greater than the MRL but less than five times the absolute concentration detected in the blank have been U qualified by AMEC. When the absolute concentration detected in the blank is greater than the MRL, concentrations in associated samples greater than the MRL but less than ten times the concentration detected in the blank have been U qualified by AMEC. In both cases, sample concentrations between the IDL and MRL, and less than 5 or 10 times the concentration detected in the blank have been U qualified at the MRL concentration.

A list of target analytes detected in laboratory blanks may be found in Table 6. Detected target analyte concentrations that resulted in qualification of the analytical data are described below:

- Boron (0.033 mg/L), iron (0.016 mg/L), magnesium (0.16 mg/L), antimony (0.00066 mg/L), copper (0.00036 mg/L), molybdenum (0.00049 mg/L), and zinc (0.00034 mg/L) were detected in the method blank associated with the analysis of this SDG at concentrations below the MRL. Specific limitations are presented below:
  - AMEC U qualified the detected iron result from sample TS-1-WDLSS-6A-25DAY-STG because the concentration detected in the sample was less than five times the concentration detected in the associated method blank. (**U**-MB)
  - AMEC U qualified the detected boron result from sample TS-1-WDLSS-6B-25DAY-STG because the concentration detected in the sample was less than five times the concentration detected in the associated method blank. (**U**-MB)
- Silver was detected at a negative concentration of -0.005 mg/L in the method blank associated with the analysis of this SDG. The absolute value of the detected concentration was between the MDL and MRL. AMEC UJ qualified the nondetected silver results from samples TS-1-WDLSS-6A-25DAY-STG, TS-1-WDLSS-12A-25DAY-FL, TS-1-WDLSS-12A-25DAY-FL-DUP, TS-1-WDLSS-6B-25DAY-STG, TS-1-WDLSS-12B-25DAY-FL, and TS-1-WDLSS-12B-25DAY-FL because of possible low bias introduced by instrument bias. (**UJ**-MB)

7.2.7 LCS Recovery

All LCS recoveries were within the method-specified 80 to 120% acceptance limits.

7.2.8 MS Recovery and Precision

The method-specified acceptance limits for metals MS recoveries are 75 to 125%. However, spike recovery limits are not applicable when the sample concentration exceeds the spike concentration by a factor of four or more.

MS/MSD recoveries were within acceptance limits, and RPDs between MS and MSDs were less than the QAPP-specified 30% in the MS associated with metals analysis of this SDG.

7.2.9 Laboratory Duplicates

EPA CLP acceptance limits for duplicate sample analyses are ±20% RPD for sample concentrations greater than or equal to five times the MRL. A control limit of ± MRL is used if either the sample or duplicate result is less than five times the MRL.

The laboratory duplicates associated with the analysis of this SDG exhibited acceptable precision.

7.2.10 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and IDL. AMEC concurs that these results are quantitative estimates and J qualified these results the data tables. (**J**-DL)

8.0 FIELD DUPLICATE RESULTS

Two field duplicates were collected along with the four primary water samples. Detected results for each set of field duplicates are summarized in Table 2.

Precision values met the QAPP-specified acceptance limits, with RPDs less than 30% for analytes with concentrations more than 5 times their practical quantitation limit (PQLs), and concentrations within one MRL for analytes with concentrations less than five times their MRLs, except as described below:

- Manganese was detected at 0.00065 mg/L in primary sample TS-1-WDLSS-12A-25DAY-FL and at 0.0011 mg/L in field duplicate sample TS-1-WDLSS-12A-25DAY-FL-DUP, for a RPD of 51%. The results from both samples were less than the MRL of 0.002 mg/L and the absolute difference between the results was less than the MRL. Data usability is not adversely affected.
- Arsenic was detected at 0.0031 mg/L in primary sample TS-1-WDLSS-12B-25DAY-FL and at 0.00043 mg/L in field duplicate sample TS-1-WDLSS-12B-25DAY-FL-DUP, for a RPD of 151%. The results from both samples were less than five times the MRL, but the absolute difference between the samples was greater than the MRL. AMEC J qualified the detected arsenic results from the primary and field duplicate samples because of imprecision between field duplicate analyses. (**J**-FD)

9.0 SUMMARY AND CONCLUSIONS

Data generated for this SDG from the West Doane Lake Treatability Study are of acceptable quality and are usable with the addition of the qualifiers listed in Tables 4 and 5. A summary of data validation findings may be found in Table 7.

A total of 427 results from this SDG underwent data validation. No results were rejected during data validation, and the overall completeness of the data set exceeded 95%.

In addition, 63 results (14.8%) were J qualified, 70 results (16.4%) were UJ qualified, 5 results (1.2%) were U qualified, 2 results (0.5%) were N qualified, and 3 results were NJ qualified (0.7%).

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LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on:
i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Data Validation Report for the West Doane Lake Treatability Study is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
Field Samples Submitted to STL Seattle
WDL Treatability Study
RP - Portland Site

Field Sample ID	Sample Matrix	Sample Collection Date	STL-S Sample ID	Herbicides (8151A)	Herbicides (8151A), TCLP	Metals (6000/7000 series)	Metals (6000/7000 series), TCLP	VOCs (8260B), TCLP	SVOCs (8270C), TCLP	OCPs (8081A), TCLP	Dioxins and Furans (8290), TCLP
TS-1WDLSS-14E-UCS-28	Soil	11/10/2006	580-4254-1		√		√	√	√	√	√
TS-1WDLSS-6A-25DAY-STG	Water	11/12/2006	580-4254-2	√		√					
TS-1WDLSS-12A-25DAY-FL	Water	11/12/2006	580-4254-3	√		√					
TS-1WDLSS-12A-25DAY-FL-DUP	Water	11/12/2006	580-4254-4	√		√					
TS-1WDLSS-6B-25DAY-STG	Water	11/13/2006	580-4254-5	√		√					
TS-1WDLSS-12B-25DAY-FL	Water	11/13/2006	580-4254-6	√		√					
TS-1WDLSS-12B-25DAY-FL-DUP	Water	11/13/2006	580-4254-7	√		√					

Notes:
ID = identification
OCPs = organochlorine insecticide
STL-S = Severn Trent Laboratories, Inc. - Seattle
SVOCs = semivolatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure
VOCs = volatile organic compounds

TABLE 2
Summary of Field Duplicate Detections
WDL Treatability Study
RP - Portland Site

Analyte	TS-1WDLSS-12A-25DAY-FL	TS-1WDLSS-12A-25DAY-FL-DUP	RPD
Chlorinated Herbicides EPA Method 8151A (µg/L)			
MCPP	12	12	0.0%
MCPA	390	360	8.0%
2,4,5-TP	9.3	<24	NC
2,4,5-T	180	180	0.0%
2,4-DB	69	72	4.3%
2,4-D	4600	4600	0.0%
Total Recoverable Metals Method EPA 6000/7000 series (mg/L)			
Aluminum	0.87	0.86	1.2%
Calcium	52	53	1.9%
Potassium	1.5	1.5	0.0%
Sodium	12	12	0.0%
Arsenic	<0.002	0.0043	NC
Lead	0.0012	0.0012	0.0%
Antimony	0.0048	0.0053	9.9%
Barium	0.032	0.033	3.1%
Chromium	0.0083	0.0083	0.0%
Cobalt	0.00016	0.00017	6.1%
Copper	0.0073	0.0061	17.9%
Manganese	0.00065	0.0011	51.4%*
Molybdenum	0.14	0.13	7.4%
Nickel	0.0089	0.0083	7.0%
Selenium	0.0016	<0.002	NC
Vanadium	0.014	0.016	13.3%
Zinc	0.0038	0.0031	20.3%
Analyte	**TS-1WDLSS-12B-25DAY-FL**	**TS-1WDLSS-12B-25DAY-FL-DUP**	**RPD**
Chlorinated Herbicides EPA Method 8151A (µg/L)			
MCPP	12	11	8.7%
MCPA	430	400	7.2%
2,4,5-TP	7.8	8.1	3.8%
2,4,5-T	200	190	5.1%
2,4-DB	68	63	7.6%
2,4-D	5800	5900	1.7%
Total Recoverable Metals Method EPA 6000/7000 series (mg/L)			
Aluminum	1.0	0.95	5.1%
Calcium	49	46	6.3%
Potassium	1.4	1.4	0.0%
Sodium	12	11	8.7%
Arsenic	0.0031	0.00043	151%
Lead	0.0013	0.0013	0.0%
Antimony	0.0041	0.0039	5.0%
Barium	0.054	0.05	7.7%
Chromium	0.0069	0.007	1.4%
Cobalt	0.00016	0.00015	6.5%
Copper	0.0074	0.0071	4.1%
Manganese	0.00053	0.00051	3.8%
Molybdenum	0.15	0.14	6.9%
Nickel	0.0069	0.0065	6.0%
Vanadium	0.022	0.024	8.7%
Zinc	0.0033	0.0033	0.0%

Notes:

* = Detected concentrations were less than the MRL, and the absolute difference between samples was less than the MRL.
µg/L = micrograms per liter
EPA = United States Environmental Protection Agency
mg/L = milligrams per liter
RPD = relative percent difference

TABLE 3
Definitions of Data Qualifiers That May Be Added as a Result of Data Validation Findings
WDL Treatability Study
RP - Portland Site

Qualifier	Definition
U	Indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.
UJ	Indicates the reporting limit is estimated. UJ qualifiers added during validation may indicate either a high or low bias related to a QC element that exceeds required acceptance limits.
J	Indicates that the associated result is quantitatively uncertain. J qualifiers added during validation may indicate a concentration between the method detection limit (MDL) and the MRL or sample reporting limit (RL), or a data limitation related to a QC element that exceeds required acceptance limits.
N	Indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.
R	Indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

TABLE 4
Data Qualifiers for Organic Analyses
WDL Treatability Study
RP - Portland Site

Method	Analyte	TS-1-WDLSS-14E-UCS-28	TS-1-WDLSS-12A-25DAY-FL	TS-1-WDLSS-12A-25DAY-FL-DUP	TS-1-WDLSS-12B-25DAY-FL	TS-1-WDLSS-12B-25DAY-FL-DUP	TS-1-WDLSS-6A-25DAY-STG	TS-1-WDLSS-6B-25DAY-STG
8151A	2,4,5-T	(none)	J HT	J HT	(none)	(none)	J HT	(none)
8151A	2,4,5-TP (Silvex)	(none)	J DL,HT	UJ HT	J DL	J DL	J HT	(none)
8151A	2,4-D	(none)	J HT	J HT	(none)	(none)	J HT	(none)
8151A	2,4-DB	(none)	J HT	J HT	(none)	(none)	J HT	(none)
8151A	4-Nitrophenol	NT	UJ HT	UJ HT	(none)	(none)	UJ HT	(none)
8151A	Dalapon	UJ LL	UJ HT,LL	UJ HT,LL	UJ LL	UJ LL	UJ HT,LL	UJ LL
8151A	Dicamba	(none)	UJ HT	UJ HT	(none)	(none)	UJ HT	(none)
8151A	Dichlorprop	(none)	UJ HT	UJ HT	(none)	(none)	J HT	(none)
8151A	Dinoseb	(none)	UJ HT	UJ HT	(none)	(none)	UJ HT	(none)
8151A	MCPA	(none)	J HT	J HT	(none)	(none)	J HT	(none)
8151A	MCPP	(none)	J DL,HT	J DL,HT	J DL	J DL	J HT	(none)
8151A	Pentachlorophenol	NT	UJ HT	UJ HT	(none)	(none)	UJ HT	(none)

Method	Analyte	TS-1-WDLSS-14E-UCS-28
8081A	4,4'-DDD	J UC
8081A	4,4'-DDE	N SC
8081A	4,4'-DDT	NJ LL,SC
8081A	Aldrin	J DL
8081A	delta-BHC	NJ DL,LC,SC
8081A	Endosulfan I	N SC
8081A	Endrin	NJ LC,SC
8260B	1,1,1,2-Tetrachloroethane	UJ BC
8260B	1,1,2-Trichloroethane	UJ BC
8260B	1,2,4-Trimethylbenzene	J BC,DL
8260B	1,2-Dichlorobenzene	J BC
8260B	1,2-Dichloroethane	UJ BC
8260B	1,3-Dichlorobenzene	UJ BC
8260B	1,3-Dichloropropane	UJ BC
8260B	1,4-Dichlorobenzene	UJ BC
8260B	2-Chlorotoluene	UJ BC
8260B	2-Ethyl-1-hexanol	UJ BC,LC,LV
8260B	4-Chlorotoluene	UJ BC
8260B	Benzene	UJ BC
8260B	Bromobenzene	UJ BC
8260B	Bromochloromethane	UJ BC
8260B	Bromodichloromethane	UJ BC
8260B	Bromoform	UJ BC,LC
8260B	Bromomethane	UJ BC,LC,LV
8260B	Chloroform	UJ BC
8260B	Chloromethane	UJ BC
8260B	cis-1,2-Dichloroethene	UJ BC
8260B	cis-1,3-Dichloropropene	UJ BC
8260B	Dibromochloromethane	UJ BC,LC
8260B	Dibromomethane	UJ BC
8260B	Ethylbenzene	J DL
8260B	Iodomethane	UJ BC,LC,LV
8260B	Isopropylbenzene	UJ LL
8260B	m,p-Xylene	J BC,DL
8260B	Methylene chloride	UJ BC,LV
8260B	n-Butylbenzene	UJ BC
8260B	o-Xylene	UJ BC
8260B	Styrene	UJ BC
8260B	Toluene	UJ BC
8260B	trans-1,2-Dichloroethene	UJ BC
8260B	trans-1,3-Dichloropropene	UJ BC
8260B	Trichloroethene	UJ BC
8270C	2,3,5,6-Tetrachlorophenol	J LV
8270C	2,4-Dinitrophenol	UJ LV,LL
8270C	2-Methyl-4,6-dinitrophenol	UJ LV,LC
8270C	3 & 4-Methylphenol	J DL
8270C	3,3'-Dichlorobenzidine	UJ LV,LL
8270C	3-Nitroaniline	UJ LV,LC
8270C	4-Chloroaniline	UJ LC,LL
8270C	4-Nitroaniline	UJ LC
8270C	4-Nitrophenol	UJ LV,LL
8270C	Benzoic acid	UJ LV,LC,LL
8270C	Carbazole	UJ LC
8270C	Diethylphthalate	UJ LV,LC,LL
8270C	Di-n-butylphthalate	J DL
8270C	Pentachlorophenol	UJ LL
8270C	Phenol	J LL
8270C	Pyridine	UJ LV,LC,LL

Note:

NT	Not tested

Qualification Rationale Abbreviations:

BC	Bad calibration curve. Analytical result may be biased.
DL	Analyte concentration is between the MDL and RL.
HT	Method-specified holding time exceeded.
LC	Low CCV recovery. Analytical result may be biased low.
LL	LCS/LCSD recoveries were low. Analytical result may be biased low.
LV	Low ICV recovery. Analytical result may be biased low.
SC	Difference between dual-column results > 25%
UC	Analyte was detected at a concentration above the analytical instrument's linear calibration range.

TABLE 5
Data Qualifiers for Inorganic Analyses
WDL Treatability Study
RP - Portland Site

Method	Analyte	TS-1-WDLSS-14E-UCS-28	TS-1-WDLSS-12A-25DAY-FL	TS-1-WDLSS-12A-25DAY-FL-DUP	TS-1-WDLSS-12B-25DAY-FL	TS-1-WDLSS-12B-25DAY-FL-DUP	TS-1-WDLSS-6A-25DAY-STG	TS-1-WDLSS-6B-25DAY-STG
6010B	Arsenic	U MB	NT	NT	NT	NT	NT	NT
6010B	Cadmium	U MB	NT	NT	NT	NT	NT	NT
6010B	Selenium	U CB	NT	NT	NT	NT	NT	NT
6010B	Boron	NT	(none)	(none)	(none)	(none)	(none)	U MB
6010B	Iron	NT	(none)	(none)	(none)	(none)	U MB	(none)
6010B	Potassium	NT	J DL	J DL	J DL	J DL	(none)	(none)
6010B	Silver	NT	UJ MB	UJ MB	UJ MB	UJ MB	UJ MB	UJ MB
6020	Arsenic	NT	(none)	(none)	J FD	J DL,FD	(none)	(none)
6020	Cadmium	NT	(none)	(none)	(none)	(none)	J DL	J DL
6020	Cobalt	NT	J DL	J DL	J DL	J DL	J DL	J DL
6020	Lead	NT	J DL	J DL	J DL	J DL	(none)	(none)
6020	Manganese	NT	J DL	J DL	J DL	J DL	J DL	J DL
6020	Selenium	NT	J DL	(none)	(none)	(none)	(none)	(none)
6020	Zinc	NT	J DL	J DL	J DL	J DL	J DL	J DL

Notes:

NT Not tested

RPD Relative percent difference

Qualification Rationale Abbreviations:

CB Contaminated blank

DL Analyte concentration is between the MDL and RL

FD High RPD between field duplicate analyses

MB Method blank contamination

TABLE 6
Laboratory Blank Detections
WDL Treatability Study
RP - Portland Site

Method	Blank ID	Analyte	Detected Concentration (mg/L)
6010B TCLP	MB-580-13171/9-AA	Arsenic	0.00580
		Barium	0.00078
		Cadmium	0.00670
		Silver	0.00130
6010B	MB-580-13331/19-AA	Boron	0.033
		Silver	-0.005
		Aluminum	-0.036
		Iron	0.016
		Magnesium	0.160
6020	MB-580-13331/19-AA	Antimony	0.00066
		Copper	0.00036
		Molybdenum	0.00049
		Zinc	0.00034
6010B TCLP	ICB 11/16/06 14:03	Cadmium	0.0022
		Chromium	0.0042
		Lead	0.0072
		Selenium	0.0119
6010B TCLP	CCB 11/16/06 16:13	Arsenic	0.0070
		Barium	0.0015
		Cadmium	0.0069
		Chromium	0.0015
		Lead	0.0042
		Selenium	0.0073
6010B TCLP	CCB 11/16/06 16:42	Arsenic	0.0096
		Barium	0.0013
		Cadmium	0.0050
		Chromium	0.0031
		Selenium	0.0080
		Silver	0.0020
6010B	ICB 11/21/06 18:02	Iron	0.0416
		Sodium	-0.1770
		Boron	0.5600
6010B	CCB 11/21/06 20:05	Potassium	-0.1301
		Sodium	0.1554
		Boron	0.0291
6010B	CCB 11/21/06 20:55	Potassium	-0.1161
		Sodium	0.2091
		Boron	0.1753
6020	ICB 11/21/06 08:04	Molybdenum	0.000141
		Antimony	0.000189
6020	CCB 11/21/06 13:47	Molybdenum	0.000481
		Antimony	0.000525
6020	CCB 11/21/06 14:36	Zinc	0.000158
		Molybdenum	0.000379
		Antimony	0.000305
6020	CCB 11/21/06 15:00	Zinc	0.000160
		Molybdenum	0.000352
		Antimony	0.000312

Notes:

CCB = Continuing calibration blank
ICB = Initial calibration blank
ID = identification
MB = Method blank
mg/L = milligrams per liter
TCLP = Toxicity characteristic leaching procedure

TABLE 7
Summary of Data Validation Findings
WDL Treatability Study
RP - Portland Site

Analytical Method	Samples Affected	Reason for Qualification	Analyte	Qualifier Added
TCLP Herbicides (8151A)	TS-1-WDLSS-14E-UCS-28	Low LCS recovery	Dalapon	UJ-LL
TCLP Metals (6010B/7470A)		MB contamination	Arsenic	U-MB
			Cadmium	
		CCB contamination	Selenium	U-CB
TCLP VOCs (8260B)		High ICAL %RSD	Chloromethane	UJ-BC
			Bromomethane	
			Iodomethane	
			Methylene Chloride	
			trans-1,2-Dichloroethene	
			cis-1,2-Dichloroethene	
			Bromochloromethane	
			Chloroform	
			Benzene	
			1,2-Dichloroethane	
			Trichloroethene	
			Dibromomethane	
			Bromodichloromethane	
			cis-1,3-Dichloropropene	
			Toluene	
			trans-1,3-Dichloropropene	
			1,1,2-Trichloroethane	
			1,3-Dichloropropane	
			Dibromochloromethane	
			1,1,1,2-Tetrachloroethane	
			o-Xylene	
			Styrene	
			Bromoform	
			1,3-Dichlorobenzene	
			2-Ethyl-1-hexanol	
			1,4-Dichlorobenzene	
			n-Butylbenzene	
			1,2,4-Trimethylbenzene	J-BC
			m,p-Xylene	
			1,2-Dichlorobenzene	
TCLP VOCs (8260B)	TS-1-WDLSS-14E-UCS-28	Low ICV recovery	Bromomethane	UJ-LV
			Iodomethane	
			Methylene Chloride	
			2-Ethyl-1-hexanol	
		Low CCV recovery	Bromomethane	UJ-LC
			Iodomethane	
			Dibromochloromethane	
			Bromoform	
			2-Ethyl-1-hexanol	
		Low LCS recovery	Isopropylbenzene	UJ-LL

TABLE 7
Summary of Data Validation Findings
WDL Treatability Study
RP - Portland Site

Analytical Method	Samples Affected	Reason for Qualification	Analyte	Qualifier Added
TCLP SVOCs	TS-1-WDLSS-14E-UCS-28	Low ICV recovery	Pyridine	UJ-LV
			Benzoic acid	
			2,4-Dinitrophenol	
			4-Nitrophenol	
			Diethyl phthalate	
			4,6-Dinitro-2-methylphenol	
			3,3'-Dichlorobenzidine	
			2,3,5,6-Tetrachlorophenol	J-LV
		Low CCV recovery	Pyridine	UJ-LC
			Benzoic acid	
			4-Chloroaniline	
			3-Nitroaniline	
			Diethyl phthalate	
			4-Nitroaniline	
			4,6-Dinitro-2-methylphenol	
			Carbazole	
		Low LCS recovery	Phenol	J-LL
			Pentachlorophenol	UJ-LL
			Pyridine	
			Benzoic acid	
			4-Chloroaniline	
			2,4-Dinitrophenol	
			4-Nitrophenol	
			Diethyl phthalate	
			3,3'-Dichlorobenzidine	
TCLP OCPs (8081A)	TS-1-WDLSS-14E-UCS-28	Low CCV recovery	Delta-BHC	J-LC
			Endrin	
		Low LCS recovery	4,4'-DDT	J-LL
		Analyte detection between MDL and MRL	Aldrin	J-DL
			Delta-BHC	
		>40% difference in secondary column analysis	Delta-BHC	N-SC
			Endosulfan I	
			4,4'-DDE	
			Endrin	
			4,4'-DDT	
		Upper calibration level exceeded	4,4'-DDD	J-UC
Herbicides (8151A)	TS-1-WDLSS-6A-25DAY-STG	Holding time exceeded	All herbicides	J/UJ-HT
	TS-1-WDLSS-12A-25DAY-FL			
	TS-1-WDLSS-12A-25DAY-FL-DUP			
	TS-1-WDLSS-6A-25DAY-STG	Low LCS recovery	Dalapon	UJ-LL
	TS-1-WDLSS-12A-25DAY-FL			
	TS-1-WDLSS-12A-25DAY-FL-DUP			
	TS-1-WDLSS-6B-25DAY-STG			
	TS-1-WDLSS-12B-25DAY-FL			
	TS-1-WDLSS-12B-25DAY-FL-DUP			

TABLE 7
Summary of Data Validation Findings
WDL Treatability Study
RP - Portland Site

Analytical Method	Samples Affected	Reason for Qualification	Analyte	Qualifier Added
Metals (6010B/6020/7470A)	TS-1-WDLSS-6A-25DAY-STG	MB contamination	Iron	U-MB
	TS-1-WDLSS-6B-25DAY-STG	MB contamination	Boron	U-MB
	TS-1-WDLSS-6A-25DAY-STG	Analyte detected at a negative concentration in MB	Silver	UJ-MB
	TS-1-WDLSS-12A-25DAY-FL			
	TS-1-WDLSS-12A-25DAY-FL-DUP			
	TS-1-WDLSS-6B-25DAY-STG			
	TS-1-WDLSS-12B-25DAY-FL			
	TS-1-WDLSS-12B-25DAY-FL-DUP			
	TS-1-WDLSS-12B-25DAY-FL	High RPD between field duplicate analyses	Arsenic	J-FD
	TS-1-WDLSS-12B-25DAY-FL-DUP			

Notes:
%RSD = percent relative standard deviation
CCB = continuing calibration blank
CCV = continuing calibration verification
ICAL = initial calibration
ICV = initial calibration verification
LCS = laboratory control sample
MB = method blank
MDL = method detection limit
MRL = method reporting limit
OCP = organochlorine insecticide
RL = reporting limit
RPD = relative percent difference
SVOCs = semivolatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure
VOC = volatile organic compound

Qualification Rationale Abbreviations:
BC = Bad calibration curve
CB = Contaminated blank
DL = Value was between MDL and RL
FD = High field duplicate RPD (>30%)
HT = Holding time exceedence
LC = Low CCV recovery
LL = Low laboratory control sample recovery
LV = Low ICV recovery. Analytical result may be biased low.
MB = Method blank contamination
SC = Second column confirmation >40%
UC = Upper calibration level exceeded

APPENDIX C

Analytical Data Reports (CD format)

ATTACHMENT 3

Geotechnical Investigation Report for the
Proposed West Doane Lake IRAM

ATTACHMENT 3

WEST DOANE LAKE
GEOTECHNICAL INVESTIGATION REPORT
RP - PORTLAND SITE

September 11, 2007

Submitted to:

Oregon Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue
Portland, Oregon

Submitted for:

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0-61M-107030/Phase 65/T3

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Appendix C Geophysical Investigation Procedures and Profiles
Appendix D Laboratory Test Program
Appendix E Finite Element Modeling

LIST OF ACRONYMS AND ABBREVIATIONS

AMEC	AMEC Earth & Environmental, Inc.
ASTM	American Society for Testing and Materials
bgs	below ground surface
BNSF	BNSF Railway Company
CPT	cone penetration test
CRBG	Columbia River Basalt Group
Cv	coefficient of consolidation
DEQ	Oregon Department of Environmental Quality
DMT	flat plate dilatometer
EE/CA	Engineering Evaluation/Cost Analysis
ESCO	ESCO Corporation
FEM	Finite Element Modeling
XH:XV	horizontal to vertical
HS	Hardening Soil Model
HSA	hollow stem auger
IRAM	Interim Remedial Action Measure
LA	Lake Area
msl	mean sea level
NDL	North Doane Lake
pcf	pounds per cubic foot
psi	pounds per square inch
RP	Rhône-Poulenc
SP&S	Spokane Portland & Seattle Railway
SPT	standard penetration test
SSC	Soft Soil Creep Model
URS	URS Greiner Woodward-Clyde, Inc.
USACE	United States Army Corps of Engineers
USGS	United States Geologic Survey
WDL	West Doane Lake

1.0 INTRODUCTION

On behalf on SLLI, AMEC Earth & Environmental, Inc. (AMEC) submits this Geotechnical Investigation Report to the Oregon Department of Environmental Quality (DEQ), summarizing the geotechnical investigation and analysis of the proposed West Doane Lake (WDL) interim remedial action measure (IRAM) at the Rhône-Poulenc (RP) Portland Site (Site). Specifically, this report summarizes the effects, if any, the proposed WDL IRAM and the final remediation fill may have on the stability of the adjacent BNSF Railway Company (BNSF) embankment. This report is being submitted as Attachment 3 to the WDL Engineering Evaluation/Cost Analysis (EE/CA).

WDL is located on BNSF property between N.W. St. Helens Road and N.W. Front Avenue in the industrial district of northwest Portland, Oregon. The study area, which includes the entire depression to be affected during WDL IRAM implementation (hereafter referred to as WDL), is bordered by the BNSF embankment to the west, BNSF easement/right-of-way to the north and south, and RP and ESCO Corporation (ESCO) properties to the east-southeast.

SLLI evaluated alternative remedial actions to minimize exposure to contaminant-impacted WDL sediment by potential human and ecological receptors. As part of the proposed WDL IRAM, SLLI plans to solidify, stabilize, and cap the impacted lake sediments in 2008. IRAM implementation, however, does not completely fill the WDL depression. SLLI is currently evaluating additional Site-wide remedies. At some point in the future, the WDL depression will be completely filled to surrounding grades and a final cap placed in the vicinity of WDL. For the purpose of analysis, SLLI assumes that the final Site grading, as part of a larger Site remedy will occur no sooner than 2010.

Report Organization

Section 2.0 of this report describes the purpose and scope of work for the geotechnical investigation. Section 3.0 briefly describes the proposed WDL IRAM. The approach to characterizing subsurface conditions at WDL and a general review of WDL history are presented in Sections 4.0 and 5.0, respectively. Section 6.0 describes the surface conditions at WDL and adjacent properties. The regional geologic setting and the subsurface soil/geology at WDL are presented in Sections 7.0 and 8.0, respectively. The geotechnical evaluation and analysis is presented in Section 9.0, and conclusions and recommendations are presented in Section 10.0.

Figures 1 and 2 depict the WDL location and the WDL site plan, respectively. Geotechnical information is presented on Figures 3 through 20, and aerial photographs illustrating the fill history of Doane Lake are presented on Figure 21.

Field procedures and data, laboratory analysis, and results of the finite element modeling (FEM) are presented in Appendices A through E.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of this geotechnical investigation was to collect field data to provide a basis for geotechnical analysis, calculate anticipated ground deformations, and identify geotechnical concerns related to the construction of the proposed WDL IRAM, and the final Site remedy in the vicinity of WDL.

Geotechnical evaluations were based on data collected from a total of 8 cone penetration test (CPT) soundings, 2 flat plate dilatometer (DMT) soundings, 3 mud-rotary borings, 1 sonic boring, and a geophysical investigation. Several laboratory tests were conducted on relatively undisturbed soil samples collected from subsurface borings. The laboratory testing program included moisture content, dry density, grain size, plasticity, consolidation-related properties, and triaxial strength testing.

Additionally, SLLI conducted a brief reconnaissance of the accessible areas of WDL to evaluate the current conditions. WDL access was limited due to heavy vegetation, steep slopes, and limited access to the BNSF embankment. Site conditions were noted to the extent possible, given the access limitations.

SLLI conducted a settlement analysis of the anticipated conditions following the proposed WDL IRAM and final Site remediation fill based on data collected from Site investigations and geotechnical laboratory testing. The analysis included traditional settlement calculations based on Terzaghi's theory of one-dimensional consolidation and finite element computer modeling based on Modified Cam Clay and Duncan's Hyperbolic material models using the computer program PLAXIS version 7.12.

The scope of work was designed to address the following main objectives:

- Estimate the geometric configuration and structural makeup of the BNSF embankment.
- Obtain information to develop a model of subsurface soil conditions to estimate potential settlement and lateral movement of the BNSF embankment caused by the WDL IRAM fill and final Site remedy grading.
- Recommend a system to monitor potential deformation of the BNSF embankment.
- Develop a plan to follow in case settlement during construction exceeds the estimated magnitude or rate and requires action to maintain rail traffic.

To achieve the aforementioned objectives, the following field analysis and engineering tasks were performed:

- Completed three mud rotary borings and one sonic boring to practical refusal in underlying gravel or rock, and collected disturbed and relatively undisturbed soil samples at selected intervals;
- Advanced eight CPT soundings, to practical refusal on underlying gravel or rock;
- Advanced two DMT soundings, to practical refusal on gravel or rock;
- Conducted 12 seismic refraction lines near WDL to evaluate the condition of fill material near WDL;
- Maintained logs of soil, rock, and groundwater conditions encountered in each exploration and obtained soil samples for laboratory testing;
- Conducted soil index testing consisting of moisture content, dry unit weight, gradation, plasticity, and liquid limit to validate field boring logs;
- Conducted one-dimensional consolidation tests on selected soil samples, following American Society for Testing and Materials (ASTM) D2435, and used the generated data to calculate consolidation settlements, secondary creep, time rate of consolidation, and deformation modulus;
- Conducted six triaxial shear tests, consisting of consolidated undrained and consolidated drained tests on relatively undisturbed soil samples, and used the data to provide total and effective strength parameters for the finite element computer modeling;
- Calculated overall settlement and displacement at critical locations at WDL using both traditional one-dimensional settlement methods and finite element modeling (FEM); and
- Calculated displacement and time rate of displacement at critical locations at WDL based on the soil conditions and properties.

This report presents the results of the WDL subsurface geotechnical exploration and subsequent laboratory testing and engineering analysis. Additionally, this report addresses possible settlement mitigation methods and provides preliminary recommendations for monitoring BNSF embankment settlement during and after construction activities.

3.0 PROPOSED WDL IRAM

The proposed WDL IRAM consists of solidifying and stabilizing lake sediment and constructing a cap over the WDL area (Figure 2). The purpose of the WDL IRAM is to

mitigate pathways for direct human and ecological exposure and to reduce the potential for contaminants to migrate from sediment to groundwater.

Sediment below the waterline of WDL will be solidified and stabilized to a depth of approximately 12 feet or to a depth where the BNSF embankment fill is encountered. WDL sediment will be solidified and stabilized with Portland cement and various admixtures to immobilize contaminants and prevent premature decay of the binding agent. Project specifications require the solidified sediment to have a minimum compressive strength of 50 pounds per square inch (psi). For the analysis addressed in this report, the assumption was made that the stabilized sediment will only achieve a compressive strength of 12.5 psi (i.e., factor of safety = 4).

The cap will be constructed after solidification and stabilization procedures are completed. The cap will consist of an impervious clay layer at least 1 foot thick, a minimum 1-foot-thick sand drainage layer, and a topsoil layer. The thickness of the topsoil will vary depending on the final grade of the cap and the existing depth of the lake.

The total thickness of the WDL IRAM cap will be up to 13 feet. Maximum surface elevations following cap construction will be approximately 34 feet above mean sea level (msl) near the RP/ESCO property boundary. Minimum elevations at the north and south ends of the lake will be approximately 31 feet msl. The surface of the cap will be constructed at a 0.5% slope from the center of WDL downward to the north and south ends of WDL. This slope will direct stormwater to catch basins at either end of the lake. The stormwater will be pumped from the catch basins to the existing water treatment plant at the RP property.

As stated previously, additional fill will be placed across most of the WDL vicinity as part of the final Site remedy. Currently, there are no specific plans indicating the grades of the final remediation fill. Generally, however, additional fill is anticipated to adjust grades in the southern portion of the WDL depression to direct stormwater from south to north, ultimately discharging to the City of Portland storm sewer system. Presumabely, final Site remedy grades will match grades at the north end of WDL, and will grade upward from north to south at a slope of 1%. Approximately 10 feet of fill (in addition to fill added during WDL IRAM implementation) will be required to meet proposed final remediation grades at the south end of the lake.

4.0 APPROACH TO CHARACTERIZING SUBSURFACE CONDITIONS

SLLI's approach to characterizing the subsurface conditions at WDL included a literature review, site reconnaissance, geophysical investigation, DMT and CPT

soundings, and subsurface borings. The following sections outline specific details regarding each of these activities.

4.1 Literature Review

The literature review included previous geotechnical and environmental reports, historical railroad documents, historical photographs, and historical maps of the Site and adjacent properties. AMEC files, and files at the City of Portland, were reviewed for environmental and geotechnical reports addressing RP and neighboring properties. The review included: Northern Pacific Railway Pocket Bridge List specifications for the Willamette Bridge (Northern Pacific Railway, 1961); historical photographs from the Port of Portland; aerial photographs from the United States Army Corps of Engineers (USACE) and the Metro Data Resource Center; photographs taken during previous Site visits; and historical maps published by the Port of Portland and the United States Geologic Survey (USGS). Historical USGS maps included: Linnton 7.5 minute quadrangles (USGS, 1954; USGS; 1961; USGS, 1970; and USGS, 1990); Portland 15 minute quadrangles (USGS, 1905; USGS, 1962); Portland 7.5 minute quadrangles (USGS, 1954; USGS, 1961); and Hillsboro 15 minute quadrangles (USGS, 1915; USGS, 1918; and USGS, 1961).

4.2 Site Reconnaissance

SLLI conducted a brief reconnaissance of the WDL vicinity on March 19, 2006. The purpose of the reconnaissance was to evaluate and note surface conditions, including grades and slopes, vegetation, fills, WDL water levels, and to the extent possible, the BNSF embankment.

4.3 Subsurface Investigation

SLLI's subsurface investigation conducted in March 2006 included: 2 DMT soundings, 8 CPT soundings, 1 sonic boring, and 3 mud-rotary borings. In addition, SLLI reviewed CPT soundings and soil borings from previous investigations near WDL conducted by SLLI and others. Information regarding each of these previous borings and soundings is presented in Table 4.1.4. The locations of the borings and soundings used in the subsurface models are presented on Figures 2 through 13, 19, and 20. Descriptions of the subsurface exploration methods and procedures used in the subsurface explorations are presented in Appendices A and B.

4.4 Geophysical Investigation

SLLI conducted a geophysical investigation in the vicinity of WDL utilizing both seismic refraction and seismic micro-tremor techniques in February/March 2006. Both 120-

and 300-foot long arrays were used to evaluate the fill on the RP and ESCO properties, and to a limited extent, the BNSF embankment. Seismic array profile results and a detailed discussion of the methods used in the geophysical investigation are included in Appendix C.

Table 4.1.4: Summary of Previous Subsurface Borings and Soundings

Boring/ Sounding Designation	Exploration Method	Date Completed	Completed By	Completion Depth (bgs in feet)
BTB-4A-84	HSA	5/19/93	EMCON	84
BTB-5-20	Cable Tool	2/2/95	EMCON	30
C-01	Direct Push	7/15/99	URS	67
NB-13	Direct Push	12/23/99	AMEC	60
NB-14	Direct Push	12/19/03	AMEC	51
NB-16	Direct Push	1/16/04	AMEC	50
NB-17	Direct Push	1/13/04	AMEC	55
NB-18	Direct Push	1/14/04	AMEC	63
NB-19	Direct Push	1/21/04	AMEC	53
RP-04-41	Air Rotary	2/22/00	URS	42
W-08-74	Air Rotary	1/20/00	URS	75
W-09-116	Air Rotary	1/21/00	URS	117
W-11-B	Unknown	1986	Dames & Moore	122
WDL-102-S	Direct Push	8/14/02	AMEC	11
WDL-103-S	Direct Push	8/15/02	AMEC	9.5
WDL-104-S	Direct Push	8/15/02	AMEC	7.5
CPT-001-URS	CPT	8/13/99	URS	126
CPT-002-URS	CPT	8/10/99	URS	75
CPT-003-URS	CPT	8/13/99	URS	68
CPT-004-URS	CPT	8/13/99	URS	55
CPT-005-URS	CPT	8/13/99	URS	47

HSA - Hollow Stem Auger
URS - URS Greiner Woodward-Clyde
bgs - below ground surface

4.5 Laboratory Test Program

Disturbed and relatively undisturbed samples were obtained during SLLI's March 2006 subsurface investigation from the subsurface borings using split-spoon and Shelby

tube piston samplers, respectively. Disturbed samples were transported to AMEC's soil laboratory in Portland, Oregon for visual classification. Relatively undisturbed samples were packaged and transported to Soil Technology, Inc. in Bainbridge Island, Washington, and tested to evaluate index properties, compressibility, and strength parameters. A comprehensive description and the results of the geotechnical laboratory testing program are presented in Appendix D.

5.0 SITE INFORMATION

5.1 Previous Site Development

WDL is situated in an area formerly occupied by Doane Lake. The former shoreline of Doane Lake encompassed much of the land now occupied by WDL, North Doane Lake (NDL), and portions of the RP, Gould, Schnitzer Investment Corporation, Siltronic Corporation, and ESCO properties, and BNSF embankment.

The earliest known development in the area was the construction of a new railway and an associated bridge across the Willamette River. Construction of the bridge began around 1906. Northern Pacific Railway records indicate the bridge, and presumably the railway, were completed by the end of 1908 (Northern Pacific Railway, 1961).

Between 1906 and 1915, the Spokane Portland & Seattle Railway (SP&S) constructed what is now referred to as the BNSF embankment, which bisected Doane Lake. The remnant of Doane Lake to the west was named NDL and the portion of the lake to the east retained the name Doane Lake (USGS, 1915).

Photographs from 1906 taken in the area of Doane Lake indicate the first crossing of the lake was a timber pile supported trestle. However, the exact location of the first crossing is unknown. SLLI speculates that the trestle was built to provide construction access to the Willamette Bridge; but, the actual purpose and the alignment of the trestle is not known. If the trestle was constructed to support the railway, the trestle likely shared the same alignment as the existing BNSF embankment. However, if the trestle was built to provide construction access to the Willamette Bridge, it is likely that the trestle was a temporary structure along a separate alignment, which would have allowed the existing embankment and the Willamette Bridge to be built simultaneously.

If the trestle shared the same alignment with the existing embankment, the timber piling may have been buried in place. While it would be very difficult to verify its presence, piling would provide a great deal of support and stability to the core of the embankment. However, it is nearly impossible to determine if any of the piles had been removed before the construction of the BNSF embankment. Further, it would be

extremely difficult to evaluate the capacity of the piles without removing at least some of the embankment fill.

Industrialization of the Doane Lake area began in the 1930s, with the construction of some facilities on the nearby properties. In the late 1940s, significant amounts of fill material were being added to the lake. Fill activities continued gradually through the 1950s and 1960s, and accelerated in the 1970s. Around 1971, fill material bisected Doane Lake for the second time, creating the WDL remnant to the west and East Doane Lake remnant to the east. Excluding minor modifications in the early 1980s, WDL had reached its current configuration by the end of 1977.

5.2 Aerial Photograph Review

A review of aerial photographs compiled by the USACE and Metro Data Resource Center was conducted to evaluate RP Site development. Figure 21 presents some selected photographs showing the most significant changes to topographic features near WDL over the past 70 years.

5.3 Previous Site Investigations

Numerous investigations have been conducted at or near WDL by SLLI and others. SLLI's review included evaluating data from environmental and geotechnical reports for WDL and the rest of the Site, as well as available geotechnical reports of nearby properties on file with the City of Portland Office of Planning and Development Review. The following sections describe the reports reviewed during this study.

5.4 On-Site Environmental Investigations

Environmental reports were reviewed for relevant data, including boring logs, CPT logs, grain size analyses, dry unit weight (bulk density), and moisture content test results. Reports also were reviewed for information regarding previous RP Site activity, and engineering recommendations and specifications. Previous environmental reports containing information pertinent to this geotechnical investigation are included in the References section of this report.

5.5 Geotechnical Investigations

The WDL geotechnical investigation included a review of previous geotechnical data from reports from the WDL vicinity, the RP Site, and nearby properties. The review identified three data records that address geotechnical conditions at WDL, including 12 CPT sounding logs and data (provided by Gregg Drilling and Testing, Inc.) completed by URS Greiner Woodward Clyde in 1999, an investigation report for a combined

geotechnical and environmental evaluation of the WDL area, and an associated report of factual data (Dames & Moore, 1981a and Dames & Moore, 1981b). SLLI reviewed available off-site geotechnical data and reports of nearby properties on file with the City of Portland Office of Planning and Development Review.

Additionally, two geotechnical reports completed by Dames & Moore in 1981, including a factual report (Dames & Moore, 1981a) and an investigation report (Dames & Moore, 1981b) were reviewed. Dames & Moore's investigation report indicated that the two following geotechnical reports had been completed for properties near WDL:

- Shannon & Wilson, 1967. Report on Willbridge Wye Connection, Portland, Oregon, for SP&S Railway. Burlington Northern Railway.
- An unnamed geotechnical investigation report for a tank farm located north of the SP&S embankment completed by an unknown author in 1976.

Attempts to obtain either of these reports were unsuccessful.

The review also included a number of geotechnical reports for properties with similar geologic settings located within approximately 2 miles of WDL. These reports are included in the References section of this report. Relevant information from the reports, including soil index parameters, consolidation data, and surcharge settlement rates was compared to the soil data collected from the subsurface explorations and laboratory testing programs. Geotechnical data from these reports were used in concert with data from the laboratory testing program to develop WDL-specific relationships between consolidation properties and soil index properties.

6.0 SURFACE CONDITIONS

6.1 West Doane Lake

WDL has a surface area of approximately 1 acre and during wet weather months, a maximum depth of about 4 feet. During summer months, much of the northern portion of the lake dries out, and the depth of the remainder of the lake reduces to approximately 1 foot or less.

6.2 RP Property

The portion of the RP property known as the Lake Area (LA) is located to the east, south, and southeast of WDL. Fill is visible at the surface over most of the LA. At the surface, the fill is comprised of silt with varying amounts of sand and gravel with occasional construction debris. A topographical depression is located south of WDL. The elevation at the base of this depression is approximately 30 feet msl, based on

available topographic maps. The area east of WDL is graded approximately flat, to an elevation of about 34 feet msl. The bank of WDL on the RP property is approximately 5 to 9 feet high and has a slope of approximately 2 horizontal to 1 vertical (2H:1V). Boulder sized blocks of concrete debris are visible in the bank of WDL, just above the water surface. The LA is vegetated primarily with sparse grass, with occasional blackberry briers near WDL.

6.3 ESCO Property

The ESCO property is located adjacent to the north half of WDL. Similar to the LA, the ESCO property is almost entirely comprised of filled areas of Doane Lake. This property has been used as a landfill for foundry sands. The landfill was decommissioned and capped in the late 1970s. The surface of the property was graded relatively flat upon completion of the landfill cap.

The elevation of the ESCO landfill cap adjacent to the eastern shore of WDL ranges from approximately 34 feet msl at the south to 38 feet msl at the north. The north end of WDL is situated near the northern ESCO property boundary in a topographical depression between the landfill cap and the BNSF embankment. The elevation of the crest of the northern bank of WDL is approximately 34 feet msl, which is approximately 4 feet lower than the adjacent landfill cap. The bank of WDL on the ESCO property has an approximate slope of 2H:1V. The ESCO property is vegetated with sparse grass and brush, with occasional blackberry briers adjacent to WDL.

6.4 BNSF Embankment

The BNSF embankment is located along the western shore of WDL. The embankment is positioned on a large radius turn of the railway that is generally oriented in a north – south direction. The embankment ranges from about 56 feet msl at the crest to 21 feet msl at the toe of the slope. The sides of the embankment are steep. The east side grades downward at an average slope of approximately 1.5H:1V, with a maximum slope exceeding 1.2H:1V.

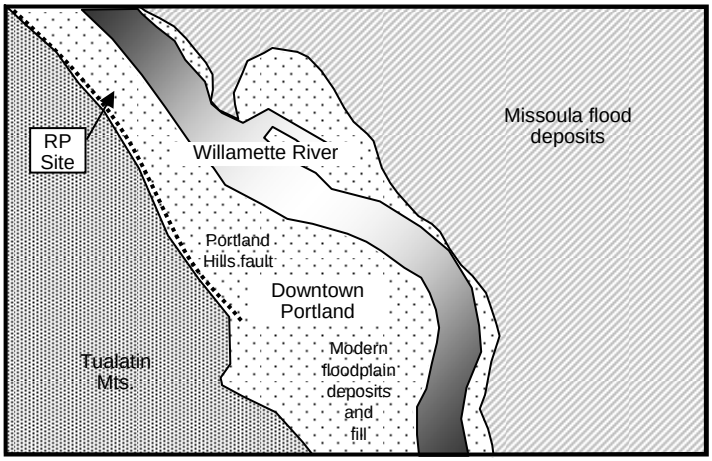
Currently, the upper portions of the BNSF embankment are vegetated with sparse grass, and the lower portions of the embankment slope are vegetated with dense blackberry briers. Cracks in the ground surface are visible in sparsely vegetated portions of the embankment. The largest visible cracks in the embankment appear to be located adjacent to the RP-ESCO property boundary. The surface cracks in this area were estimated to have a vertical offset of approximately 6 to 8 inches at the time of the March 19, 2006 site reconnaissance. Horizontal displacement of the cracks could not be estimated from the low vantage point.

7.0 GEOLOGIC SETTING

The following sections generally describe the regional and local geology and subsurface conditions in the vicinity of WDL. Soil profiles, properties, and descriptions are based on boring logs, as presented in Appendix A; research; and analysis of geotechnical samples collected during the investigation and described herein. These descriptions, as interpreted from a geotechnical perspective, may vary from geologic interpretations for the remedial investigation at the Site, which may focus on contaminant fate and transport, remedial alternative feasibility, or other objectives.

7.1 Regional Geology

WDL is situated on the floodplain of the Willamette River at the foot of the Tualatin Mountains, which form the pronounced uplands west of Portland (see Sketch Map). Volcanic activity, faulting, folding, earthquakes, and catastrophic flooding have influenced regional geology. About 28 million years ago, east-directed pressures caused by colliding tectonic plates uplifted the marine sedimentary bedrock of the Tualatin Mountains from below sea level. Subsequently, a series of lavas of middle Miocene age (about 16 million years ago) flowed down the ancestral Columbia River into the region (Beeson, et al, 1991). These lava flows (Columbia River Basalts) were tilted, deeply eroded, and subsequently overlain by several hundred feet of siltstone, sandstone, and cobble conglomerate of the Troutdale Formation (Miocene to Pliocene age - approximately 10 to 1.7 million years ago), which was deposited by a meandering river system. Localized eruptions spread additional basalt flows (Boring Lavas) across the landscape, which was then overlain by more river-deposited sediments.



Sketch Map Showing the Geological Setting.

Continued tectonic pressures uplifted the Tualatin Mountains, faulting and folding the strata into a northwest-trending anticline—an elongated fold having the oldest rocks in the center. The eastern flank is steep and linear, and may be cut by a northwest-striking fault (Portland Hills fault) that has been interpreted to have both right lateral and vertical (east side down) separation of a few tens of feet. This fault may be part of a larger, down-dropped, "pull apart" structure along which the Willamette River lies (Beeson, et al, 1991).

Catastrophic floods, occurring when ice dams on Lake Missoula repeatedly failed 13,000 to 15,000 years ago, sent raging torrents of water down the Columbia River at least 50 times, leaving in their wake the coarse- to fine-grained "Missoula flood deposits" that form the bluffs east of the Willamette River (Trimble, 1963). Water from these floods is believed to have been over 600 feet deep in the Portland area. The Missoula flood deposits were presumably wide spread on the west side of the Willamette River, but have largely been eroded away.

In the last few thousand years, erosion and major landslides in the Tualatin Mountains delivered enormous volumes of detritus to the Willamette River, whose flood waters mixed the material with alluvial sediment and deposited it on the broad floodplain. During the last 150 years of human activity in the Portland area, the floodplain has been extensively excavated and filled.

7.2 Site Geology

The vicinity of WDL has been covered by fill soils and the BNSF embankment. These manmade fills have been constructed over the last approximately 100 years of area during industrial development. Quaternary alluvial flood deposits of the Willamette River and Doane Lake sediments underlie the fill soils. The Quaternary alluvium varies from fine-grained soils, such as silts and clays, which are more prevalent at shallow depths, to course grained soils, including sands and gravels at greater depths. The alluvial deposits are underlain by basalt bedrock of the Columbia River Basalt Group (CRBG).

WDL is located in the immediate vicinity of the West Hills Fault (USGS, 2006). Given the accuracy of the fault map, this fault may intersect WDL or the vicinity. However, whether or not this fault has been active in the Quaternary is somewhat controversial. While there are no fault scarps or known displacements of the overlying Quaternary deposits along the fault trace, some geophysical data and geomorphic conditions indicate small Quaternary movements (Beeson, et al, 1991).

8.0 SUBSURFACE CONDITIONS

The following sections generally describe the regional and local geology and subsurface conditions in the vicinity of WDL. Soil profiles, properties, and descriptions are based on boring logs, as presented in Appendix A; research; and analysis of geotechnical samples collected during the investigation and described herein. These descriptions, as interpreted from a geotechnical perspective, may vary from geologic interpretations for the remedial investigation at the Site.

8.1 General

Five main geologic units have been identified in the vicinity of WDL for the purpose of this geotechnical evaluation, based on their grain size and composition. From oldest to youngest (deepest to shallowest), these are basalt; sandy gravel; sand, silt and clay alluvium; BNSF embankment fill; and LA fill. Results of laboratory testing conducted on these materials are presented in the boring logs (Appendix A) and in the Laboratory Test Program results (Appendix D).

8.2 Basalt Bedrock

Basalt bedrock underlies the Site, including WDL, although it was not encountered in all borings. The basalt is at least 700 feet thick and consists of a series of lava flows separated by discontinuous layers of interflow tuff and sediment. In the vicinity of WDL, the basalt dips northward toward the Willamette River. Its upper contact is topographically irregular.

8.3 Sandy Gravel

Overlying the basalt are sedimentary floodplain deposits similar to those being deposited along the modern Willamette River. The oldest unit is coarse sandy gravel. Based on its clast composition and grain size distribution, the gravel was probably deposited in an ancient river channel. The gravel is up to 20 feet thick in places across the RP Site, but absent in others. Overall, it is thickest above localized depressions on the basalt surface (AMEC, 2003). Most of the clasts are rounded to sub-rounded, and are composed of basalt likely derived from regional bedrock, or from landslide detritus. However, 15 to 20% of the clasts are quartz, quartzite, and monzonite whose sources lie east of WDL.

8.4 Sand, Silt and Clay Alluvium

Overlying the gravel are layers of sand, silt, and clay alluvium forming discontinuous and interfingering beds, which altogether range from 25 to over 100 feet in thickness.

These deposits were likely laid down during ancient river flood events when the water spilled out of the channel and carried sand, silt, and clay across the floodplain. Although floodplains tend to be fairly flat and planar, they can have numerous depressions, including abandoned channels and ponds, which collect sediment. When the water recedes and its velocity decreases, sand settles out closest to the river. When the remaining water either evaporates or percolates into the ground, silt and clay are deposited on top of the sand, producing a characteristic upward-fining profile from each flood event. Successive floods scour new depressions into the floodplain through the underlying deposits, creating a vertically and laterally discontinuous arrangement of sedimentary horizons such as those beneath WDL.

8.5 BNSF Embankment Fill

The composition of the BNSF embankment fill is unknown; SLLI has neither sampled nor tested it. However, based on the embankment geometry and exposed soils, it is presumed that the embankment material is a mixture of sand, silt, and possibly gravel. For the purpose of this study, the embankment fill is assumed to have a dry unit weight of 120 pounds per cubic foot (pcf), an effective angle of internal friction of 42 degrees, and a moisture content of 15%. These assumed soil parameters have been used primarily to represent existing pre-consolidation stress below the BNSF embankment. Moderate differences in these values would not significantly affect the settlement analysis of underlying and adjacent soils, which were explored during the subsurface evaluation.

8.6 LA Fill

Area-wide industrial activities included filling of Doane Lake, as discussed in Section 5.2. Most of the fill is silty sand and sandy silt having low plasticity, but minor cobble and gravel lenses, organic matter, and assorted construction debris are also present. Based on field observations, variable standard penetration test (SPT) results, and historical photographs, it is likely that the fill was not placed and compacted as structural fill.

8.7 Groundwater Occurrence

Groundwater elevations were estimated in CPT soundings using pore water pressure dissipation tests. Groundwater elevations from soil borings were not recorded because they cannot be determined accurately in mud-rotary borings. Shallow pore water pressure dissipation tests indicate groundwater levels range from approximately 8 to 18 feet bgs, corresponding to an elevation of 20 to 30 feet msl. At the time of the geotechnical investigation, monitoring well data indicate that the groundwater elevation

at RP-04-48 was 24.75 feet msl. A groundwater elevation of 25 feet msl has been assumed for the purpose of this study.

9.0 GEOTECHNICAL ANALYSES AND EVALUATION

9.1 General

Deformation analysis was performed on the proposed WDL cap and the adjacent properties based on the data obtained from characterization activities. The study area was divided into five areas (Areas A through E as shown on Figure 2). A subsurface soil model was developed for each of the five areas using data acquired from the WDL exploration program, the laboratory testing program, and data from previous investigations. Each subsurface soil model was analyzed using both traditional settlement analysis based on Terzaghi's theory of one dimensional consolidation, and FEM using the computer program PLAXIS version 7.12. A brief study was conducted on the seismic hazards that could potentially impact the BNSF embankment and how the proposed cap will affect these risks. A detailed description of the analysis and evaluation of the study area is presented below.

9.2 Subsurface Soil Model

The five study areas were selected based on boring locations, spatial split, subsurface conditions, and projected post construction conditions (Figure 2). Information was compiled from the current exploration program, previous boring logs, and previous CPT sounding logs to develop typical cross sections for each area (Figures 4 through 13). Using the cross sections, a typical soil profile for each of the five areas was developed for use in the deformation calculations.

Figures 9 though 13 indicate the typical soil profiles including soil layer thickness, groundwater elevation, and the relevant physical and strength characteristics of the soil. When possible, soil properties were based directly on test results. When direct laboratory data were not available, soil properties were based on either published values or site-specific correlations developed as part of this investigation. When no laboratory, published data, or correlations were available, soil properties were estimated using engineering judgment.

The subsurface soil model assumes that soil horizons are relatively continuous, and that soil conditions below WDL and the BNSF embankment have similar strength and physical characteristics. The subsurface soil model assumes that groundwater levels will remain relatively constant over the design life of the proposed cap and the BNSF embankment. The BNSF embankment is assumed to extend below the waterline of WDL, at a slope of 1.5H:1V, to an elevation of 21 feet msl. Laboratory tests indicate

that native soil underlying WDL is normally consolidated or slightly over consolidated. Analysis of the subsurface soil model assumed that all soils are normally consolidated.

Both the traditional settlement analysis and the FEM analysis account for loads resulting from four major construction events:

- The construction of the BNSF embankment;
- The placement of fill on the LA and ESCO property (both fills are similar in depth and time of placement);
- The WDL IRAM cap construction; and
- The final remediation fill construction.

Previous loads due the construction of the BNSF embankment and the adjacent fill have been incorporated into the analysis to determine if soils are under-consolidated, to quantify the amount of secondary creep settlement, and to account for any two-dimensional strain-hardening effects.

Effects of each load were evaluated at three points on each typical cross section:

- Below the crest of the BNSF embankment slope at the interface of the fill and native soil;
- At the toe of the embankment slope where the embankment fill is assumed to meet the base of WDL; and
- At the center of WDL.

9.3 Settlement Analysis and Evaluation

9.3.1 Settlement Mechanisms

Soil settlements can occur from multiple mechanisms within a soil mass. For the fills associated with the proposed WDL IRAM, anticipated settlements within the soft alluvial soil will result from three major mechanisms: immediate or distortion settlements, consolidation settlements, and secondary creep or secondary consolidation settlements (Holtz and Kovacs, 1981).

Fine-grained saturated soil including clay, silt, and silty sand comprise the majority of the subsurface soil at WDL. These soils are most susceptible to primary consolidation settlements. Significant deformations can also occur in the form of secondary creep settlements in some fine-grained soils. Immediate settlements in saturated fine-grained soils are typically small in comparison to consolidation and secondary creep settlements. Calculations indicate that immediate settlements are relatively

insignificant with respect to other forms of settlement at WDL. Settlements presented in the following section for one-dimensional settlement analysis do not include deformations due to immediate settlement.

9.3.2 One-Dimensional Settlement Analysis

Several assumptions and judgments were made during the one-dimensional settlement analysis of WDL:

- The subsurface exploration program did not include explorations within the footprint of WDL or on the BNSF embankment. Soil properties and soil unit thickness in these areas were estimated, based on soil properties at the locations of the explorations, published values, and engineering judgment.
- All soil units underlying WDL are normally consolidated.
- Stress distributions induced by loads at the ground surface were calculated following Newmark's integration of Boussinesq's equation. Boussinesq's equation assumes that stresses are distributed through a homogeneous, elastic, perfectly plastic, semi-infinite half space.
- Consolidation indices were derived from a relationship with dry unit weight and void ratio, based on 31 consolidation tests conducted on Quaternary alluvium obtained at or near WDL.
- The coefficient of consolidation (Cv) values used in the calculations of secondary creep were based on laboratory testing and previous hydrological studies in the vicinity of WDL (AMEC, 2003).
- Time rates of consolidation settlement calculations assume the soil profile is double-drained.

The one-dimensional analysis indicates that settlement due to the existing loads of the BNSF embankment and the adjacent fill is effectively complete. Further, secondary creep due to these loads is calculated to be insignificant (Figures 14 through 18).

The one-dimensional analysis indicates maximum settlements below the crest of the BNSF embankment of 1.9 inches following the IRAM cap construction and 1 inch following the final remediation fill construction. Maximum cumulative settlements due to both construction events are calculated to be less than 3 inches (Figure 16 and 17). In general, maximum settlement will occur in Areas C and D as defined on Figure 2. Based on calculations, maximum differential settlements will be approximately ½-inch over a span of 100 feet, which will occur following the WDL IRAM cap construction. The calculated maximum settlements below the crest of the embankment, at the toe of the embankment, and at the center of the lake are summarized in Table 9.3.2. Results

of the one-dimensional settlement analysis, including time rates of consolidation, are presented on Figures 14 through 20.

Table 9.3.2: Maximum Settlements Based on One-Dimensional Settlement Calculations

	IRAM Fill/Cap		Final Remediation Fill		Cumulative IRAM Fill/Cap and Final Remediation Fill	
	Maximum Settlement (Inches)	**Area of Maximum Settlement***	**Maximum Settlement (Inches)**	**Area of Maximum Settlement***	**Maximum Settlement (Inches)**	**Area of Maximum Settlement***
Crest of BNSF Embankment	1.9	C	1.0	D	2.9	C
Toe of BNSF Embankment	17.2	C	7.4	D	20.8	C
Center of Lake	31.0	C	9.8	D	36.0	C

* Areas defined as shown on Figure 2.

9.3.3 Finite Element Deformation Analysis

FEM analyses were performed using the subsurface soil models described in Section 9.2 and the soil parameters presented on Figures 14 through 18. The FEM calculations were made using the computer program PLAXIS version 7.2. FEM analysis included the Soft Soil Creep Model (SSC) and the Hardening Soil Model (HS) as outlined in the PLAXIS Material Models Manual (Brinkgreve and Vermeer, Eds., 1998; Wood, 1998).

The SSC and HS material models used in the PLAXIS software are based on the Modified Cam-Clay and the Duncan's Hyperbolic soil models, respectively. These material models assume elastic-plastic soil conditions, similar to a more simplistic Mohr-Coulomb material model. Elastic-plastic based models imply a soil will undergo reversible strains until a defined limiting state of stress is reached, as described by Hooke's Law. If the limiting state of stress is never exceeded, the soil will return to its pre-existing form once the stresses return to the initial state. Once the limiting state of stress is exceeded, the soil will begin to undergo permanent deformation.

The SSC material model adds a level of complexity to the simple Mohr-Coulomb model by accounting for long-term creep effects and strain-hardening relationships of soil. The SSC material model is most successfully used to model the behavior of compressible soils (Wood, 1998), such as the soil underlying WDL. Native soil underlying WDL has been modeled as a SSC material.

The HS material model varies from a simple Mohr-Coulomb model by accounting for stress state dependence on the stiffness moduli of the soil (Brinkgreve and Vermeer, Eds., 1998). The HS material model is appropriate for modeling compressible soil units that are not susceptible to large secondary creep settlements. The BNSF embankment and the RP fill have been modeled as a HS material.

FEM analysis agrees with the one-dimensional analysis, and indicates that the settlement due to the existing loads is effectively complete. Secondary creep due to existing loads is calculated to be insignificant (Figures 14 through 18).

The FEM analyses indicate that maximum settlements below the crest of the BNSF embankment will be 2.3 inches following the IRAM cap and 2.6 inches following the final remediation fill. Maximum cumulative settlement due to the WDL IRAM fill and the final remediation fill will be approximately 5 inches (Figures 16 and 17). In general, maximum settlements are expected within Areas C and D, as defined on Figure 2. The FEM analyses indicate that maximum differential settlements below the crest of the BNSF embankment will be about 1 inch of settlement over a span of 100 feet, which will occur following the final remediation fill. Table 9.3.3 summarizes the maximum calculated settlements due to both the WDL IRAM fill and the final remediation fill, below the crest of the BNSF embankment, at the toe of the BNSF embankment, and at the center of WDL. Results of the FEM calculations, including time rates of deformations, are presented on Figures 14 through 20.

Table 9.3.3: Maximum Settlements Based on FEM Calculations

	IRAM Fill/Cap		**Final Remediation Fill**		**Cumulative IRAM Fill/Cap and Final Remediation Fill**	
	Maximum Settlement (Inches)	**Area of Maximum Settlement***	**Maximum Settlement (Inches)**	**Area of Maximum Settlement***	**Maximum Settlement (Inches)**	**Area of Maximum Settlement***
Crest of BNSF Embankment	2.3	C	2.6	C	4.9	C
Toe of BNSF Embankment	6.1	C	5.6	D	10.6	C
Center of Lake	8.5	C	7.6	D	14.1	D

* Areas defined as shown on Figure 2.

9.3.4 Time Rate of Consolidation Settlement

The time rate of settlement is dependent on the permeability of the subsurface soil. Fine-gained soils, like those underlying WDL, generally have low coefficients of permeability and consolidate over time. The consolidation rates are also dependent

on the thickness of the deposit. Consolidation settlements occur more rapidly with decreasing thickness of a soil layer.

Soft alluvial soils below WDL are interbedded with thin lenses of highly permeable clean sand in some locations. The horizontal continuity of the clean sand lenses could not be determined from the subsurface explorations. It is assumed that the continuity of the sand lenses varies beneath WDL.

Consolidation settlements will occur faster in areas with clean, horizontally continuous sand lenses, and where the compressible alluvial soil units are thinner. Slower consolidation rates will be observed in areas without clean sand lenses, in areas where the sand lenses are not continuous, and where the compressible alluvial soil is thickest. It is assumed that consolidation rates will vary across WDL.

Time rate of settlement analysis assumes that saturated soils are double-drained and that the soil's permeability is homogeneous within a given soil unit. Given these assumptions, the calculations show 90% of consolidation settlement due to either the WDL IRAM fill or the final remediation fill will occur over a period of 15 days to about 21 months. The fastest consolidation settlements will occur in Area E and the slowest rates will occur in Area C. Calculated time rates of consolidation are shown on Figures 14 through 18.

9.4 Seismic Considerations

The project is currently susceptible to some seismically-induced geologic hazards such as seismically-induced slope instability, liquefaction settlement, and lateral spreading. The proposed WDL IRAM and final remediation fill will not increase the susceptibility of WDL to these phenomena. These hazards are described in detail in the following sections.

9.4.1 Seismic Slope Stability

The slopes of the BNSF embankment are steep, 1.5H:1V on average. Soil exposed on the sides of the embankment appears to be sandy or silty gravel that is distinctly different from the ballast rock used to support track structures. Surface cracks are present near the crest of the embankment. Horizontal accelerations imposed by an earthquake may exacerbate these cracks or cause slope failures within the embankment.

During construction of the proposed cap, fill will be placed at the toe of the BNSF embankment. While the weight of the fill will cause some settlement, it will also act as a stabilizing buttress at the toe of the embankment slope. FEM calculations indicate

that the WDL IRAM fills will increase the overall stability of the eastern slope of the BNSF embankment.

9.4.2 Liquefaction-Induced Settlement and Lateral Spreading

Liquefaction is a process where soils undergo significant loss of strength and stiffness when subjected to large, cyclic ground motions or vibrations associated with earthquakes. Cyclic loading of saturated, non-cohesive soils leads to a build up of excess pore water pressure as a result of soil particles being forced into a denser arrangement. Loads are transferred from the soil grains to the pore water under saturated, undrained conditions during earthquake shaking, consequently reducing the shear strength of the soil.

Saturated, loose, granular soils without cohesive fines such as gravels, sands, and silts are particularly susceptible to liquefaction. Research suggests that the major factors affecting the potential for soil liquefaction are: density; amplitude of loading; confining pressure; past stress history; age of soil deposit; the size, shape and gradation of particles; and the fabric of the soil. Liquefaction induced ground settlement and lateral spreading can cause extensive damage to above ground structures, foundations, embankments, and pipelines during major earthquakes.

The combination of the proximity of the Portland Hills Fault and other potential seismic sources, shallow groundwater conditions, and weak alluvial deposits composed of predominately sandy and silty soils, results in a significant potential for liquefaction at WDL. Liquefaction-induced hazards at WDL include post-earthquake settlements and lateral spreading of the BNSF embankment. The proposed WDL IRAM and final remediation fill will have a negligible mitigating impact on liquefaction-induced settlement. However, the WDL IRAM and the final remediation fill will reduce the potential of liquefaction-induced lateral deformation of the BNSF embankment toward WDL.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 General

Based on the results of the geotechnical investigation and analysis of WDL, the proposed sediment stabilization and the proposed construction will cause relatively insignificant settlements beneath the crest of the BNSF embankment. Somewhat greater settlements are anticipated at the toe of the BNSF embankment and the center of WDL. These settlements are expected following newly placed fill. Any potential settlement of the adjacent railway can be mitigated through routine maintenance; however, it is recommend that a settlement monitoring program be implemented prior

to, during, and following construction. Further conclusions and recommendations are presented in the following sections.

10.2 BNSF Embankment

FEM calculations indicate that maximum settlements below the crest of the BNSF embankment will be 2.3 inches following the IRAM implementation, 2.6 inches following the final remediation fill, and 4.9 inches for both construction events. One dimensional calculations predict smaller maximum settlements of 2.9 inches for both construction events. Most of the settlement was calculated to occur over a period ranging from about 15 days to 21 months; however, settlements may occur at a faster rate if horizons of clean sand are present to facilitate drainage. This magnitude and rate of settlement can be mitigated though periodic railway maintenance and track re-surfacing.

As described in Sections 9.3.2 and 9.3.3, moderate settlements are anticipated to be observed at the toe of the BNSF embankment. One-dimensional settlement calculations indicate maximum settlements up to 21 inches, while FEM analysis indicates that the settlement will be closer to 10 inches. The large discrepancy between the two calculations can be attributed to lateral strain hardening effects of the subsurface soil due to loads imposed by the BNSF embankment and the adjacent fill.

FEM calculations indicate that the proposed construction will help stabilize the embankment slope; however, some minor sloughing and raveling of the slope may occur following construction.

Cracks are visible from the eastern bank of WDL where the view of the embankment was unobstructed by vegetation. Tension cracks near the upper third of the embankment appear extensive, especially upslope from the midpoint of the lake. Data from previous work at WDL indicate that these embankment cracks have been present for over a decade.

Predicted settlements vary significantly between the crest and the toe of the BNSF embankment. Differential settlement between these locations may cause additional cracking or may exacerbate the existing cracks in the embankment. Cracks may become more extensive during construction due to differential settlement between the crest and toe of the embankment. This cracking may lead to minor sloughing and raveling of the upper portions of the embankment during or after construction. These occurrences are expected to be manageable with routine maintenance of the embankment. Analysis indicates the proposed construction will act as a buttress, and will increase the global stability of the BNSF embankment slope.

While it is believed to be an unlikely scenario, the observed embankment cracks may be the result of differential settlement. Early photographs of Doane Lake indicate that timber piling may be present in the embankment. If the piling is present, differential settlement would likely occur between the center of the embankment (which would be partially supported by the piling) and the embankment slope (which would be founded directly on the native alluvium). If this scenario exists, the proposed WDL IRAM and final remediation fill could cause additional differential settlement; however, significant settlement of the railway would not be expected due to the support of the piling. For the purpose of this study, it has been assumed that any timber piling that may have been present along the alignment of the embankment was removed prior to placing the embankment fill. Therefore, the predicted settlement at the crest may overestimate the actual future settlement.

Due to the limited amount of information on the BNSF embankment, calculations and estimates of embankment deformation have been based on assumed soil properties and slope conditions. Further evaluation of the embankment may allow SLLI to refine these qualitative estimates. SLLI recommends employing a settlement monitoring program to observe changes in embankment conditions due to the proposed construction. Further recommendations regarding a settlement monitoring program are presented in Section 10.3.

10.3 Settlement Monitoring Program

A settlement monitoring program should be established to determine BNSF embankment settlement rates and magnitudes. Predetermined settlement limits should be established and agreed upon, by both BNSF and SLLI. At a minimum, settlement limits should be established based on the following limit parameters:

- Maintenance Limit: This limit would indicate that track maintenance should be performed to correct for railway deformations due to total settlement, differential settlement, or rotation of the track.
- Restricted Passage Limit: This limit would indicate that embankment deformations have exceeded limits prescribed by the maintenance limit, and that reduced speeds and/or loads are required to reduce the risk of hazards to railway traffic or the track structure.
- Stop Traffic Limit: This limit would prescribe an amount of deformation that would require all railway traffic to be suspended until maintenance or repair can be performed to allow for safe passage of railway traffic.

SLLI does not underestimate the serious nature of the latter two limits, particularly given the main line and Amtrak status of this track. For this reason, each of the limits

established will require accurate and timely settlement monitoring, rapid analysis, and prompt distribution of settlement monitoring data. Settlement monitoring can be implemented through an automated track monitoring system, rather than a monitoring system based on traditional survey methods. Automated track monitoring systems typically give more continuous, accurate, and quickly reduced data readings, as compared to the data collected by traditional survey methods. The two monitoring systems are discussed below.

Automated track monitoring systems can be used to provide nearly continuous monitoring of embankment settlement. Settlement data can be uploaded to a project server using a cell phone modem. Available software can be used to reduce the data and send alerts by email, or to a pager, if settlements exceed specified limits. The project server can be set up to allow secure access of the settlement data to pertinent parties over the internet.

A traditional survey track monitoring system could be used to monitor embankment deformation either as a stand alone monitoring system or in concert with a track monitoring system. Between 10 and 20 survey monitoring points would need to be established along the railway and the embankment slope. Survey point monitoring should be conducted per the following schedule, at a minimum:

- Once prior to WDL sediment stabilization.
- Daily during the first week of both the WDL IRAM and final remediation fill construction. Daily monitoring may be required for a longer period, if determined necessary by SLLI.
- Every two to three days following the initial week of either WDL IRAM and final remediation fill construction, or as otherwise specified by SLLI.
- Weekly, for a period of six weeks, following both the WDL IRAM and final remediation fill construction, or as specified by SLLI.

Settlement monitoring programs could also include strain gauges to help detect movement of the railway embankment, and inclinometers to monitor embankment slope movements. While strain gauges could be automated to record nearly continuously, they would be subject to large errors due to inference from train traffic and thermal strain of the rail. Inclinometers can produce accurate measurements of horizontal slope movement, provided the displacements that act to shear the inclinometer are large in comparison to settlement magnitudes. However, compression of the inclinometer casing due to large embankment settlements could result in errors in the inclinometer data.

A summary of monitoring methods is presented in Table 10.3.

Table 10.3: Deformation Monitoring Method Comparison

Monitoring Method	Purpose	Initial Costs	Operating Costs	Accuracy	Data Distribution Speed	Advantages	Disadvantages
Automated Track Monitoring System	Rail settlement monitoring	High	Low	High	Fast	Accurate, nearly real time data and distribution. System can be used for both proposed construction events.	High initial costs
Survey Monitoring Points	Embankment settlement monitoring	Low	High	Low	Slow	Low initial costs.	High labor costs, low accuracy, large time lapse between readings
Strain Gauges	Monitoring of rail strain	Low	Low	High	Moderate	Provides accurate readings and actual strain on rail	Must be mounted to rail. Track noise and thermal strains may cause inaccurate data assessment. Limited durability.
Inclinometers	Monitoring movement of embankment slopes	High	Moderate	High	Moderate	Provides accurate slope movement data if casing is not subjected to compression.	High labor costs. Data less critical than rail settlements. Embankment settlement could cause errors in readings.

A settlement monitoring program will be finalized prior to the proposed IRAM activities, in cooperation with BNSF.

10.4 Additional Studies

SLLI recommends obtaining any existing construction documents or maintenance records from BNSF to help evaluate the construction history and stability of the BNSF embankment. Additionally, SLLI recommends conducting a geotechnical reconnaissance of the embankment to evaluate slope stability and the assumptions made in this report. While the current investigation was adequate to evaluate settlements due to the proposed WDL IRAM and subsequent final remediation fill

activities, a reconnaissance may indicate that further explorations and testing are necessary to conduct an accurate assessment of embankment slope stability.

This evaluation is based on current remediation plans; however, these plans may be modified prior to implementation. If the WDL IRAM specifications vary significantly from those described in this report, geotechnical conclusions will need to be re-evaluated.

LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Geotechnical Investigation Report is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

The conclusions and recommendations contained herein are relevant to the dates of AMEC's site explorations and should not be relied upon to represent conditions at later dates. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to AMEC so the original conclusions and recommendations can be modified as necessary.

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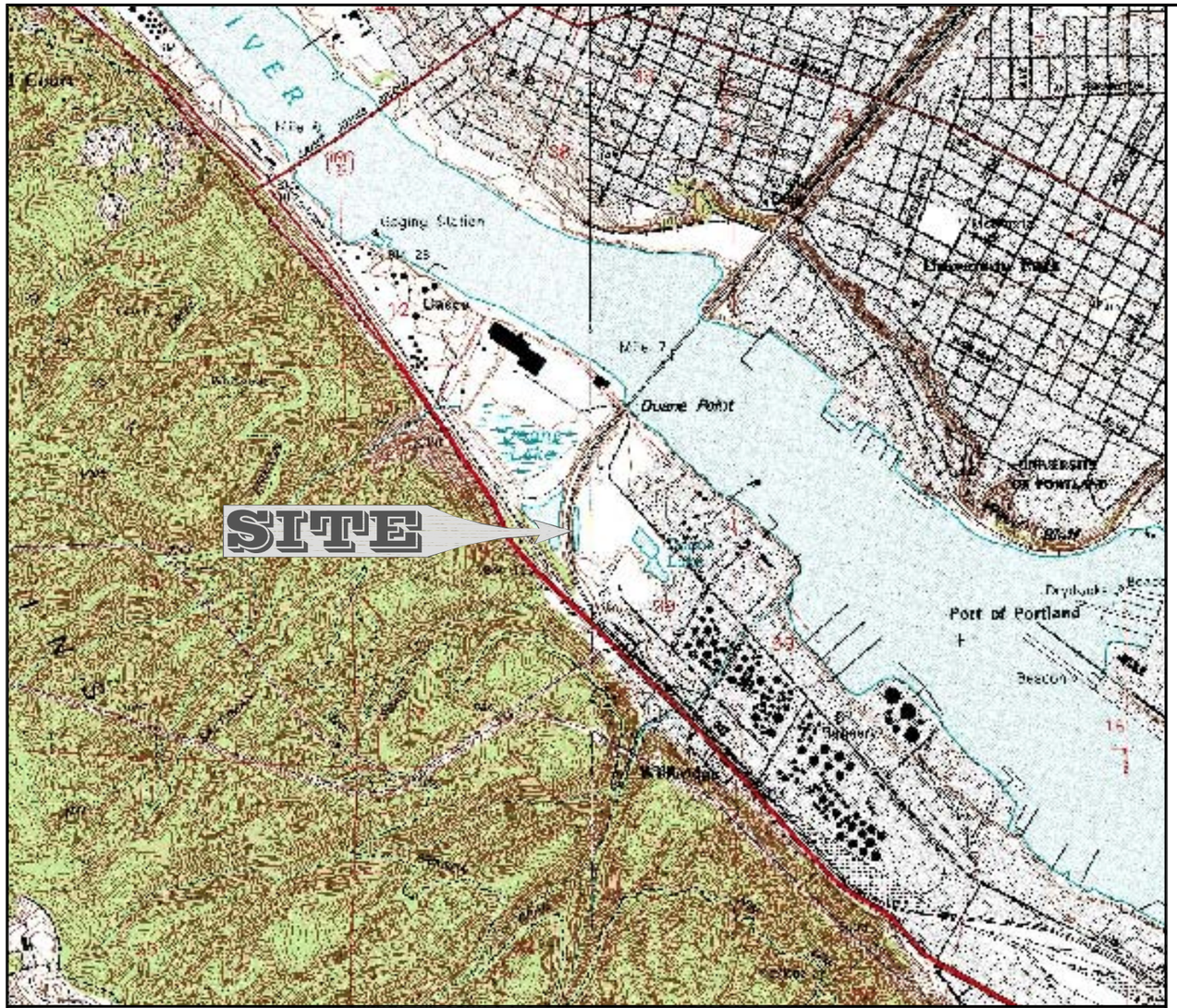
FIGURES



ROAD CLASSIFICATION

Railroad Line

Heavy–duty — Light–duty

Medium–duty — Unimproved dirt

U.S. Route — State Route — Interstate Route

LINNTON, OR.

45122-E7-TF-024
1990
DMA 1475 III SE - SERIES V892

0' 1000' 2000' 3000'

1" = 2000'

N

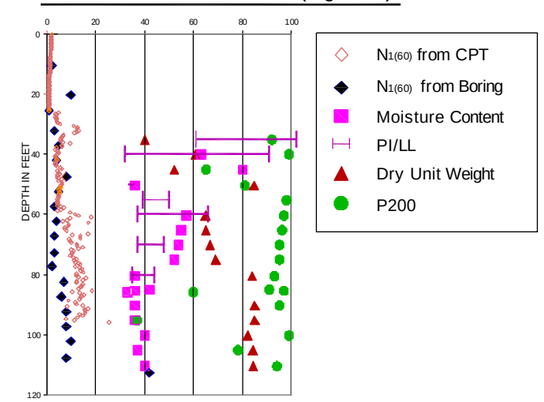
SOIL CLASSIFICATION LEGEND (Figs. 3-13)

GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	CL	INORGANIC CLAY OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAY, SANDY CLAY, SILTY CLAY, LEAN CLAY
GP	POORLY-GRADED GRAVEL, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	OL	ORGANIC SILT AND ORGANIC SILTY CLAY OF LOW PLASTICITY
GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES	MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS SILTY SOIL
GC	CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURES	CH	INORGANIC CLAY OF HIGH PLASTICITY
SW	WELL-GRADED SAND, GRAVELLY SAND, LITTLE OR NO FINES	OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILT
SP	POORLY-GRADED SAND, GRAVELLY SAND, LITTLE OR NO FINES	PT	PEAT, HUMUS, SWAMP SOIL WITH HIGH ORGANIC CONTENT
SM	SILTY SAND, SAND-SILT MIXTURES	FILL	MAN MADE FILL
SC	CLAYEY SAND, SAND-CLAY MIXTURES	BASALT	-
ML	INORGANIC SILT, ROCK FLOUR, OR CLAYEY SILT WITH SLIGHT PLASTICITY		

SOIL PROPERTIES LEGEND (Figs. 9-13)

Symbol	Parameters	unit
γd	Dry Unit Weight	lb/ft^3
w	Moisture Content	%
P200	% passing #200 Sieve	%
PI	Plastic Index	%
LL	Liquid Limit	%
φ'	Effective Friction Angle	degree
c'	Effective Cohesion	lb/ft^2
φ	Total Friction Angle	degree
c	Total Cohesion	lb/ft^2
e	Void Ratio	-
C_c	Compression Index	-
OCR	Overconsolidation Ratio	-
C_α	Secondary Compression Index	-
C_v	Vertical Coefficient of Consolidation	ft^2/day
kx	Horizontal Permeability	ft/day
ky	Vertical Permeability	ft/day
$N_{1(60)}$	Normalized blows per foot	-

TEST RESULTS LEGEND (Figs. 4-8)



GENERAL LEGEND (Figs. 2-13)

100 — Topography contour with elevation in feet

100 — Proposed Stage 1 contours with elevation in feet

Station centerline

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

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Portland, OR. U.S.A. 97224

amec

DWN BY:	MK
CHK'D BY:	PDR, RHB
DATUM:	-
PROJECTION:	-
SCALE:	AS SHOWN

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: SITE LOCATION MAP AND LEGEND

DATE:	AUGUST 2007
PROJECT NO:	0-61M-107030/P65/T3
REV. NO.:	3
FIGURE No.	FIGURE 1

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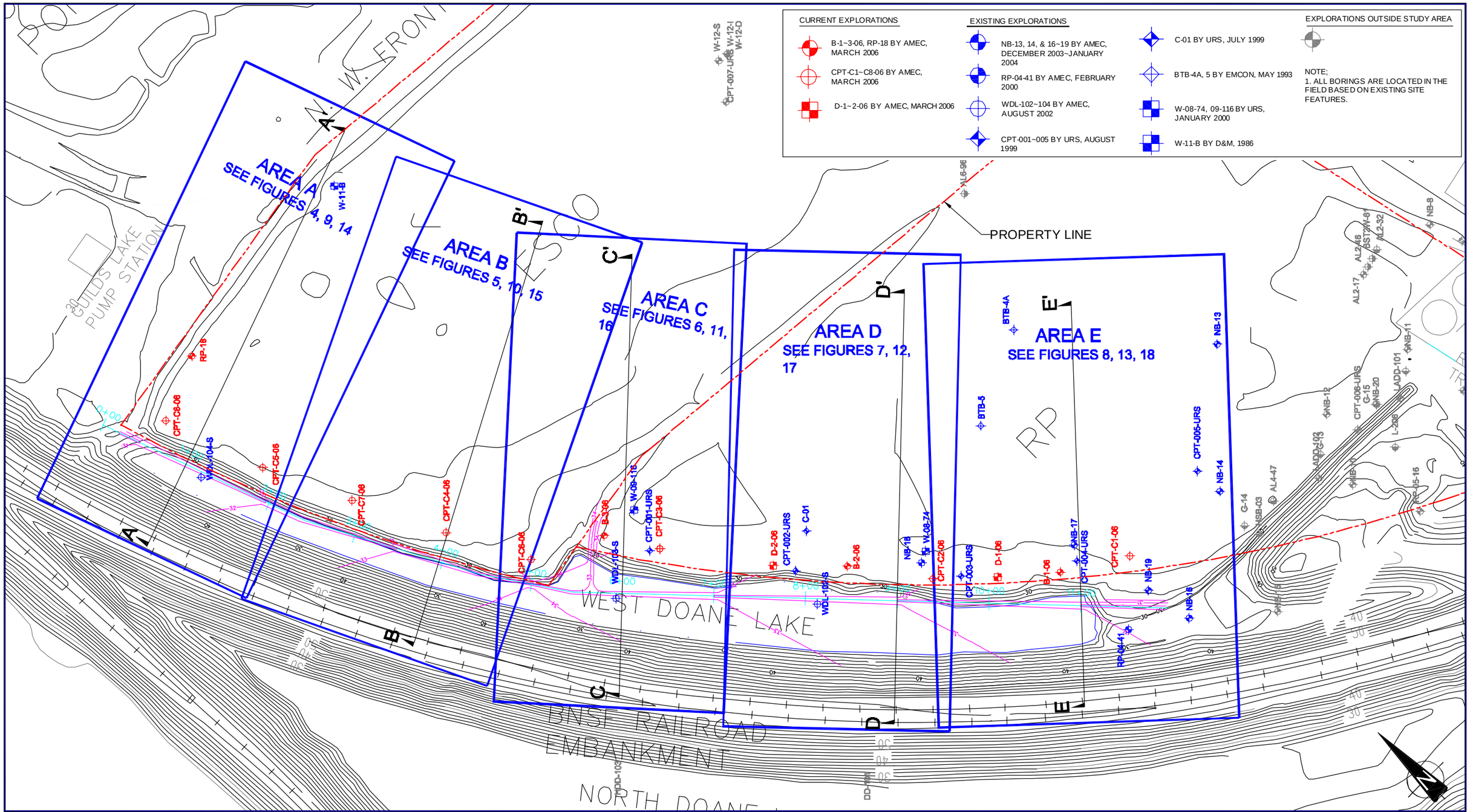

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	DATUM: -		REV. NO.: 2
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR. U.S.A. 97224	PROJECTION: -	TITLE: SITE PLAN	FIGURE No. FIGURE 2
	SCALE: 1"=100'		

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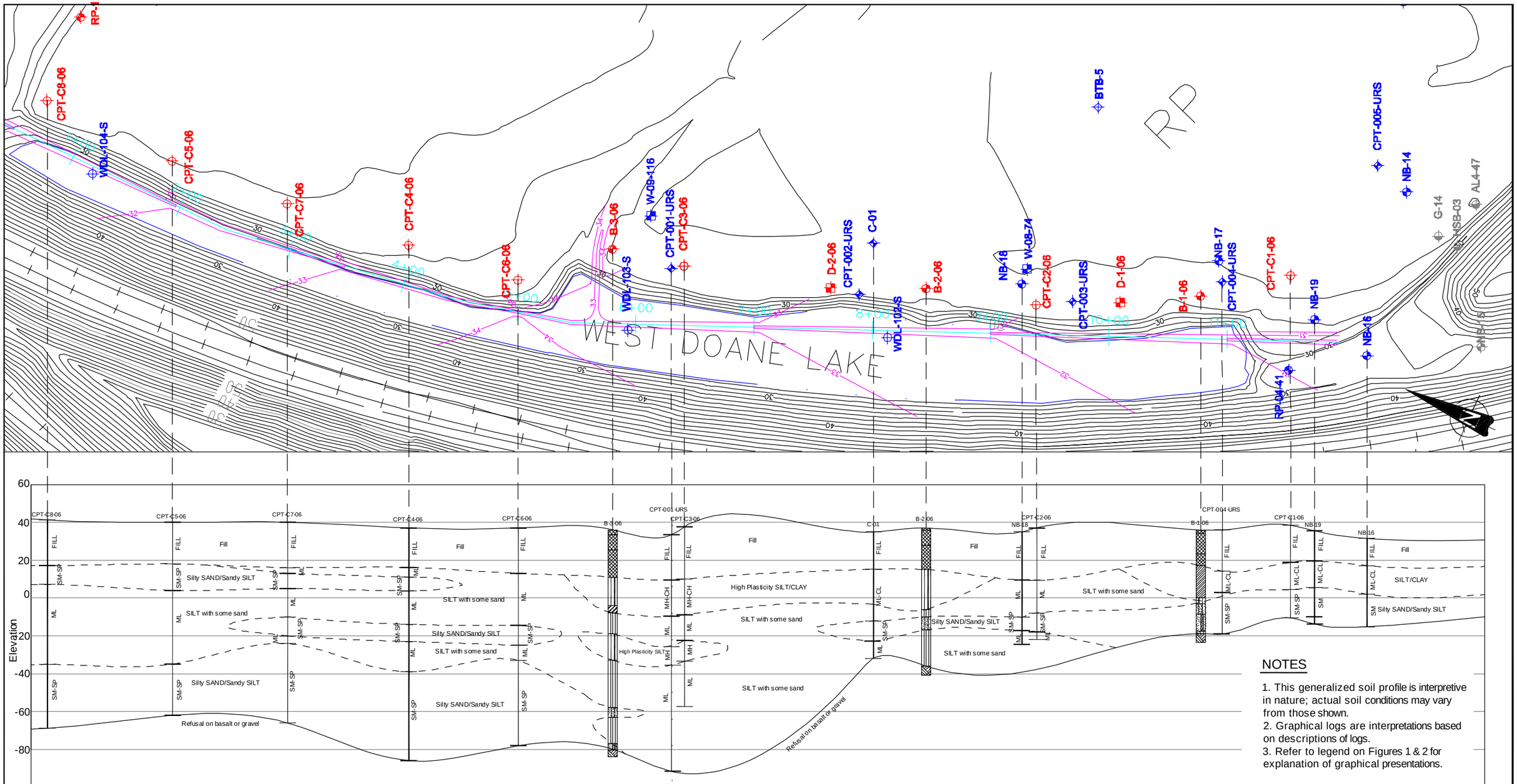

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PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: GEOTECHNICAL SUBSURFACE PROFILE

DATE:	AUGUST 2007
PROJECT NO:	0-61M-107030/P65/T3
REV. NO.:	2
FIGURE No.	FIGURE 3

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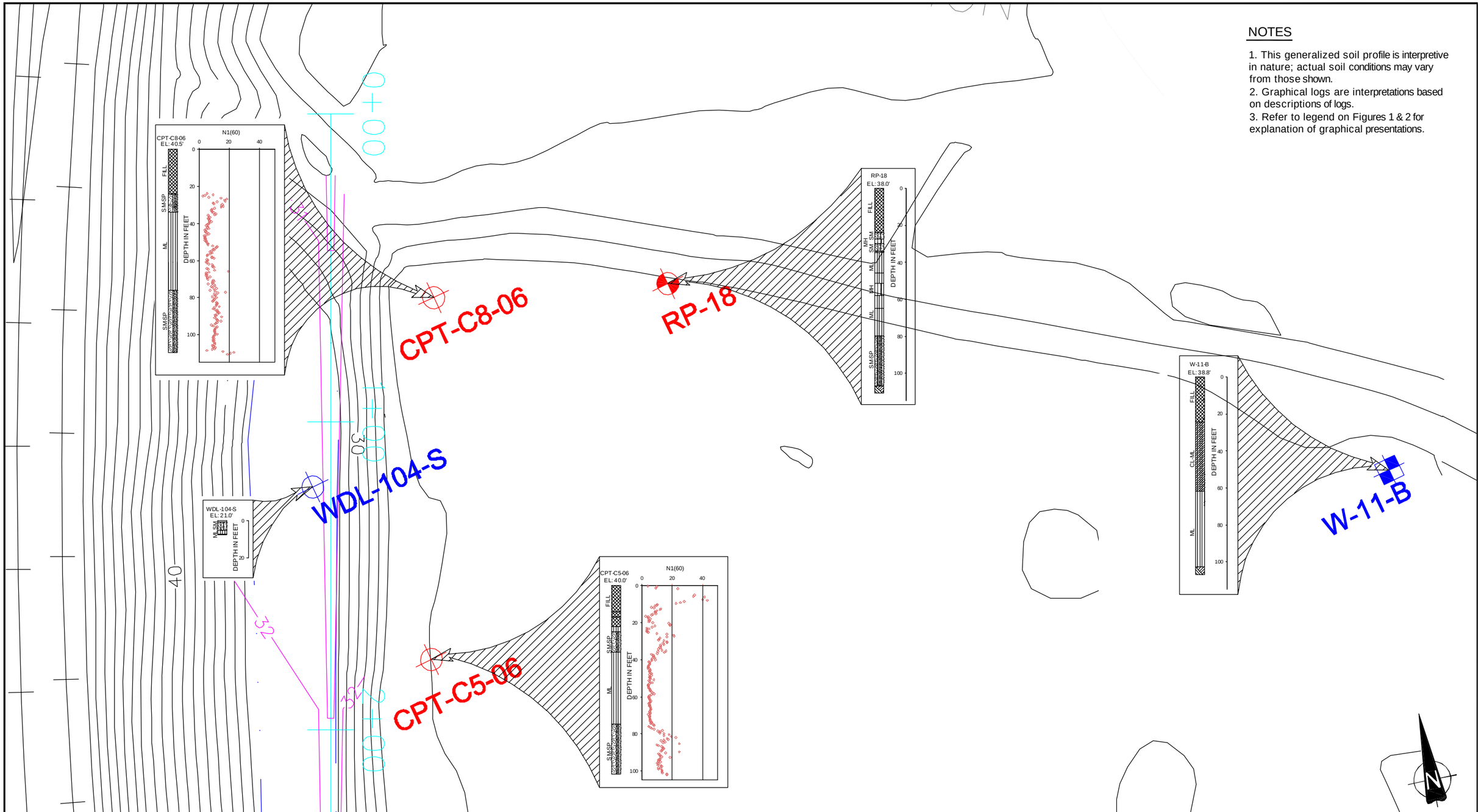

NOTES

1. This generalized soil profile is interpretive in nature; actual soil conditions may vary from those shown.
2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

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CHK'D BY:	PDR, RHB
DATUM:	-
PROJECTION:	-
SCALE:	Logs 1"=50' Plan 1"=30'

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA A BORING LOCATIONS AND EXPLORATION DATA

DATE:	AUGUST 2007
PROJECT NO:	0-61M-107030/P65/T3
REV. NO.:	3
FIGURE No.	FIGURE 4

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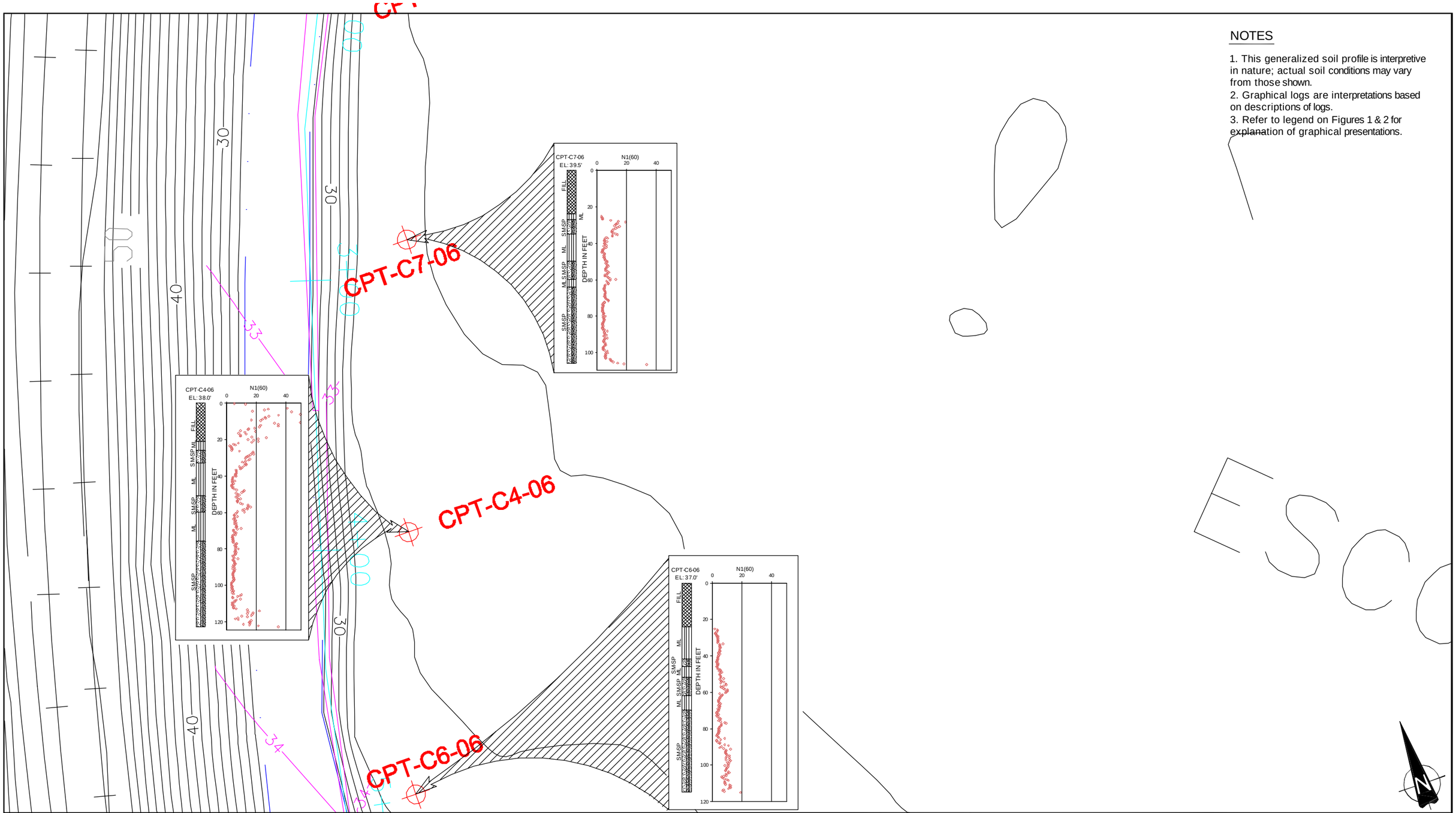

NOTES

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2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.

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DATUM:	-
PROJECTION:	-
SCALE:	Logs 1"=50' Plan 1"=30'

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA B BORING LOCATIONS AND EXPLORATION DATA

DATE:	AUGUST 2007
PROJECT NO:	0-61M-107030/P65/T3
REV. NO.:	3
FIGURE No.	FIGURE 5

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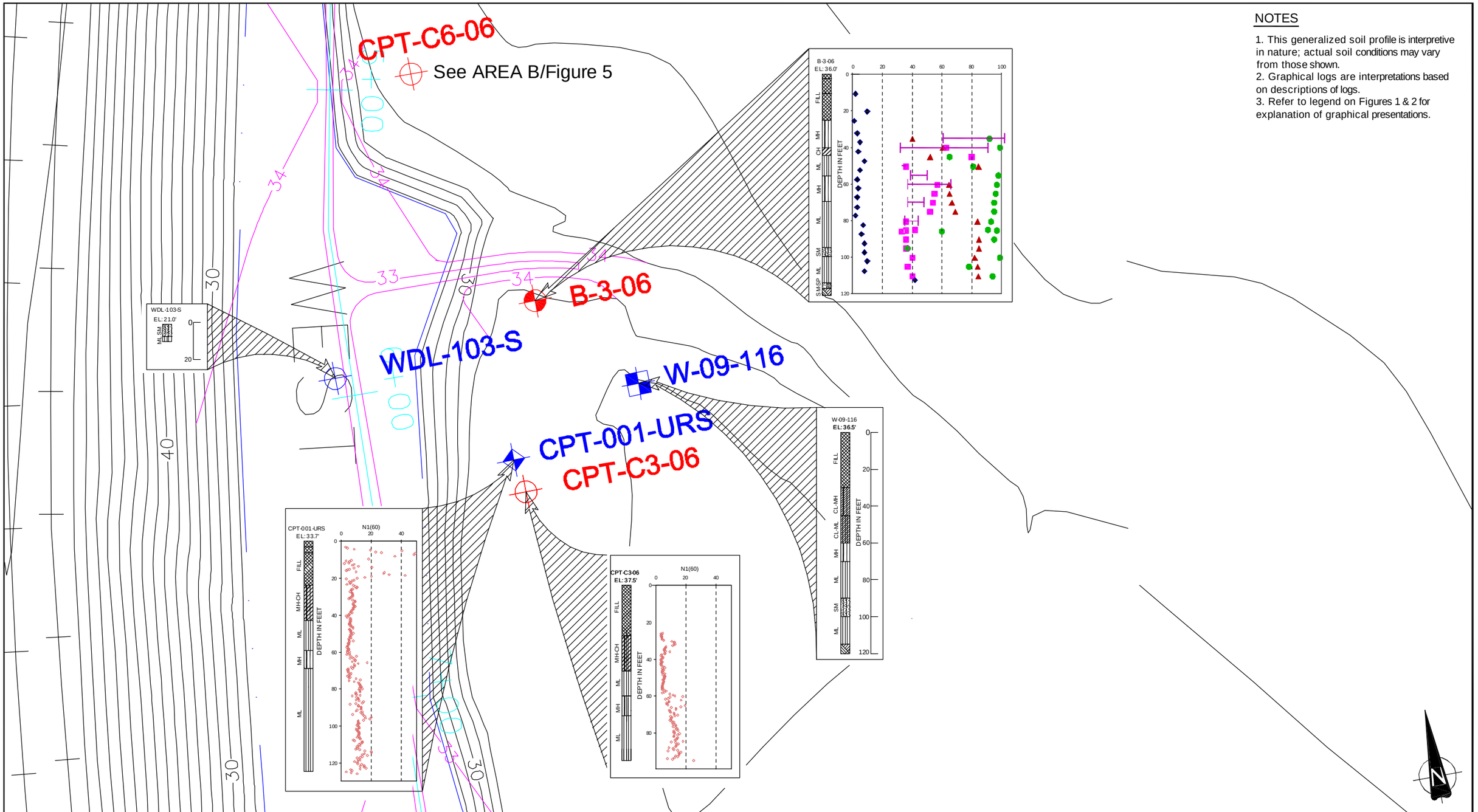

NOTES

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NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

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DATUM:	-
PROJECTION:	-
SCALE:	Logs 1"=50' Plan 1"=30'

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA C BORING LOCATIONS AND EXPLORATION DATA

DATE:	AUGUST 2007
PROJECT NO:	0-61M-107030/P65/T3
REV. NO.:	3
FIGURE No.	FIGURE 6

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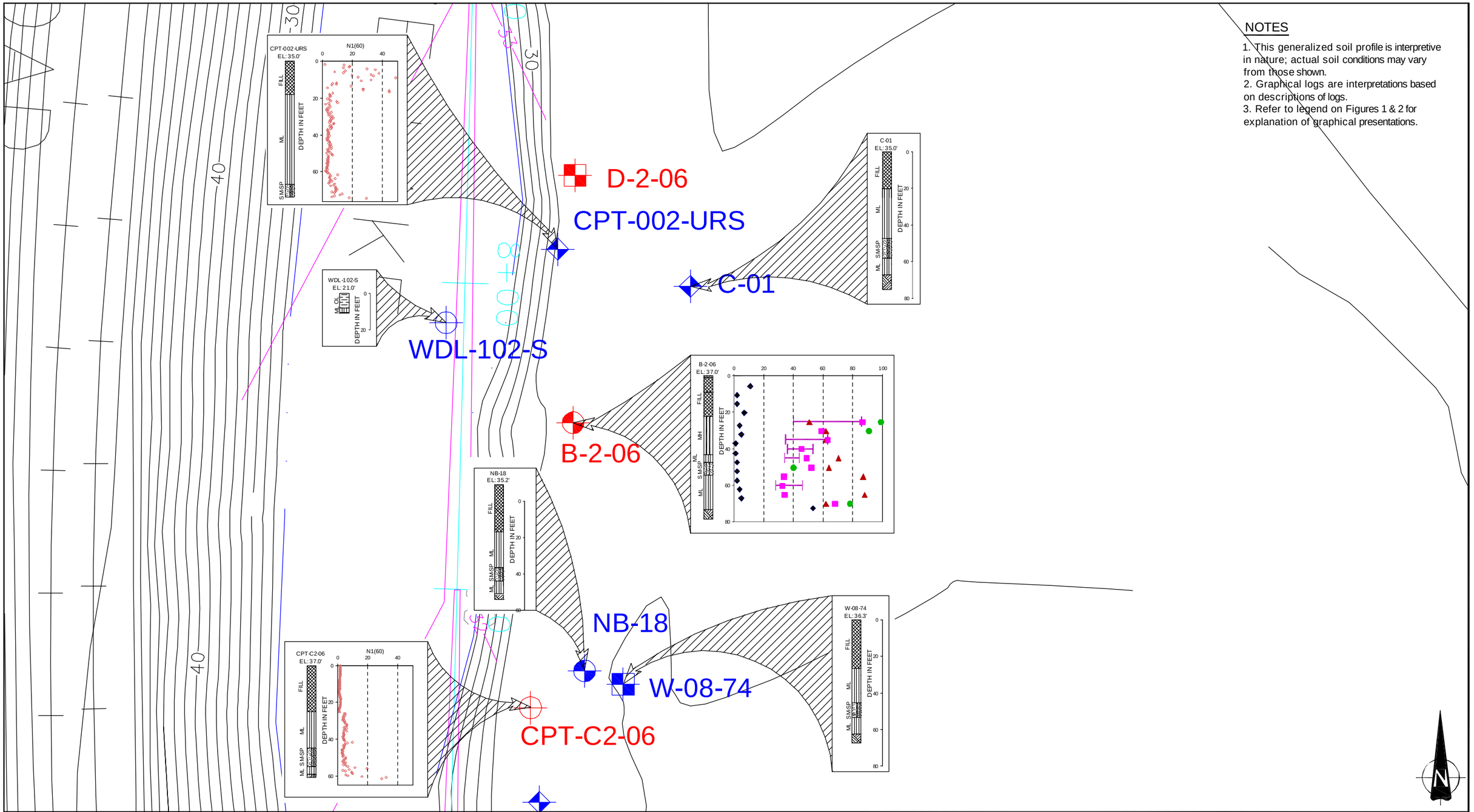

NOTES

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2. Graphical logs are interpretations based on descriptions of logs.
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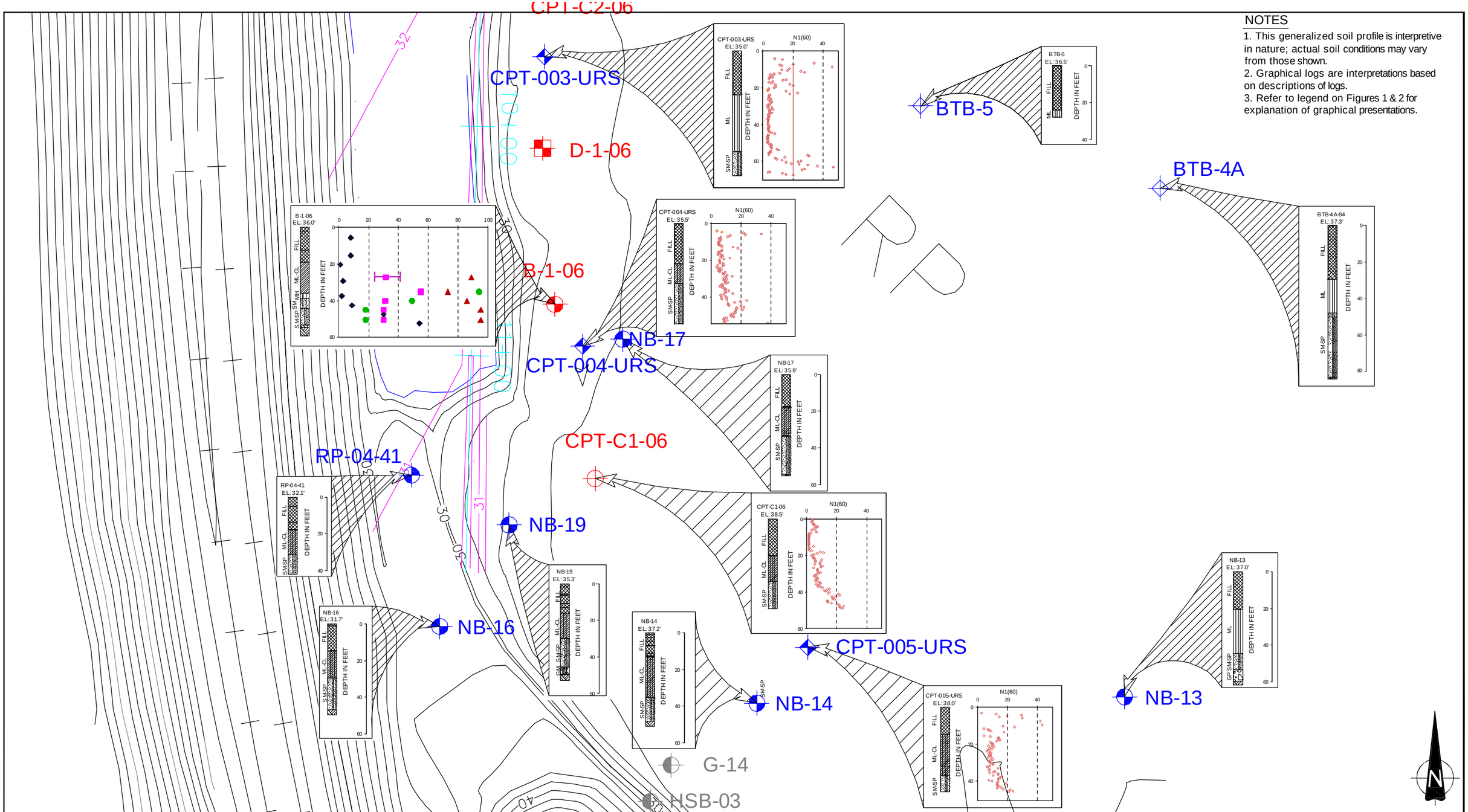
DATUM:	-
PROJECTION:	-
SCALE:	Logs 1"=50' Plan 1"=30'

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA D BORING LOCATIONS AND EXPLORATION DATA

DATE:	AUGUST 2007
PROJECT NO:	0-61M-107030/P65/T3
REV. NO.:	3
FIGURE No.	FIGURE 7

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 2~13.dwg – F-7 D – Aug. 31, 2007 12:44pm – laura.mccoy



NOTES

1. This generalized soil profile is interpretive in nature; actual soil conditions may vary from those shown.
2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT:	SLLI
DWN BY:	MK
CHK'D BY:	PDR, RHB
DATUM:	-
PROJECTION:	-
SCALE:	Logs 1"=50' Plan 1"=40'
PROJECT	RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON
TITLE	AREA E BORING LOCATIONS AND EXPLORATION DATA
DATE:	AUGUST 2007
PROJECT NO:	0-61M-107030/P65/T3
REV. NO.:	3
FIGURE No.	FIGURE 8

AMEC Earth & Environmental
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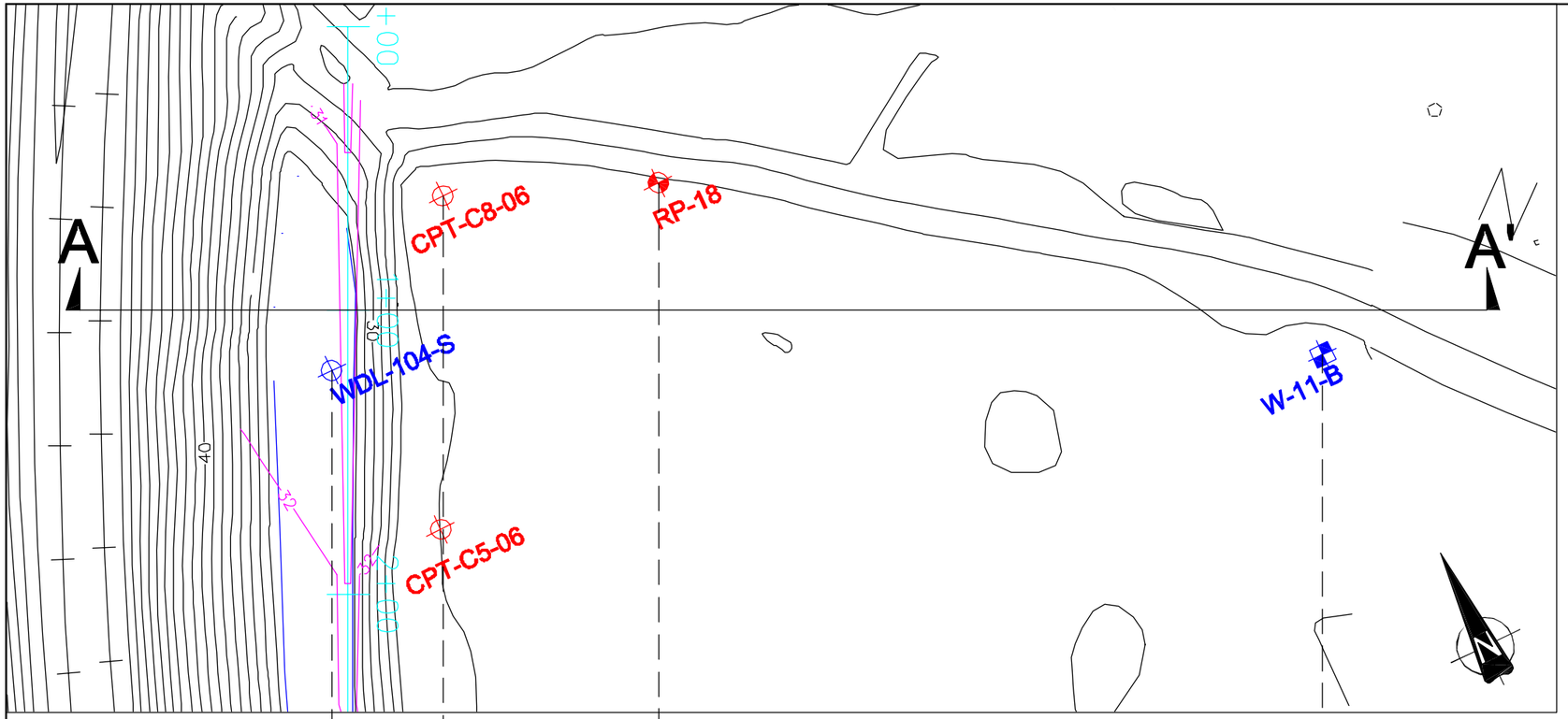
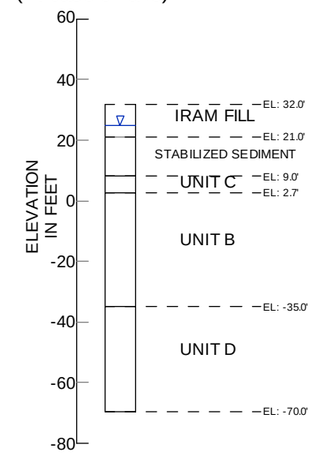
Portland, OR. U.S.A. 97224

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 2~13.dwg – F-8 E – Aug. 31, 2007 12:46pm – laura.mccoy



TYPICAL SECTION
(At base of lake)



SOIL TYPE

UNIT A: Loose to dense silty SAND and soft sandy SILT (FILL).
UNIT B: Stiff to medium stiff, gray to brown, sandy SILT.
UNIT C: Very loose, brown, silty SAND.
UNIT D: Very loose to medium dense, gray to brown, silty SAND

NOTES

1. This generalized soil profile is interpretive in nature; actual soil conditions may vary from those shown.
2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.
4. Soil classifications for cone penetration test (CPT) are estimated by comparing CPT results with boring logs.
5. Horizontal distance between CPT-C5-06 and CPT-C8-06 in cross section A-A' is not to scale.

SOIL PROPERTIES USED IN DEFORMATION MODELING

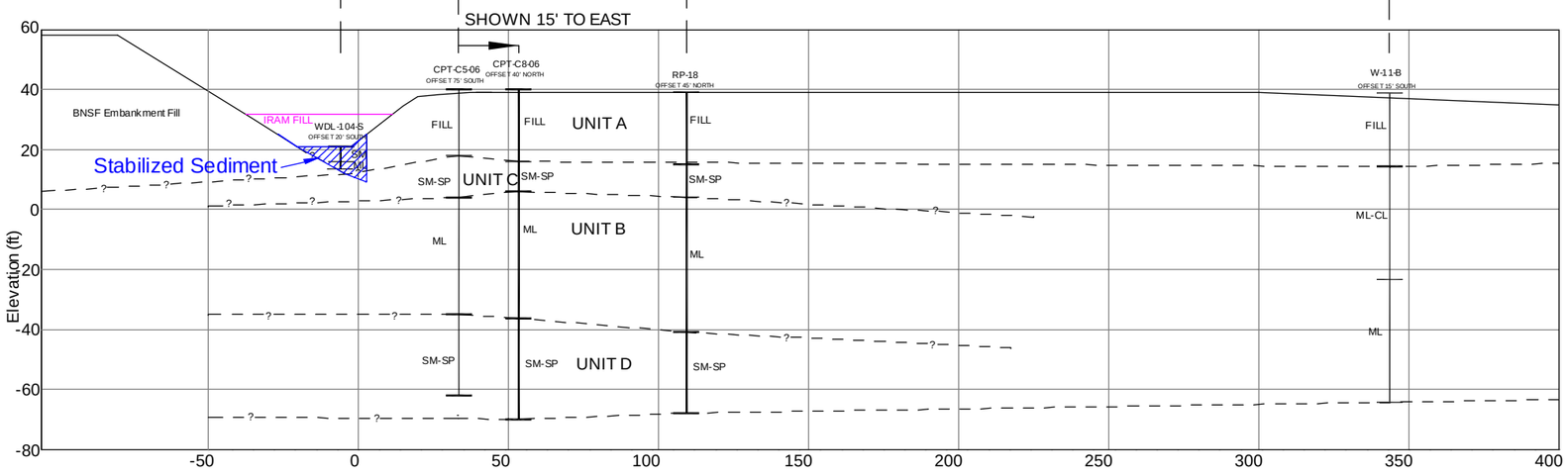
Unit	Classification		γd	w	P200	PI	LL
A	SM-ML(FILL)		85	25	-	-	-
B	ML		76	44	90	8	43
C	SM-SP		64	52	40	NP	NP
D	SM-SP		87	26	27	NP	NP
Unit	φ'	c'	φ	c	e	C_c	OCR
A	31	0	-	-	0.95	-	1
B	26	0	18	0	1.18	0.33	1
C	26	0	-	-	1.58	0.51	1
D	26	0	-	-	0.90	0.18	1
Unit	C_α	C_v	kx	ky			
A	-	-	25.8	2.5			
B	0.0013	3.8	2.4	0.2			
C	0.0013	8.6	28.3	2.8			
D	0.0013	8.6	28.3	2.8			

MODEL FUTURE IRAM SOIL PROPERTIES

Type		γd	w	kx	ky	φ'	c'
BNSF Embankment Fill		120	15	280	280	42	0
Stabilized Sediment		64	62	0.0003	0.0003	0	1800
IRAM FILL	Clay Liner, 1'	103	20	0.0003	0.0003	29	0
	Drainage Sand, 1'	100	10	30	30	29	0
	Top Soil	85	30	3	3	26	0
Final Remediation Fill		90	30	3	3	26	0

BOREHOLE INFORMATION

Borehole	Northing	Easting	Elevation	Depth
WDL-104-S	702937	7625631	21.0'	7.5'
CPT-05-06	702852	7625635	40.0'	102.0'
CPT-08-06	702553	7625523	40.5'	110.0'
W-11-B	702782	7625950	38.8'	103.0'



NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

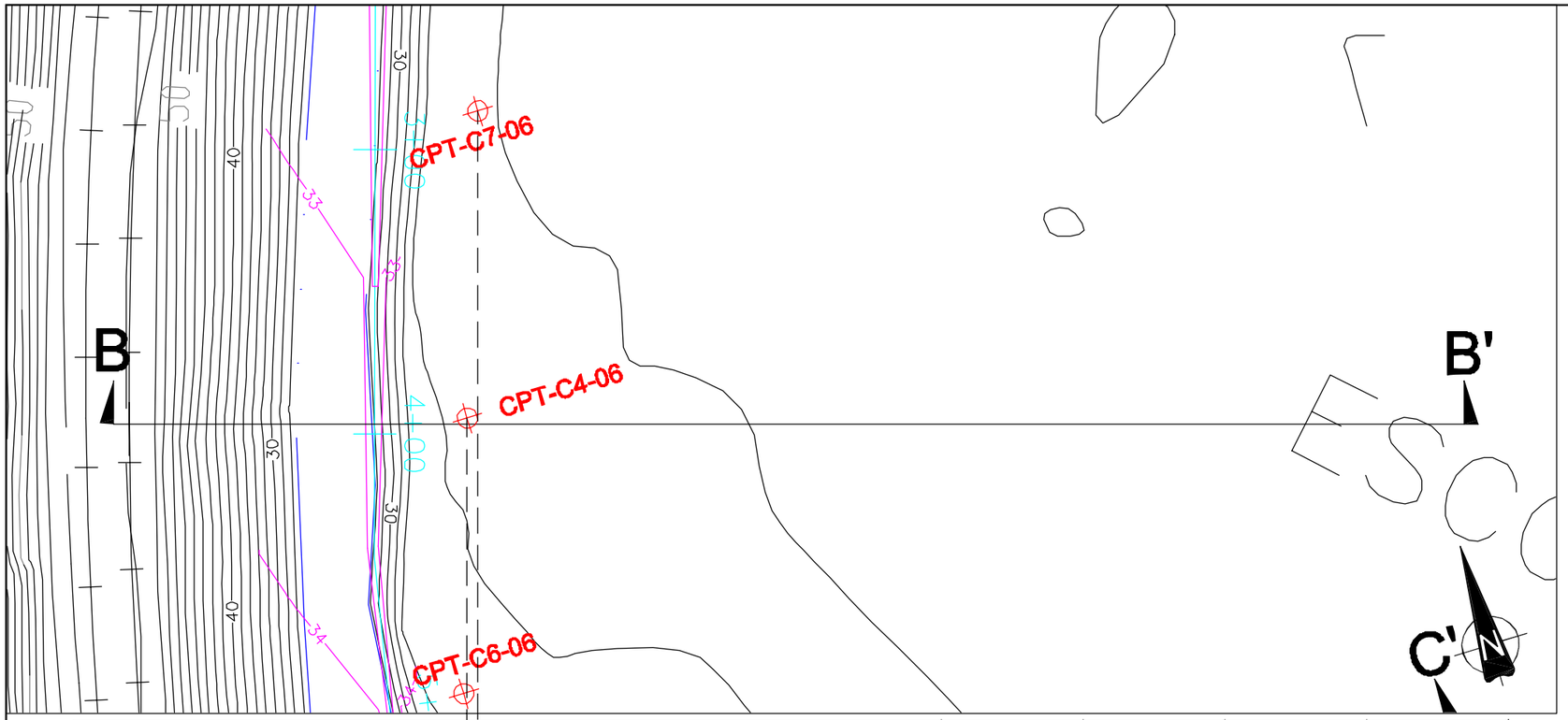
DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: AS SHOWN

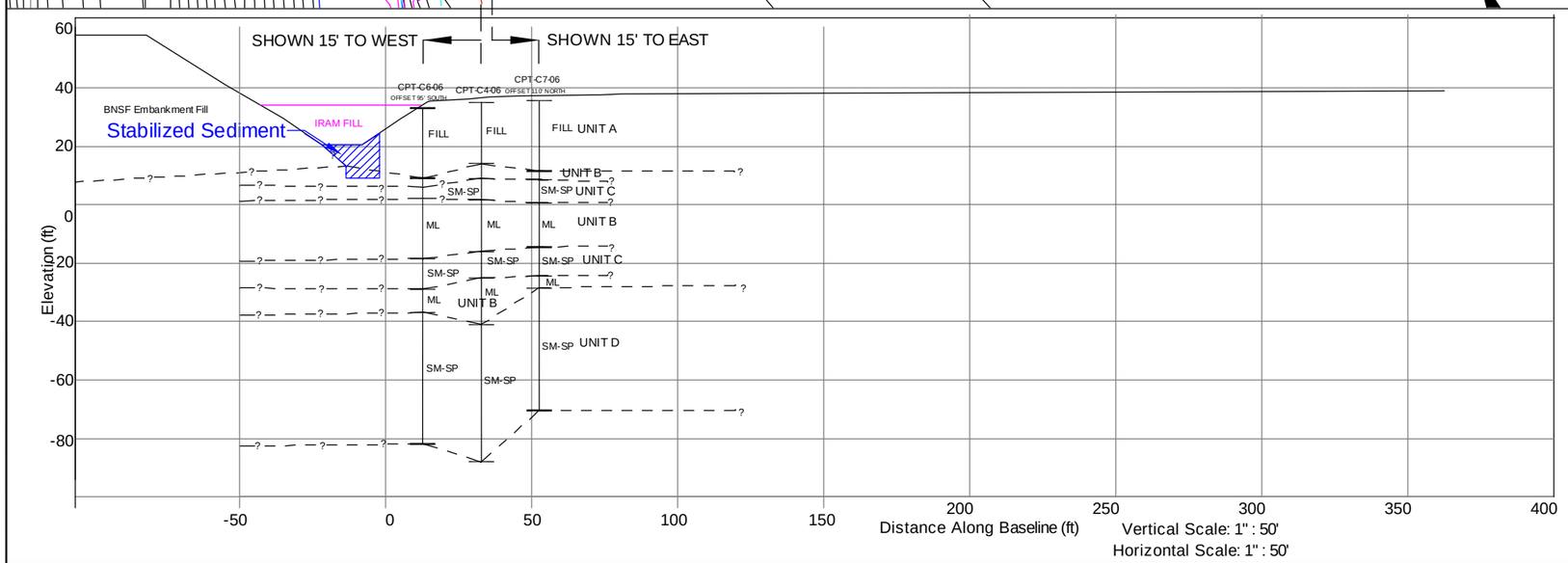
PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA A SUBSURFACE PROFILE AND SOIL PARAMETERS CROSS SECTION A-A'

DATE: AUGUST 2007
PROJECT NO: 0-61M-107030/P65/T3
REV. NO.: 3
FIGURE No. FIGURE 9

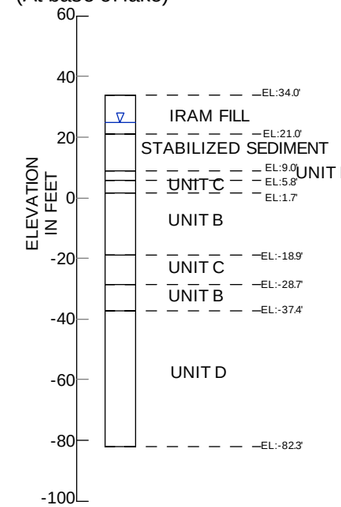
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 2~13.dwg – F-9 A – Aug. 31, 2007 12:48pm – laura.mccoy





TYPICAL SECTION

(At base of lake)



SOIL TYPE

UNIT A: Loose to dense silty SAND and soft sandy SILT (FILL).
UNIT B: Stiff to medium stiff, gray to brown, sandy SILT.
UNIT C: Very loose, brown, silty SAND.
UNIT D: Very loose to medium dense, gray to brown, silty SAND.

NOTES

1. This generalized soil profile is interpretive in nature; actual soil conditions may vary from those shown.
2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.
4. Soil classifications for cone penetration test (CPT) are estimated by comparing CPT results with boring logs.
5. Horizontal distance between CPT-C6-06 and CPT-C7-06 on cross section B-B' is not to scale.

SOIL PROPERTIES USED IN DEFORMATION MODELING

Unit	Classification		γd	w	P200	PI	LL
A	SM-ML(FILL)		85	25	-	-	-
B	ML		76	44	90	8	43
C	SM-SP		64	52	40	NP	NP
D	SM-SP		87	26	27	NP	NP
Unit	φ'	c'	φ	c	e	C_c	OCR
A	31	0	-	-	0.95	-	1
B	26	0	18	0	1.18	0.33	1
C	26	0	-	-	1.58	0.51	1
D	26	0	-	-	0.90	0.18	1
Unit	C_u	C_v	kx	ky			
A	-	-	25.8	2.5			
B	0.0013	3.8	2.4	0.2			
C	0.0013	8.6	28.3	2.8			
D	0.0013	8.6	28.3	2.8			

MODEL FUTURE IRAM SOIL PROPERTIES

Type		γd	w	kx	ky	φ'	c'
BNSF Embankment Fill		120	15	280	280	42	0
Stabilized Sediment		64	62	0.0003	0.0003	0	1800
IRAM Fill	Clay Liner, 1'	103	20	0.0003	0.0003	29	0
	Drainage Sand, 1'	100	10	30	30	29	0
	Top Soil	85	30	3	3	26	0
Final Remediation Fill		90	30	3	3	26	0

BOREHOLE INFORMATION

Borehole	Northing	Easting	Elevation	Depth
CPT-C6-06	702553	7625523	37.0'	115.0'
CPT-C4-06	702608	7625543	38.0'	122.0'
CPT-C7-06	702760	7625595	39.5'	106.0'

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL GEOTECHNICAL REPORT NO. 0-61M-107030/P65/T3 DATED _____.

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

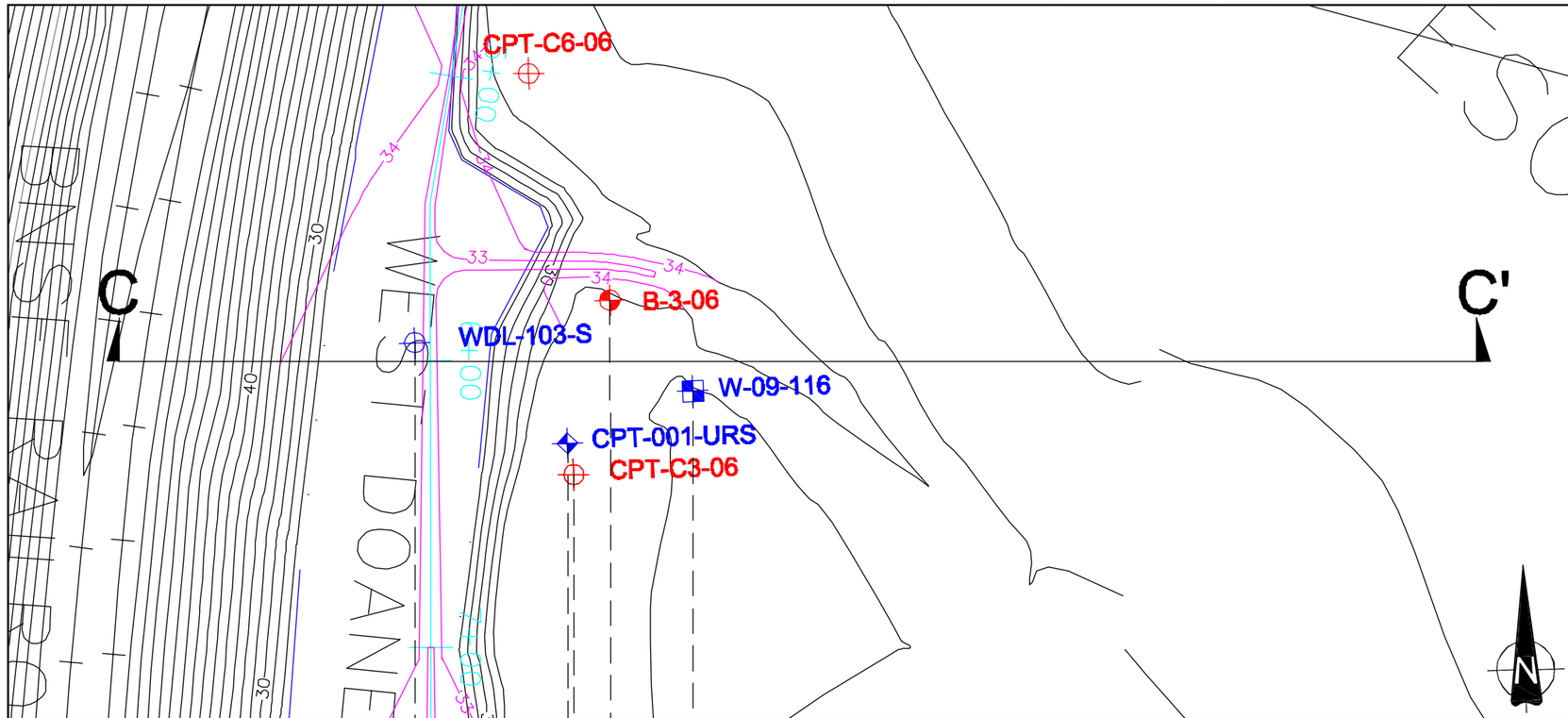
DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: AS SHOWN

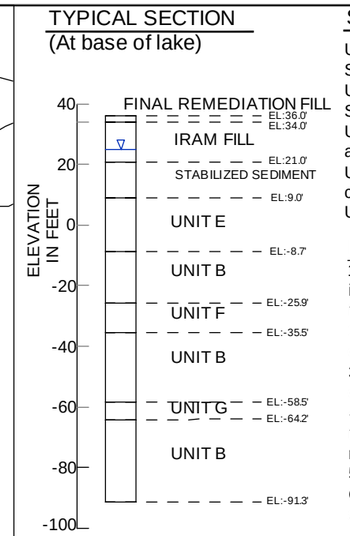
PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA B SUBSURFACE PROFILE AND SOIL PARAMETERS CROSS SECTION B-B'

DATE: AUGUST 2007
PROJECT NO: 0-61M-107030/P65/T3
REV. NO.: 3
FIGURE No. FIGURE 10

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 2~13.dwg – F-10 B – Aug. 31, 2007 12:49pm – laura.mccoy



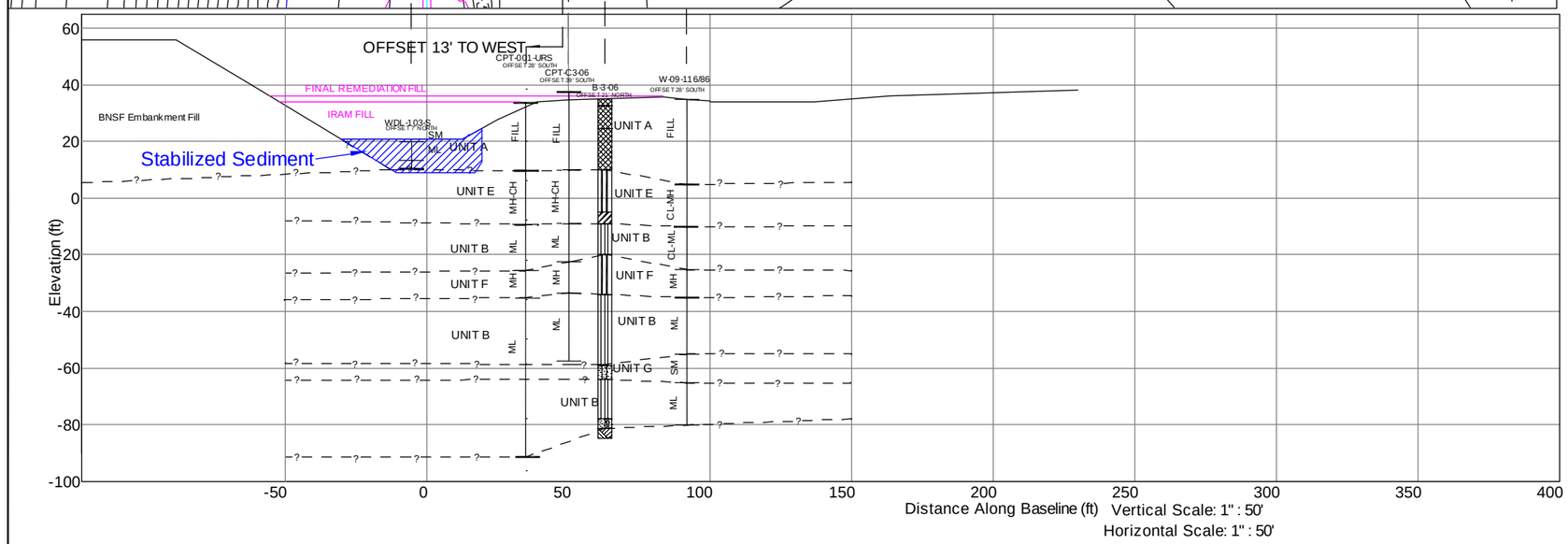


SOIL TYPE

UNIT A: Loose to dense silty SAND and soft sandy SILT (FILL).
UNIT B: Stiff to medium stiff, gray to brown sandy SILT.
UNIT E: Very soft to medium stiff, gray to black, SILT and silty CLAY.
UNIT F: Medium stiff, gray, SILT to SILT with some clay.
UNIT G: Medium dense, gray, silty SAND.

NOTES

1. This generalized soil profile is interpretive in nature; actual soil conditions may vary from those shown.
2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.
4. Soil classifications for cone penetration test (CPT) are estimated by comparing CPT results with boring logs.
5. Horizontal distance between CPT-001-URS and CPT-03-06 on cross section C-C' is not to scale.



SOIL PROPERTIES USED IN DEFORMATION MODELING

Unit	Classification		γd	w	P200	PI	LL
A	SM-ML(FILL)		85	25	-	-	-
B	ML		76	44	90	8	43
E	MH-CH		50	91	96	62	108
F	MH		65	56	97	29	66
G	SM-SP		85	36	37	NP	NP
Unit	φ'	c'	φ	c	e	C_c	OCR
A	31	0	-	-	0.95	-	1
B	26	0	18	0	1.18	0.34	1.00
E	26	0	18	0	2.31	0.74	1.00
F	26	0	18	0	1.54	0.50	1.00
G	26	0	-	-	0.95	0.21	1.00
Unit	C_α	C_v	kx	ky			
A	-	-	25.8	2.5			
B	0.0013	3.8	2.3	0.2			
E	0.013	0.7	0.06	0.006			
F	0.013	0.7	0.06	0.006			
G	0.0013	8.6	28.3	2.8			

MODEL FUTURE IRAM SOIL PROPERTIES

Type		γd	w	kx	ky	φ'	c'
BNSF Embankment Fill		120	15	280	280	42	0
Stabilized Sediment		64	62	0.0003	0.0003	0	1800
IRAM Fill	Clay Liner, 1'	103	20	0.0003	0.0003	29	0
	Drainage Sand, 1'	100	10	30	30	29	0
	Top Soil	85	30	3	3	26	0
Final Remediation Fill		90	30	3	3	26	0

BOREHOLE INFORMATION

Borehole	Northing	Easting	Elevation	Depth
WDL-103-S	702485	7625499	21.0'	9.5'
CPT-001-URS	702448	7625552	33.7'	125.0'
CPT-C3-06	702448	7625528	37.5'	96.0'
B-3-06	702507	7625565	36.0'	120.0'
W-09-116	702465	7625596	36.5'	116.0'

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

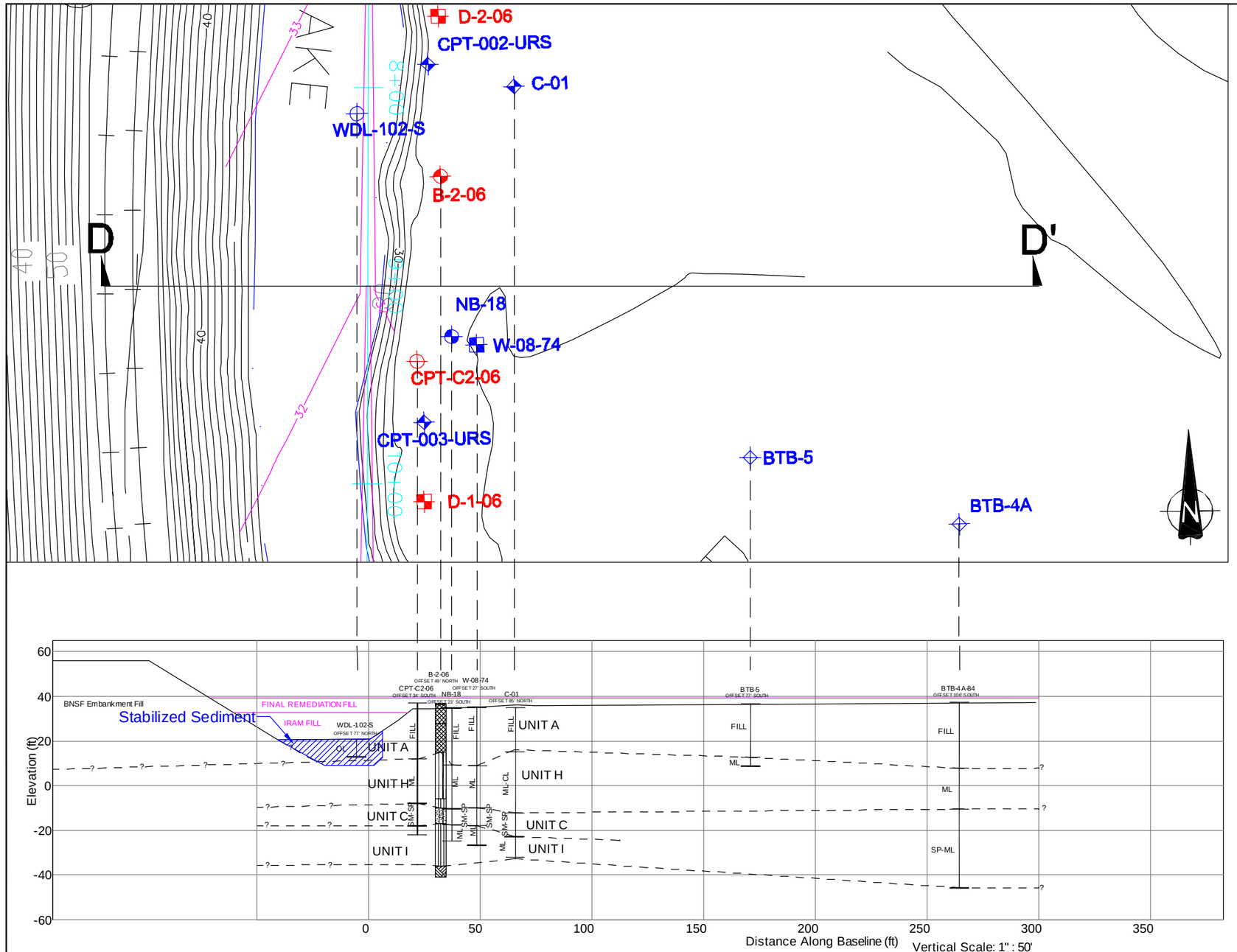
DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: AS SHOWN

PROJECT: RP-WDL-IRAM
GEOTECHNICAL EVALUATION
PORTLAND, OREGON

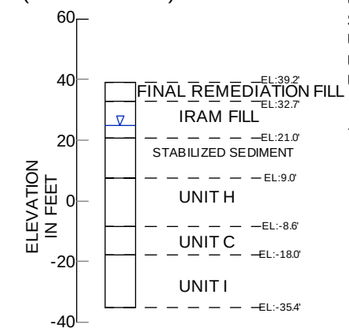
TITLE: AREA C
SUBSURFACE PROFILE AND SOIL PARAMETERS
CROSS SECTION C-C'

DATE: AUGUST 2007
PROJECT NO: 0-61M-107030/P65/T3
REV. NO.: 3
FIGURE No. FIGURE 11

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 2~13.dwg – F-11 C – Aug. 31, 2007 12:51pm – laura.mccoy



TYPICAL SECTION
(At base of lake)



SOIL TYPE

UNIT A: Loose to dense silty SAND and soft sandy SILT (FILL).
UNIT C: Very loose, brown, silty SAND.
UNIT H: Soft to medium stiff, dark gray, SILT.
UNIT I: Medium stiff, dark gray, SILT.

NOTES

1. This generalized soil profile is interpretive in nature; actual soil conditions may vary from those shown.
2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.
4. Soil classifications for cone penetration test (CPT) are estimated by comparing CPT results with boring logs.

SOIL PROPERTIES USED IN DEFORMATION MODELING

Unit	Classification		γd	w	P200	PI	LL
A	SM-ML(FILL)		85	25	-	-	-
C	SM-SP		64	52	40	NP	NP
H	ML-MH		61	60	96	26	65
I	ML		79	34	86	18	46
Unit	φ'	c'	φ	c	e	C_c	OCR
A	31	0	-	-	0.95	-	1
C	26	0	-	-	1.58	0.51	1
H	26	0	18	0	1.71	0.55	1
I	26	0	18	0	1.09	0.29	1
Unit	C_α	C_v	kx	ky			
A	-	-	25.8	2.5			
C	0.0013	8.6	28.3	2.8			
H	0.013	0.7	0.06	0.006			
I	0.0013	3.8	2.3	0.2			

MODEL FUTURE IRAM SOIL PROPERTIES

Type		γd	w	kx	ky	φ'	c'
BNSF Embankment Fill		120	15	280	280	42	0
Stabilized Sediment		64	62	0.0003	0.0003	0	1800
IRAM Fill	Clay Liner, 1'	103	20	0.0003	0.0003	29	0
	Drainage Sand, 1'	100	10	30	30	29	0
	Top Soil	85	30	3	3	26	0
FInal Remediation Fill		90	30	3	3	26	0

BOREHOLE INFORMATION

Borehole	Northing	Easting	Elevation	Depth
WDL-102-S	702266	7625493	21.0'	8.0'
CPT-C2-06	702140	7625509	37.0'	61.0'
B-2-06	702156	7625531	37.0'	78.0'
NB-18	702152	7625538	35.2'	62.6'
W-08-74	702147	7625551	36.3'	64.0'
C-01	702277	7625573	35.0'	67.0'
BTB-5-20	702087	7625688	36.5'	28.0'
BTB-4A-84	702051	7625792	37.3'	83.0'

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

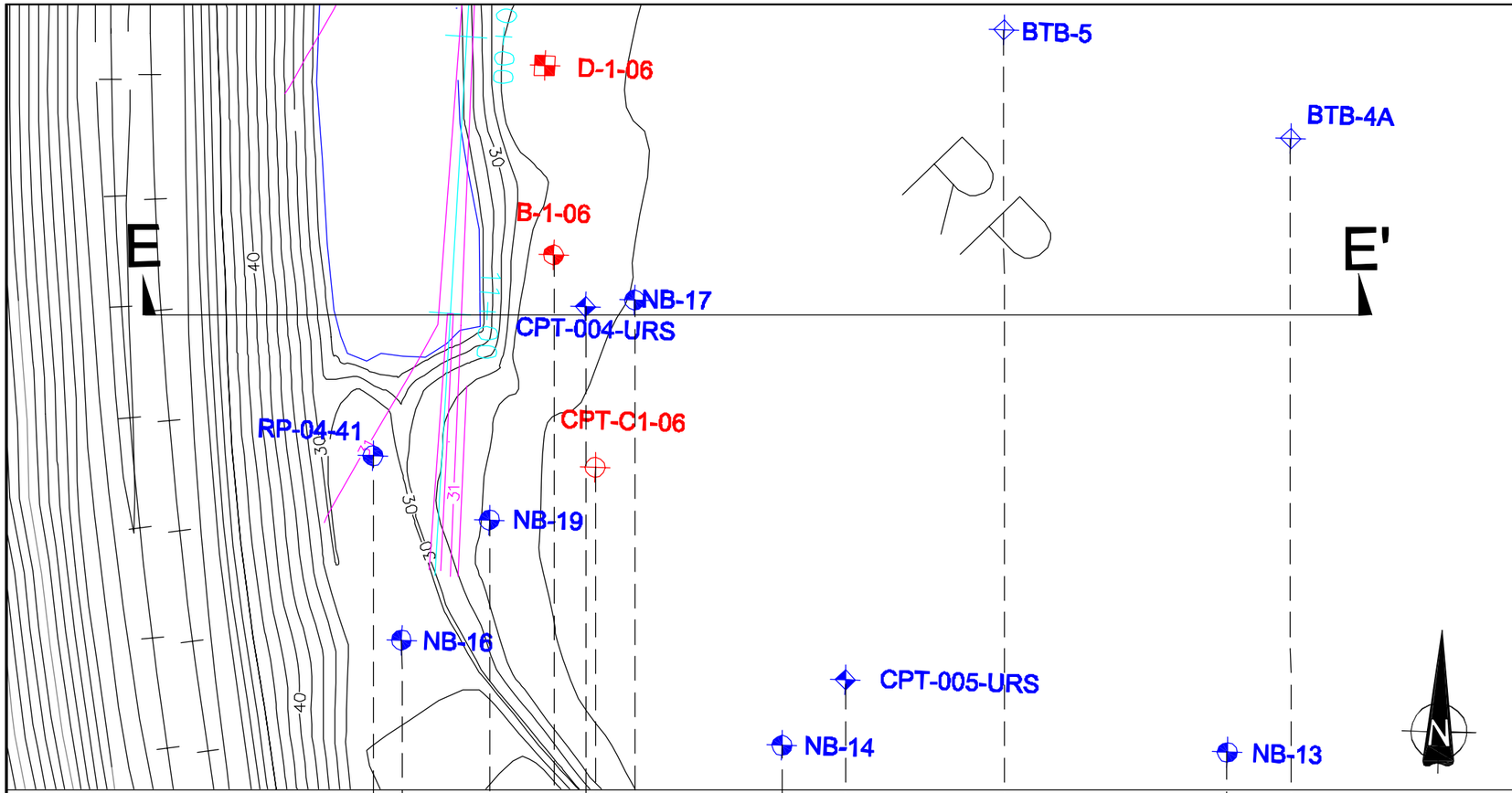
DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: AS SHOWN

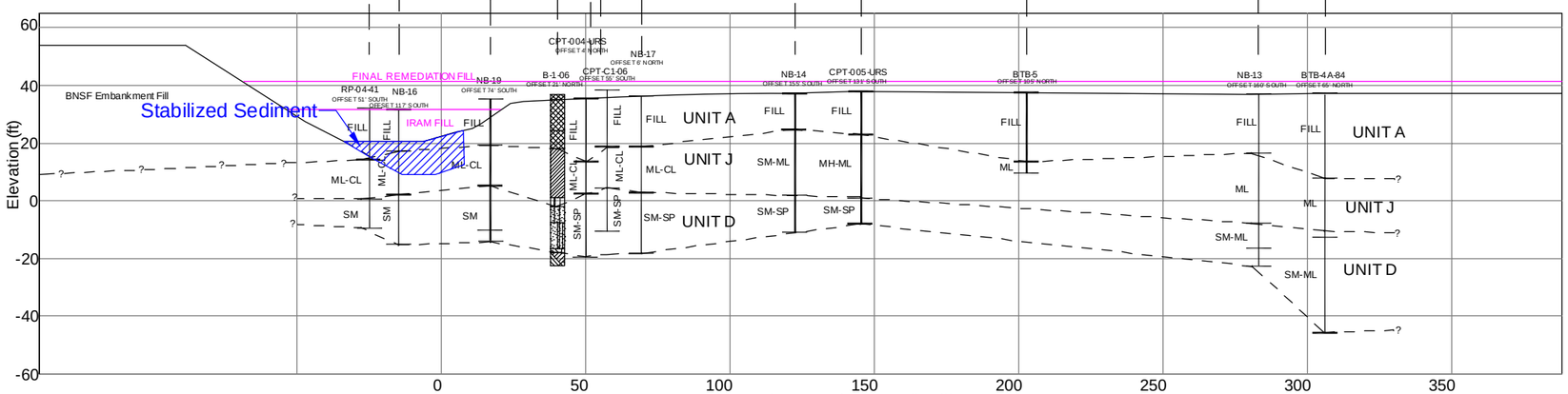
PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA D SUBSURFACE PROFILE AND SOIL PARAMETERS CROSS SECTION D-D'

DATE: AUGUST 2007
PROJECT NO: 0-61M-107030/P65/T3
REV. NO.: 3
FIGURE No. FIGURE 12

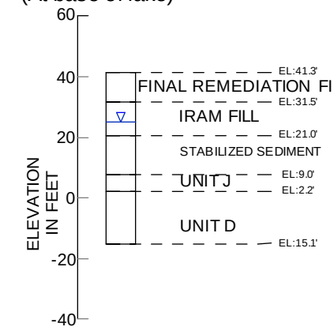
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 2~13.dwg – F-12 D – Aug. 31, 2007 12:53pm – laura.mccoy





Vertical Scale: 1" : 50'
Horizontal Scale: 1" : 50'

TYPICAL SECTION
(At base of lake)



SOIL TYPE

UNIT A: Loose to dense silty SAND and soft sandy SILT (FILL).
UNIT D: Very loose to Medium dense, gray to brown, silty SAND.
UNIT J: Very soft to soft, brown CLAY and SILT.

NOTES

1. This generalized soil profile is interpretive in nature; actual soil conditions may vary from those shown.
2. Graphical logs are interpretations based on descriptions of logs.
3. Refer to legend on Figures 1 & 2 for explanation of graphical presentations.
4. Soil classifications for cone penetration test (CPT) are estimated by comparing CPT results with boring logs.

SOIL PROPERTIES USED IN DEFORMATION MODELING

Unit	Classification		γd	w	P200	PI	LL
A	SM-ML(FILL)		85	25	-	-	-
D	SM-SP		87	26	27	NP	NP
J	CL-MH		81	43	94	17	41
Unit	φ'	c'	φ	c	e	C_c	OCR
A	31	0	-	-	0.95	-	1
D	26	0	-	-	0.90	0.18	1
J	26	0	18	0	1.04	0.26	1
Unit	C_α	C_v	kx	ky			
A	-	-	25.8	2.5			
D	0.0013	8.6	28.3	2.8			
J	0.013	2.3	0.06	0.006			

MODEL FUTURE IRAM SOIL PROPERTIES

Type		γd	w	kx	ky	φ'	c'
BNSF Embankment Fill		120	15	280	280	42	0
Stabilized Sediment		64	62	0.0003	0.0003	0	1800
IRAM Fill	Clay Liner, 1'	103	20	0.0003	0.0003	29	0
	Drainage Sand, 1'	100	10	30	30	29	0
	Top Soil	85	30	3	3	26	0
Final Remediation Fill		90	30	3	3	26	0

BOREHOLE INFORMATION

Borehole	Northing	Easting	Elevation	Depth
RP-04-41	701926	7625465	32.1'	42.0'
NB-16	701860	7625478	31.7'	49.6'
NB-19	701904	7625508	35.3'	50.0'
B-1-06	701985	7625526	36.0'	59.0'
CPT-004-URS	701982	7625540	35.5'	54.0'
CPT-C1-06	701925	7625546	38.5'	49.0'
NB-17	701985	7625558	35.9'	55.2'
NB-14	701826	7625616	37.2'	49.0'
CPT-005-URS	701851	7625638	38.0'	46.0'
BTB-5	702087	7625688	36.5'	28.0'
NB-13	701829	7625777	37.0'	59.0'
BTB-4A-84	702051	7625792	37.3'	83.0'

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: AS SHOWN

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

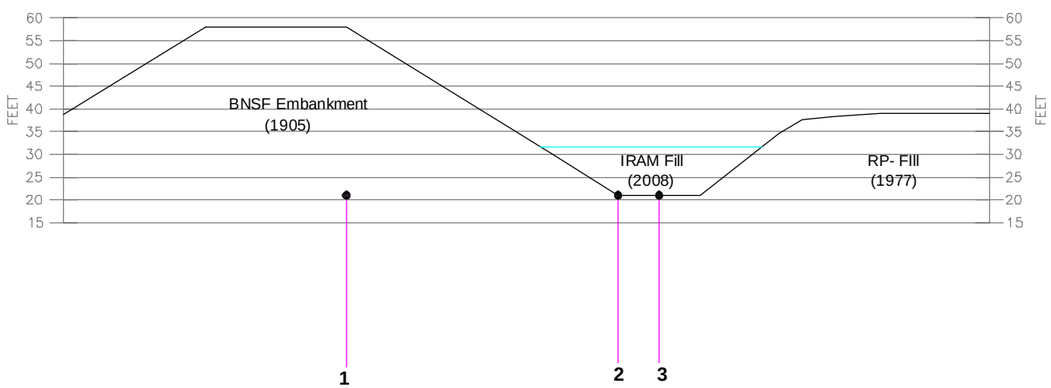
TITLE: AREA E SUBSURFACE PROFILE AND SOIL PARAMETERS CROSS SECTION E-E'

DATE: AUGUST 2007
PROJECT NO: 0-61M-107030/P65/T3
REV. NO.: 3
FIGURE No. FIGURE 13

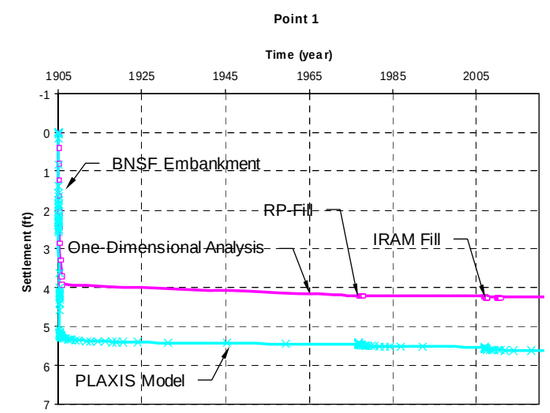
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 2~13.dwg – F-13 E – Aug. 31, 2007 12:54pm – laura.mccoy

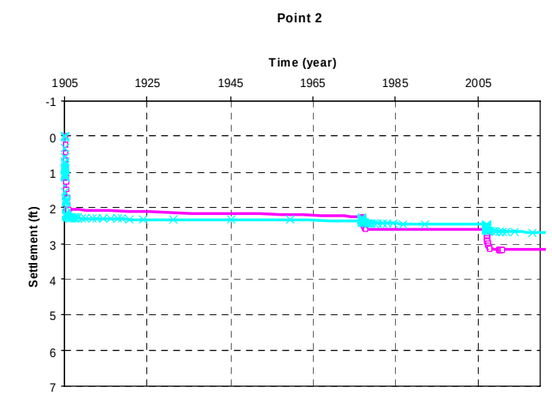
D A B C

CROSS SECTION A-A'



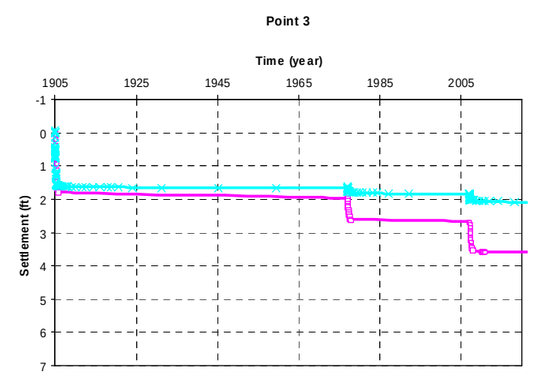
ESTIMATED TIME RATE OF SETTLEMENT





ESTIMATED SETTLEMENT

Section A		Settlement (feet)		
		Point 1	Point 2	Point 3
Existing BNSF Embankment	Plaxis Modeling	5.44	2.34	1.66
	One-Dimensional Consolidation Theory	4.21	2.25	1.96
Existing RP Fill	Plaxis Modeling	0.09	0.11	0.16
	One-Dimensional Consolidation Theory	0.01	0.37	0.70
IRAM Fill	Plaxis Modeling	0.10	0.24	0.26
	One-Dimensional Consolidation Theory	0.05	0.55	0.91



Notes:
1. Terzaghi's consolidation theory was used to calculate time rate of settlement for one-dimensional consolidation.
2. Double-drained paths were assumed.
3. Thickness of layer for the time rate of the consolidation was assumed to be constant during consolidation.
4. Stress distribution for settlement analysis was estimated using Newmark's integration of Boussinesq's equation.

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: x

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

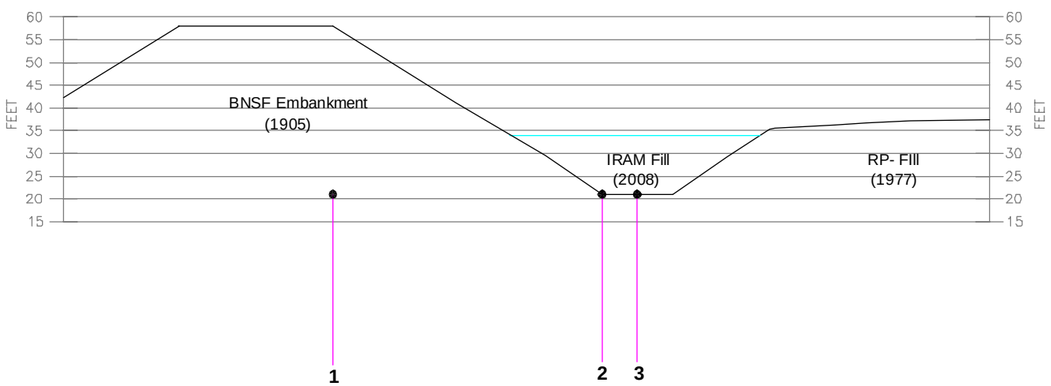
TITLE: AREA A SETTLEMENT COMPUTATIONS (REPORTED IN FEET)

DATE: AUGUST 2007
PROJECT NO: 0-61M-10703/65/T3
REV. NO.: 3
FIGURE No. FIGURE 14

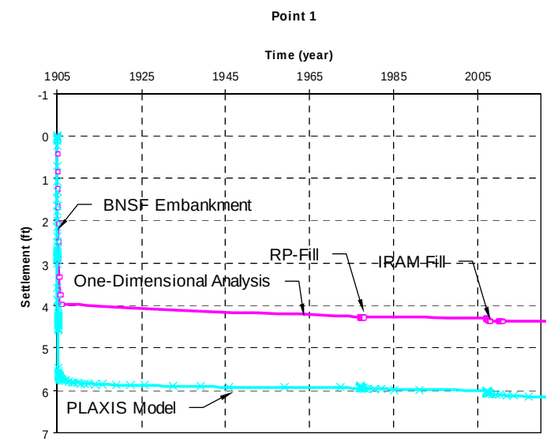
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 14~18.dwg – F-14 A – Aug. 31, 2007 12:59pm – laura.mccoy

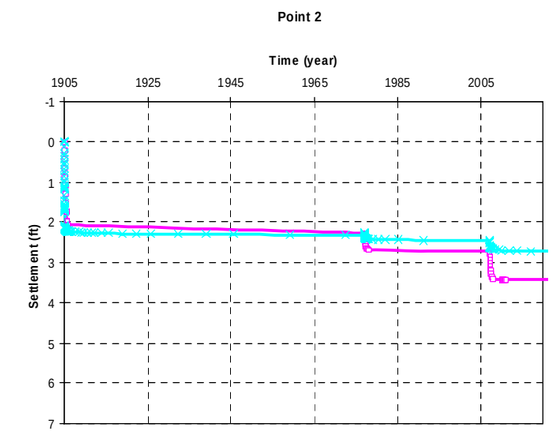
D A B C

CROSS SECTION B-B'



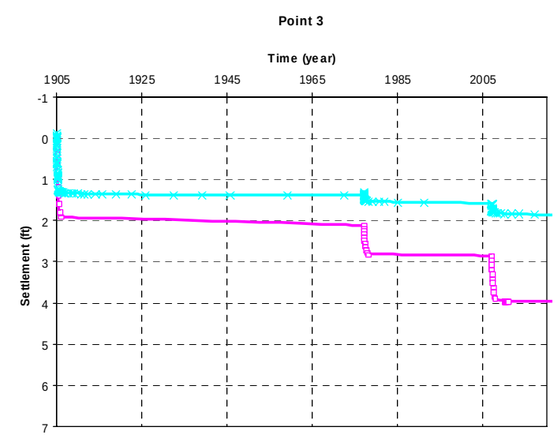
ESTIMATED TIME RATE OF SETTLEMENT





ESTIMATED SETTLEMENT

Section B		Settlement (feet)		
		Point 1	Point 2	Point 3
Existing BNSF Embankment	Plaxis Modeling	5.92	2.31	1.39
	One-Dimensional Consolidation Theory	4.28	2.27	2.11
Existing RP Fill	Plaxis Modeling	0.06	0.14	0.17
	One-Dimensional Consolidation Theory	0.01	0.45	0.75
IRAM Fill	Plaxis Modeling	0.16	0.29	0.31
	One-Dimensional Consolidation Theory	0.07	0.70	1.09



Notes:
1. Terzaghi's consolidation theory was used to calculate time rate of settlement for one-dimensional consolidation.
2. Double-drained paths were assumed.
3. Thickness of layer for the time rate of the consolidation was assumed to be constant during consolidation.
4. Stress distribution for settlement analysis was estimated using Newmark's integration of Boussinesq's equation.

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: X

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

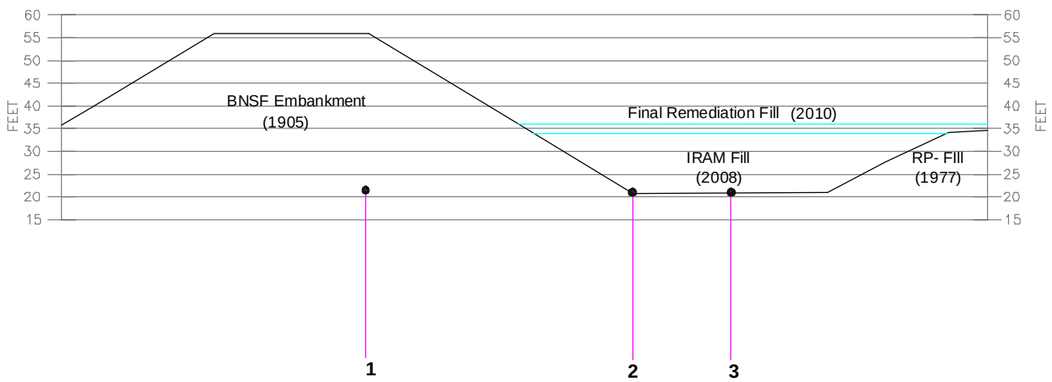
TITLE: AREA B SETTLEMENT COMPUTATIONS (REPORTED IN FEET)

DATE: AUGUST 2007
PROJECT NO: 0-61M-10703/65/T3
REV. NO.: 3
FIGURE No. FIGURE 15

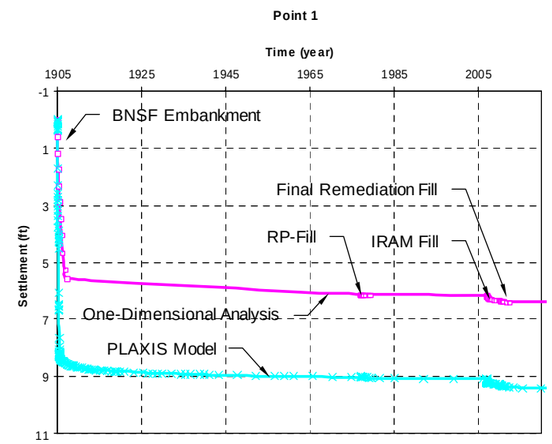
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 14~18.dwg – F-15 B – Aug. 31, 2007 1:00pm – laura.mccoy

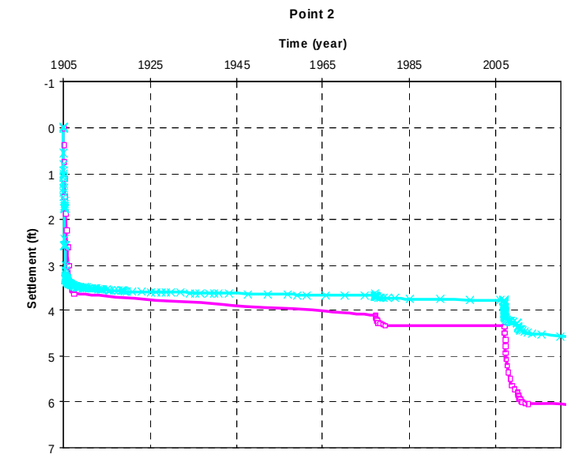
D A B C

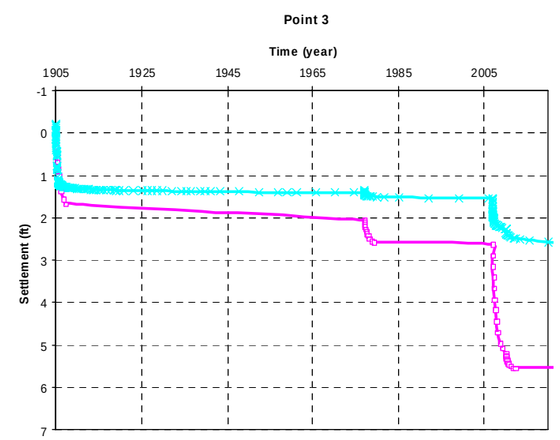
CROSS SECTION C-C'



ESTIMATED TIME RATE OF SETTLEMENT







ESTIMATED SETTLEMENT

Section C		Settlement (feet)		
		Point 1	Point 2	Point 3
Existing BNSF Embankment	Plaxis Modeling	9.02	3.67	1.42
	One-Dimensional Consolidation Theory	6.15	4.09	2.04
Existing RP Fill	Plaxis Modeling	0.09	0.09	0.13
	One-Dimensional Consolidation Theory	0.03	0.26	0.59
IRAM Fill	Plaxis Modeling	0.19	0.51	0.71
	One-Dimensional Consolidation Theory	0.16	1.43	2.58
Final Remediation Fill	Plaxis Modeling	0.22	0.37	0.41
	One-Dimensional Consolidation Theory	0.08	0.30	0.38

Notes:
1. Terzaghi's consolidation theory was used to calculate time rate of settlement for one-dimensional consolidation.
2. Double-drained paths were assumed.
3. Thickness of layer for the time rate of the consolidation was assumed to be constant during consolidation.
4. Stress distribution for settlement analysis was estimated using Newmark's integration of Boussinesq's equation.
5. Thickness of Final Remediation Fill will vary along profile.

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: x

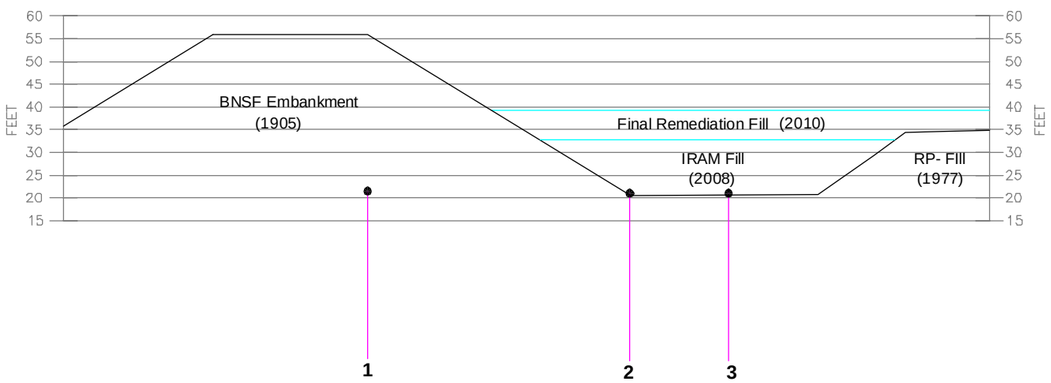
PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA C SETTLEMENT COMPUTATIONS (REPORTED IN FEET)

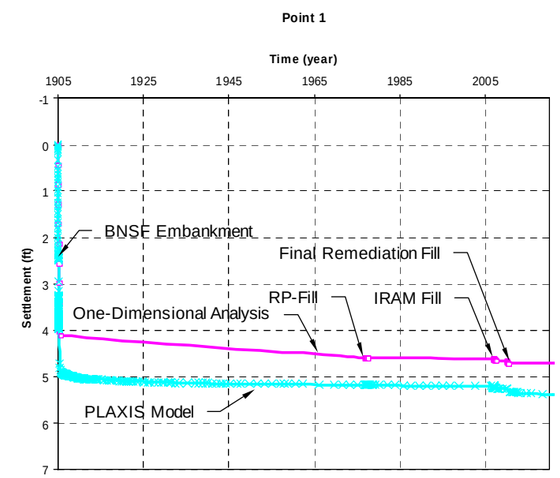
DATE: AUGUST 2007
PROJECT NO: 0-61M-10703/65/T3
REV. NO.: 3
FIGURE No. FIGURE 16

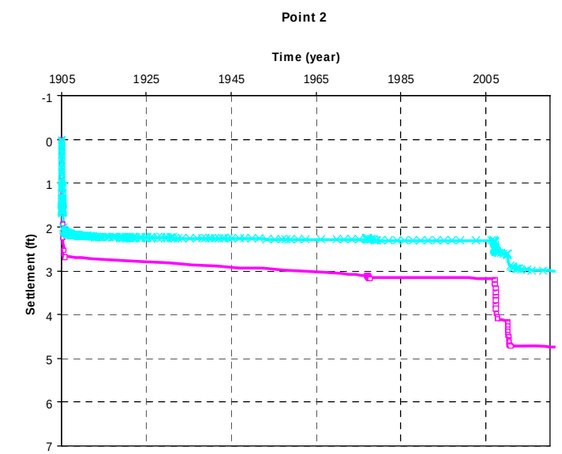
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 14~18.dwg – F-16 C – Aug. 31, 2007 1:03pm – laura.mccoy

CROSS SECTION D-D'



ESTIMATED TIME RATE OF SETTLEMENT

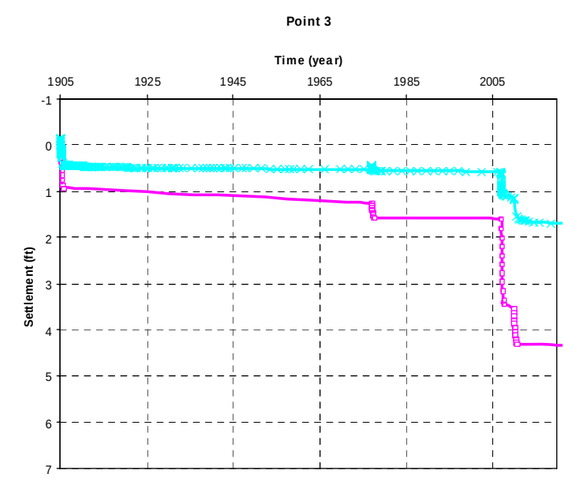




ESTIMATED SETTLEMENT

Section D		Settlement (feet)		
		Point 1	Point 2	Point 3
Existing BNSF Embankment	Plaxis Modeling	5.18	2.28	0.52
	One-Dimensional Consolidation Theory	4.60	3.09	1.25
Existing RP Fill	Plaxis Modeling	0.03	0.02	0.06
	One-Dimensional Consolidation Theory	0.02	0.10	0.35
IRAM Fill	Plaxis Modeling	0.05	0.28	0.54
	One-Dimensional Consolidation Theory	0.04	0.95	1.94
Final Remediation Fill	Plaxis Modeling	0.16	0.47	0.63
	One-Dimensional Consolidation Theory	0.08	0.62	0.82

Notes:
1. Terzaghi's consolidation theory was used to calculate time rate of settlement for one-dimensional consolidation.
2. Double-drained paths were assumed.
3. Thickness of layer for the time rate of the consolidation was assumed to be constant during consolidation.
4. Stress distribution for settlement analysis was estimated using Newmark's integration of Boussinesq's equation.
5. Thickness of Final Remediation Fill will vary along profile.



NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: x

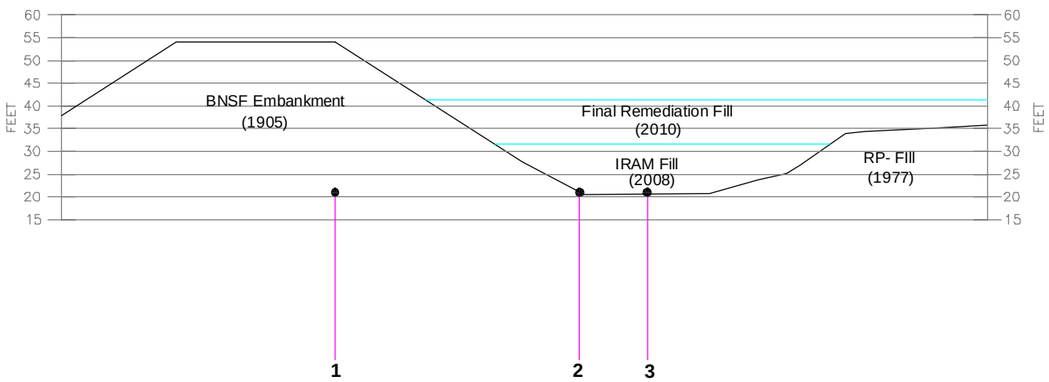
PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA D SETTLEMENT COMPUTATIONS (REPORTED IN FEET)

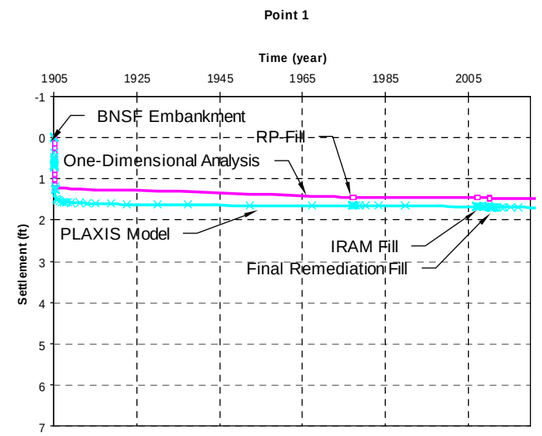
DATE: AUGUST 2007
PROJECT NO: 0-61M-10703/65/T3
REV. NO.: 3
FIGURE No. FIGURE 17

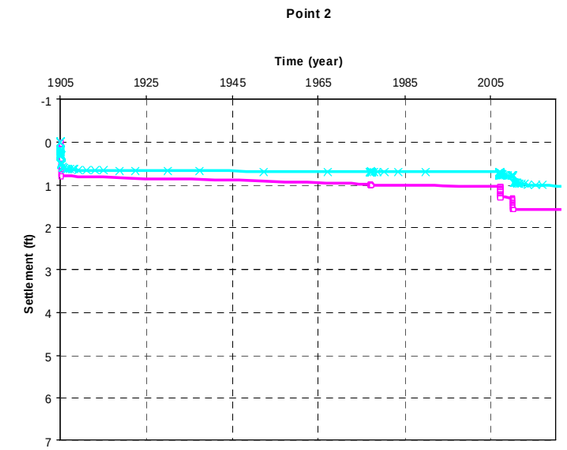
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 14~18.dwg – F-17 D – Aug. 31, 2007 1:07pm – laura.mccoy

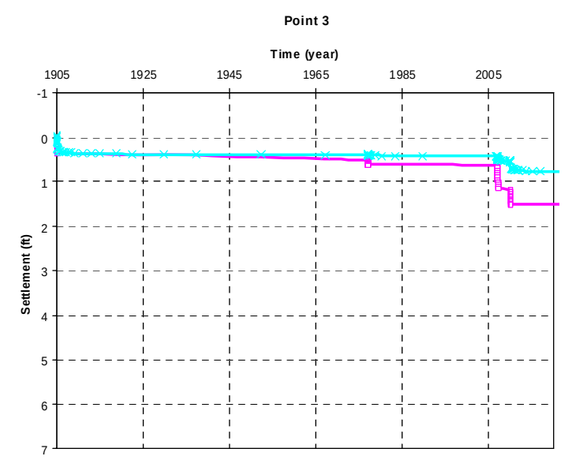
CROSS SECTION E-E'



ESTIMATED TIME RATE OF SETTLEMENT







ESTIMATED SETTLEMENT

Section E		Settlement (feet)		
		Point 1	Point 2	Point 3
Existing BNSF Embankment	Plaxis Modeling	1.66	0.70	0.41
	One-Dimensional Consolidation Theory	1.44	0.99	0.51
Existing RP Fill	Plaxis Modeling	0.01	0.01	0.03
	One-Dimensional Consolidation Theory	0.01	0.04	0.12
IRAM Fill	Plaxis Modeling	0.00	0.08	0.11
	One-Dimensional Consolidation Theory	0.01	0.28	0.53
Final Remediation Fill	Plaxis Modeling	0.05	0.25	0.25
	One-Dimensional Consolidation Theory	0.04	0.30	0.36

Notes:
1. Terzaghi's consolidation theory was used to calculate time rate of settlement for one-dimensional consolidation.
2. Double-drained paths were assumed.
3. Thickness of layer for the time rate of the consolidation was assumed to be constant during consolidation.
4. Stress distribution for settlement analysis was estimated using Newmark's integration of Boussinesq's equation.
5. Thickness of Final Remediation Fill will vary along profile.

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

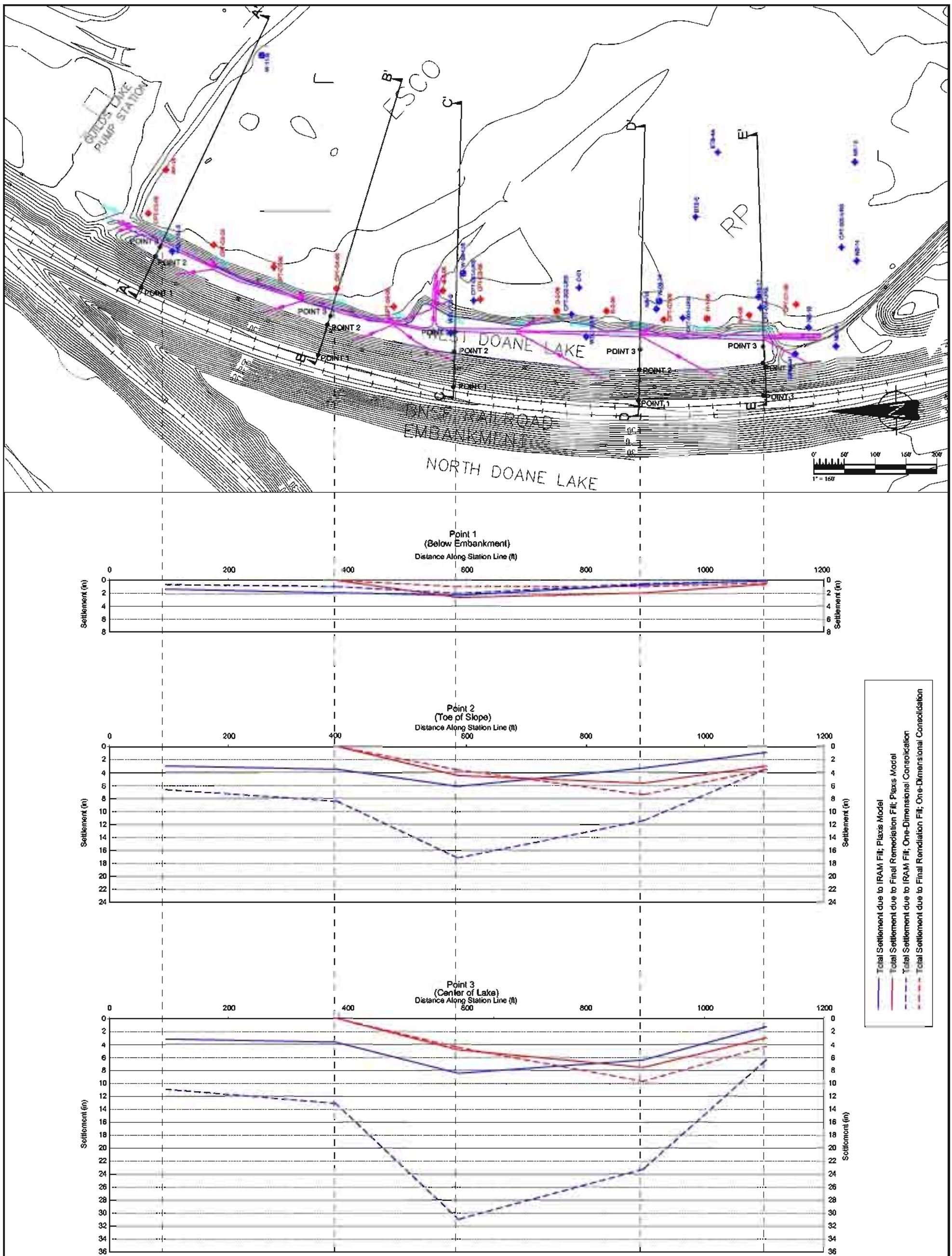
DWN BY: MK
CHK'D BY: PDR, RHB
DATUM: -
PROJECTION: -
SCALE: X

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AREA E SETTLEMENT COMPUTATIONS (REPORTED IN FEET)

DATE: AUGUST 2007
PROJECT NO: 0-61M-10703/65/T3
REV. NO.: 3
FIGURE No. FIGURE 18

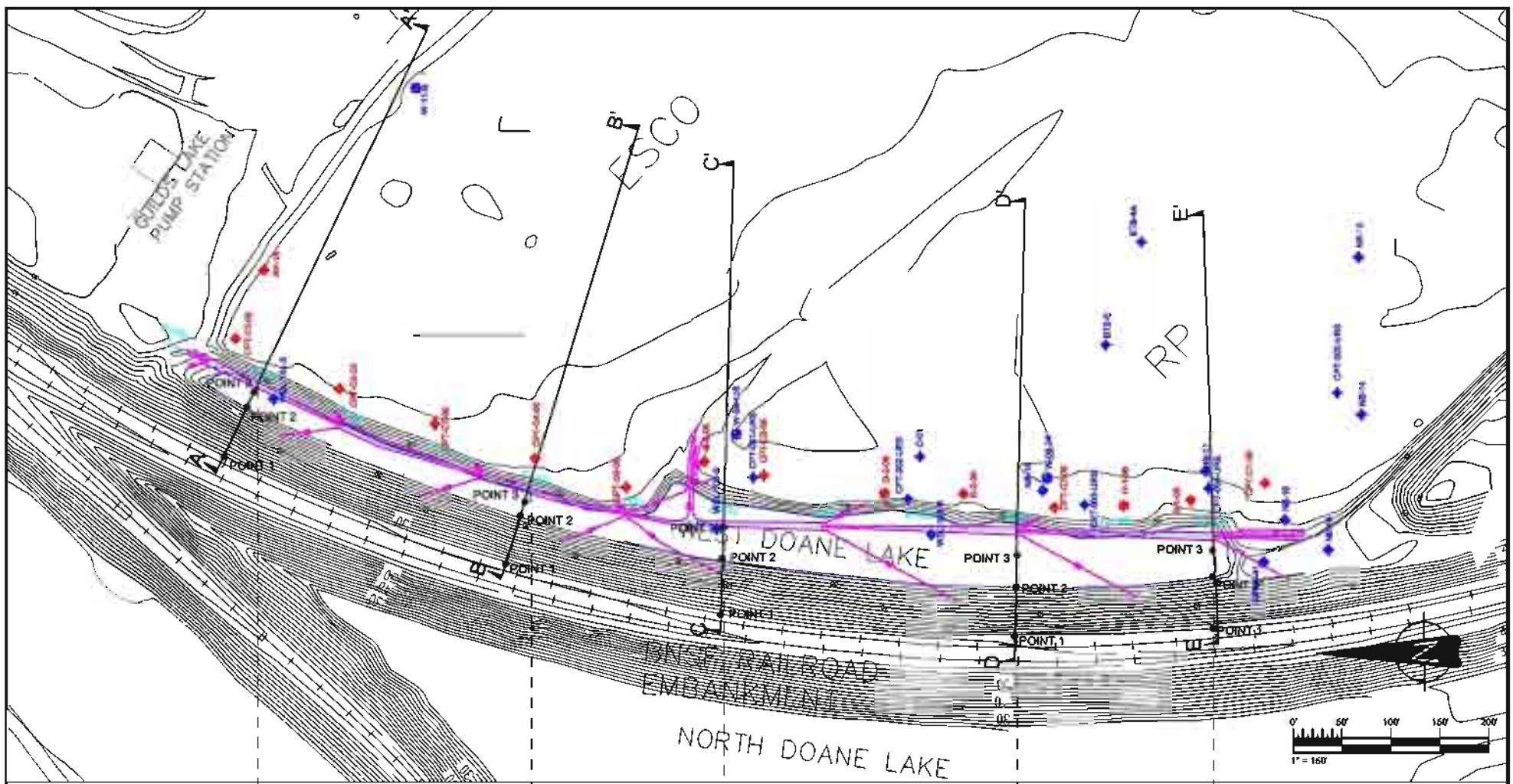
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 14~18.dwg – z – Aug. 31, 2007 1:06pm – laura.mccoy

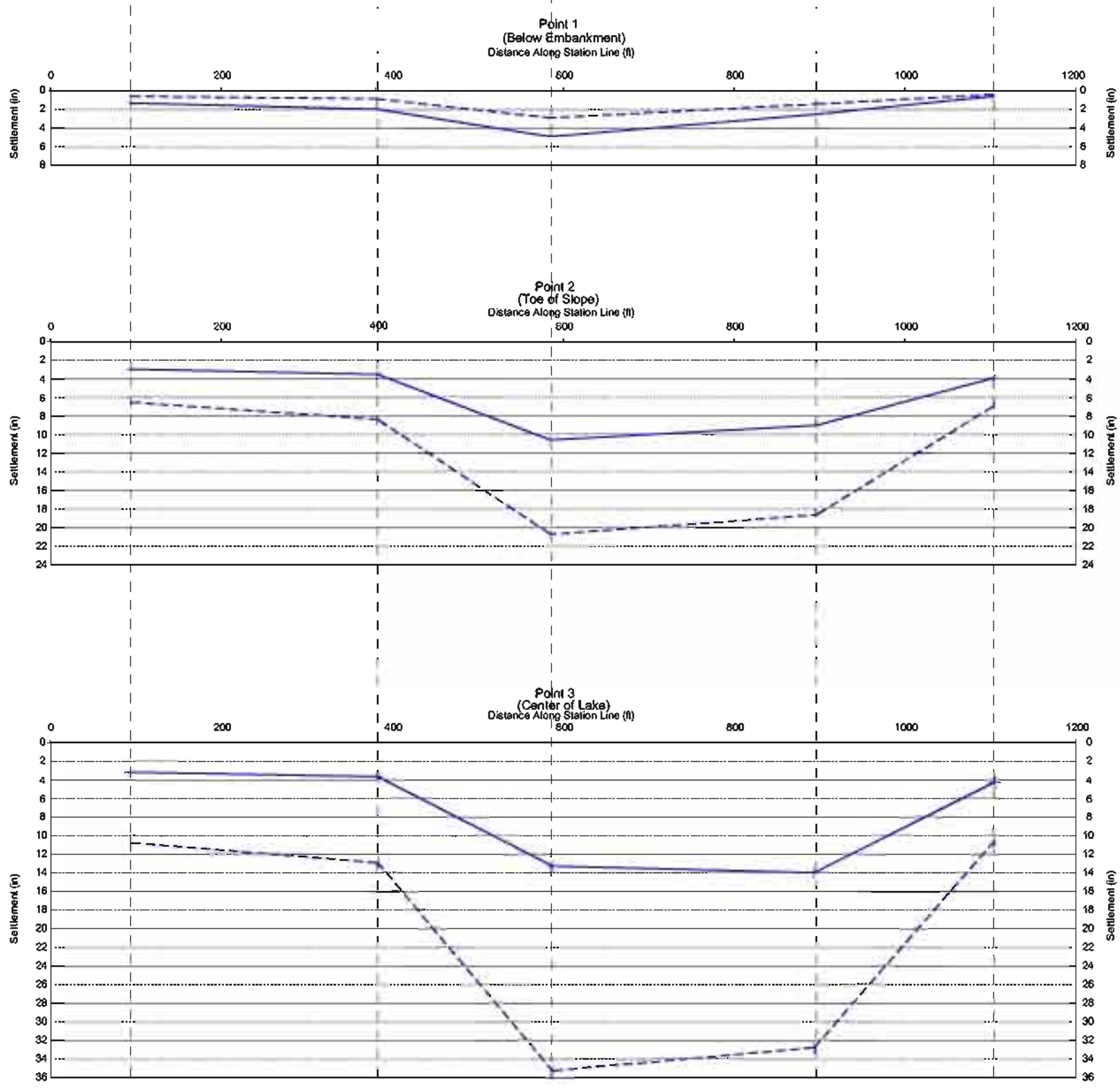


NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

CLIENT: SLLI	DWN BY: MK	PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON	REV. NO.: 3
	CHK'D BY: PDR		DATE: AUGUST 2007
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR. U.S.A. 97224	DATUM: -	TITLE: IRAM AND FINAL REMEDIATION FILL TOTAL SETTLEMENT PROFILE (REPORTED IN INCHES)	PROJECT NO: 0-61M-107030/P65/T3
	PROJECTION: -		FIGURE No. FIGURE 19
	SCALE: NTS		

K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 19~20.dwg - Figure 19 - Aug. 31, 2007 1:14pm - laura.mccoy

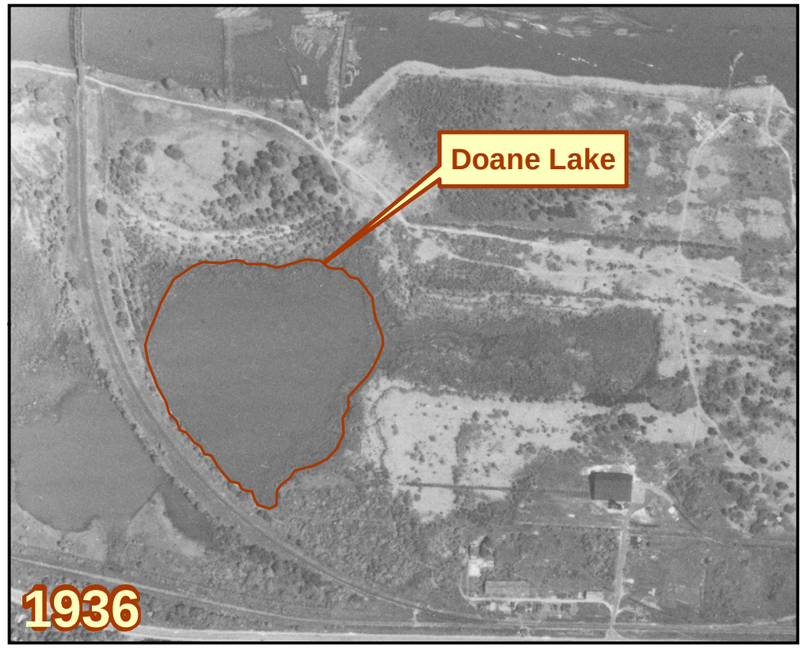


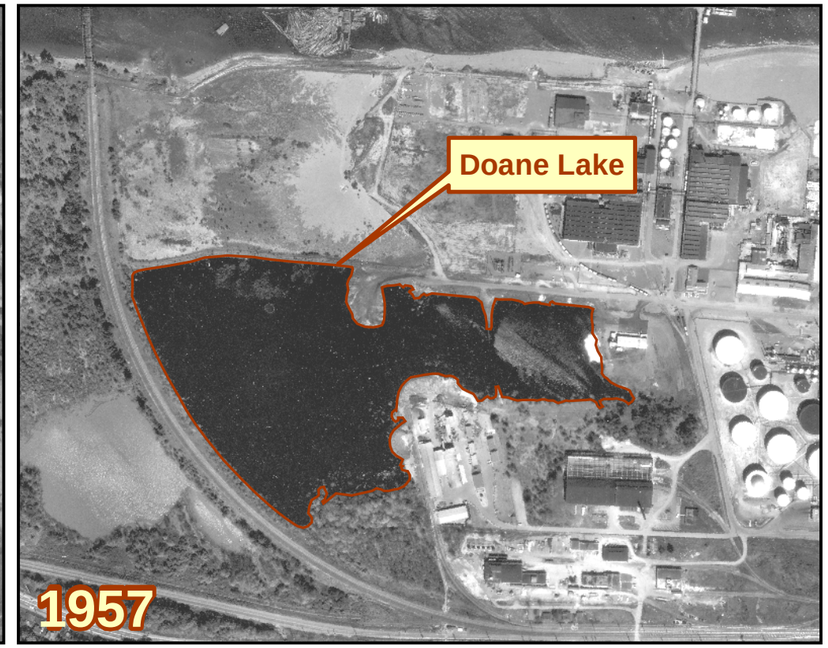


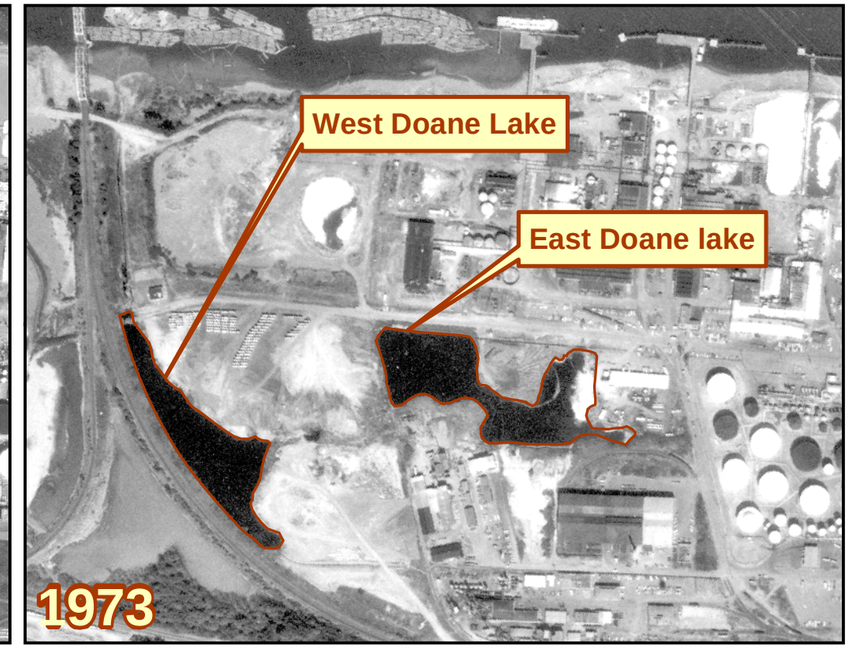
NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT TITLED: WEST DOANE LAKE ENGINEERING EVALUATION/COST ANALYSIS

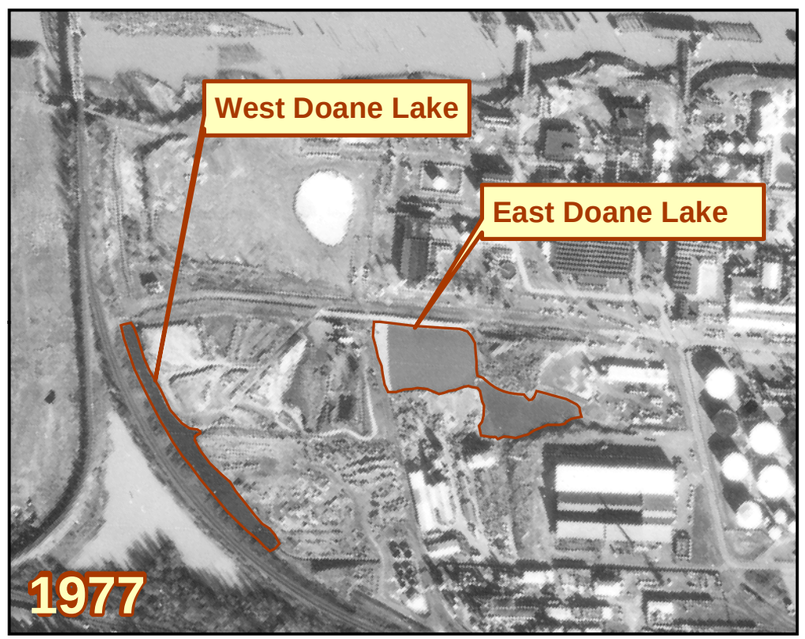
CLIENT: SLLI	DWN BY: MK	PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON	REV. NO.: 3
	CHK'D BY: PDR		DATE: AUGUST 2007
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR. U.S.A. 97224	DATUM: -	TITLE: IRAM AND FINAL REMEDIATION FILL CUMULATIVE SETTLMENT PROFILE (REPORTED IN INCHES)	PROJECT NO: 0-61M-107030/P65/T3
	PROJECTION: -		FIGURE No. FIGURE 20
	SCALE: NTS		

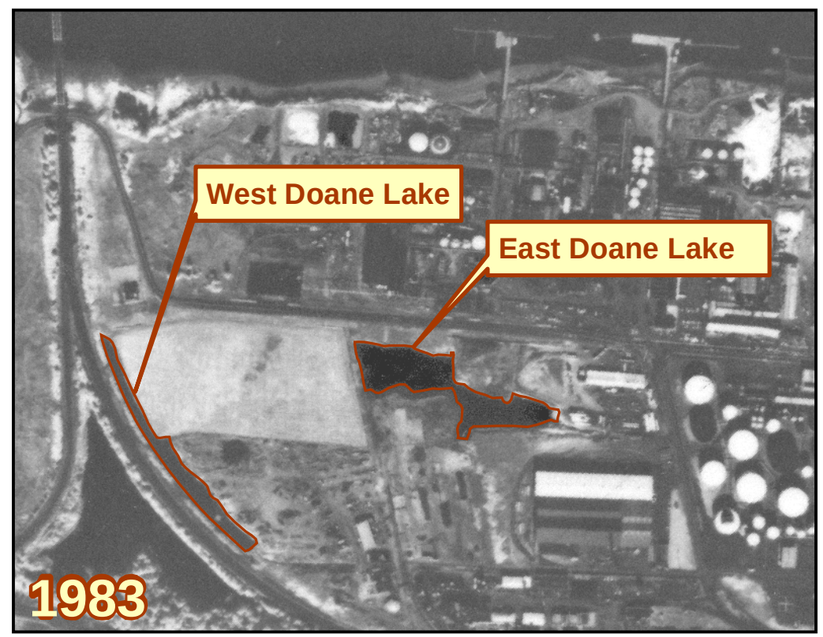
K:\10000\10700\10703\Phase 65 WDL IRAM\WDL EECA\DWG\Attachment_3_Geo_Rpt_Figs\Figure 19~20.dwg - Figure 20 - Aug. 31, 2007 1:13pm - laura.mccoy

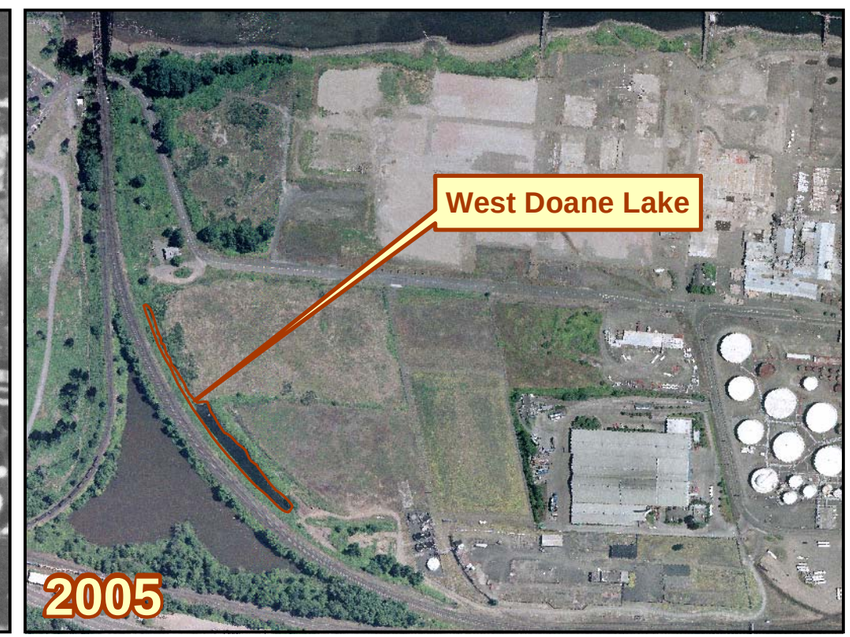












0 312.5 625 1,250 Feet

NOTE:
Historical Aerials from the Metro Data Resource Center & USGS

N

CLIENT: SLLI

AMEC Earth & Environmental
7376 SW Durham Road
Portland, OR, U.S.A. 97224

DWN BY: LM
CHK'D BY: RB
DATUM:
PROJECTION: 1983 OR SP N (Itnl Ft)
SCALE: 1 inch equals 625 feet

PROJECT: RP-WDL-IRAM GEOTECHNICAL EVALUATION PORTLAND, OREGON

TITLE: AERIAL PHOTOGRAPHS OF DOANE LAKE, HISTORICAL FILL AREAS

DATE: DECEMBER 2006
PROJECT NO.: 061M-107030
REV. NO.: 2
FIGURE NO.: FIGURE 21

K://10703/Phase 65/Geotechnical Investigation/DWG/Historic Shorelines-- fill of Doane Lake.mxd

APPENDIX A

Soil Boring Procedures and Logs

APPENDIX A
SOIL BORING PROCEDURES AND LOGS
0-61M-107030/Phase 65/T3

Soil Borings

As part of the exploration program, AMEC Earth & Environmental, Inc. (AMEC) advanced four borings (B-1-06 through B-3-06, and RP-18) to depths ranging from 39.5 to 125 feet. Borings B-1-06 through B-3-06 were advanced, using mud rotary drilling methods, between March 20 and March 31, 2006. Boring RP-18 was advanced, using sonic drilling methods, between August 16 and August 18, 2006. Each boring was advanced using truck-mounted drill rigs owned and operated by Geo-Tech Explorations of Tualatin, Oregon. The exploration locations were determined in the field by pacing from features identified on Rhône-Poulenc (RP) Site drawings. Boring elevations shown in the boring logs were based on elevation values shown on available topographic surveys of the RP Site. Boring locations are shown on Figure 2. Boring locations and elevations should be considered approximate.

Throughout the mud-rotary drilling operation, soil samples were obtained from the borings using a 1.5-inch OD Split Spoon sampler, in general conformance with guidelines presented in ASTM D 1586 - Standard Test Method for Penetration Test and Split Barrel Sampling of Soils. The samplers were driven into the soil a distance of 18 inches, or to refusal, with a 140-pound hammer free falling a distance of 30 inches. The sum of the blows required to drive the sampler the final two increments of 6 inches was recorded in the boring logs. If the sampler met refusal, the number of inches driven and the number of blows was recorded.

Relatively undisturbed samples were obtained using an Osterberg piston-type sampler to collect standard Shelby tube samples, in general accordance with ASTM D 1587, the Standard Practice for Thin-walled Tube Sampling of Soils.

After each boring was completed, the borehole was backfilled with hydrated bentonite chips.

The subsurface conditions of the Site have been interpreted from borings, Standard Penetration Test (SPT) and Shelby tube samples, cone penetration test (CPT) soundings, and flat plate dilatometer (DMT) soundings. “Undisturbed” sampling was conducted at specified intervals during boring, so soil was not recovered continuously along the entire depth. Drilling produced cuttings from the entire soil section. The cuttings were mixed and disturbed as they were expelled from the boring hole. Accordingly, the cuttings were useful solely to aid in the determination of grain size and soil type; mechanical properties did not represent those of the in-situ materials. CPT and DMT soundings were based on

the soil's resistance to mechanical penetration and deformation, respectively, which were calibrated with known strata from sampled boreholes.

Results of these methods indicate that the RP Site subsurface is a complex configuration of discontinuous horizons whose physical and mechanical properties vary vertically and laterally. However, even with an array of closely spaced test holes, it is not possible to know precisely the materials beneath any defined point; therefore, the type of material, its thickness, and mechanical properties must be interpolated between the borings.

The discontinuous geometry of strata, and highly varied material types, beneath the RP Site are typical of river alluvium and fill. The grain size and consistency of river-deposited alluvium varies according to water energy, sediment size, and depositional environment. Soils in artificial fill vary according to the type of material, delivery method, the method of emplacement, and the time since emplacement.

Boring logs for B-1-06 through B-3-06 and RP-18, as well as logs for historical borings identified on Figure 2, are presented on the following pages.

BORING AND TEST PIT LOGS

DISTINCTION BETWEEN FIELD LOGS AND FINAL LOGS

A field log is prepared for exploration by our field representative. The log contains information concerning soil and groundwater encountered, sampling depths, sampler types used and identification of samples selected for laboratory analysis. The final logs presented in this report represent our interpretation of subsurface conditions based on the contents of the field logs, observations made during explorations, and the results of laboratory testing. Our recommendations are based on the contents of the final logs and the information contained therein and not on the field logs.

SOIL CLASSIFICATION SYSTEM

Soil samples are classified in the field in general accordance with the Unified Soil Classification (USCS) presented in ASTM D 2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)." Final logs reflect field soil classifications and laboratory testing results. A summary of the USCS is provided on page 3. Classifications and sampling intervals are shown in the logs.

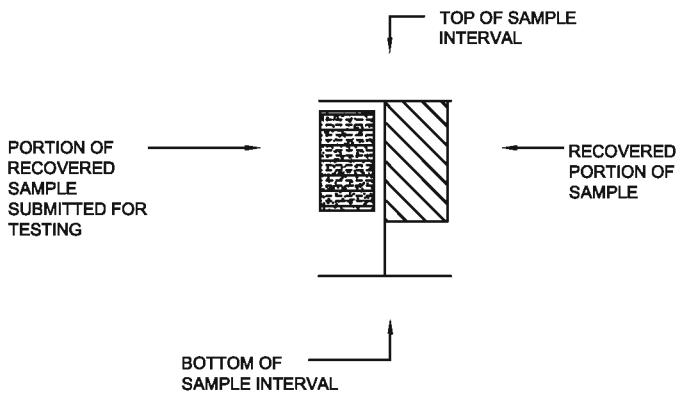
VARIATION OF SOIL BETWEEN EXPLORATIONS

The final logs and related information depict subsurface conditions only at the specific location and on the date(s) indicated. Those using the information contained herein should be aware that soil conditions at other locations or on other dates may differ.

TRANSITION BETWEEN SOIL OR ROCK CLASSIFICATIONS

The lines designating the interface between soil, fill, or rock on the final logs and on the subsurface profiles presented in the report are determined by interpolation and are therefore approximate. The transition between the materials may be abrupt or gradual. Only at specific exploration locations should profiles be considered as reasonably accurate and then only to the degree implied by the notes.

BORING LOG SAMPLES



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INFORMATION AND SYMBOLS

BACKGROUND

EXPLORATION LOG SYMBOLS

- Sample Location with No Sample Recovery
- Sample Location Using Direct Push Sampler (ASTM D 6282)
- Sample Location Using Ring-Lined Barrel Sampler (ASTM D 3550)
- Sample Location Using Split-Barrel Sampler (ASTM D 1586)
- Sample Location Using Thin-Walled Tube Sampler (ASTM D 1587)
- Rock Core Interval
- Sonic Core Interval
- Grab Sample Location
- Soil Sample Submitted for Chemical Testing
- Soil Sample Submitted for Physical Property Testing
- Water Sample Screened Interval
- Water Sample Submitted for Chemical Testing
- Water Sample Tested in the Field
- Groundwater Level Encountered While Drilling
- Static Groundwater Level
- Perched Groundwater
- Groundwater Level at Time of Sampling

SOIL CHARACTER

Granular Soil		Cohesive Soil		
Density	Standard Penetration Test *	Consistency	Standard Penetration Test*	Unconfined Compressive Strength (tsf)
Very Loose	0 - 4	Very Soft	Less Than 2	Less Than 0.25
Loose	4 - 10	Soft	2 - 4	0.25 - 0.5
Medium Dense	10 - 30	Medium Stiff	4 - 8	0.50 - 1.0
Dense	30 - 50	Stiff	8 - 16	1.0 - 2.0
Very Dense	Greater Than 50	Very Stiff	16 - 32	2.0 - 4.0
Blows Required to Drive a Split-Barrel Sampler 12 inches		Hard	Greater Than 32	Greater Than 4.0

DEFINITINIONS AND ABBREVIATIONS

AT	ATTERBERG LIMITS TEST	ND	NON DETECT	PPB	PARTS PER BILLION
BGS	BELOW GROUND SURFACE	NEG	NEGATIVE RESULT	PPM	PARTS PER MILLION
CO	CONSOLIDATION TEST	NS	NO VISIBLE SHEEN	PSF	POUNDS PER SQUARE FOOT
DS	DIRECT SHEAR TEST	OC	ORGANIC CONTENT	RS	SOIL RESISTIVITY TEST
DW	DRY UNIT WEIGHT	P	PUSHED SAMPLE	S4	SUDAN IV SOIL TEST
GS	MECHANICAL GRAIN SIZE TEST	P200	P200 FINES CONTENT TEST	SG	SPECIFIC GRAVITY TEST
HS	HEAVY SHEEN	PCF	POUNDS PER CUBIC FOOT	SPT	STD. PENETRATION TEST
HYD	HYDROMETER TEST	PH	SOIL pH	SS	SLIGHT SHEEN
MC	MOISTURE CONTENT	PID	PHOTOIONIZATION DETECTOR	TO	TOREVANE
MG/KG	MILLIGRAMS PER KILOGRAM	POS	POSITIVE RESULT	TSF	TONS PER SQUARE FOOT
MS	MODERATE SHEEN	PP	POCKET PENETROMETER	UV	ULTRAVIOLET LIGHT TEST

GRAIN SIZE DEFINITIONS			MINOR FRACTIONS IN FINE GRAINED SOIL		GROUNDWATER SEEPAGE	
SAND	FINE	No. 200 to No. 40	No Mention (CLAY, SILT)	< 15 percent	Slow	< 1 gpm
	MEDIUM	No. 40 to No. 10	With Sand, With Gravel	15 to 30 percent	Moderate	1-3 gpm
	COARSE	No. 10 to No. 4	Sandy, Gravelly	30 to 49 percent	Rapid	> 3 gpm
GRAVEL	FINE	No. 4 to 3/4-inch	FIELD MOISTURE OBSERVATION		CAVING	
	COARSE	3/4- to 3-inch	Dry	Absence of moisture, dusty, dry to touch	Minor	
COBBLE		3-inches to 12-inches	Moist	Damp but no visible water.	Moderate	
BOULDER		> 12-inches	Wet	Saturated, below groundwater	Severe	

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INFORMATION AND SYMBOLS

GENERAL

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOIL (MORE THAN 50 % OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE) (DUAL SYMBOLS USED WITH FINES CONTENT BETWEEN 5 AND 12%)	GRAVEL AND GRAVELLY SOIL (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE)	CLEAN GRAVEL (LESS THAN 5% FINES)		GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVEL, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVEL WITH FINES (GREATER THAN 12% FINES)		GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOIL (MORE THAN 50 % OF COARSE FRACTION PASSING ON NO. 4 SIEVE)	CLEAN SAND (LESS THAN 5% FINES)		SW	WELL-GRADED SAND, GRAVELLY SAND, LITTLE OR NO FINES
				SP	POORLY-GRADED SAND, GRAVELLY SAND, LITTLE OR NO FINES
		SAND WITH FINES (GREATER THAN 12% FINES)		SM	SILTY SAND, SAND-SILT MIXTURES
				SC	CLAYEY SAND, SAND-CLAY MIXTURES
FINE GRAINED SOIL (MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE)	SILT AND CLAY	(LIQUID LIMIT LESS THAN 50)		ML	INORGANIC SILT, ROCK FLOUR, OR CLAYEY SILT WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAY OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAY, SANDY CLAY, SILTY CLAY, LEAN CLAY
				OL	ORGANIC SILT AND ORGANIC SILTY CLAY OF LOW PLASTICITY
	SILT AND CLAY	(LIQUID LIMIT GREATER THAN 50)		MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS SILTY SOIL
				CH	INORGANIC CLAY OF HIGH PLASTICITY
				OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILT
HIGHLY ORGANIC SOIL				PT	PEAT, HUMUS, SWAMP SOIL WITH HIGH ORGANIC CONTENT

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INFORMATION AND SYMBOLS

SOIL CLASSIFICATION

ROCK CLASSIFICATION GUIDELINES

HARDNESS		DESCRIPTION
Very soft	(RH-0)	For plastic material only
Soft	(RH-1)	Carved or gouged with a knife
Moderate	(RH-2)	Scratched with a knife
Hard	(RH-3)	Difficult to scratch with a knife
Very hard	(RH-4)	Rock scratches metal; rock cannot be scratched with a knife

STRENGTH	DESCRIPTION
Plastic	Easily deformable with finger pressure
Friable	Crumbles by rubbing with fingers
Weak	Crumbles only under light hammer blows
Moderately Strong	Few heavy hammer blows before breaking
Strong	Withstands few heavy hammer blows and yields large fragments
Very Strong	Withstands many heavy hammer blows, yields dust and small fragments

WEATHERING	DESCRIPTION
Severe	Rock decomposed; thorough discoloration; all fractures extensively coated with clay, oxides, or carbonates.
Moderate	Intense localized discoloration of rock; fracture surfaces coated with weathering minerals.
Little	Slight and intermittent discoloration of rock; few stains on fracture surfaces.
Fresh	Rock unaffected by weathering

FRACTURING	FRACTURE SPACING
Crushed	Less than 5/8 inch to contains clay
Highly Fractured	5/8 inch to 2 inches
Closely Fractured	2 inches to 6 inches
Moderately fractured	6 inches to 1 foot
Little Fractured	1 foot to 4 feet
Massive	Greater than 4 feet

JOINT SPACING	DESCRIPTION
Papery	Less than 1/8 inch
Shaley or Platey	1/8 inch to 5/8 inch
Very Close	5/8 inch to 3 inches
Close	3 inches to 2 feet
Blocky	2 to 4 feet
Massive	Greater than 4 feet

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INFORMATION AND SYMBOLS

ROCK CLASSIFICATION

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
0		GP	Dense, brown, GRAVEL FILL; moist (3-inch minus crushed rock).						
		SM-SP	Loose brown silty fine SAND FILL with subrounded gravel; moist.						
5				SS-1	8				
10			Becomes medium dense and wet at 10.5 feet.	D-1	4-2-23				
		SM	Dense, gray, silty, fine SAND; moist. Occasional subangular to subrounded gravel.						
15				SS-2	11				
		ML	Very soft, gray, SILT with fine sand; moist (organic odor).						
20				SS-3	2			PD=28.0 ppm	
25				ST-1					
				ST-2				PP=1.5 tsf	
			becomes brown with occasional 4- to 8-inch thick lenses of fine sandy SILT and silty fine SAND.	SS-4	4				
30									
35				ST-3		55			UW = 73 pcf
		SM	Very loose, brown, silty, fine SAND; wet.						P200 = 94%
				SS-5	3				

BORING METHOD: Mud Rotary

BOREHOLE DIAMETER: 6 (in)

DRILL RIG: CME-75

CONTRACTOR: Geo-Tech Explorations

LOGGED BY: P.Richards/M. Kim

ELEVATION REFERENCE:

GROUND SURFACE ELEVATION: 38 feet

CASING ELEVATION: N/A feet

DRILLING DATES: 03/20/2006 - 03/21/2006

START CARD/TAG ID:

REMARKS:

RP West Doane Lake Geotechnical Investigation

0-61M-10703-0-Phase 65-3

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LOG OF BORING B-1-06

GEOTECH BORING 0-61M-10703-0-P65-T3 B1 TO B3.GPJ AMEC PORTLAND.GDT 6/19/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
40		SM	Very loose, brown, silty, fine SAND; wet.	ST-4					
		SP-SM	Medium dense, gray, fine poorly graded SAND with silty; wet.	SS-6	16				
45		SP	Medium dense, gray, fine to medium SAND; wet	ST-5					
				SS-7	13				
50		SM	Very Loose, brown, silty SAND; wet.	ST-6		30			UW = 95 pcf P200 = 18%
				SS-8	54				
		GP	Hard, dark gray to gray, subrounded to subangular GRAVEL; wet.						
55			Moderately hard (RH-2), moderately strong, little to moderately weathered, closely to moderately fractured, closely jointed, BASALT.	SS-9	30-50/4"			PD=42 ppm	
				SS-10	50/4"				
60									
65									
70									
75									

BORING METHOD: Mud Rotary
BOREHOLE DIAMETER: 6 (in)
DRILL RIG: CME-75
CONTRACTOR: Geo-Tech Explorations
LOGGED BY: P.Richards/M. Kim

ELEVATION REFERENCE:
GROUND SURFACE ELEVATION: 38 feet
CASING ELEVATION: N/A feet
DRILLING DATES: 03/20/2006 - 03/21/2006

START CARD/TAG ID:
REMARKS:

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LOG OF BORING B-1-06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
0		GP	Dense, brown, GRAVEL FILL; moist (3-inch minus crushed rock).						
		SM-SP	Loose, gray to brown silty SAND FILL with subrounded to subangular gravel; moist.						
5				SS-1	9				
		ML	Very soft, dark gray, fine sandy SILT; moist.						
10				SS-2	2				
			occasional gravels, cobbles, and boulders at 14 feet.						
15				SS-3	2				
20				SS-4	9				
		ML	Medium stiff, dark gray, SILT with fine sand; moist.						
25				ST-1				PP=0.25 tsf	
				SS-5	5				
30				ST-2		59		PP=1.0 tsf	UW = 62 pcf P200 = 91%
			Grades to fine sandy SILT at 32 feet.	SS-6	7				
35				ST-3					
				SS-7	2				

BORING METHOD: Mud Rotary
BOREHOLE DIAMETER: 6 (in)
DRILL RIG: CME-75
CONTRACTOR: Geo-Tech Explorations
LOGGED BY: P. Richards

ELEVATION REFERENCE:
GROUND SURFACE ELEVATION: 38 feet
CASING ELEVATION: N/A feet
DRILLING DATES: 03/28/2006 - 03/29/2006

START CARD/TAG ID:
REMARKS:

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LOG OF BORING B-2-06

GEOTECH BORING 0-61M-10703-0-P65-T3 B1 TO B3.GPJ AMEC PORTLAND.GDT 6/19/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Medium stiff, dark gray, SILT with fine sand; moist.						
40			Becomes very soft at 40 feet.	ST-4		31		PP=0.5 tsf	UW = 86 pcf P200 = 49%
				SS-8	2				
45				ST-5				PP=0.75 tsf	
			Becomes soft with a 2-inch thick layer of organics at 47 feet.	SS-9	3				
50				ST-6				PP=0.5 tsf	UW =
			2-inch thick layer of coarse SAND at 52 feet.	SS-10	3				
55				ST-7				PP=1.0 tsf	
				SS-11	4				
60				ST-8				PP=1.0 tsf	
			Becomes medium stiff at 62 feet.	SS-12	7				
65				ST-9				PP=2.0 tsf	
			becomes stiff with 2-inch thick silty fine SAND to clayey SILT interbeds at 67 feet.	SS-13	9				
70				ST-10		35		PP=3.0 tsf	UW = 62 pcf P200 = 78%
				SS-14	16-50/1"				
			Moderately hard (RH-2), moderately strong, little to moderately weathered, closely to moderately fractured, closely jointed, BASALT.						
75				SS-15	50/1.5"				

BORING METHOD: Mud Rotary
BOREHOLE DIAMETER: 6 (in)
DRILL RIG: CME-75
CONTRACTOR: Geo-Tech Explorations
LOGGED BY: P. Richards

ELEVATION REFERENCE:
GROUND SURFACE ELEVATION: 38 feet
CASING ELEVATION: N/A feet
DRILLING DATES: 03/28/2006 - 03/29/2006

START CARD/TAG ID:
REMARKS:

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LOG OF BORING B-2-06

GEOTECH BORING 0-61M-10703-0-P65-T3 B1 TO B3.GPJ AMEC PORTLAND.GDT 6/19/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
0		GP	Dense, brown, GRAVEL FILL; moist (3-inch minus crushed rock).						
		ML	Soft to medium stiff, brown, fine sandy SILT FILL with subrounded to subangular gravel; moist.						
5				D-1	1-14-19			140 lb Hammer	
10		SP	Very loose, gray, silty SAND FILL; moist.	SS-1	3				
15			With gravel, cobbles, and boulders at 16 to 24.5 feet.	D-2	8-50/6"			140 lb Hammer	
20			Grades to fine to course sand at 20 feet. Black tar-like substance at 20.25 feet.	SS-2	13				
25		SM	Loose, gray, silty fine SAND; moist.	SS-3	2				
30				ST-1 SS-4	4				
35		ML	Medium stiff, gray to black, fine sandy SILT; moist.	ST-2 SS-5	7				UW = 40 pcf MC = 119% PI = 64 LL = 125

BORING METHOD: Mud Rotary
BOREHOLE DIAMETER: 6 (in)
DRILL RIG: Mobile B-59
CONTRACTOR: Geo-Tech Explorations
LOGGED BY: P. Richards

ELEVATION REFERENCE:
GROUND SURFACE ELEVATION: 36 feet
CASING ELEVATION: N/A feet
DRILLING DATES: 03/30/2006 - 03/31/2006

START CARD/TAG ID:
REMARKS:

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LOG OF BORING B-3-06

GEOTECH BORING 0-61M-10703-0-P65-T3 B1 TO B3.GPJ AMEC PORTLAND.GDT 6/19/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Medium stiff, gray to black, fine sandy SILT; moist.						
40				ST-3					
				SS-6	7				
45				ST-4		80			UW = 52 pcf P200 = 65%
			Becomes stiff at 47 feet.	SS-7	13				
50				ST-5					
			Becomes medium stiff at 52 feet.	SS-8	8				
55				ST-6				PP=1.75 tsf	
				SS-9	6				
60				ST-7				PP=1.0 tsf	
				SS-10	7				
65				ST-8		55		PP=1.0 tsf	UW = 65 pcf P200 = 96%
				SS-11	5				
70				ST-9				PP=1.0 tsf	
				SS-12	5				
75				ST-10		52			UW = 69 pcf P200 = 95%
			1-inch thick layer of organics at 77 feet.	SS-13	5				

BORING METHOD: Mud Rotary
BOREHOLE DIAMETER: 6 (in)
DRILL RIG: Mobile B-59
CONTRACTOR: Geo-Tech Explorations
LOGGED BY: P. Richards

ELEVATION REFERENCE:
GROUND SURFACE ELEVATION: 36 feet
CASING ELEVATION: N/A feet
DRILLING DATES: 03/30/2006 - 03/31/2006

START CARD/TAG ID:
REMARKS:

RP West Doane Lake Geotechnical Investigation

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LOG OF BORING B-3-06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Medium stiff, gray to black, fine sandy SILT; moist.						
80			becomes stiff at 80 feet.	SS-14 ST-11	14				
85				SS-15 ST-12	12				
		SM	Medium dense, gray, silty fine SAND; wet.						
90				SS-16 ST-13	17				
95				SS-17 ST-14	17	36			UW = 85 pcf P200 = 37%
100			1- to 2- inch thick SILT interbeds at 102 feet.	SS-18 ST-15	23				
105				SS-19 ST-16	17	37			UW = 84 pcf P200 = 78%
110				SS-20 ST-17	50-0-50/3"				
		SP	Very dense, brown, fine to medium SAND with silt; wet.						
115				SS-21	30-50/5"				

BORING METHOD: Mud Rotary

BOREHOLE DIAMETER: 6 (in)

DRILL RIG: Mobile B-59

CONTRACTOR: Geo-Tech Explorations

LOGGED BY: P. Richards

ELEVATION REFERENCE:

GROUND SURFACE ELEVATION: 36 feet

CASING ELEVATION: N/A feet

DRILLING DATES: 03/30/2006 - 03/31/2006

START CARD/TAG ID:

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	MOISTURE CONTENT (%)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
			Moderately hard (RH-2), moderately strong, little to moderately weathered, closely to moderately fractured, closely jointed, BASALT.						
120				SS-22	50/0"				
125									
130									
135									
140									
145									
150									
155									

BORING METHOD: Mud Rotary
BOREHOLE DIAMETER: 6 (in)
DRILL RIG: Mobile B-59
CONTRACTOR: Geo-Tech Explorations
LOGGED BY: P. Richards

ELEVATION REFERENCE:
GROUND SURFACE ELEVATION: 36 feet
CASING ELEVATION: N/A feet
DRILLING DATES: 03/30/2006 - 03/31/2006

START CARD/TAG ID:
REMARKS:

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amec

LOG OF BORING B-3-06

APPENDIX B

Cone Penetration Test and
Flat Plate Dilatometer Procedures and Logs

APPENDIX C

Geophysical Investigation Procedures and Profiles

APPENDIX C
GEOPHYSICAL INVESTIGATION PROCEDURES AND PROFILES
0-61M-107030/Phase 65/T3

AMEC Earth & Environmental, Inc. (AMEC) geophysical study included both seismic refraction and seismic micro-tremor investigation methods. The equipment used and procedures followed in these two investigation methods are discussed below. The references listed below are included in Section 13.0 of the geotechnical report.

Seismic Refraction Surveys

Refraction seismic surveys are performed in general conformance with the guidelines presented in American Society of Testing Materials (ASTM) D 5777-95, Standard Guide for Using the Seismic Refraction Method for Subsurface Investigation, for refraction surveys using compression waves (p-waves). ASTM D 5777 does not address shear wave (s-wave) surveys; standard practice is followed for refraction surveys using s-waves. In some investigations, such as seeking and tracing earth fissures or other significant discontinuities (Rucker and Keaton, 1998), non-standard procedures and analyses, such as signal amplitude analysis, are used as part of the investigation process.

Seismic Equipment - Refraction seismic surveys are performed using a Geometrics ES-1225 or Smartseis signal enhancement seismograph. These instruments have the capability to simultaneously record 12 channels of geophone data and produce hard copies of that data. The Smartseis also has the capability of digitally storing geophone data. Signal enhancement capability permits the use of a sledgehammer as the seismic energy source. A timing sensor is attached to the hammer, and for p-waves, a metal plate is set securely on the ground surface and struck. Generating horizontally polarized s-waves typically involves setting the plate against the end of a wooden plank or railroad tie oriented perpendicular to the axis of the geophone array and striking with a horizontal motion of the sledgehammer. A truck is usually driven onto the plank or tie to effectively couple the plank or tie to the ground.

Because of the signal enhancement capability, signals from several or many strikes can be added together to increase the total signal available, relative to noise, to obtain the seismic record. Although explosives can also be used as a p-wave seismic energy source, a sledgehammer does not require licenses or permits, or involve special limitations, regulations, and liabilities. Explosive energy sources may be needed for long geophone arrays. Geophone cables with 12 geophone takeouts at 10-foot, 20-foot, or 20-meter spacings are presently used. Vertical geophones are used to obtain p-wave data and horizontal geophones are used to obtain s-wave data. The seismograph system is extremely portable. In areas where vehicular access is not possible, the equipment can be mobilized by various means, including backpacking, packhorse, helicopter, and canoe.

Field Procedures - An experienced AMEC engineer or geologist conducts the field operations. The engineer or geologist operates the equipment, prepares the records, and examines the data in the field. Refraction seismic lines are generally laid out using the standard spacings on the geophone cables. A maximum investigation depth of about 75 to 100 feet may be possible using a 300-foot array. For shorter lines with improved near-surface resolution, 10-foot spacings between geophones with a 120-foot array have a maximum investigation depth of about 30 to 40 feet. Other geophone spacings can also be used. To improve the resolution of near-surface interfaces, energy source positions generally are set at 12.5 feet from the ends of a 25-foot spacing geophone array, or at 5 feet from the ends of a 10-foot geophone spacing array. Several shot locations are utilized along the length of an array. When three shots are obtained, there is a foreshot and a backshot at the array ends, and a midshot at the array center. The midshot is usually placed midway between the two centermost geophones. When five shots are obtained, the additional shot points are located midway between the foreshot-midshot and the midshot-backshot. These multiple shot points permit interpretation of near-surface interfaces at various locations along the array, as well as near the endpoints, for variable subsurface profiles. Multiple shot points also permits more refined overall interpretations of shallow and mid-depth subsurface velocities and interfaces. In cases when both enhanced depth of investigation and improved shallow resolution are needed, multiple 12-geophone arrays are completed end-to-end and combined into longer, composite 24-or-more geophone arrays. Additional energy shot points are then conducted, at a minimum, at the midpoint and far endpoint of each adjacent 12-geophone array, to provide seismic energy travel path coverage over the extended array.

P-wave data are recorded for general exploration work. S-wave data are also recorded when dynamic subsurface material properties are desired. An s-wave arrival is verified by two sets of horizontal data that are 180 degrees out of phase. The phase reversal is obtained by either reversing the horizontal geophone orientation or reversing the hammer impact direction. Hard copy printouts of all field data are made and inspected in the field as the information is collected. Field notes, including line number and orientation, topographic variations, and other notes as appropriate, are recorded on the hard copy printout. Locations and other notes are recorded on site maps and in notebooks as appropriate. Initial first arrival picks are identified in the field, and array endpoint arrival times are checked for immediate data adequacy verification as part of the quality control process.

Interpretation - Although preliminary or quality control initial refraction seismic data interpretations may sometimes be performed in the field, full interpretations are conducted in the office. Two interpretation methods are currently accepted as industry standard: the intercept time method (ITM), and an optimization software routine based on finite difference optimization software. ITM breaks an interpretation into several distinct layers. It is simple, can be performed with a calculator, and can provide

excellent interpretations of near surface layer depths and velocities. Optimization provides a continuously variable velocity interpretation through a discrete grid. Optimization methods also indicate zones where interpretation has occurred, thus providing quality control on the depths to which the interpretation can be relied upon. However, the discrete grid used by optimization results in a low resolution of near surface interpretations. The combination of both ITM and optimization methods, when appropriate, provides two separate interpretations with complimentary strengths and cross-checking capability. These interpretation methods are applied, as appropriate, to a particular project.

Refraction seismic data interpretation using ITM is detailed by Mooney (1973). A personal computer spreadsheet is used to perform the necessary calculations to obtain depths and layer velocities, and to print out time-distance plots and depth interpretations. This method is used for interpretations of up to three layers; generally, more than three layers cannot be effectively interpreted using twelve geophone data points. Interpretations are then completed manually to produce a final interpreted geologic profile and layer depths.

Refraction seismic data interpretation using optimization is performed using the SeisOpt2D software package by Optim, L.L.C., of Reno, Nevada. Energy source and geophone receiver locations, elevations, and first arrival times are entered into the software package, and first arrival travel times are optimized through a process of repeated iterations (typically 10,000 to 100,000). Multiple seismic lines combined end to end into a longer composite line can be effectively interpreted using this software. Model grid dimensions and element sizes are selected, with larger grids containing smaller elements providing greater potential resolution. However, very large grids containing small elements may become unstable, and several runs may need to be performed to obtain stable, robust interpretations. Once a robust interpretation has been obtained, the resulting seismic velocity profile is printed out, with varying colors indicating the interpreted velocities.

Seismic Microtremor (ReMi) Surveys

Refraction microtremor (ReMi) surveys are performed in general accordance with the method described by Louie (2001) to develop vertical one-dimensional s-wave velocity profiles. The same equipment used for ReMi is also used for refraction seismic surveys. When appropriate, both p-wave and s-wave data can be collected with the same physical seismic line setup.

ReMi Seismic Equipment - ReMi surveys are performed using a Geometrics S-12 Smartseis signal enhancement seismograph. This instrument has the capability to digitally record and store up to 12 channels of geophone data in SEG2 format. Up to 16,384 samples can be acquired for each geophone channel, at sample intervals as long as 0.25, 0.5, 1, and 2 milliseconds. Sampling events to collect ReMi field data

may typically last 6, 12, or 24 seconds. Geophone cables with 12 geophone takeouts at 10-foot or 20-meter spacings are used. Vertical geophones with resonant frequencies of 28 Hz and 4.5 Hz are used to obtain surface wave data for s-wave vertical profile analysis. High frequency geophones are used for shorter arrays with shallower depths of investigation, and low frequency geophones are used for longer arrays with greater depths of investigation. Broadband ambient site noise may be used as a surface wave energy source. Controlled surface wave energy sources include jogging alongside shorter geophone arrays and driving a field vehicle alongside longer geophone arrays. The seismograph system is extremely portable. In areas where vehicular access is not possible, the equipment can be mobilized by various means, including backpacking, packhorse, helicopter, and canoe.

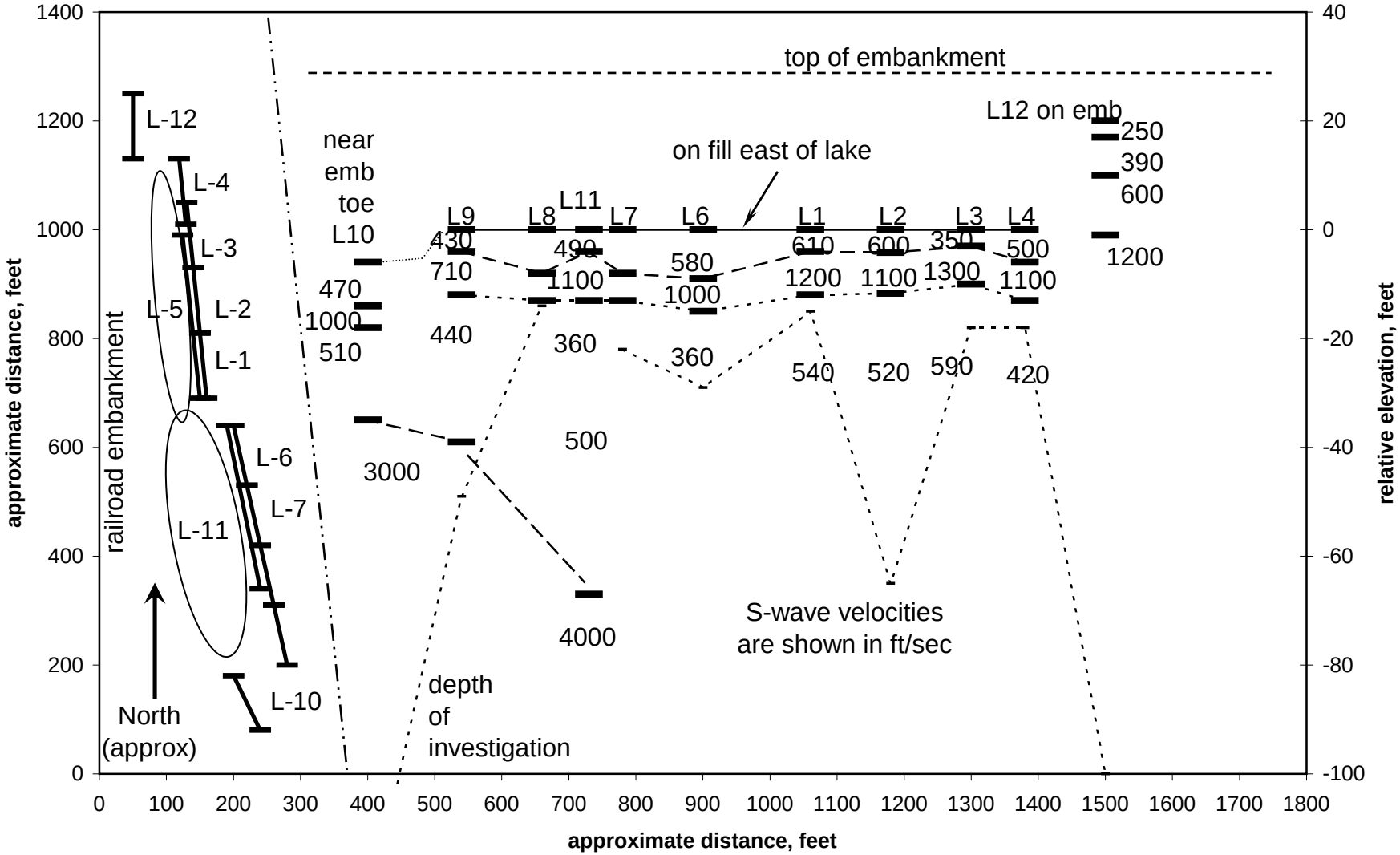
ReMi Field Procedures - An experienced AMEC engineer or geologist conducts the field operations. The engineer or geologist operates the equipment, prepares the records, and examines the data in the field. ReMi seismic lines are generally laid out using the standard spacings on the geophone cables. An investigation depth of about 100 meters or more may be possible using a 240 meter array. For shorter lines with improved near-surface resolution, 10-foot spacings between geophones with a 120-foot array have an investigation depth of about 30 to 40 feet or more. Other geophone spacings can also be used.

Data collection consists of the system sampling the ambient or generated surface waves (a sampling event) at the geophone array for several to many seconds. Typical sampling times and intervals for a sampling event may be 6 seconds at 0.5 milliseconds, 12 seconds at 1 millisecond, and 24 seconds at 2 milliseconds, for array lengths of 60 feet, 120 feet, and 240 meters, respectively. Several sampling events are collected at each ReMi setup. For shorter arrays, where ReMi with surface wave energy generated by jogging is conducted in concert with seismic refraction data collection, four sampling events may typically be recorded. For longer arrays, where urban ambient noise or a field vehicle generates the surface wave energy, six to ten sampling events may be recorded. Field notes, including line number and orientation, topographic variations, and other notes as appropriate, are recorded on hard copies of traces. Locations and other notes are recorded on site maps and in notebooks, as appropriate. Sample data files may be transferred by 3.5-inch floppy disk to the laptop computer, and preliminary interpretations made for immediate data adequacy verification as part of the quality control process.

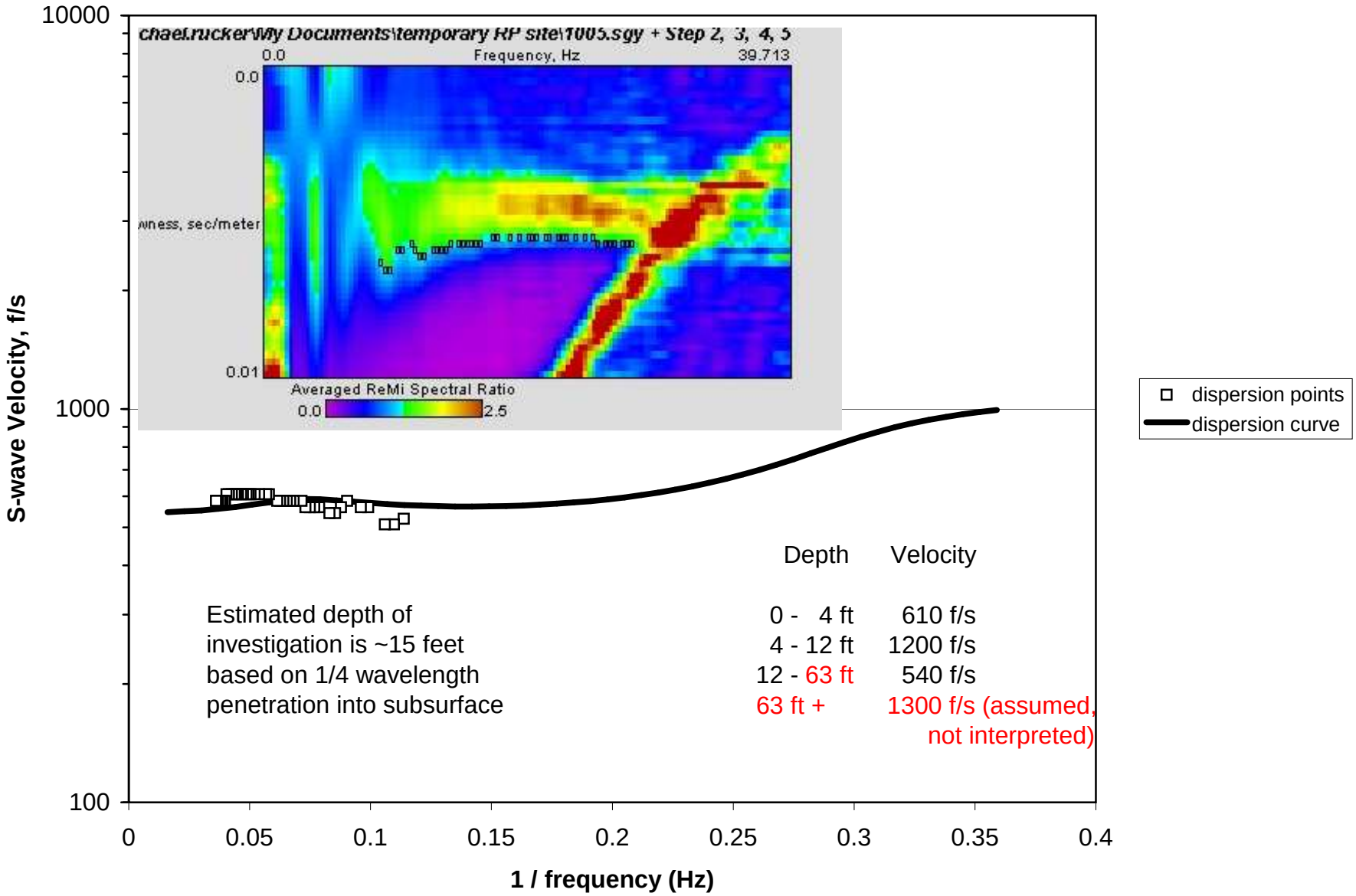
Interpretation - Although preliminary or initial quality control ReMi seismic data interpretations can be performed in the field, full interpretations are completed in the office. Data files, typically about 580kb each in size, are transferred from the seismograph to the laptop computer using 3.5-inch floppy disks. Interpretation is performed using the SeisOpt ReMi Version 3.0 software package by Optim, L.L.C., of Reno, Nevada. The software consists of two modules. The ReMiVsSpect module is

used to convert the SEG2 files into a spectral energy shear wave frequency versus shear wave velocity presentation for a ReMi seismic setup. The interpreter then selects a dispersion curve consisting of the lower bound of the spectral energy shear wave velocity versus frequency trend, and that dispersion curve is saved to disk. Tracing the lower bound (slowest) of the shear wave velocity at each frequency selects the ambient energy propagating parallel to the geophone array, since energy propagating incident to the array will appear to have a faster propagating velocity. The second module, ReMiDisper, is then invoked. The interpreter models a dispersion curve with multiple layers and s-wave velocities to match the selected dispersion curve from the field data. An interpreted vertical s-wave profile is obtained through this process. It must be understood that this type of interpretation may not result in a unique solution.

Approximate Site Plan and (ReMi) S-wave Profile



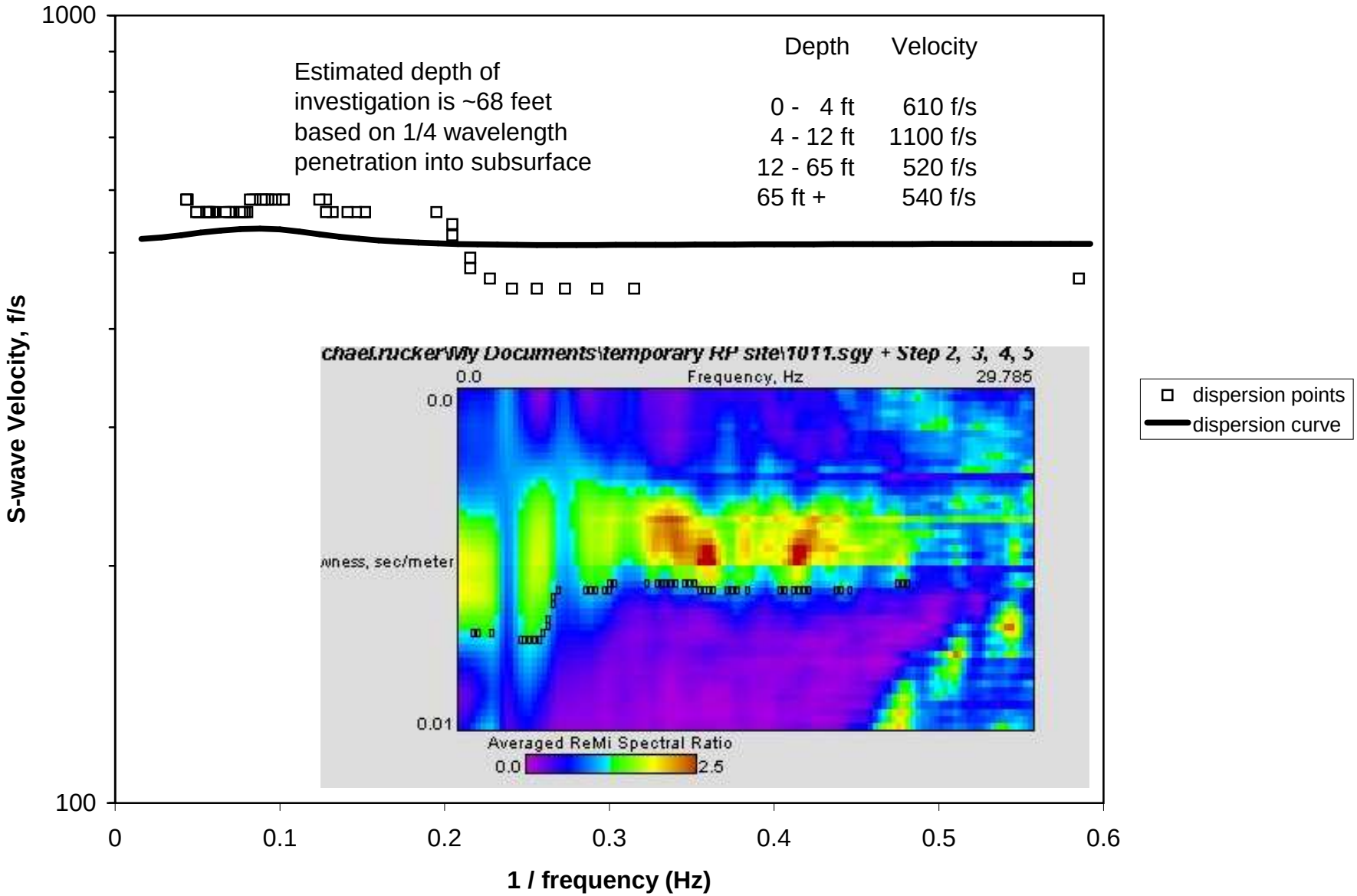
Refraction Microtremor S-wave Interpretation **Line 1** AMEC Job No. 0-61M-107030

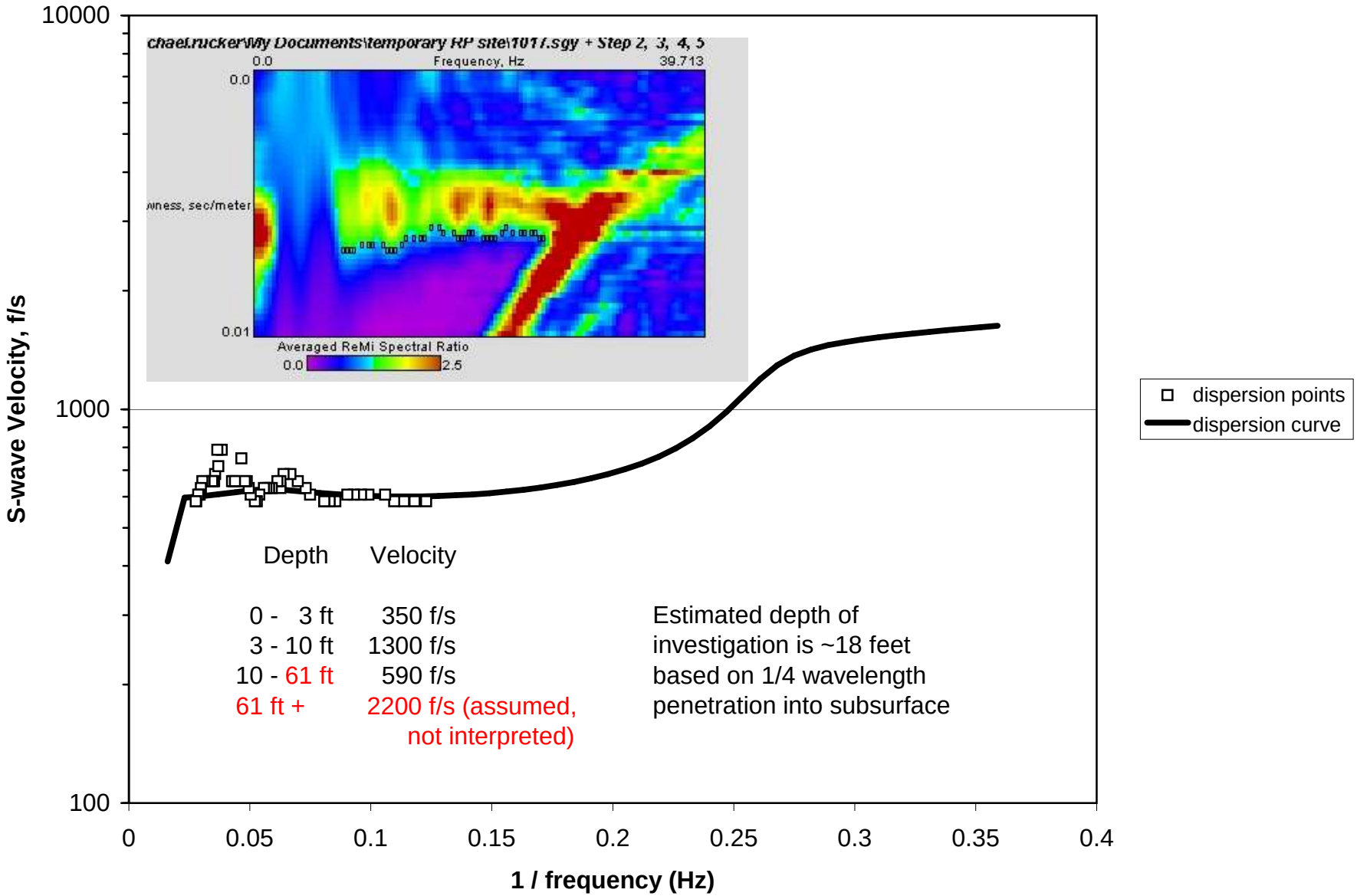


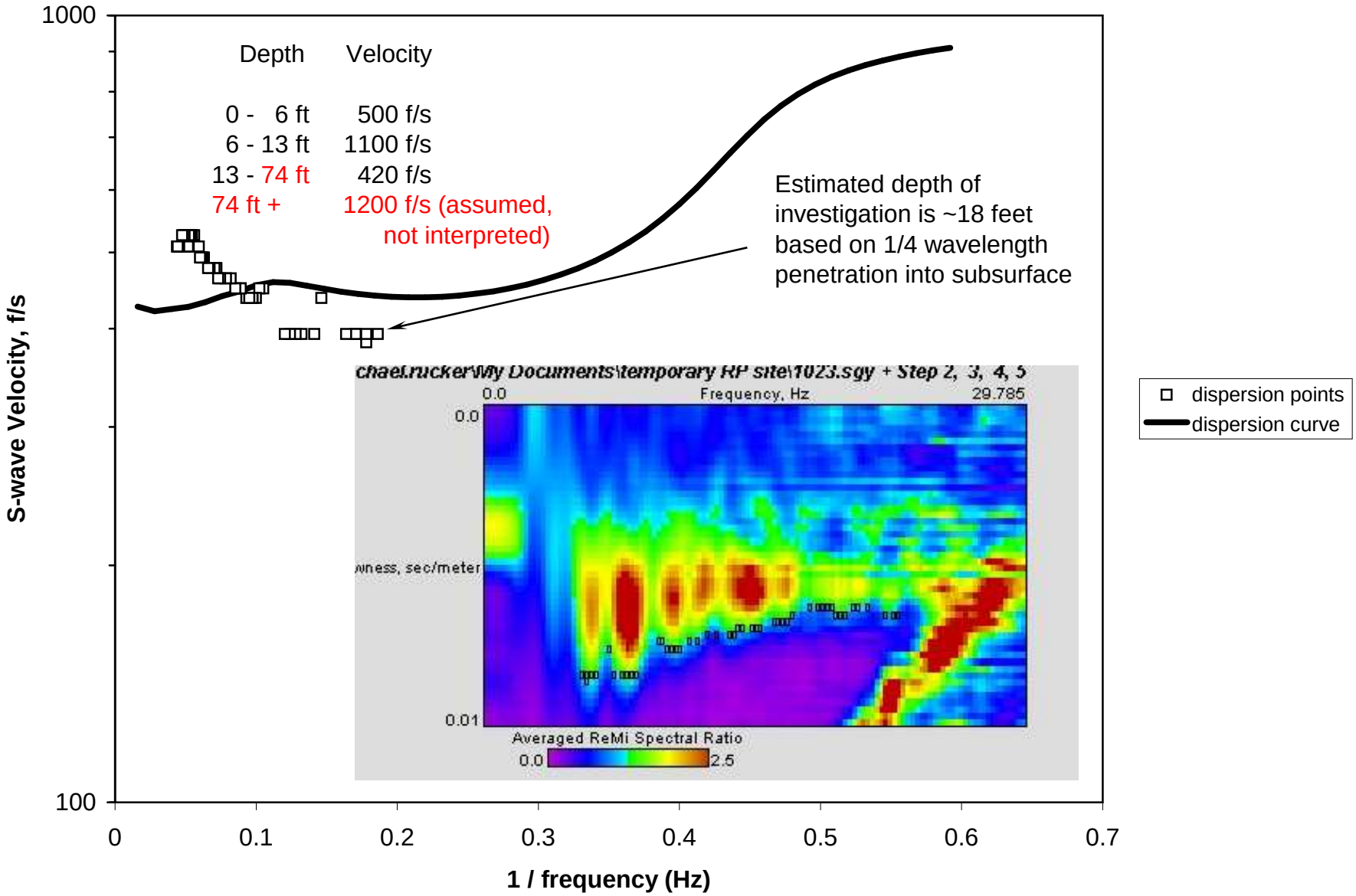
Estimated depth of investigation is ~15 feet based on 1/4 wavelength penetration into subsurface

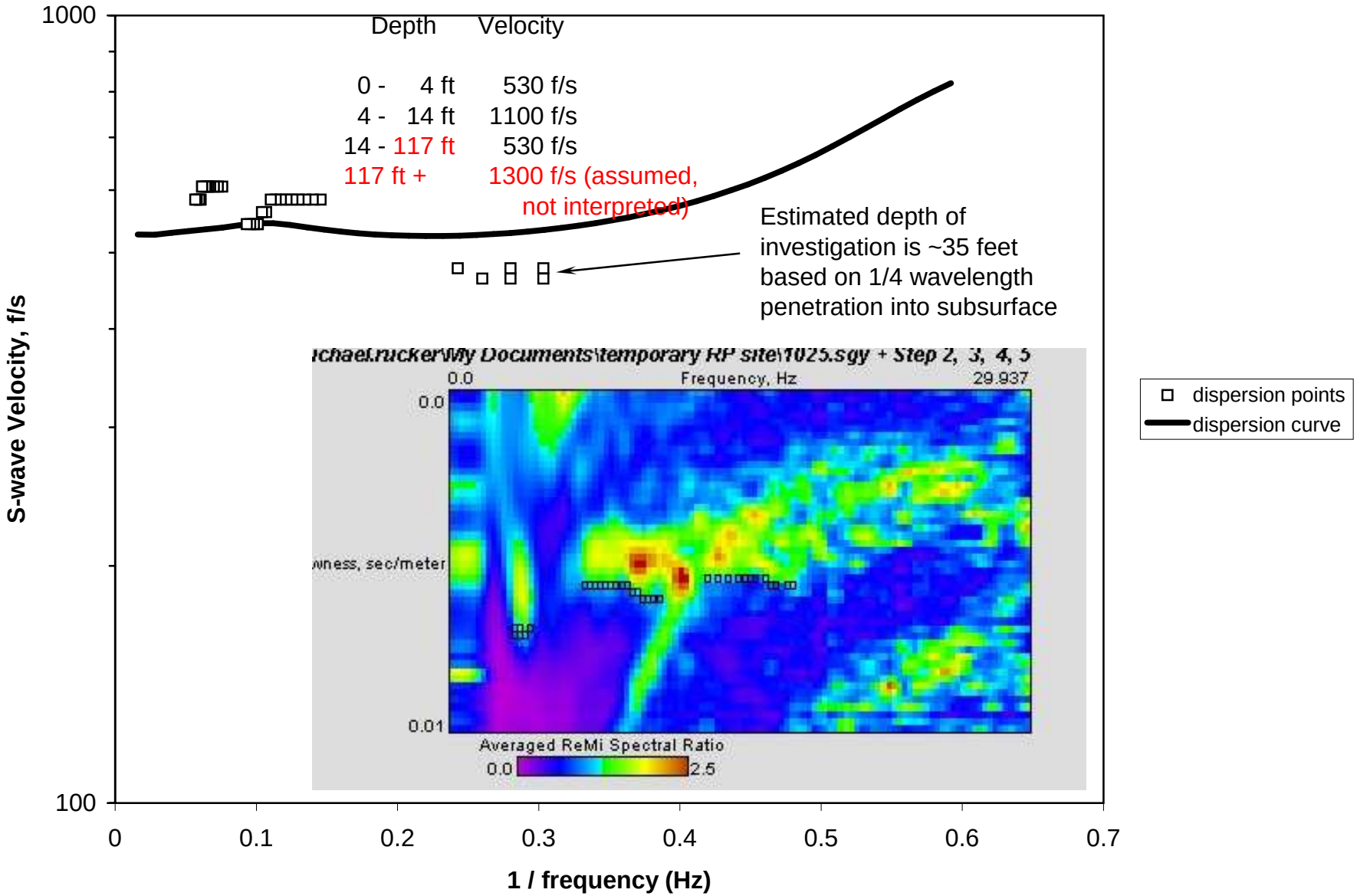
Depth	Velocity
0 - 4 ft	610 f/s
4 - 12 ft	1200 f/s
12 - 63 ft	540 f/s
63 ft +	1300 f/s (assumed, not interpreted)

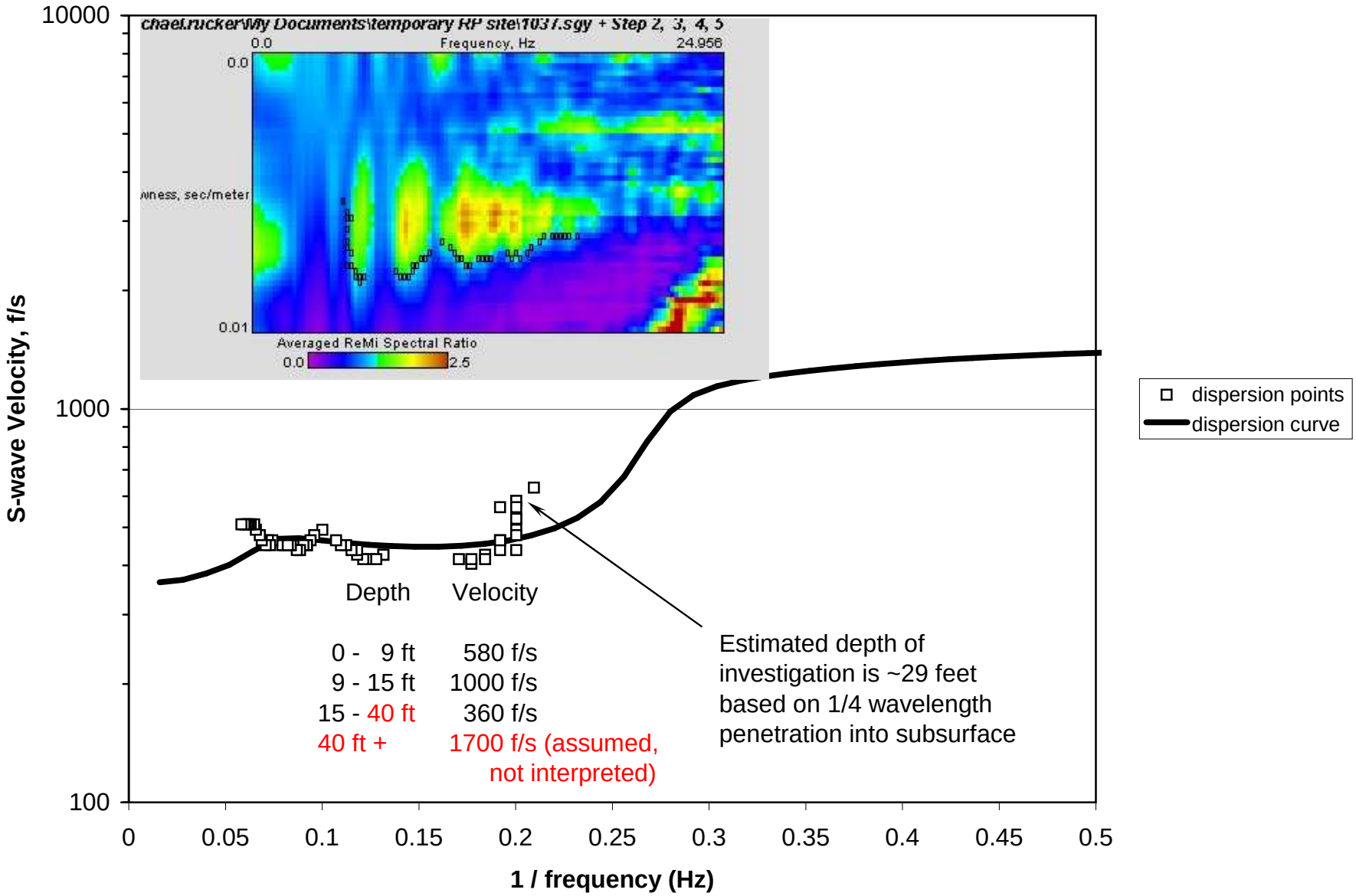
Refraction Microtremor S-wave Interpretation **Line 2** AMEC Job No. 0-61M-107030



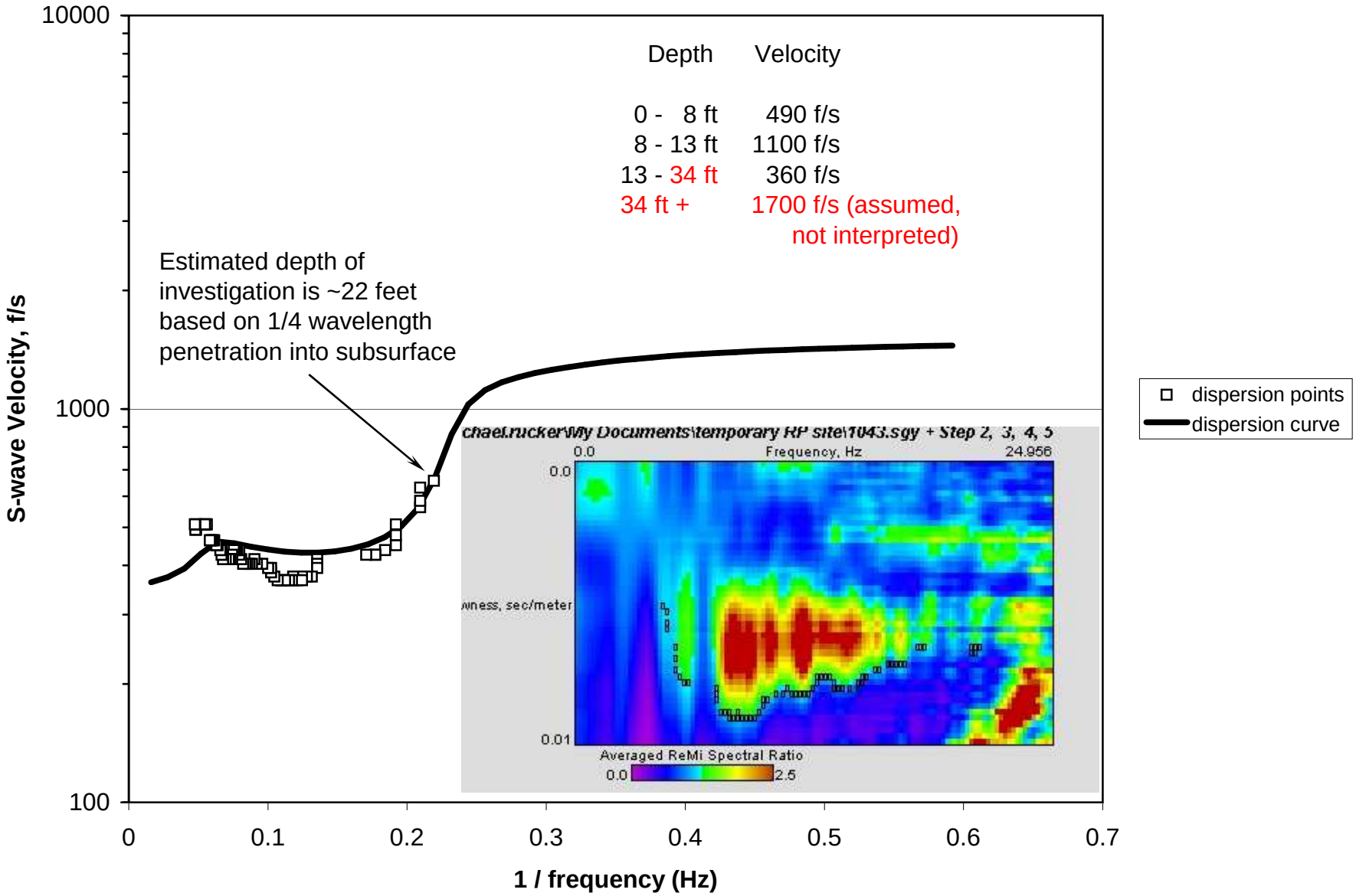

10000
1000
100
S-wave Velocity, f/s
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
1 / frequency (Hz)
chael.rucker\My Documents\temporary RP site\1017.sgy + Step 2, 3, 4, 5
0.0
Frequency, Hz
39.713
0.0
wness, sec/meter
0.01
Averaged ReMi Spectral Ratio
0.0
2.5
dispersion points
dispersion curve
Depth Velocity
0 - 3 ft 350 f/s
3 - 10 ft 1300 f/s
10 - 61 ft 590 f/s
61 ft + 2200 f/s (assumed, not interpreted)
Estimated depth of investigation is ~18 feet based on 1/4 wavelength penetration into subsurface

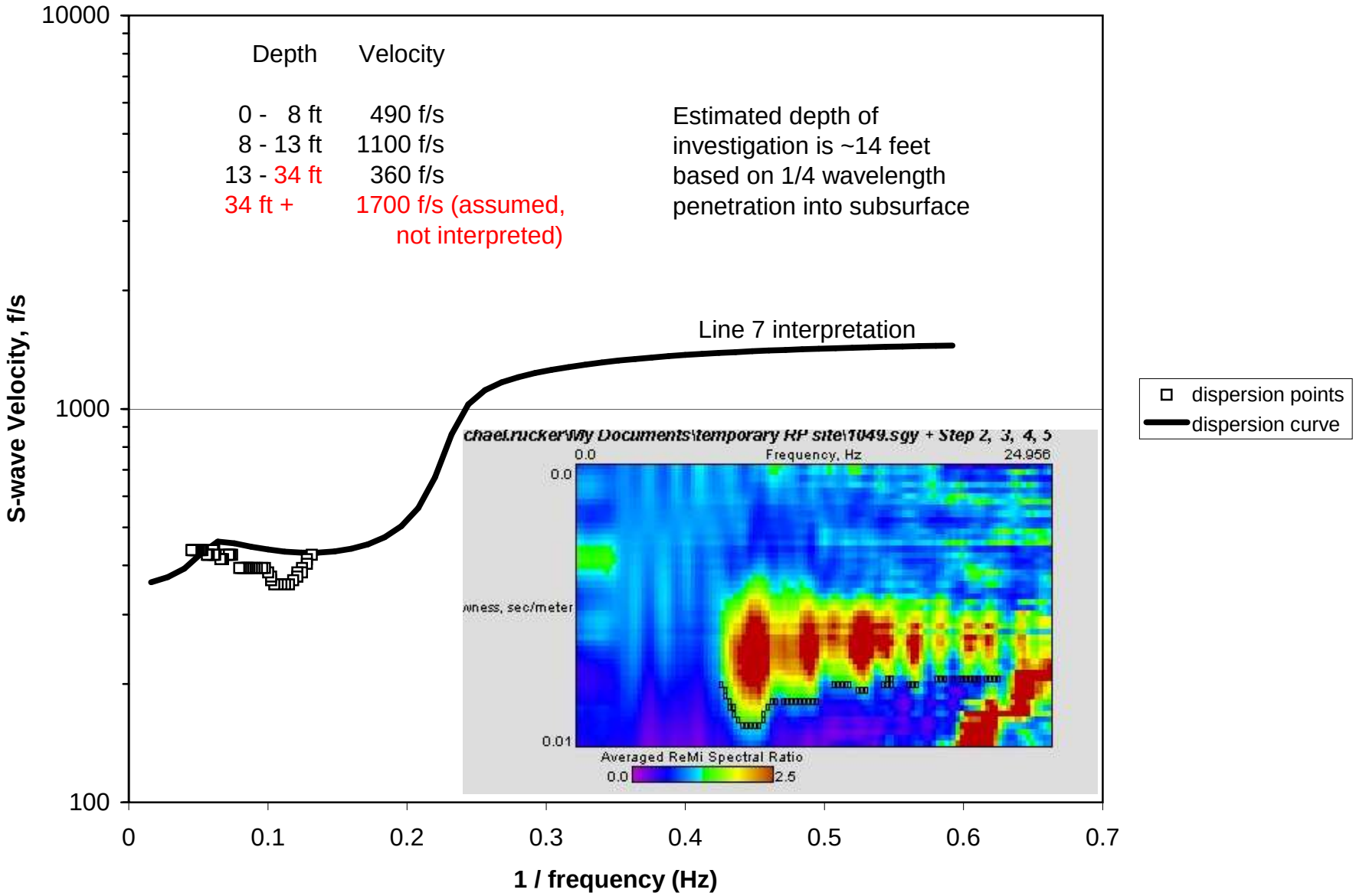

Depth Velocity
0 - 6 ft 500 f/s
6 - 13 ft 1100 f/s
13 - 74 ft 420 f/s
74 ft + 1200 f/s (assumed, not interpreted)
Estimated depth of investigation is ~18 feet based on 1/4 wavelength penetration into subsurface
chael.rucker\My Documents\temporary RP site\1023.sgy + Step 2, 3, 4, 5
0.0
Frequency, Hz
29.785
0.0
wness, sec/meter
0.01
Averaged ReMi Spectral Ratio
0.0
2.5
dispersion points
dispersion curve
S-wave Velocity, f/s
1000
100
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
1 / frequency (Hz)

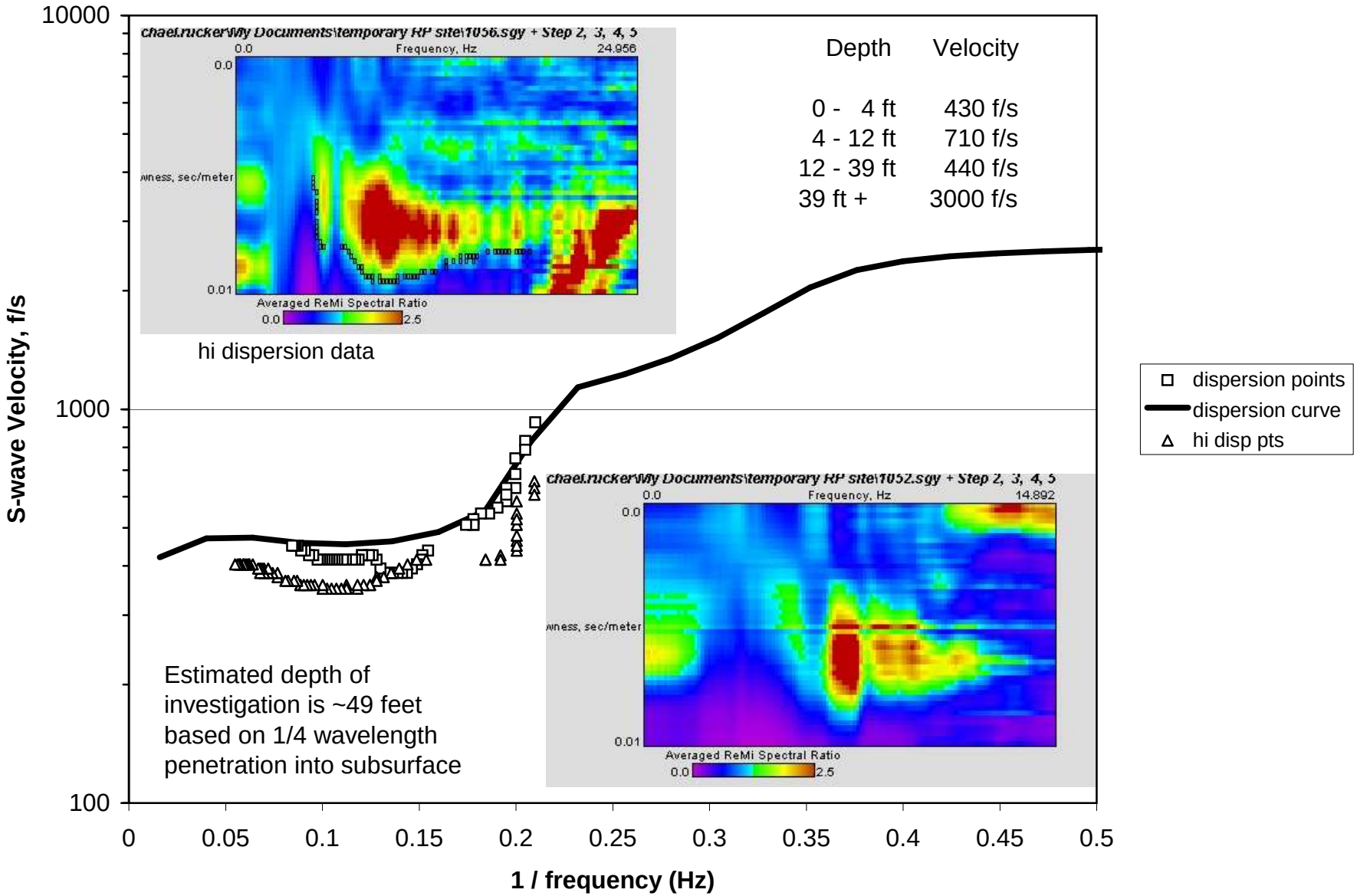

Depth Velocity
0 - 4 ft 530 f/s
4 - 14 ft 1100 f/s
14 - 117 ft 530 f/s
117 ft + 1300 f/s (assumed, not interpreted)
Estimated depth of investigation is ~35 feet based on 1/4 wavelength penetration into subsurface
Frequency, Hz
0.0
29.937
0.01
Averaged ReMi Spectral Ratio
2.5
dispersion points
dispersion curve
S-wave Velocity, f/s
1000
100
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
1 / frequency (Hz)


10000
1000
100
S-wave Velocity, f/s
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
1 / frequency (Hz)
0.0
Frequency, Hz
24.956
0.0
0.01
Averaged ReMi Spectral Ratio
0.0
2.5
dispersion points
dispersion curve
Depth
Velocity
0 - 9 ft 580 f/s
9 - 15 ft 1000 f/s
15 - 40 ft 360 f/s
40 ft + 1700 f/s (assumed, not interpreted)
Estimated depth of investigation is ~29 feet based on 1/4 wavelength penetration into subsurface

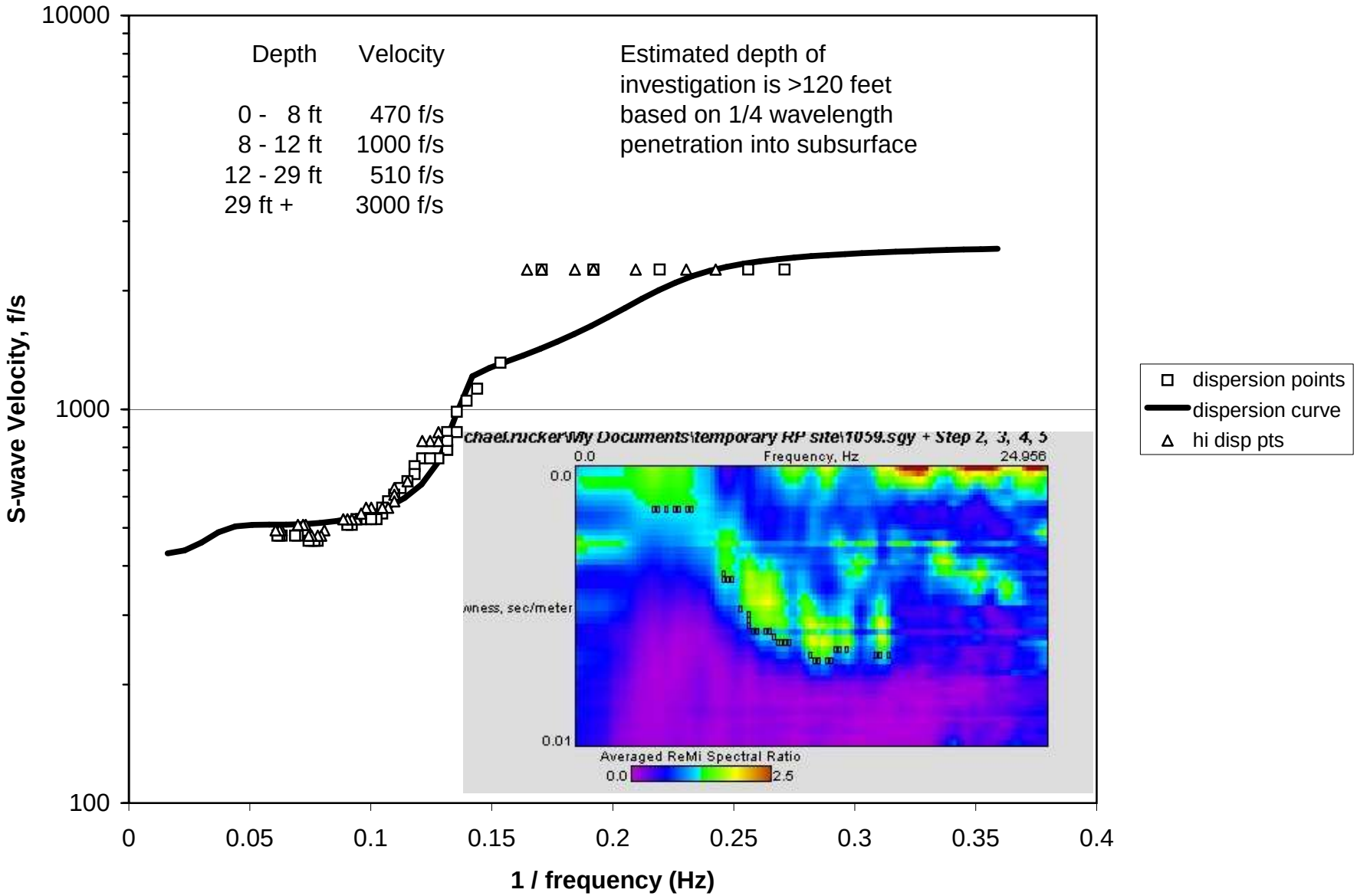
Refraction Microtremor S-wave Interpretation **Line 7** AMEC Job No. 0-61M-107030




Depth Velocity
0 - 8 ft 490 f/s
8 - 13 ft 1100 f/s
13 - 34 ft 360 f/s
34 ft + 1700 f/s (assumed, not interpreted)
Estimated depth of investigation is ~14 feet based on 1/4 wavelength penetration into subsurface
Line 7 interpretation
dispersion points
dispersion curve
Frequency, Hz
0.0
24.956
0.01
Averaged ReMi Spectral Ratio
2.5
S-wave Velocity, f/s
10000
1000
100
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
1 / frequency (Hz)


10000
1000
100
S-wave Velocity, f/s
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
1 / frequency (Hz)
Depth Velocity
0 - 4 ft 430 f/s
4 - 12 ft 710 f/s
12 - 39 ft 440 f/s
39 ft + 3000 f/s
hi dispersion data
Frequency, Hz
Averaged ReMi Spectral Ratio
Estimated depth of investigation is ~49 feet based on 1/4 wavelength penetration into subsurface
dispersion points
dispersion curve
hi disp pts

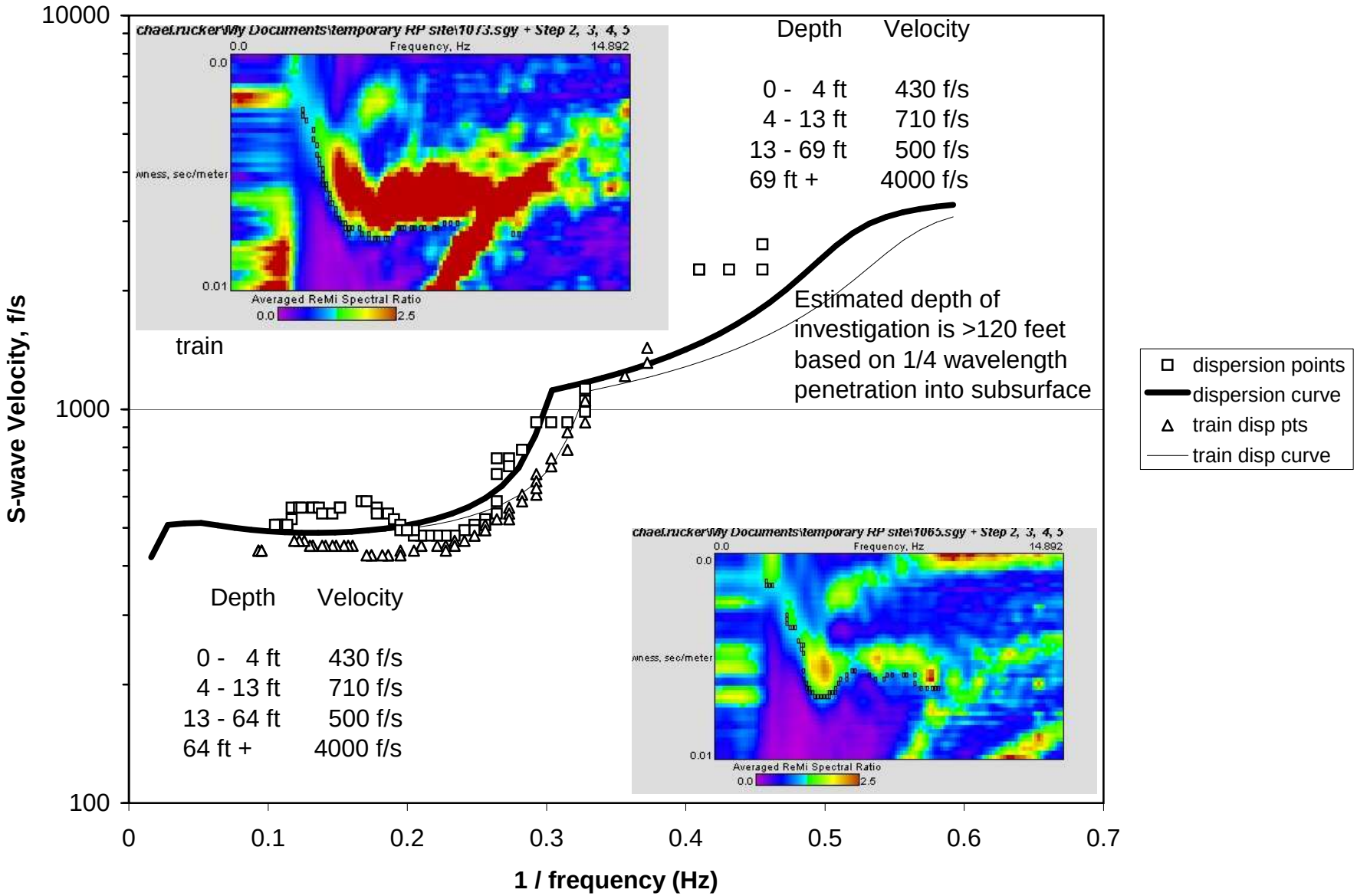
Refraction Microtremor S-wave Interpretation **Line 10** AMEC Job No. 0-61M-107030



Refraction Microtremor

Line 11
(long line)

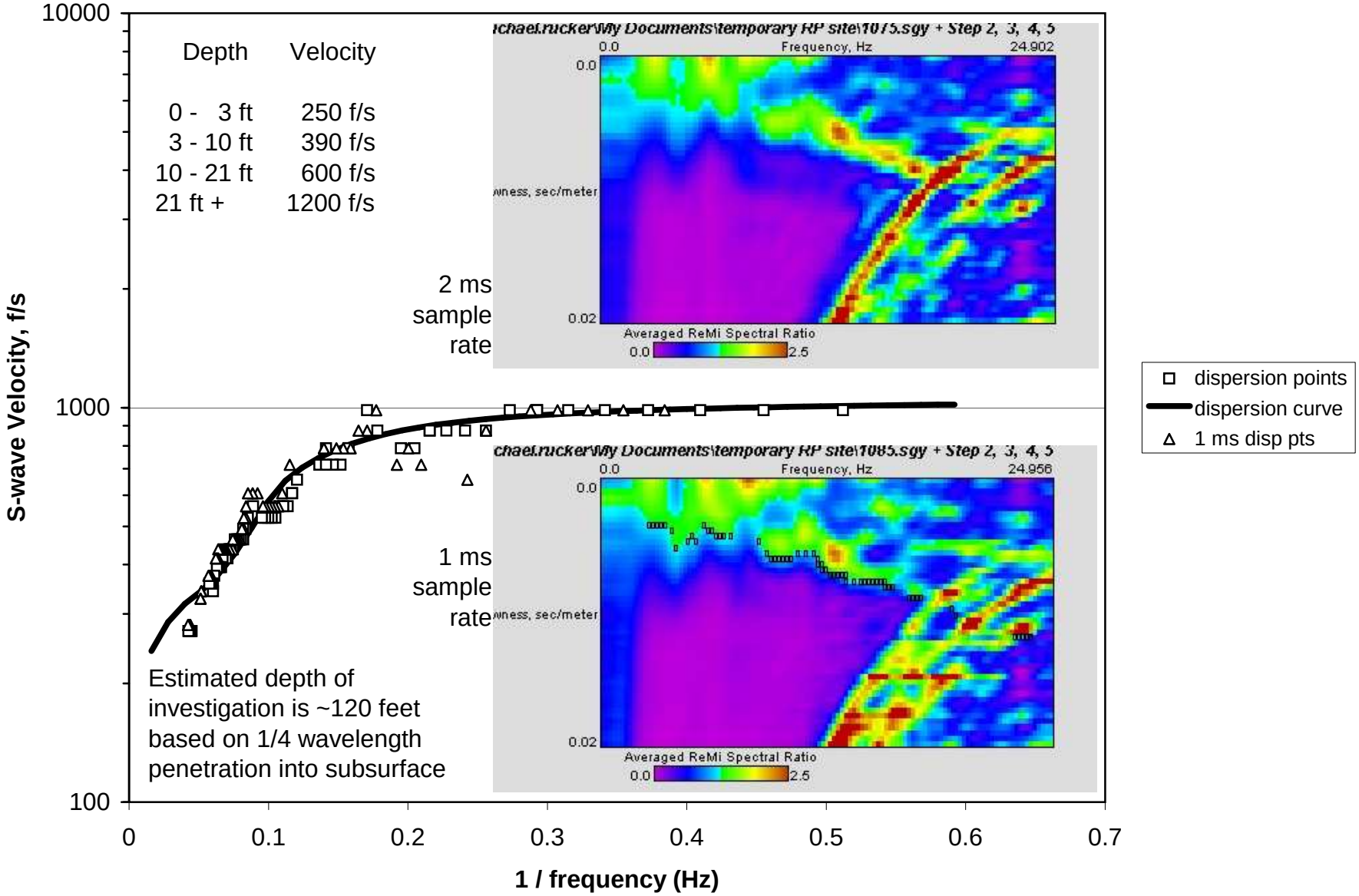
AMEC Job No. 0-61M-107030



Refraction Microtremor S-wave Interpretation

Line 12
on embankment

AMEC Job No. 0-61M-107030



APPENDIX C

Geophysical Investigation Procedures and Profiles

APPENDIX D

Laboratory Test Program

APPENDIX D
LABORATORY TEST PROGRAM
0-61M-107030/Phase 65/T3

Soil Technology, Inc. of Bainbridge Island, Washington, conducted all laboratory testing. Laboratory tests were conducted in accordance with appropriate American Society for Testing and Materials (ASTM) standards. Descriptions of the laboratory tests conducted on selected soil samples are presented below. Test results are presented in the boring logs in Appendix A and are summarized in the following pages.

Moisture and Density Testing

Moisture content and density tests were performed on a number of samples recovered from the borings. The results of these tests were used to compute existing soil overburden pressures, to correlate strength and compressibility data, and to aid in evaluating soil properties. Moisture content and density tests were conducted in accordance with ASTM D 2216 and ASTM D 2937, respectively.

Sieve Analysis

Sieve analyses (percent passing the No. 200 sieve and combined full sieve analysis with hydrometer analysis) were performed on selected samples of the subsurface materials. These tests were performed to evaluate the gradation characteristics of the soils and to aid in their classification. These tests were performed in accordance with ASTM D 1140 and ASTM D 422.

Atterberg Limits Testing (Liquid Limit, Plastic Limit, and Plasticity Index)

Atterberg limits are used primarily for classifying and indexing cohesive soil. The liquid and plastic limits, which are defined as the moisture content of a cohesive soil at established limits for liquid and plastic behavior, respectively, were determined for selected samples in general accordance with guidelines presented in ASTM D 4318. Plasticity index (PI) is defined as difference in the water content between the liquid limit (LL) and the plastic limit (PL).

Consolidation Testing

One-dimensional consolidation tests were performed on representative samples of the saturated fine grained soils encountered to evaluate their compressibility characteristics. Consolidation tests were also used to determine the odometer modulus of the soil for finite element modeling. These tests were performed in accordance with ASTM D 2435.

Triaxial Shear Testing

Consolidated undrained (CU) and consolidated drained (CD) triaxial tests were performed on selected undisturbed samples collected from the borings. Triaxial tests were used to determine effective and total friction angles, and cohesional strength of the soil. These tests were also used to determine soil moduli for finite element modeling. Consolidated undrained triaxial tests were performed in accordance with ASTM D 4767. Consolidated drained triaxial tests were conducted following generally accepted testing methods.

Soil Classification

Visual soil classifications were conducted on all samples in the field and confirmed in the AMEC Earth & Environmental, Inc. soil laboratory. All soils were classified in general accordance with the Unified Soil Classification System as described by ASTM D 2487 and ASTM D 2488, which includes stiffness/relative density, color, major soil type (based on grain size), minor soil types, and relative moisture content. Classifications and sampling intervals are shown in the boring logs. The logs indicate the depths at which the soils or their characteristics change, although the change actually could be gradual. If the change occurred between sample locations, the depth was interpreted.

Moisture and Density Testing

AMEC Earth and Environmental, Inc.
Project No. 0-61M-107030 P65-T2
West Doane Lake Treatability Study
Task order No. PDX–004

Moisture Contents, Unit Weights, and Percent passing 75 micron sieve

Table 1

Exploration Number	Sample Number	Sample Depth (ft)	Moisture Content %	Percent Passing 75 micron (sieve # 200)	Unit Weight lbs/ft3 Wet	Unit Weight lbs/ft3 Dry
B-1-06	ST-3	35-37	55	94	113	73
B-1-06	ST-6	50-51.1	30	18	123	95
B-2-06	ST-2	30-32	59	91	99	62
B-1-06	ST-4	40-42	31	49	113	86
B-2-06	ST-6	50-52	52	40	97	64
B-2-06	ST-10	70-72	35	78	115	62
B-3-06	ST-4	45-47	80	65	93	52
B-3-06	ST-8	65-67	55	96	100	65
B-3-06	ST-10	75-77	52	95	104	69
B-3-06	ST-14	95-97	36	37	116	85
B-3-06	ST-16	105-107	37	78	115	84

AMEC Earth and Environmental, Inc.
Project No. 0-61M-107030 P65-T2
West Doane Lake Treatability Study
Task order No. PDX–004

Moisture Contents, Unit Weights, and Percent passing 75 micron sieve
Table 1

Exploration Number	Sample Number	Sample Depth (ft)	Moisture Content %	Percent Passing 75 micron (sieve # 200)	Unit Weight lbs/ft3 Wet	Unit Weight lbs/ft3 Dry
B-1-06	ST-3	35-37	55	94	113	73
B-1-06	ST-4	40-42	31	49	113	86
B-1-06	ST-5	48.2-48.4	17	---	95	81
B-1-06	ST-6	50-51.1	30	18	123	95
B-2-06	ST-2	30-32	59	91	99	62
B-2-06	ST-6	50-52	52	40	97	64
B-2-06	ST-10	70-72	35	78	115	62
B-3-06	ST-4	45-47	80	65	93	52
B-3-06	ST-8	65-67	55	96	100	65
B-3-06	ST-10	75-77	52	95	104	69
B-3-06	ST-12	85.9-86.4	36	97	---	---
B-3-06	ST-12	86.4-86.9	33	60	---	---
B-3-06	ST-12	85.4-85.9	42	91	---	---
B-3-06	ST-14	95-97	36	37	116	85
B-3-06	ST-16	105-107	37	78	115	84

AMEC Earth and Environmental, Inc.
Project No. 0-61M-107030 P65-T2
West Doane Lake Treatability Study
Task order No. PDX–004

Moisture Contents, Unit Weights, and Percent passing 75 micron sieve

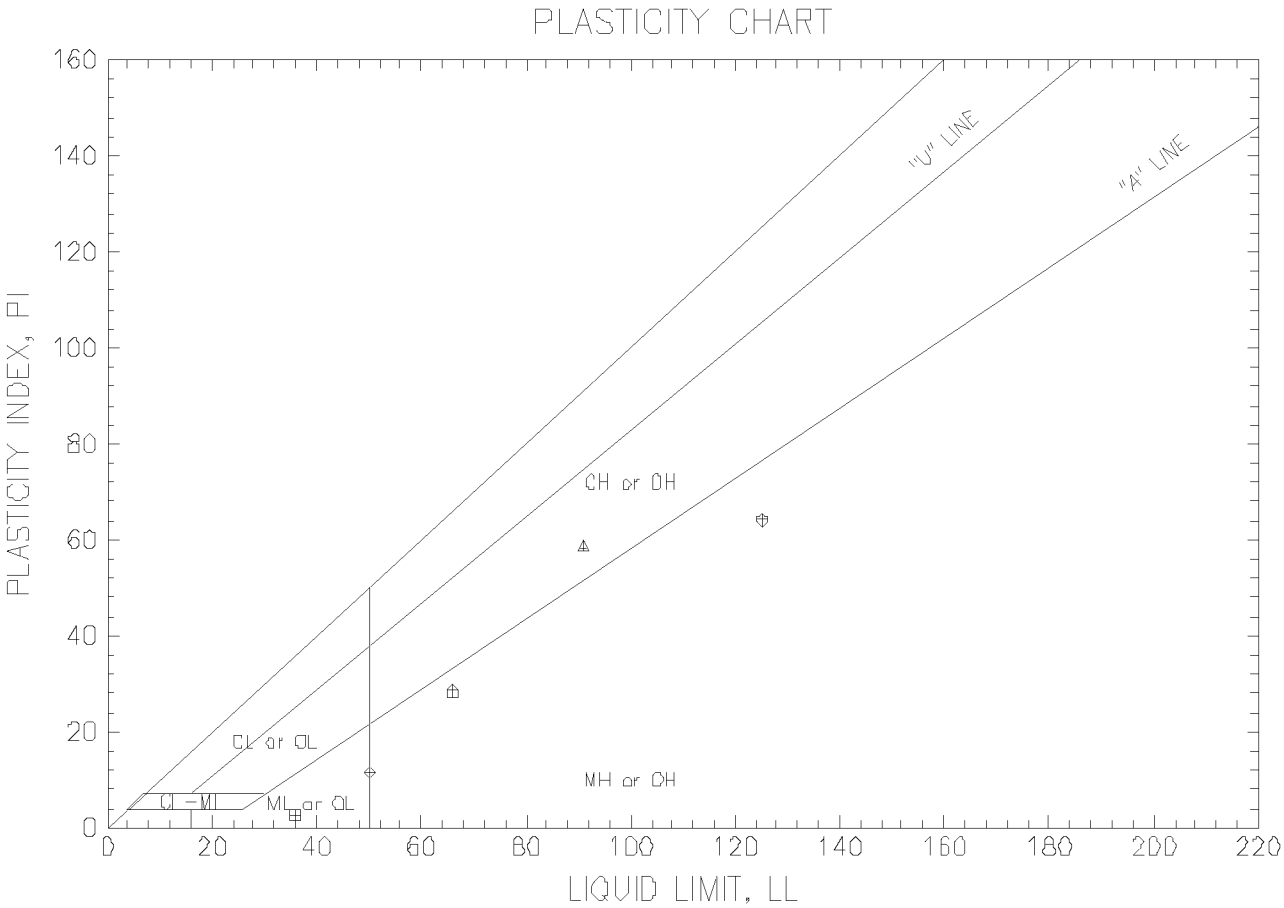
Table 1

Exploration Number	Sample Number	Sample Depth (ft)	Moisture Content %	Percent Passing 75 micron (sieve # 200)	Unit Weight lbs/ft3 Wet	Unit Weight lbs/ft3 Dry
B-1-06	ST-3	35-37	55	94	113	73
B-1-06	ST-6	50-51.1	30	18	123	95
B-2-06	ST-2	30-32	59	91	99	62
B-1-06	ST-4	40-42	31	49	113	86
B-2-06	ST-6	50-52	52	40	97	64
B-2-06	ST-10	70-72	35	78	115	62
B-3-06	ST-4	45-47	80	65	93	52
B-3-06	ST-8	65-67	55	96	100	65
B-3-06	ST-10	75-77	52	95	104	69
B-3-06	ST-14	95-97	36	37	116	85
B-3-06	ST-16	105-107	37	78	115	84

Atterberg Limits Testing

SOIL TECHNOLOGY
ATTERBERG LIMITS
ASTM D-4318

Project : West Doane Lake Treatability Study Task 04
Project No. : 06-2135
Location : RP-Portland Site
Date : Thu May 11 2006

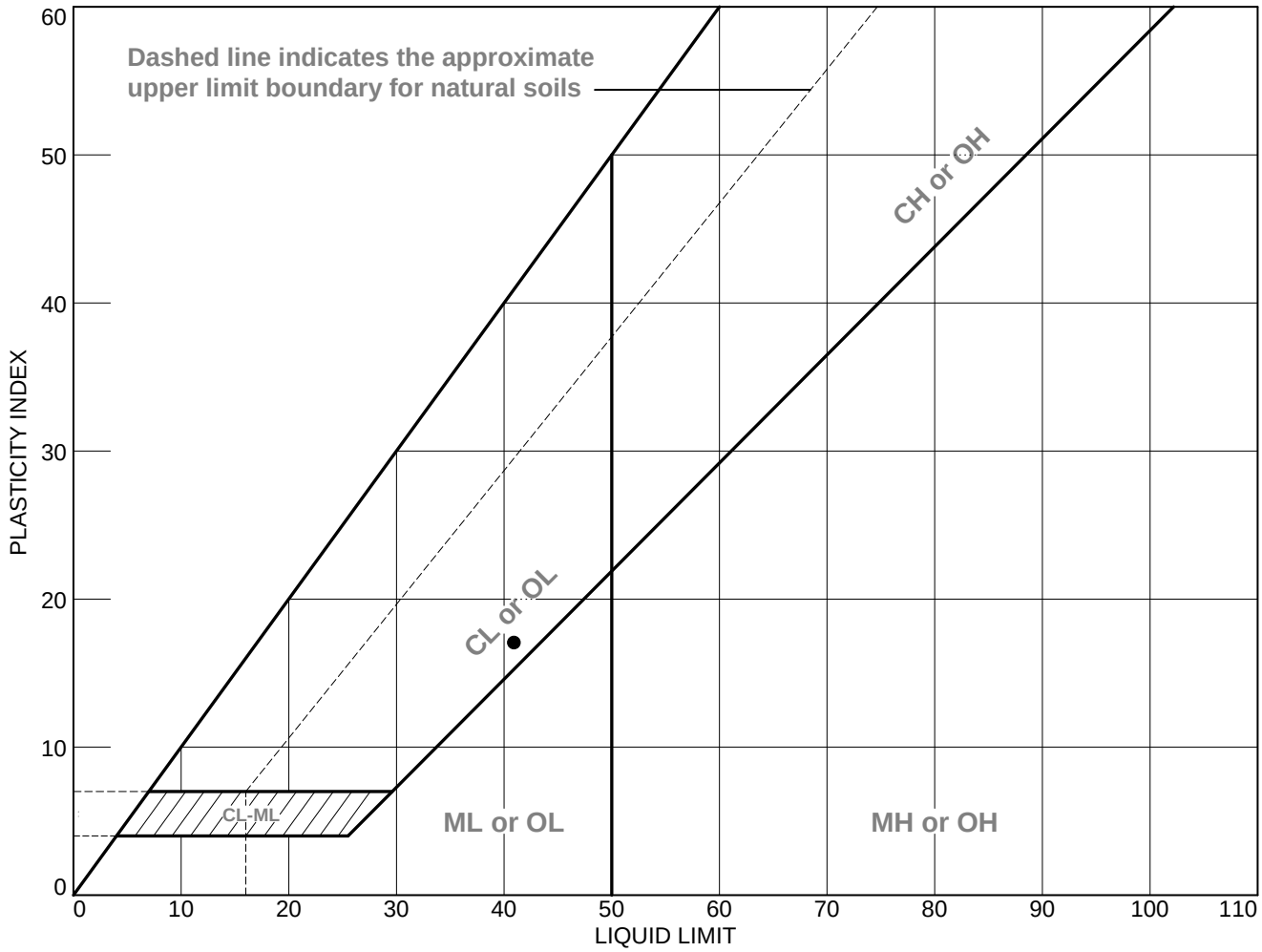


Symbol	Sample Number	Water Content	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification
○	B306 ST2	128	125	61	64	(MH) elastic silt
△	B306 ST3	68	91	32	59	(CH) fat clay
□	B306 ST5	35	36	33	3	(ML) silt
◇	B306 ST6	47	50	39	12	(MH) elastic silt
△	B306 ST7	57	66	37	29	(MH) elastic silt

Note: Above samples are from consol trimmings.

Figure 1

ATTERBERG LIMITS (ASTM D-4318)



SOIL DATA

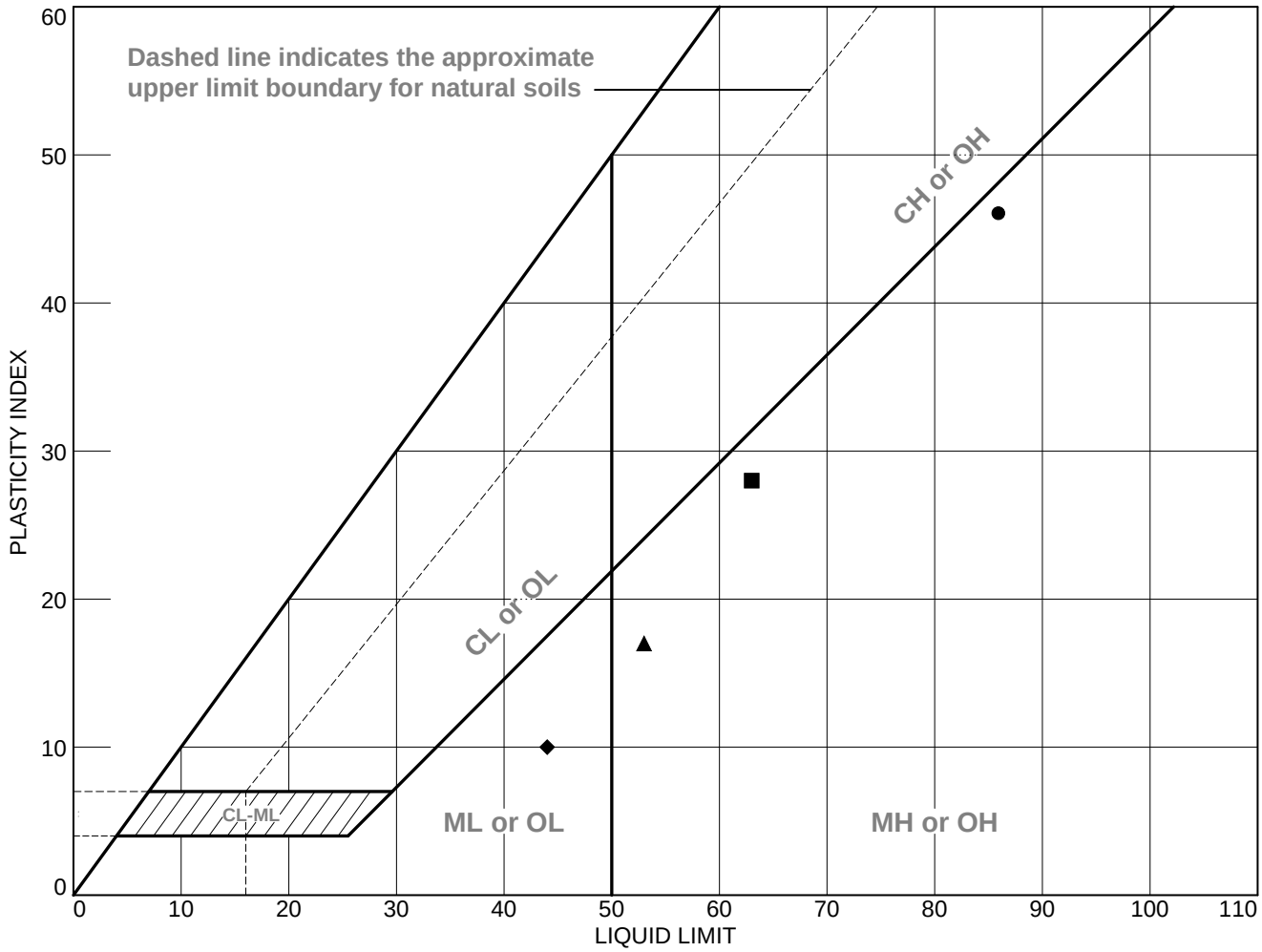
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-1-06	ST-2	27.9-28.0	31.5	24	41	17	CL

SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.
Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 **Figure** 1

ATTERBERG LIMITS (ASTM D-4318)



SOIL DATA

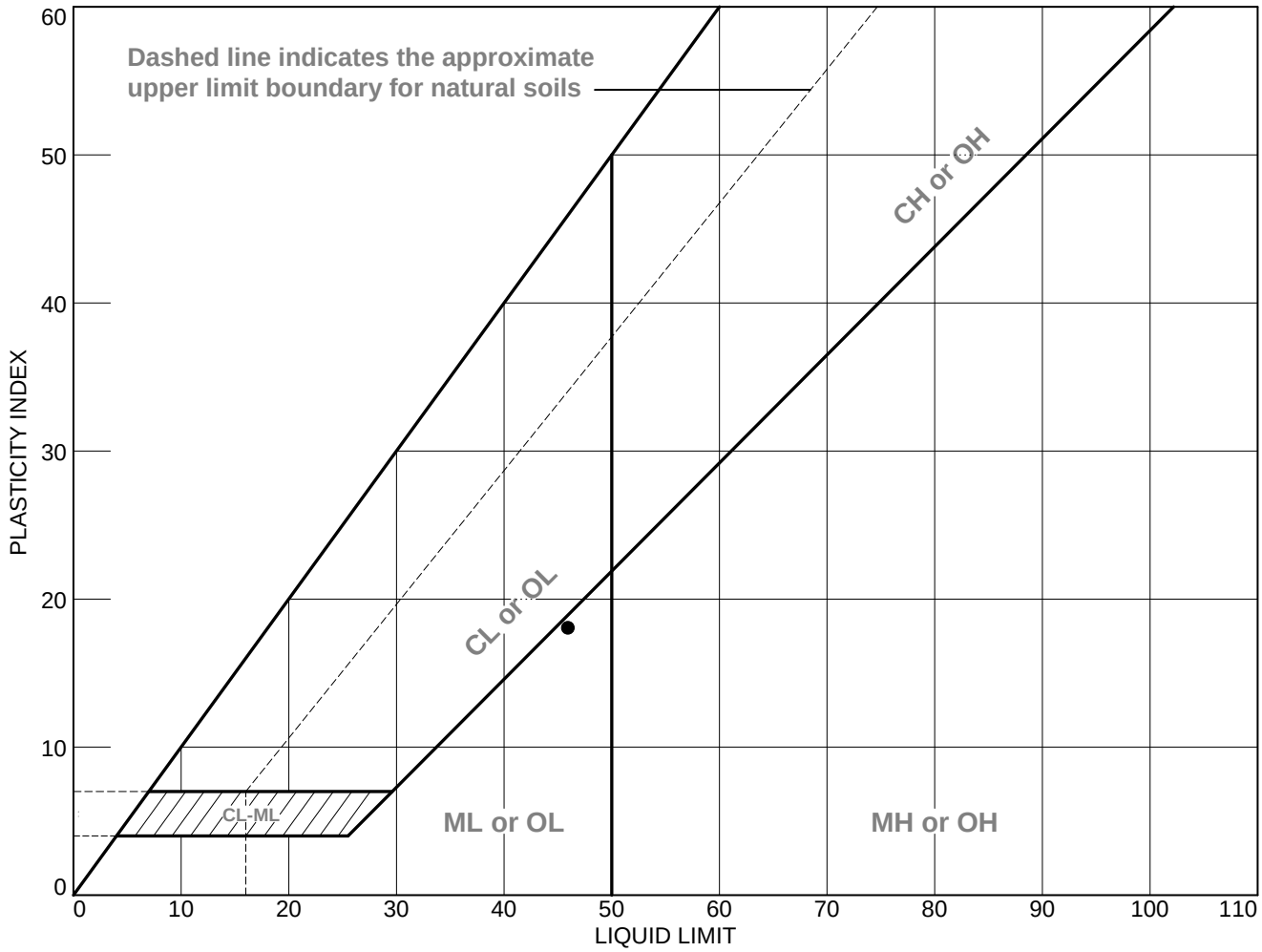
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-2-06	ST-1	26.3 - 26.4	95.2	40	86	46	MH
■	B-2-06	ST-3	36.0 - 36.1	54.5	35	63	28	MH
▲	B-2-06	ST-4	40.4 - 42.0	45.7	36	53	17	MH
◆	B-2-06	ST-5	45.7 - 45.9	40.7	34	44	10	ML
▼	B-2-06	ST-7	55.8	31.6	NP	NV	NP	ML

SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.
Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 **Figure** 2

ATTERBERG LIMITS (ASTM D-4318)



SOIL DATA

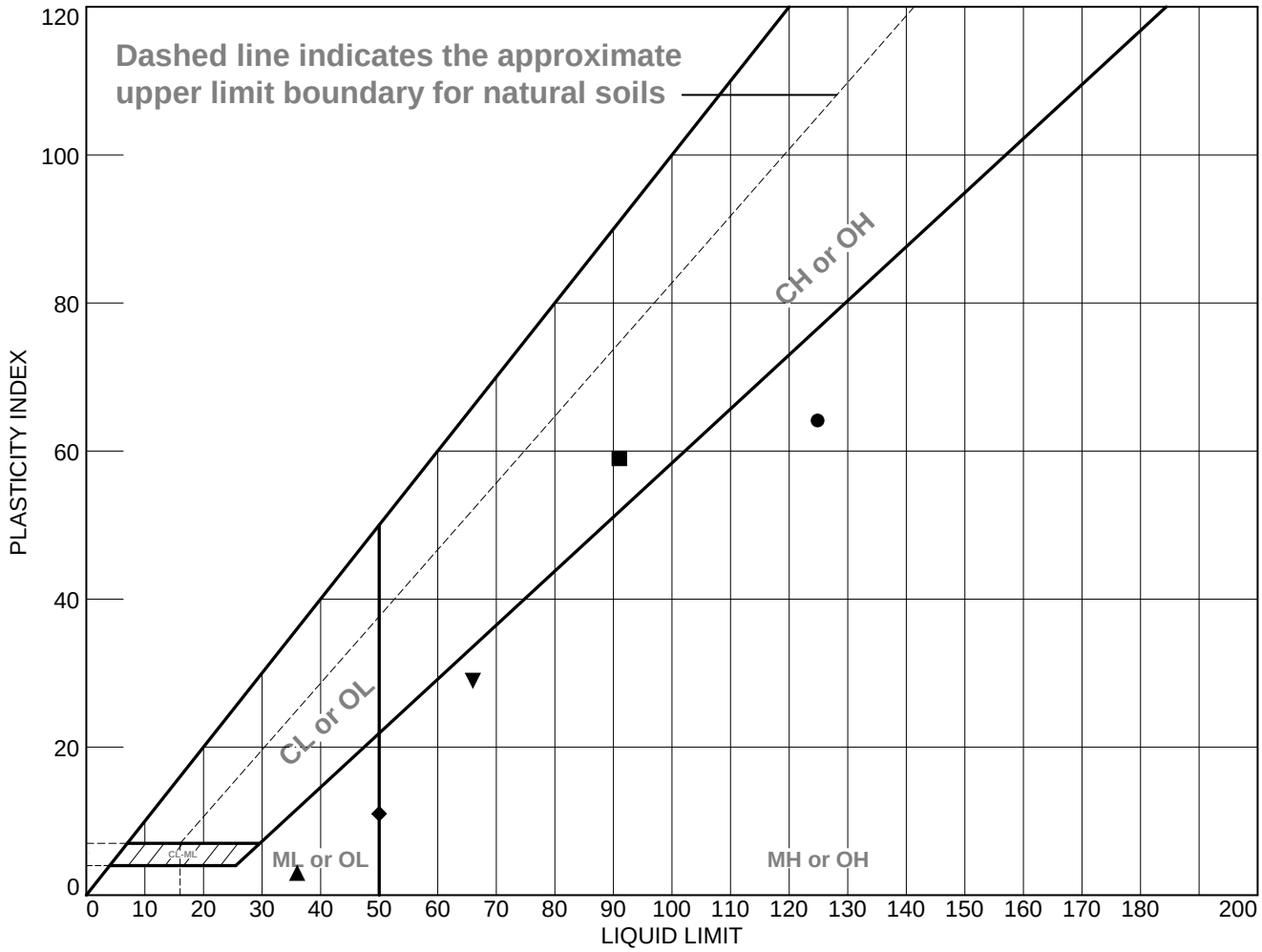
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-2-06	ST-8	60.5 - 62.0	32.5	28	46	18	ML
■	B-2-06	ST-9	66.5 - 66.6	34.2	NP	NV	NP	ML

SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.
Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 **Figure** 3

ATTERBERG LIMITS (ASTM D-4318)



SOIL DATA

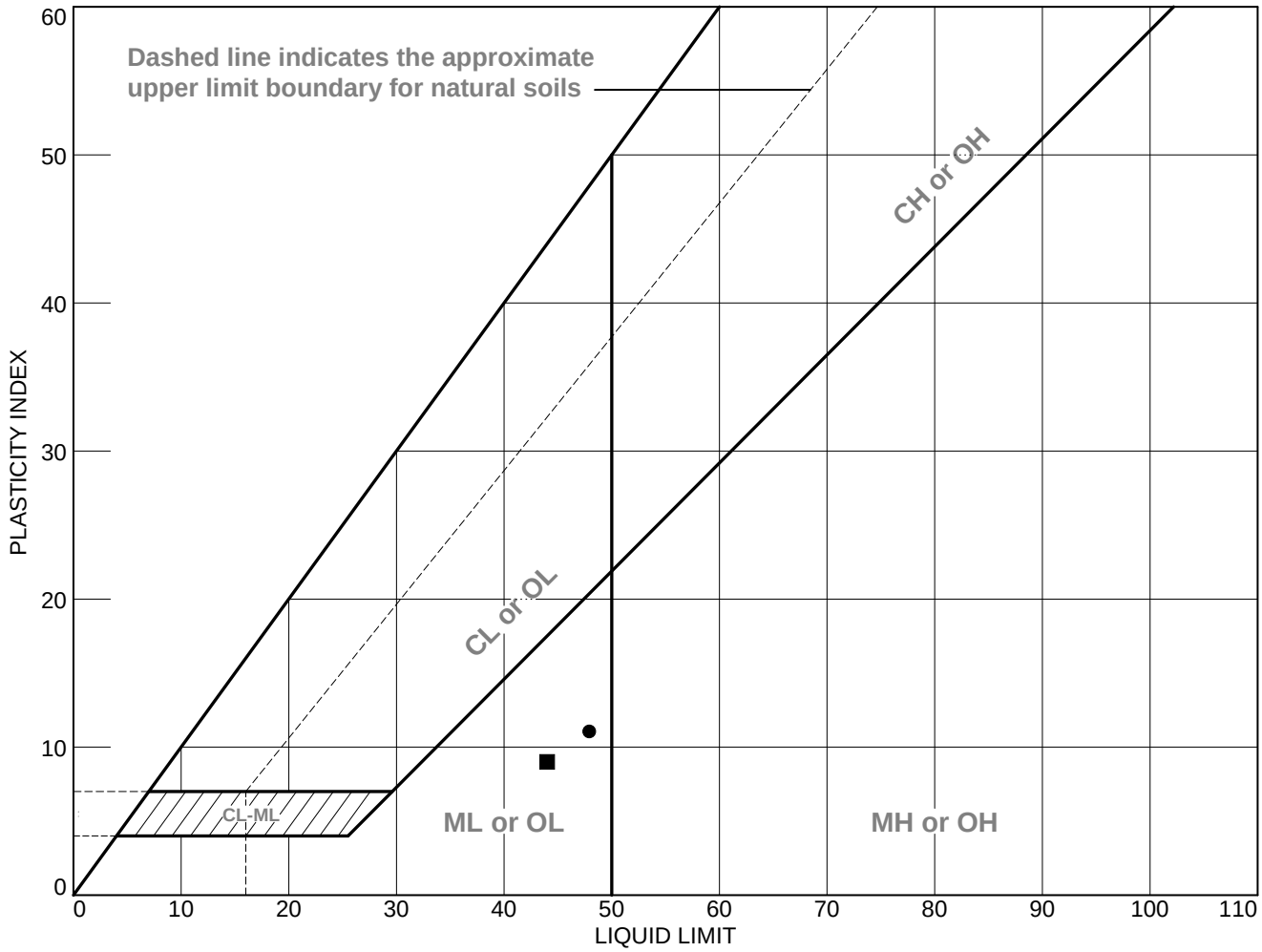
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-3-06	ST-2	36.3 - 36.4	127.7	61	125	64	MH
■	B-3-06	ST-3	41.5 - 41.6	67.6	32	91	59	CH
▲	B-3-06	ST-5	51.1 - 51.2	35.5	33	36	3	ML
◆	B-3-06	ST-6	54.0 - 54.5	46.9	39	50	11	MH
▼	B-3-06	ST-7	61.1 - 61.2	56.7	37	66	29	MH

SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.
Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 **Figure** 4

ATTERBERG LIMITS (ASTM D-4318)



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-3-06	ST-9	71.0 - 71.3	49.0	37	48	11	ML
■	B-3-06	ST-11	81.1 - 81.2	36.2	35	44	9	ML
▲	B-3-06	ST-13	90.5 - 90.6	36.8	NP	NV	NP	ML
◆	B-3-06	ST-15	100.6 - 100.8	38.0	NP	NV	NP	ML
▼	B-3-06	ST-17	110.5 - 110.6	37.3	NP	NV	NP	ML

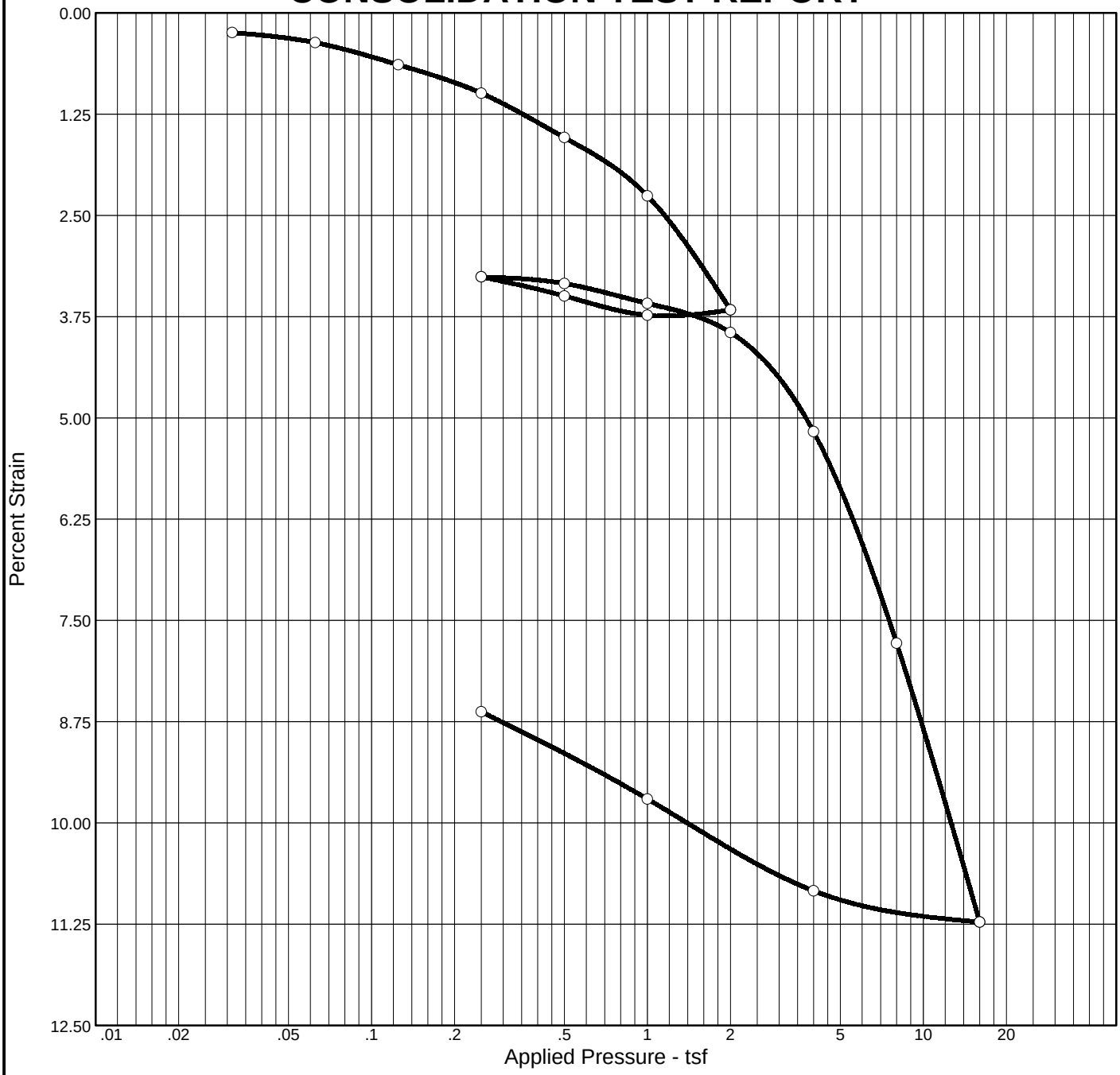
SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.
Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 **Figure** 5

Consolidation Testing

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
99.0 %	31.5 %	88.9	41	17	2.55		5.18	0.21	0.02			0.813

MATERIAL DESCRIPTION	USCS	AASHTO
Stiff, wet tan/green silty clay	CL	

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-1-06,ST-2 Depth 27.9-28.0 ft.

Remarks:
Stiff,wet,green-tan,Silt
Strong organic chemical odor

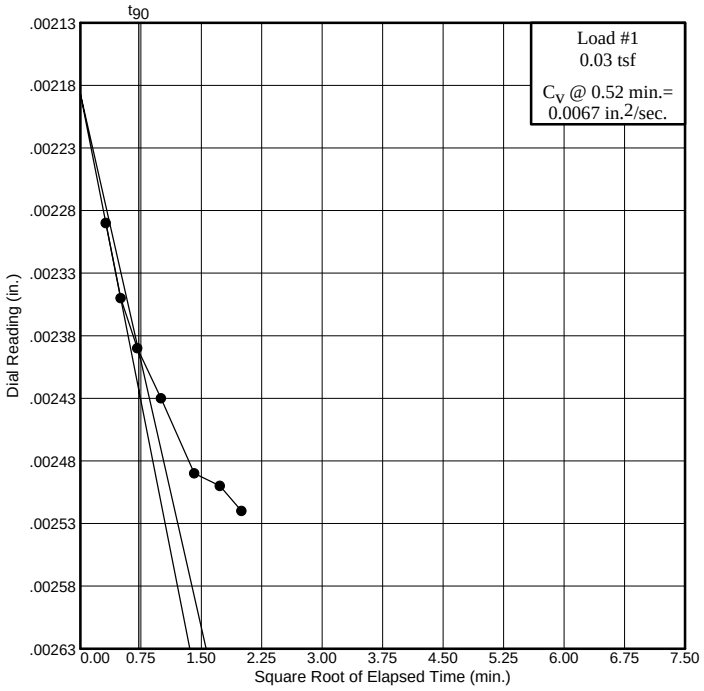
SOIL TECHNOLOGY

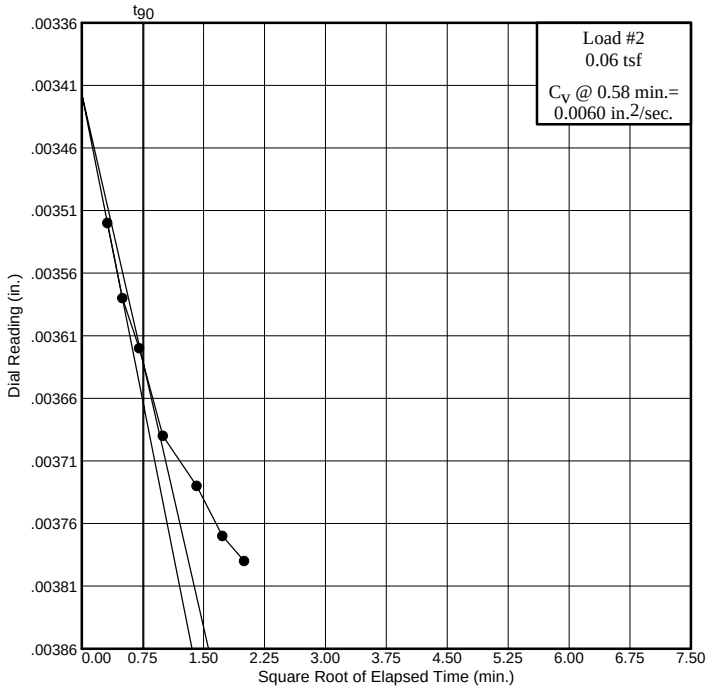
Bainbridge Island, WA

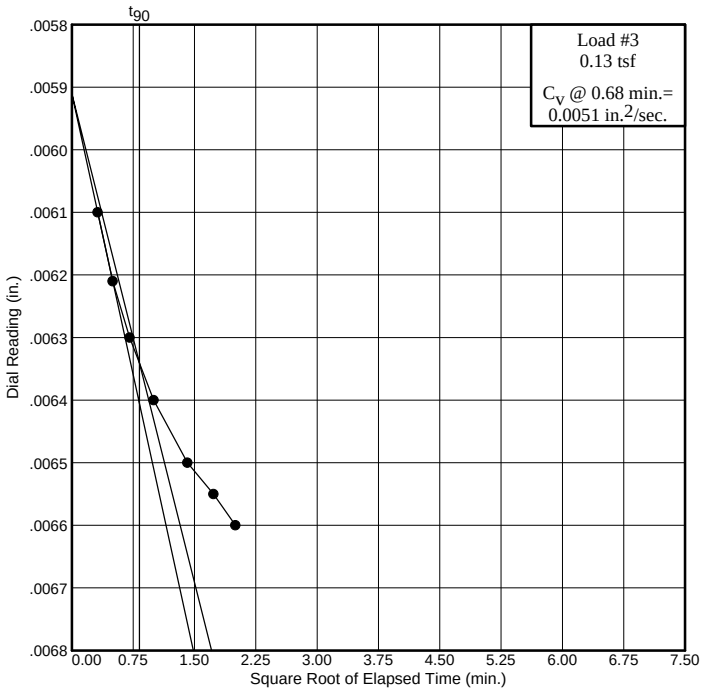
Plate 1

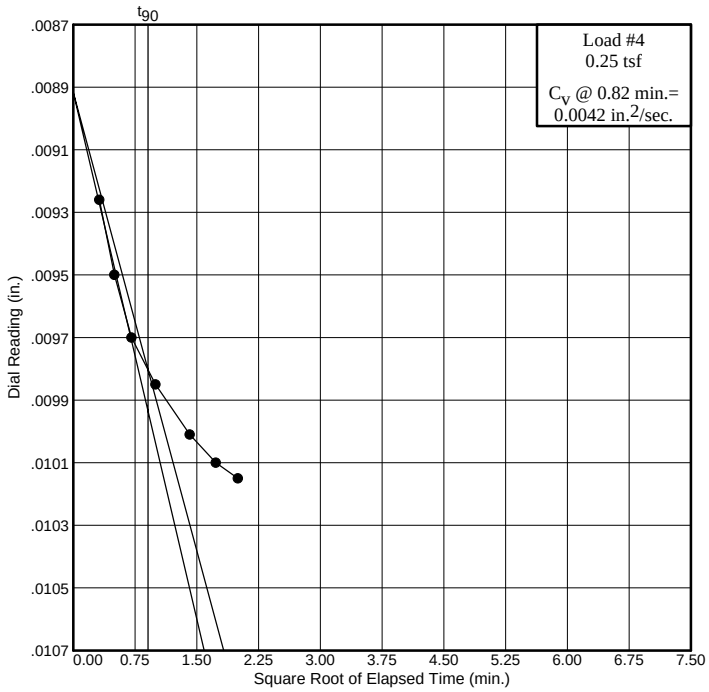
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-1-06,ST-2 Depth 27.9-28.0 ft.







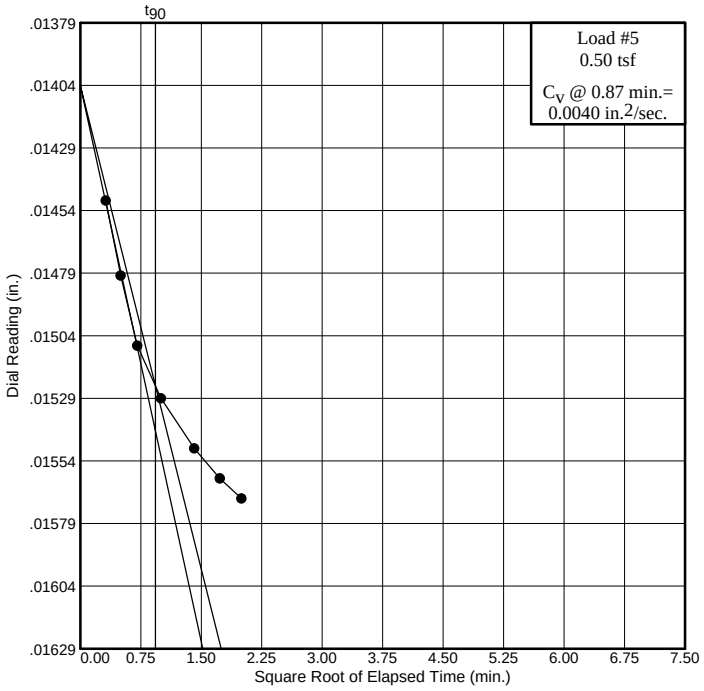


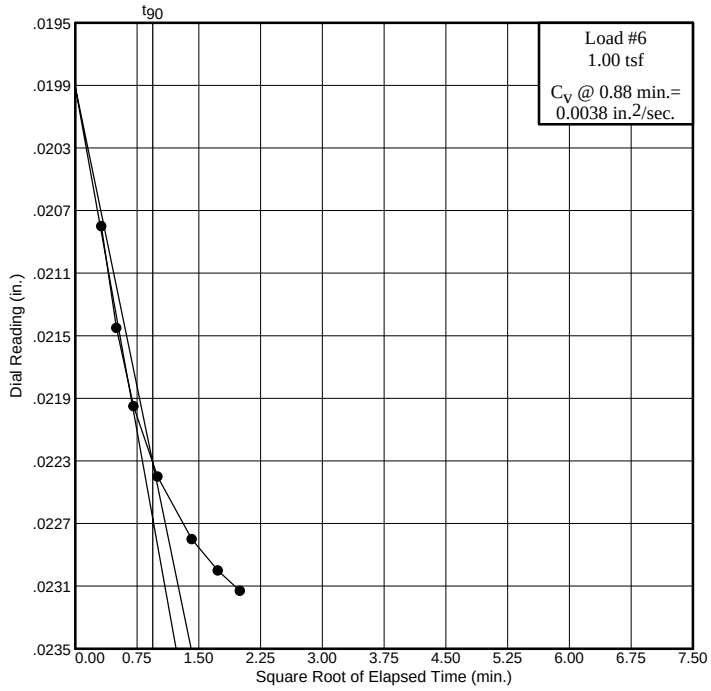
SOIL TECHNOLOGY

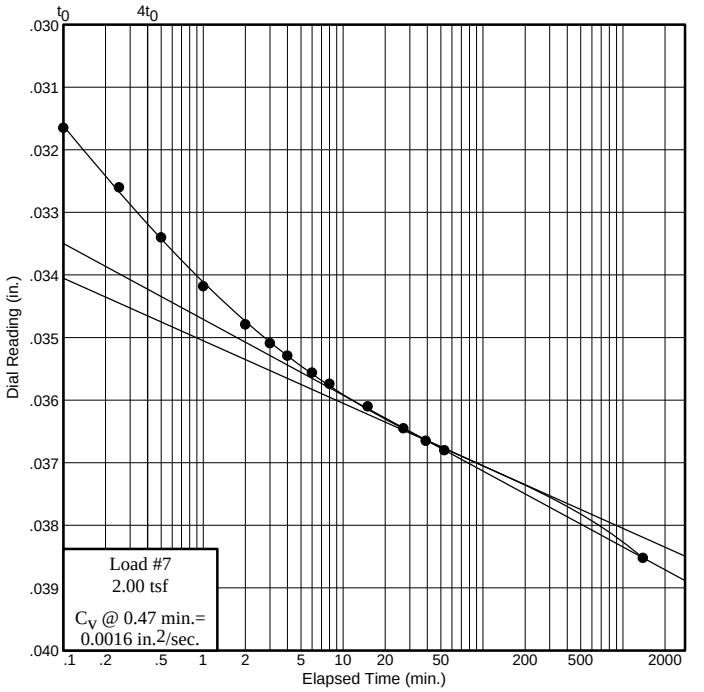
Bainbridge Island, WA

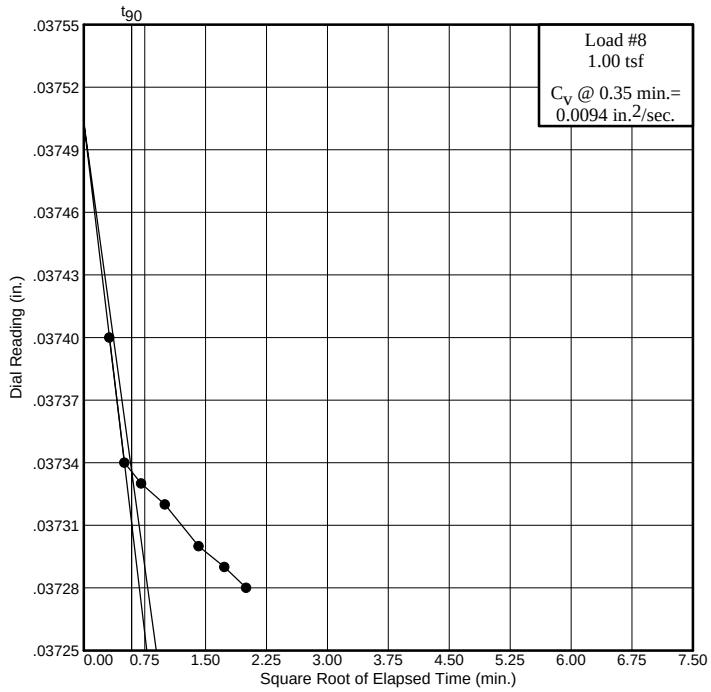
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-1-06,ST-2 Depth 27.9-28.0 ft.







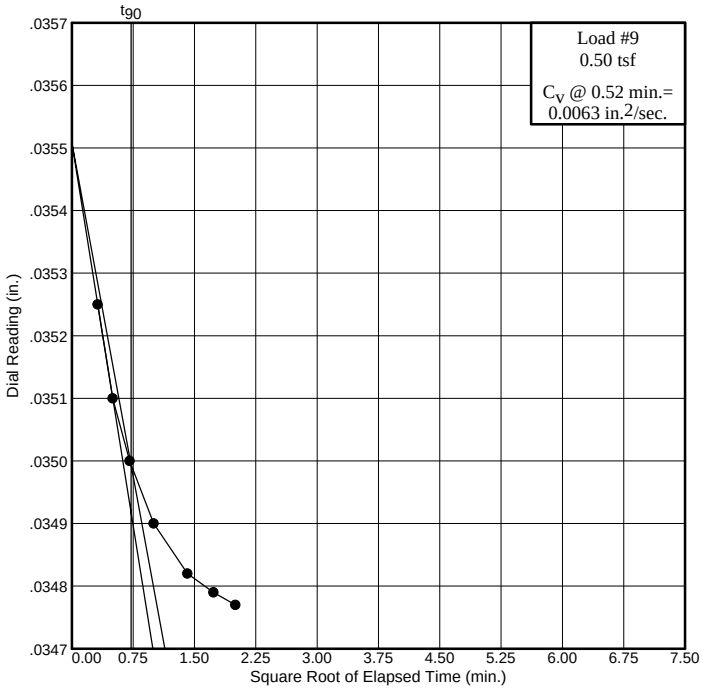


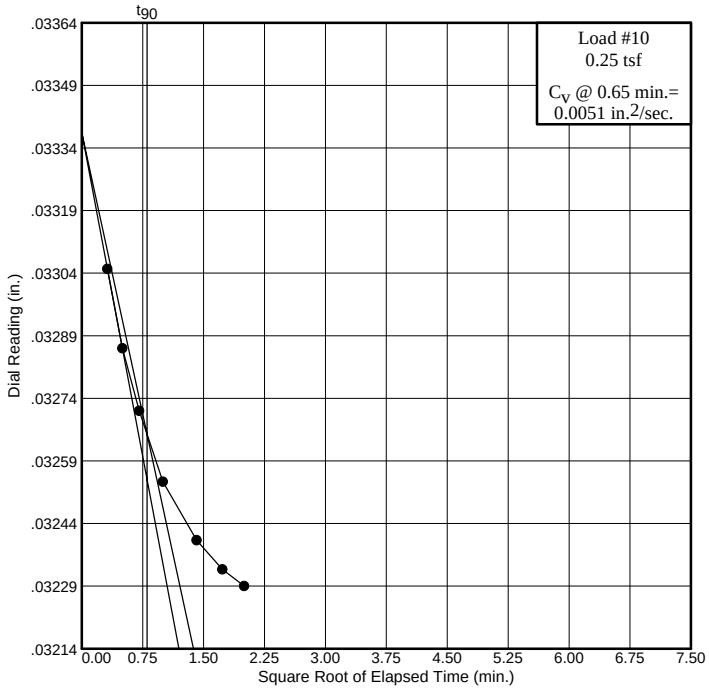
SOIL TECHNOLOGY

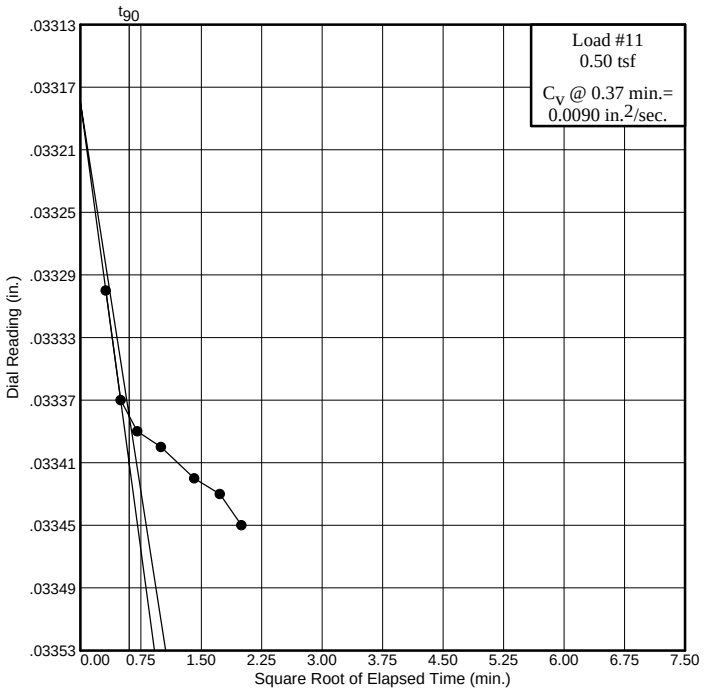
Bainbridge Island, WA

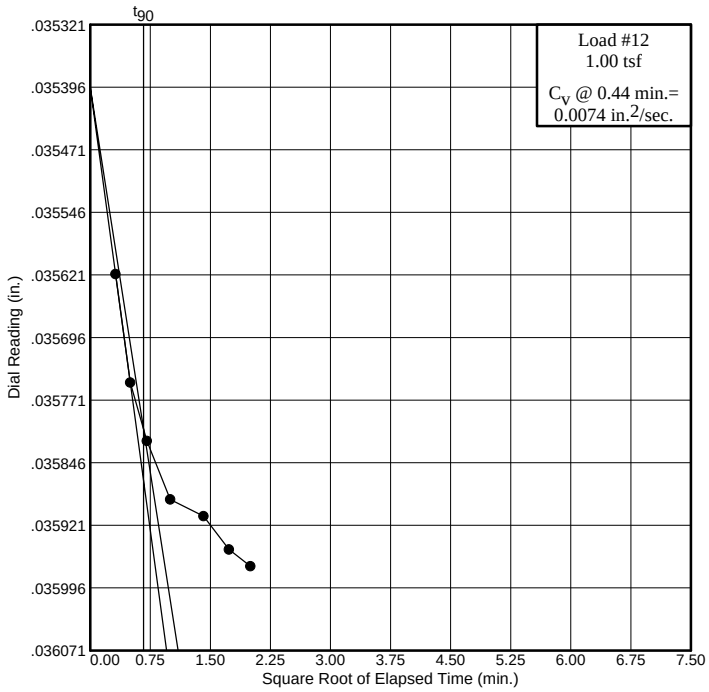
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-1-06,ST-2 Depth 27.9-28.0 ft.







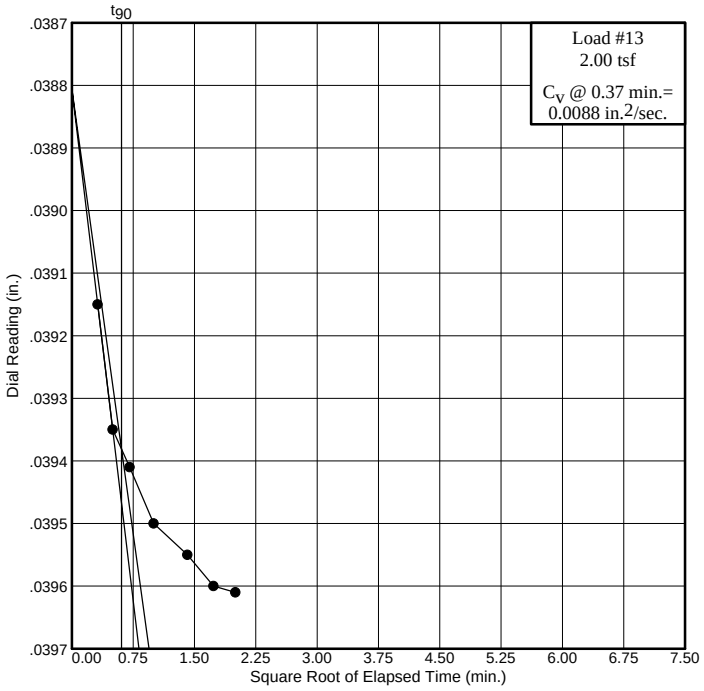


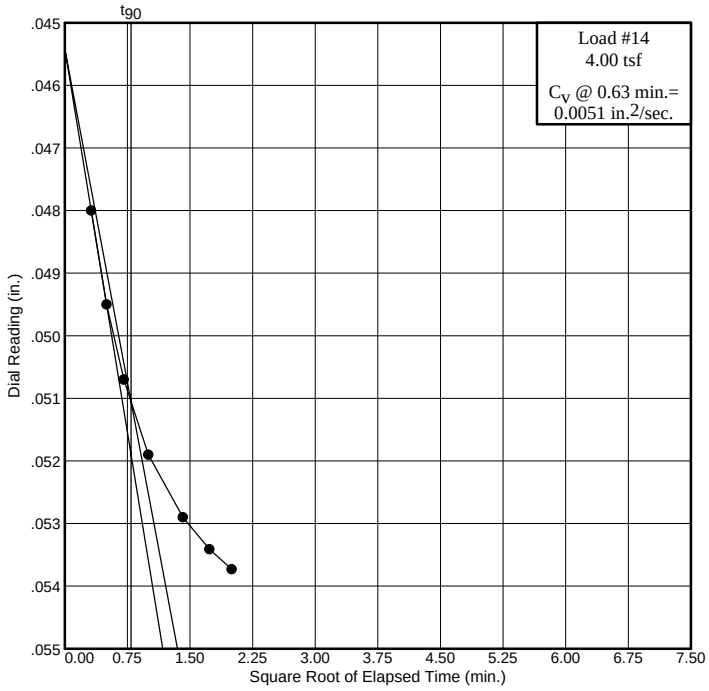
SOIL TECHNOLOGY

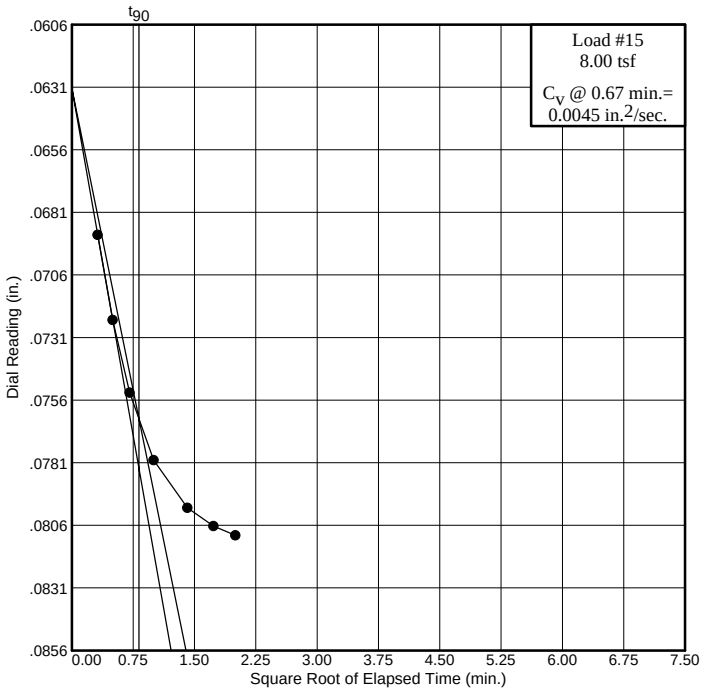
Bainbridge Island, WA

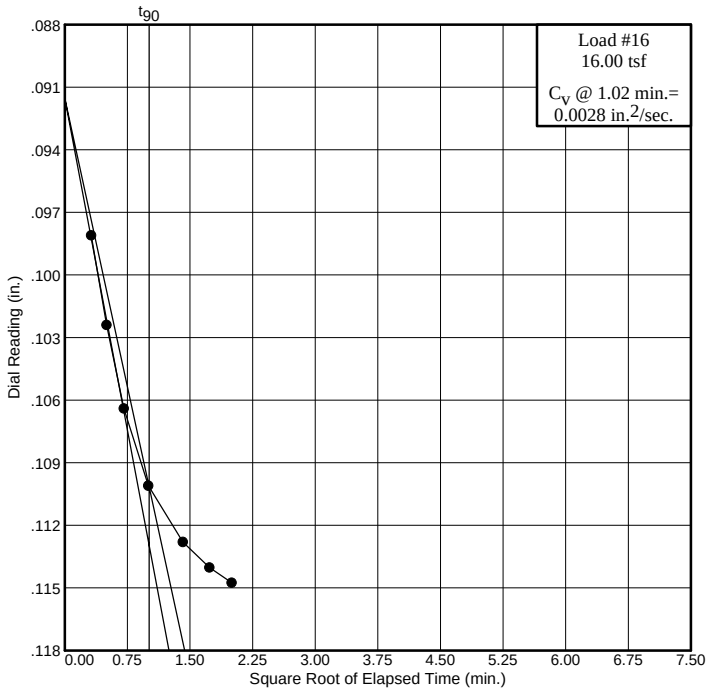
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-1-06,ST-2 Depth 27.9-28.0 ft.







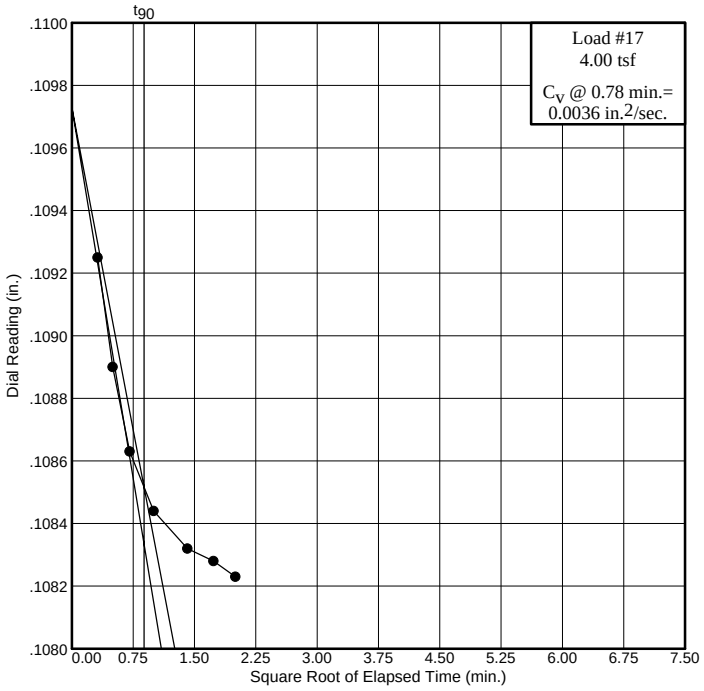


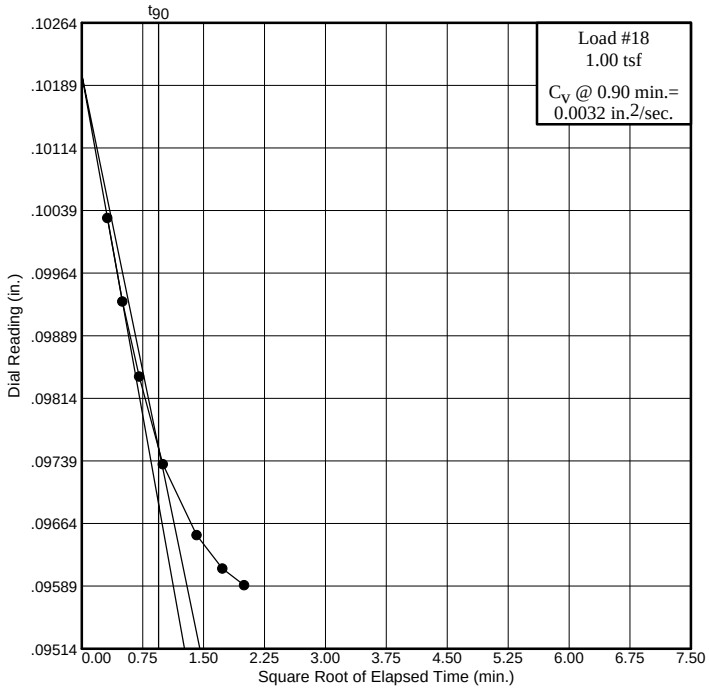
SOIL TECHNOLOGY

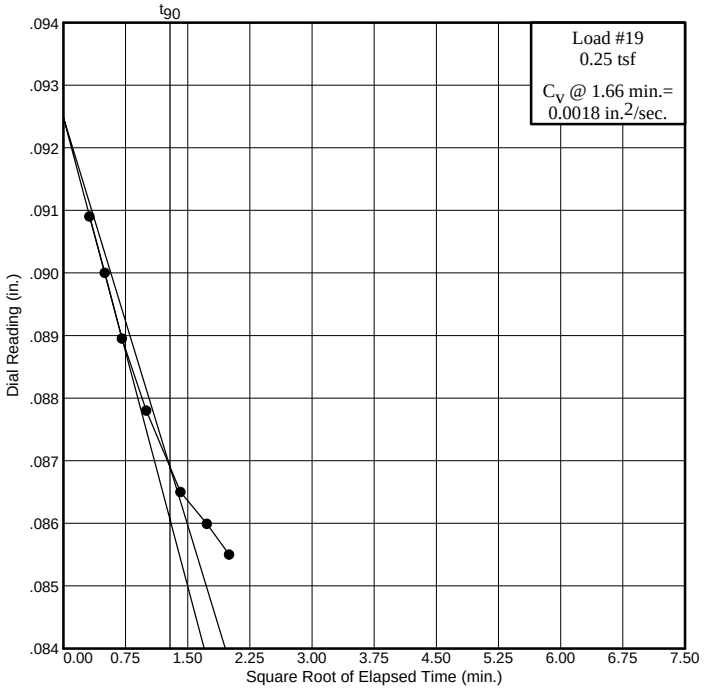
Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-1-06,ST-2 Depth 27.9-28.0 ft.



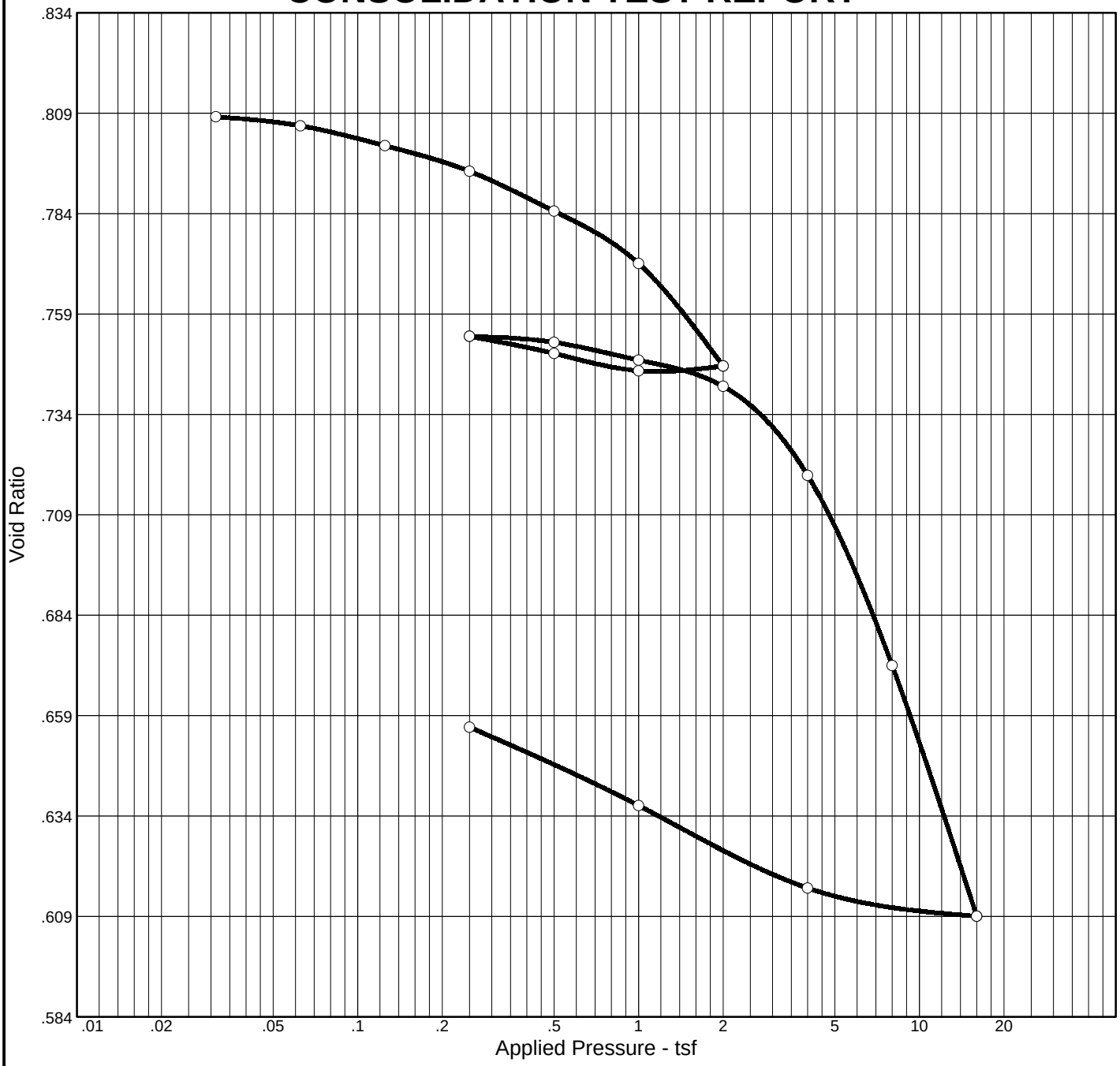




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural Sat.	Natural Moist.	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
99.0 %	31.5 %	88.9	41	17	2.55		5.18	0.21	0.02			0.813

MATERIAL DESCRIPTION	USCS	AASHTO
Stiff, wet tan/green silty clay	CL	

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-1-06,ST-2 Depth 27.9-28.0 ft.

Remarks:

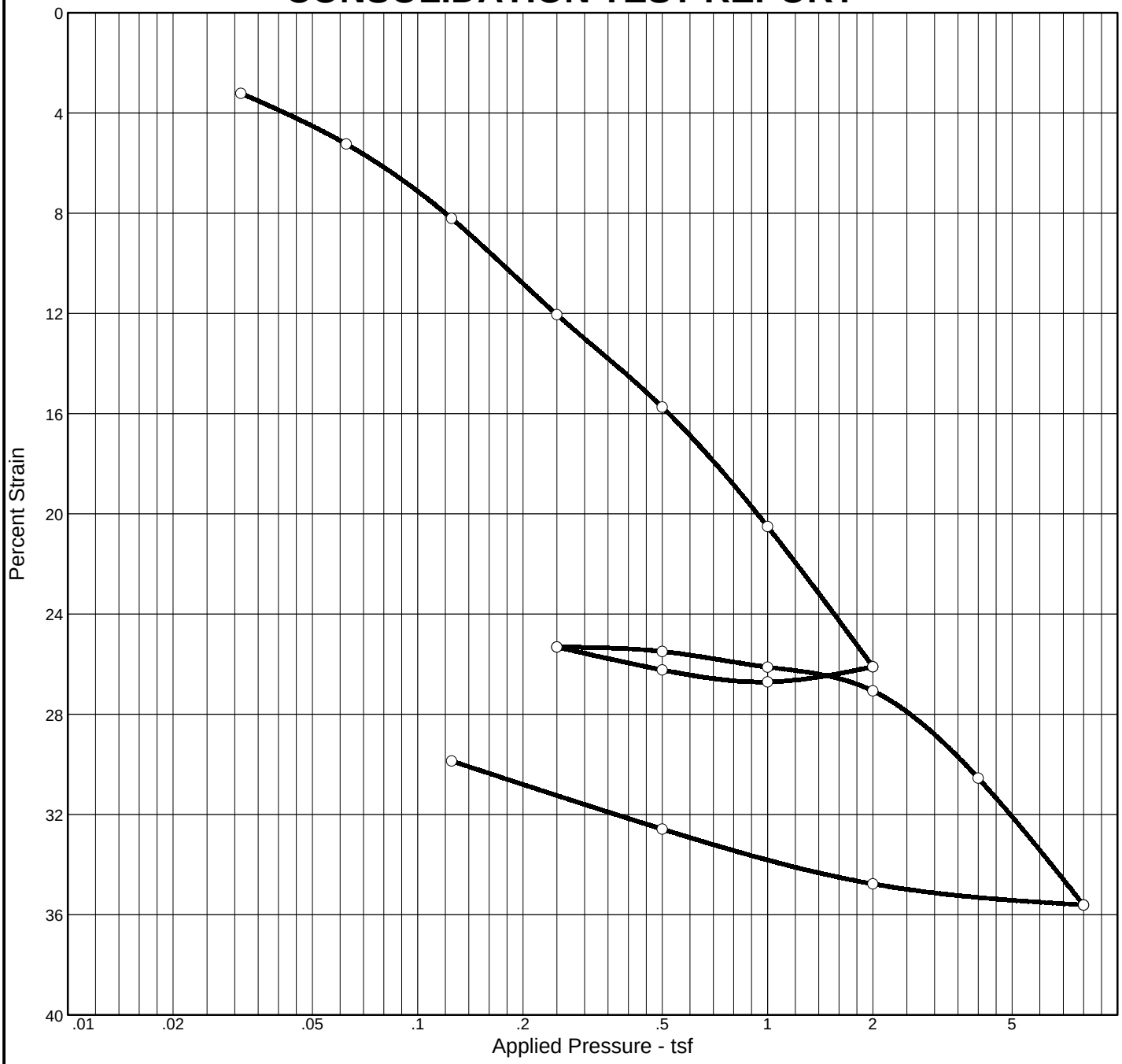
Strong organic chemical odor

SOIL TECHNOLOGY

Bainbridge Island, WA

Plate 1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
100.6 %	86.4 %	50.8	86	40	2.7		2.47	0.57	0.08			2.321

MATERIAL DESCRIPTION	USCS	AASHTO
Elastic SILT MH	Silt MH	---

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-2-06,ST-1 Depth 26.3-26.4 ft.

Remarks:

Sample was very soft.wet,gray-green clayey Silt with pecuiar organic ordor.Unique to other samples tested.

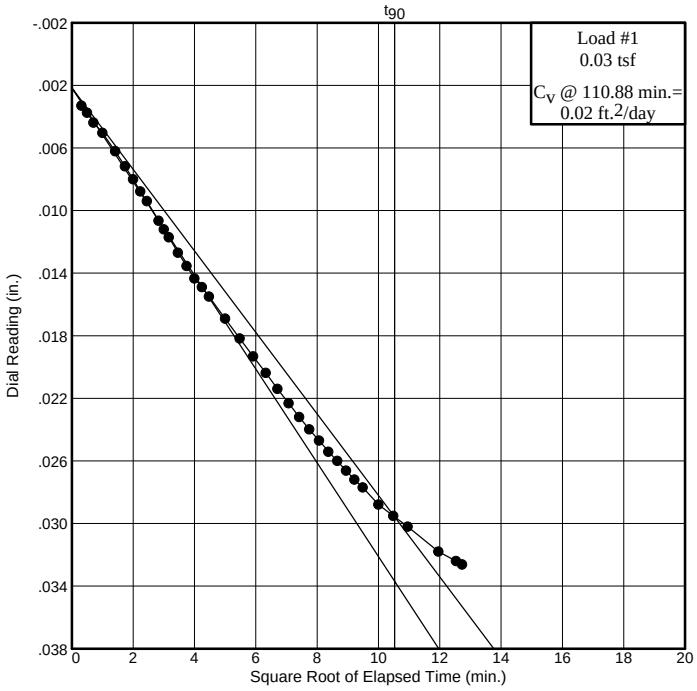
SOIL TECHNOLOGY

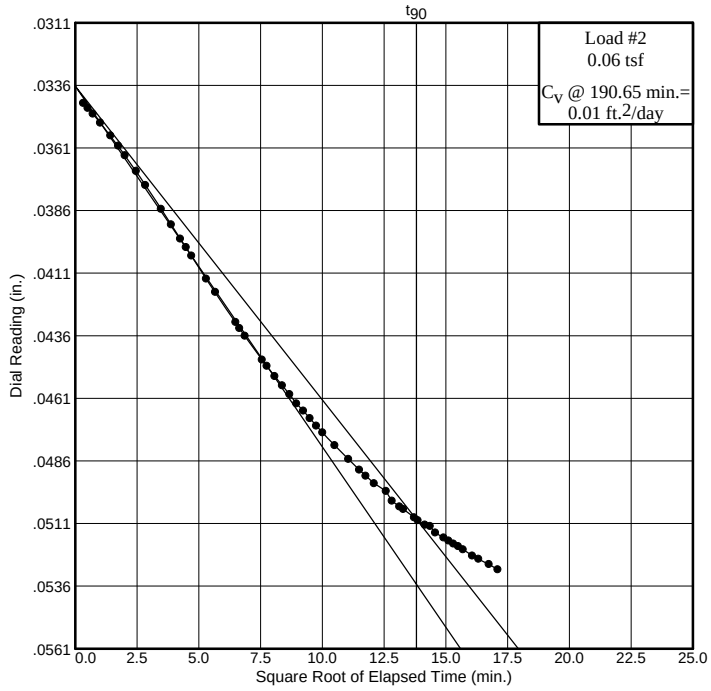
Bainbridge Island, WA

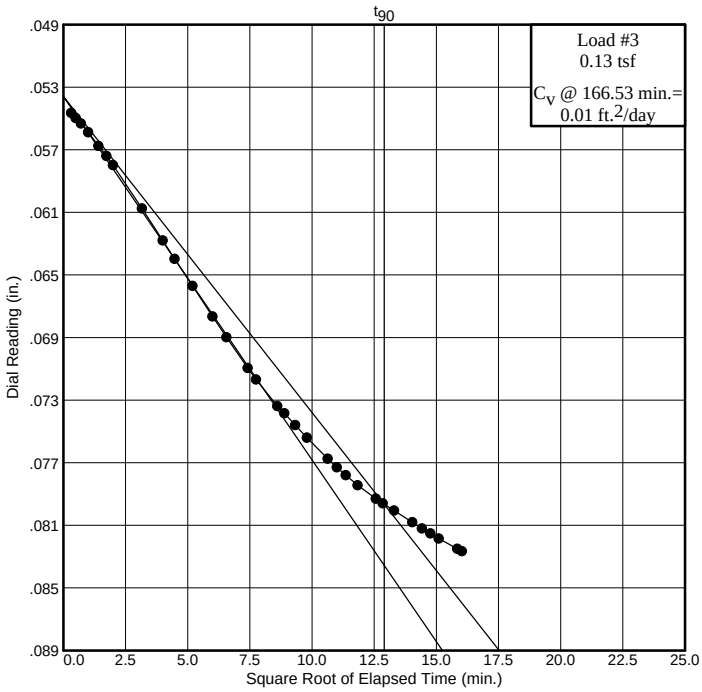
Plate 1

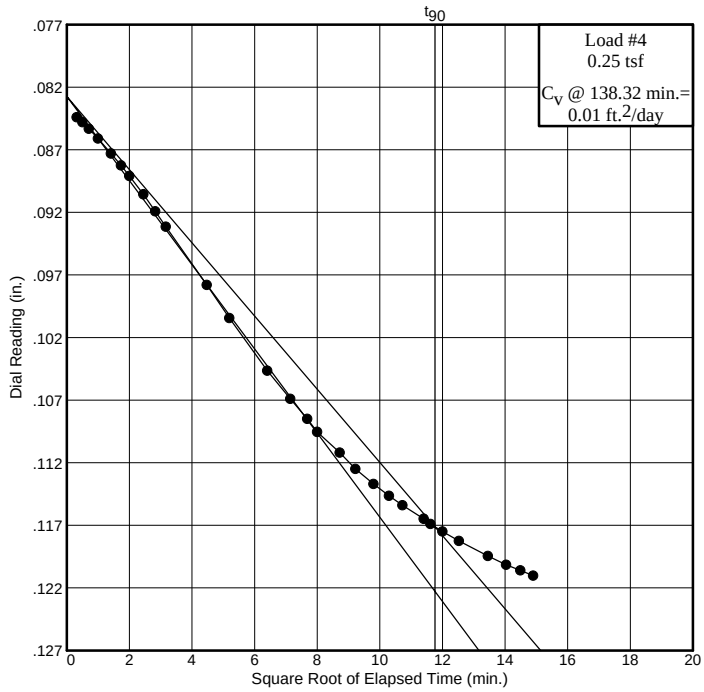
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06, ST-1 Dept 26.3-26.4 ft.







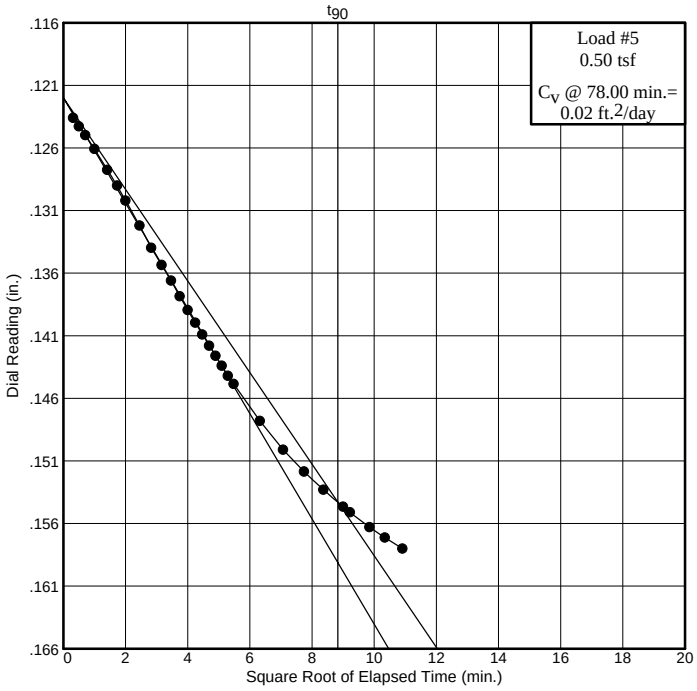


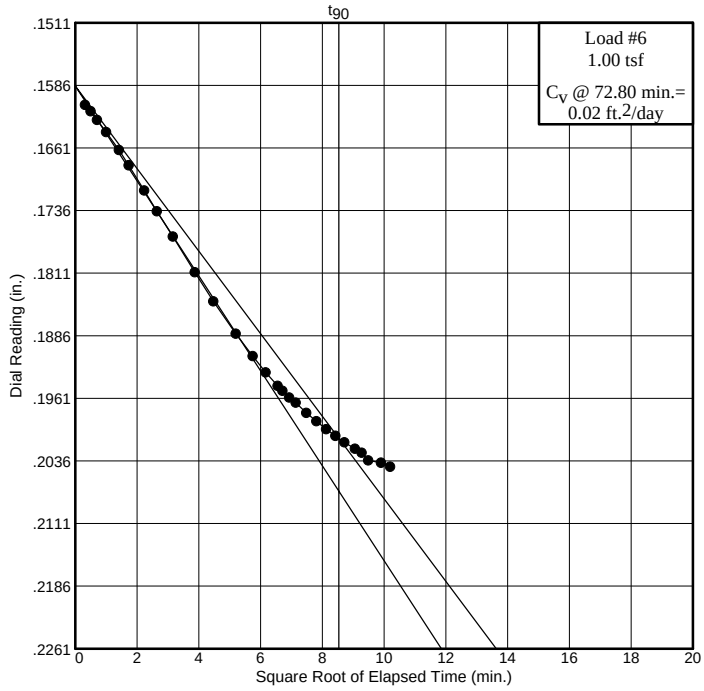
SOIL TECHNOLOGY

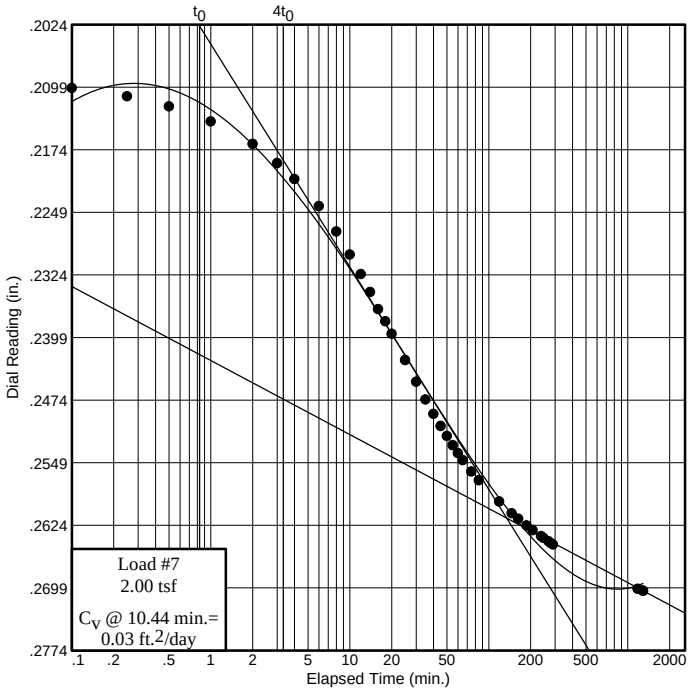
Bainbridge Island, WA

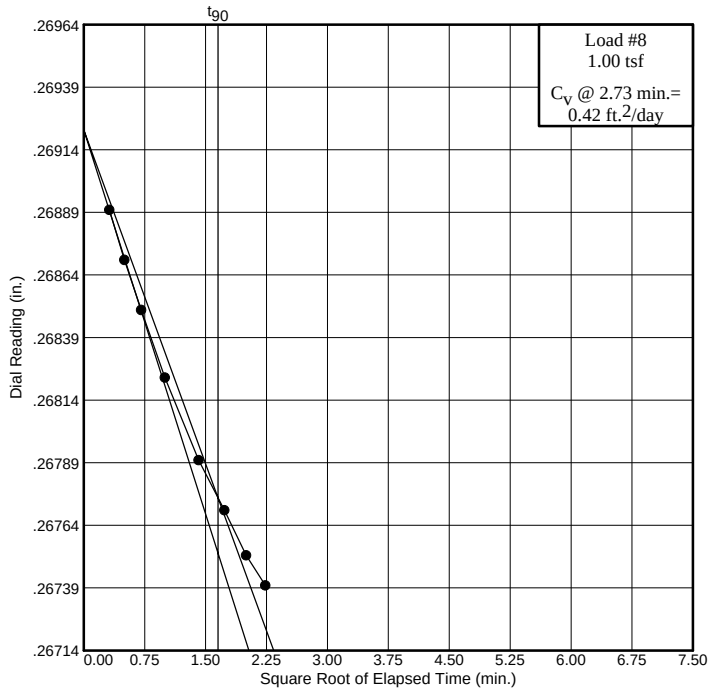
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06, ST-1 Depth 26.3-26.4 ft.







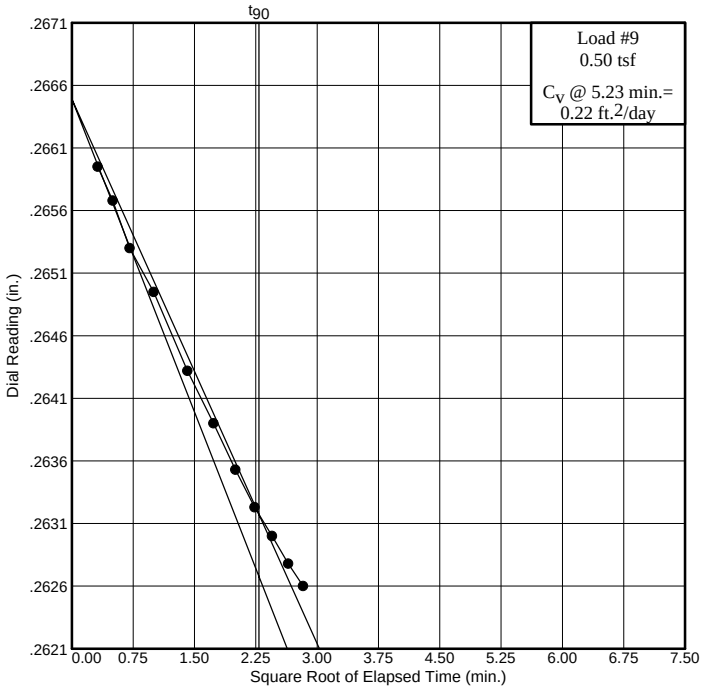


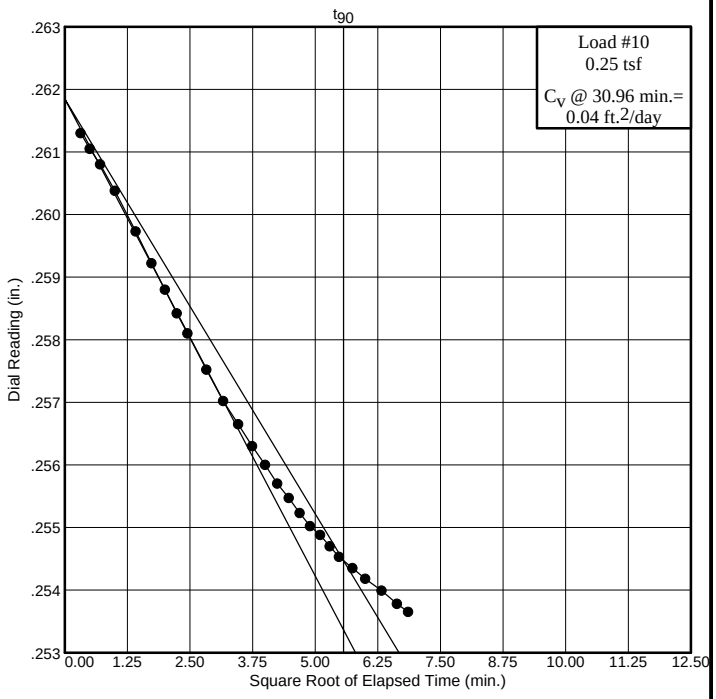
SOIL TECHNOLOGY

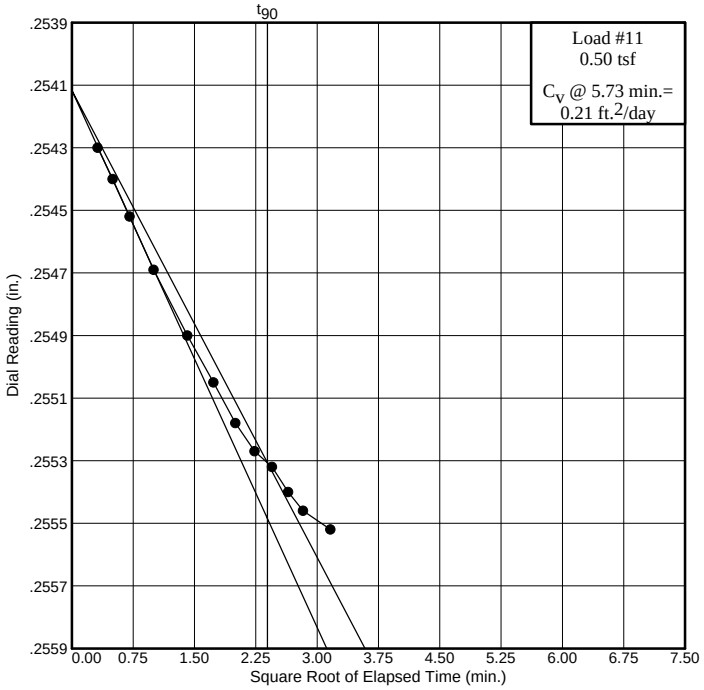
Bainbridge Island, WA

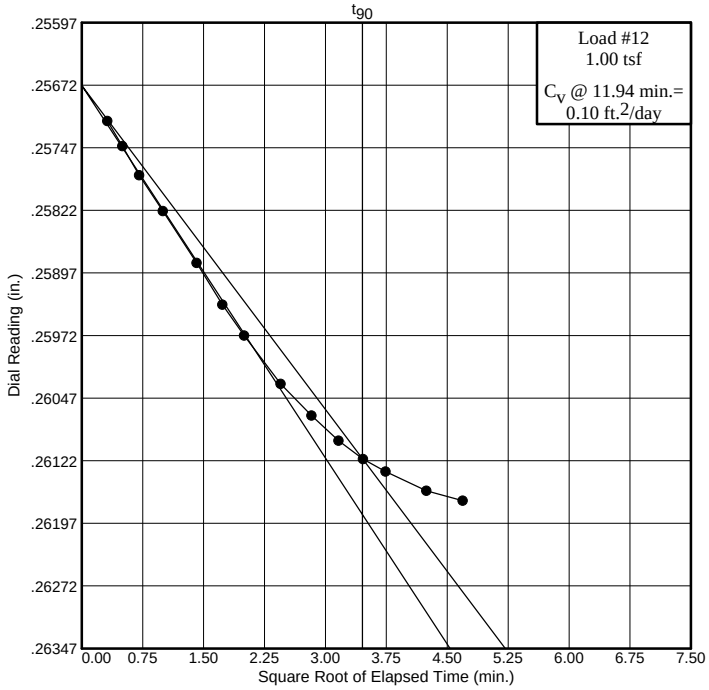
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06. ST-1 Depth 26.3-26.4 ft.







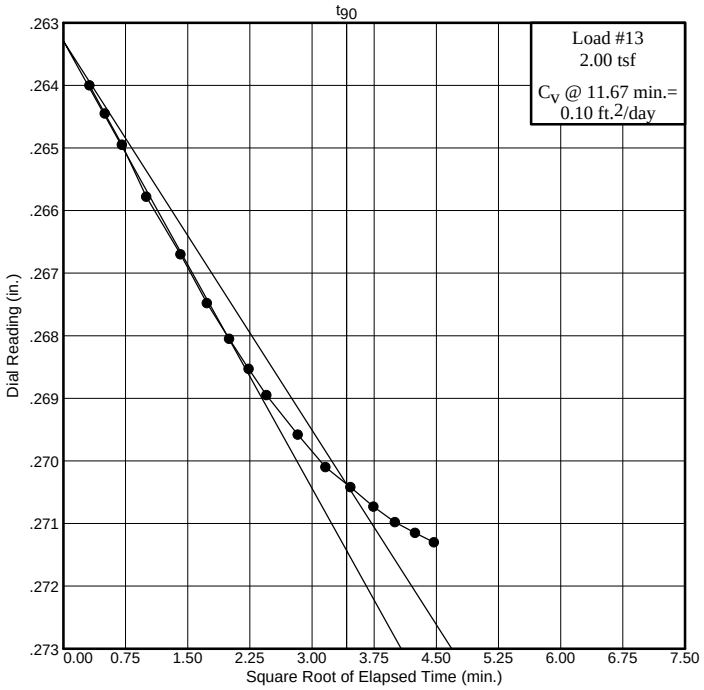


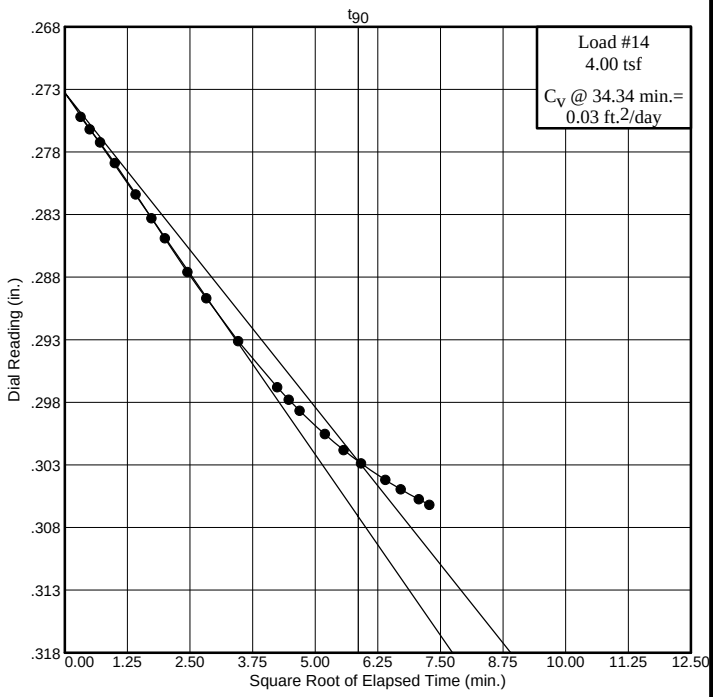
SOIL TECHNOLOGY

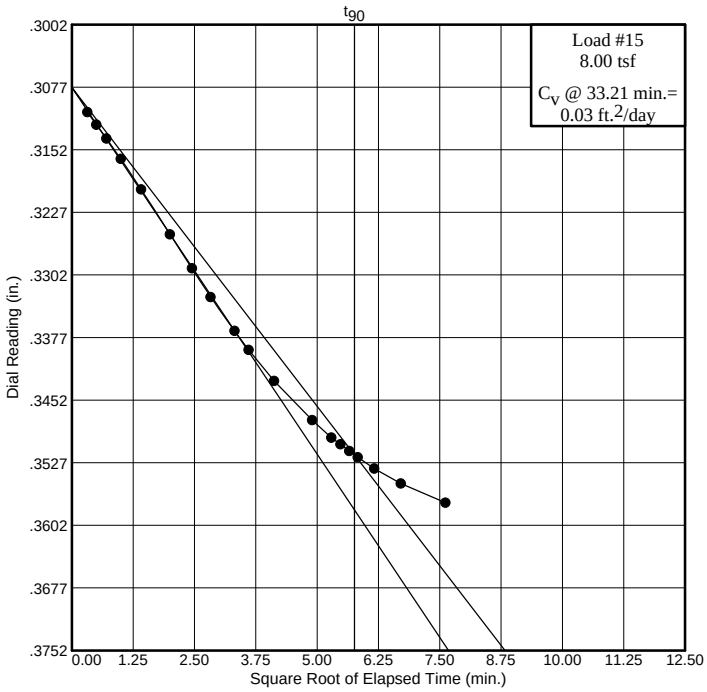
Bainbridge Island, WA

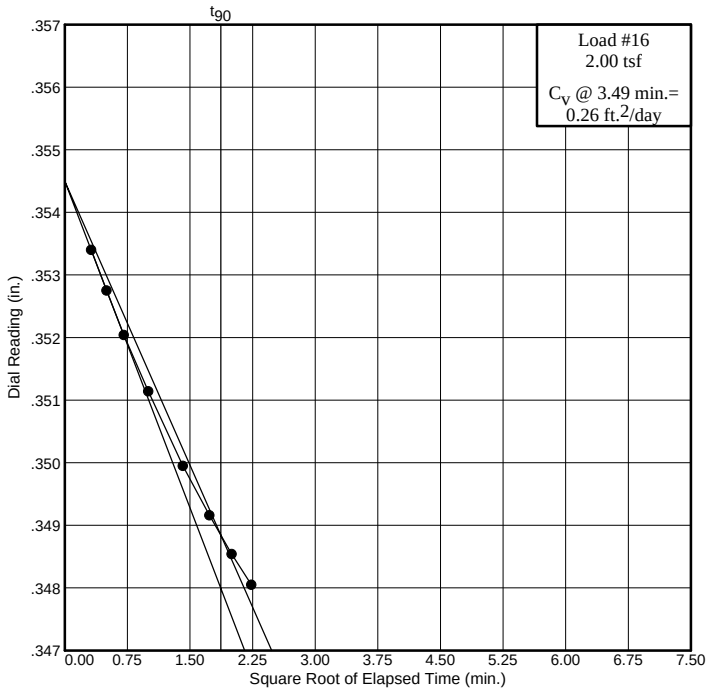
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06, ST-1 Depth 26.3-26.4 ft.







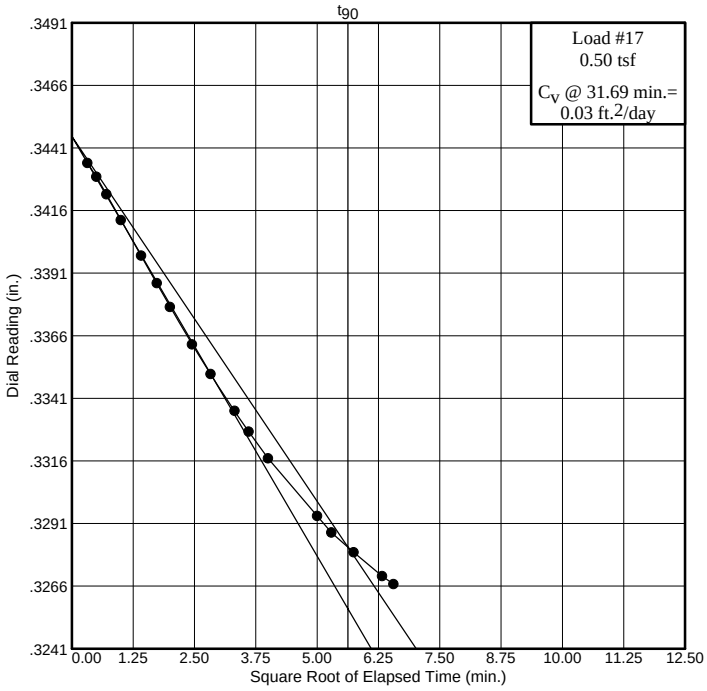


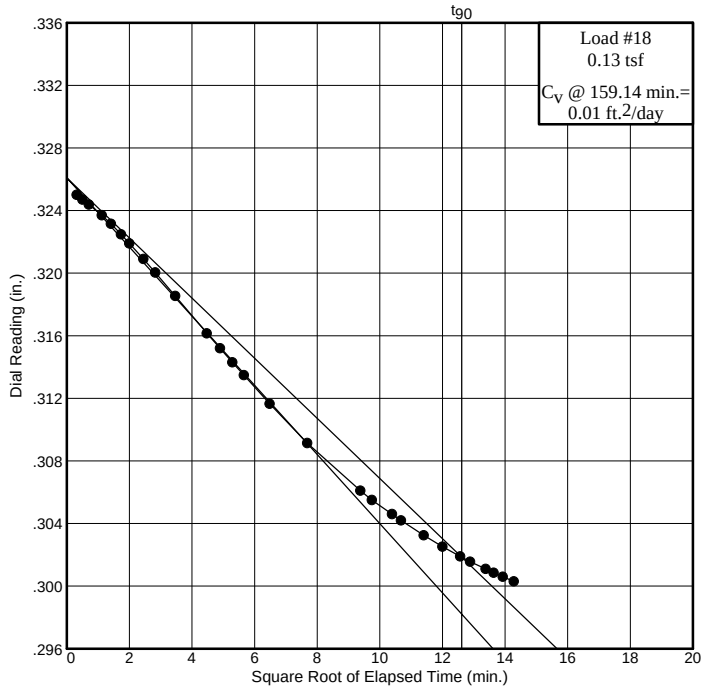
SOIL TECHNOLOGY

Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06, ST-1 Depth 26.3-26.4 ft.

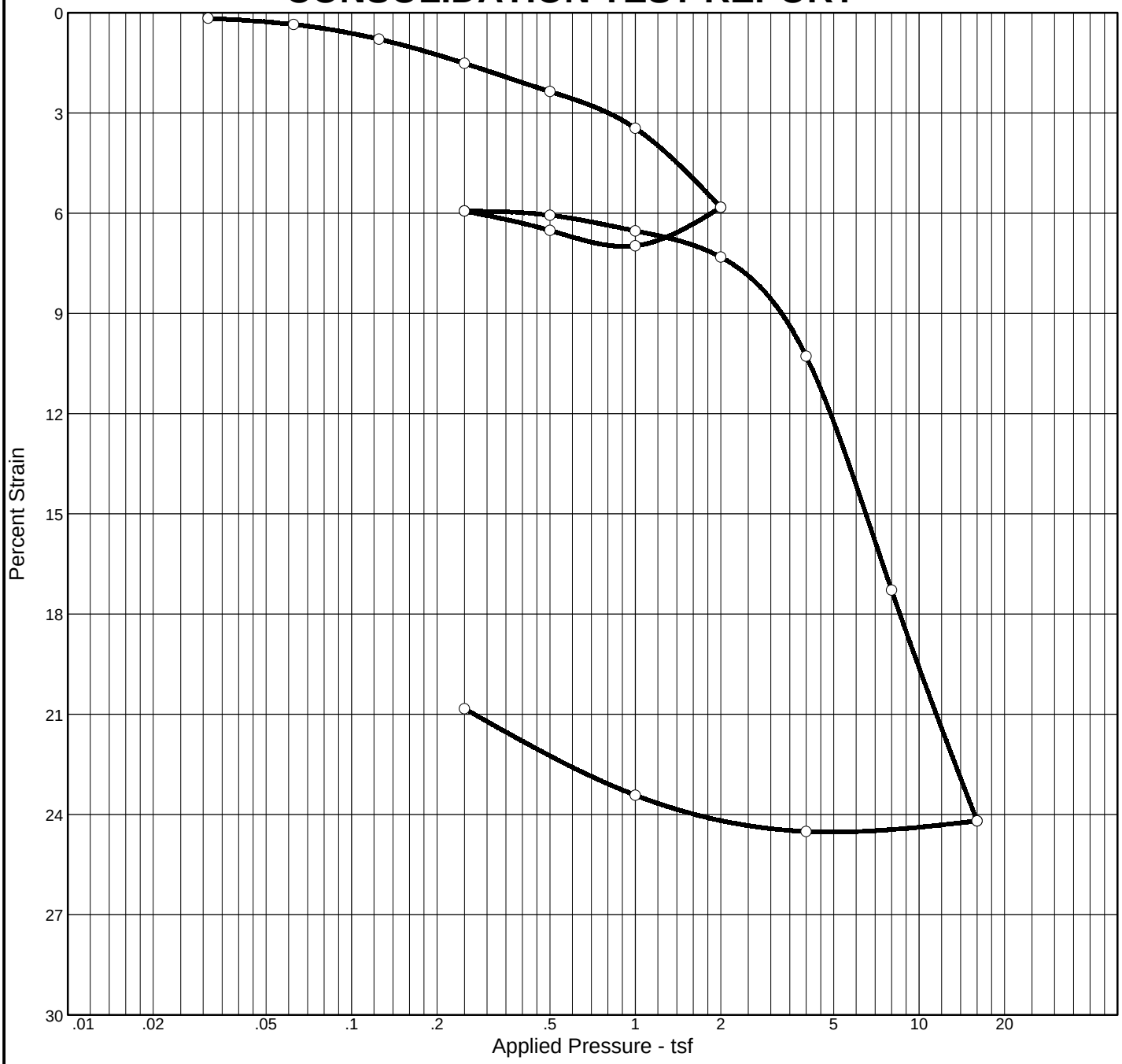




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
100.5 %	62.8 %	61.8	63	28	2.6		3.27	0.60	0.05			1.624

MATERIAL DESCRIPTION	USCS	AASHTO
	MH	----

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-2-06,ST-3 Depth 36.0-36.1 ft.

Remarks:

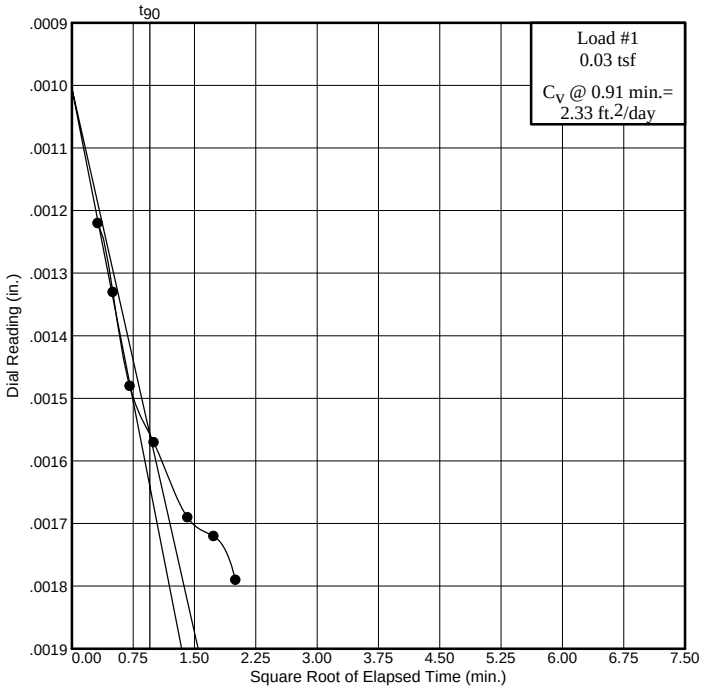
SOIL TECHNOLOGY

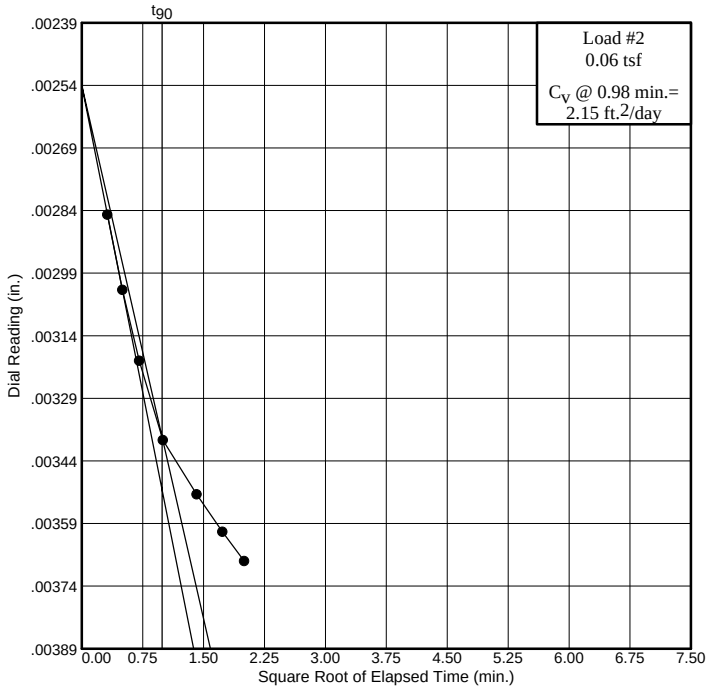
Bainbridge Island, WA

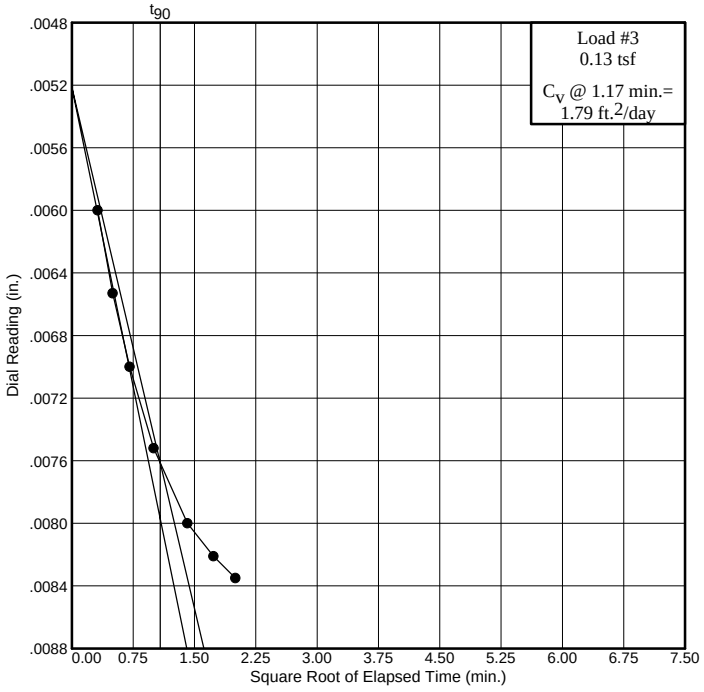
Plate 2

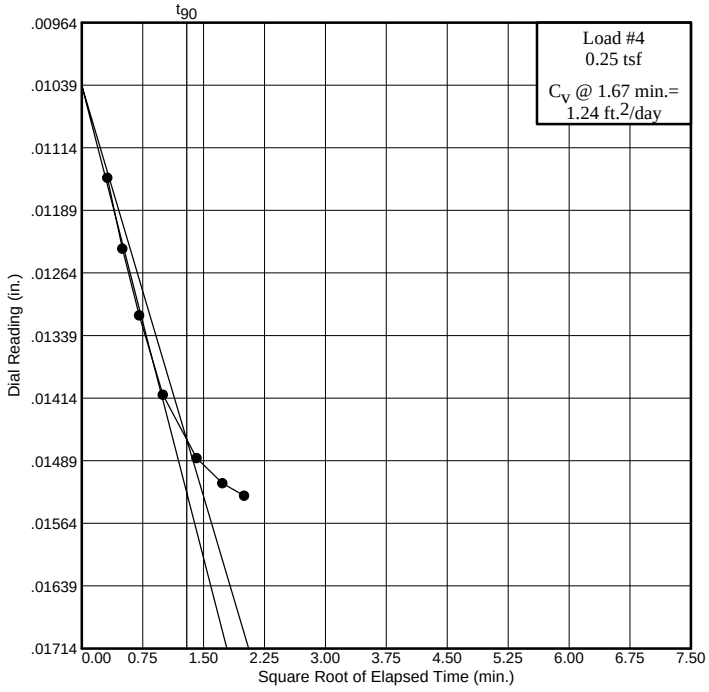
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-3 Depth 36.0-36.1 ft.







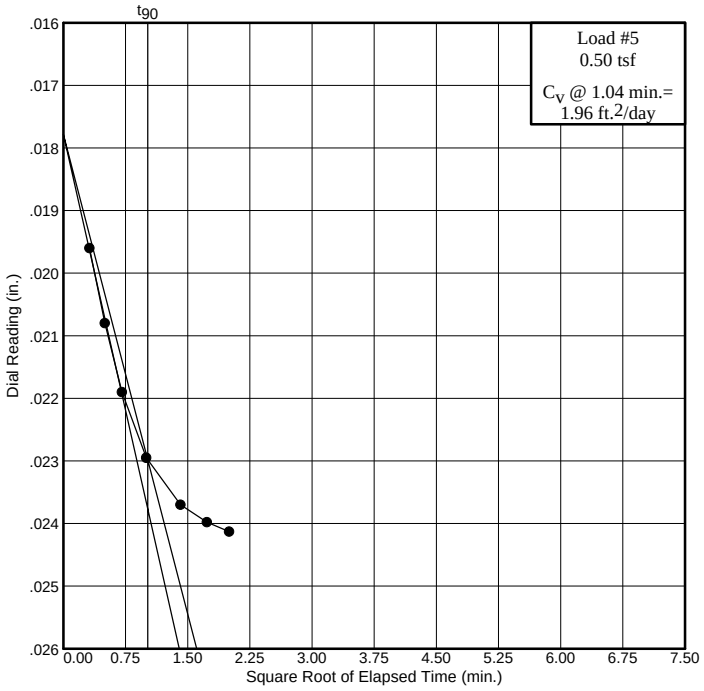


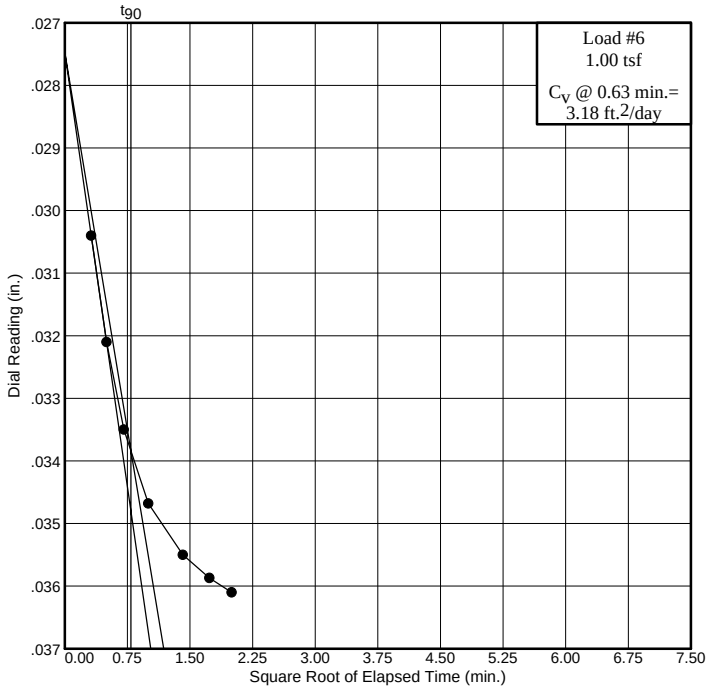
SOIL TECHNOLOGY

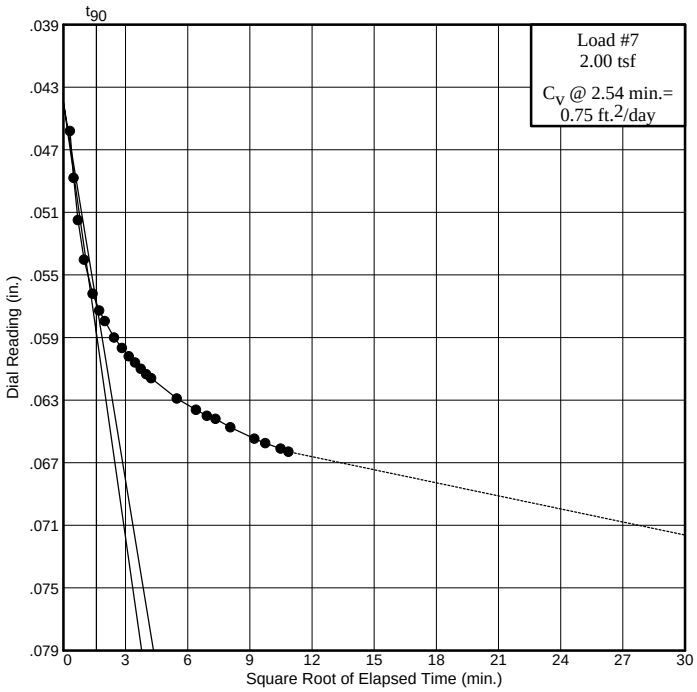
Bainbridge Island, WA

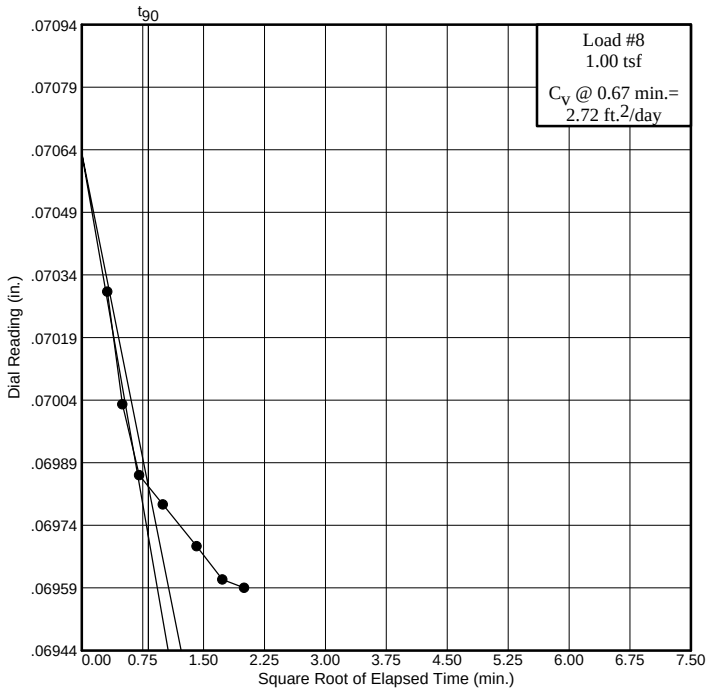
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-3 Depth 36.0-36.1 ft.







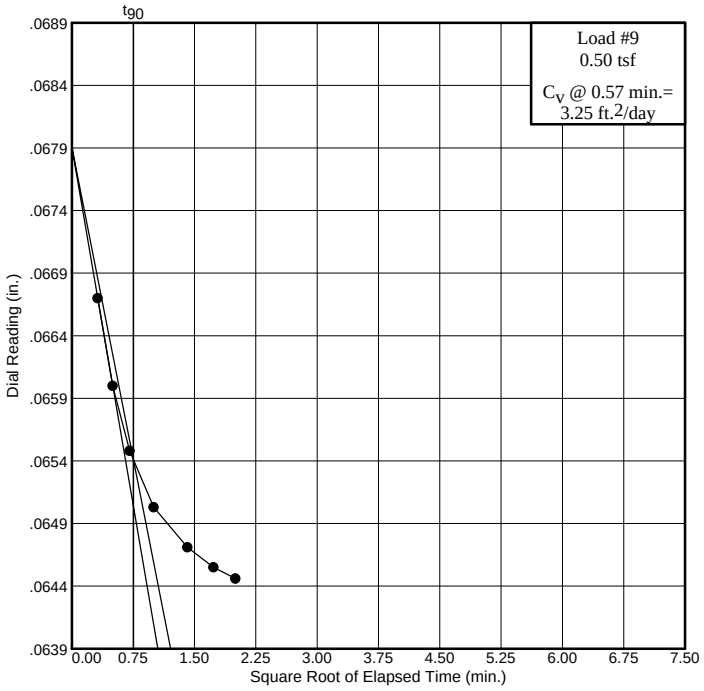


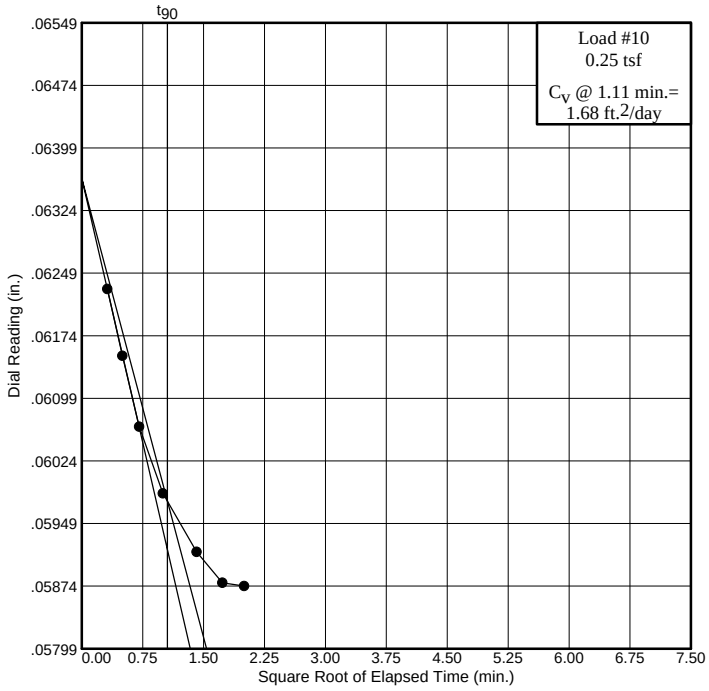
SOIL TECHNOLOGY

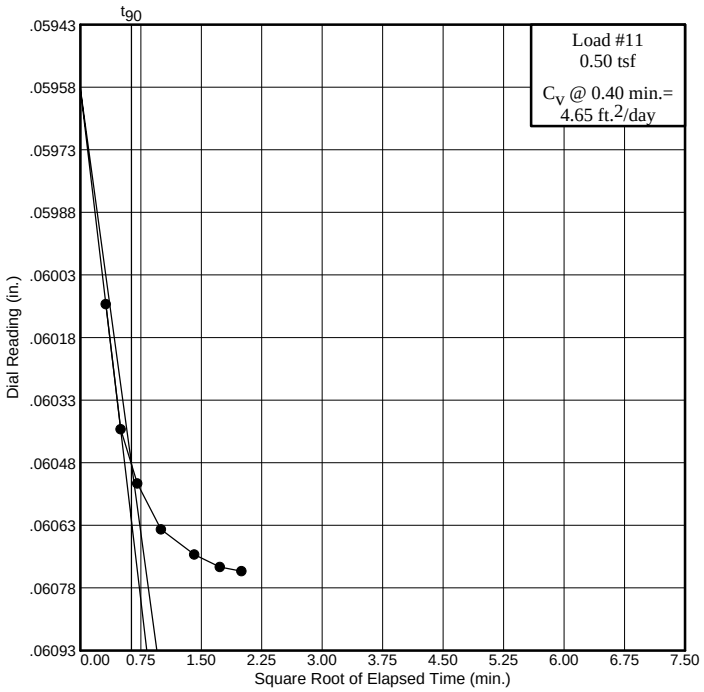
Bainbridge Island, WA

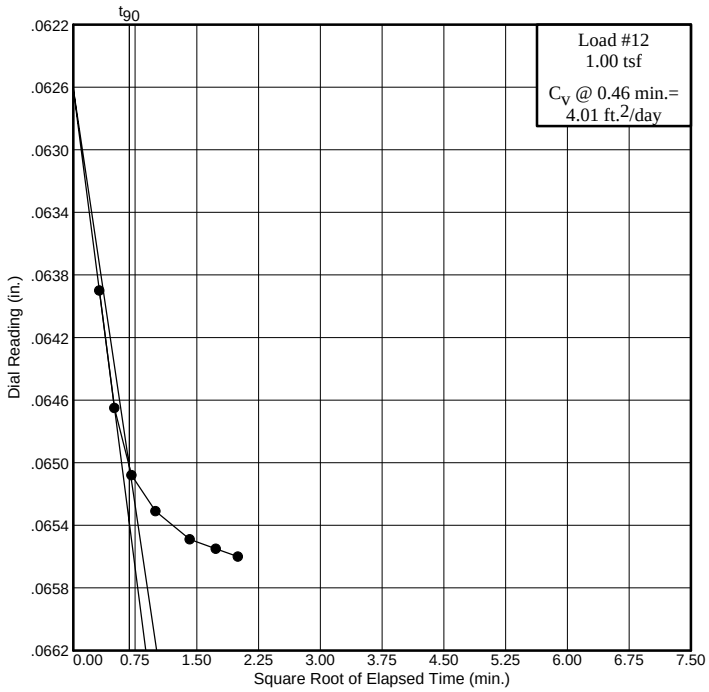
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-3 Depth 36.0-36.1 ft.







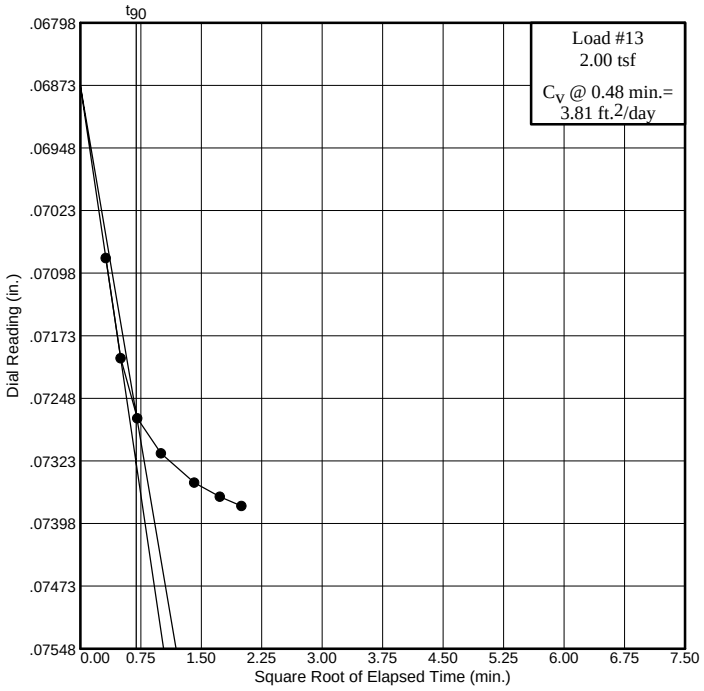


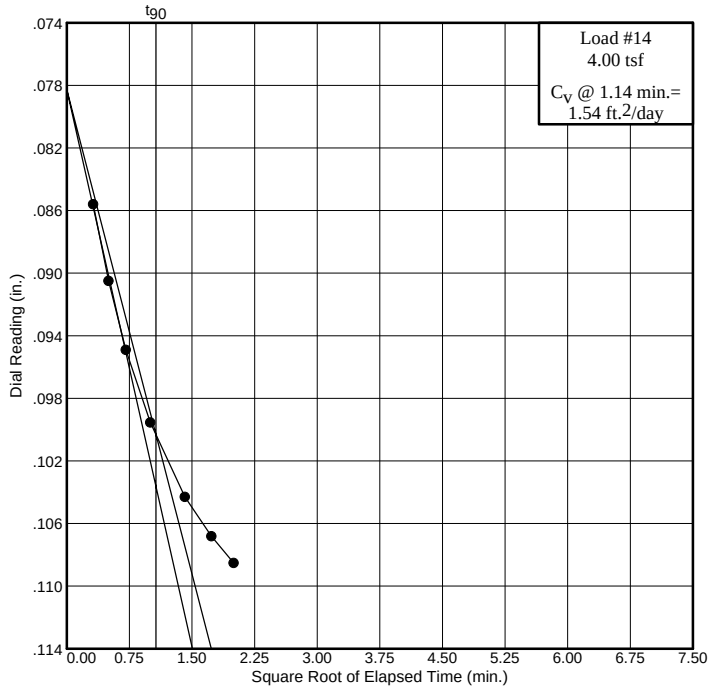
SOIL TECHNOLOGY

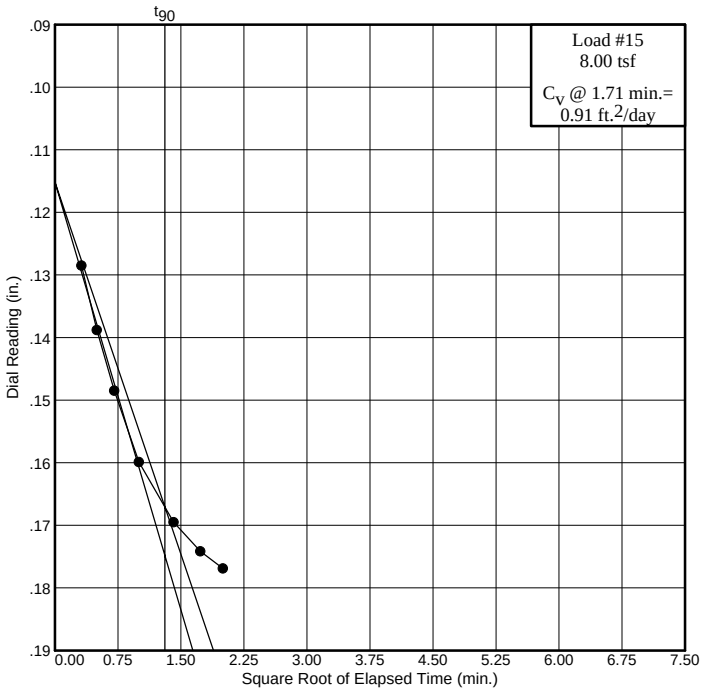
Bainbridge Island, WA

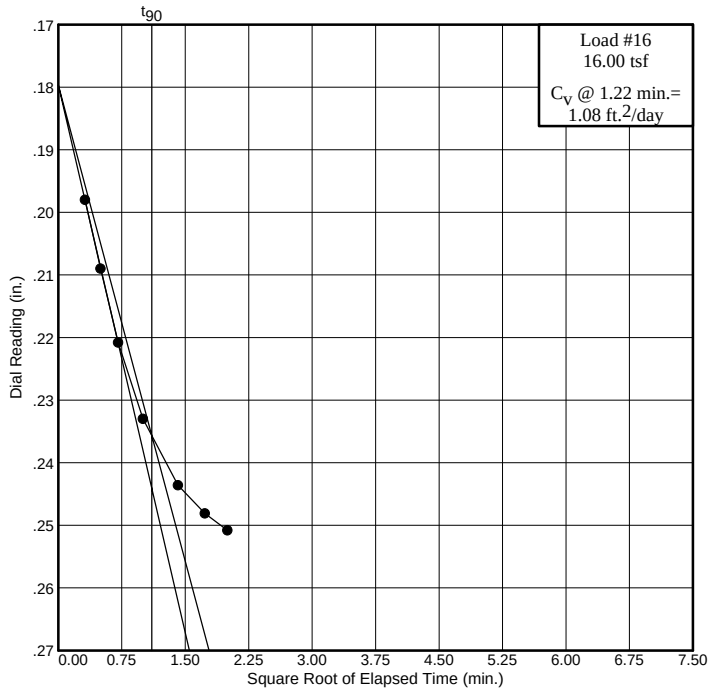
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-3 Depth 36.0-36.1 ft.







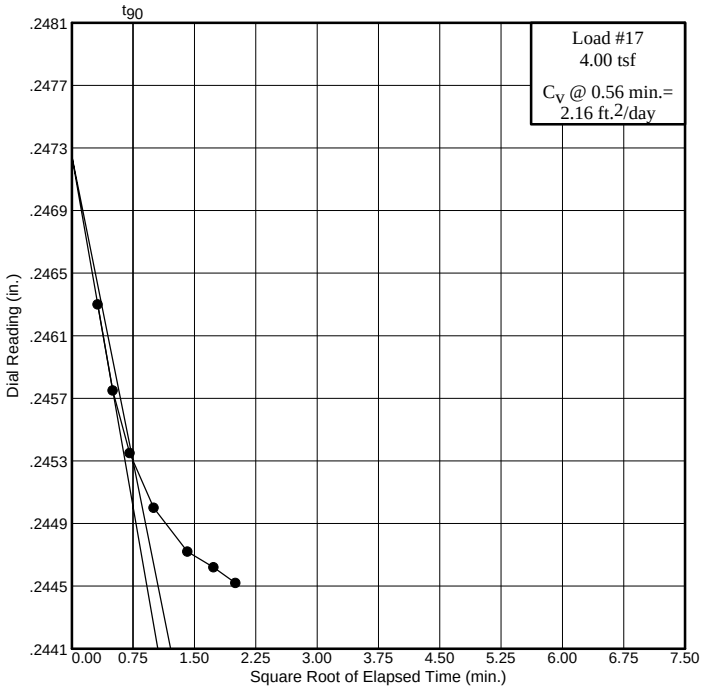


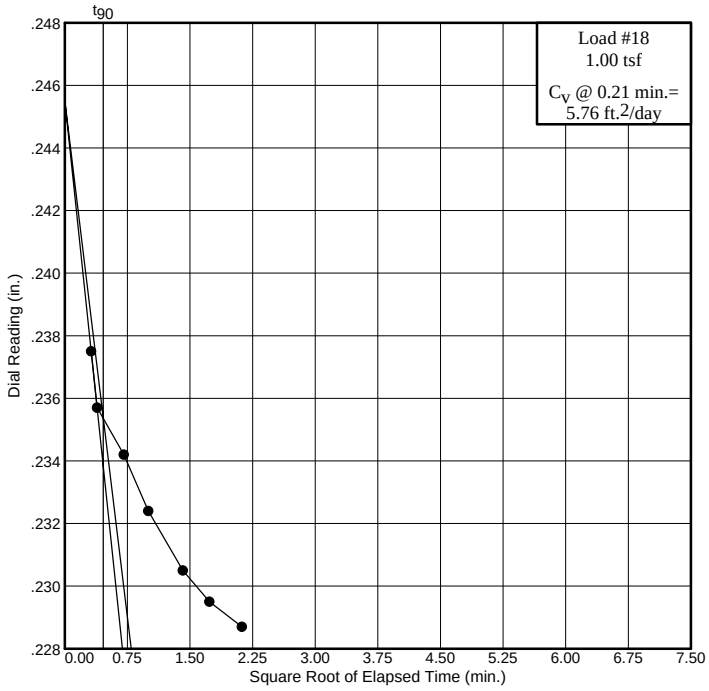
SOIL TECHNOLOGY

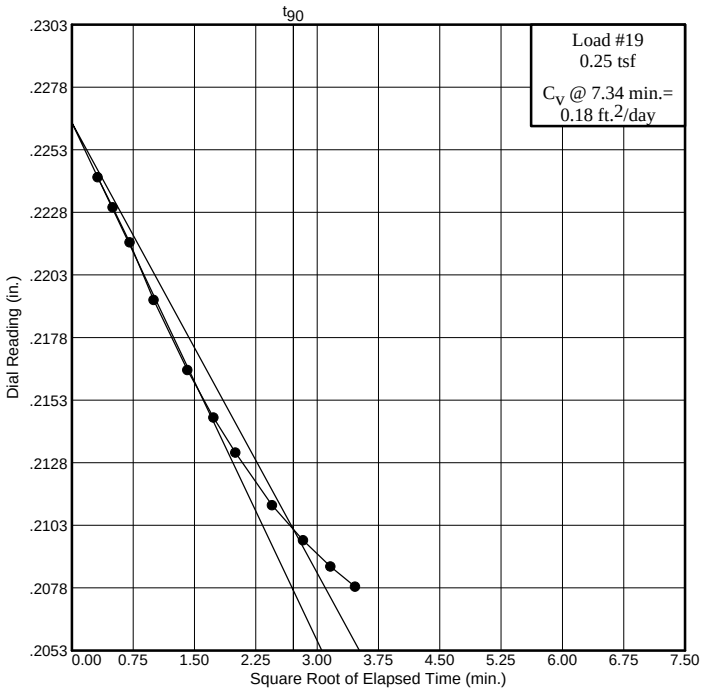
Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-3 Depth 36.0-36.1 ft.



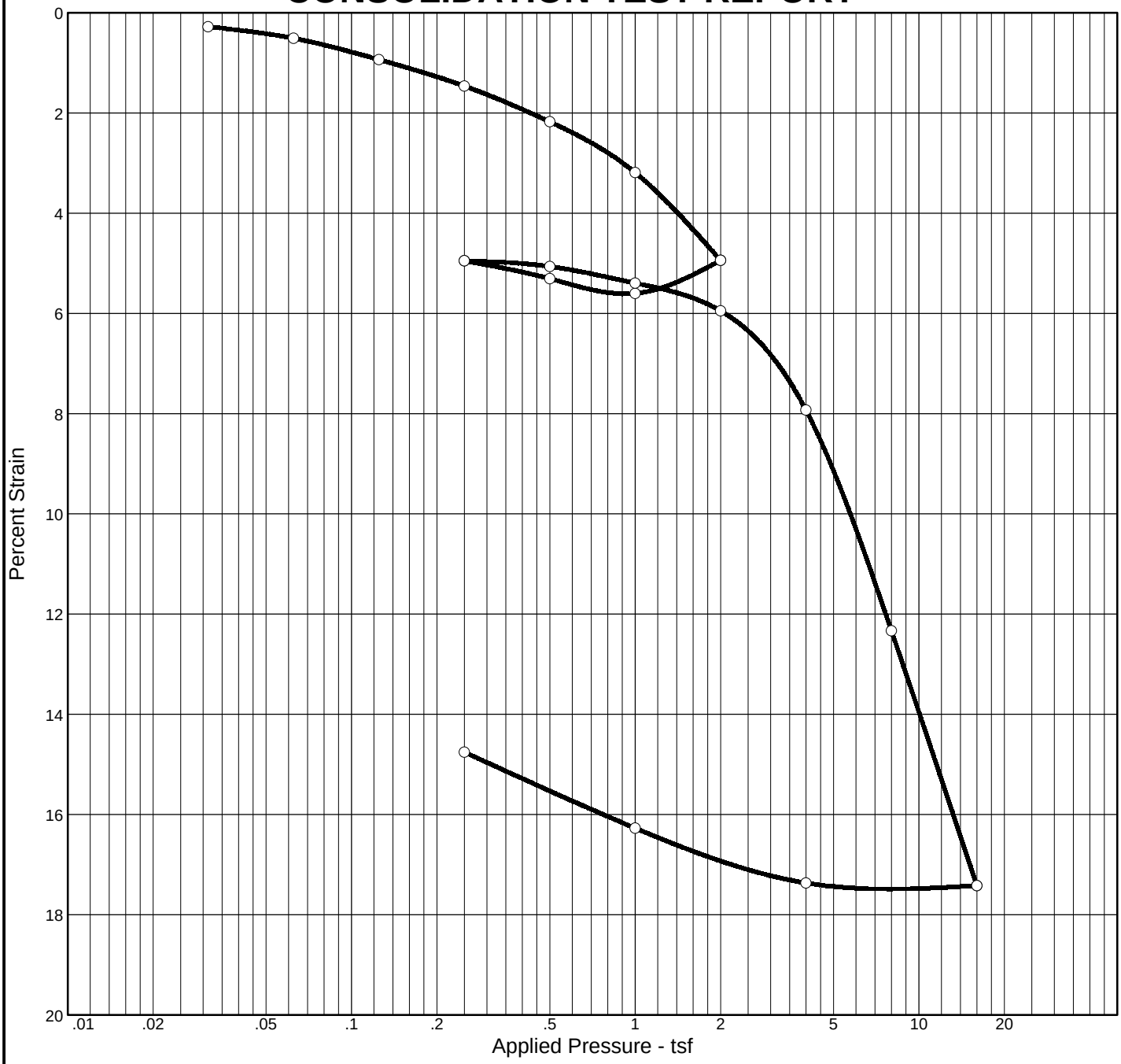




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
99.9 %	49.1 %	70.4	44	10	2.53		3.48	0.38	0.03			1.243

MATERIAL DESCRIPTION	USCS	AASHTO
	ML	---

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-2-06,ST-5 Depth 45.8-45.9 ft.

Remarks:

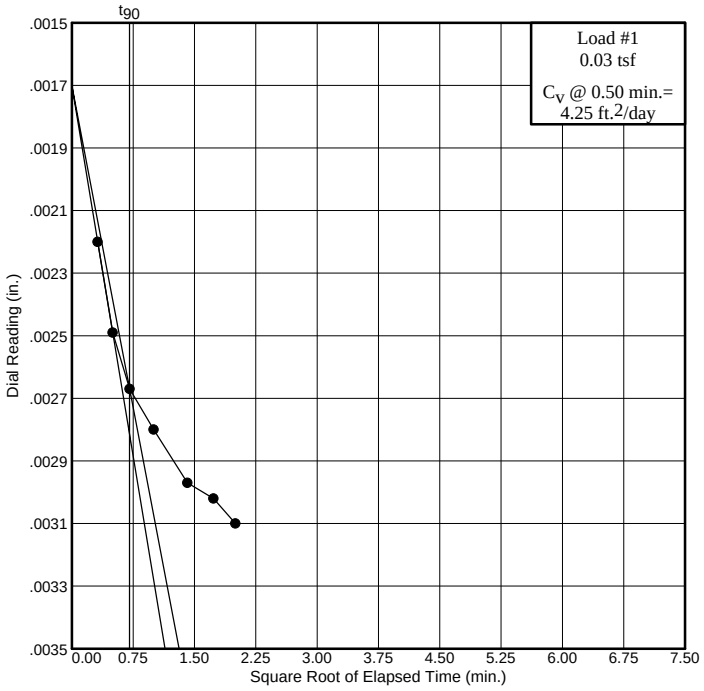
SOIL TECHNOLOGY

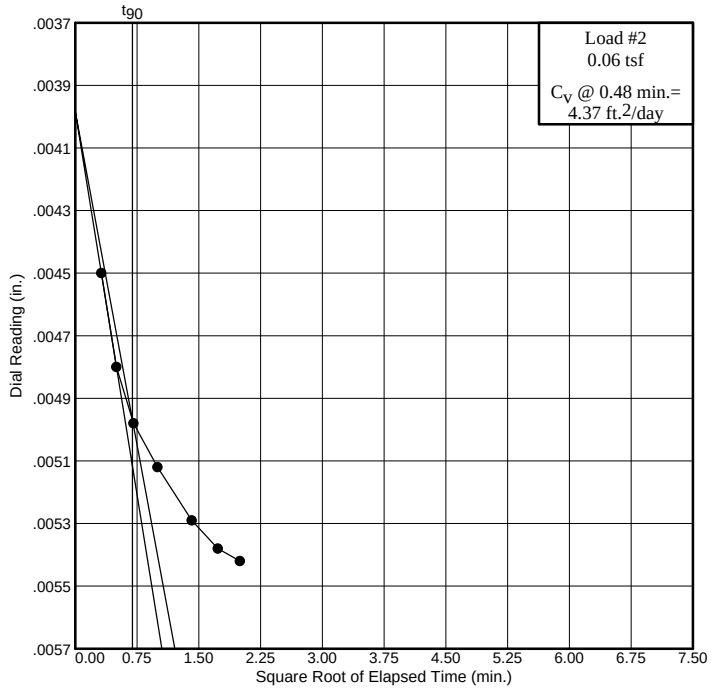
Bainbridge Island, WA

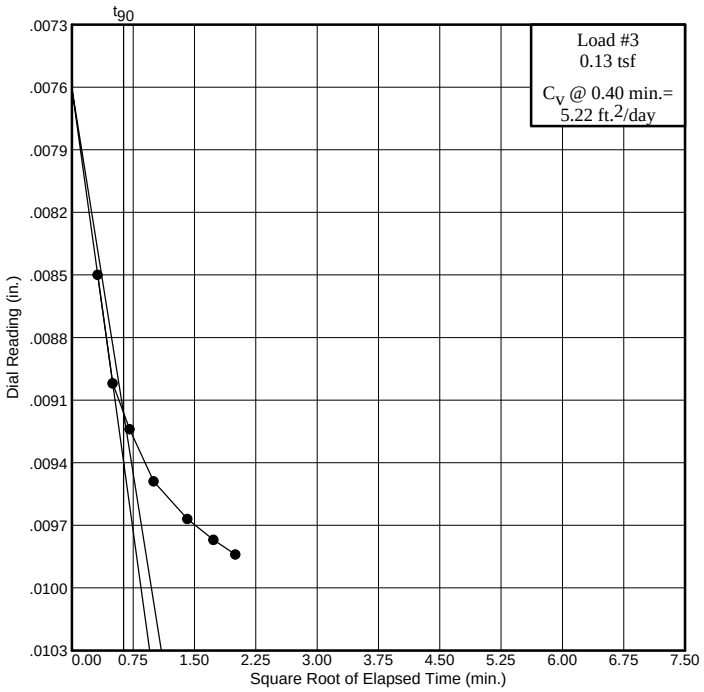
Plate 3

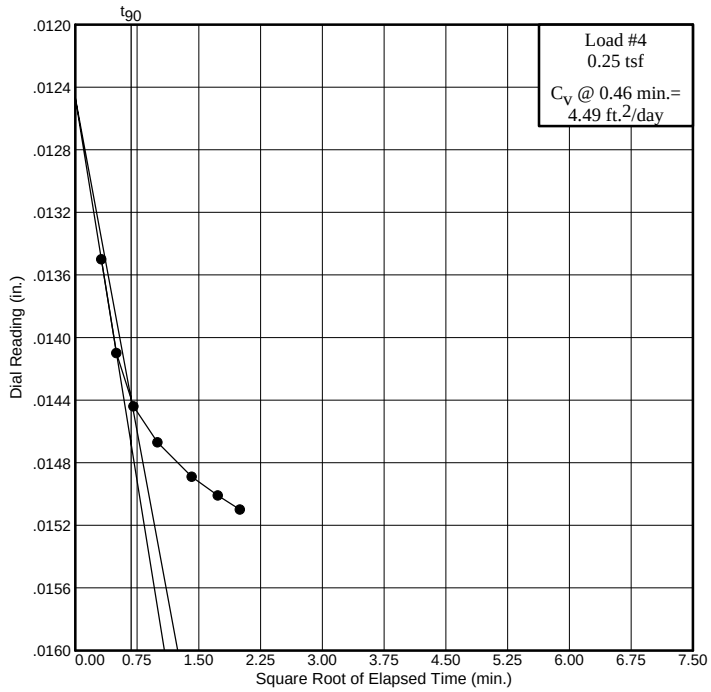
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-5 Depth 45.8-45.9 ft.







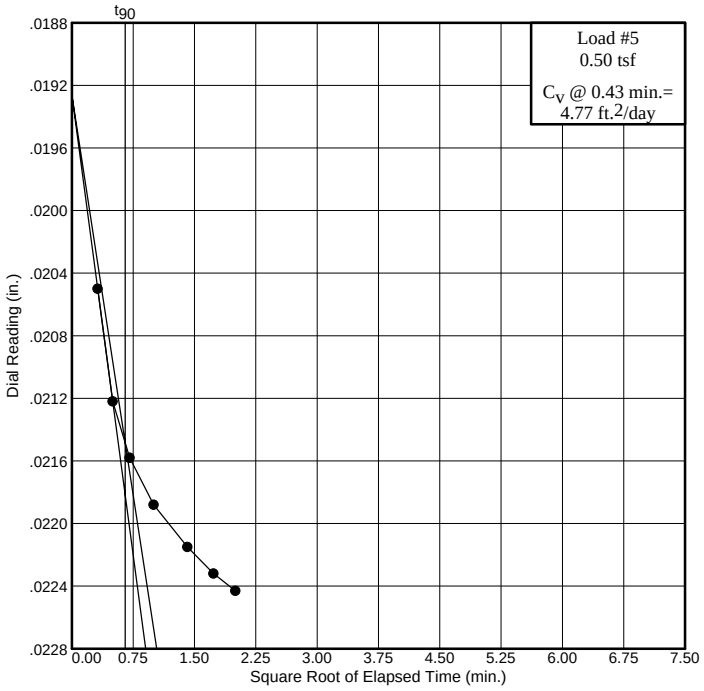


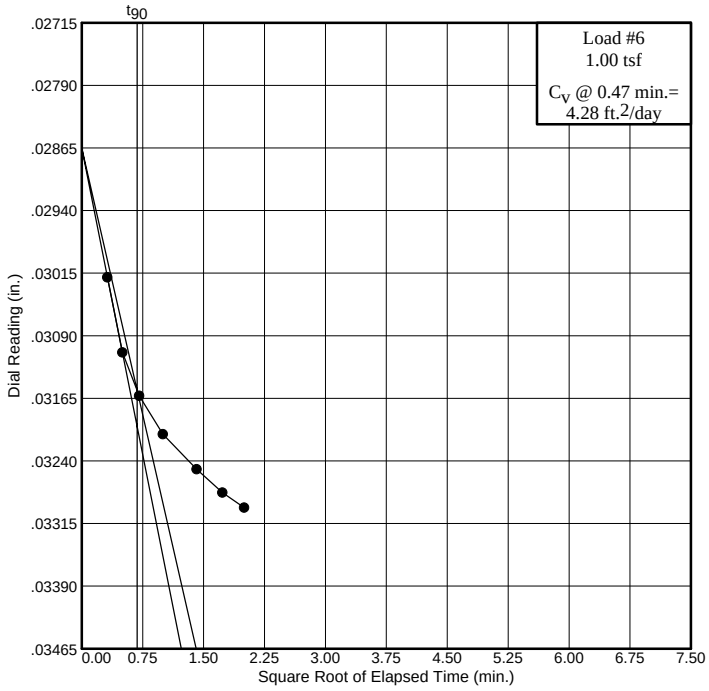
SOIL TECHNOLOGY

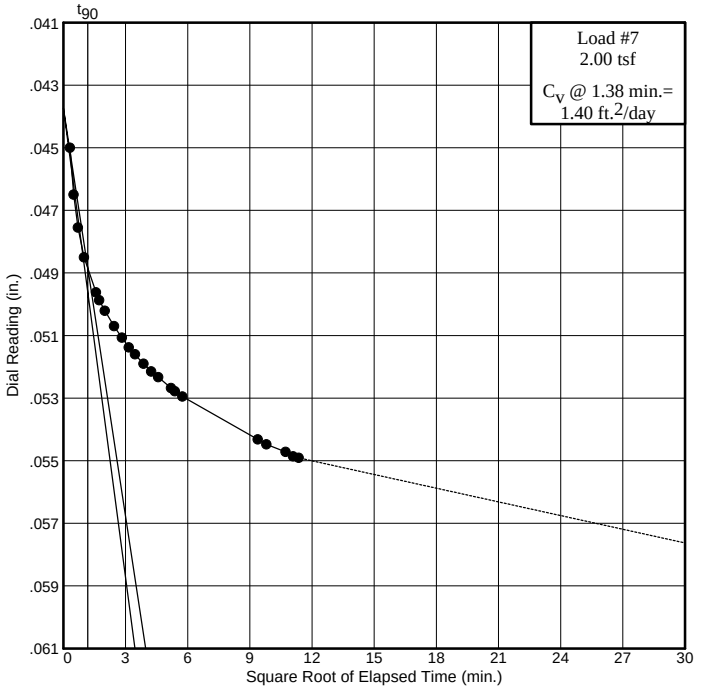
Bainbridge Island, WA

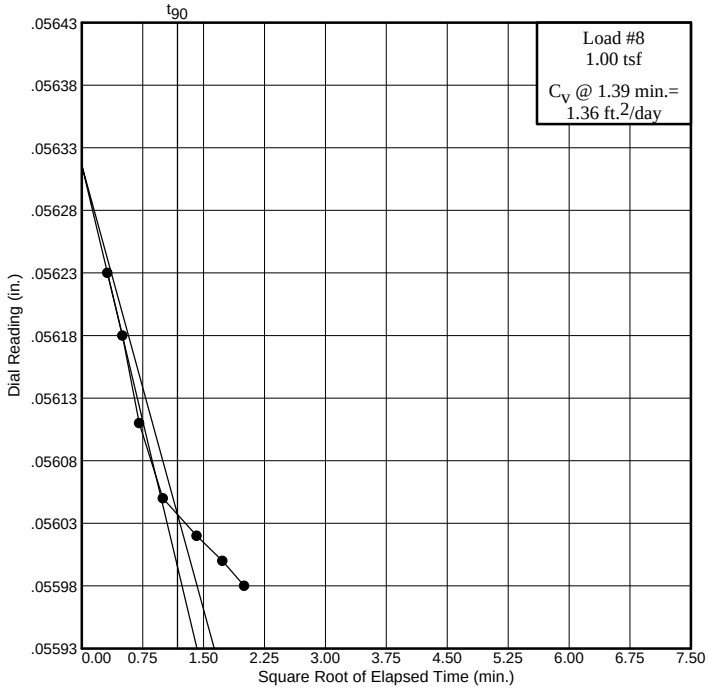
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-5 Depth 45.8-45.9 ft.







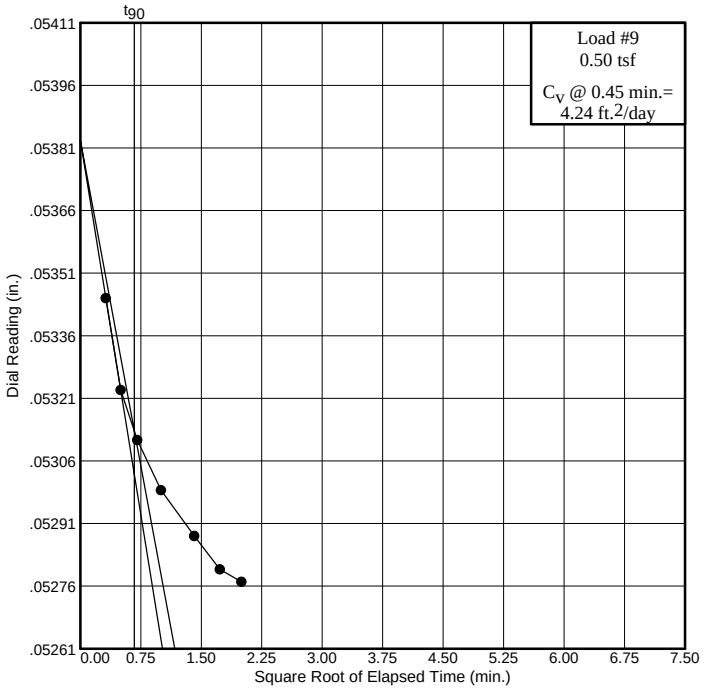


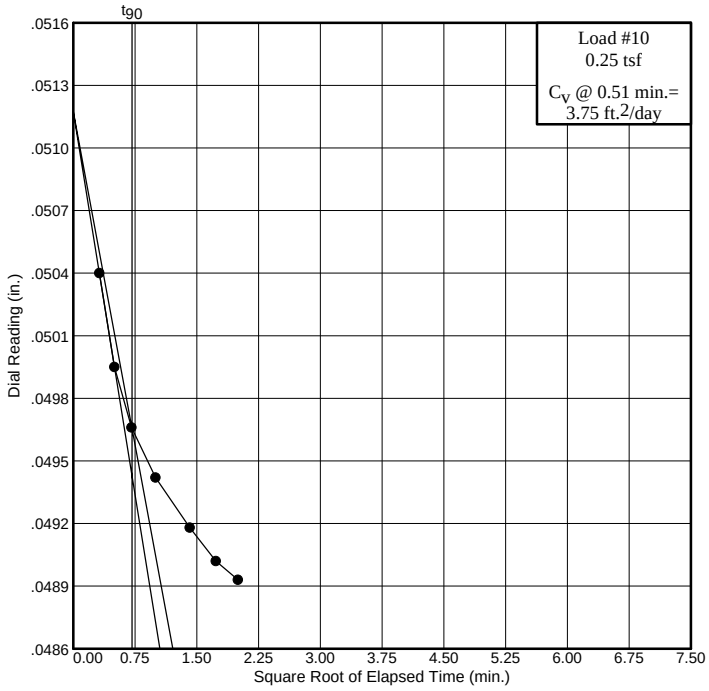
SOIL TECHNOLOGY

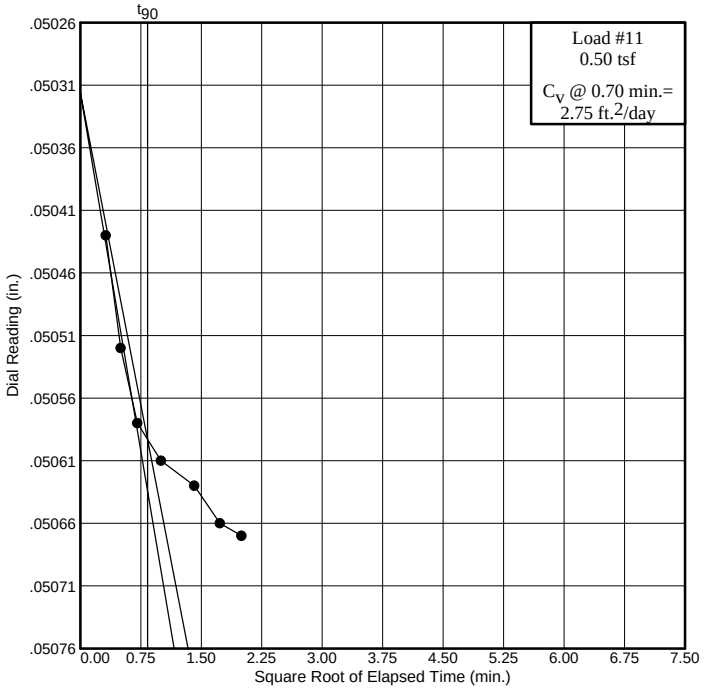
Bainbridge Island, WA

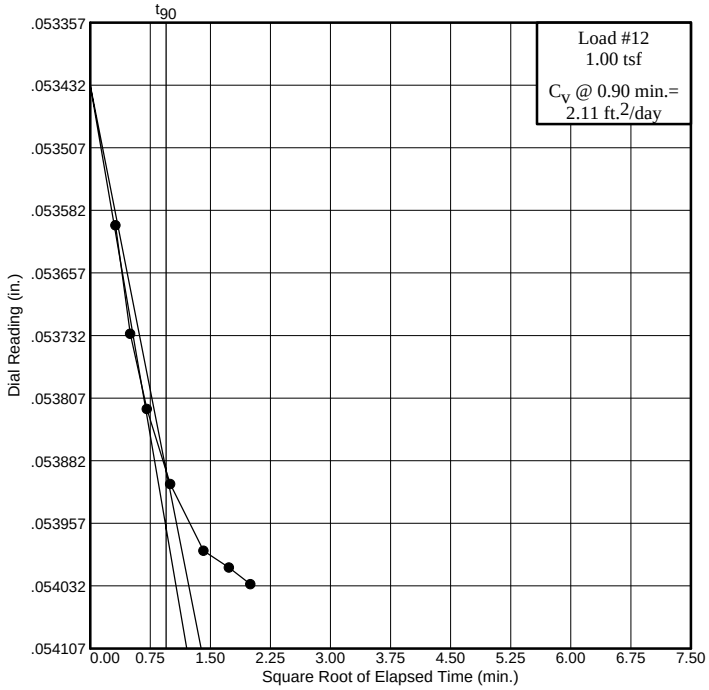
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-5 Depth 45.8-45.9 ft.







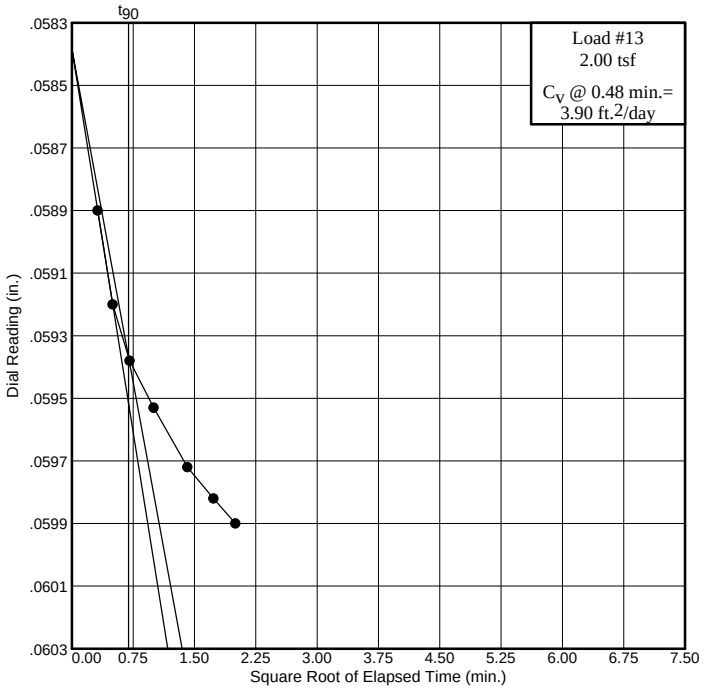


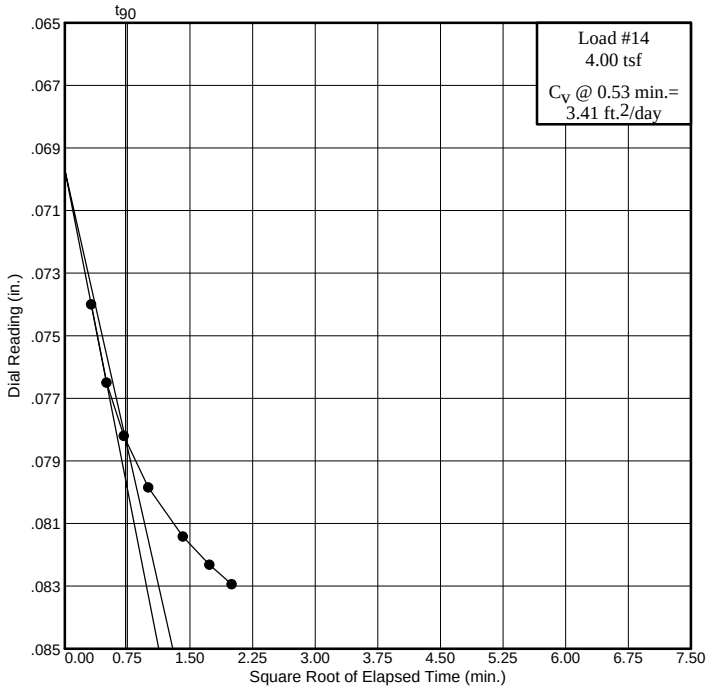
SOIL TECHNOLOGY

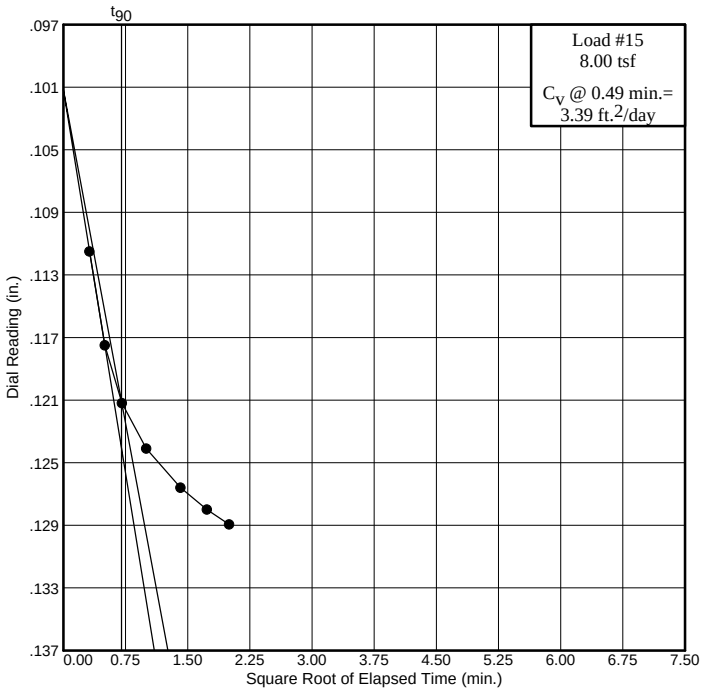
Bainbridge Island, WA

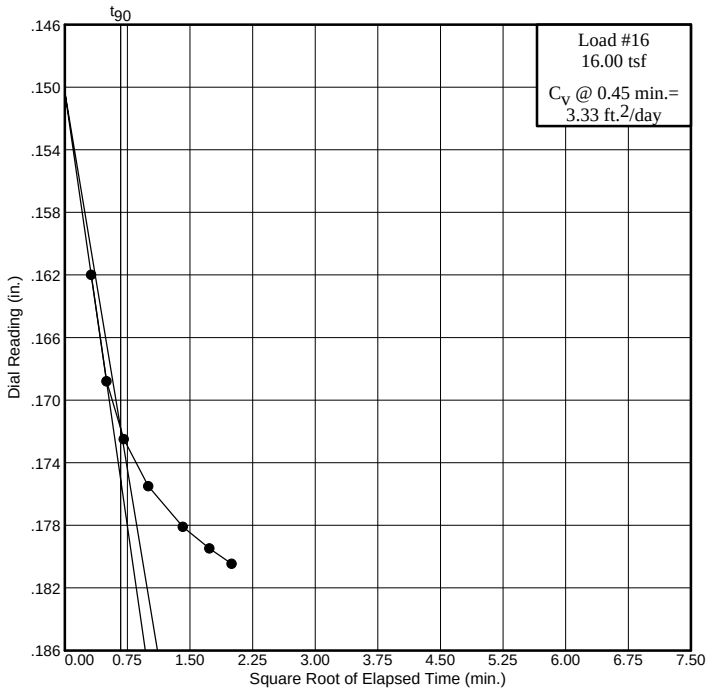
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-5 Depth 45.8-45.9 ft.







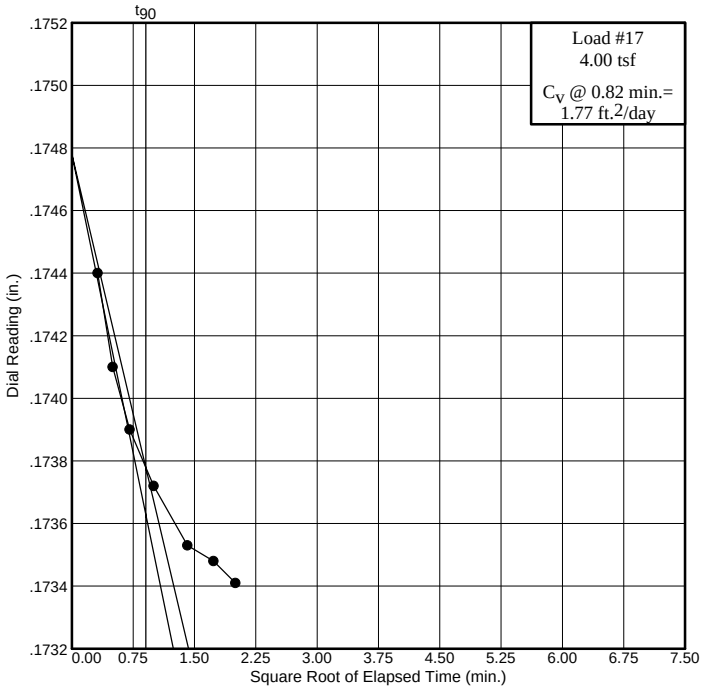


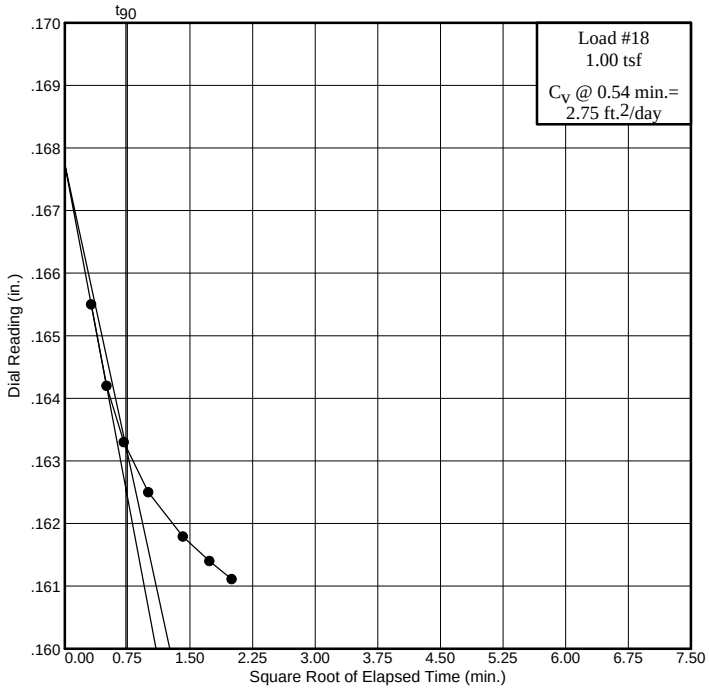
SOIL TECHNOLOGY

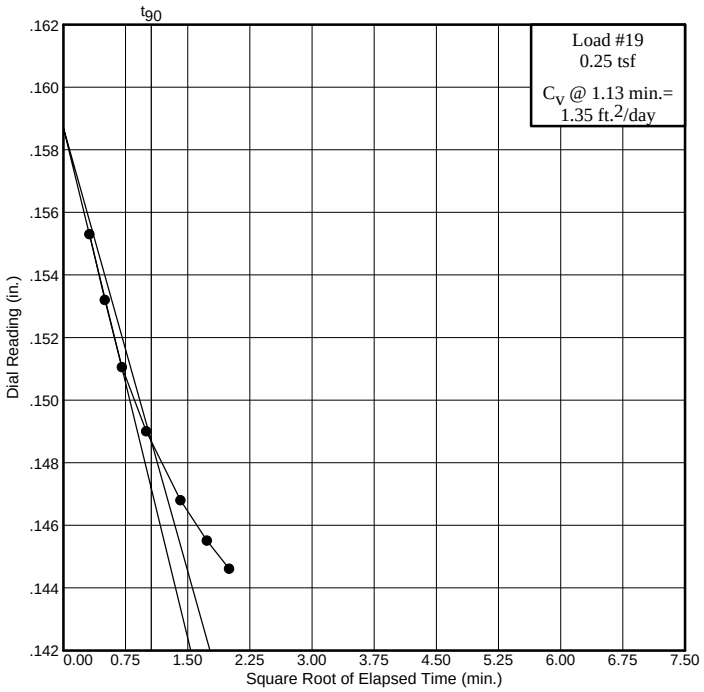
Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-5 Depth 45.8-45.9 ft.



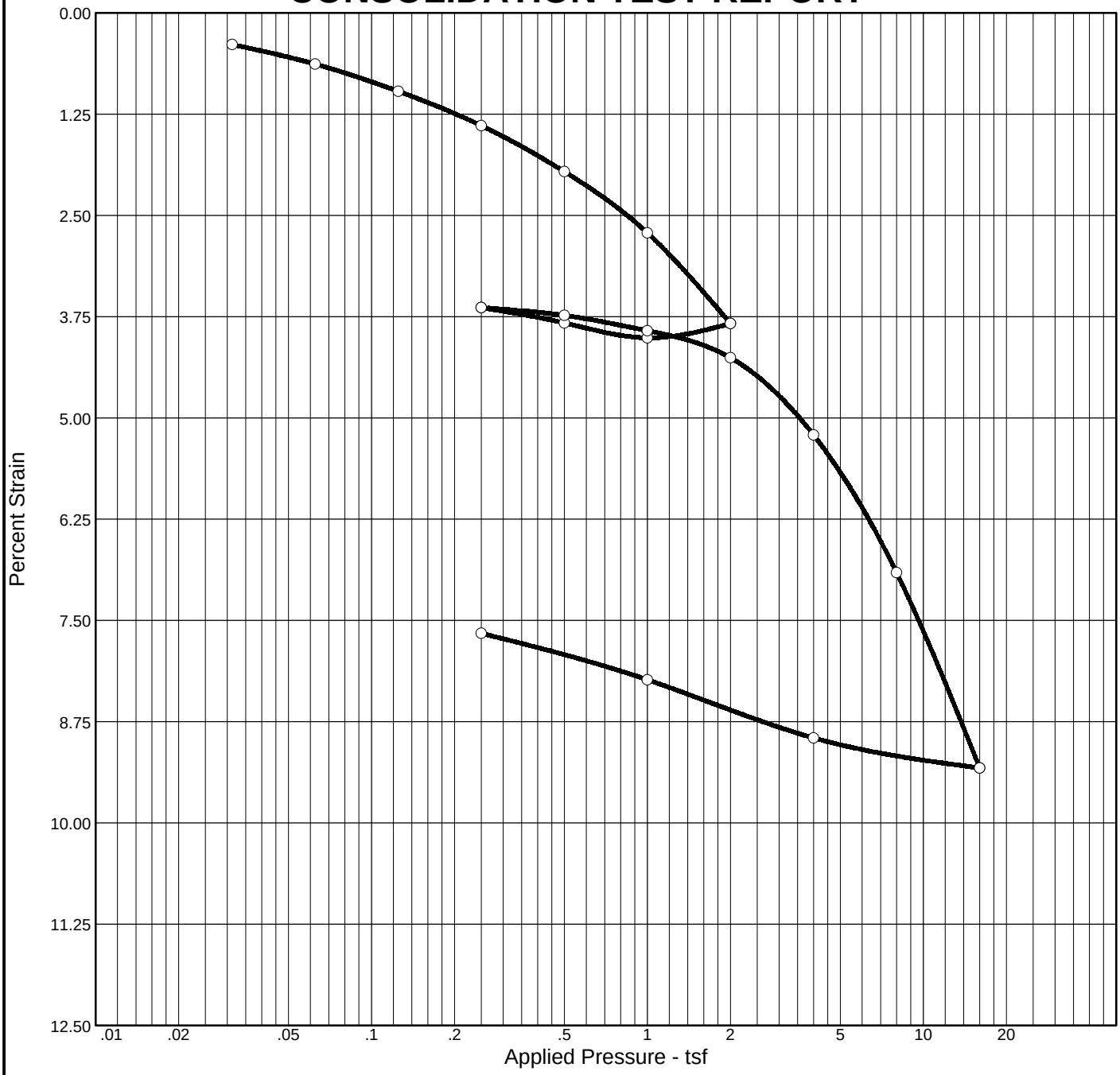




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
99.2 %	33.7 %	87.1	GNP	GNP	2.65		8.30	0.15	0.01			0.900

MATERIAL DESCRIPTION	USCS	AASHTO
	ML	---

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-2-06,ST-7 Depth 55.9-56.0 ft.

Remarks:
Granular non-plastic,silt

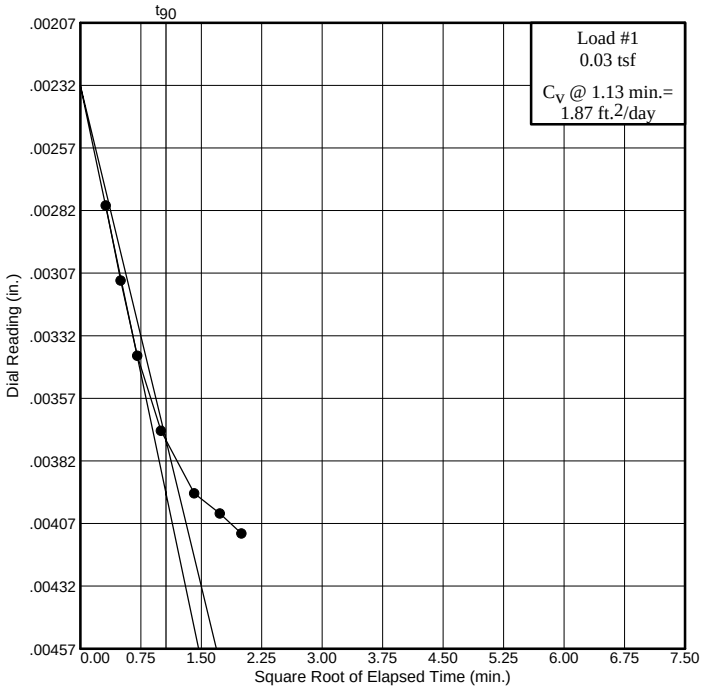
SOIL TECHNOLOGY

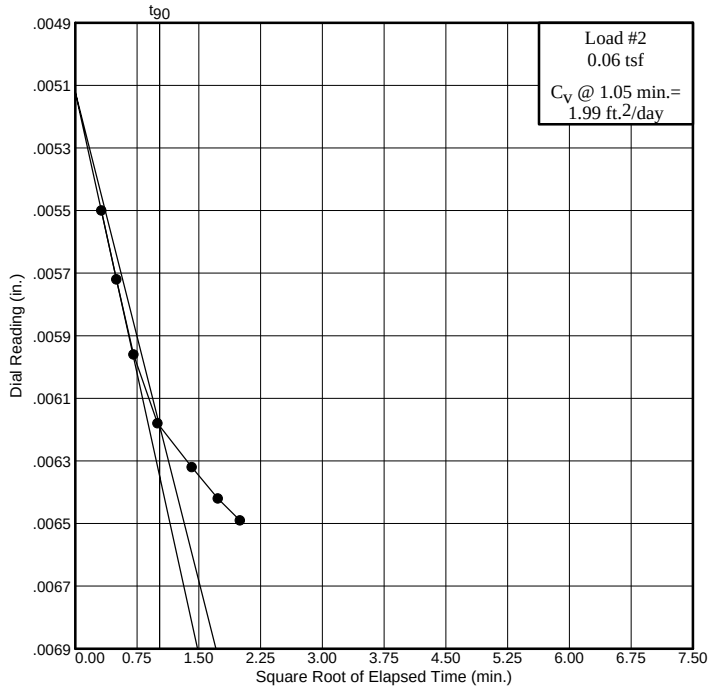
Bainbridge Island, WA

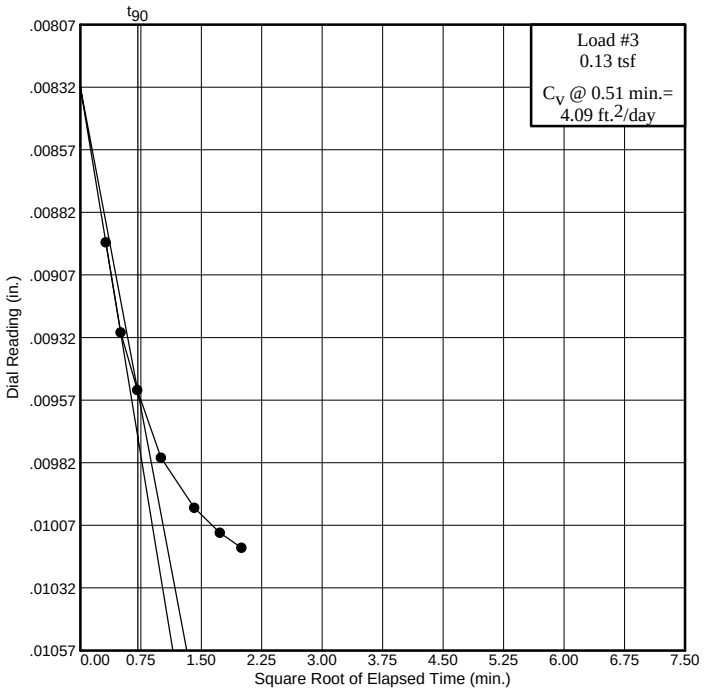
Plate 4

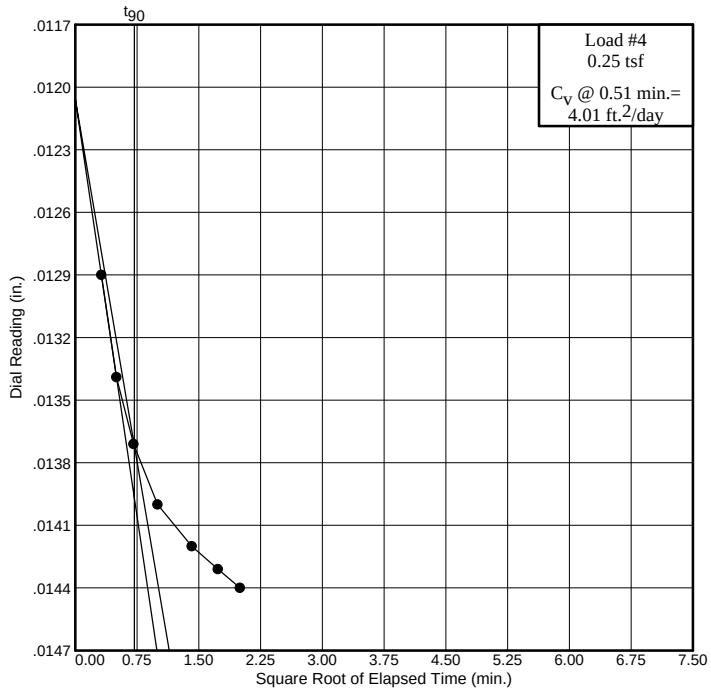
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-7 Depth 55.9-56.0 ft.







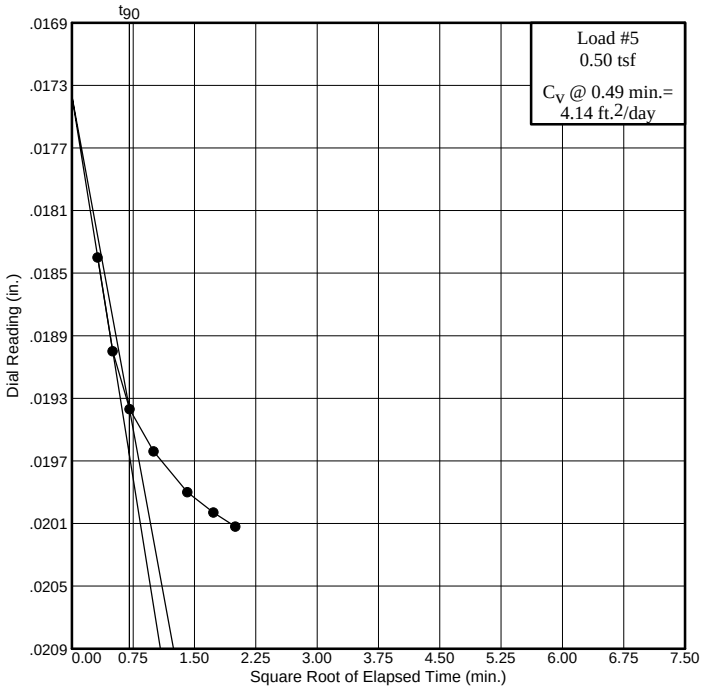


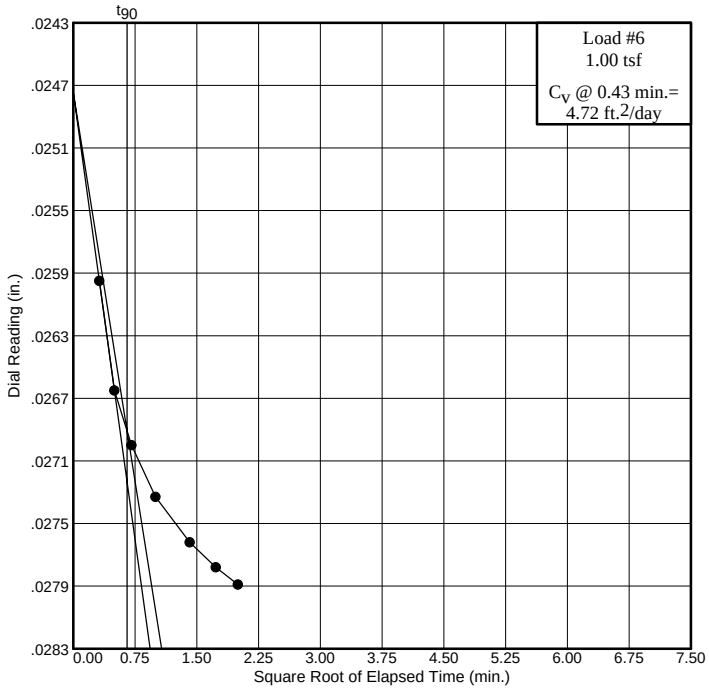
SOIL TECHNOLOGY

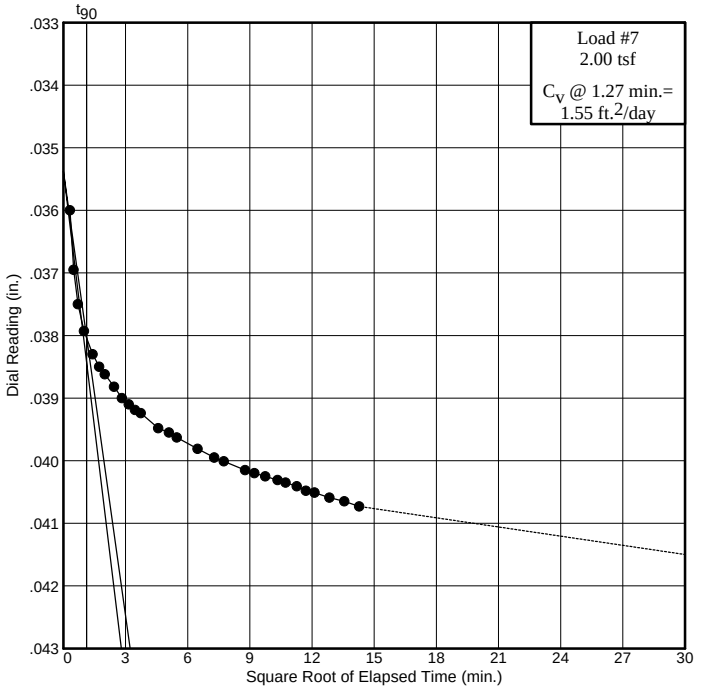
Bainbridge Island, WA

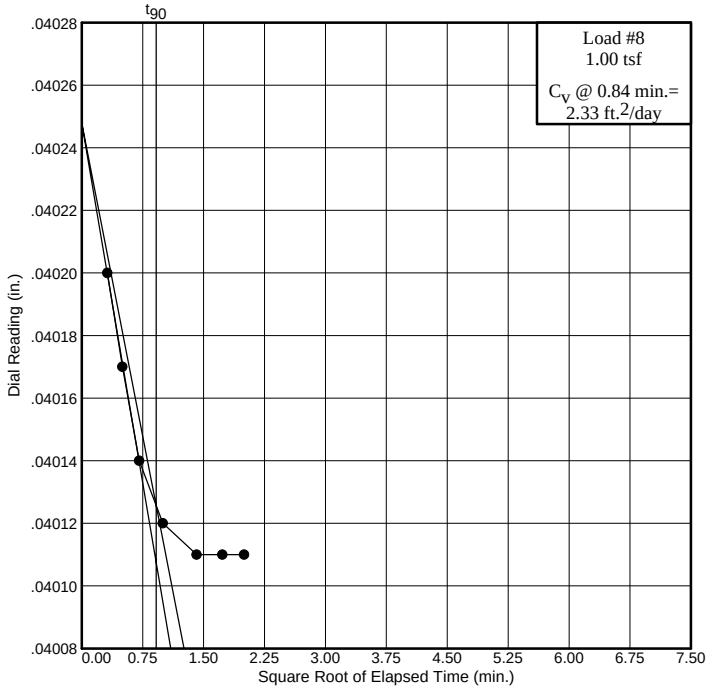
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-7 Depth 55.9-56.0 ft.







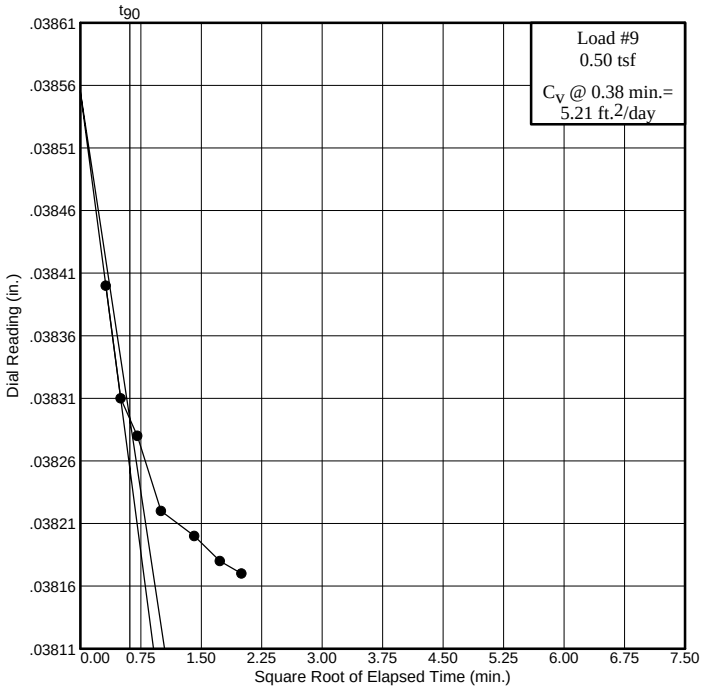


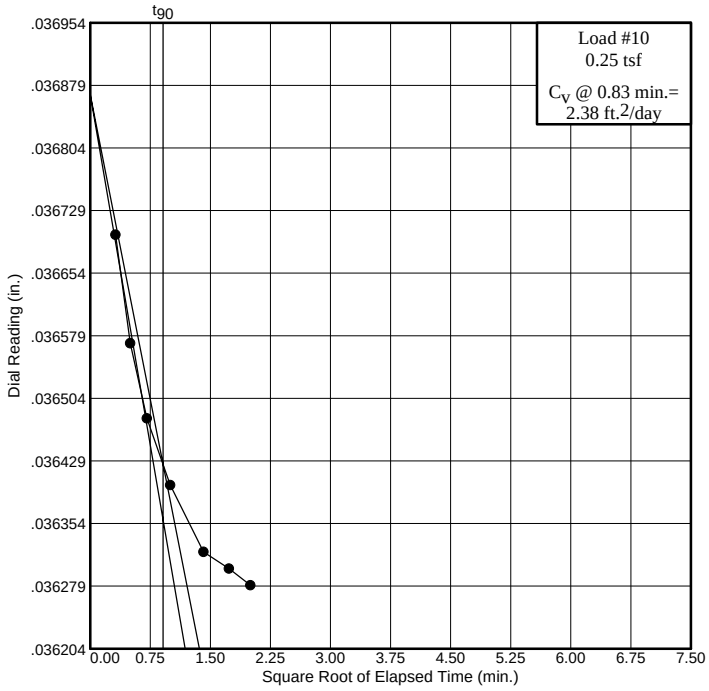
SOIL TECHNOLOGY

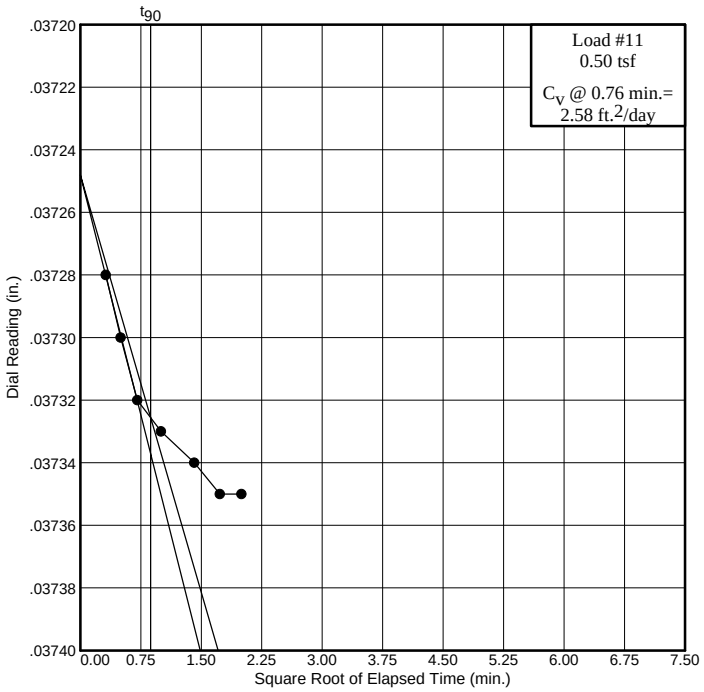
Bainbridge Island, WA

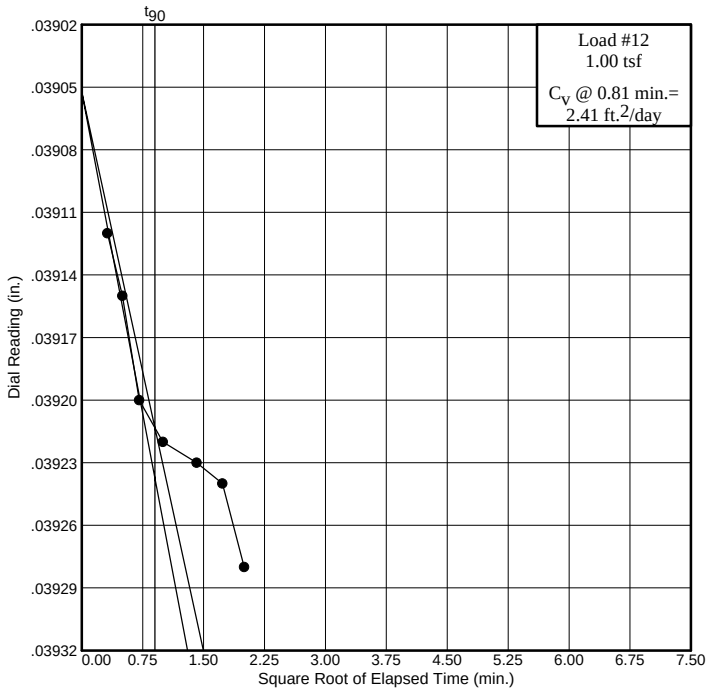
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-7 Depth 55.9-56.0 ft.







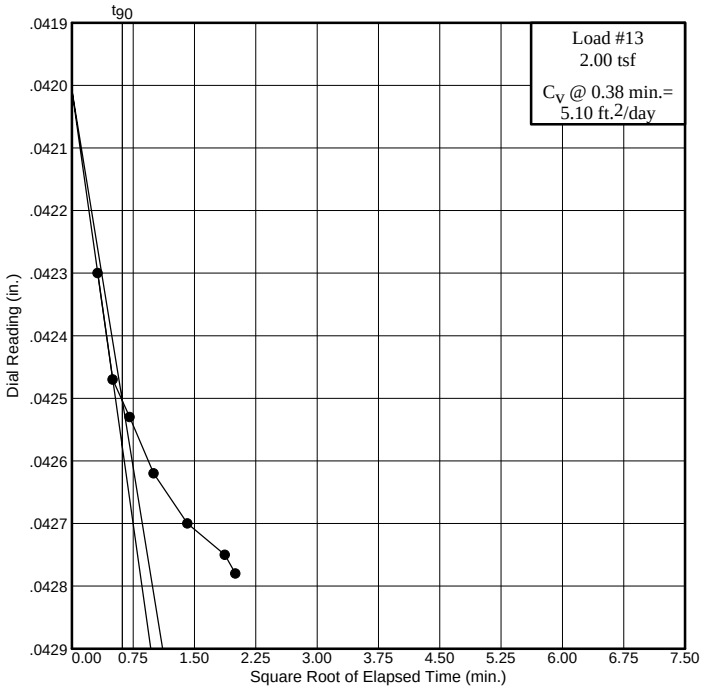


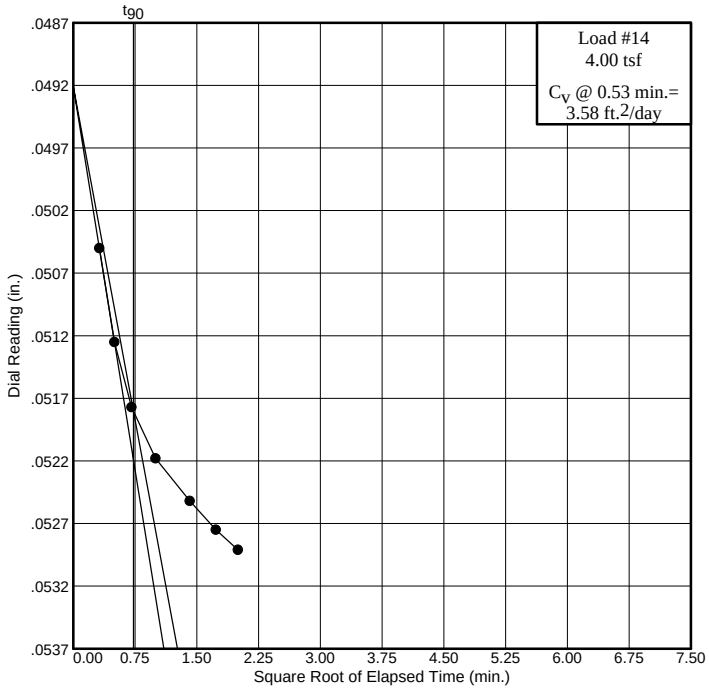
SOIL TECHNOLOGY

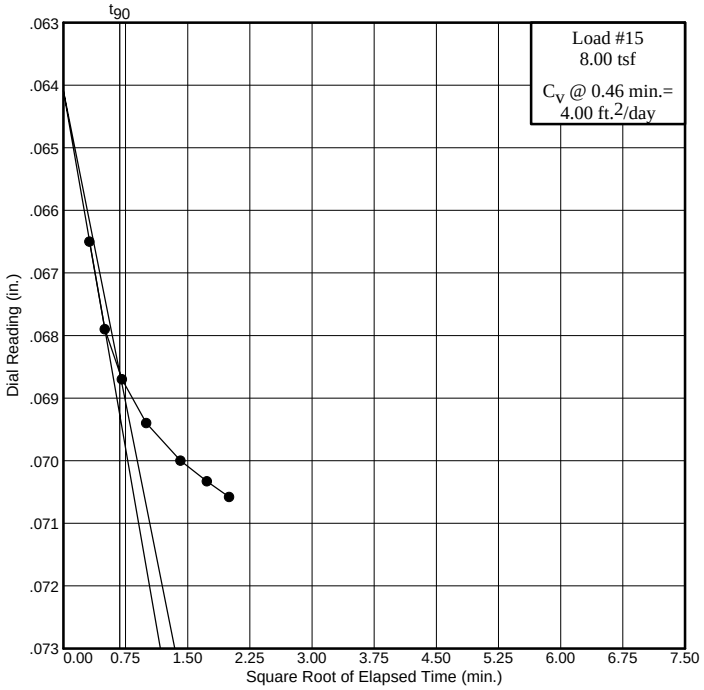
Bainbridge Island, WA

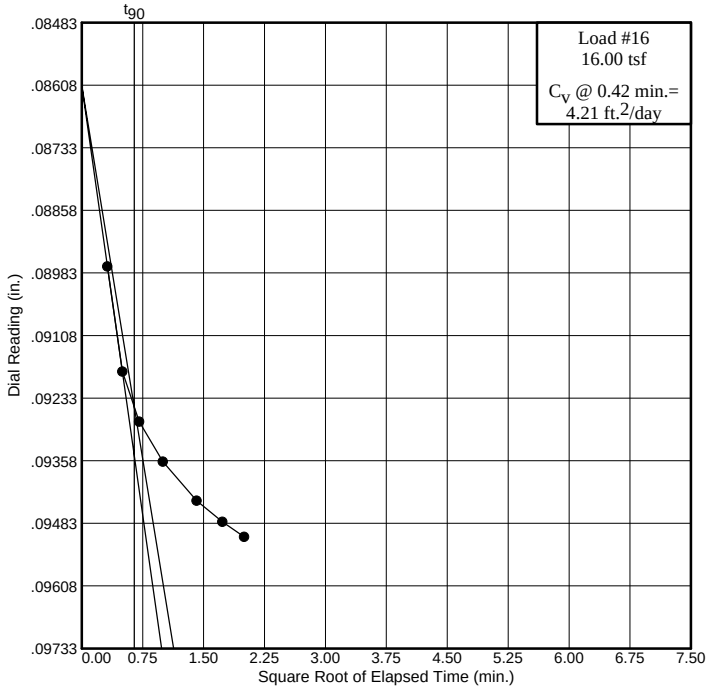
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-7 Depth 55.9-56.0 ft.







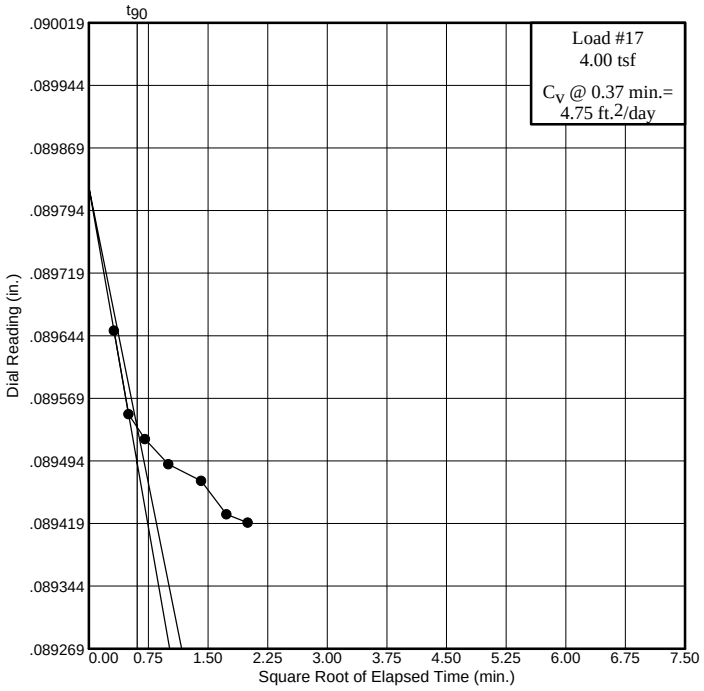


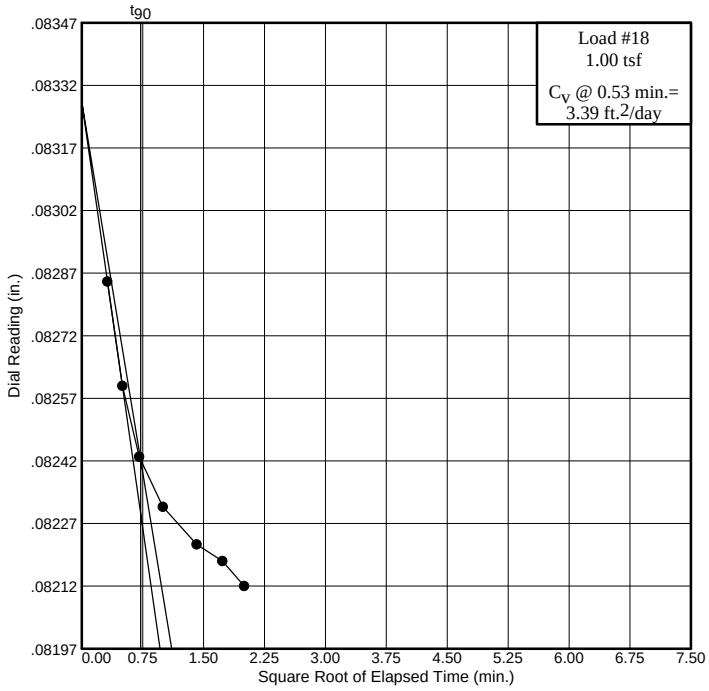
SOIL TECHNOLOGY

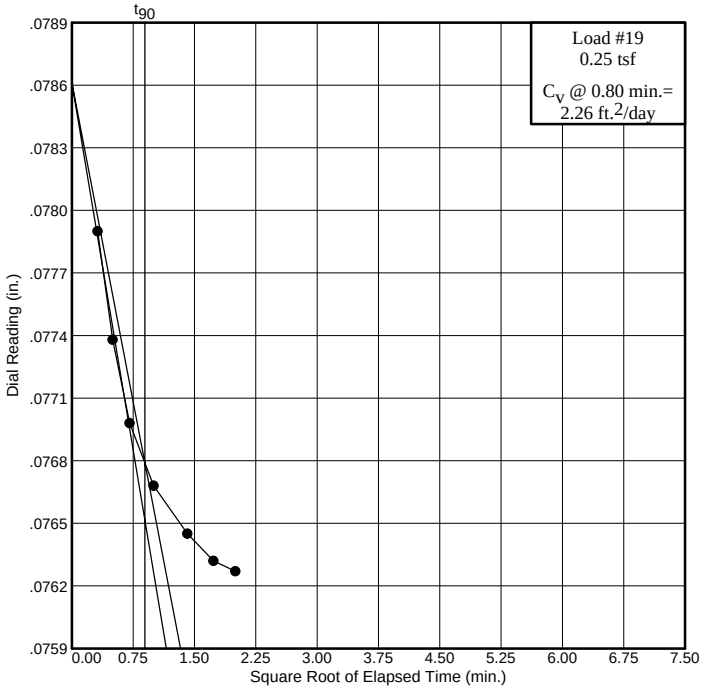
Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-7 Depth 55.9-56.0 ft.



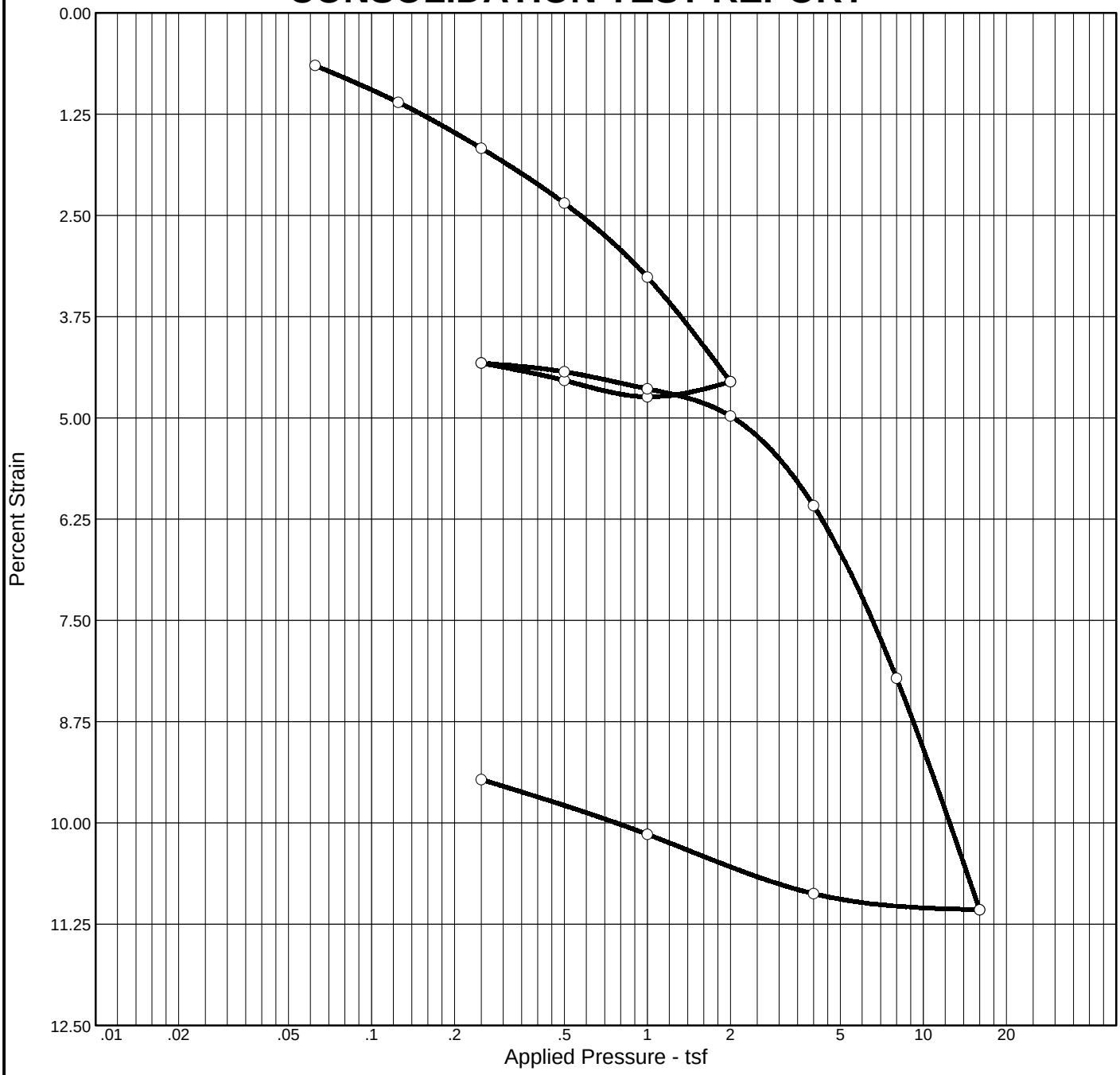




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
99.7 %	34.2 %	88.1	GNP	GNP	2.72		6.73	0.19	0.01			0.933

MATERIAL DESCRIPTION	USCS	AASHTO
	ML	--

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-2-06,ST-9 Depth 66.5-66.6 ft.

Remarks:
Granular non-plastic, Silt

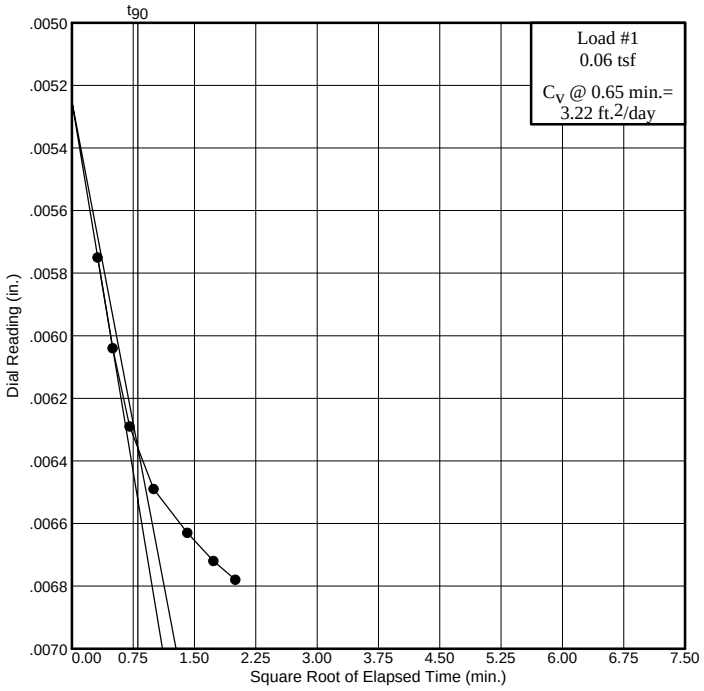
SOIL TECHNOLOGY

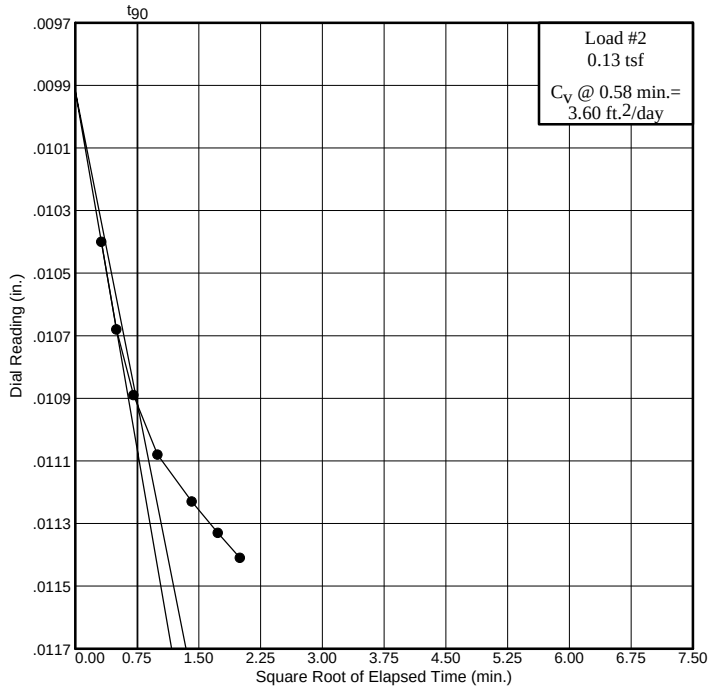
Bainbridge Island, WA

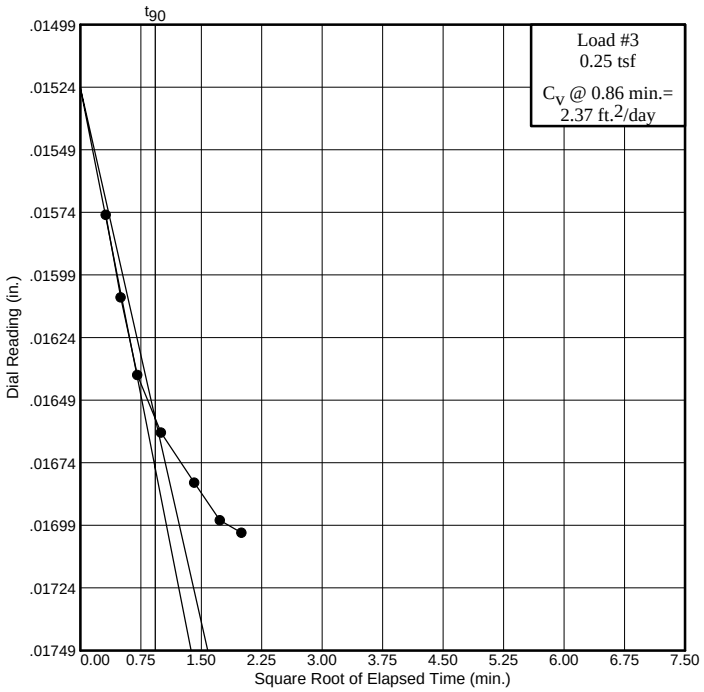
Plate 5

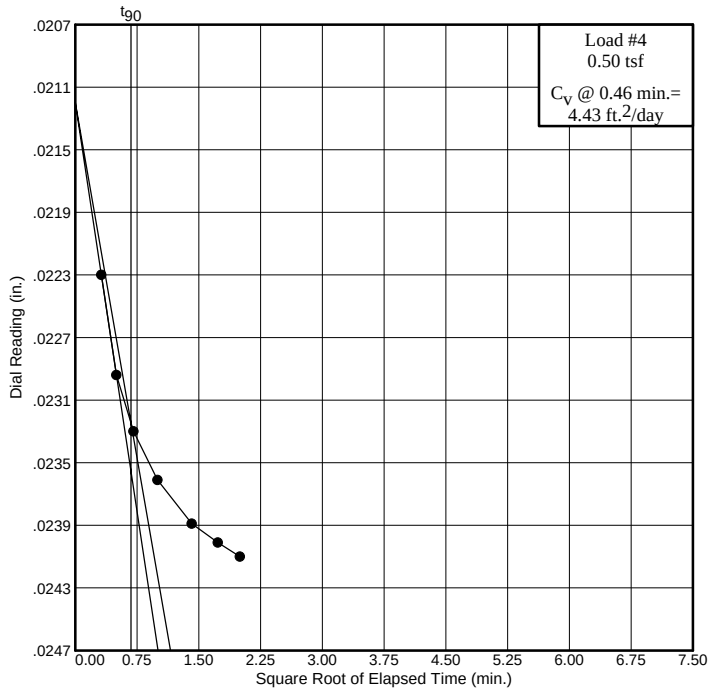
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-9 Depth 66.5-66.6 ft.







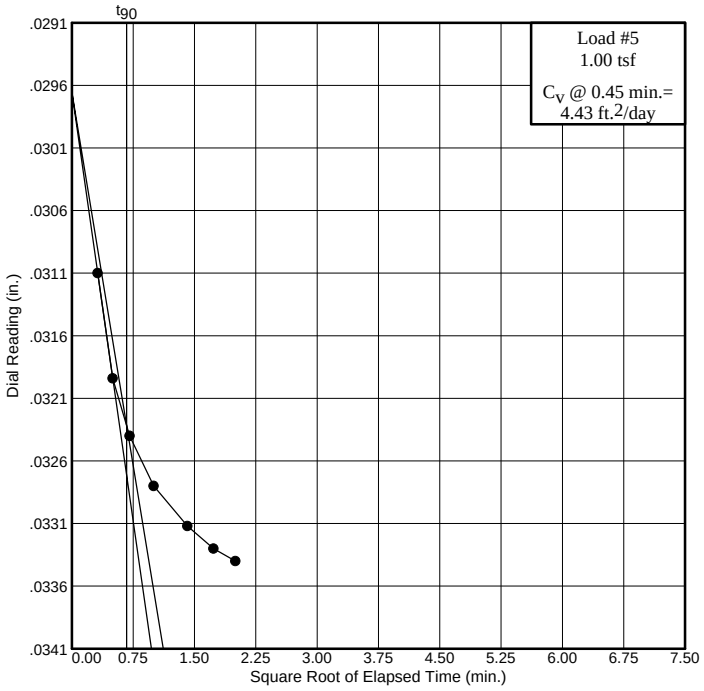


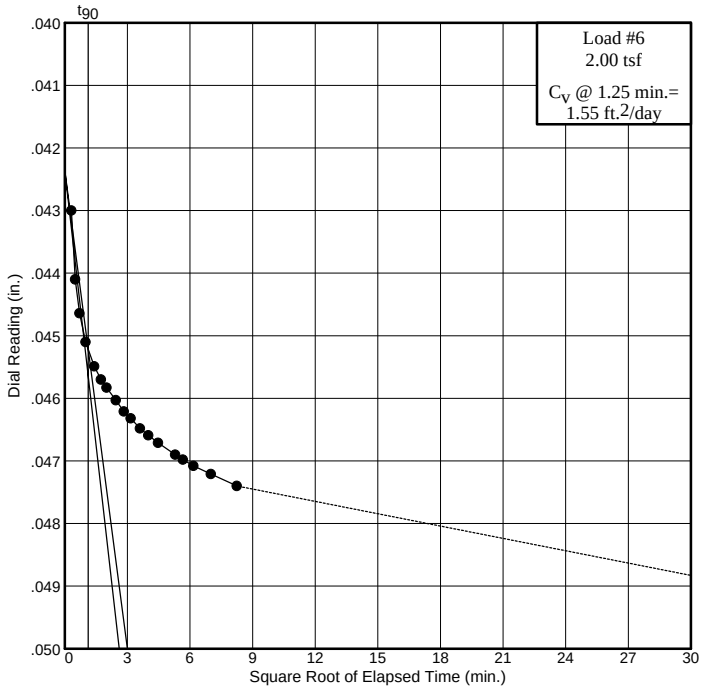
SOIL TECHNOLOGY

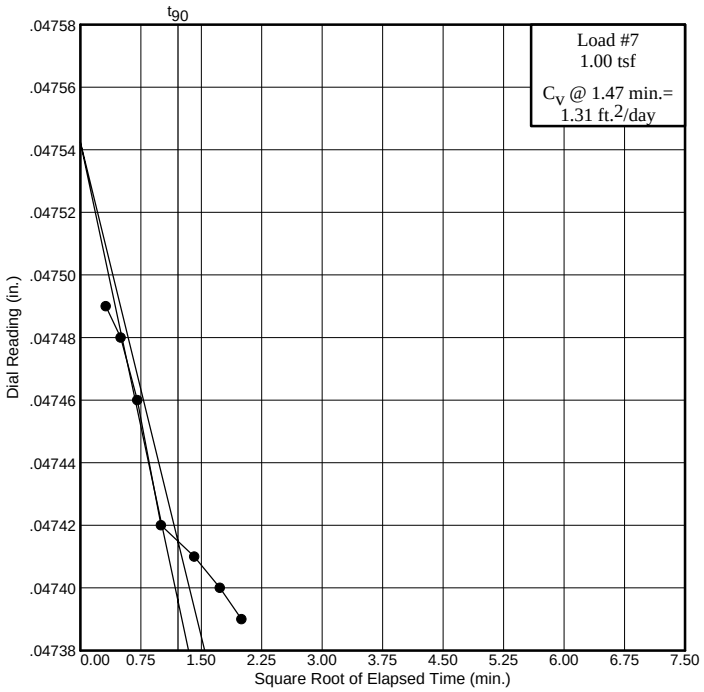
Bainbridge Island, WA

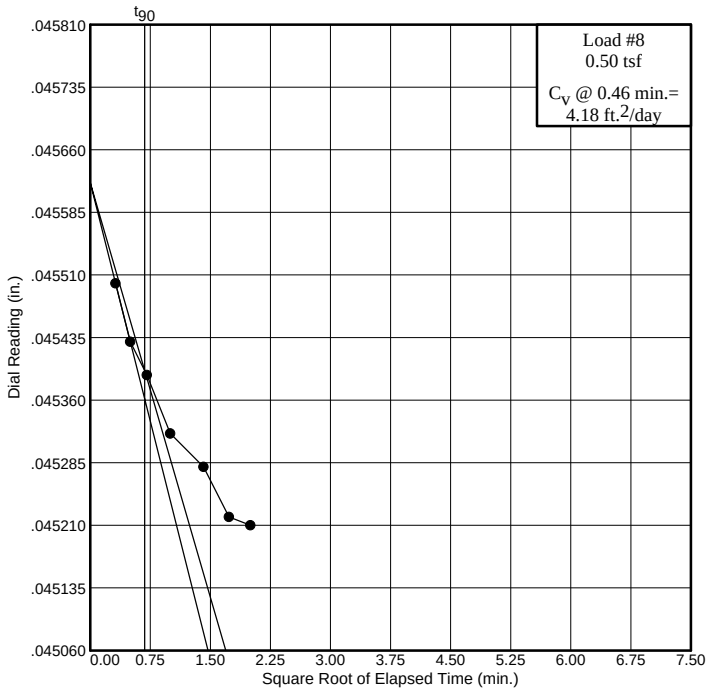
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-9 Depth 66.5-66.6 ft.







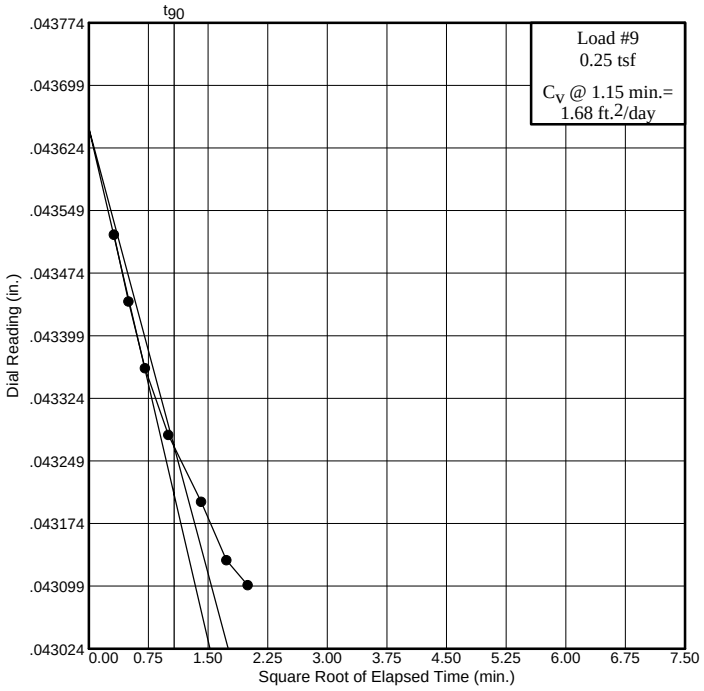


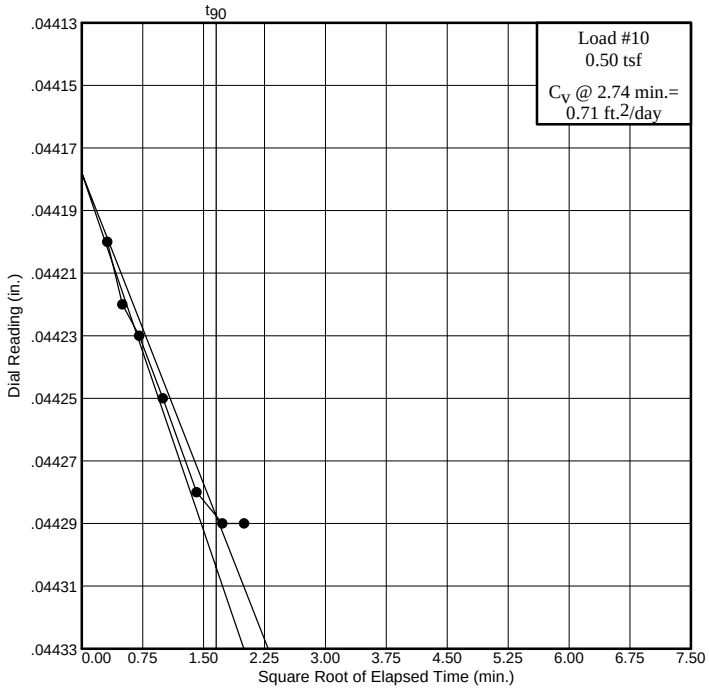
SOIL TECHNOLOGY

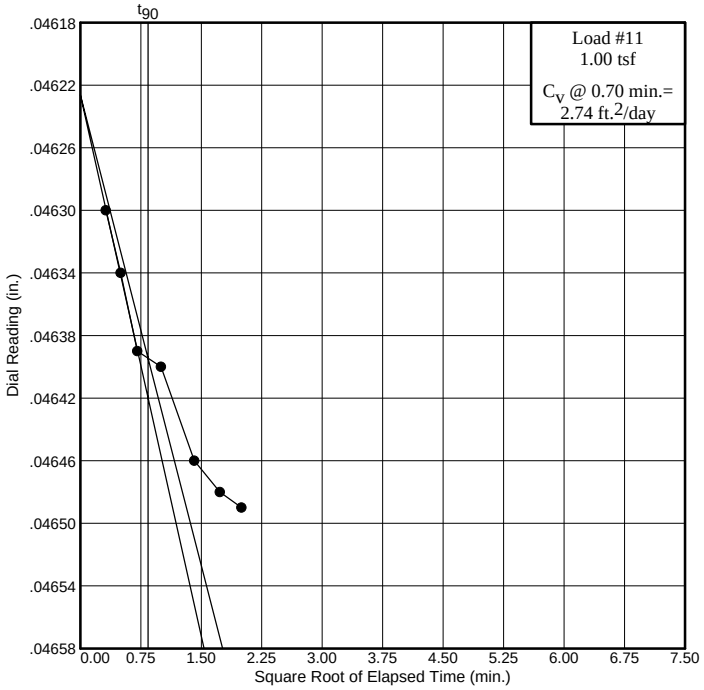
Bainbridge Island, WA

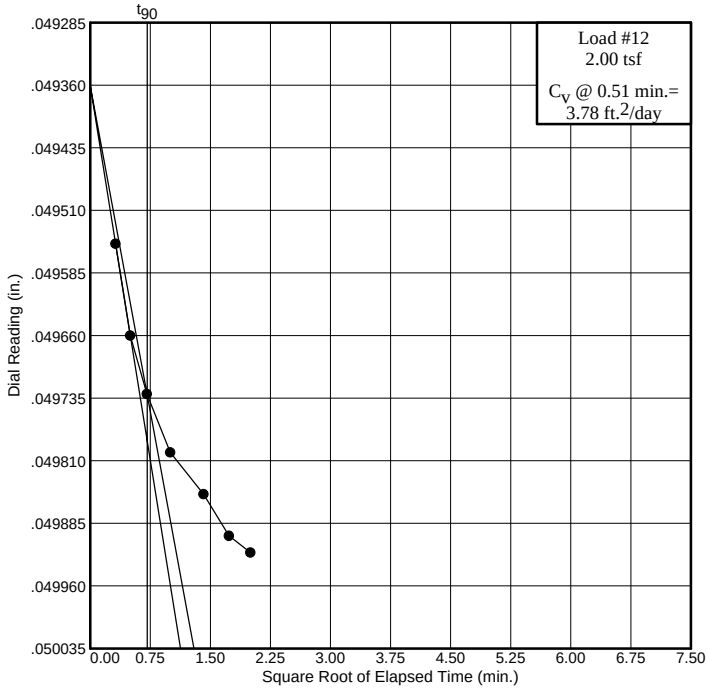
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-9 Depth 66.5-66.6 ft.







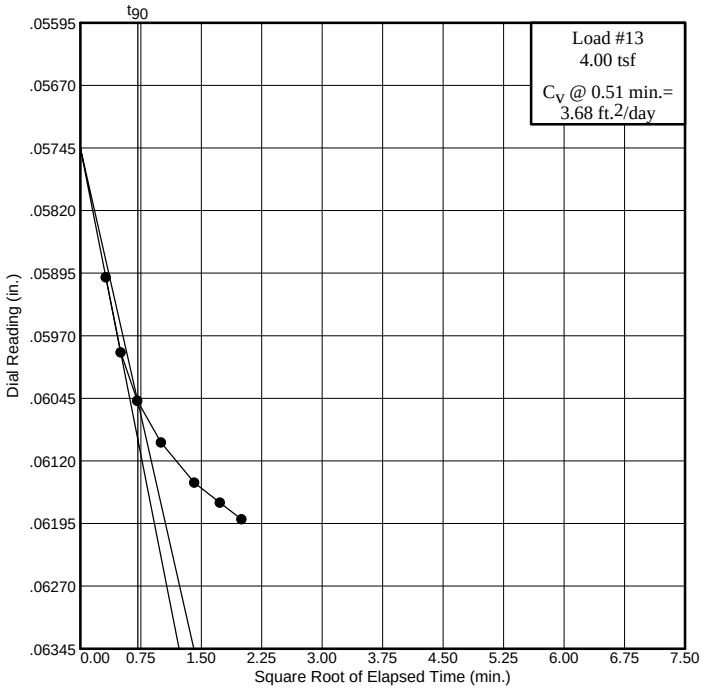


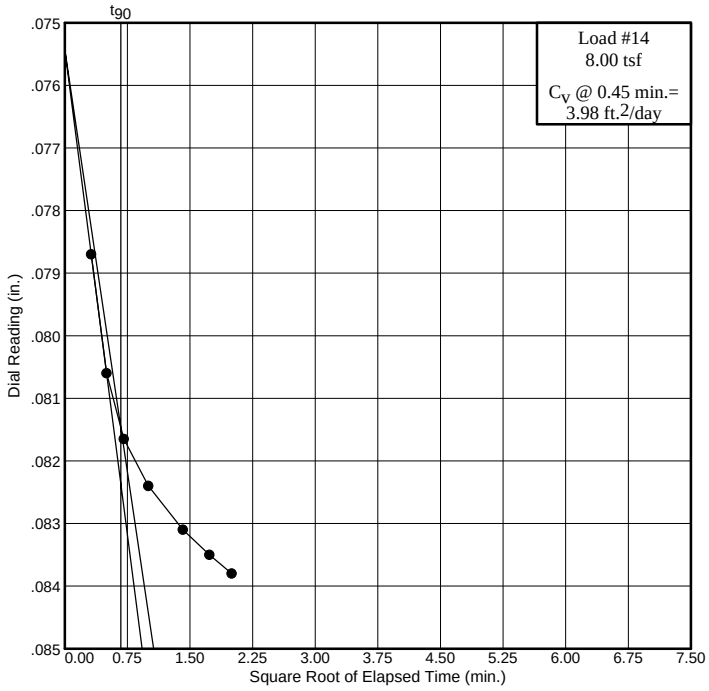
SOIL TECHNOLOGY

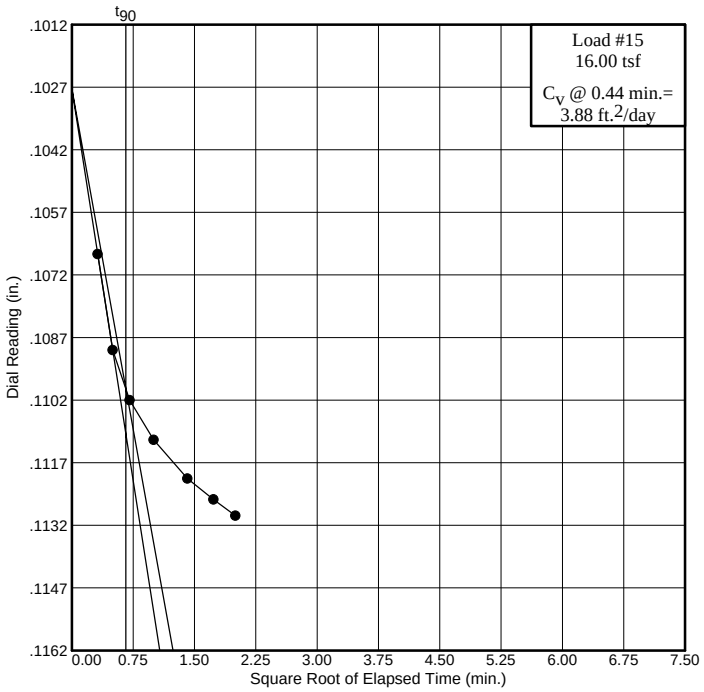
Bainbridge Island, WA

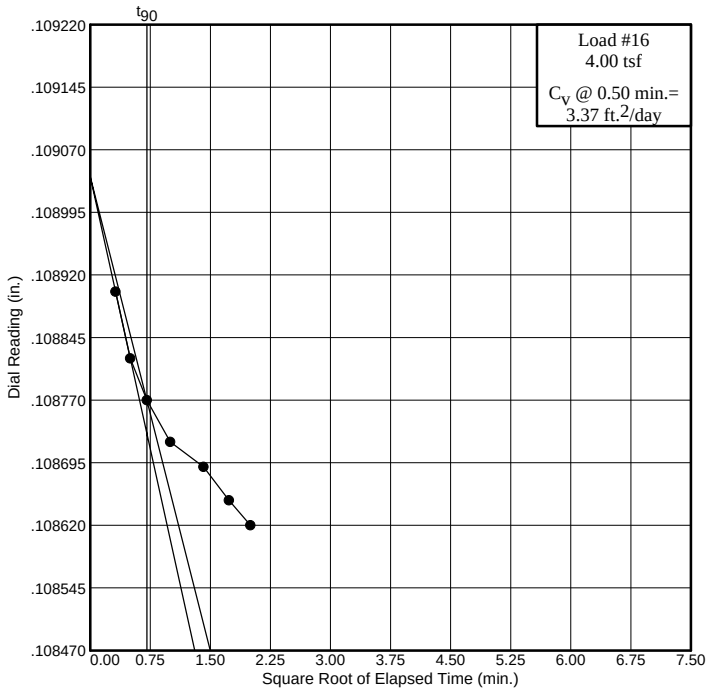
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-9 Depth 66.5-66.6 ft.







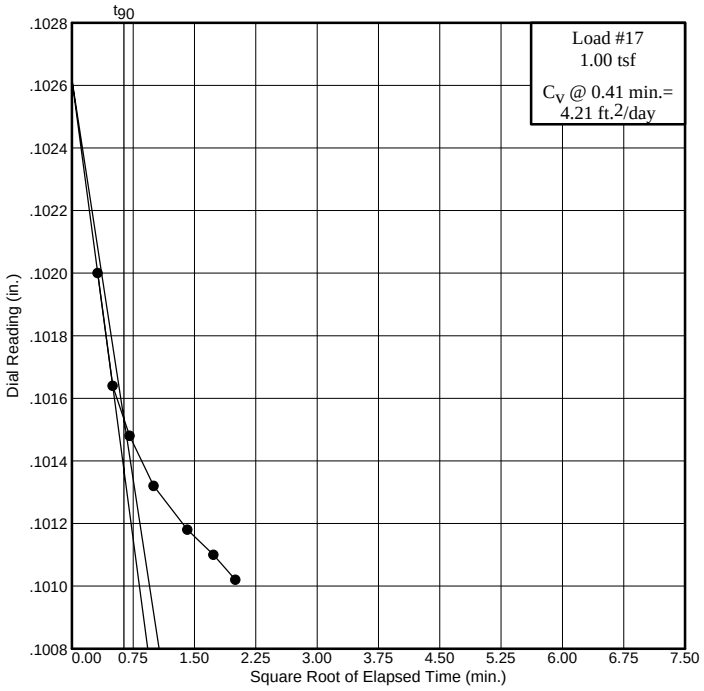


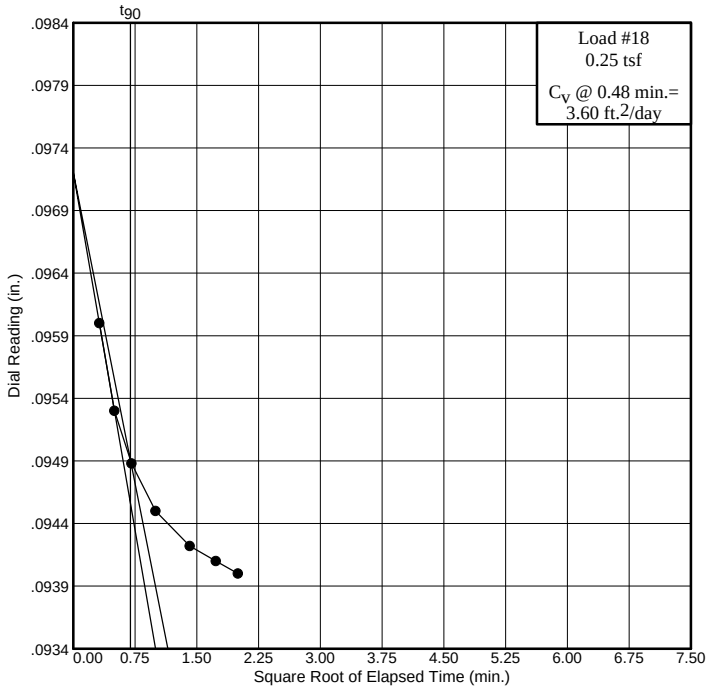
SOIL TECHNOLOGY

Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-2-06,ST-9 Depth 66.5-66.6 ft.



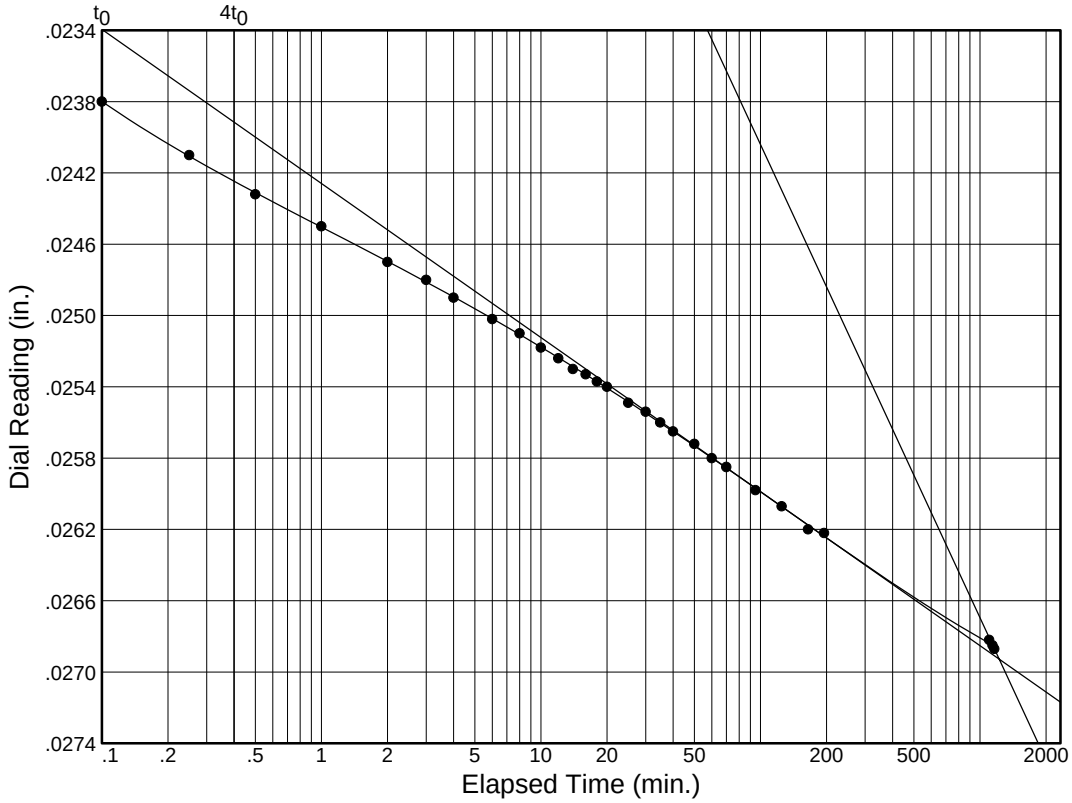


SOIL TECHNOLOGY

Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 7

Load= 2.00 tsf

D_0 = 0.02335

D_{50} = 0.02514

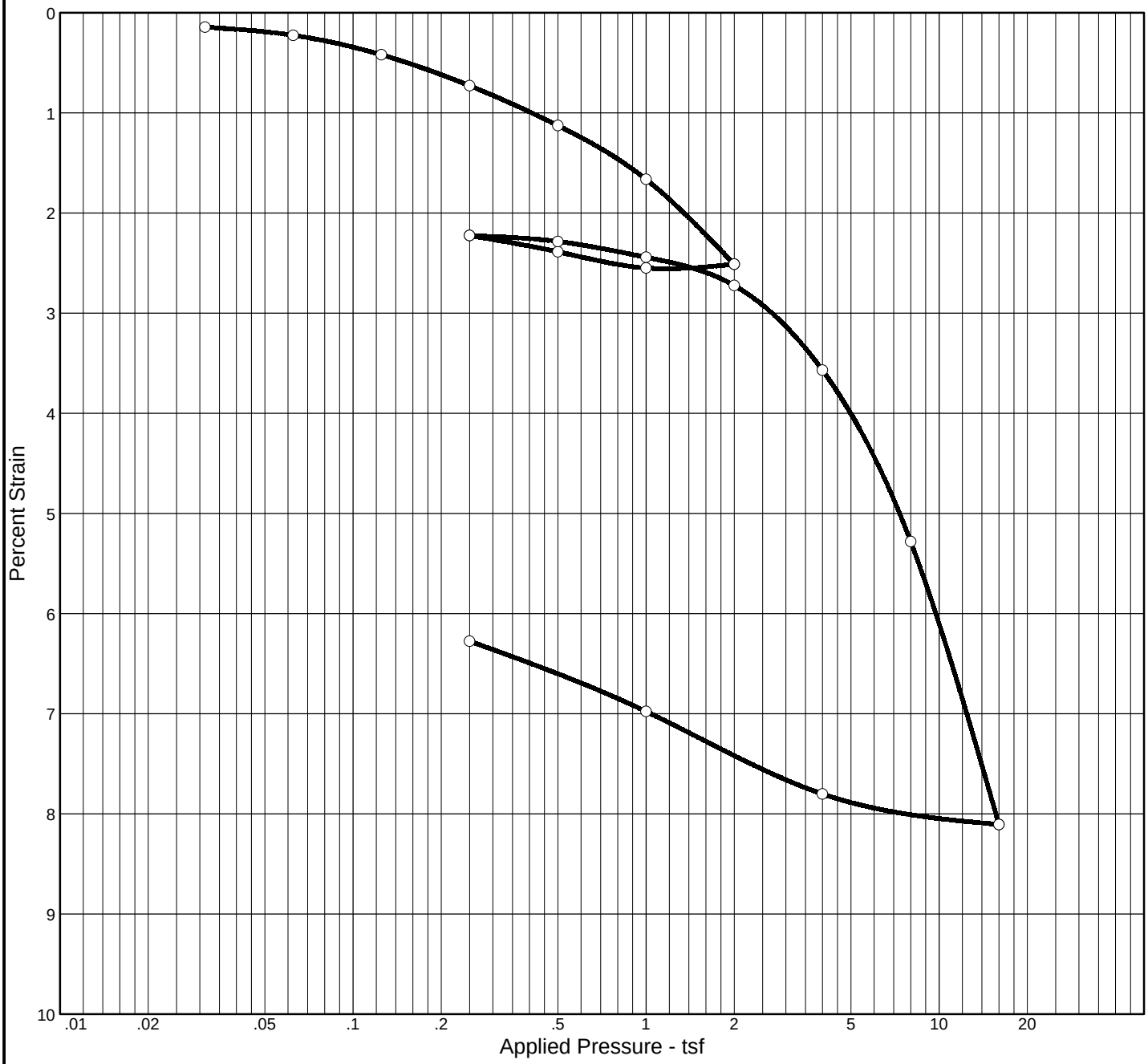
D_{100} = 0.02693

T_{50} = 8.88 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.003

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
99.8 %	36.2 %	83.9	44	9	2.6	ML	----	0.942

MATERIAL DESCRIPTION

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-11 Depth 81.1-81.2 ft.

Remarks:
Sandy Silt ML lightly cemented

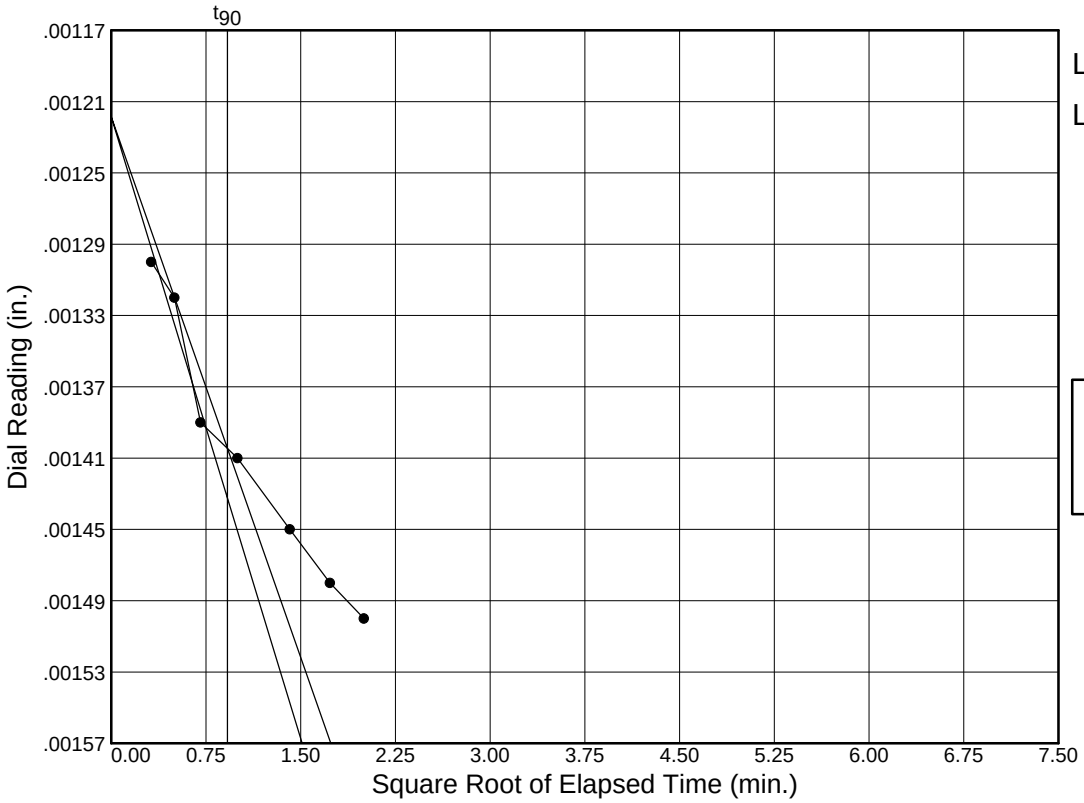
CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

Consol Plot

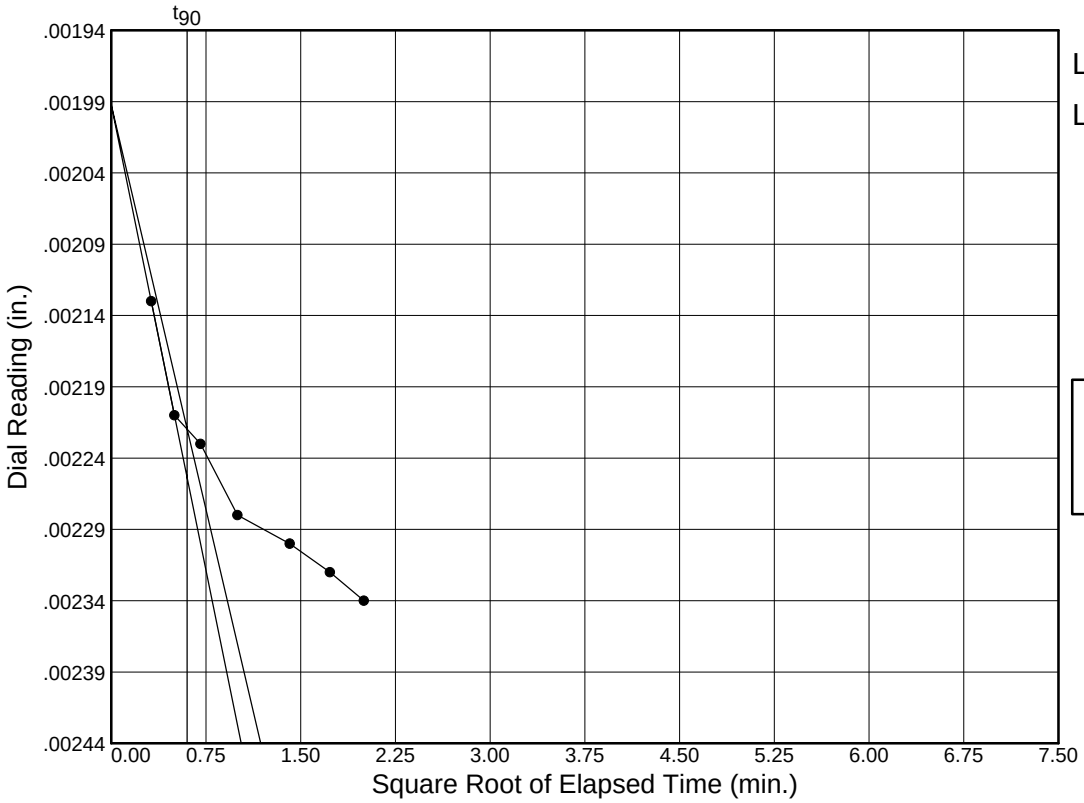
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 1
Load= 0.03 tsf
D_0 = 0.00122
D_{90} = 0.00140
D_{100} = 0.00143
T_{90} = 0.85 min.

C_v @ T_{90}
2.50 ft.^{2}/day



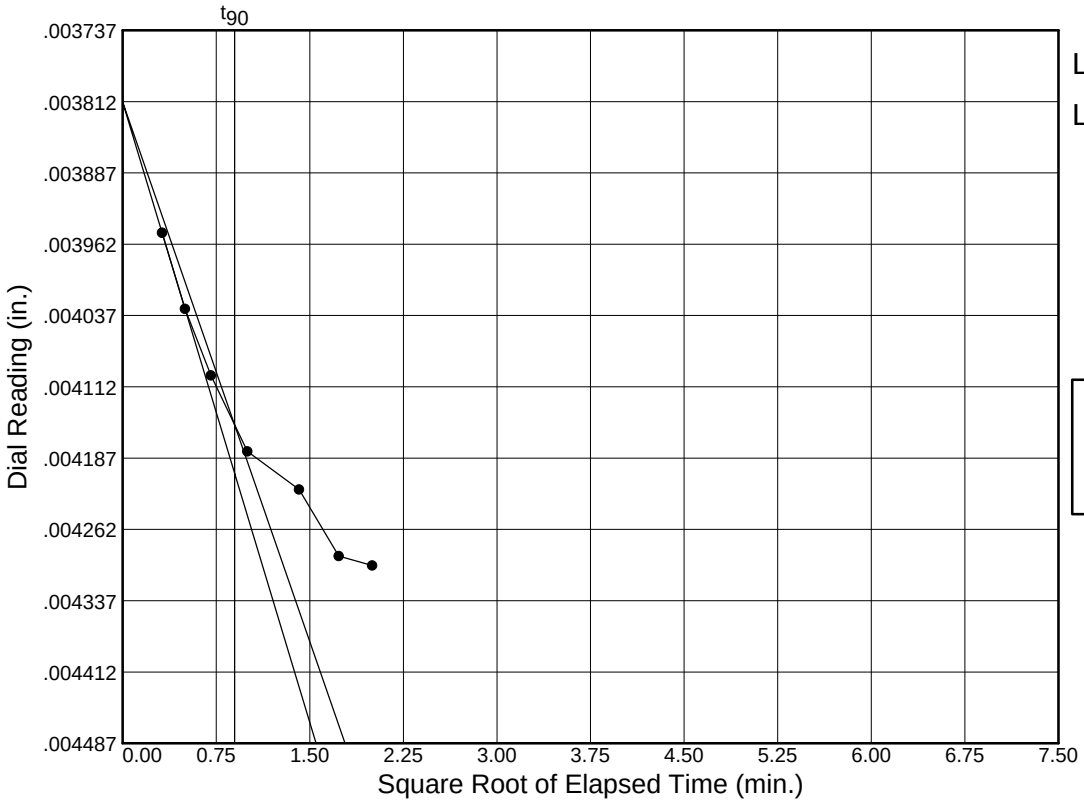
Load No.= 2
Load= 0.06 tsf
D_0 = 0.00199
D_{90} = 0.00222
D_{100} = 0.00224
T_{90} = 0.36 min.

C_v @ T_{90}
5.85 ft.^{2}/day

Consol Plot

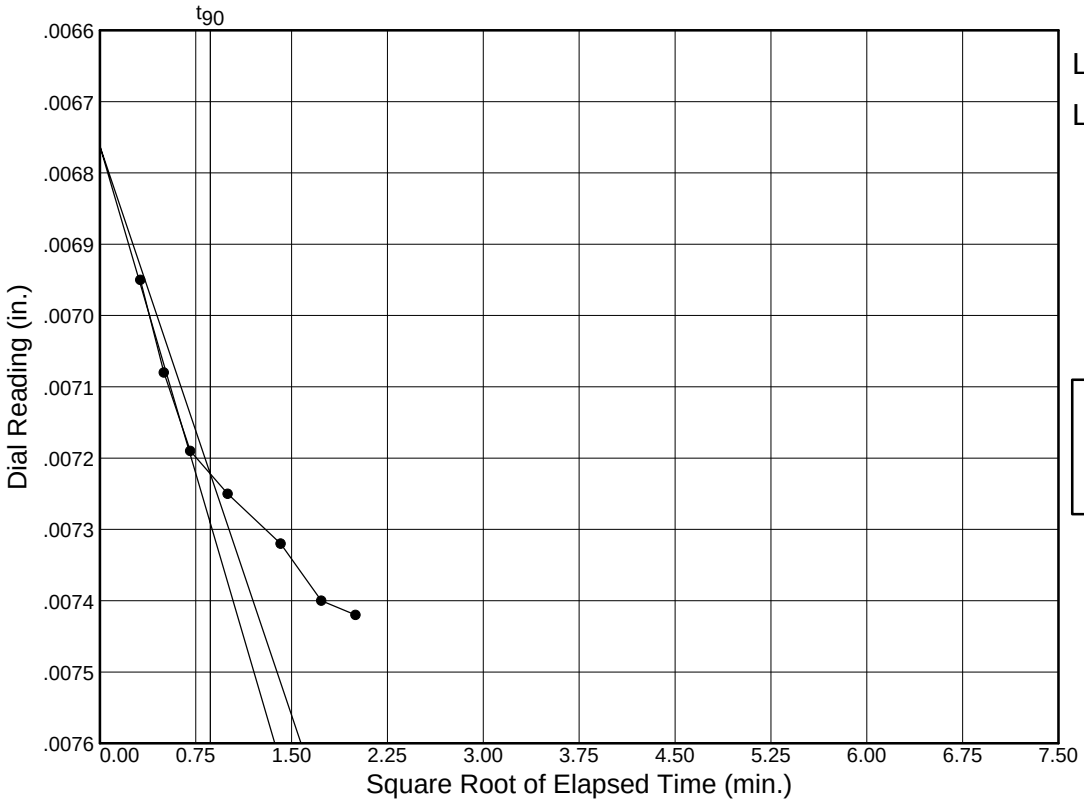
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 3
Load= 0.13 tsf
D_0 = 0.00381
D_{90} = 0.00415
D_{100} = 0.00419
T_{90} = 0.80 min.

C_v @ T_{90}
2.62 ft.^{2}/day



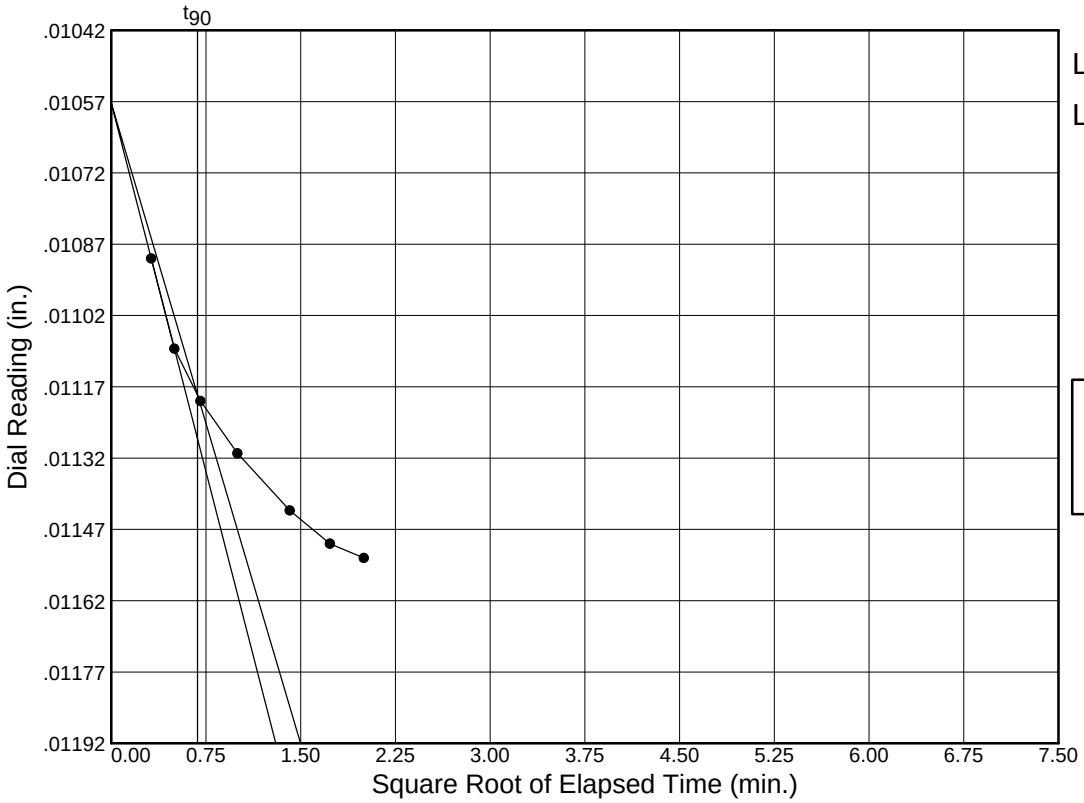
Load No.= 4
Load= 0.25 tsf
D_0 = 0.00676
D_{90} = 0.00722
D_{100} = 0.00727
T_{90} = 0.74 min.

C_v @ T_{90}
2.81 ft.^{2}/day

Consol Plot

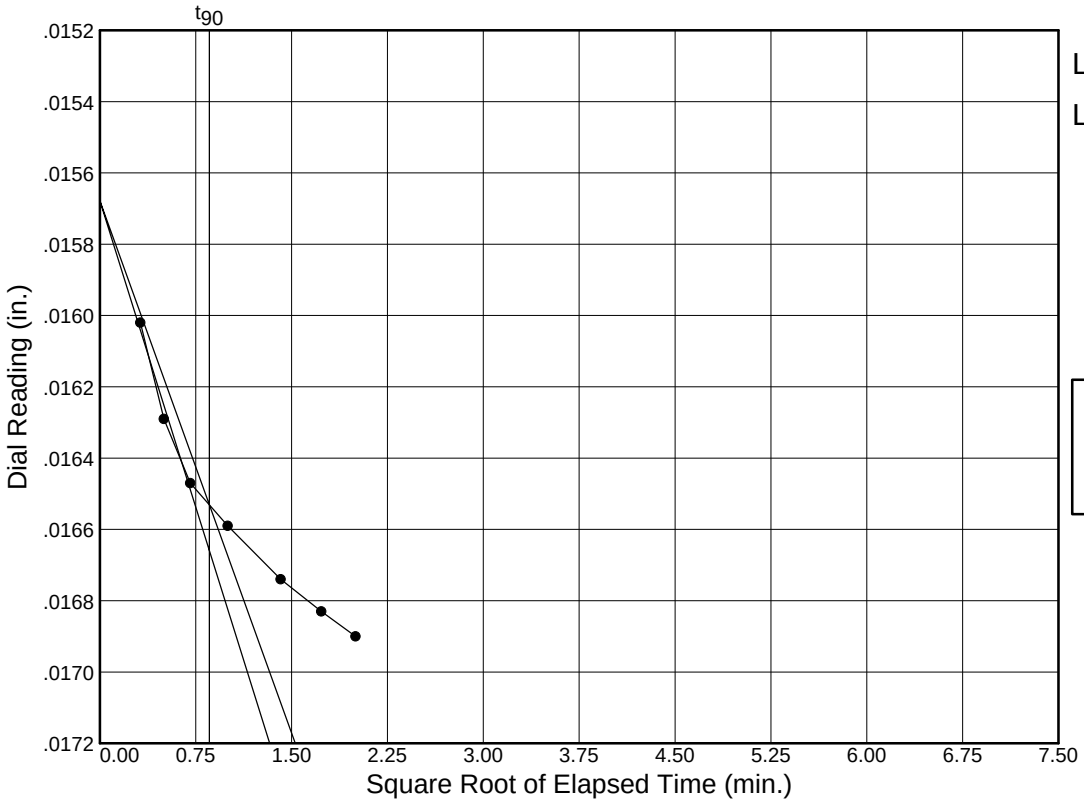
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 5
Load= 0.50 tsf
D_0 = 0.01057
D_{90} = 0.01119
D_{100} = 0.01126
T_{90} = 0.47 min.

C_v @ T_{90}
4.44 ft.^{2}/day



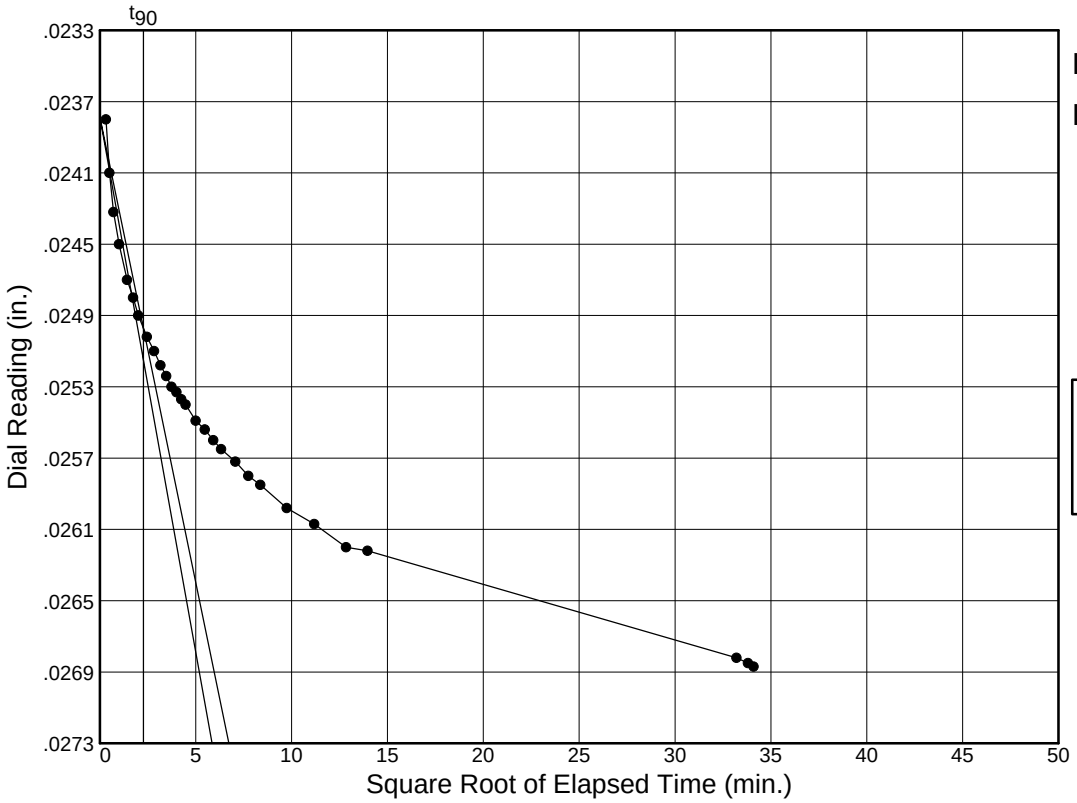
Load No.= 6
Load= 1.00 tsf
D_0 = 0.01568
D_{90} = 0.01653
D_{100} = 0.01663
T_{90} = 0.73 min.

C_v @ T_{90}
2.80 ft.^{2}/day

Consol Plot

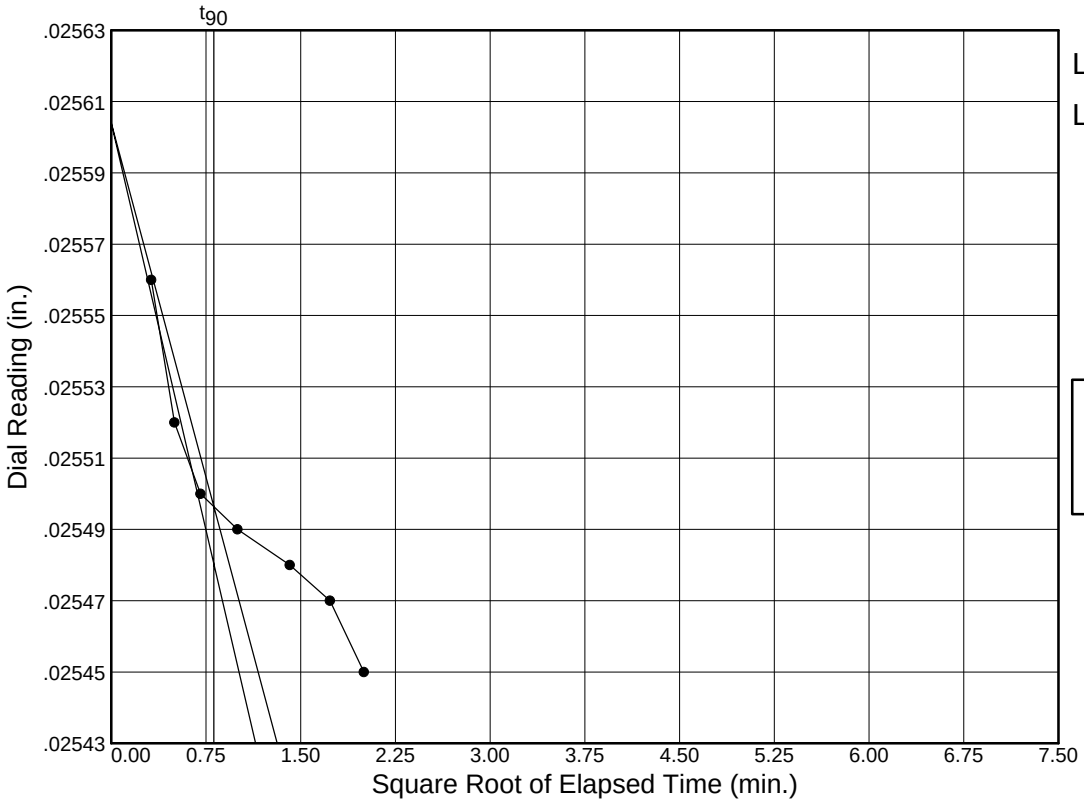
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 7
Load= 2.00 tsf
D_0 = 0.02379
D_{90} = 0.02497
D_{100} = 0.02510
T_{90} = 5.13 min.

C_v @ T_{90}
0.39 ft.^{2}/day



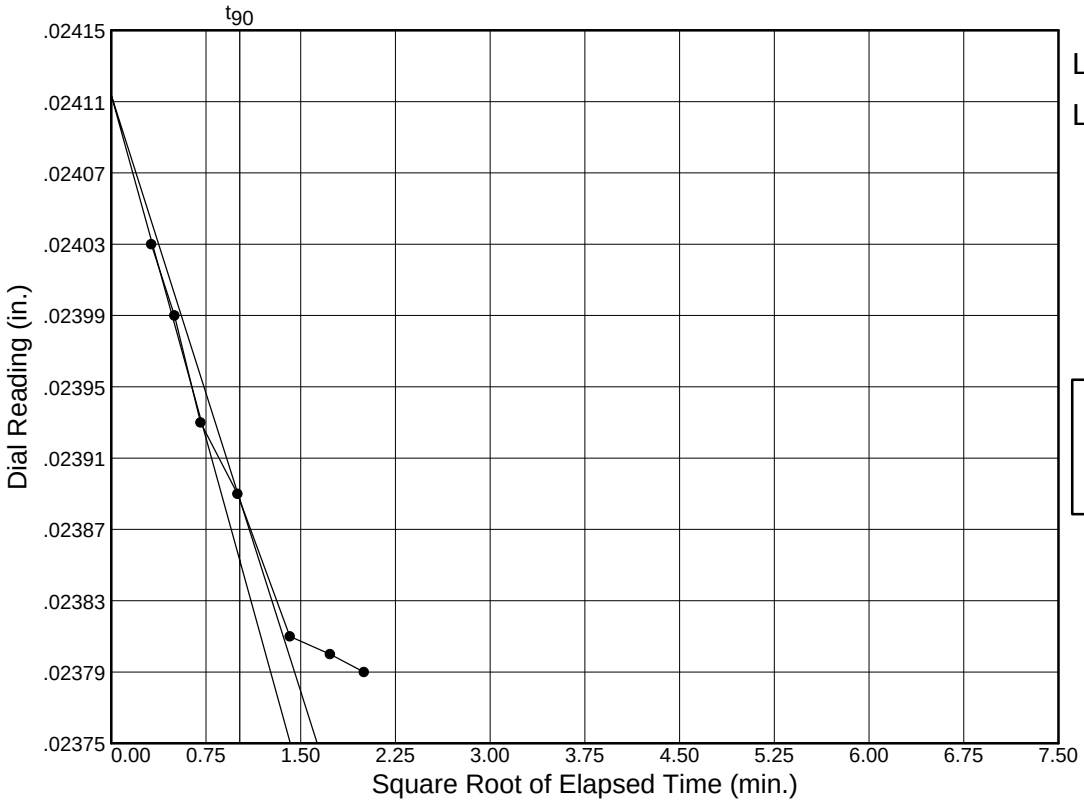
Load No.= 8
Load= 1.00 tsf
D_0 = 0.02560
D_{90} = 0.02550
D_{100} = 0.02548
T_{90} = 0.66 min.

C_v @ T_{90}
3.05 ft.^{2}/day

Consol Plot

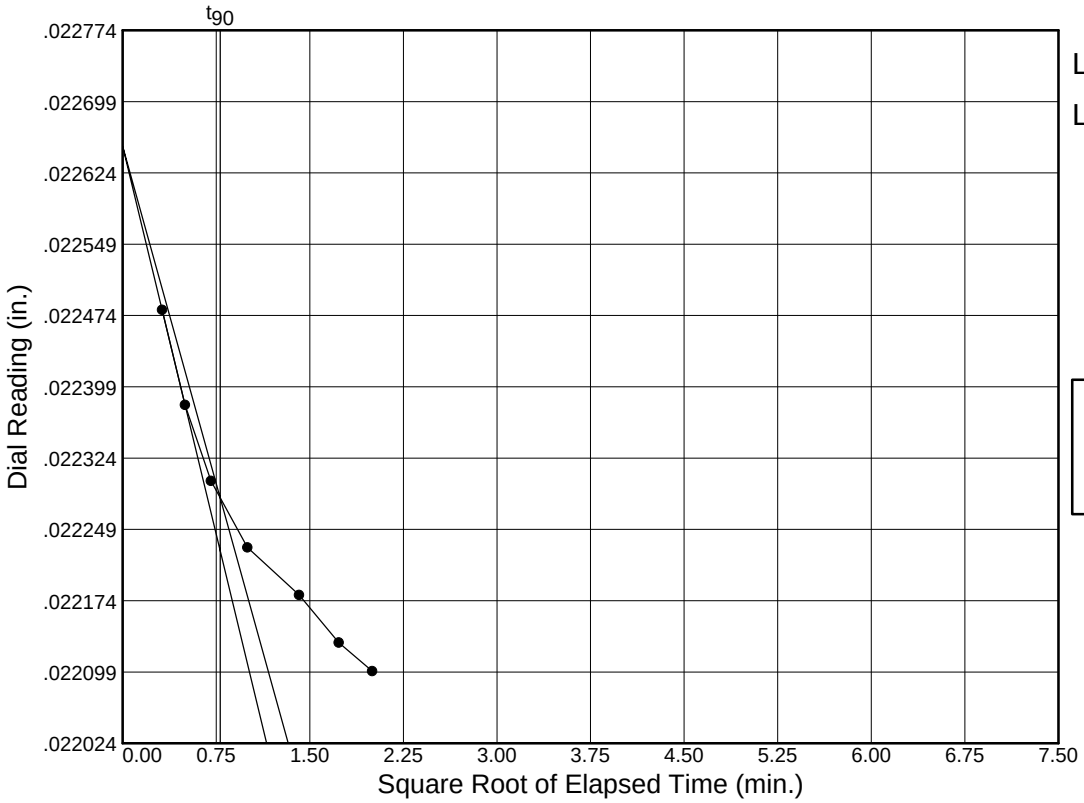
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 9
Load= 0.50 tsf
D_0 = 0.02411
D_{90} = 0.02389
D_{100} = 0.02386
T_{90} = 1.03 min.

C_v @ T_{90}
1.95 ft.^{2}/day

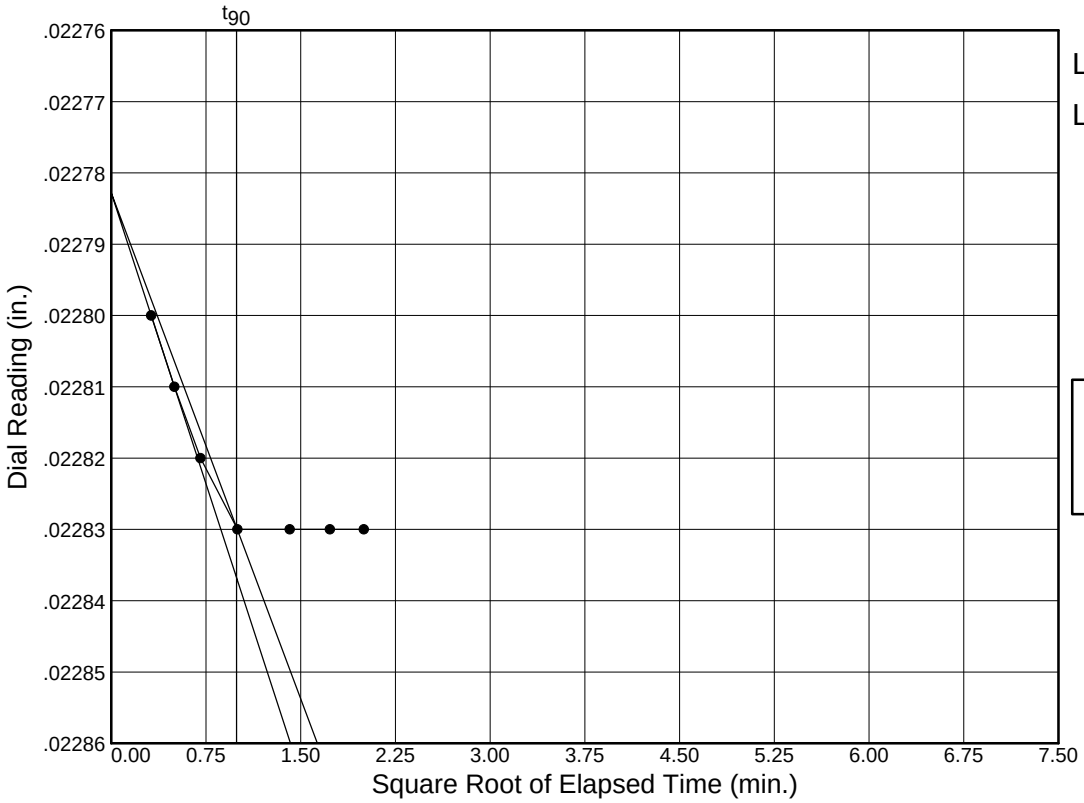


Load No.= 10
Load= 0.25 tsf
D_0 = 0.02265
D_{90} = 0.02228
D_{100} = 0.02224
T_{90} = 0.61 min.

C_v @ T_{90}
3.31 ft.^{2}/day

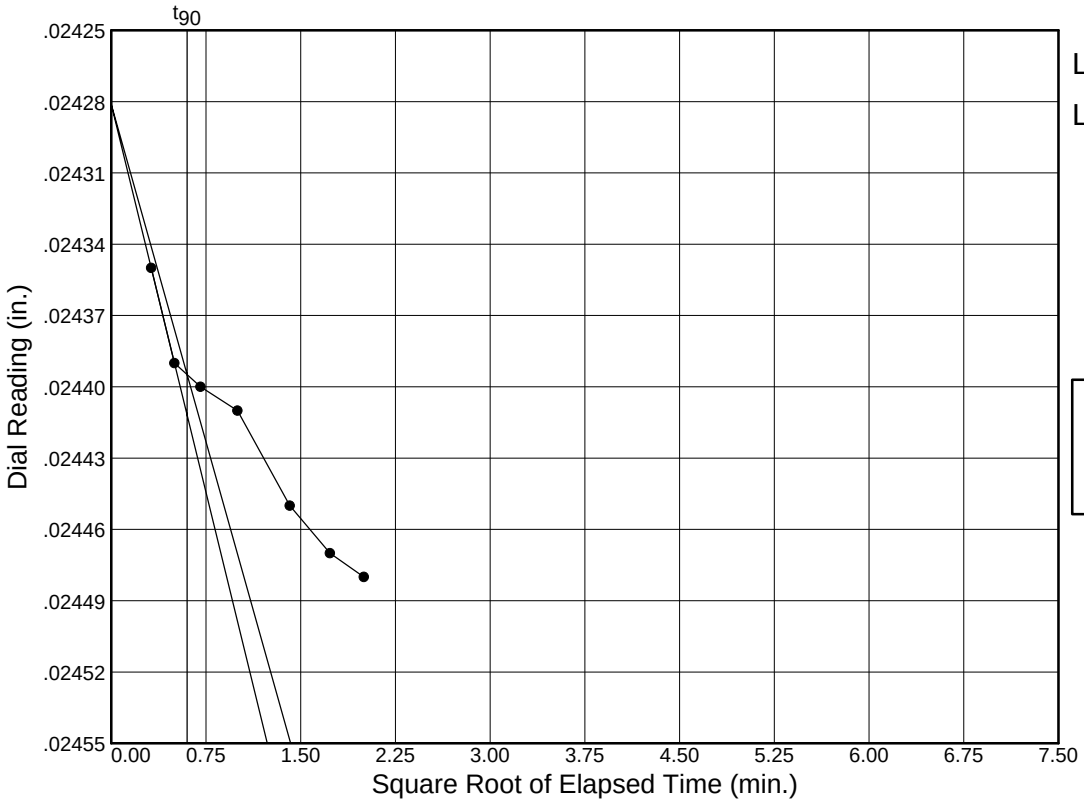
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 11
Load= 0.50 tsf
D_0 = 0.02278
D_{90} = 0.02283
D_{100} = 0.02283
T_{90} = 0.98 min.

C_v @ T_{90}
2.06 ft.^{2}/day

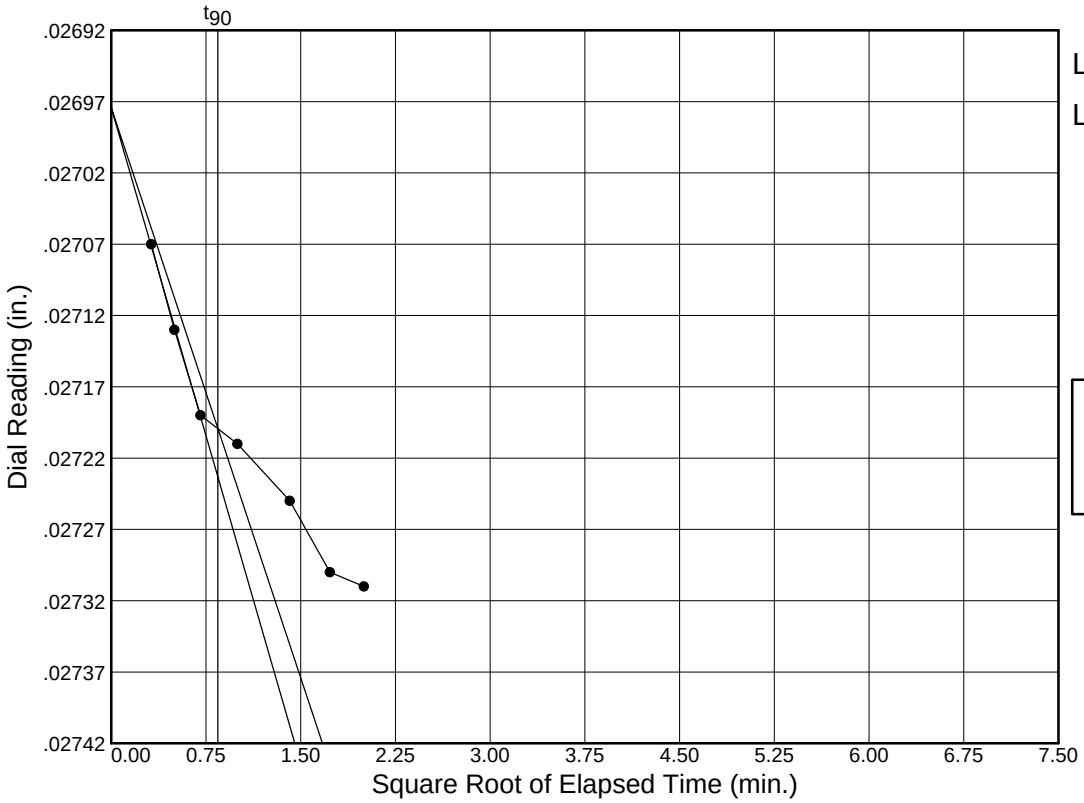


Load No.= 12
Load= 1.00 tsf
D_0 = 0.02428
D_{90} = 0.02439
D_{100} = 0.02441
T_{90} = 0.36 min.

C_v @ T_{90}
5.59 ft.^{2}/day

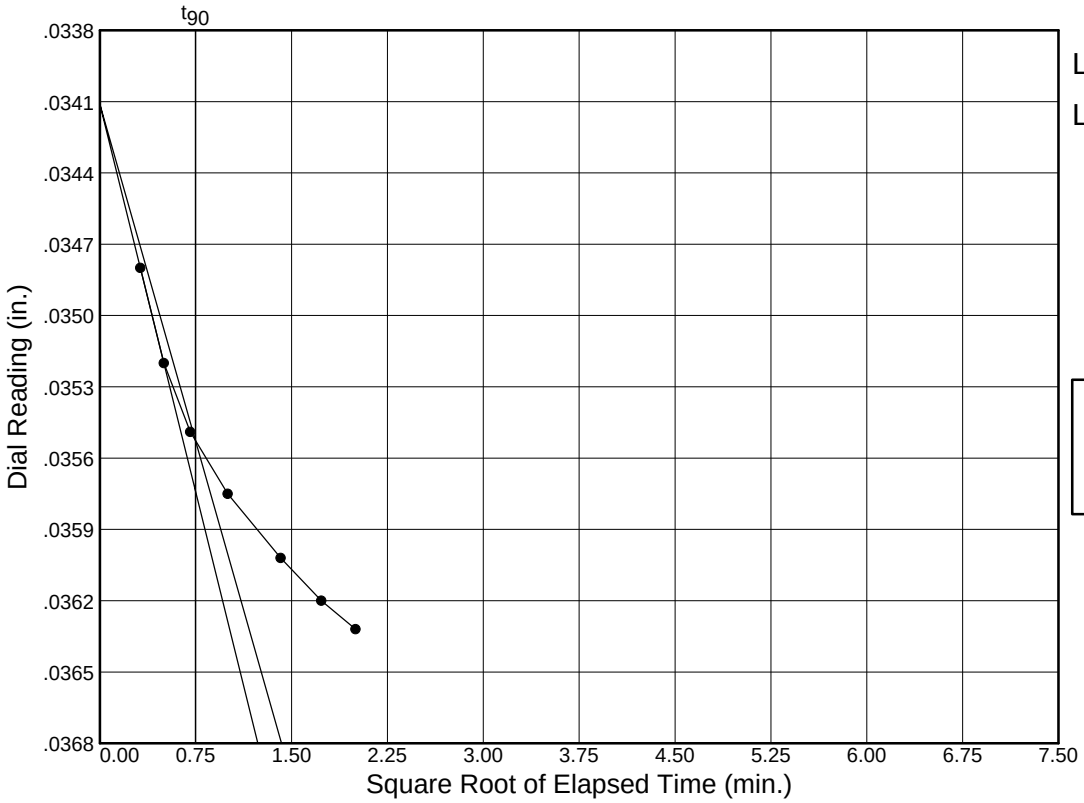
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 13
Load= 2.00 tsf
D_0 = 0.02697
D_{90} = 0.02720
D_{100} = 0.02722
T_{90} = 0.71 min.

C_v @ T_{90}
2.82 ft.^{2}/day

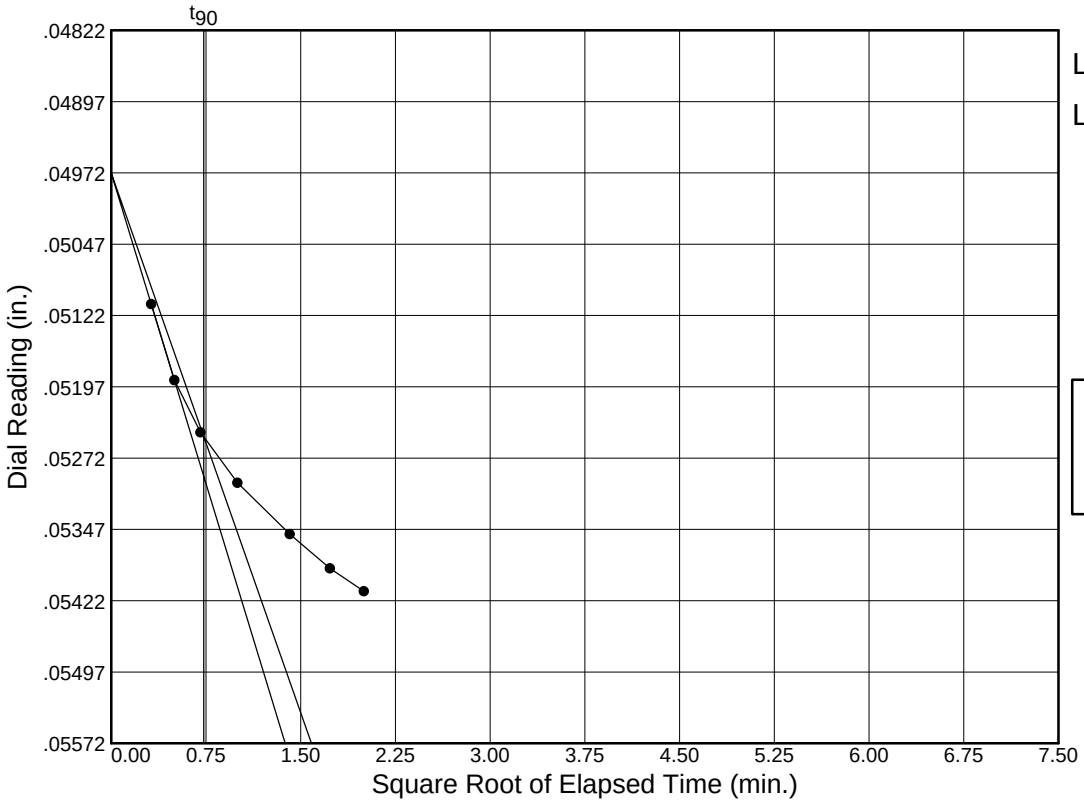


Load No.= 14
Load= 4.00 tsf
D_0 = 0.03411
D_{90} = 0.03553
D_{100} = 0.03568
T_{90} = 0.56 min.

C_v @ T_{90}
3.54 ft.^{2}/day

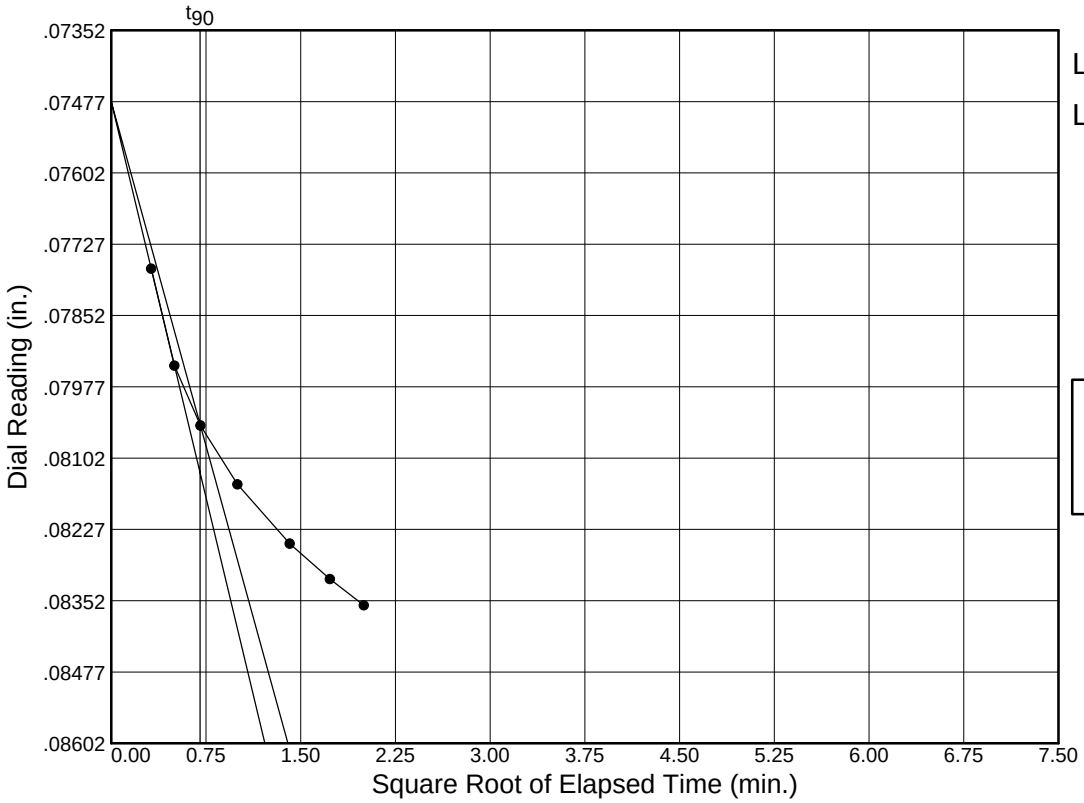
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 15
Load= 8.00 tsf
D_0 = 0.04972
D_{90} = 0.05250
D_{100} = 0.05280
T_{90} = 0.54 min.

C_v @ T_{90}
3.56 ft.^{2}/day

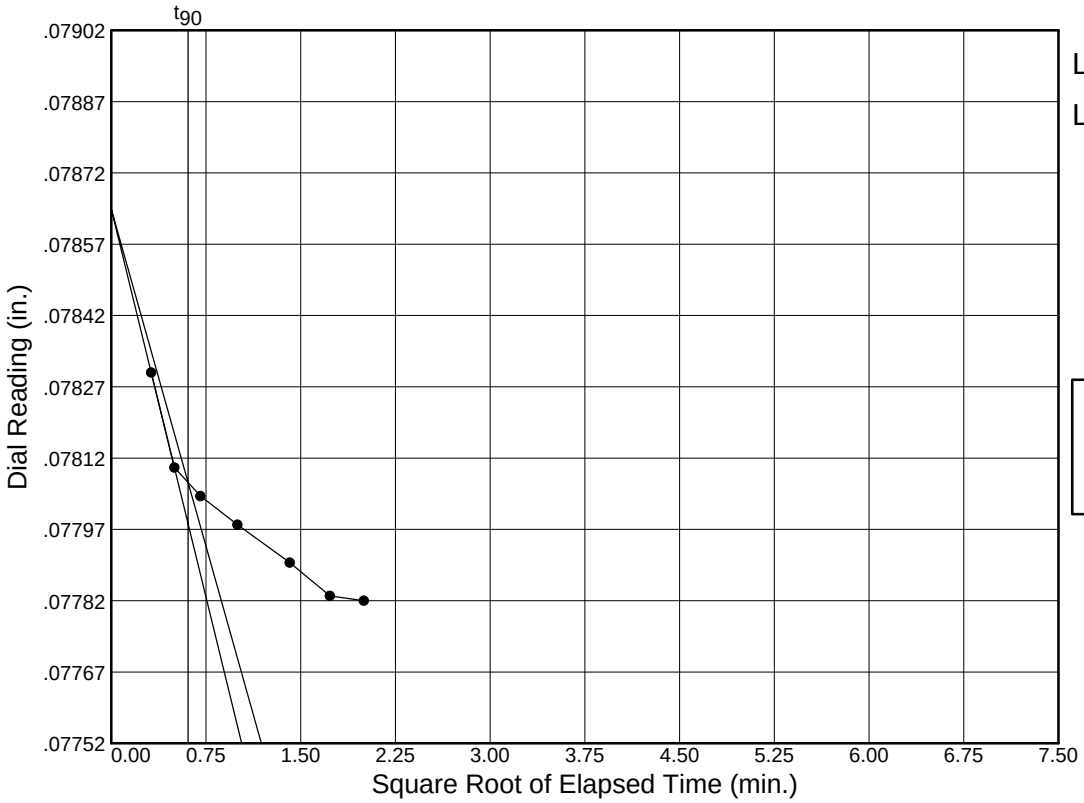


Load No.= 16
Load= 16.00 tsf
D_0 = 0.07477
D_{90} = 0.08043
D_{100} = 0.08106
T_{90} = 0.49 min.

C_v @ T_{90}
3.65 ft.^{2}/day

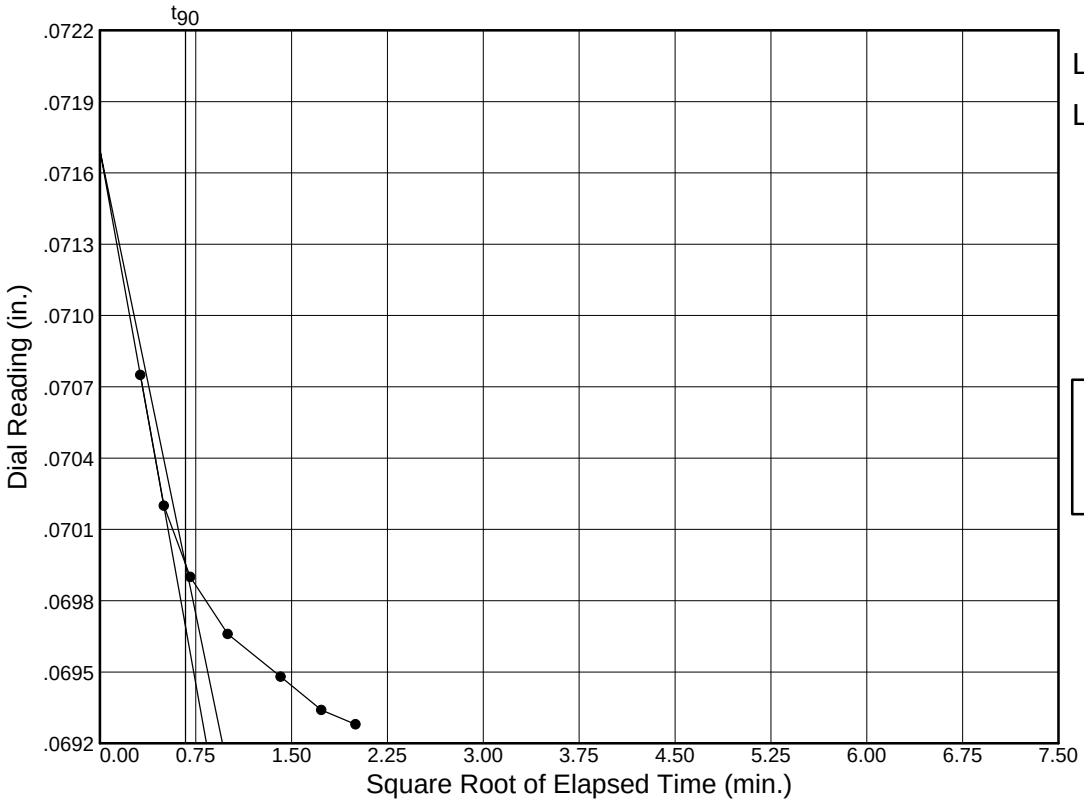
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 17
Load= 4.00 tsf
D_0 = 0.07864
D_{90} = 0.07807
D_{100} = 0.07800
T_{90} = 0.37 min.

C_v @ T_{90}
4.87 ft.^{2}/day



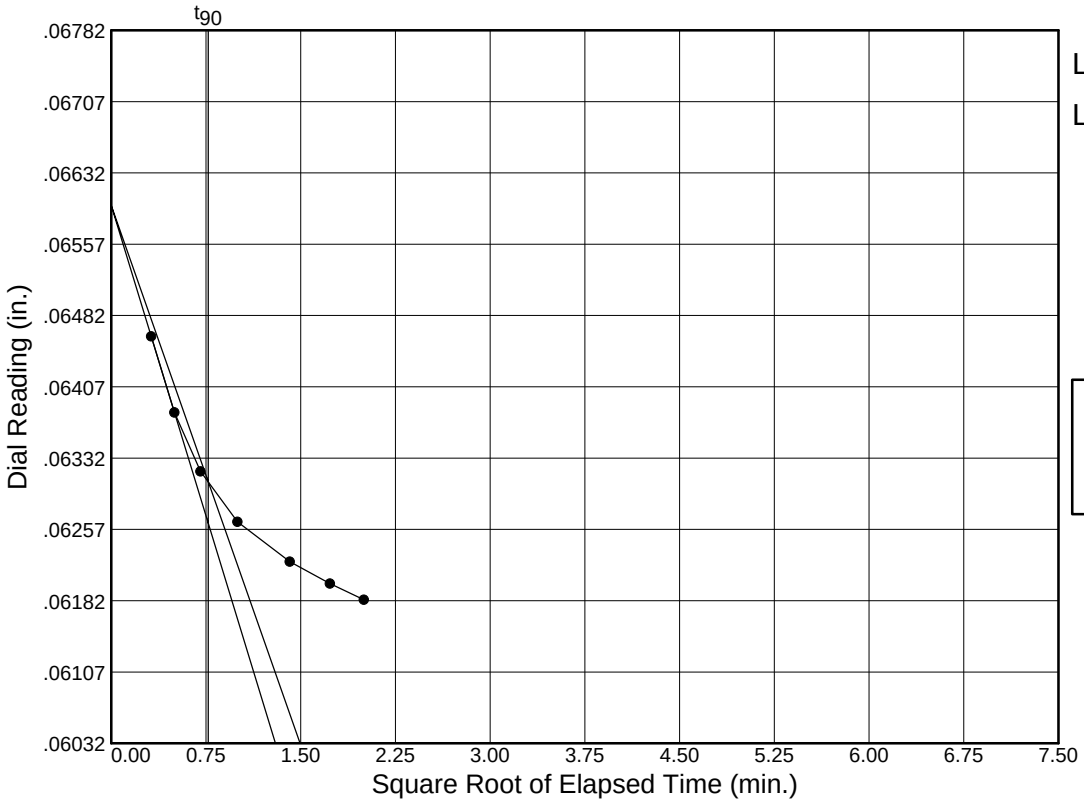
Load No.= 18
Load= 1.00 tsf
D_0 = 0.07170
D_{90} = 0.06995
D_{100} = 0.06976
T_{90} = 0.45 min.

C_v @ T_{90}
4.09 ft.^{2}/day

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-11 Depth 81.1-81.2 ft.



Load No.= 19

Load= 0.25 tsf

D_0 = 0.06598

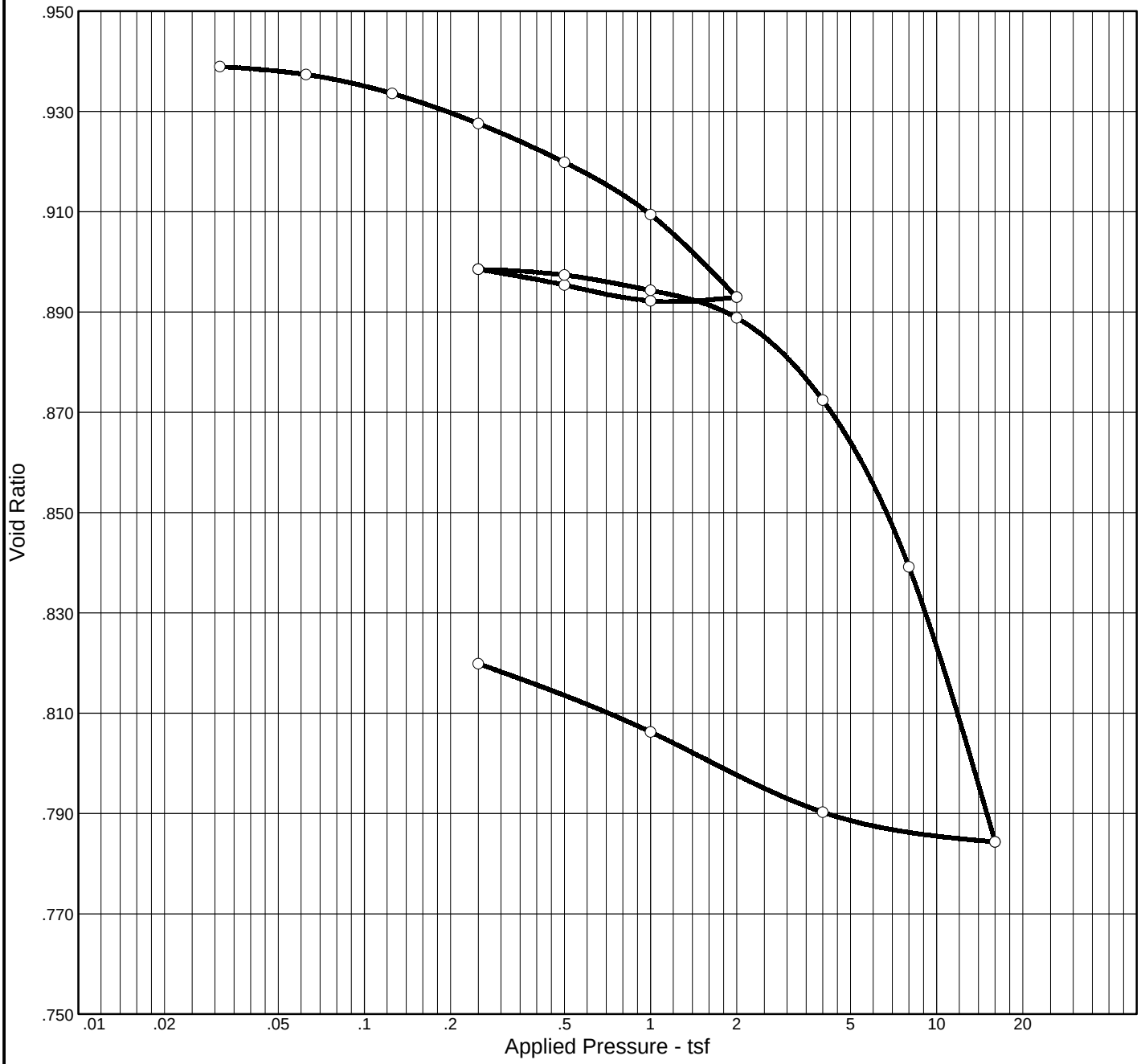
D_{90} = 0.06307

D_{100} = 0.06275

T_{90} = 0.59 min.

C_v @ T_{90}
3.15 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
99.8 %	36.2 %	83.9	44	9	2.6	ML	----	0.942

MATERIAL DESCRIPTION

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-11 Depth 81.1-81.2 ft.

Remarks:
Sandy Silt ML lightly cemented

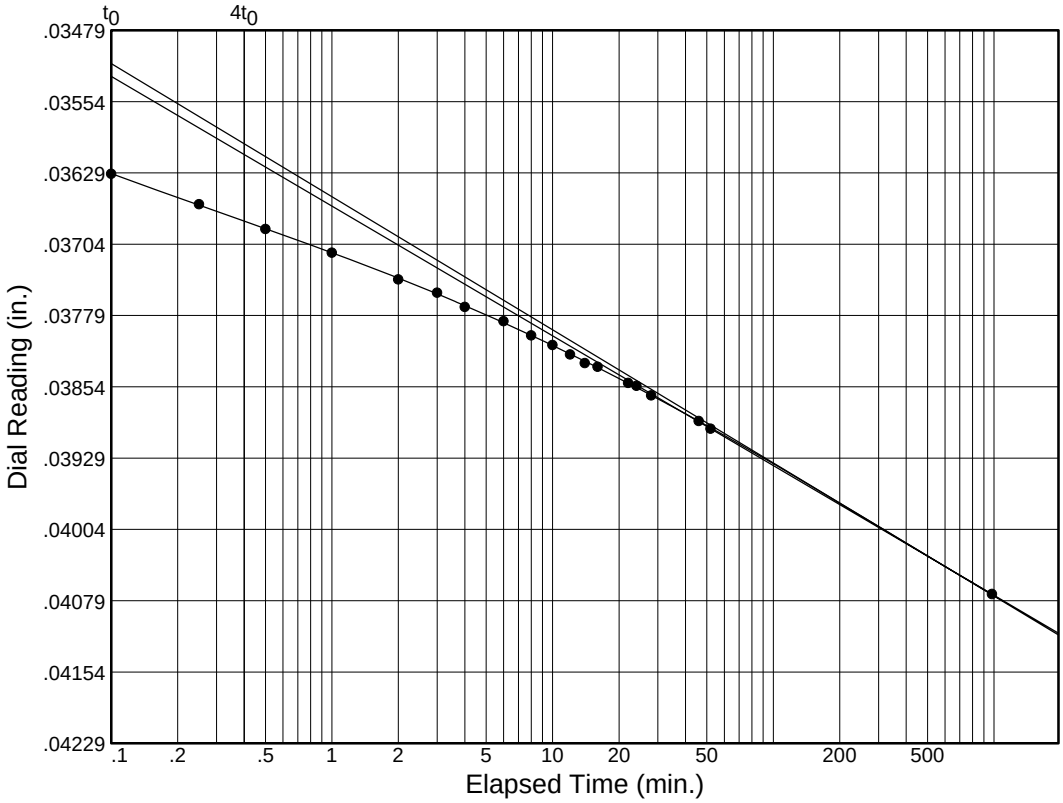
CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 7

Load= 2.00 tsf

D_0 = 0.03580

D_{50} = 0.03811

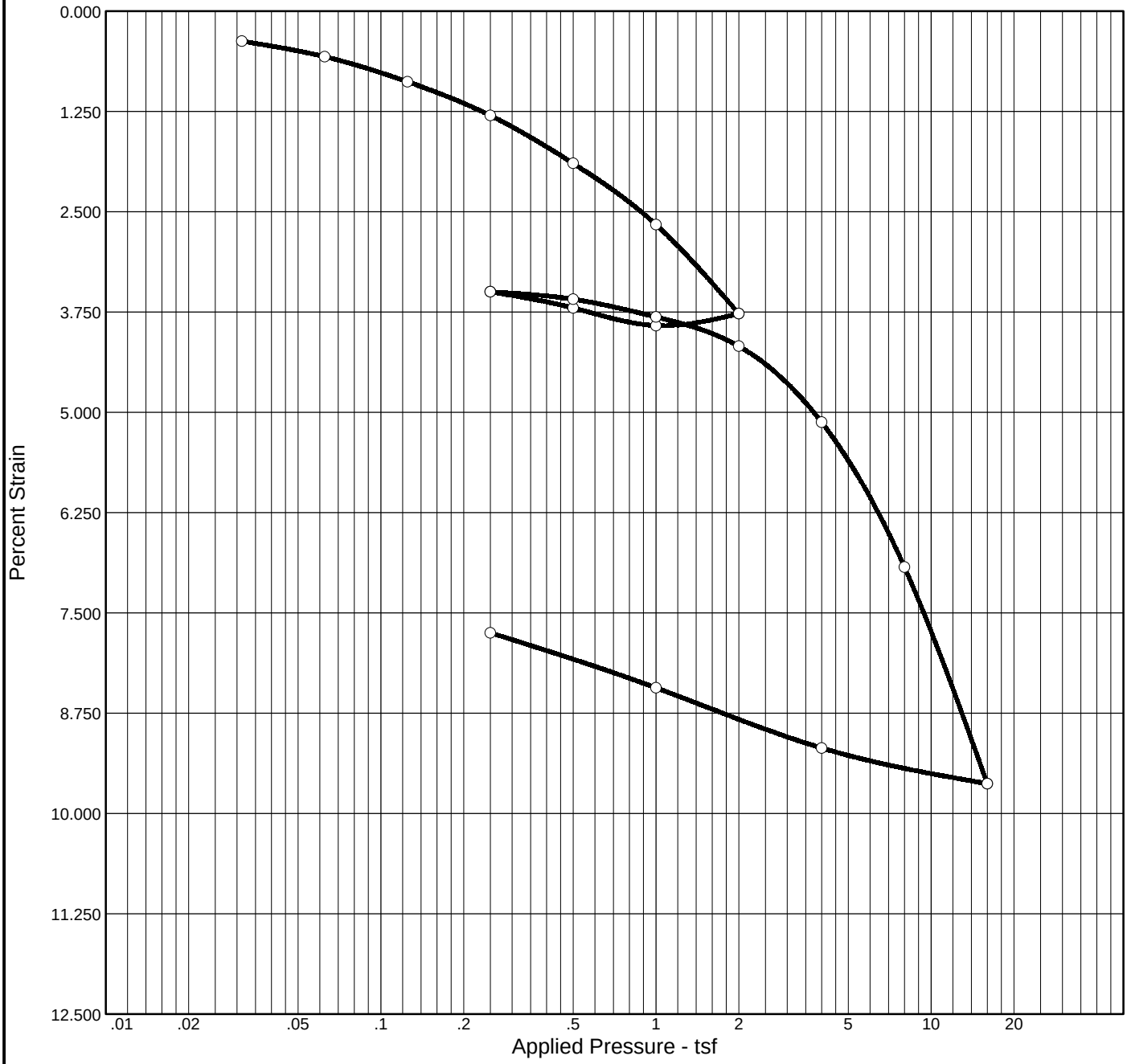
D_{100} = 0.04042

T_{50} = 10.08 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.001

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
99.7 %	36.3 %	85.0	GNP	GNP	2.7	ML	---	0.983

MATERIAL DESCRIPTION

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-13 Depth 90.5-90.6 ft.

Remarks:
Granular non-plastic GNP

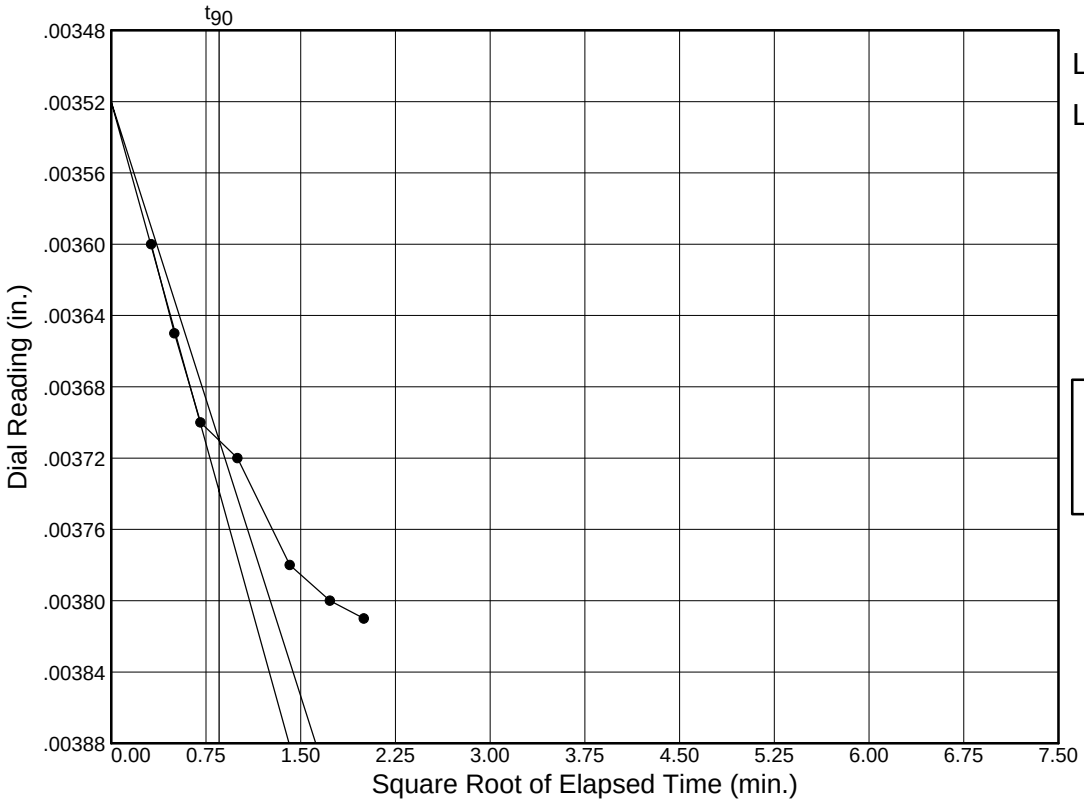
CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY,

Consol Plot

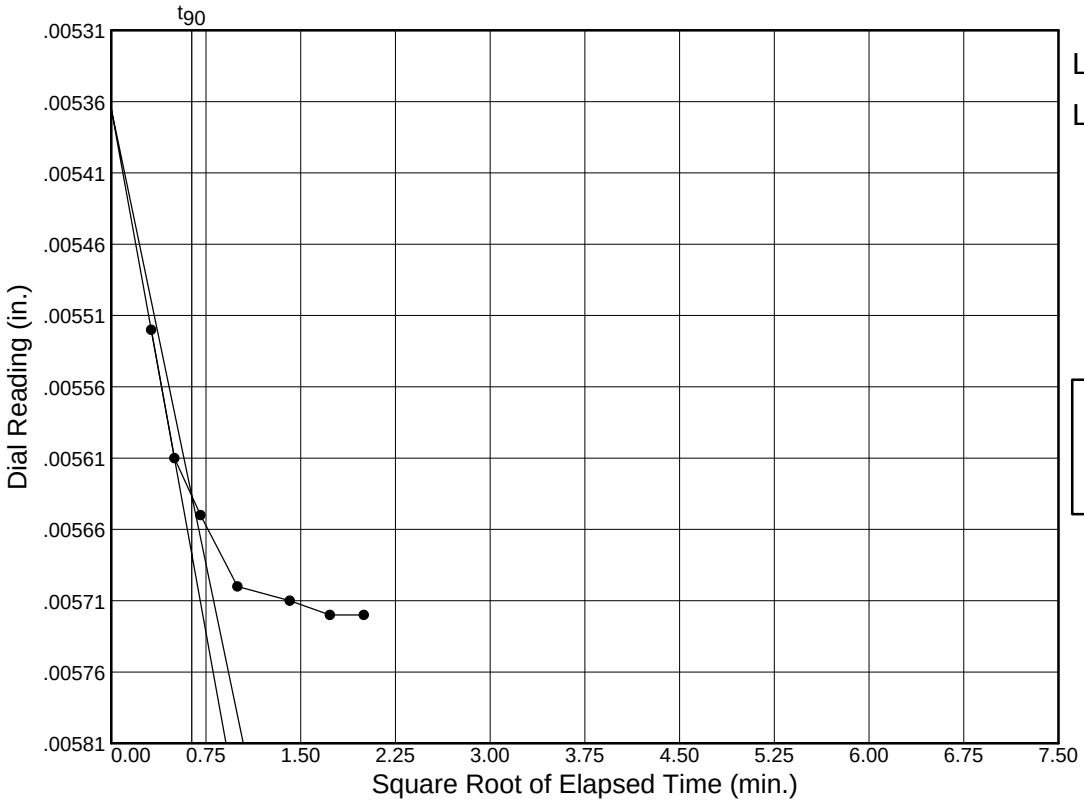
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 1
Load= 0.03 tsf
D_0 = 0.00352
D_{90} = 0.00371
D_{100} = 0.00373
T_{90} = 0.73 min.

C_v @ T_{90}
2.88 ft.^{2}/day



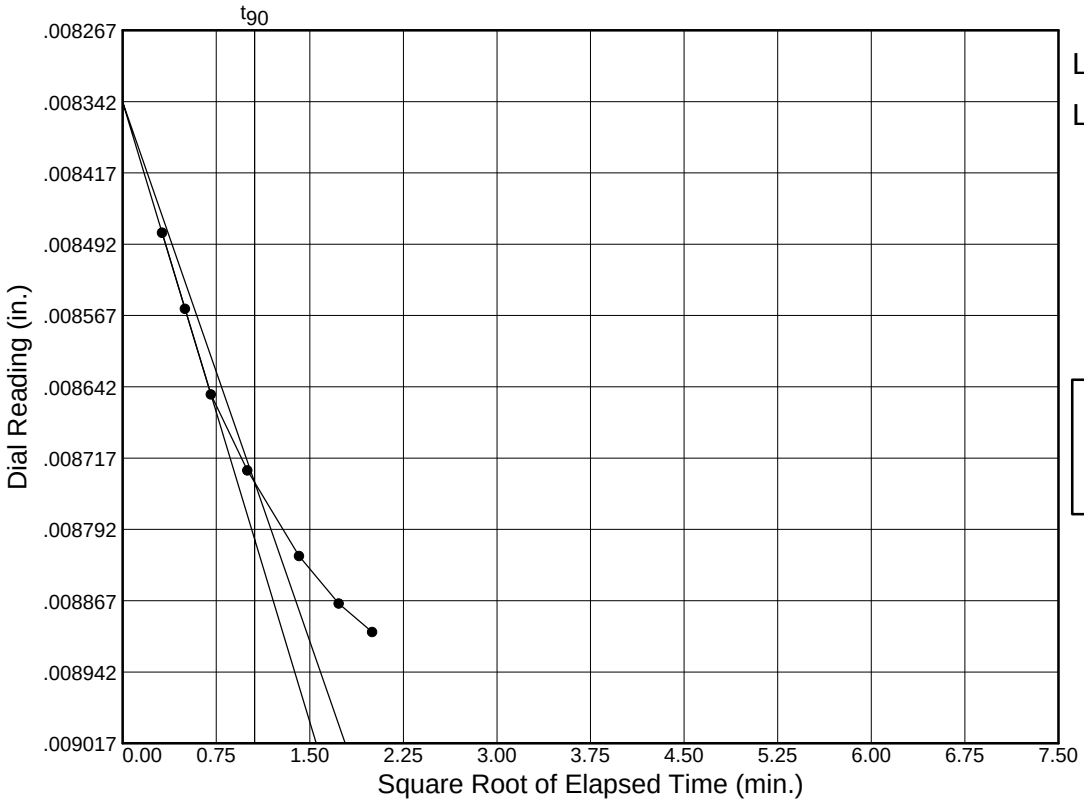
Load No.= 2
Load= 0.06 tsf
D_0 = 0.00537
D_{90} = 0.00564
D_{100} = 0.00567
T_{90} = 0.41 min.

C_v @ T_{90}
5.16 ft.^{2}/day

Consol Plot

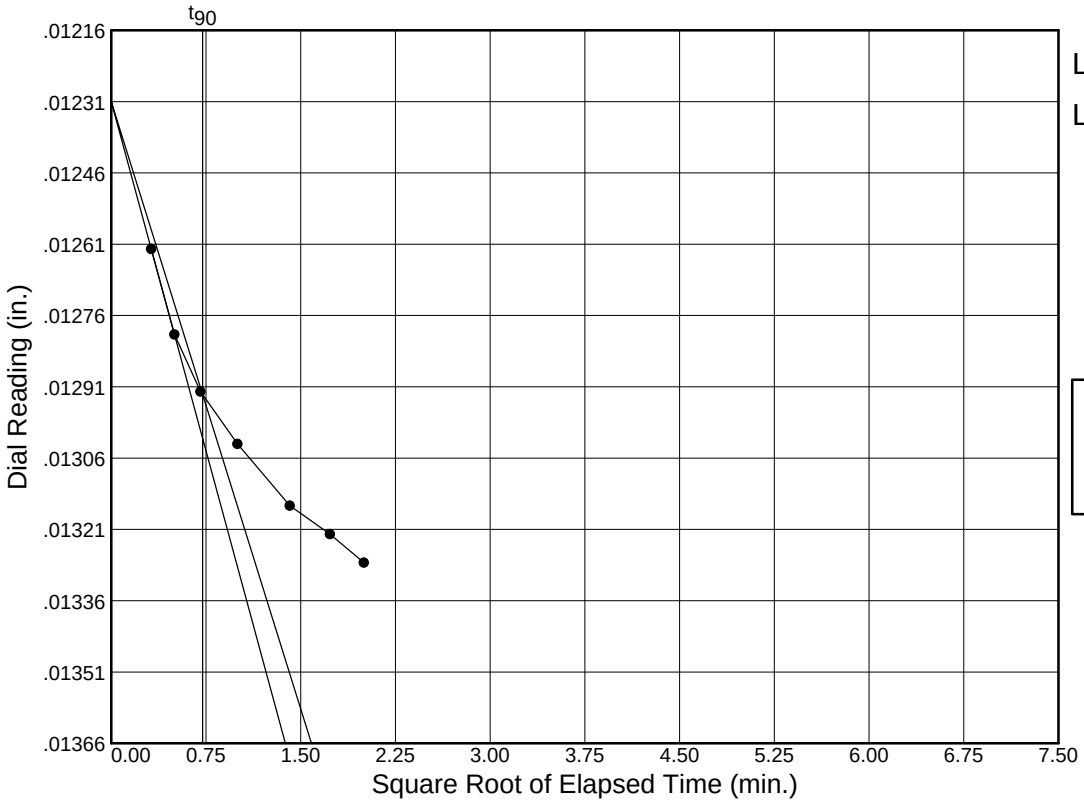
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 3
Load= 0.13 tsf
D_0 = 0.00834
D_{90} = 0.00874
D_{100} = 0.00879
T_{90} = 1.12 min.

C_v @ T_{90}
1.86 ft.^{2}/day



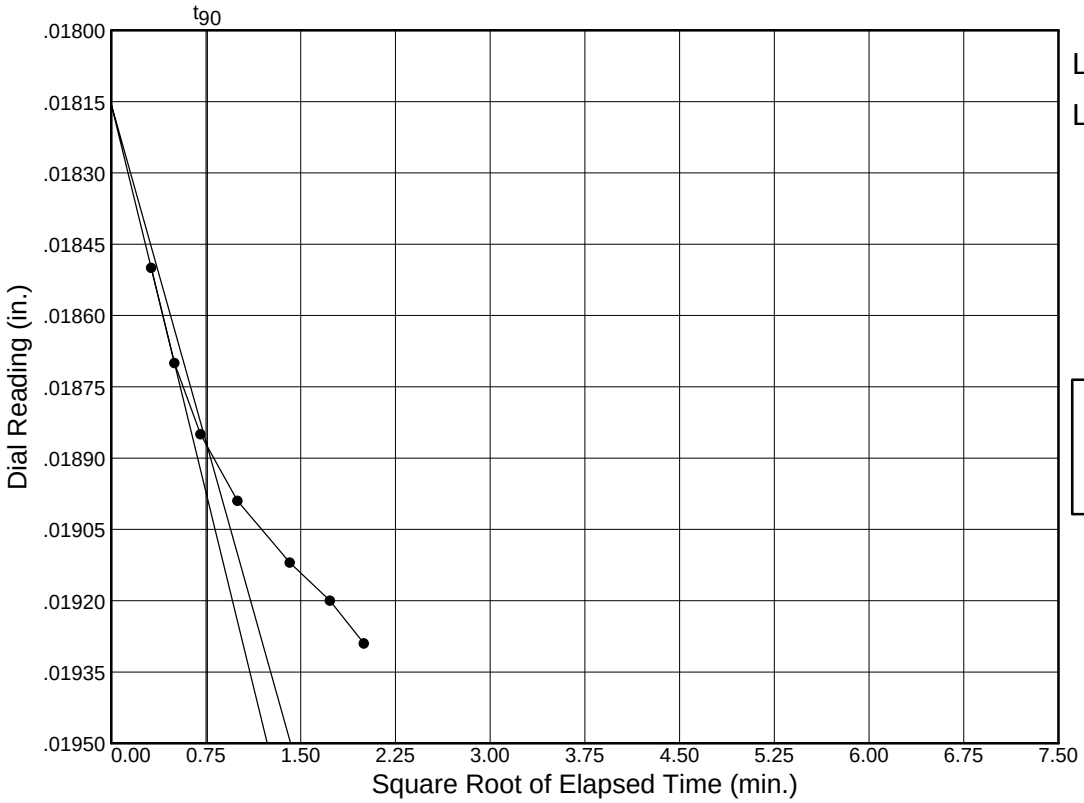
Load No.= 4
Load= 0.25 tsf
D_0 = 0.01231
D_{90} = 0.01293
D_{100} = 0.01299
T_{90} = 0.52 min.

C_v @ T_{90}
3.96 ft.^{2}/day

Consol Plot

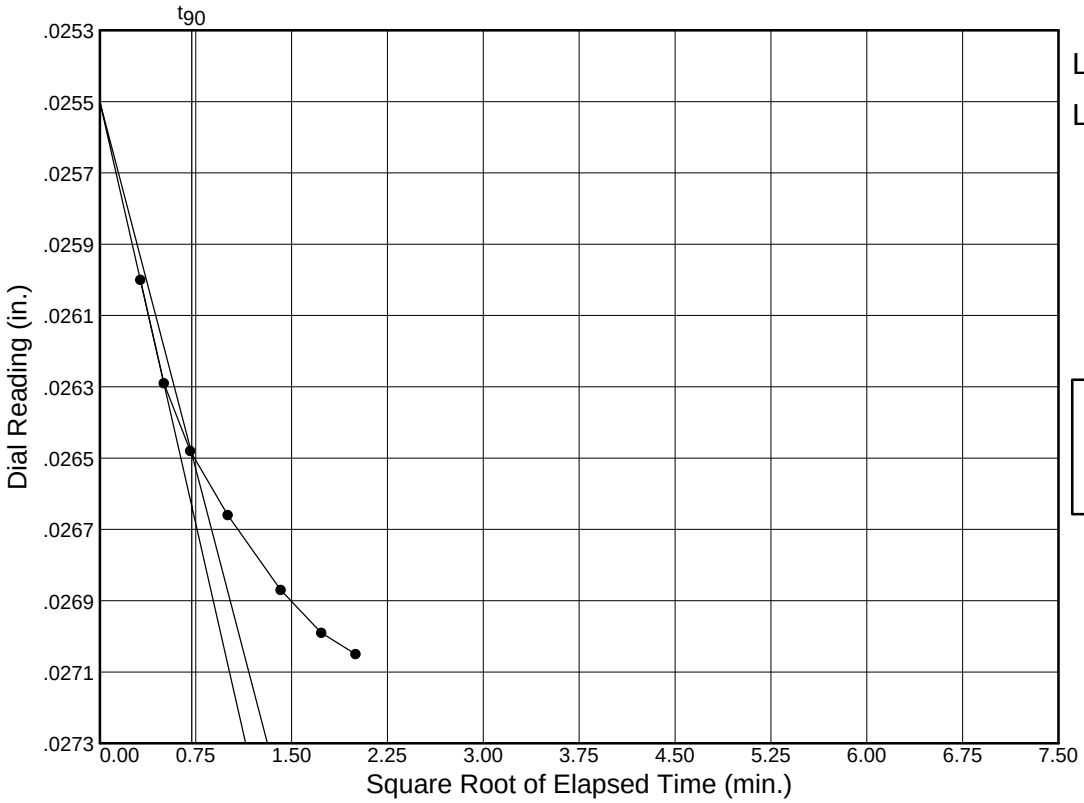
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 5
Load= 0.50 tsf
D_0 = 0.01816
D_{90} = 0.01888
D_{100} = 0.01896
T_{90} = 0.58 min.

C_v @ T_{90}
3.53 ft.^{2}/day



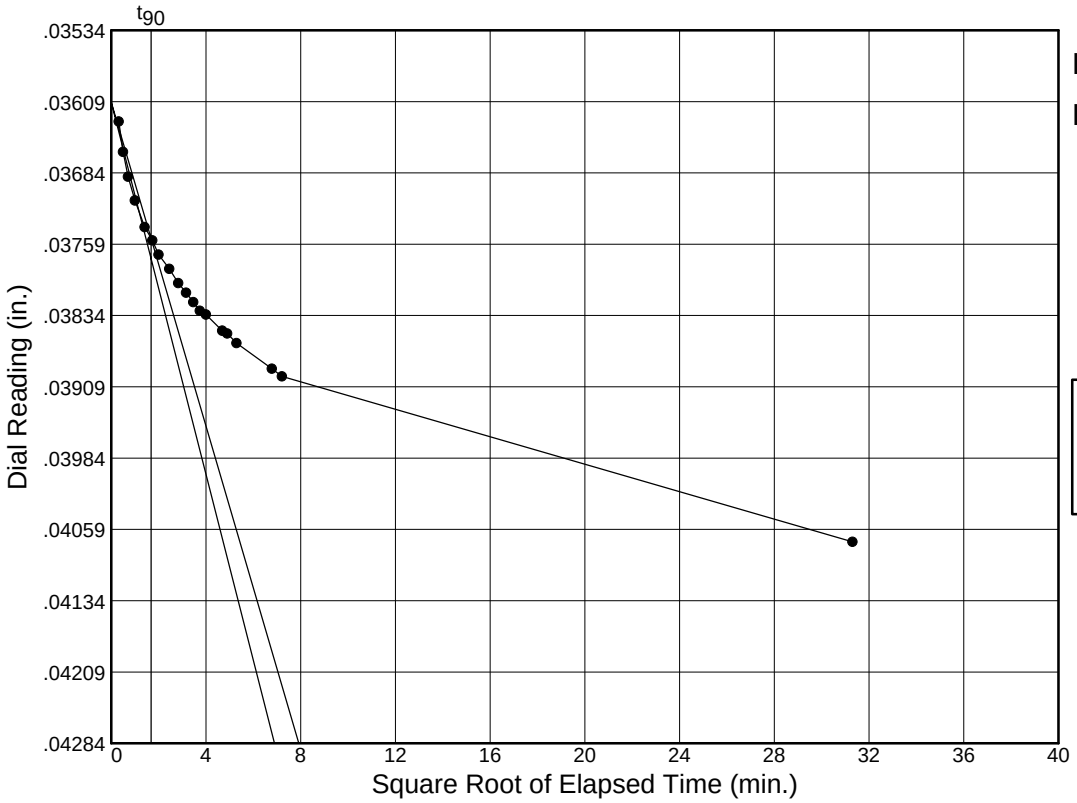
Load No.= 6
Load= 1.00 tsf
D_0 = 0.02550
D_{90} = 0.02649
D_{100} = 0.02660
T_{90} = 0.52 min.

C_v @ T_{90}
3.89 ft.^{2}/day

Consol Plot

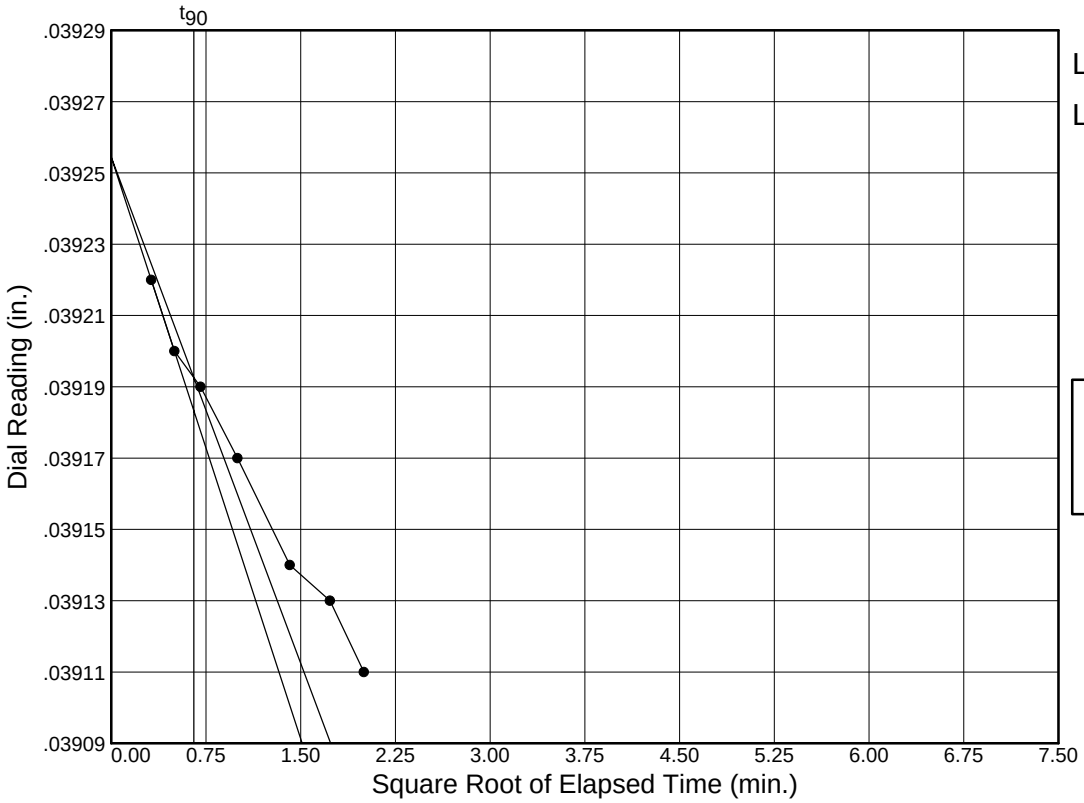
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 7
Load= 2.00 tsf
D_0 = 0.03610
D_{90} = 0.03753
D_{100} = 0.03769
T_{90} = 2.82 min.

C_v @ T_{90}
0.70 ft.^{2}/day



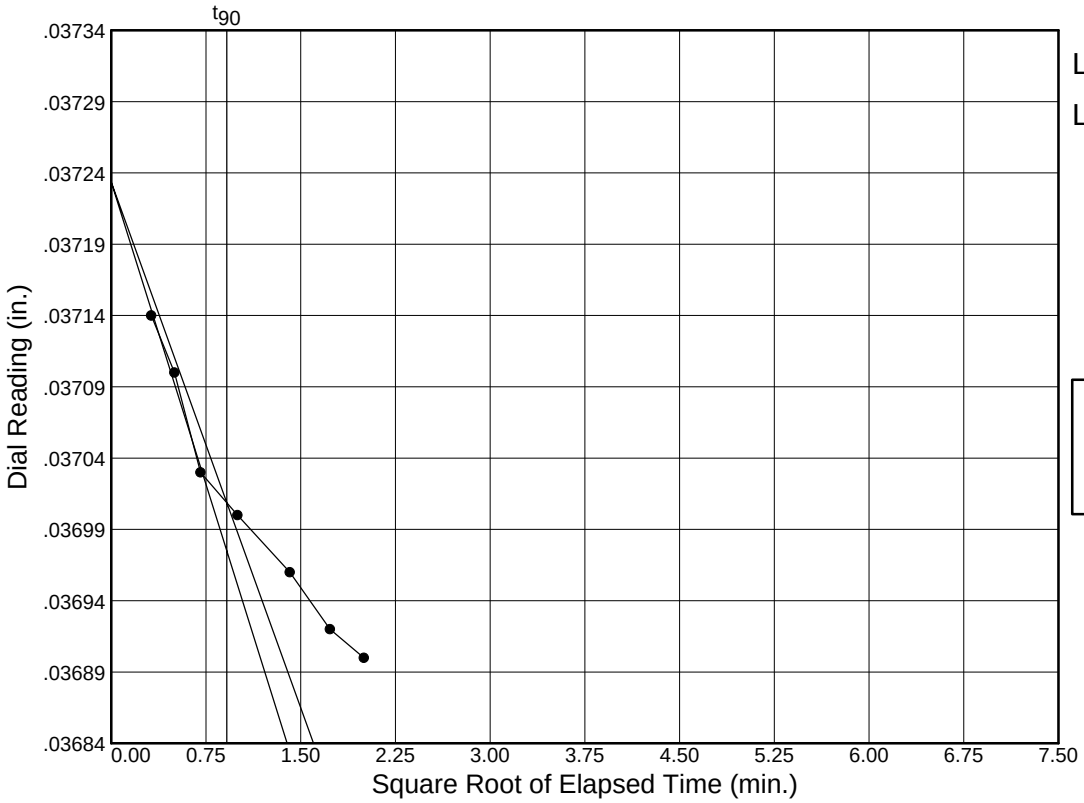
Load No.= 8
Load= 1.00 tsf
D_0 = 0.03925
D_{90} = 0.03919
D_{100} = 0.03919
T_{90} = 0.43 min.

C_v @ T_{90}
4.59 ft.^{2}/day

Consol Plot

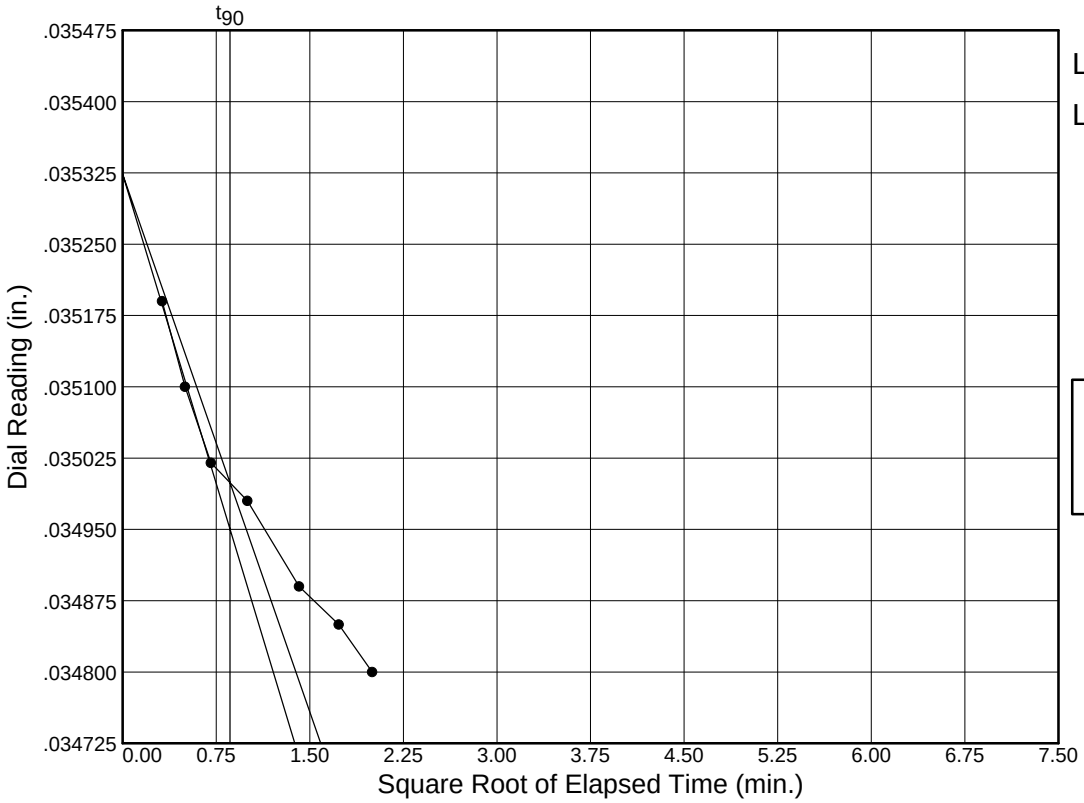
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 9
Load= 0.50 tsf
D_0 = 0.03723
D_{90} = 0.03701
D_{100} = 0.03698
T_{90} = 0.84 min.

C_v @ T_{90}
2.35 ft.^{2}/day



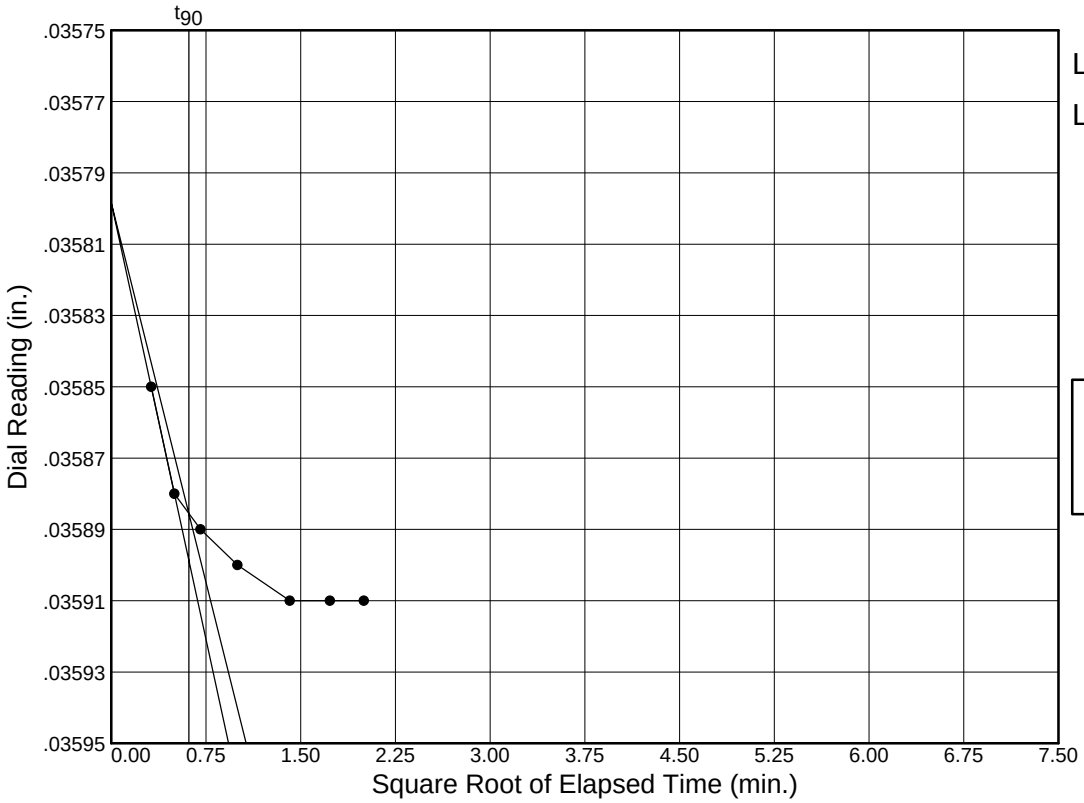
Load No.= 10
Load= 0.25 tsf
D_0 = 0.03532
D_{90} = 0.03500
D_{100} = 0.03496
T_{90} = 0.74 min.

C_v @ T_{90}
2.67 ft.^{2}/day

Consol Plot

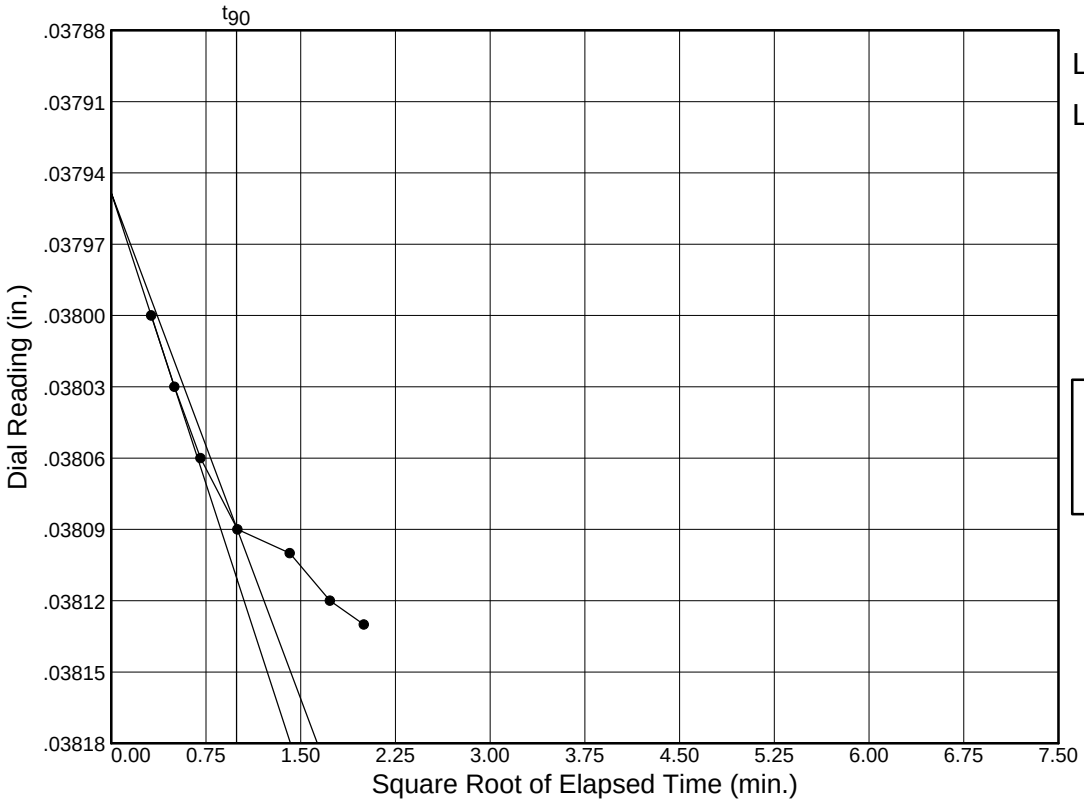
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 11
Load= 0.50 tsf
D_0 = 0.03580
D_{90} = 0.03589
D_{100} = 0.03590
T_{90} = 0.38 min.

C_v @ T_{90}
5.23 ft.^{2}/day



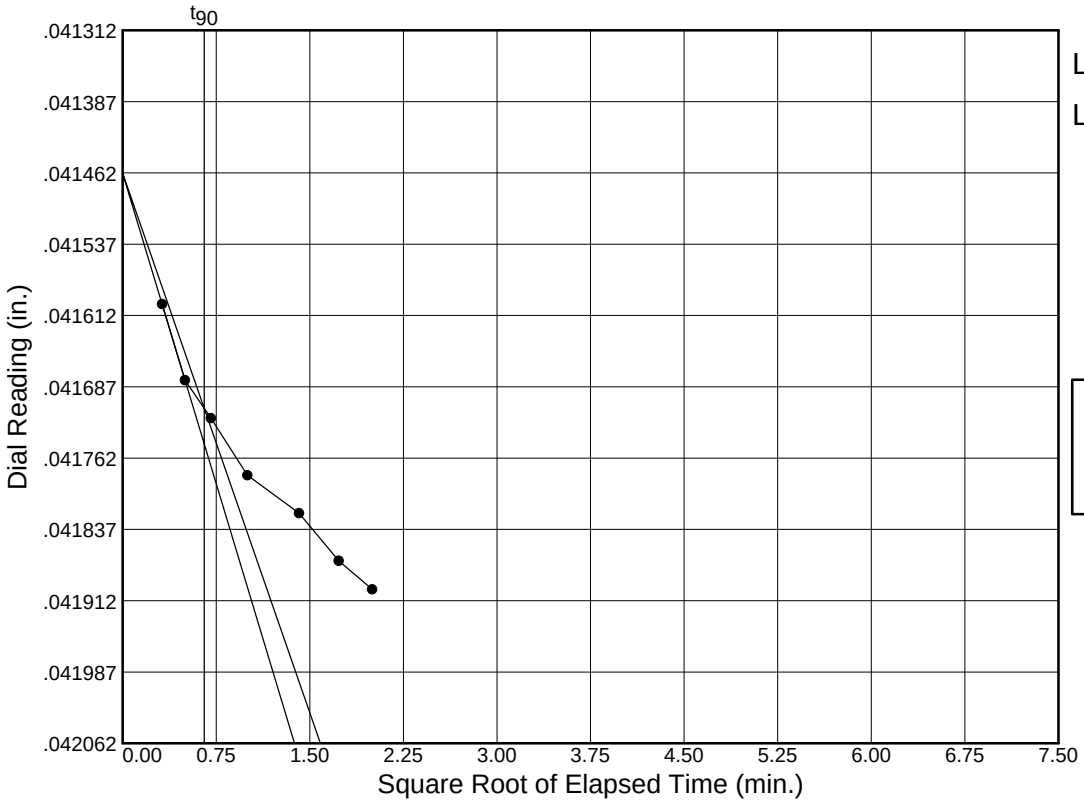
Load No.= 12
Load= 1.00 tsf
D_0 = 0.03795
D_{90} = 0.03809
D_{100} = 0.03810
T_{90} = 0.98 min.

C_v @ T_{90}
1.99 ft.^{2}/day

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 13

Load= 2.00 tsf

D_0 = 0.04146

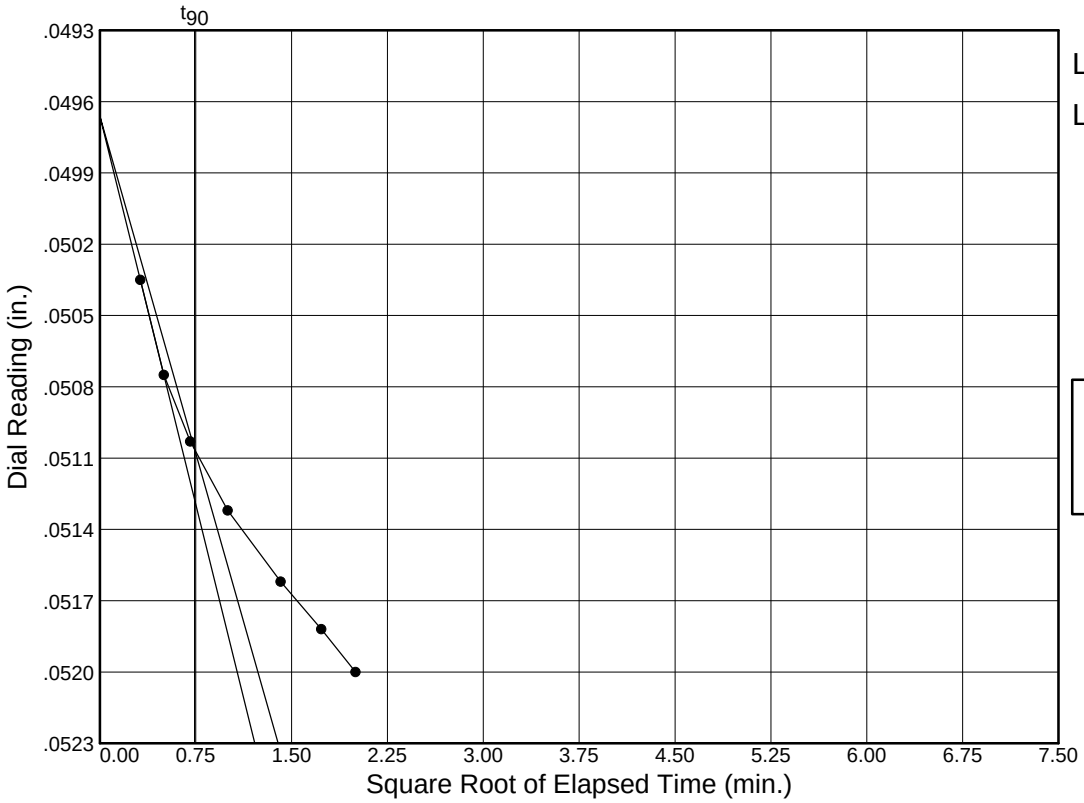
D_{90} = 0.04171

D_{100} = 0.04174

T_{90} = 0.43 min.

C_v @ T_{90}

4.56 ft.^{2}/day



Load No.= 14

Load= 4.00 tsf

D_0 = 0.04966

D_{90} = 0.05106

D_{100} = 0.05122

T_{90} = 0.55 min.

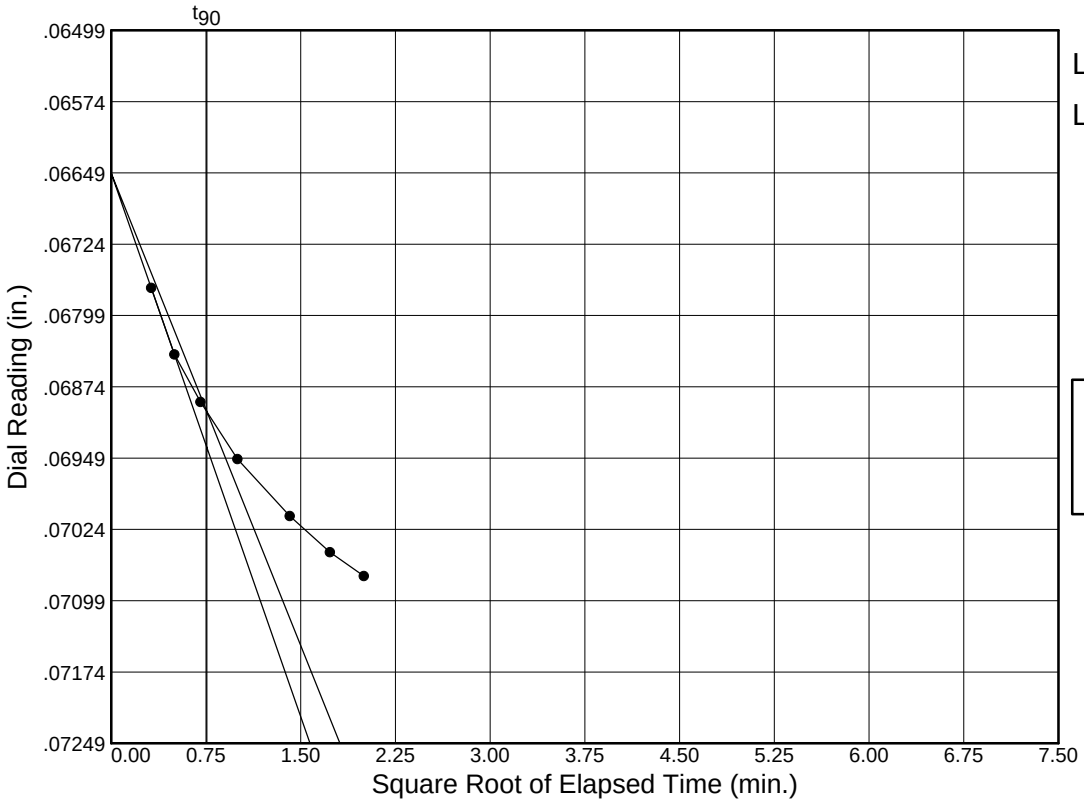
C_v @ T_{90}

3.49 ft.^{2}/day

Consol Plot

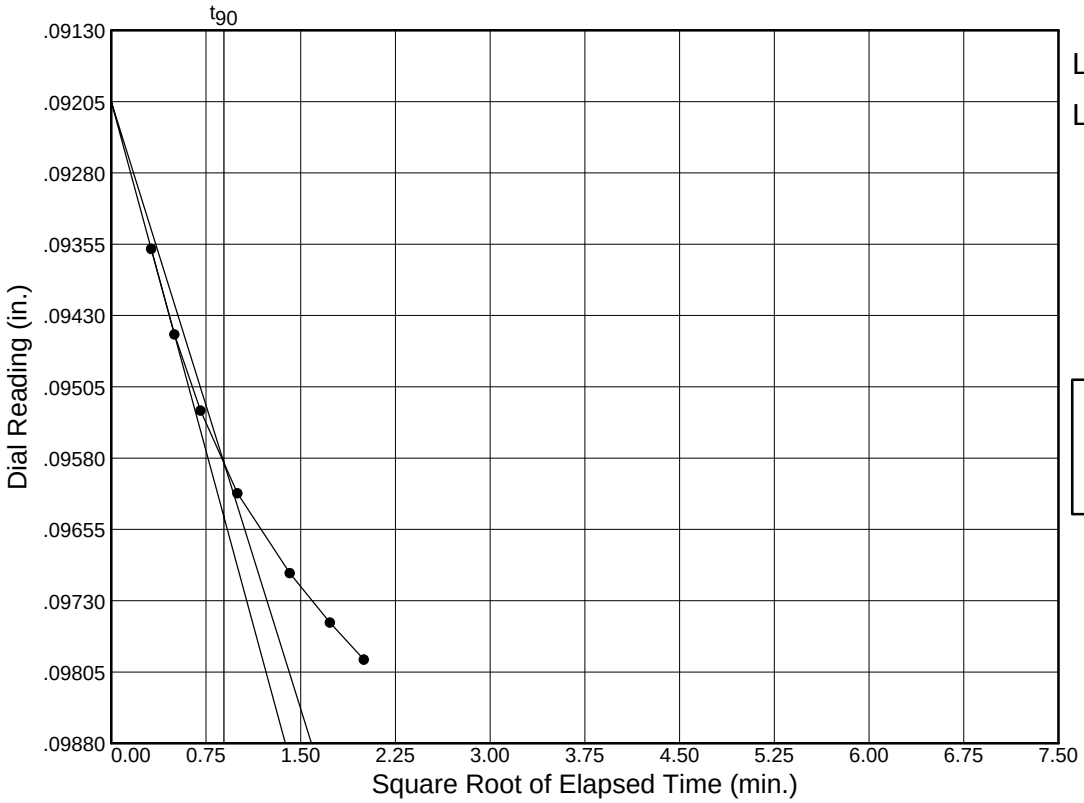
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 15
Load= 8.00 tsf
D_0 = 0.06650
D_{90} = 0.06900
D_{100} = 0.06928
T_{90} = 0.57 min.

C_v @ T_{90}
3.22 ft.^{2}/day



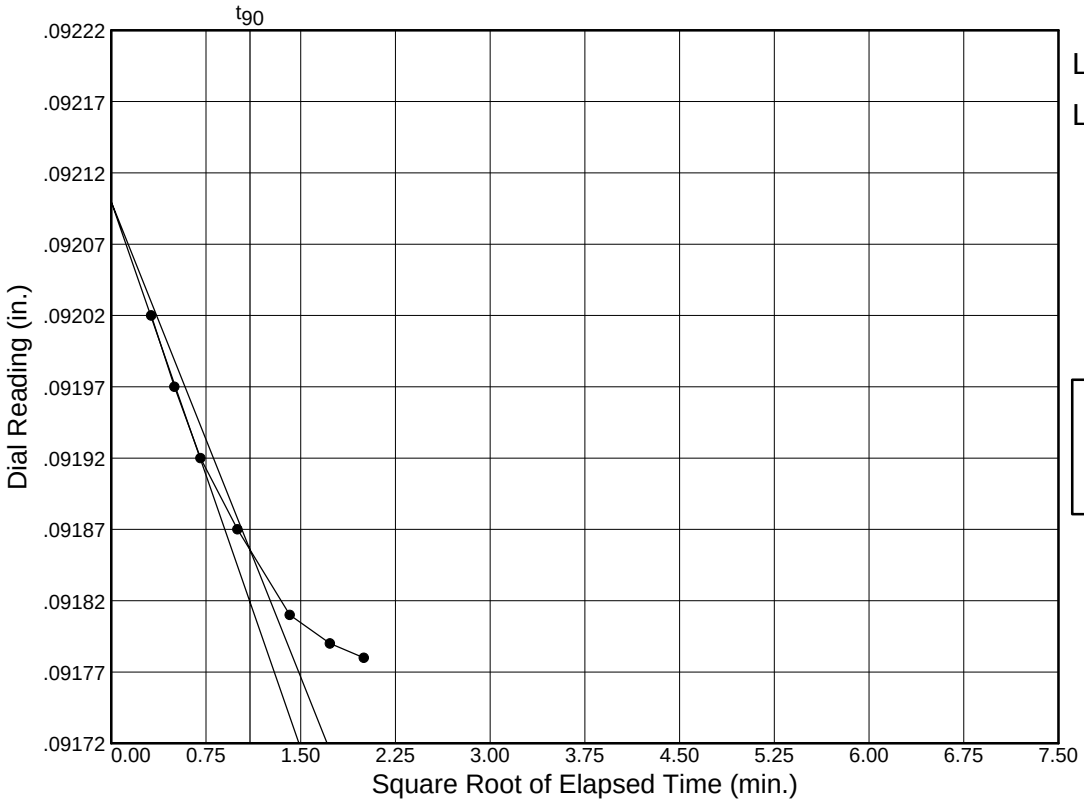
Load No.= 16
Load= 16.00 tsf
D_0 = 0.09205
D_{90} = 0.09585
D_{100} = 0.09627
T_{90} = 0.79 min.

C_v @ T_{90}
2.19 ft.^{2}/day

Consol Plot

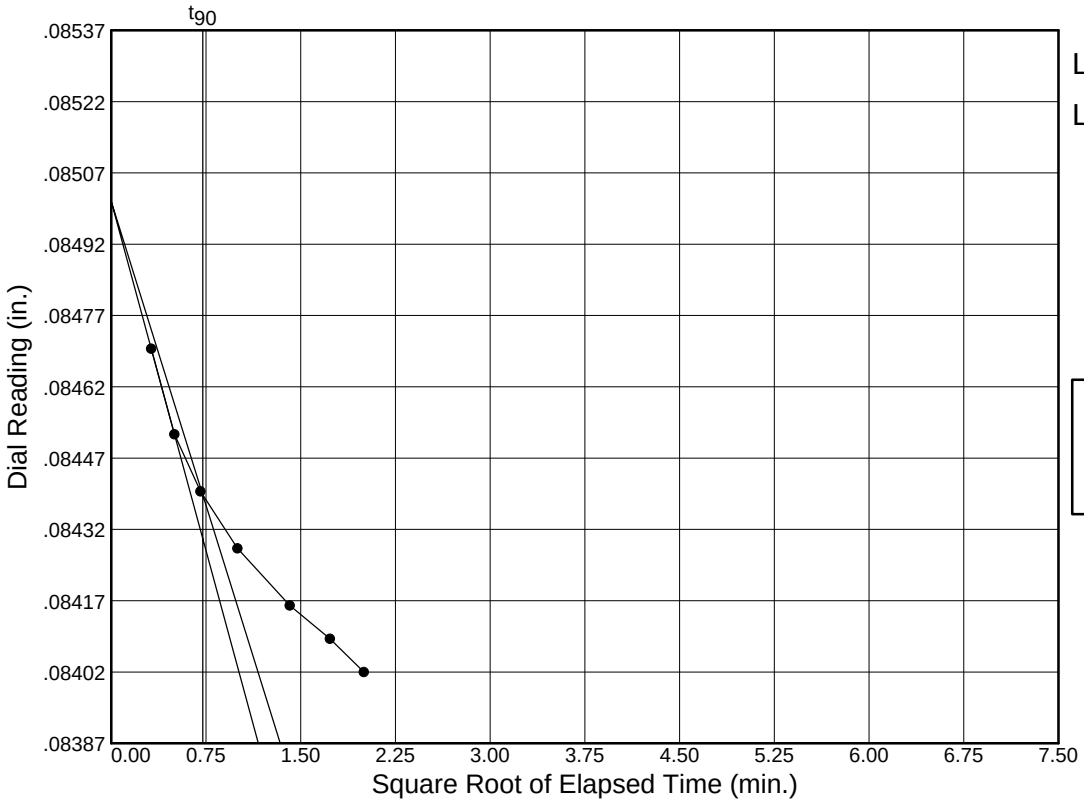
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 17
Load= 4.00 tsf
D_0 = 0.09210
D_{90} = 0.09186
D_{100} = 0.09183
T_{90} = 1.20 min.

C_v @ T_{90}
1.45 ft.^{2}/day



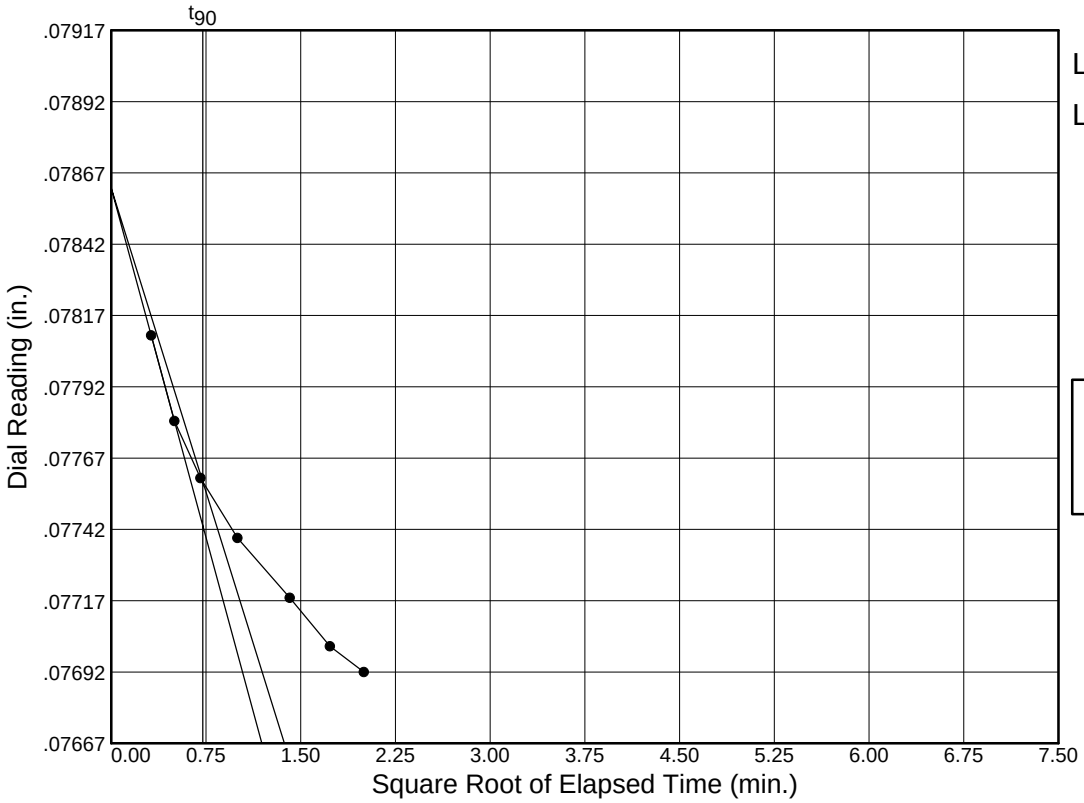
Load No.= 18
Load= 1.00 tsf
D_0 = 0.08501
D_{90} = 0.08439
D_{100} = 0.08432
T_{90} = 0.52 min.

C_v @ T_{90}
3.39 ft.^{2}/day

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-13 Depth 90.5-90.6 ft.



Load No.= 19

Load= 0.25 tsf

D_0 = 0.07862

D_{90} = 0.07759

D_{100} = 0.07747

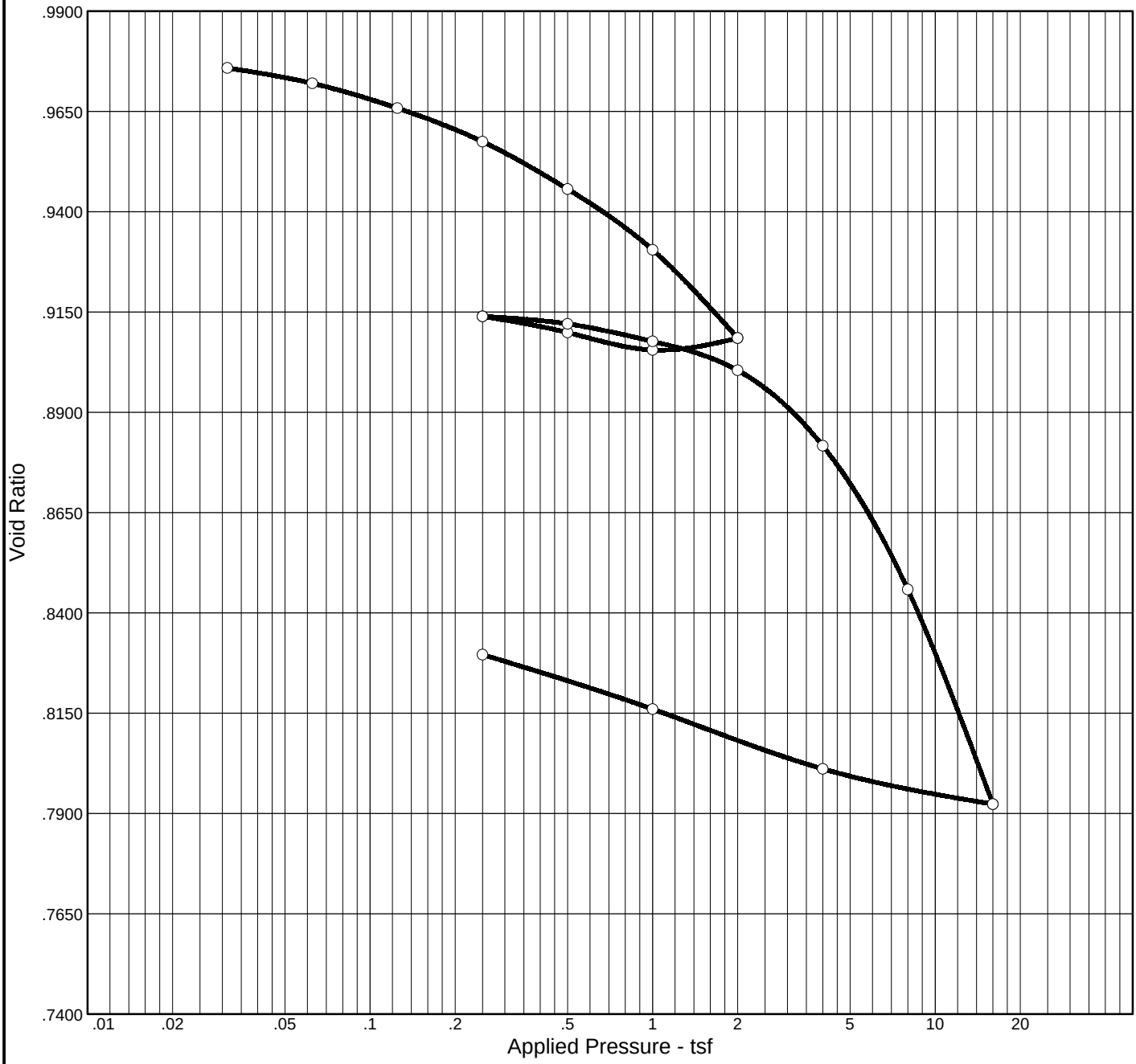
T_{90} = 0.53 min.

C_v @ T_{90}

3.43 ft.^{2}/day

Consol Plot

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
99.7 %	36.3 %	85.0	GNP	GNP	2.7	ML	---	0.983

MATERIAL DESCRIPTION

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-13 Depth 90.5-90.6 ft.

Remarks:
Granular non-plastic GNP

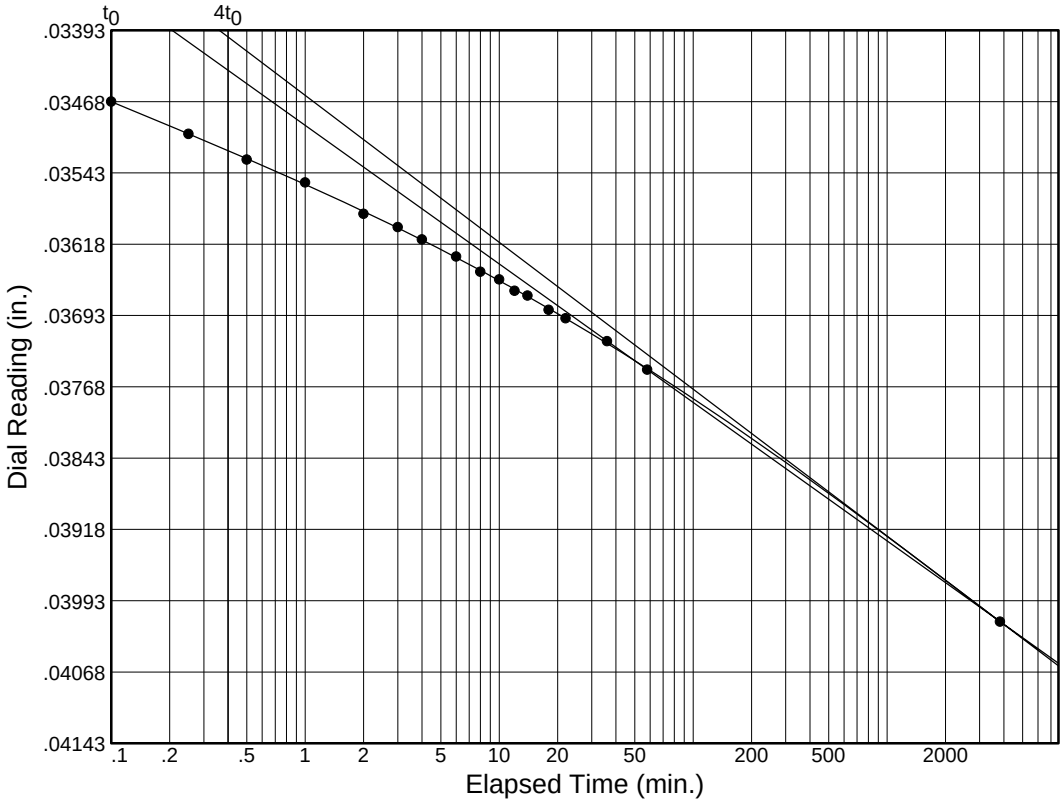
CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 7

Load= 2.00 tsf

D_0 = 0.03416

D_{50} = 0.03716

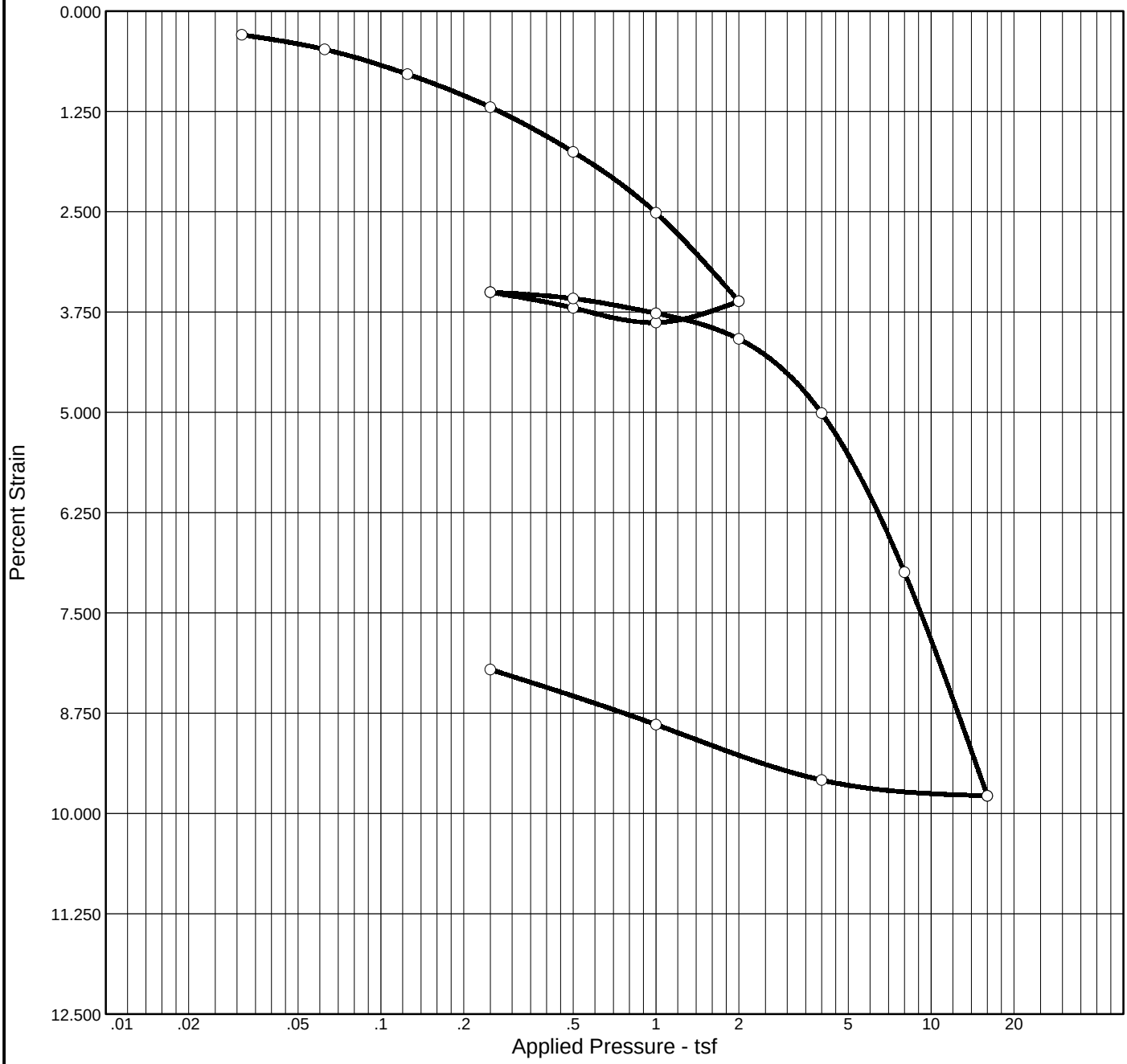
D_{100} = 0.04015

T_{50} = 31.81 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.001

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
100.1 %	39.5 %	82.0			2.73			1.078

MATERIAL DESCRIPTION

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-15 Depth 100.7-100.8 ft.

Remarks:

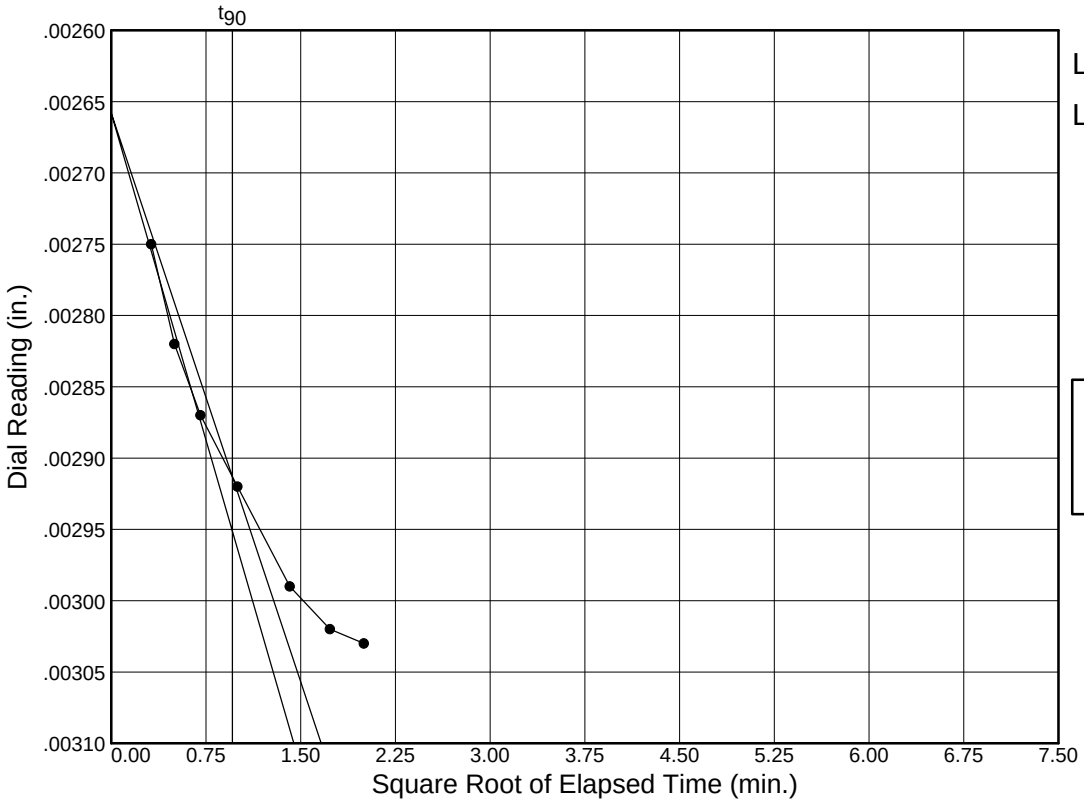
CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

Consol Plot

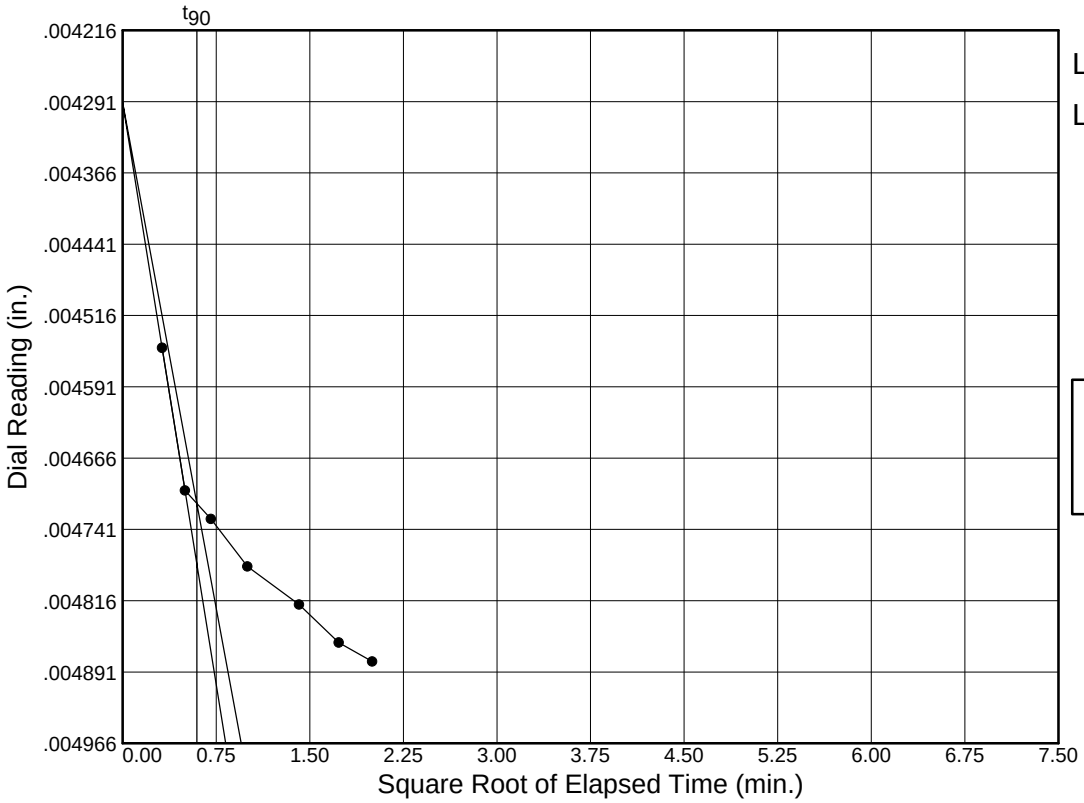
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 1
Load= 0.03 tsf
D_0 = 0.00266
D_{90} = 0.00291
D_{100} = 0.00294
T_{90} = 0.92 min.

C_v @ T_{90}
2.29 ft.^{2}/day



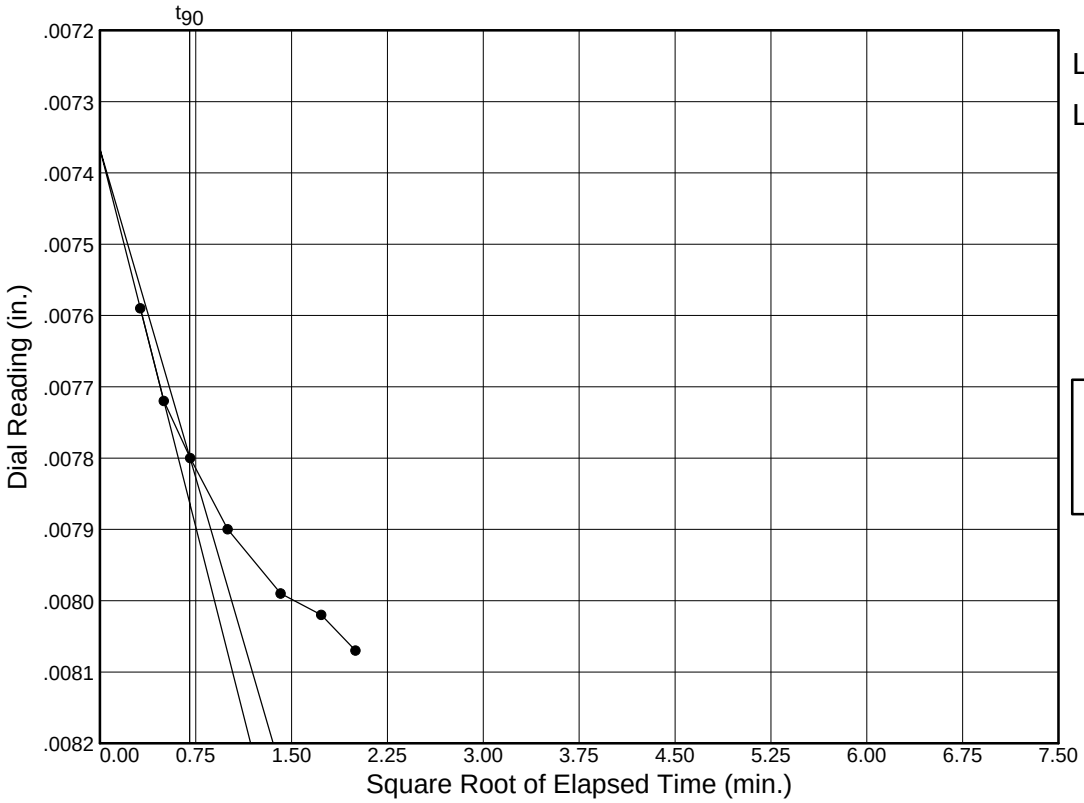
Load No.= 2
Load= 0.06 tsf
D_0 = 0.00429
D_{90} = 0.00471
D_{100} = 0.00476
T_{90} = 0.35 min.

C_v @ T_{90}
5.95 ft.^{2}/day

Consol Plot

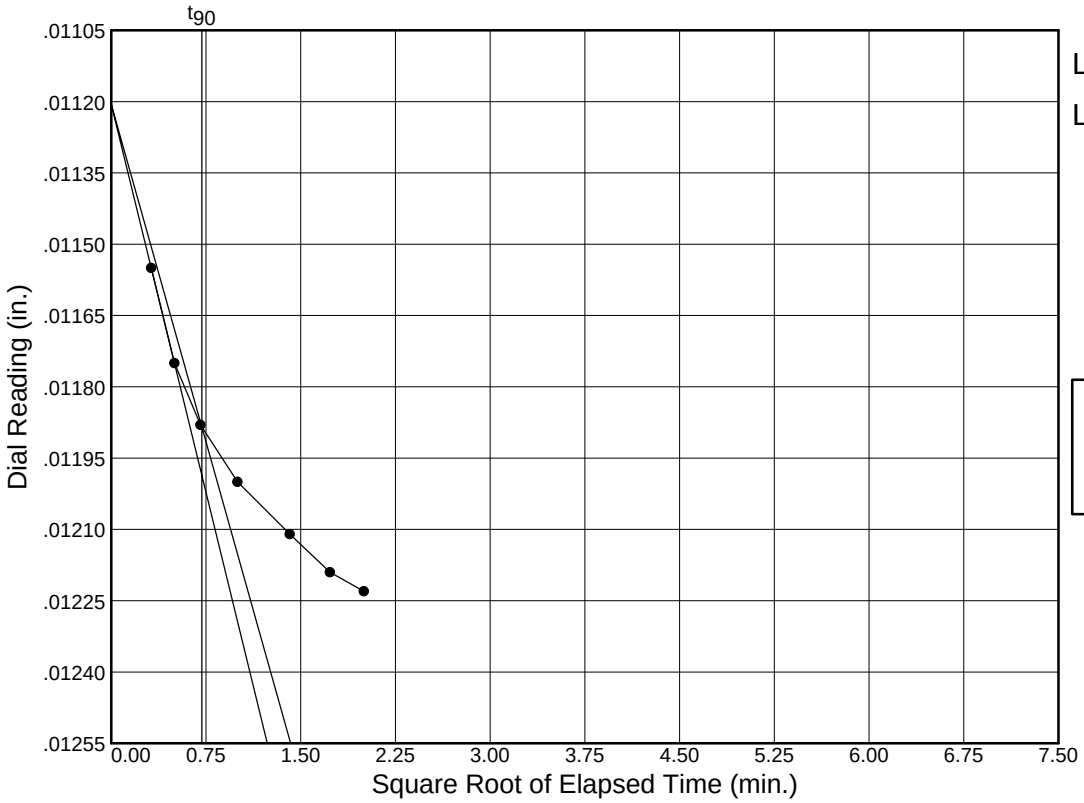
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 3
Load= 0.13 tsf
D_0 = 0.00737
D_{90} = 0.00780
D_{100} = 0.00785
T_{90} = 0.49 min.

C_v @ T_{90}
4.24 ft.^{2}/day



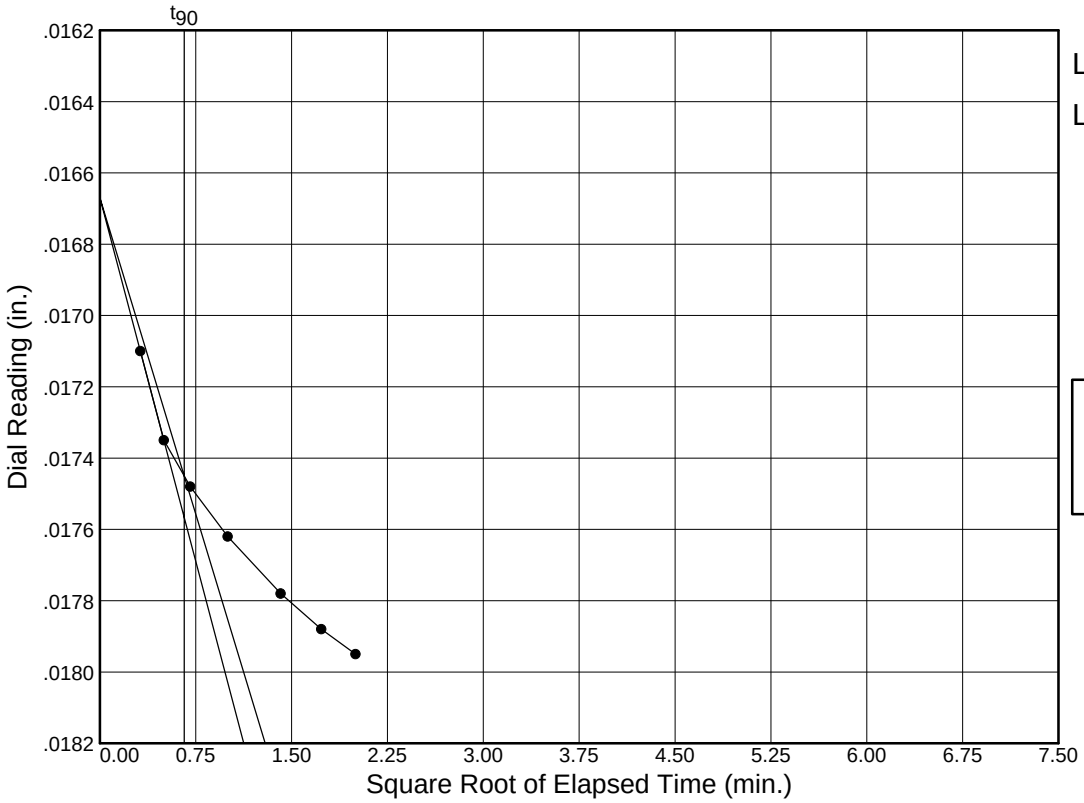
Load No.= 4
Load= 0.25 tsf
D_0 = 0.01121
D_{90} = 0.01188
D_{100} = 0.01196
T_{90} = 0.51 min.

C_v @ T_{90}
4.04 ft.^{2}/day

Consol Plot

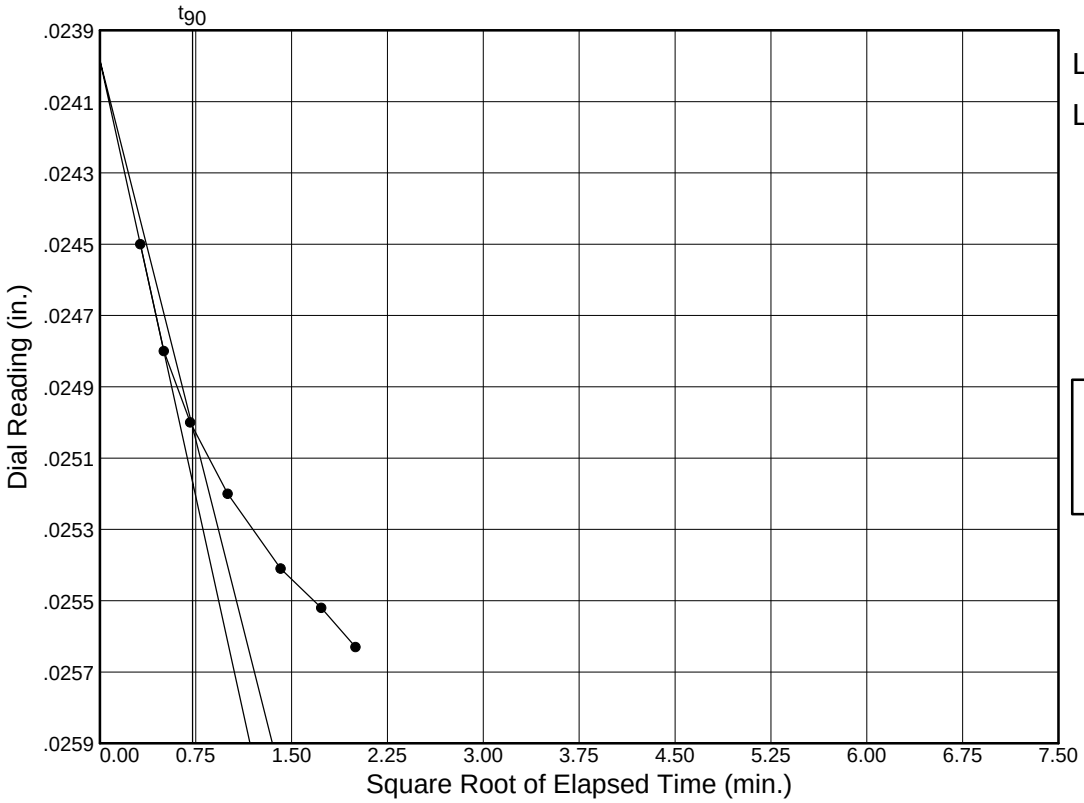
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 5
Load= 0.50 tsf
D_0 = 0.01667
D_{90} = 0.01745
D_{100} = 0.01754
T_{90} = 0.44 min.

C_v @ T_{90}
4.70 ft.^{2}/day



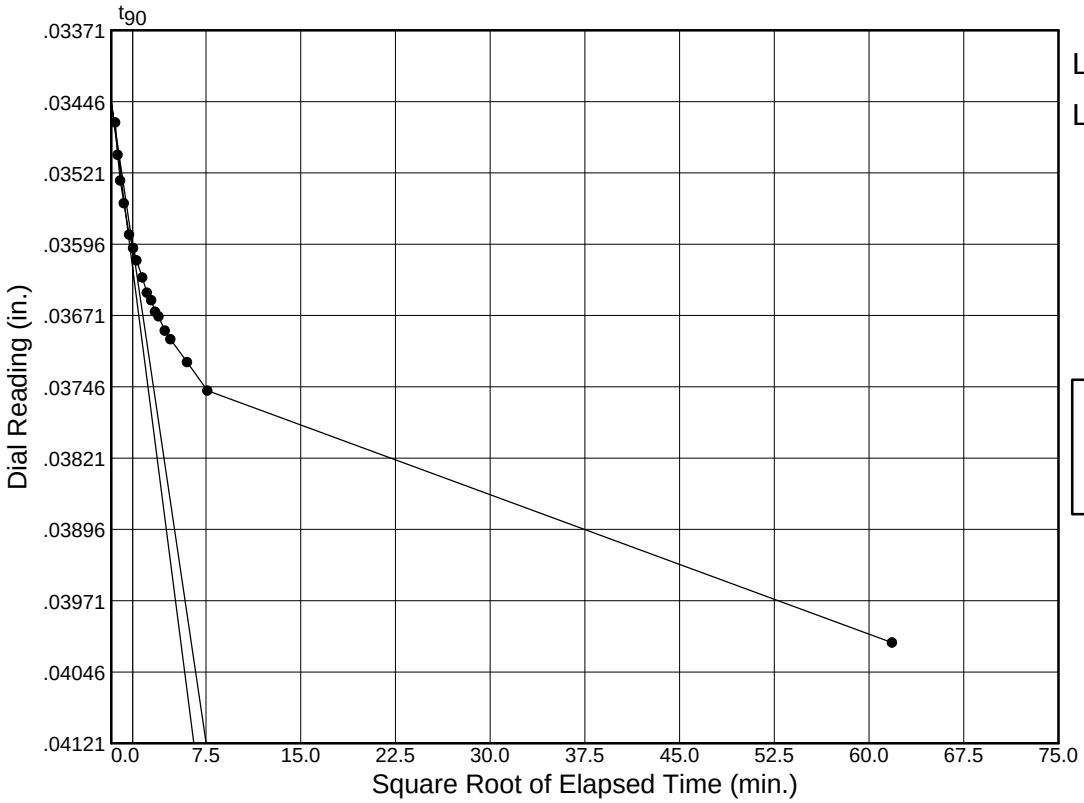
Load No.= 6
Load= 1.00 tsf
D_0 = 0.02398
D_{90} = 0.02501
D_{100} = 0.02513
T_{90} = 0.52 min.

C_v @ T_{90}
3.85 ft.^{2}/day

Consol Plot

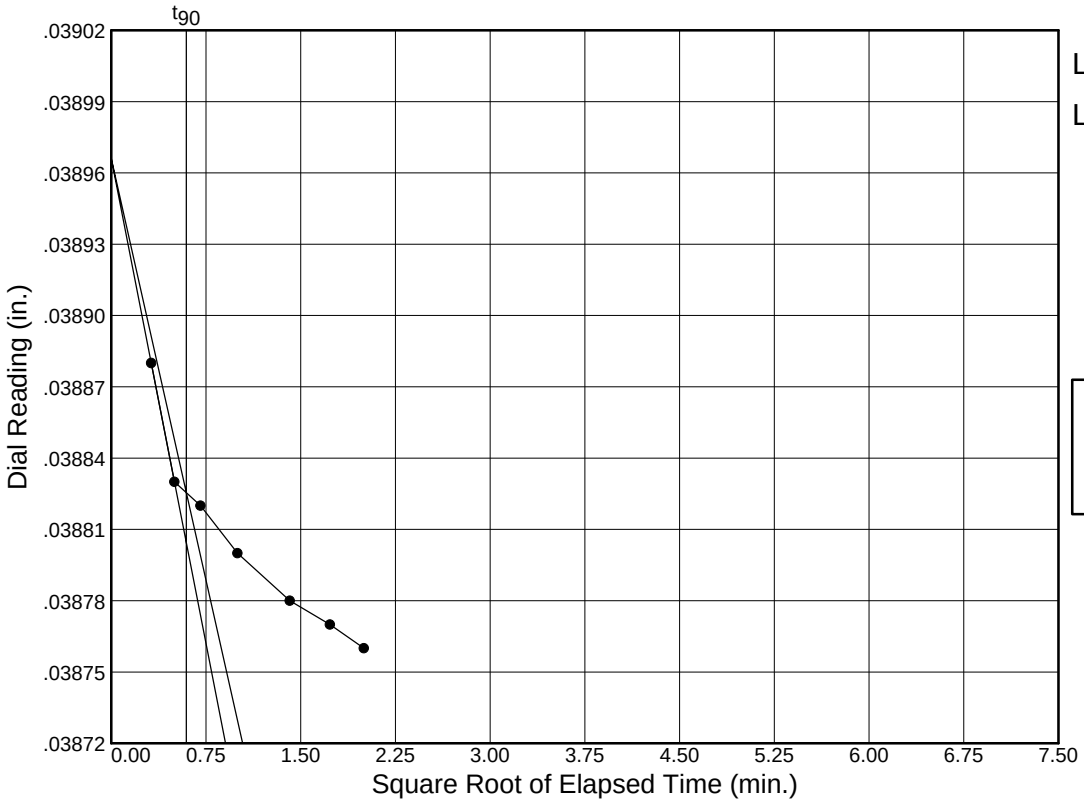
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 7
Load= 2.00 tsf
D_0 = 0.03446
D_{90} = 0.03598
D_{100} = 0.03615
T_{90} = 2.87 min.

C_v @ T_{90}
0.69 ft.^{2}/day



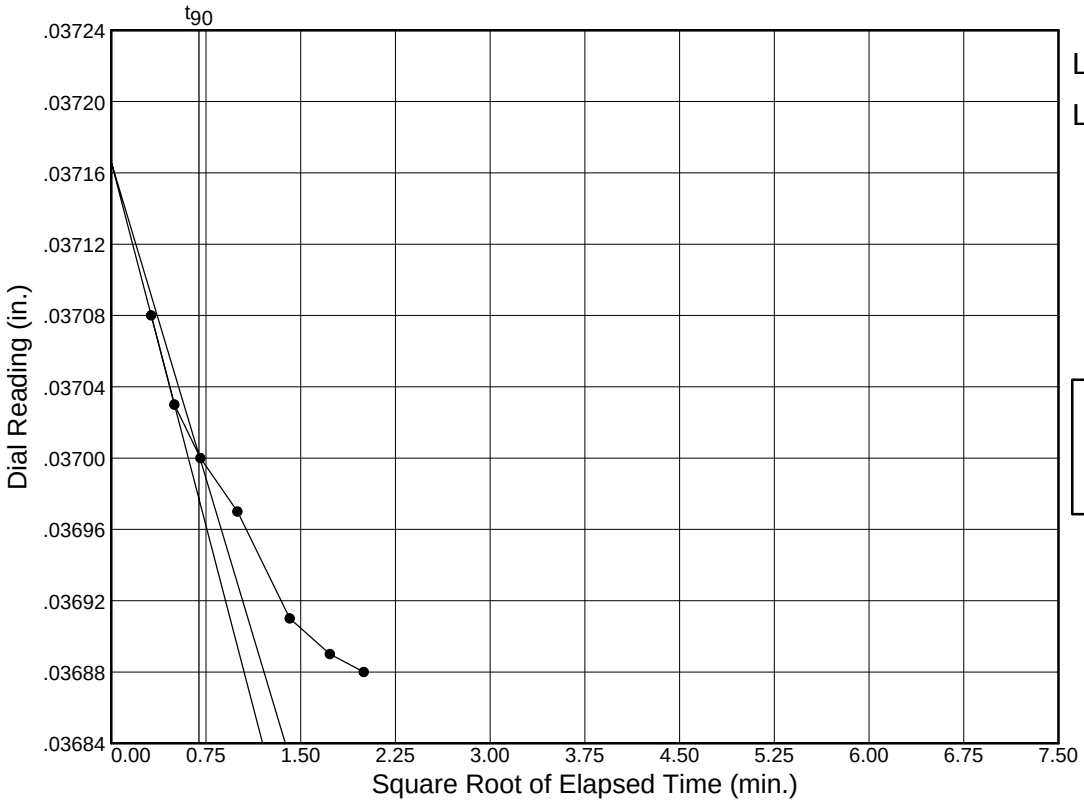
Load No.= 8
Load= 1.00 tsf
D_0 = 0.03897
D_{90} = 0.03883
D_{100} = 0.03881
T_{90} = 0.35 min.

C_v @ T_{90}
5.55 ft.^{2}/day

Consol Plot

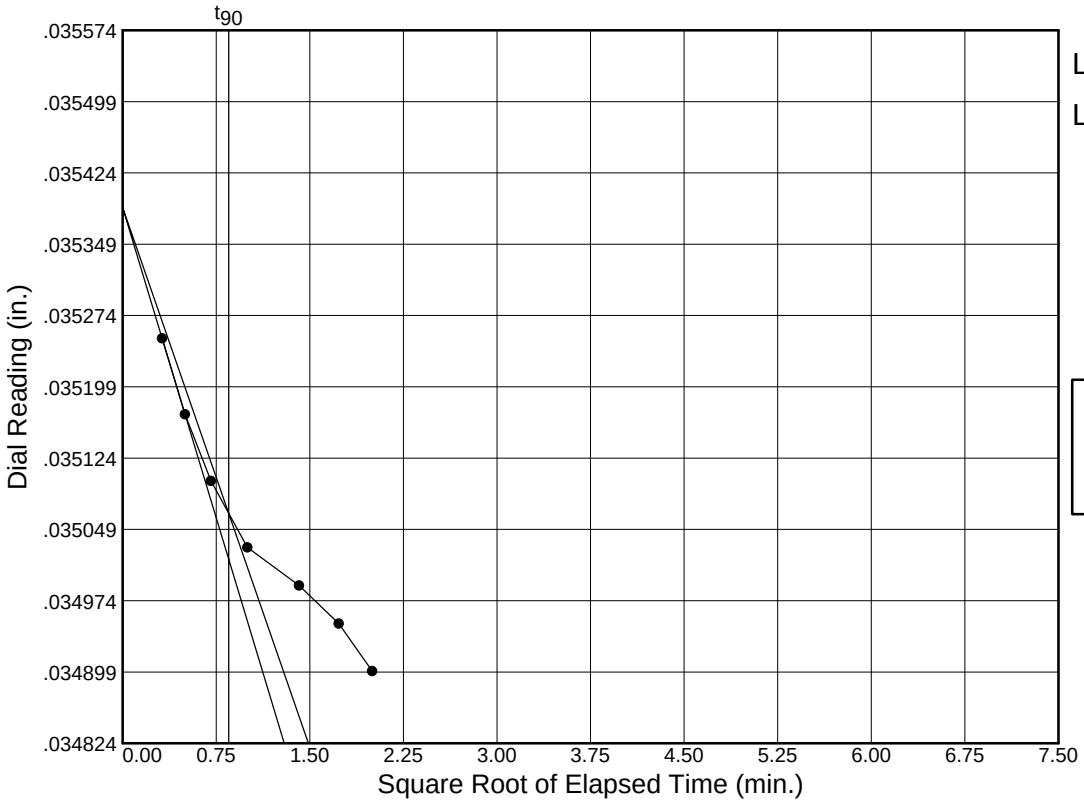
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 9
Load= 0.50 tsf
D_0 = 0.03717
D_{90} = 0.03700
D_{100} = 0.03698
T_{90} = 0.48 min.

C_v @ T_{90}
4.09 ft.^{2}/day



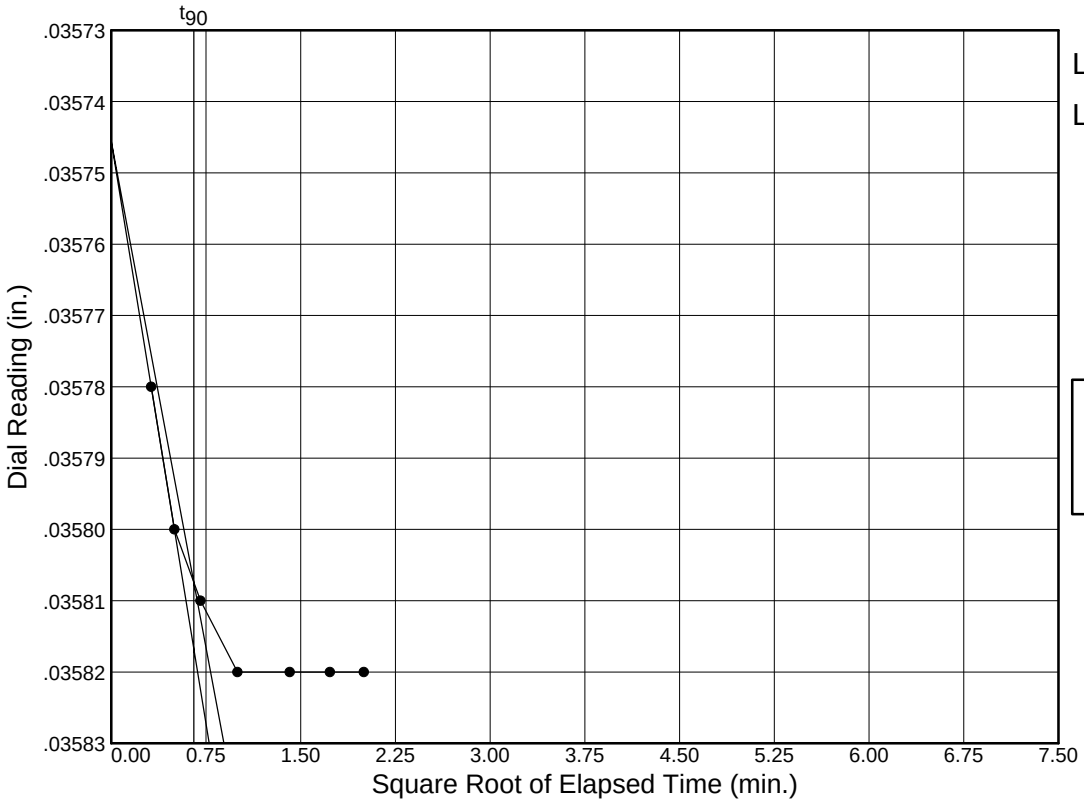
Load No.= 10
Load= 0.25 tsf
D_0 = 0.03539
D_{90} = 0.03507
D_{100} = 0.03503
T_{90} = 0.72 min.

C_v @ T_{90}
2.73 ft.^{2}/day

Consol Plot

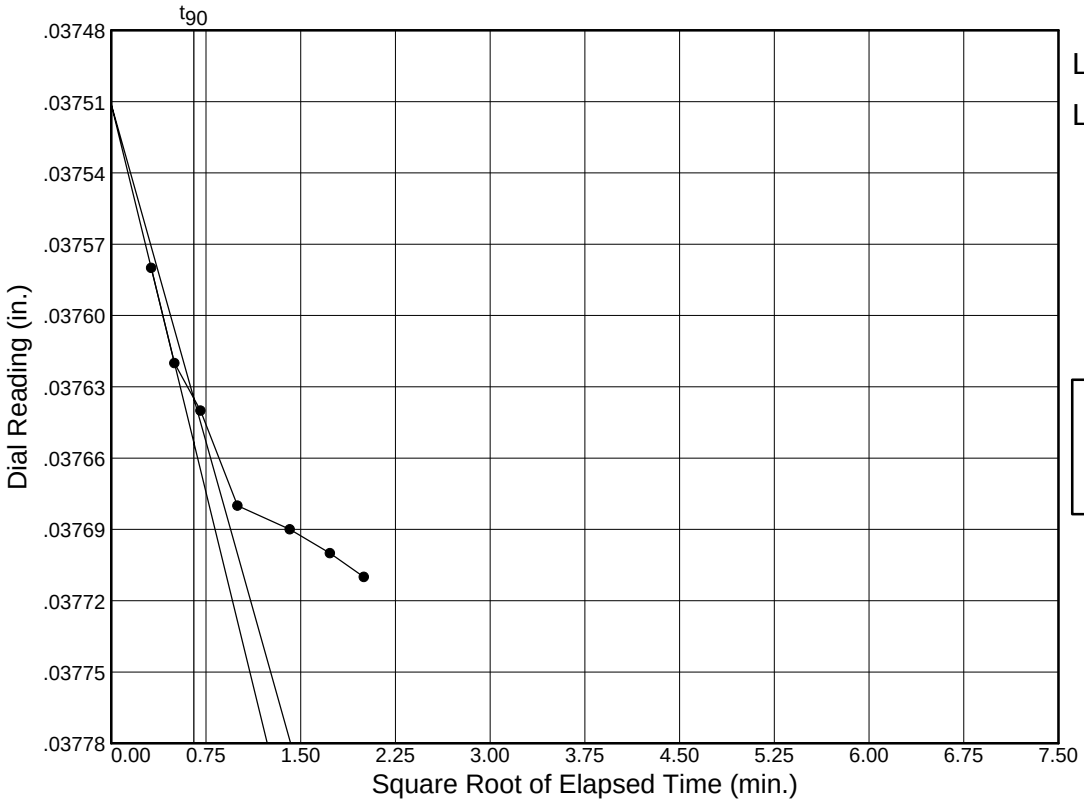
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 11
Load= 0.50 tsf
D_0 = 0.03575
D_{90} = 0.03581
D_{100} = 0.03581
T_{90} = 0.43 min.

C_v @ T_{90}
4.62 ft.^{2}/day



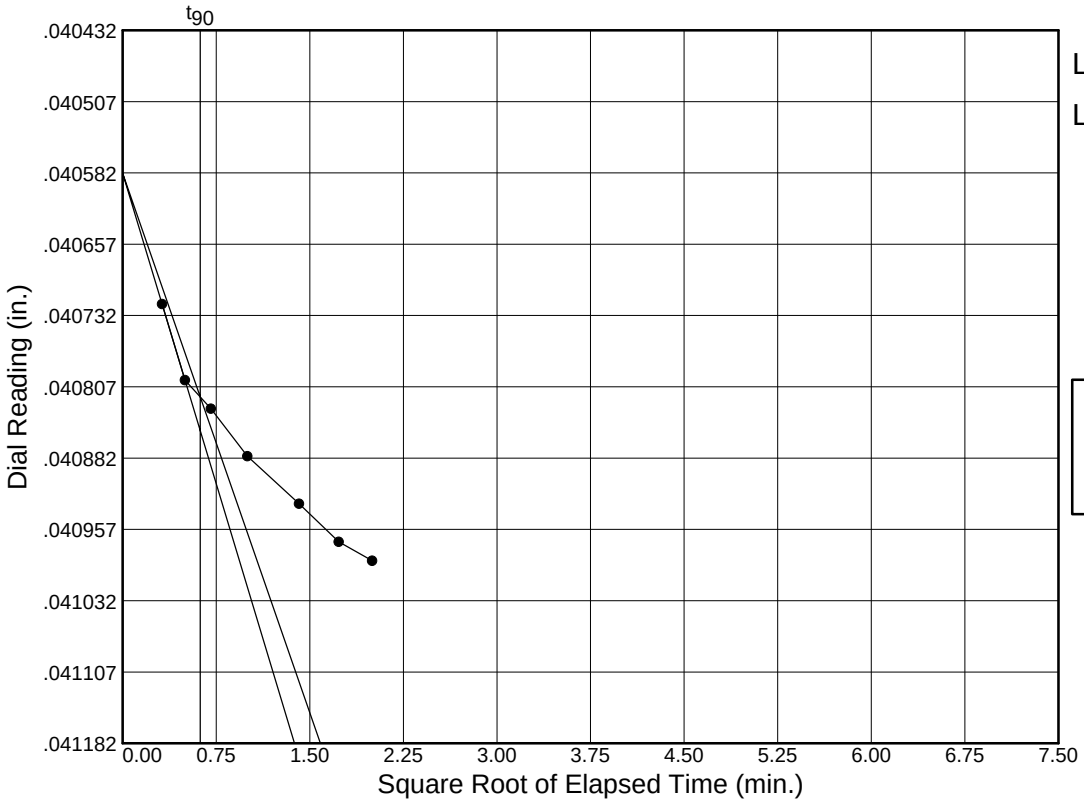
Load No.= 12
Load= 1.00 tsf
D_0 = 0.03751
D_{90} = 0.03763
D_{100} = 0.03765
T_{90} = 0.43 min.

C_v @ T_{90}
4.60 ft.^{2}/day

Consol Plot

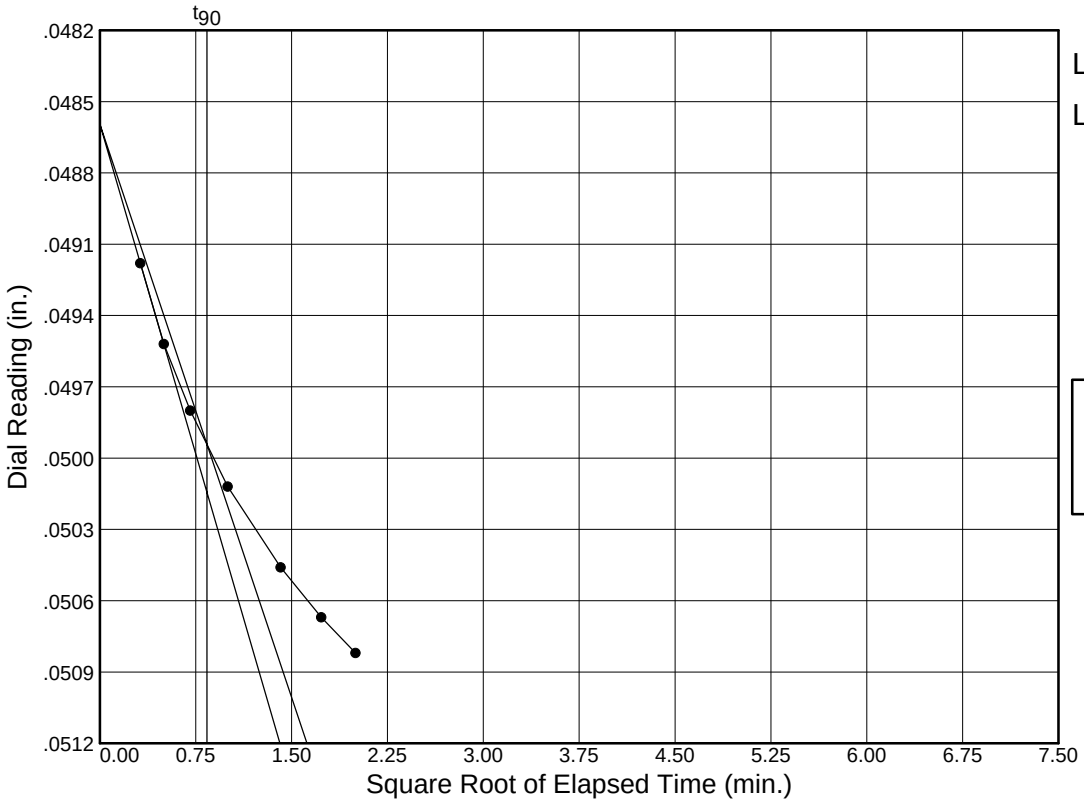
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 13
Load= 2.00 tsf
D_0 = 0.04058
D_{90} = 0.04082
D_{100} = 0.04084
T_{90} = 0.39 min.

C_v @ T_{90}
5.05 ft.^{2}/day



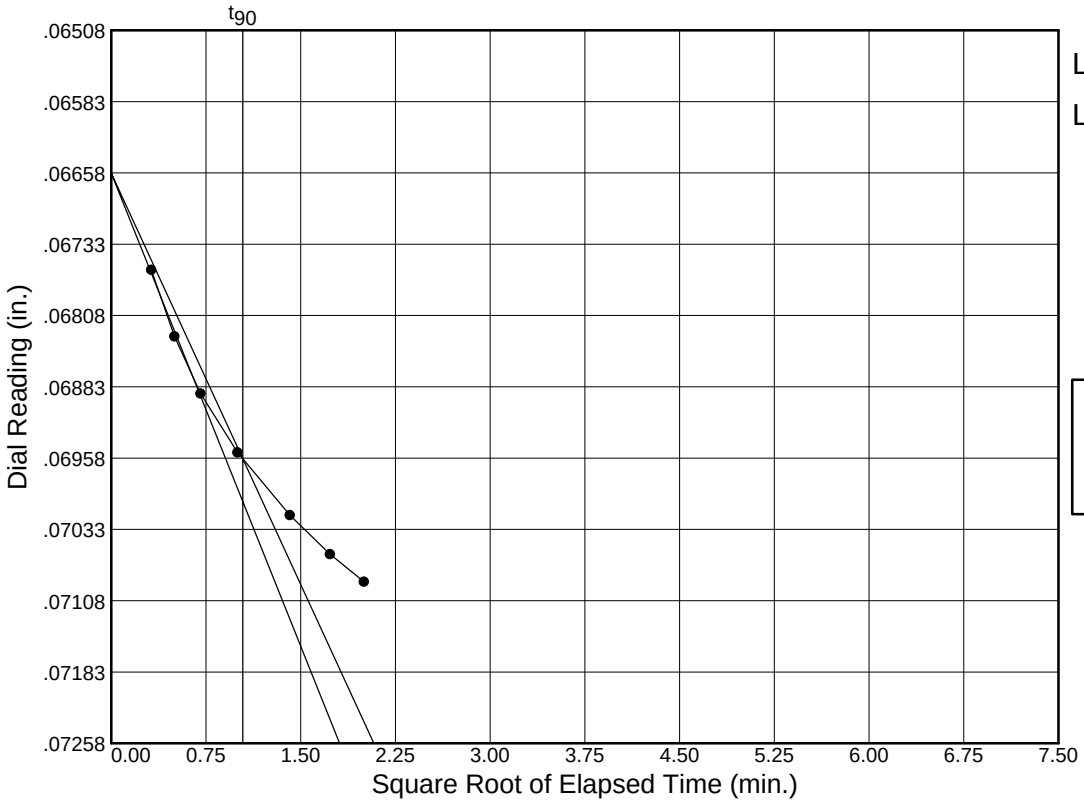
Load No.= 14
Load= 4.00 tsf
D_0 = 0.04859
D_{90} = 0.04994
D_{100} = 0.05009
T_{90} = 0.70 min.

C_v @ T_{90}
2.73 ft.^{2}/day

Consol Plot

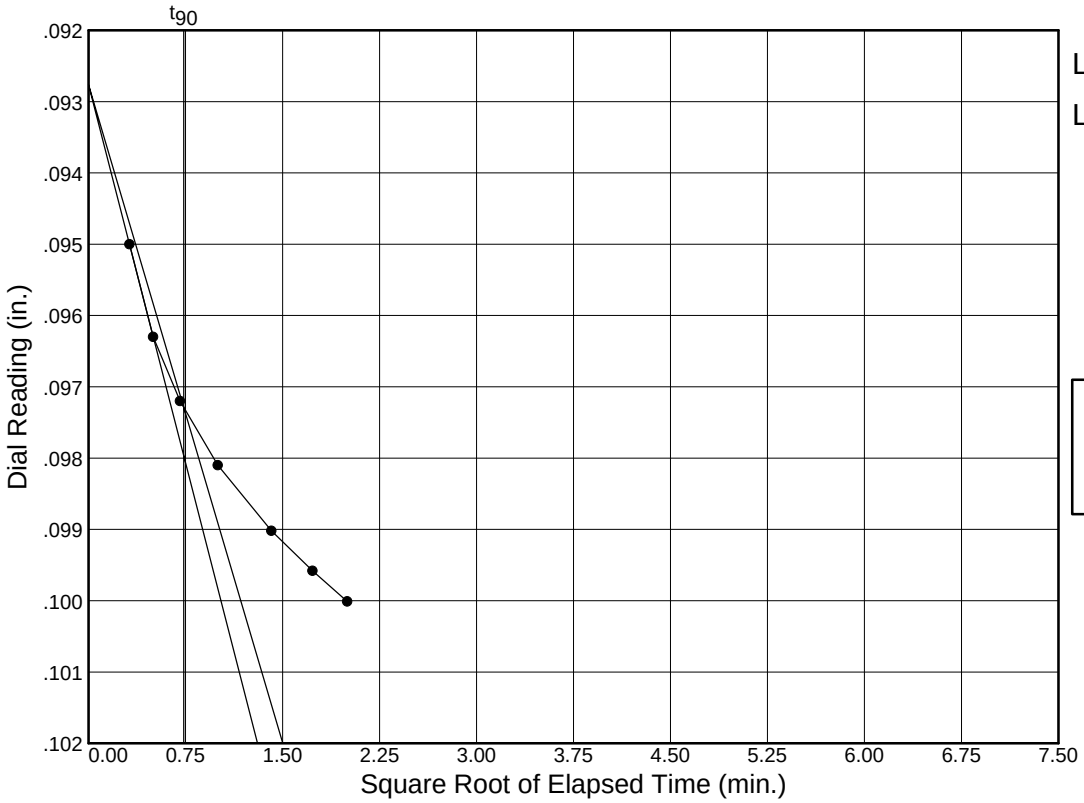
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 15
Load= 8.00 tsf
D_0 = 0.06658
D_{90} = 0.06959
D_{100} = 0.06992
T_{90} = 1.08 min.

C_v @ T_{90}
1.70 ft.^{2}/day



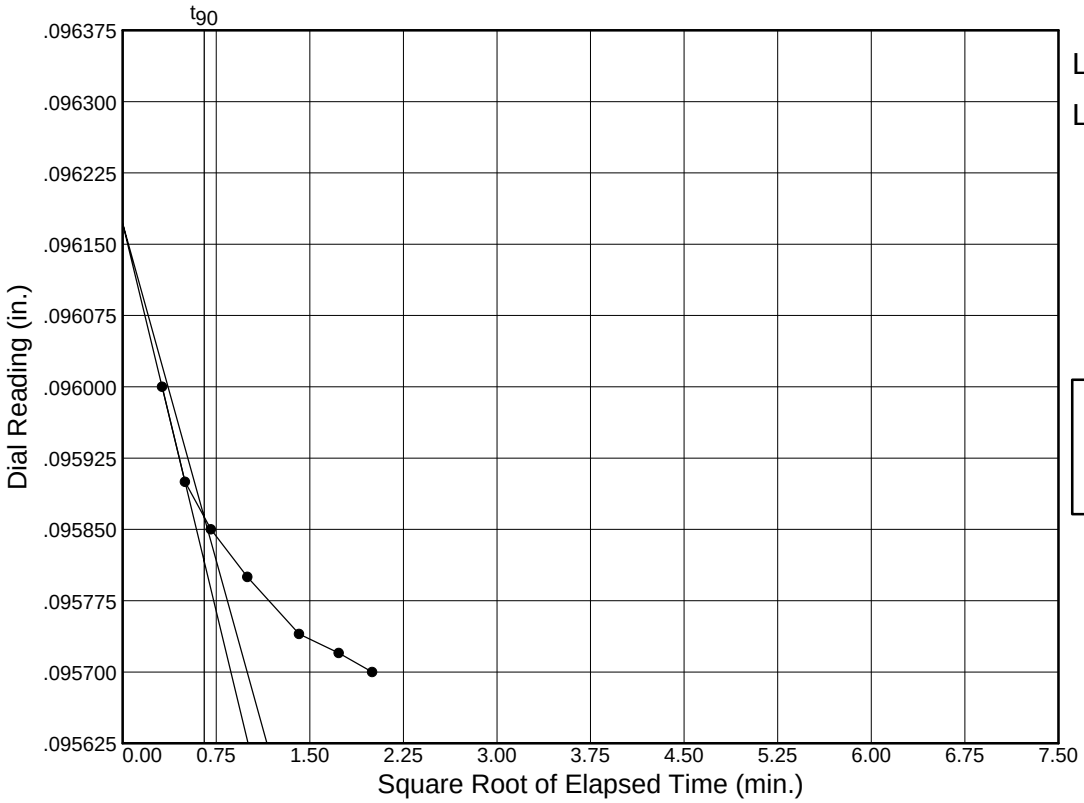
Load No.= 16
Load= 16.00 tsf
D_0 = 0.09276
D_{90} = 0.09729
D_{100} = 0.09779
T_{90} = 0.54 min.

C_v @ T_{90}
3.21 ft.^{2}/day

Consol Plot

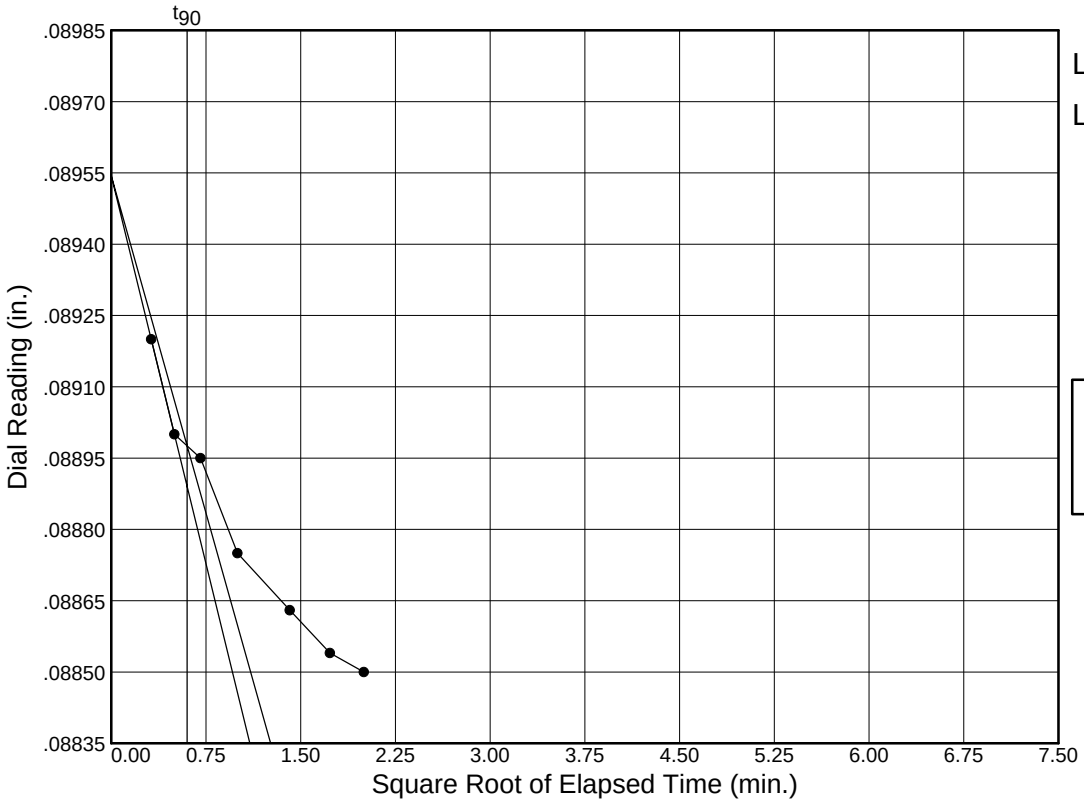
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 17
Load= 4.00 tsf
D_0 = 0.09617
D_{90} = 0.09586
D_{100} = 0.09583
T_{90} = 0.43 min.

C_v @ T_{90}
4.06 ft.^{2}/day



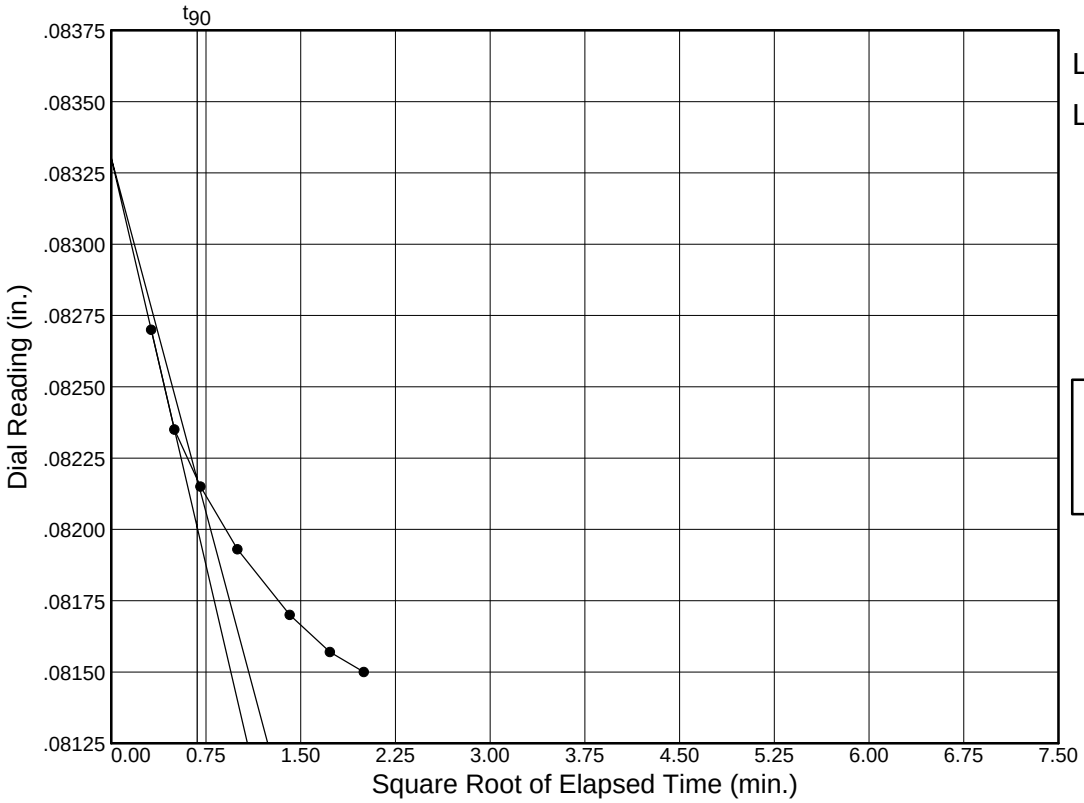
Load No.= 18
Load= 1.00 tsf
D_0 = 0.08954
D_{90} = 0.08898
D_{100} = 0.08891
T_{90} = 0.36 min.

C_v @ T_{90}
4.87 ft.^{2}/day

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-15 Depth 100.7-100.8 ft.



Load No.= 19

Load= 0.25 tsf

D_0 = 0.08330

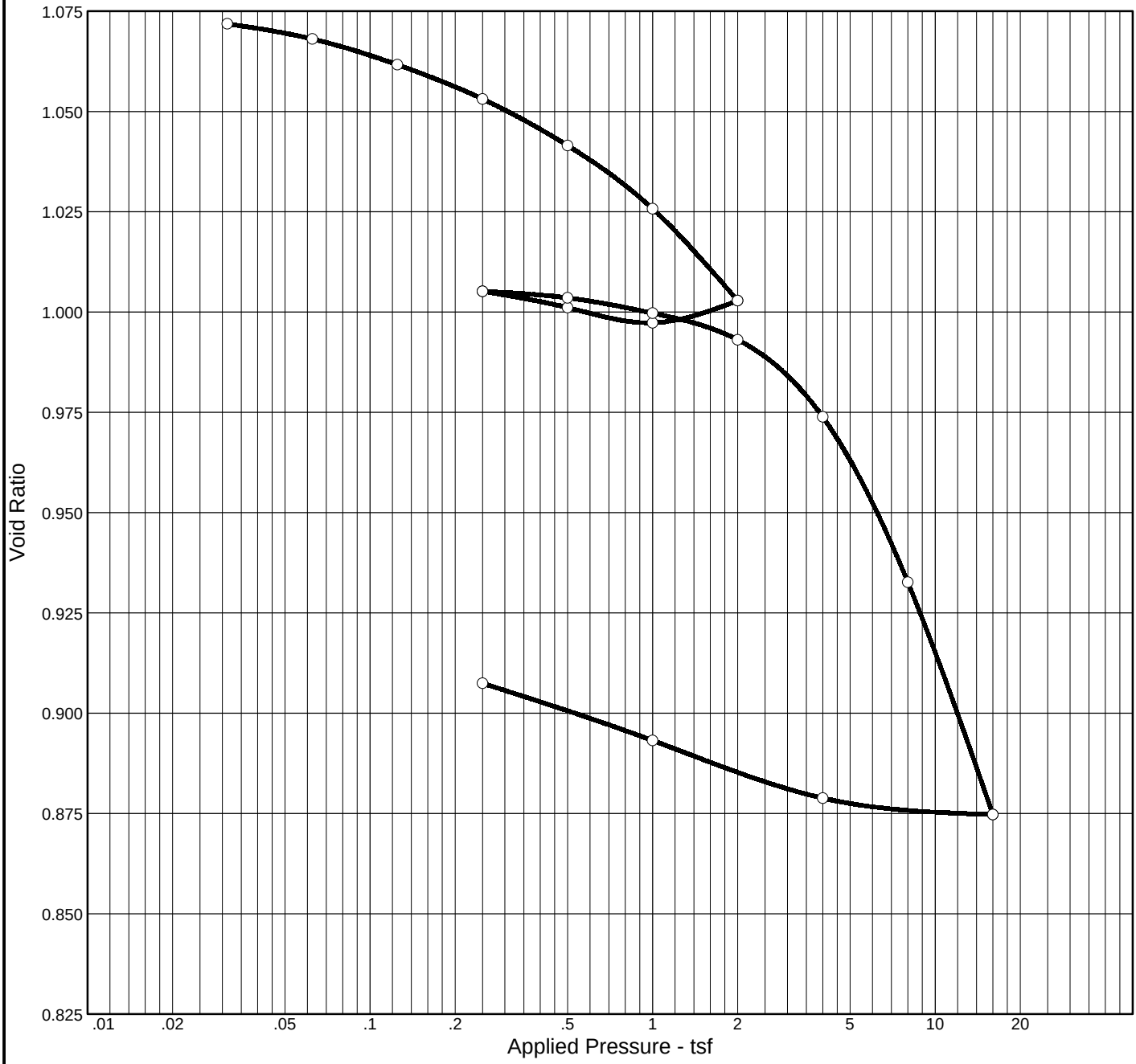
D_{90} = 0.08218

D_{100} = 0.08205

T_{90} = 0.46 min.

C_v @ T_{90}
3.86 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
100.1 %	39.5 %	82.0			2.73			1.078

MATERIAL DESCRIPTION

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-15 Depth 100.7-100.8 ft.

Remarks:

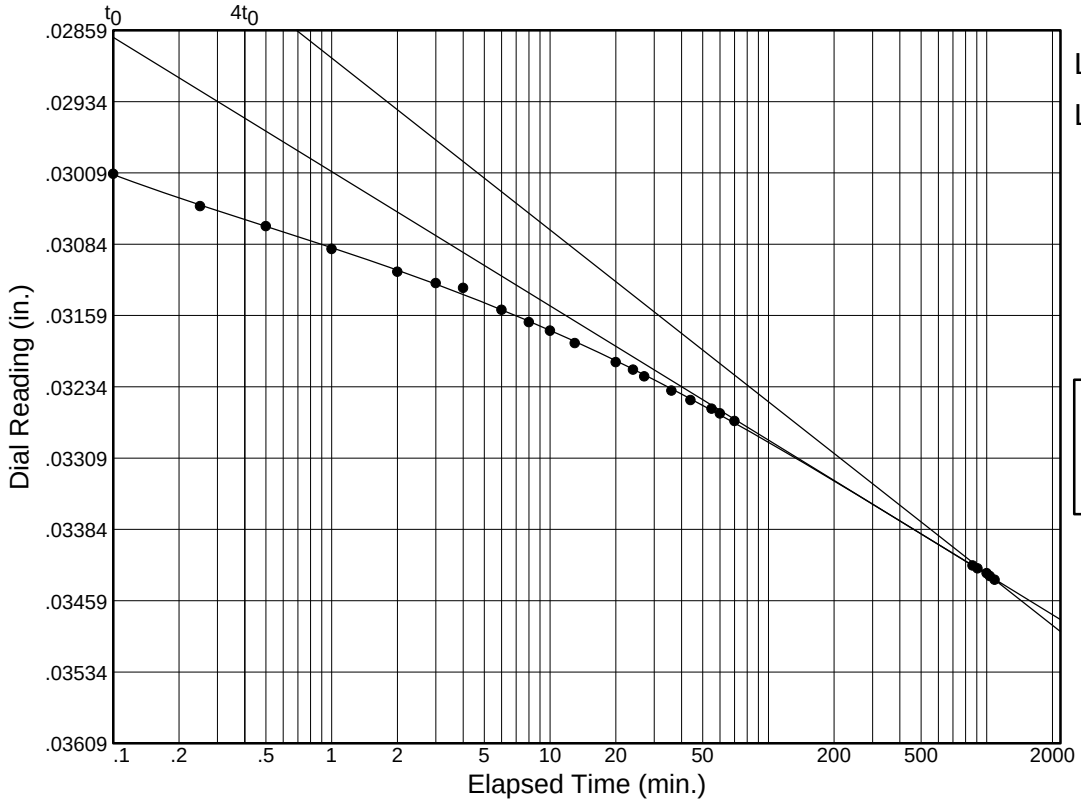
CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 7

Load= 2.00 tsf

D_0 = 0.02963

D_{50} = 0.03199

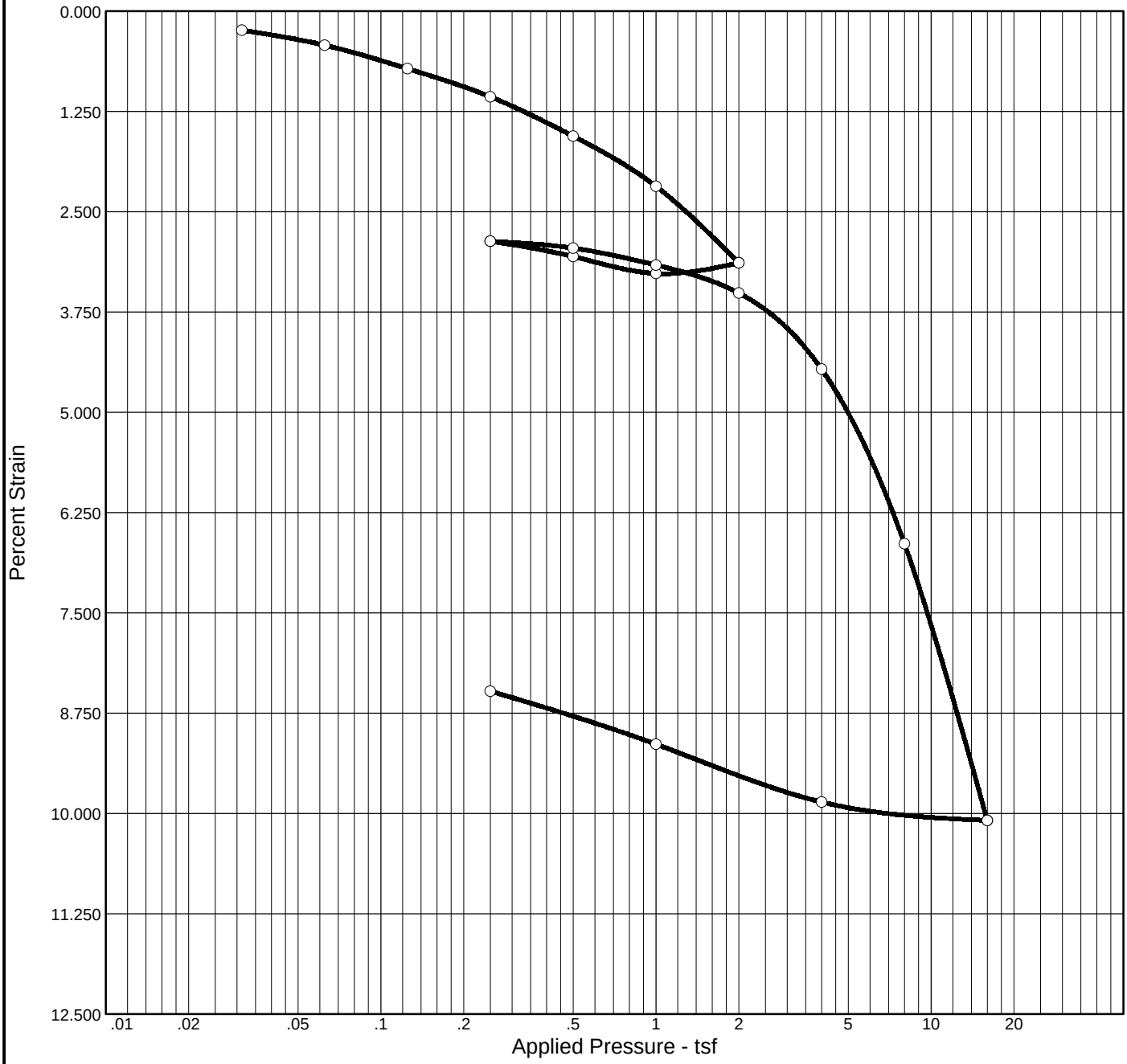
D_{100} = 0.03434

T_{50} = 16.93 min.

C_v @ T_{50}
0.03 ft.^{2}/day

C_α = 0.002

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
99.5 %	39.5 %	81.4	GNP	GNP	2.7	ML		1.072

MATERIAL DESCRIPTION

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-17 Depth 110.5-110.6 ft.

Remarks:
Stiff,wet,Silt with sand
Granular non-plastic GNP

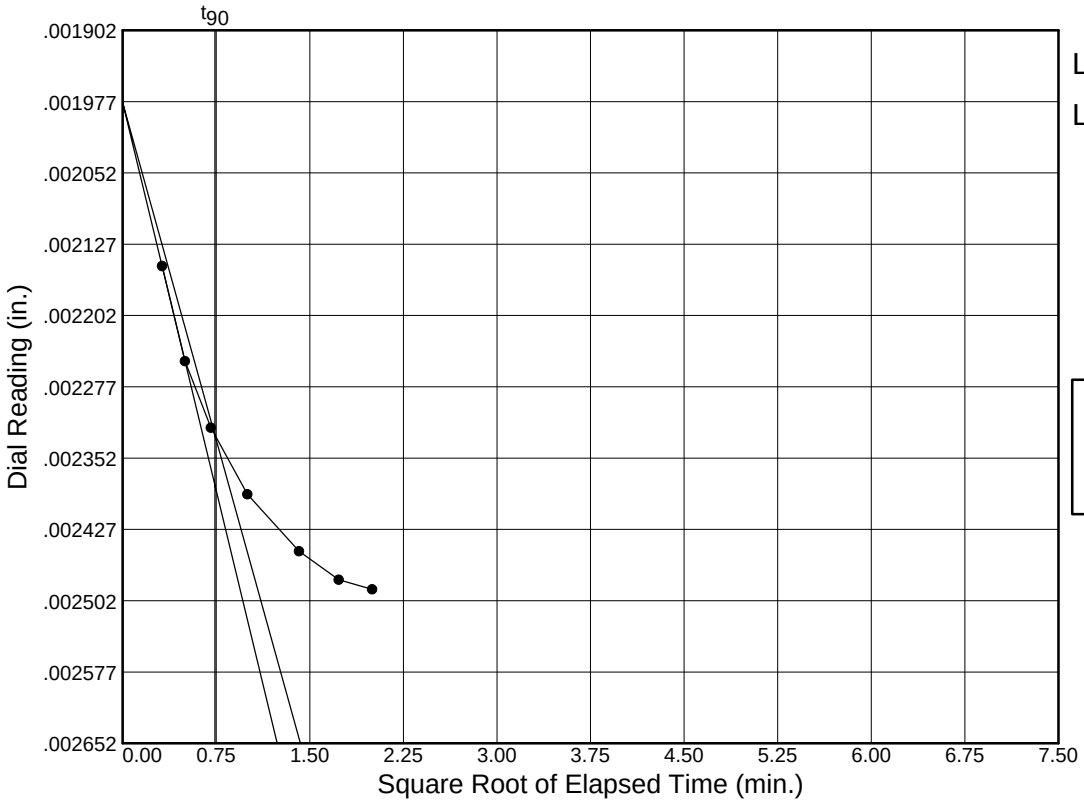
CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

Consol Plot

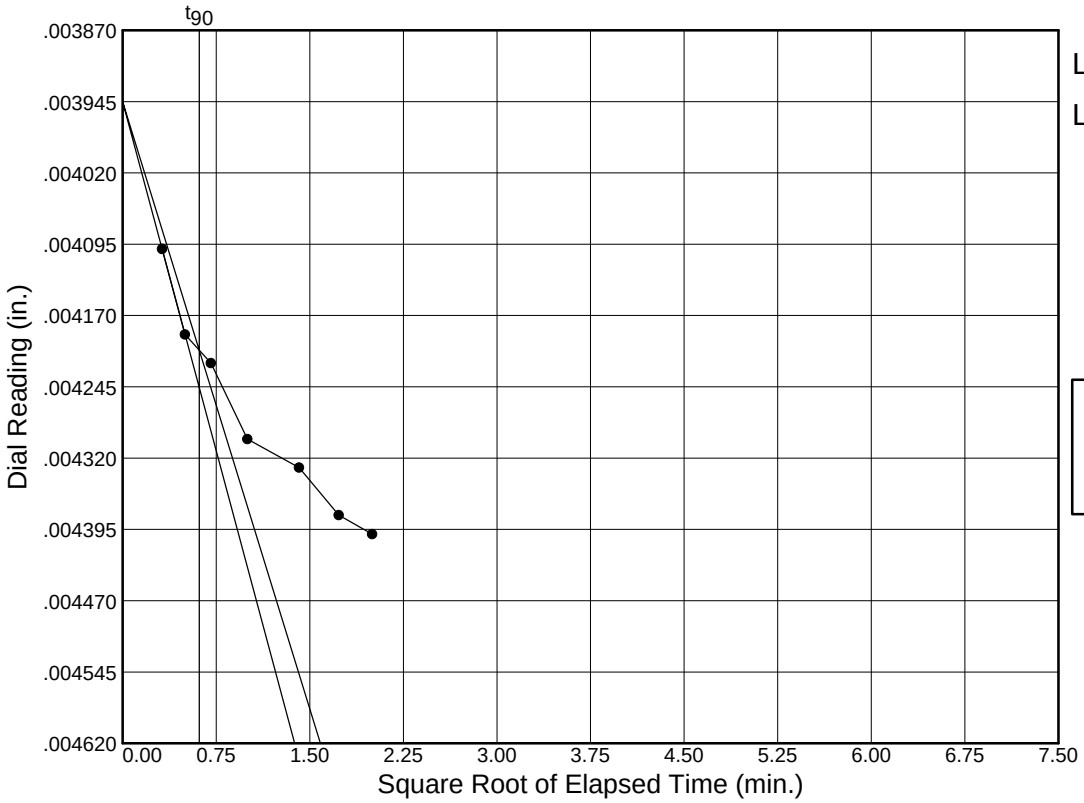
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 1
Load= 0.03 tsf
D_0 = 0.00198
D_{90} = 0.00233
D_{100} = 0.00237
T_{90} = 0.55 min.

C_v @ T_{90}
3.86 ft.^{2}/day



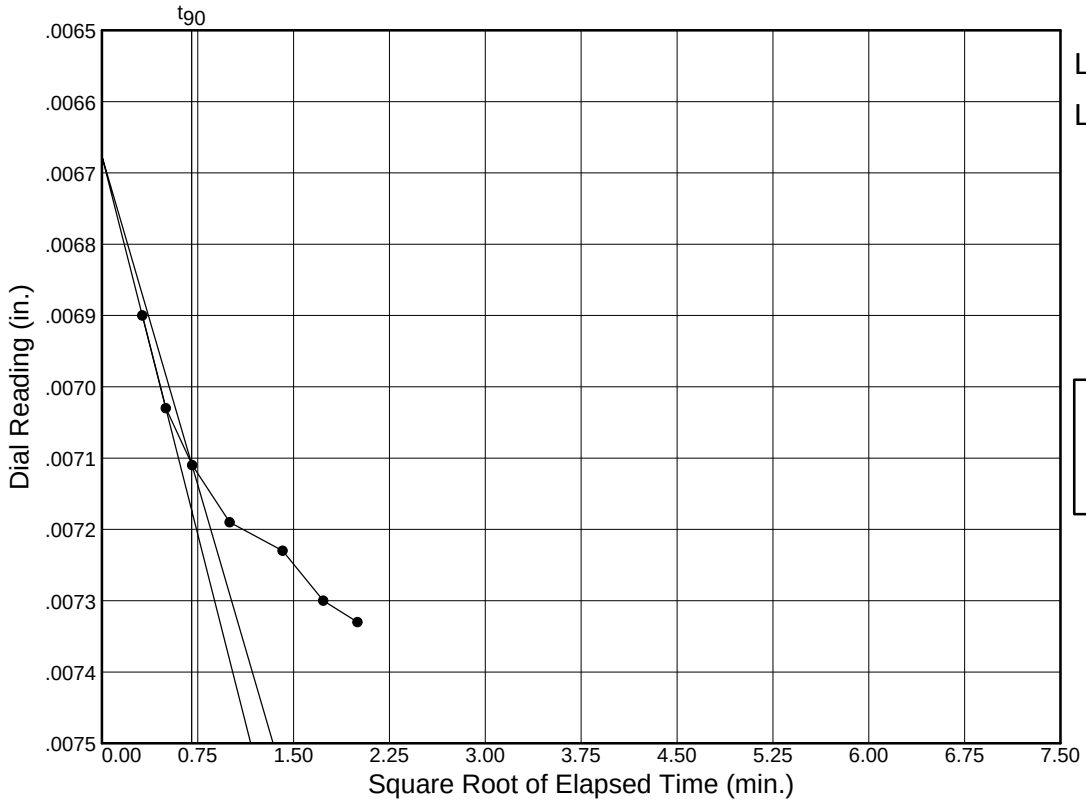
Load No.= 2
Load= 0.06 tsf
D_0 = 0.00395
D_{90} = 0.00421
D_{100} = 0.00424
T_{90} = 0.38 min.

C_v @ T_{90}
5.58 ft.^{2}/day

Consol Plot

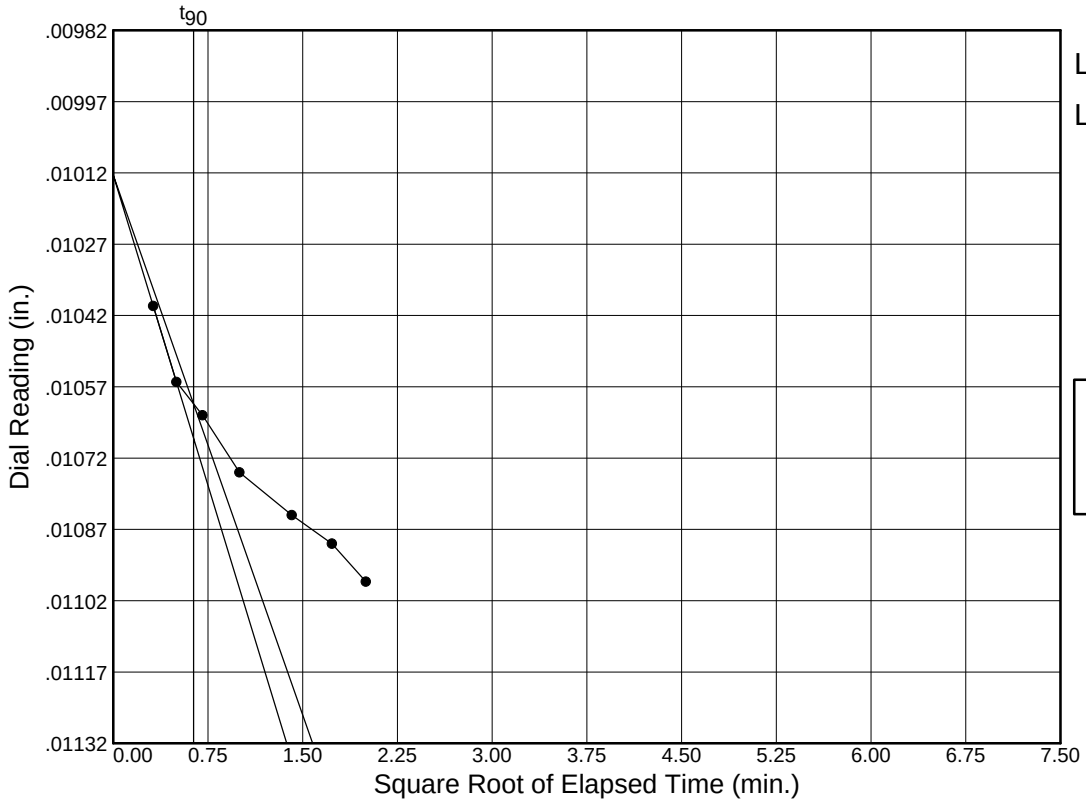
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 3
Load= 0.13 tsf
D_0 = 0.00668
D_{90} = 0.00711
D_{100} = 0.00716
T_{90} = 0.49 min.

C_v @ T_{90}
4.25 ft.^{2}/day

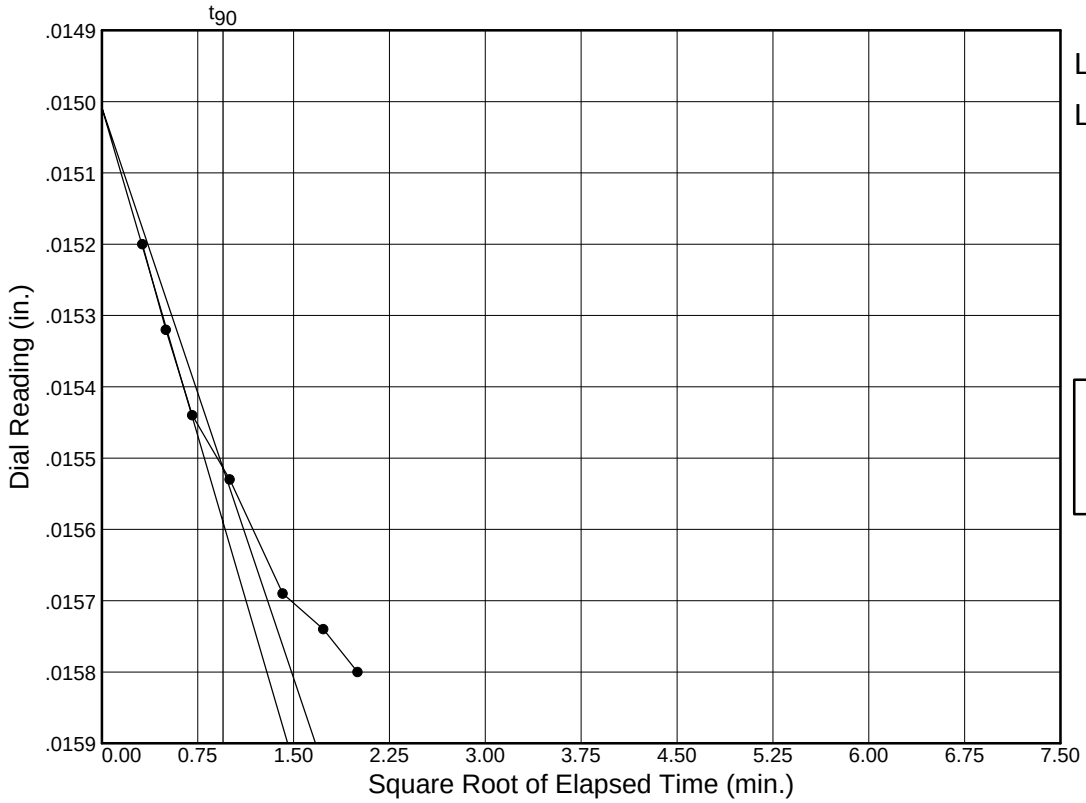


Load No.= 4
Load= 0.25 tsf
D_0 = 0.01012
D_{90} = 0.01061
D_{100} = 0.01066
T_{90} = 0.40 min.

C_v @ T_{90}
5.14 ft.^{2}/day

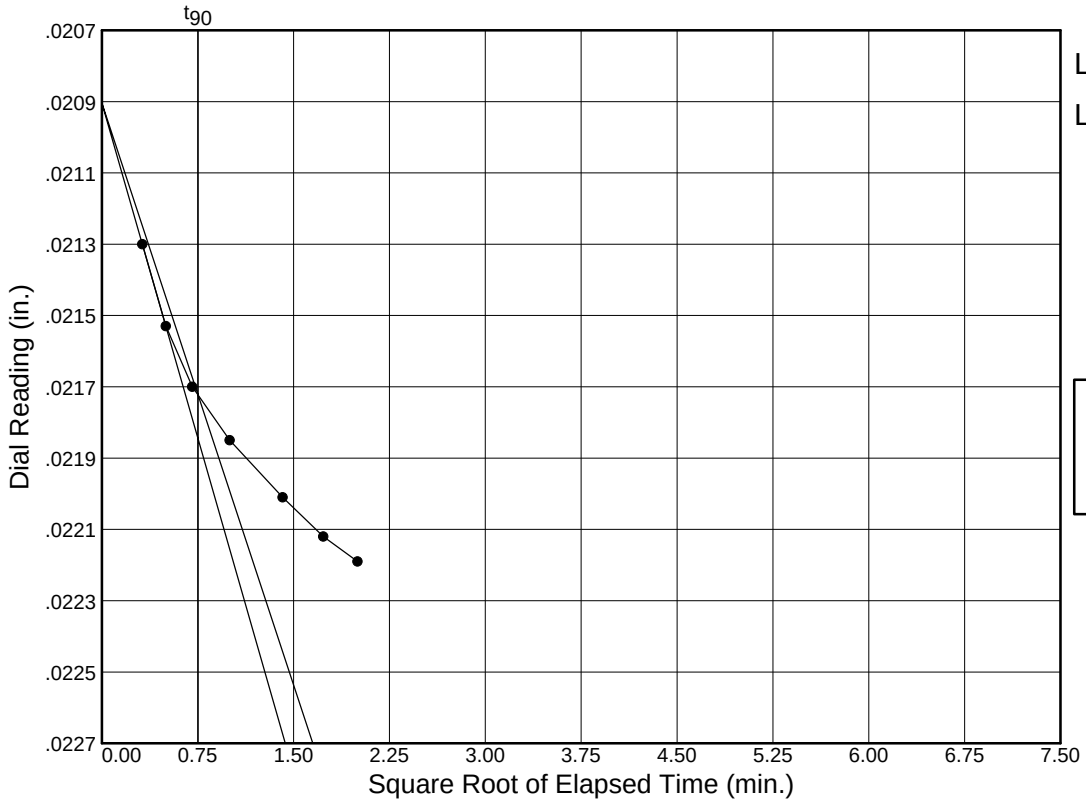
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 5
Load= 0.50 tsf
D_0 = 0.01501
D_{90} = 0.01551
D_{100} = 0.01557
T_{90} = 0.90 min.

C_v @ T_{90}
2.29 ft.^{2}/day



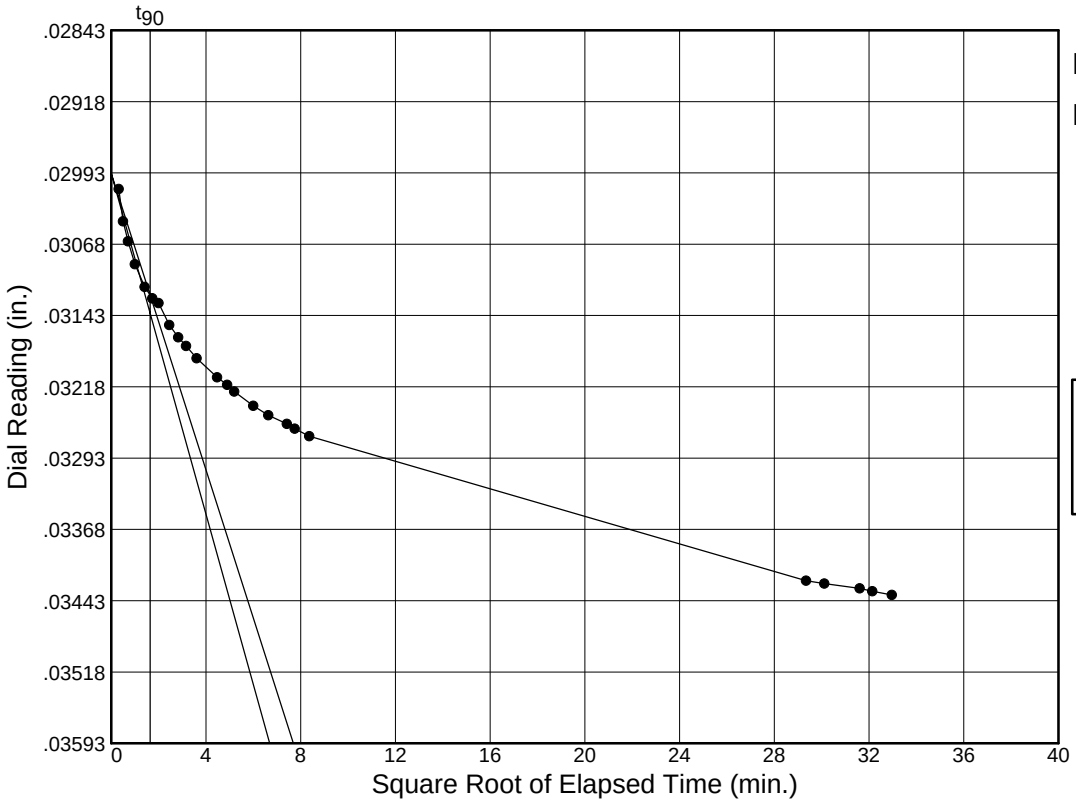
Load No.= 6
Load= 1.00 tsf
D_0 = 0.02090
D_{90} = 0.02172
D_{100} = 0.02181
T_{90} = 0.57 min.

C_v @ T_{90}
3.58 ft.^{2}/day

Consol Plot

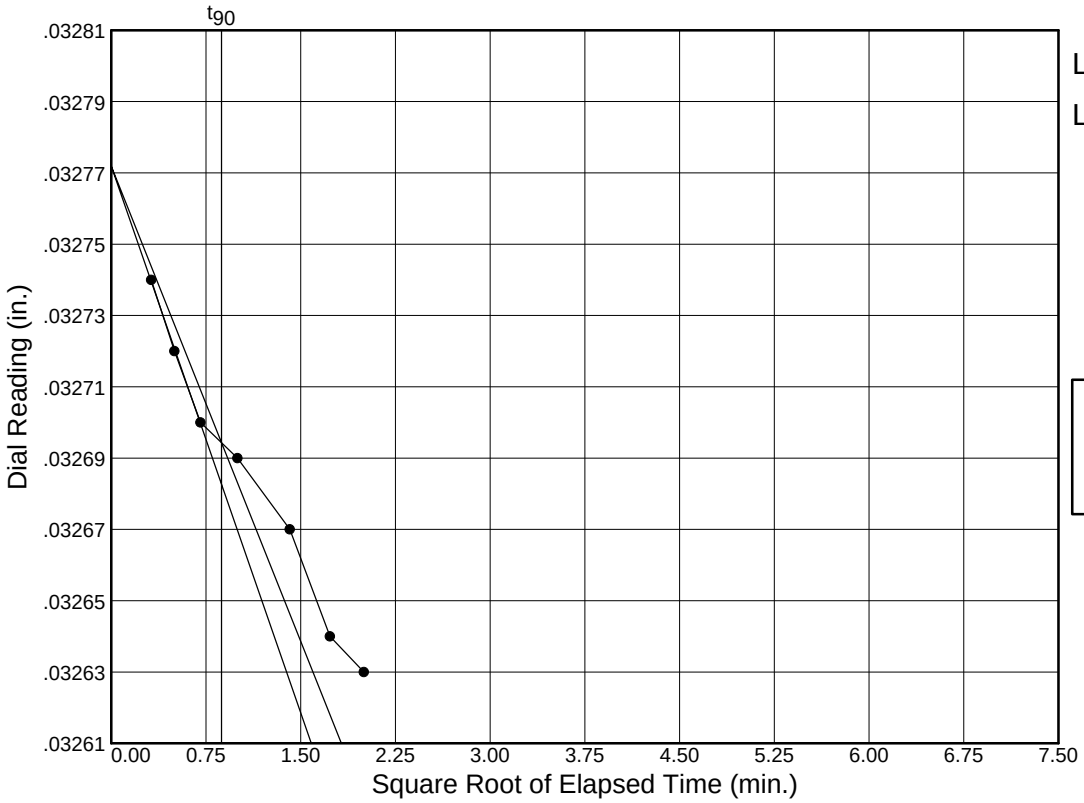
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 7
Load= 2.00 tsf
D_0 = 0.02994
D_{90} = 0.03122
D_{100} = 0.03136
T_{90} = 2.70 min.

C_v @ T_{90}
0.74 ft.^{2}/day

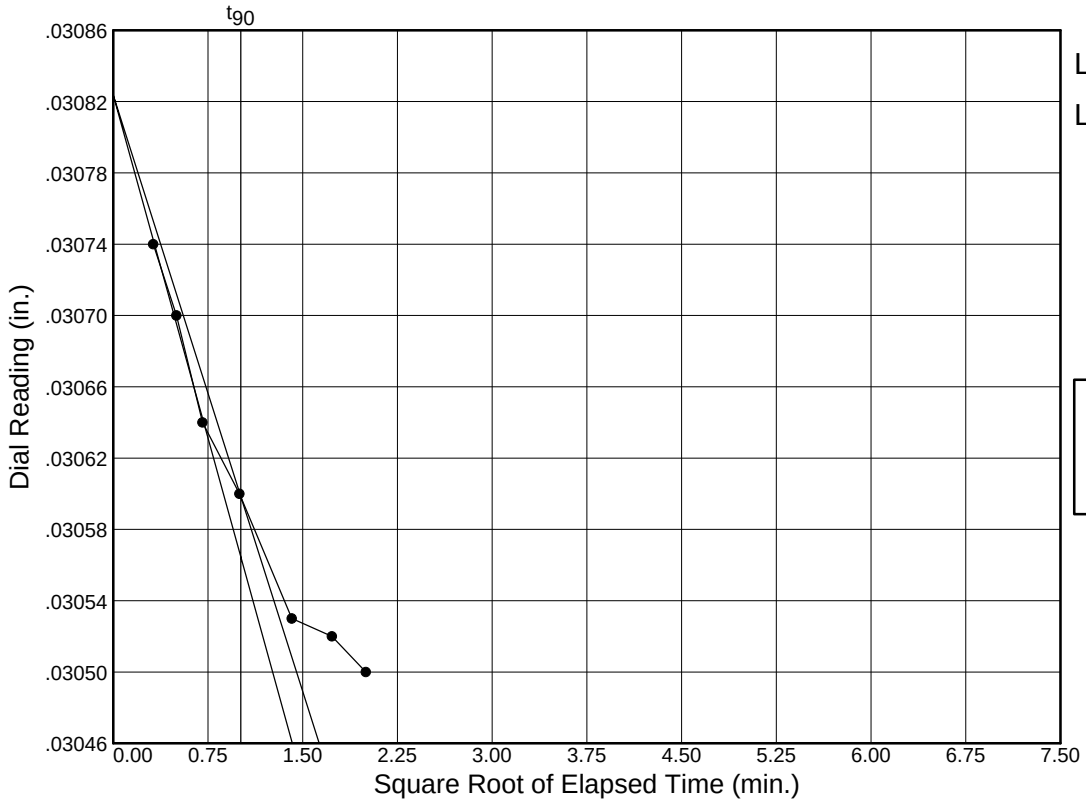


Load No.= 8
Load= 1.00 tsf
D_0 = 0.03277
D_{90} = 0.03269
D_{100} = 0.03269
T_{90} = 0.76 min.

C_v @ T_{90}
2.61 ft.^{2}/day

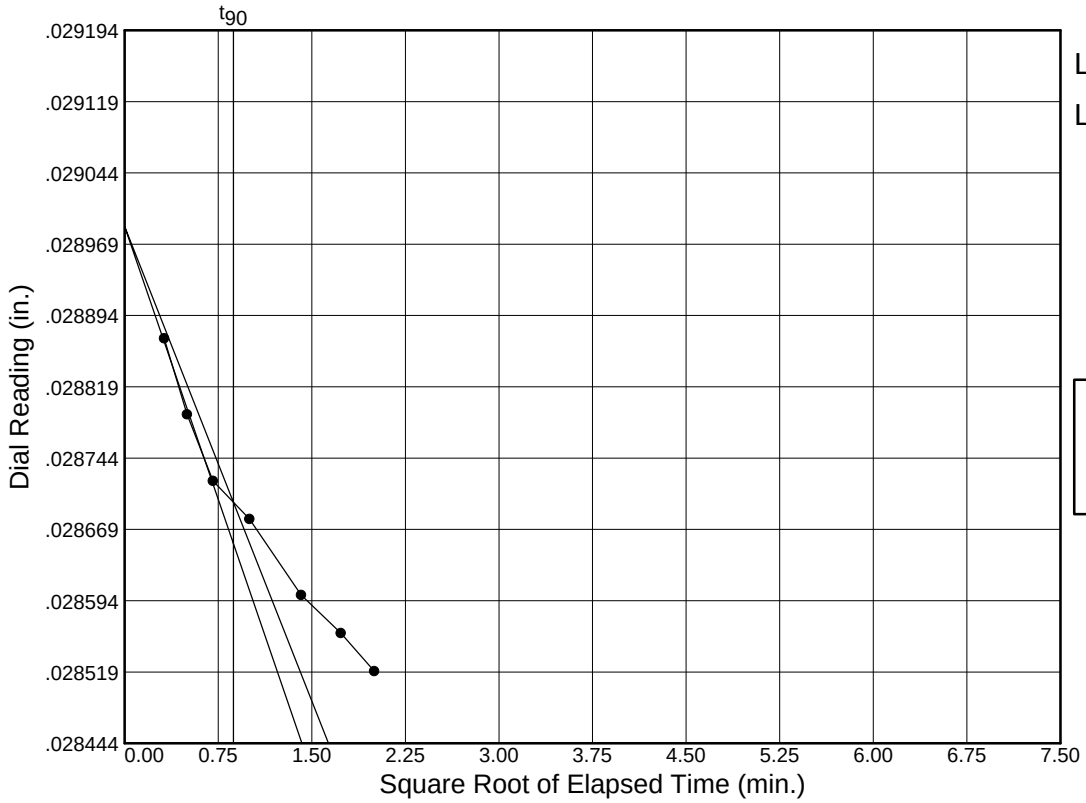
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 9
Load= 0.50 tsf
D_0 = 0.03082
D_{90} = 0.03060
D_{100} = 0.03057
T_{90} = 1.02 min.

C_v @ T_{90}
1.95 ft.^{2}/day

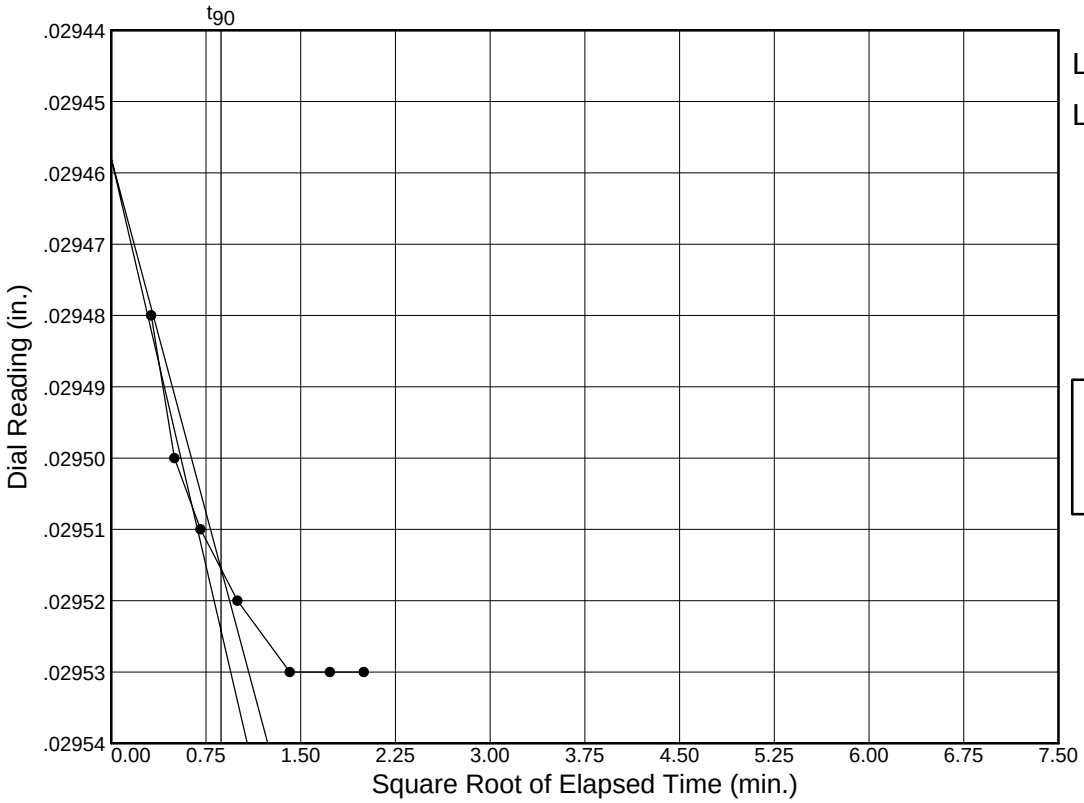


Load No.= 10
Load= 0.25 tsf
D_0 = 0.02899
D_{90} = 0.02870
D_{100} = 0.02867
T_{90} = 0.76 min.

C_v @ T_{90}
2.63 ft.^{2}/day

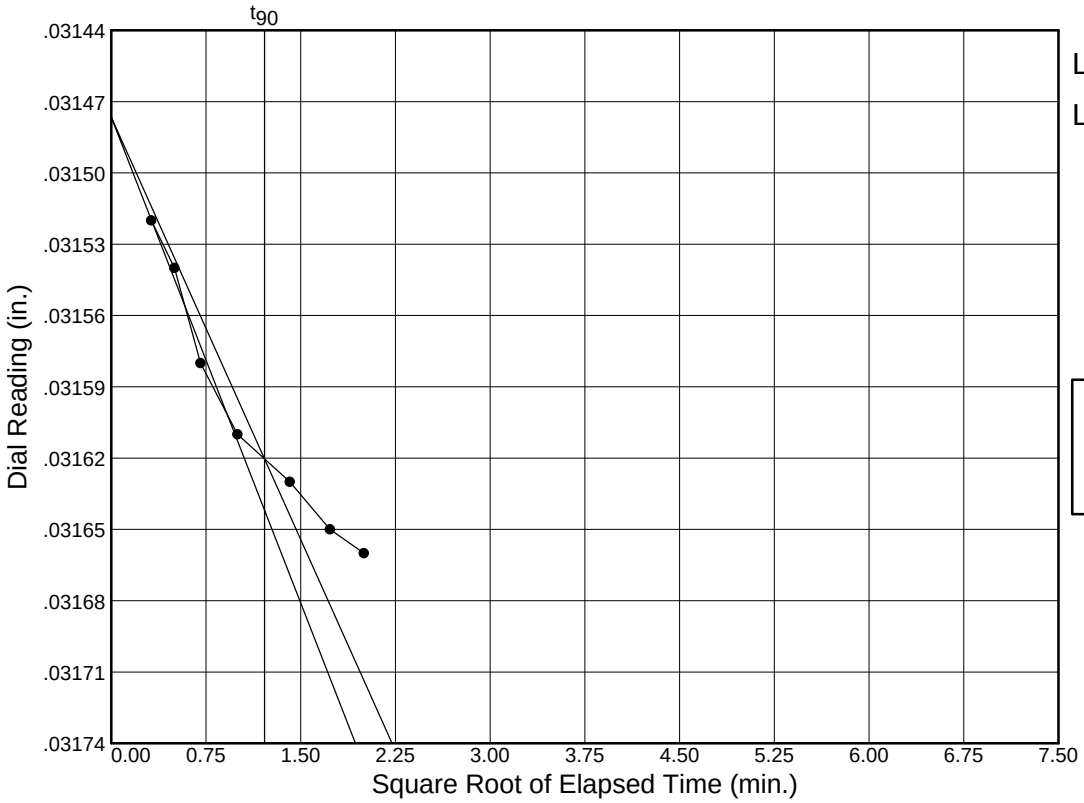
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 11
Load= 0.50 tsf
D_0 = 0.02946
D_{90} = 0.02952
D_{100} = 0.02952
T_{90} = 0.75 min.

C_v @ T_{90}
2.65 ft.^{2}/day

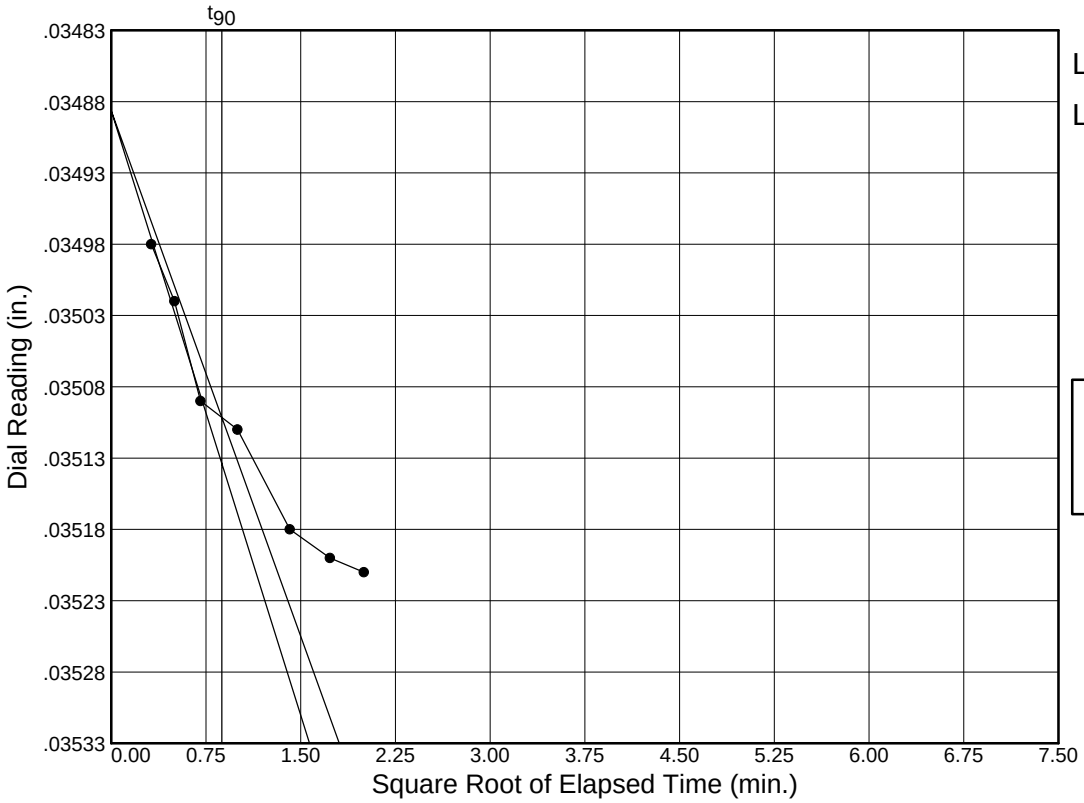


Load No.= 12
Load= 1.00 tsf
D_0 = 0.03148
D_{90} = 0.03162
D_{100} = 0.03164
T_{90} = 1.47 min.

C_v @ T_{90}
1.35 ft.^{2}/day

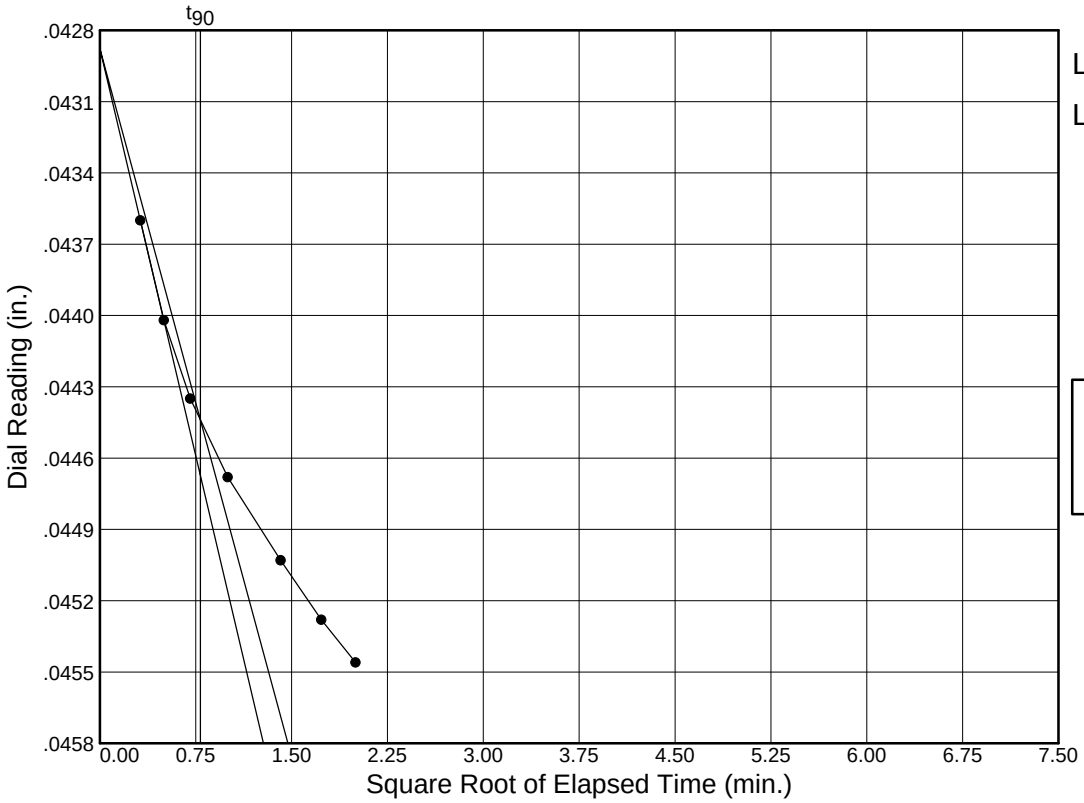
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 13
Load= 2.00 tsf
D_0 = 0.03489
D_{90} = 0.03510
D_{100} = 0.03513
T_{90} = 0.77 min.

C_v @ T_{90}
2.58 ft.^{2}/day

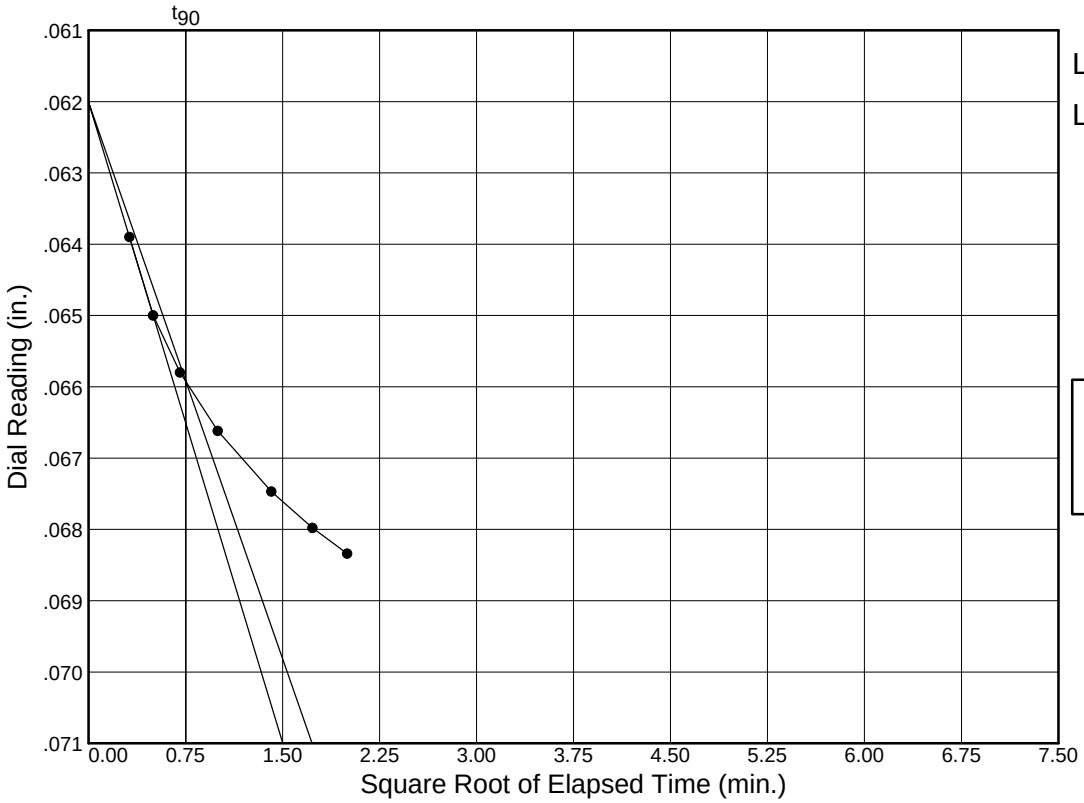


Load No.= 14
Load= 4.00 tsf
D_0 = 0.04288
D_{90} = 0.04444
D_{100} = 0.04461
T_{90} = 0.62 min.

C_v @ T_{90}
3.14 ft.^{2}/day

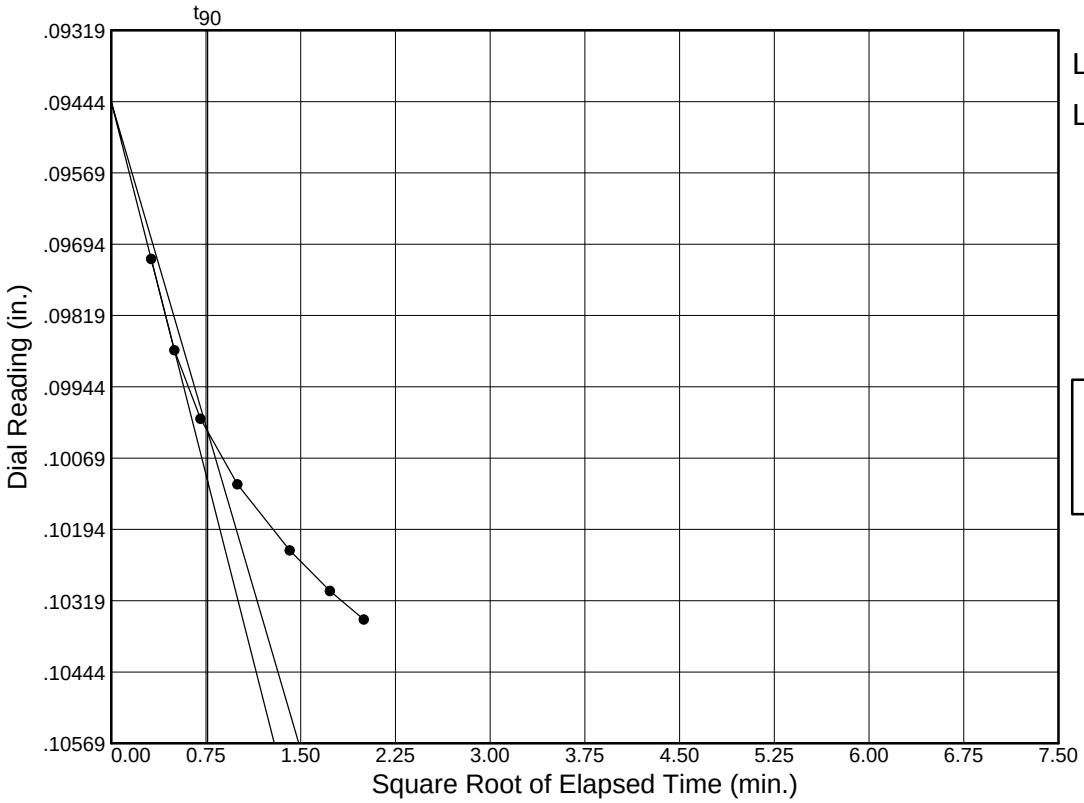
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 15
Load= 8.00 tsf
D_0 = 0.06201
D_{90} = 0.06593
D_{100} = 0.06637
T_{90} = 0.57 min.

C_v @ T_{90}
3.27 ft.^{2}/day



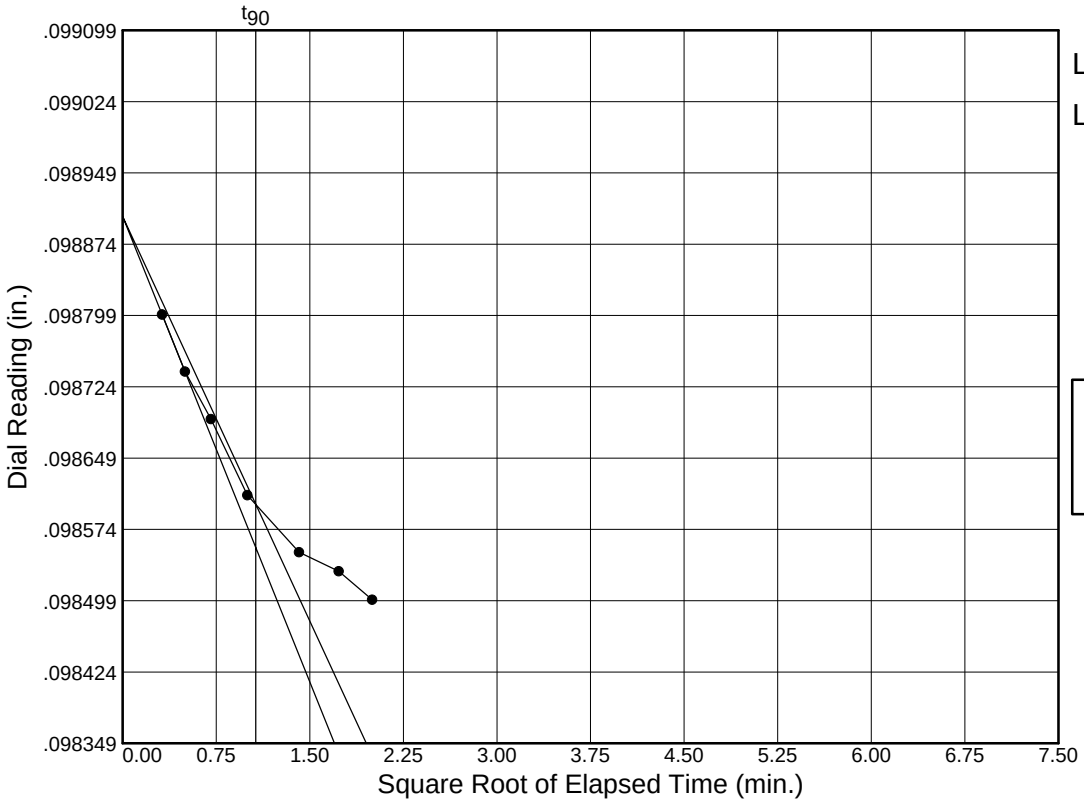
Load No.= 16
Load= 16.00 tsf
D_0 = 0.09445
D_{90} = 0.10022
D_{100} = 0.10086
T_{90} = 0.58 min.

C_v @ T_{90}
2.97 ft.^{2}/day

Consol Plot

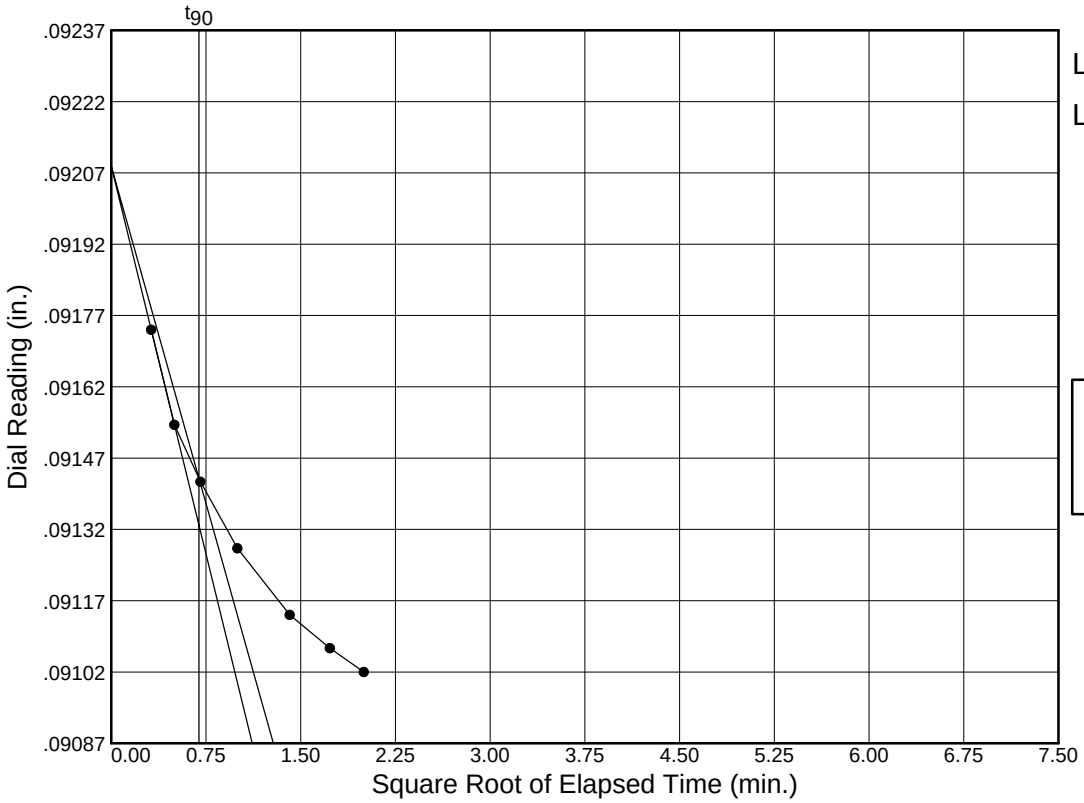
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 17
Load= 4.00 tsf
D_0 = 0.09890
D_{90} = 0.09860
D_{100} = 0.09857
T_{90} = 1.14 min.

C_v @ T_{90}
1.51 ft.^{2}/day



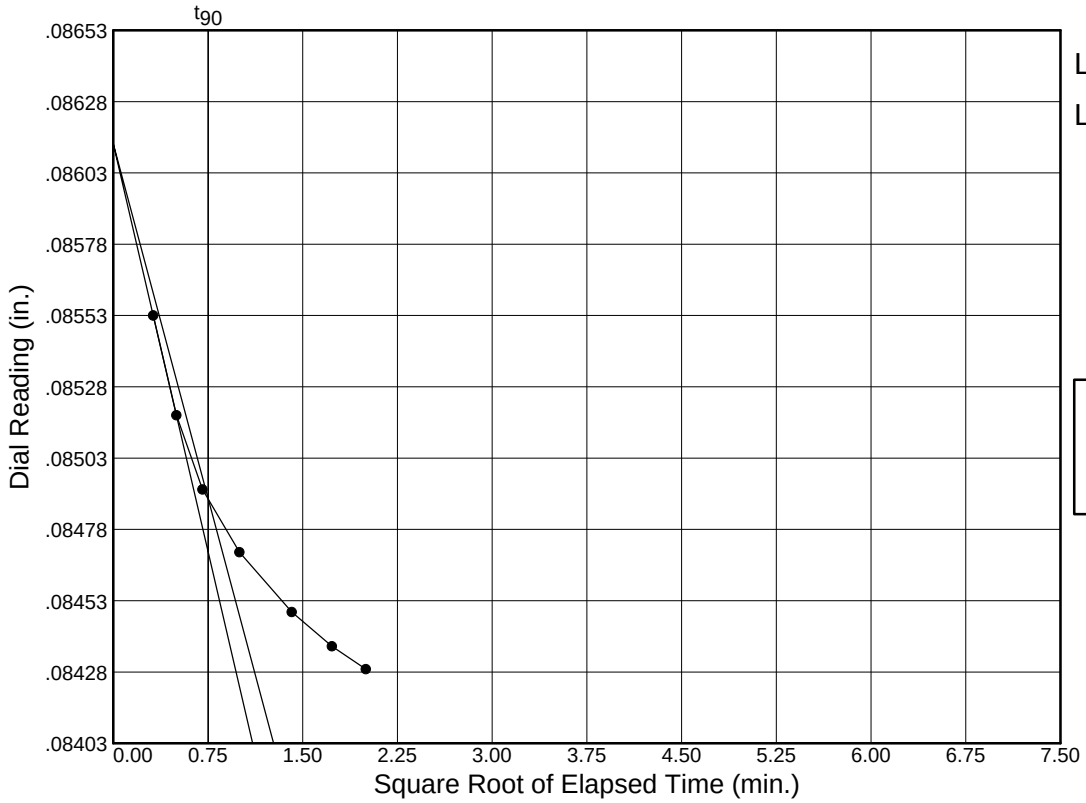
Load No.= 18
Load= 1.00 tsf
D_0 = 0.09208
D_{90} = 0.09143
D_{100} = 0.09136
T_{90} = 0.48 min.

C_v @ T_{90}
3.64 ft.^{2}/day

Consol Plot

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06 ST-17 Depth 110.5-110.6 ft.



Load No.= 19

Load= 0.25 tsf

D_0 = 0.08613

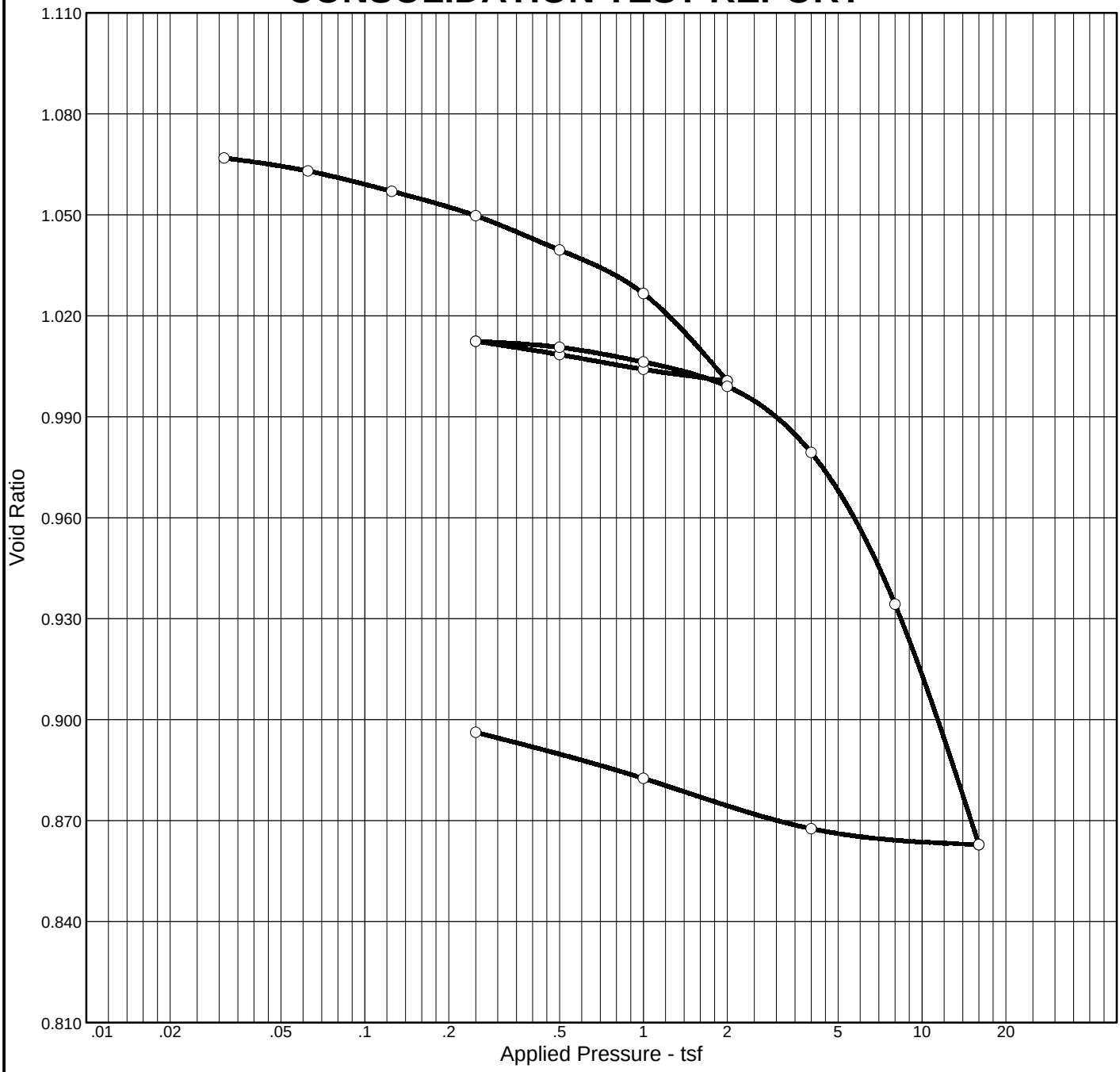
D_{90} = 0.08489

D_{100} = 0.08475

T_{90} = 0.57 min.

C_v @ T_{90}
3.13 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
99.5 %	39.5 %	81.4	GNP	GNP	2.7		5.74	0.24	0.02			1.072

MATERIAL DESCRIPTION	USCS	AASHTO
	ML	

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06 ST-17 Depth 110.5-110.6 ft.

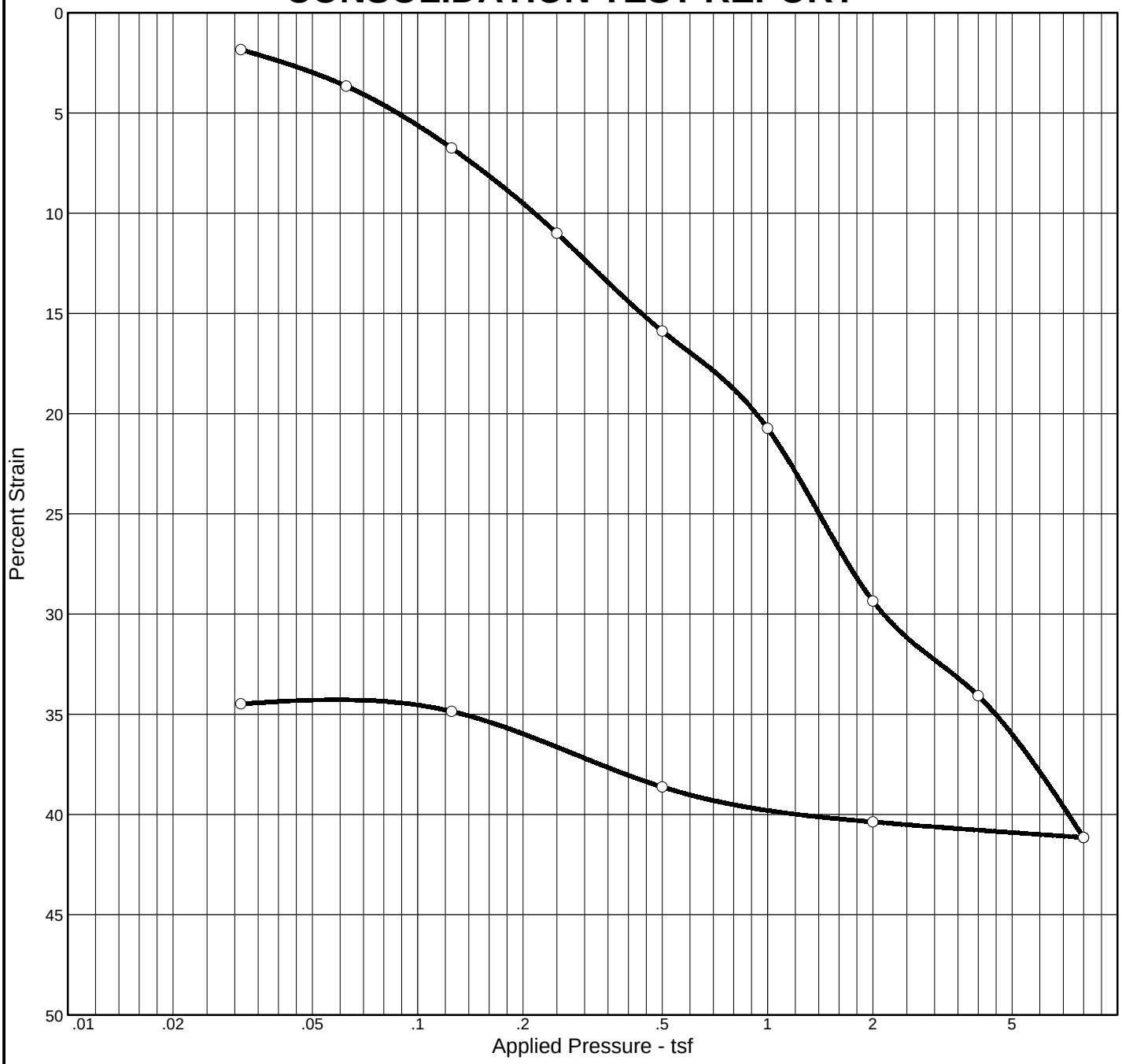
Remarks:
Stiff,wet,Silt with sand
Granular non-plastic GNP

SOIL TECHNOLOGY

Bainbridge Island, WA

Plate

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
101.9 %	118.6 %	39.8	125	64	2.6	2.05	3.48	0.98	0.15			3.024

MATERIAL DESCRIPTION	USCS	AASHTO
	MH	----

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06,ST-2 Depth 36.3-36.4 ft.

Remarks:

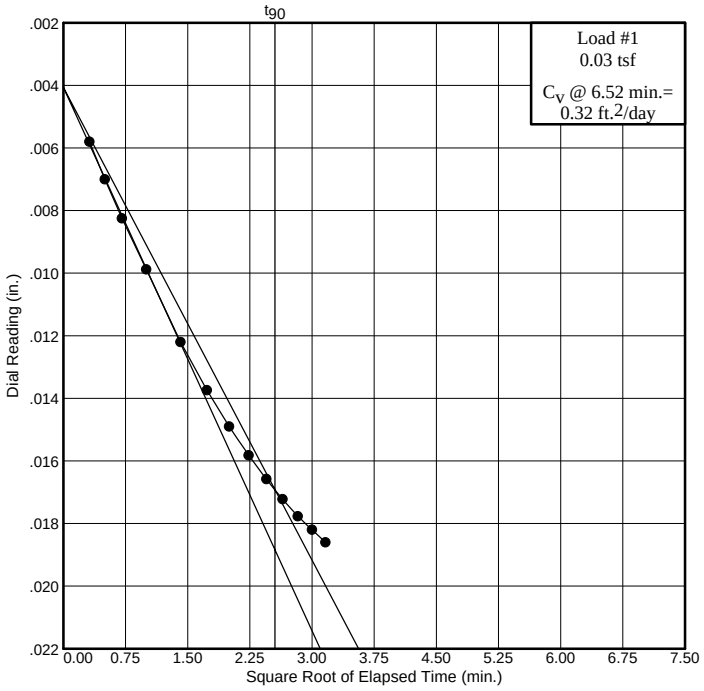
SOIL TECHNOLOGY

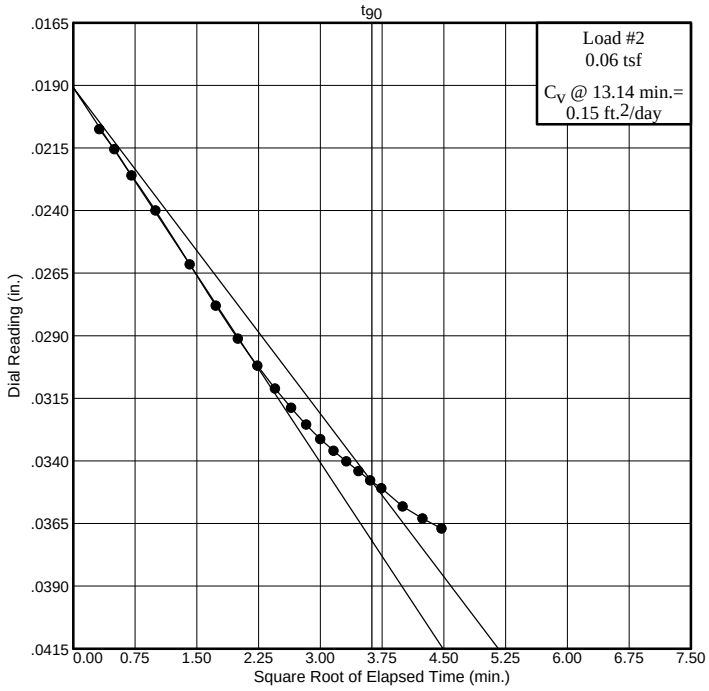
Bainbridge Island, WA

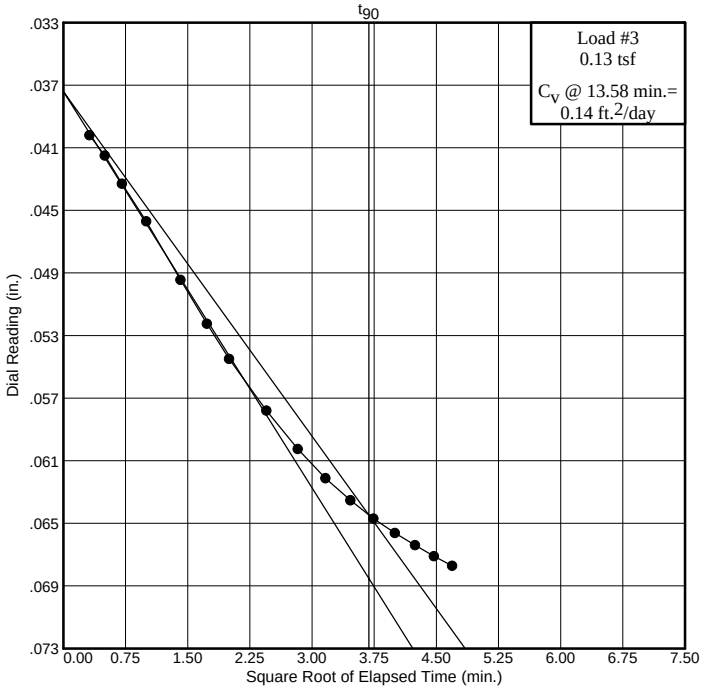
Plate

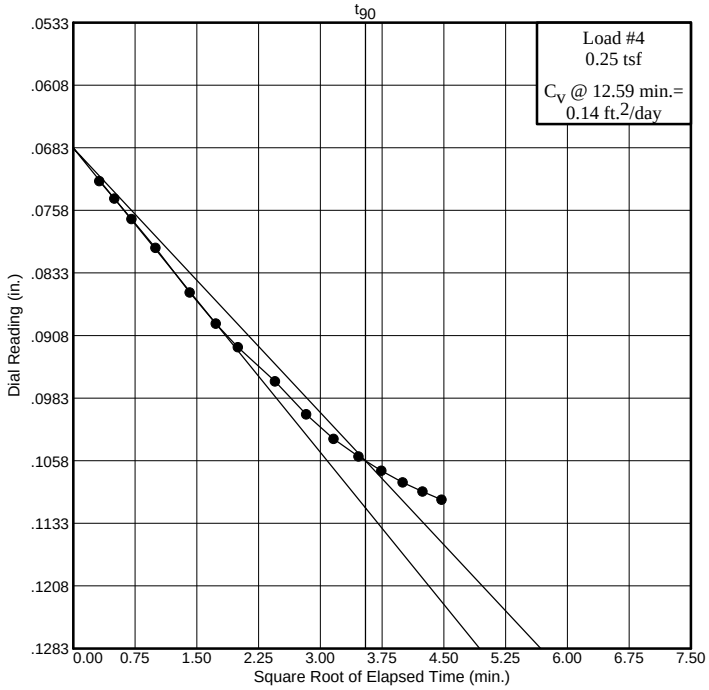
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-2 Depth 36.3-36.4 ft.









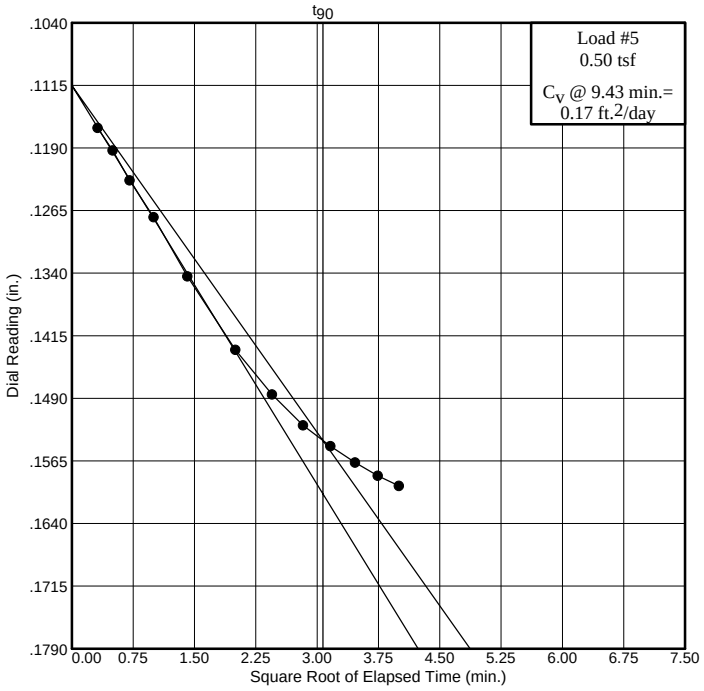
SOIL TECHNOLOGY

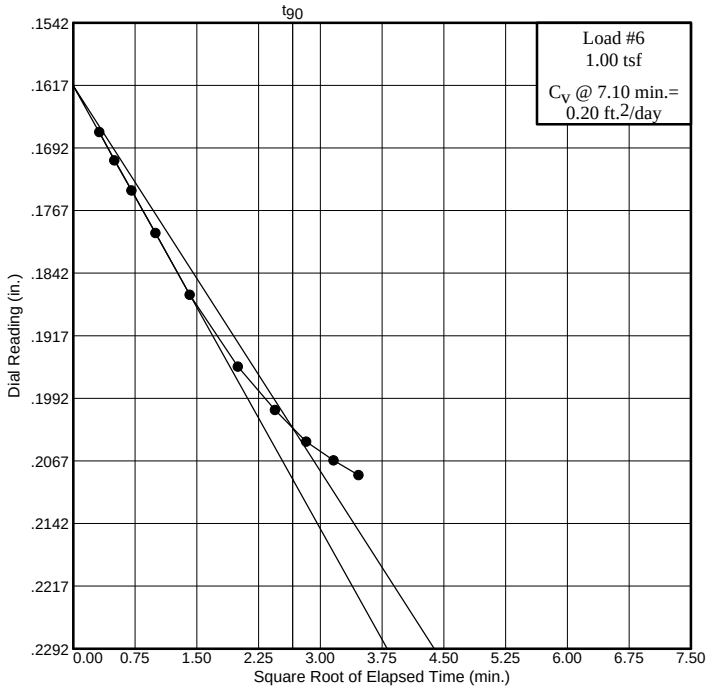
Bainbridge Island, WA

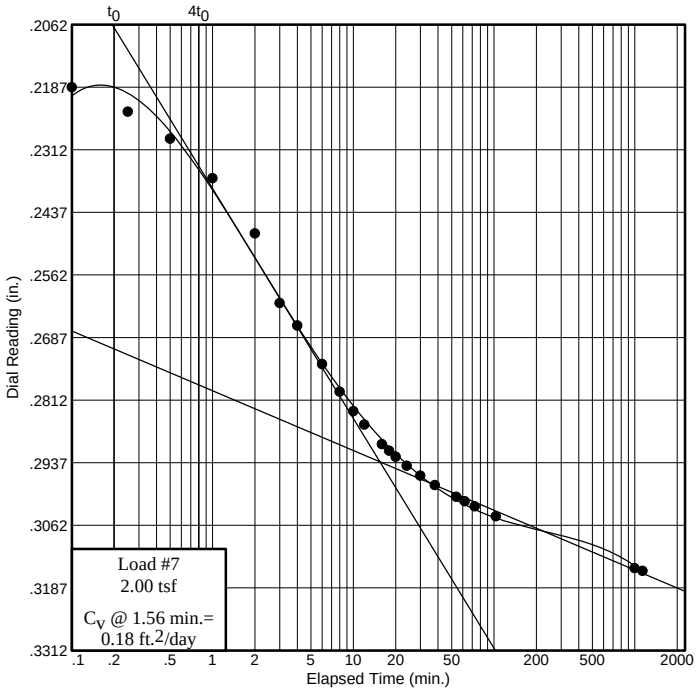
Plate

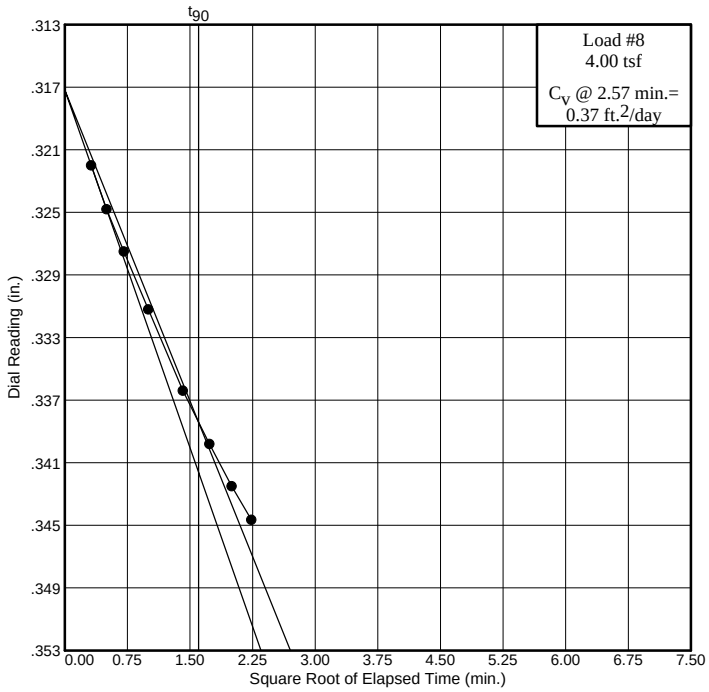
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-2 Depth 36.3-36.4 ft.









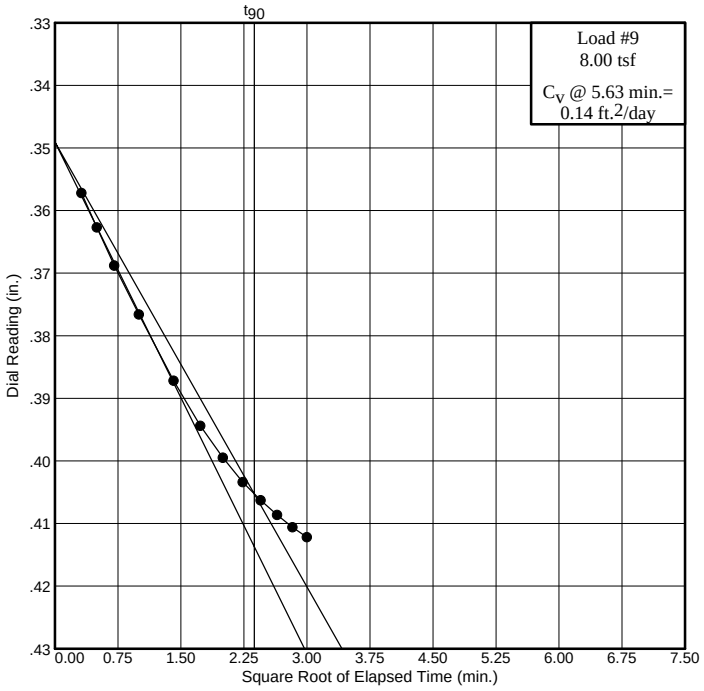
SOIL TECHNOLOGY

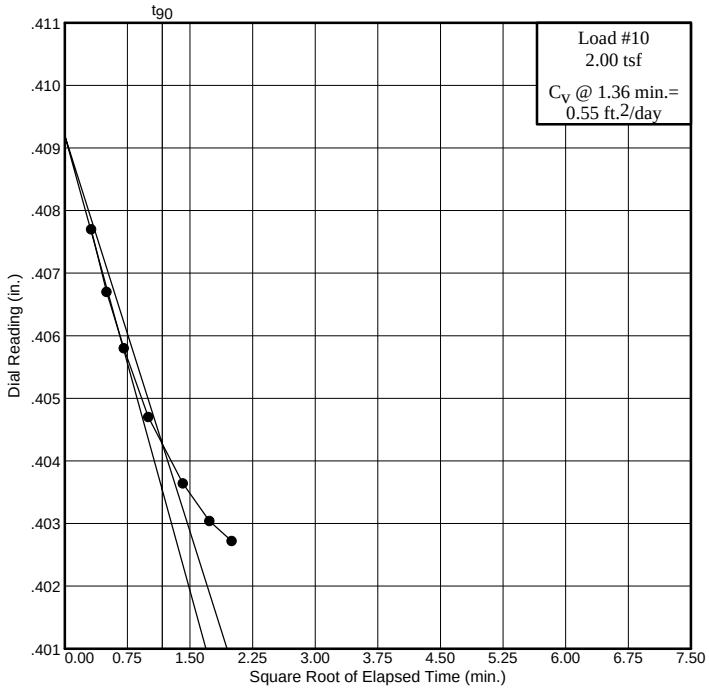
Bainbridge Island, WA

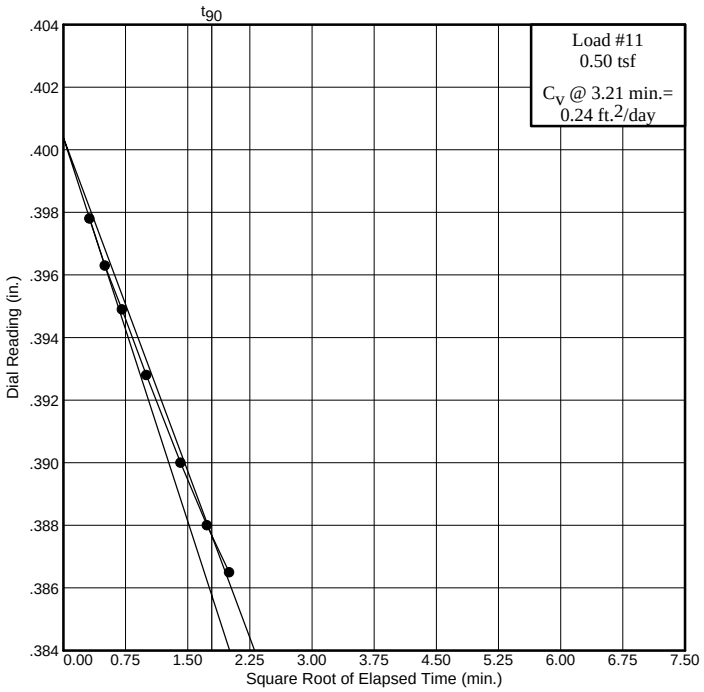
Plate

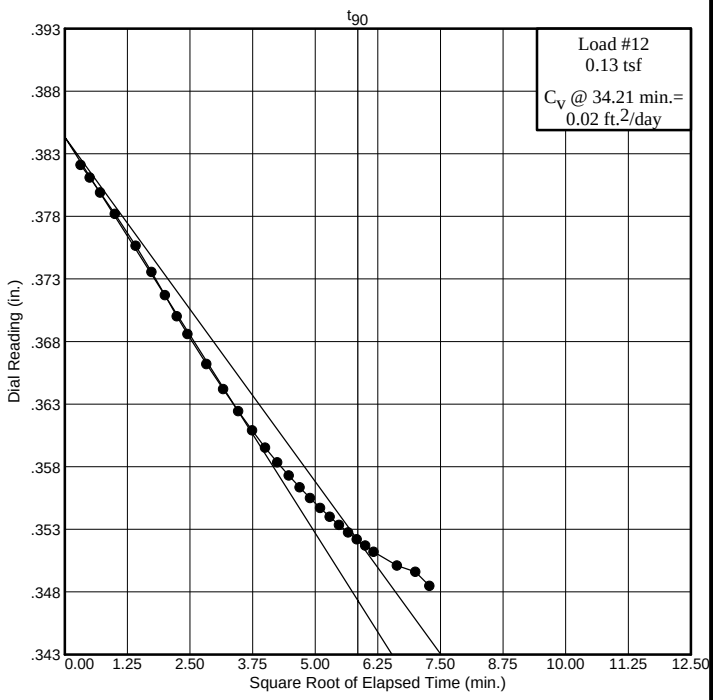
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-2 Depth 36.3-36.4 ft.









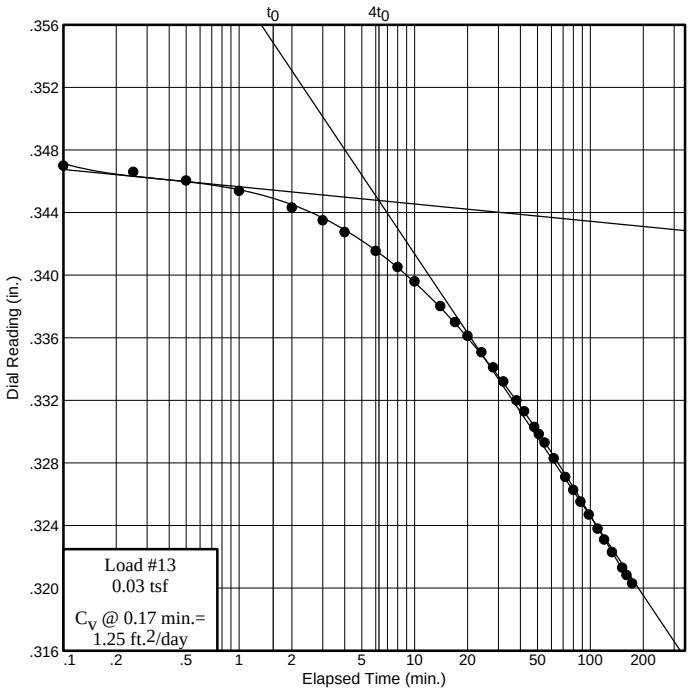
SOIL TECHNOLOGY

Bainbridge Island, WA

Plate

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-2 Depth 36.3-36.4 ft.

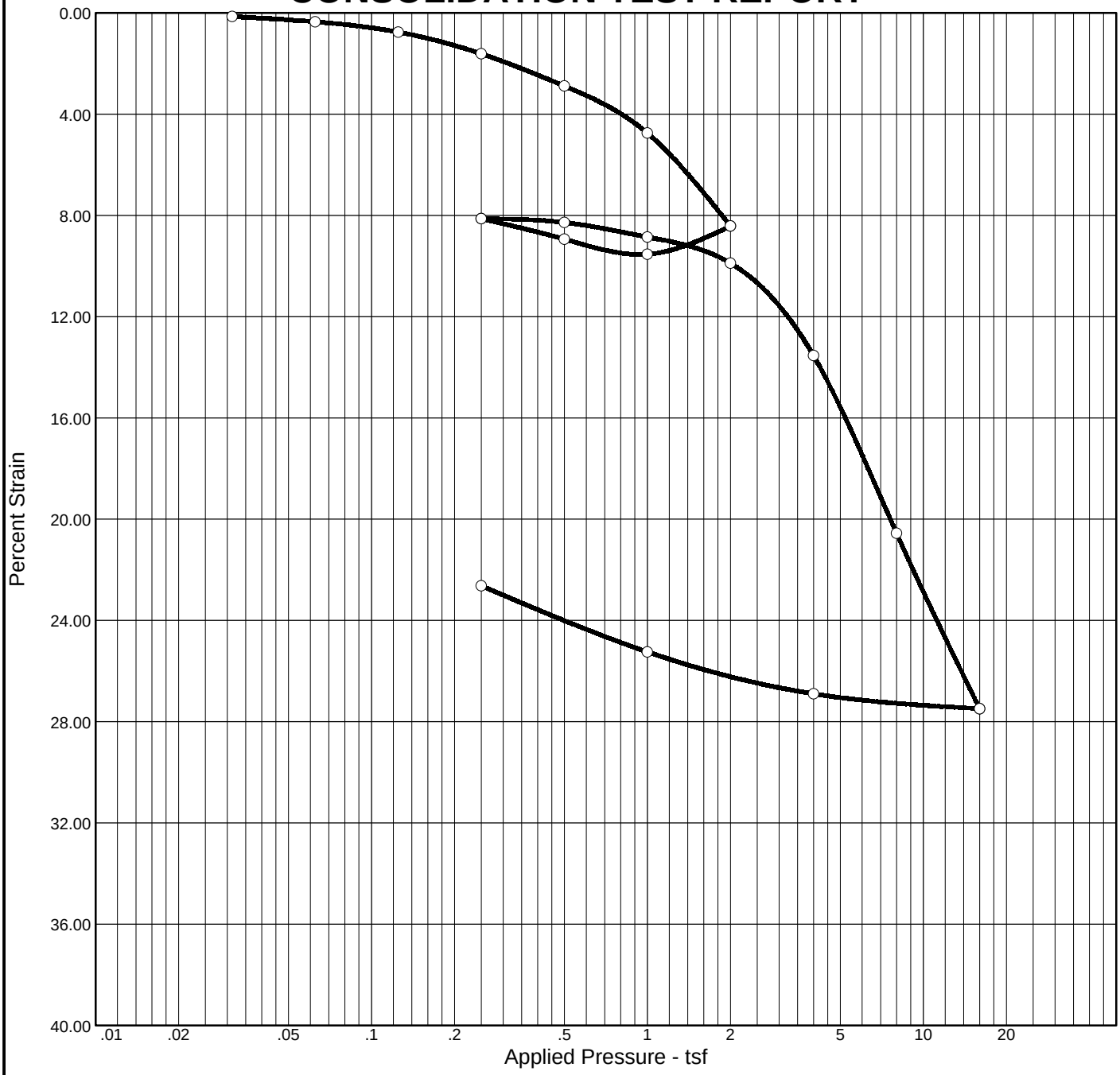


SOIL TECHNOLOGY

Bainbridge Island, WA

Plate

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
98.0 %	63.3 %	60.6			2.6		1.81	0.61	0.07			1.679

MATERIAL DESCRIPTION	USCS	AASHTO

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06,ST-3 Depth 40.5-40.6

Remarks:

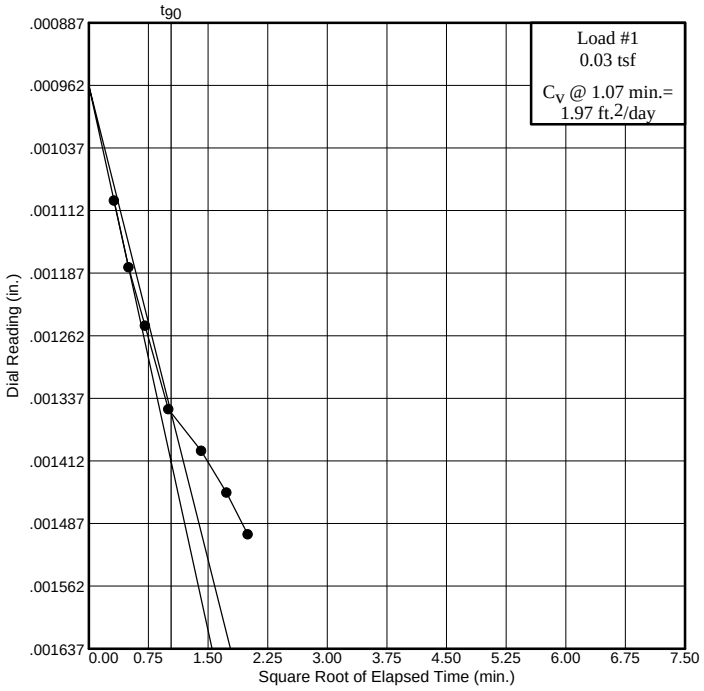
SOIL TECHNOLOGY

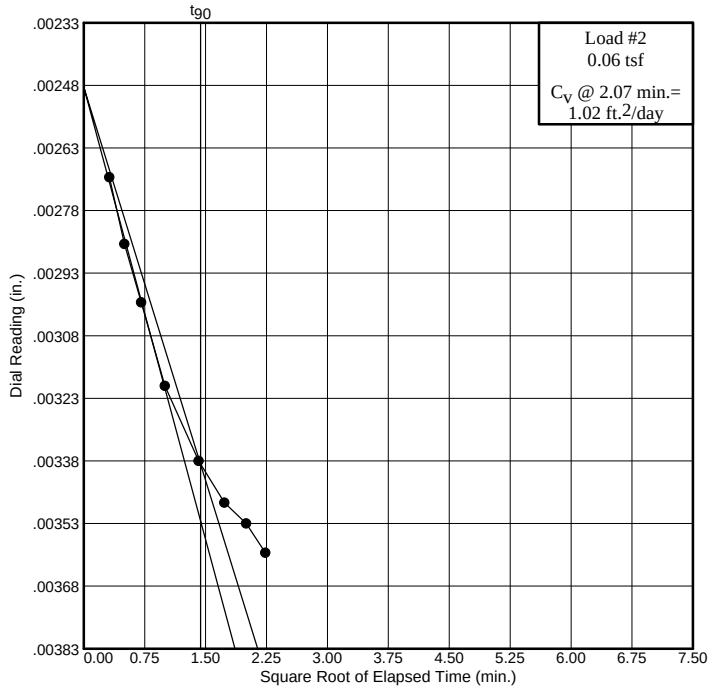
Bainbridge Island, WA

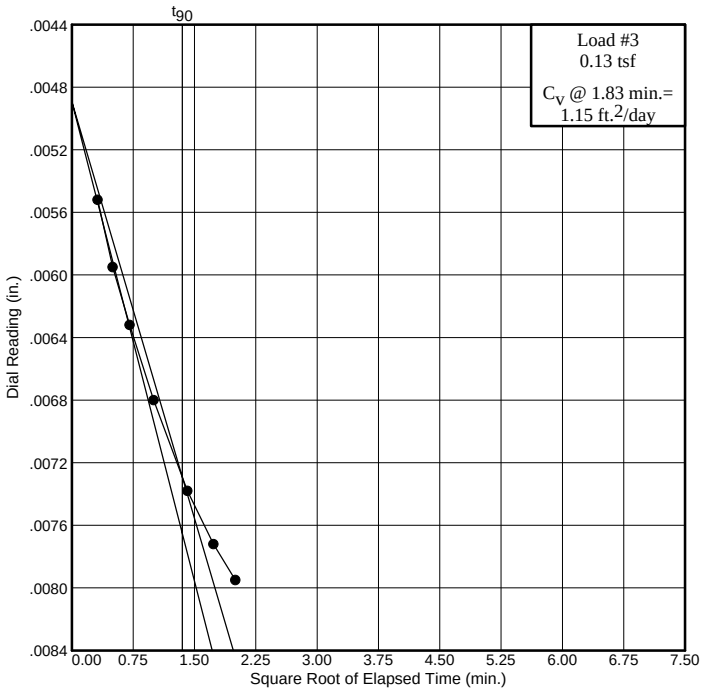
Plate 3

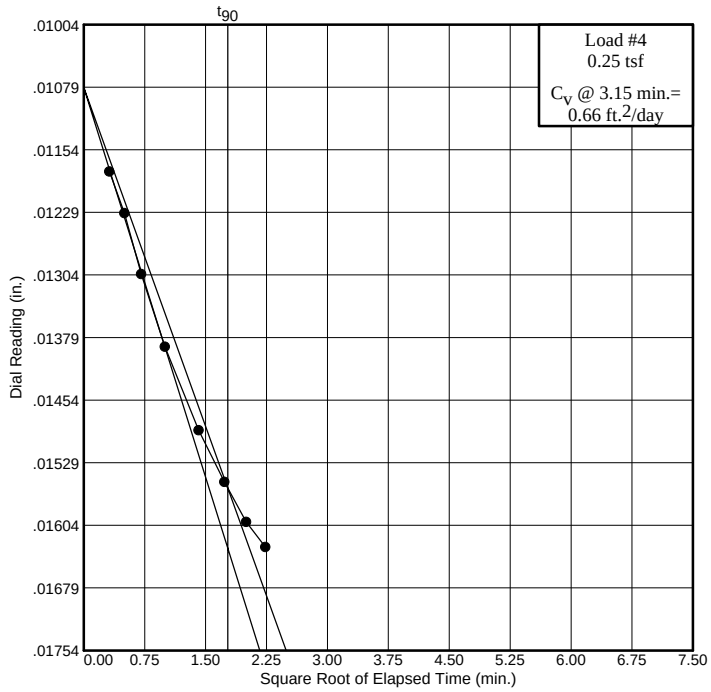
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-3 Depth 40.5-40.6







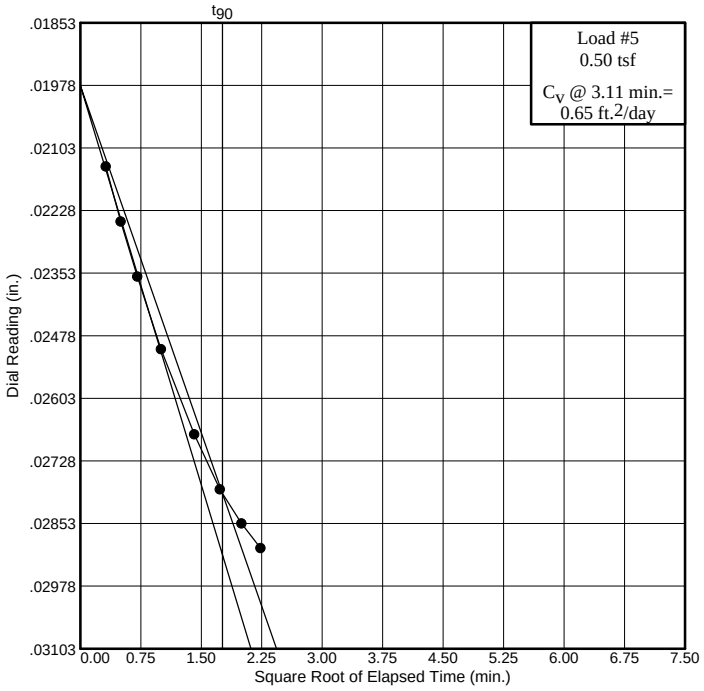


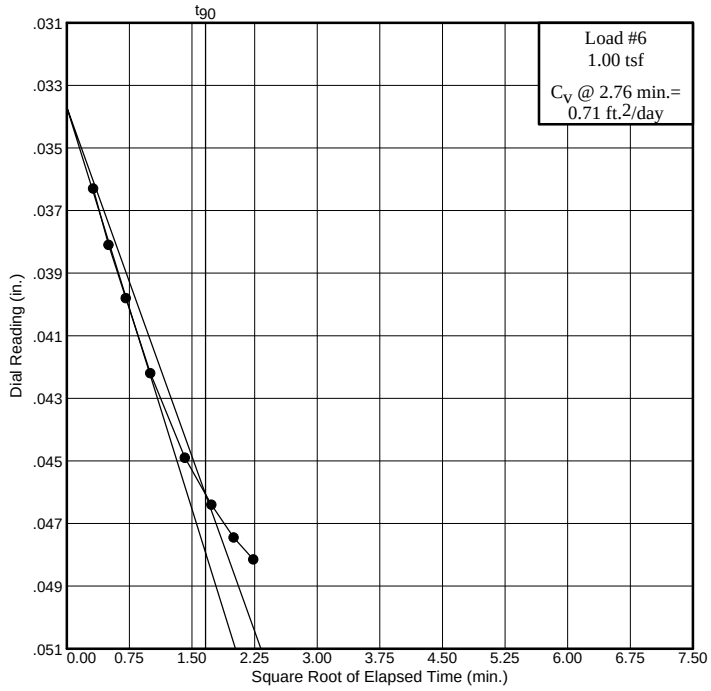
SOIL TECHNOLOGY

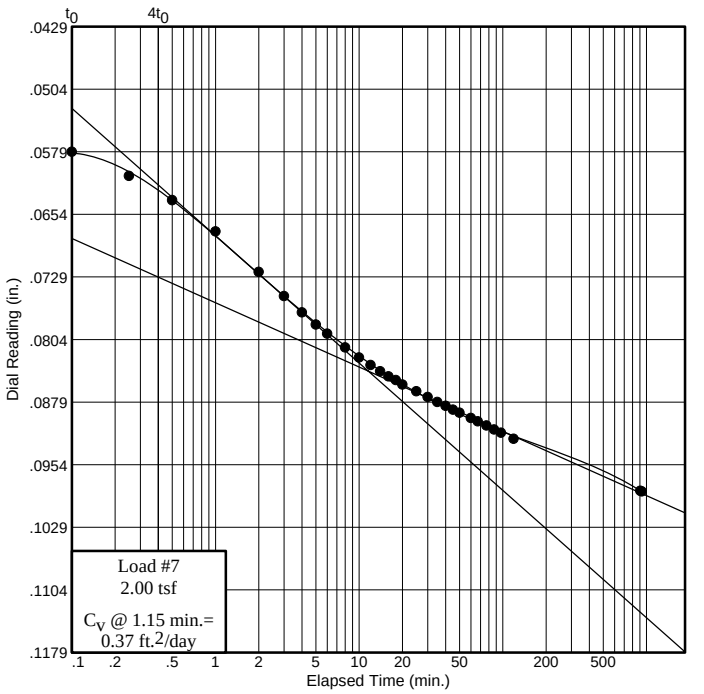
Bainbridge Island, WA

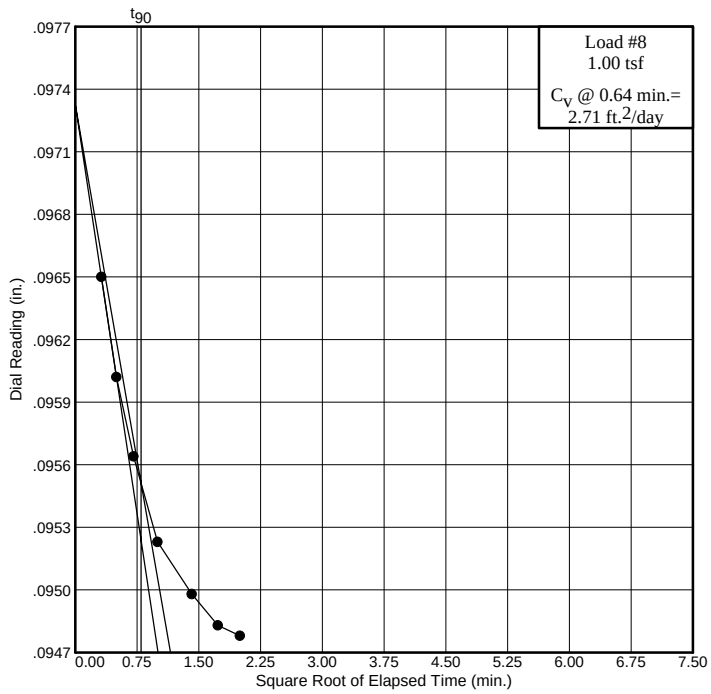
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-3 Depth 40.5-40.6







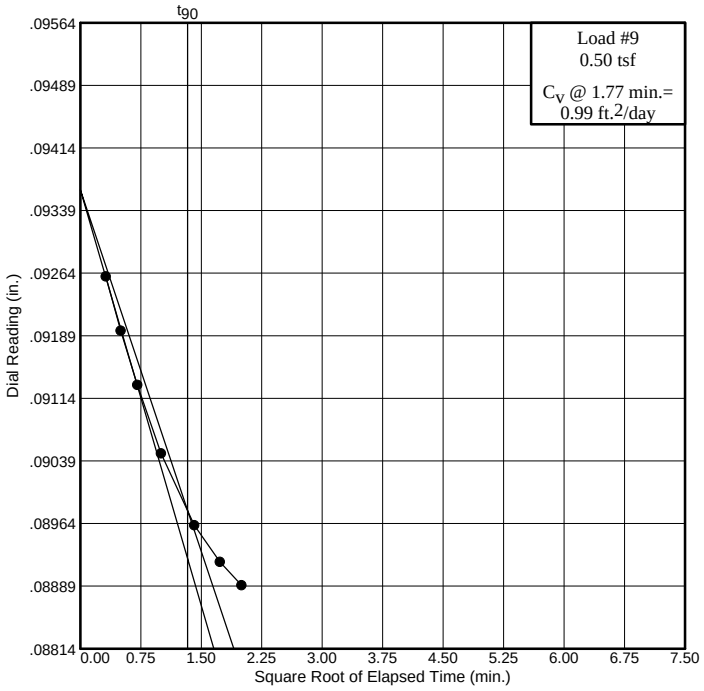


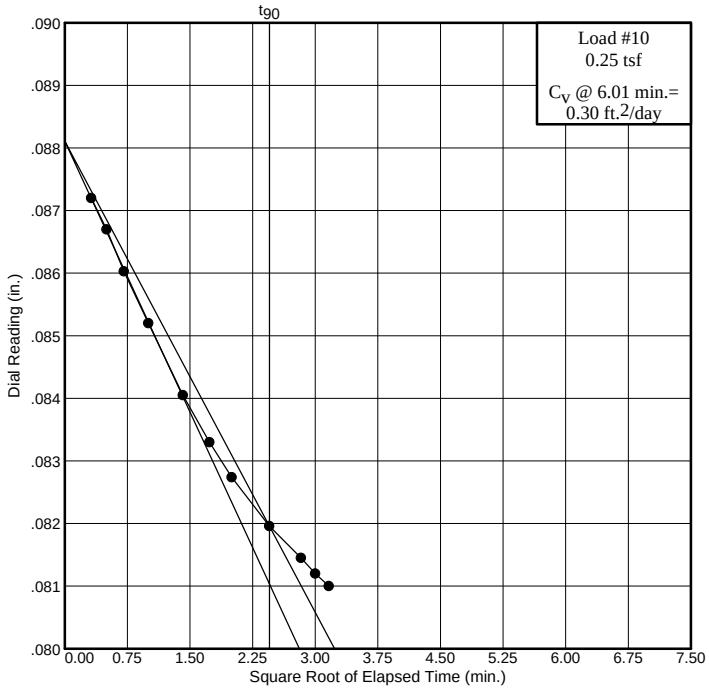
SOIL TECHNOLOGY

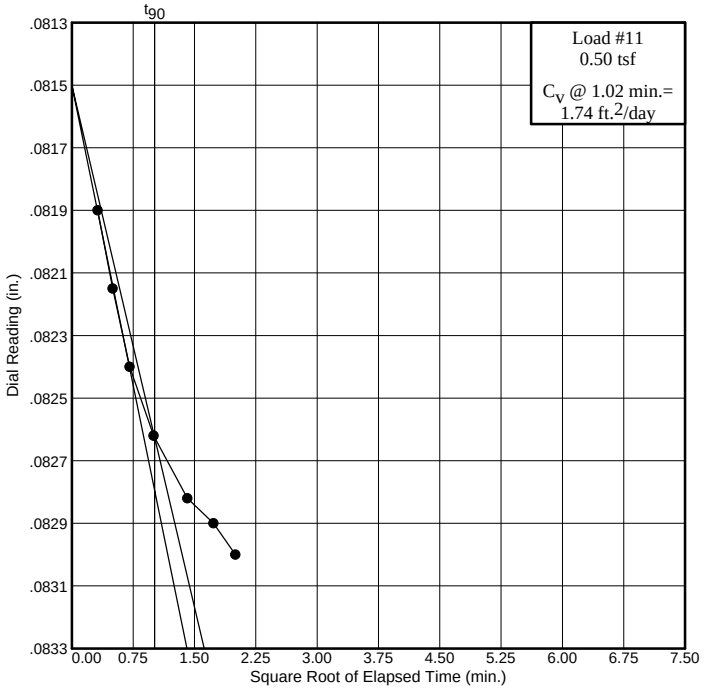
Bainbridge Island, WA

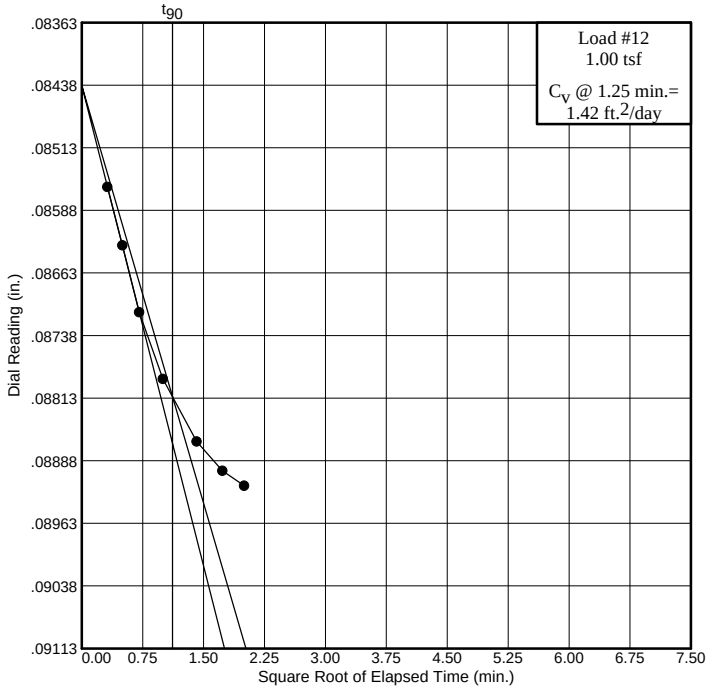
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-3 Depth 40.5-40.6







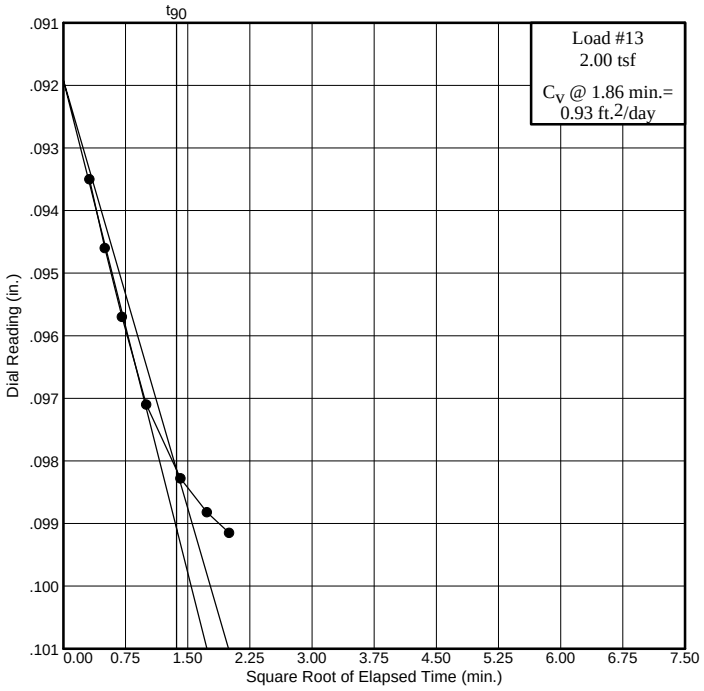


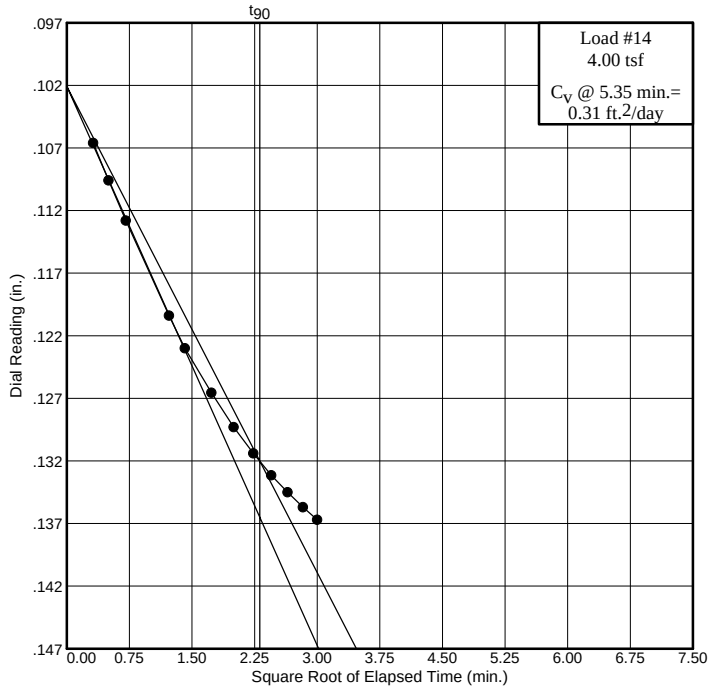
SOIL TECHNOLOGY

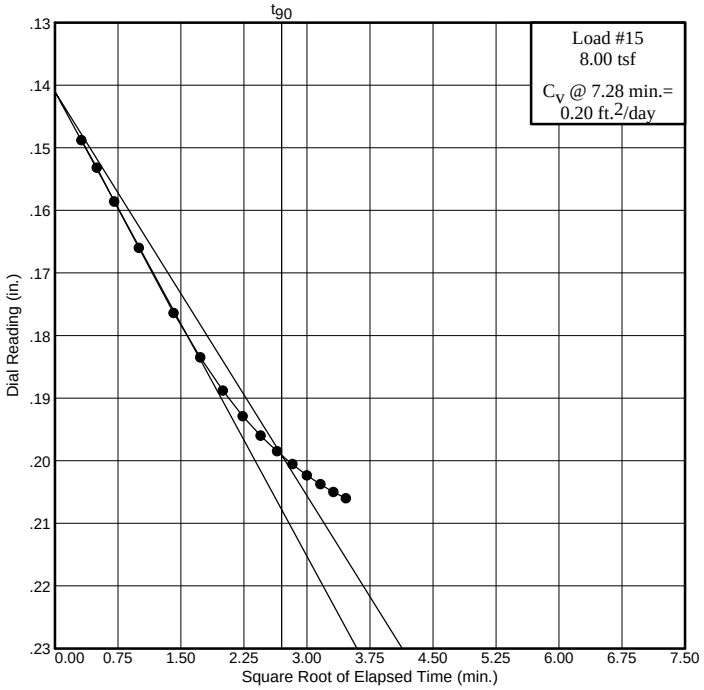
Bainbridge Island, WA

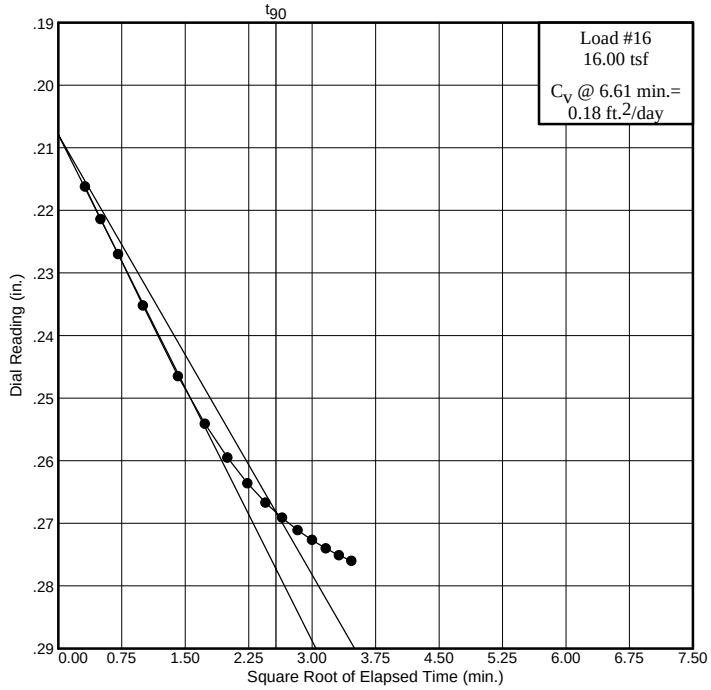
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-3 Depth 40.5-40.6







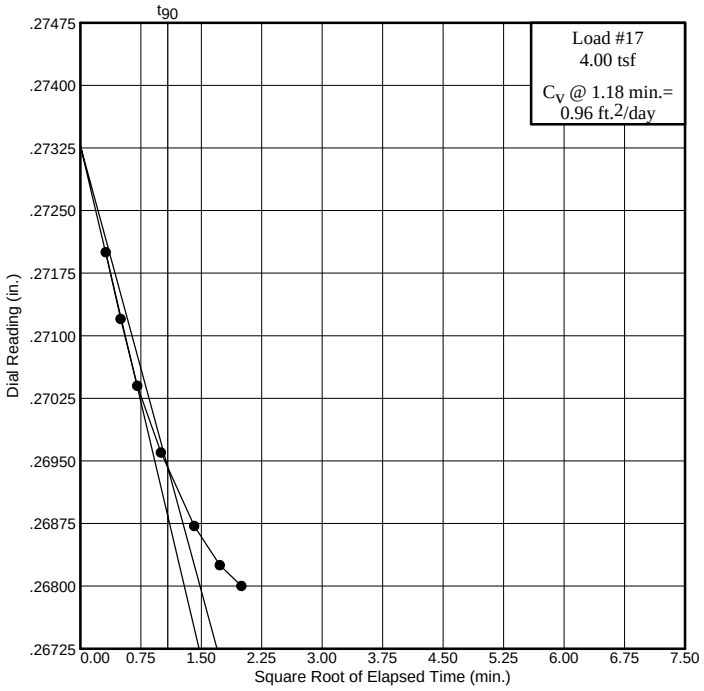


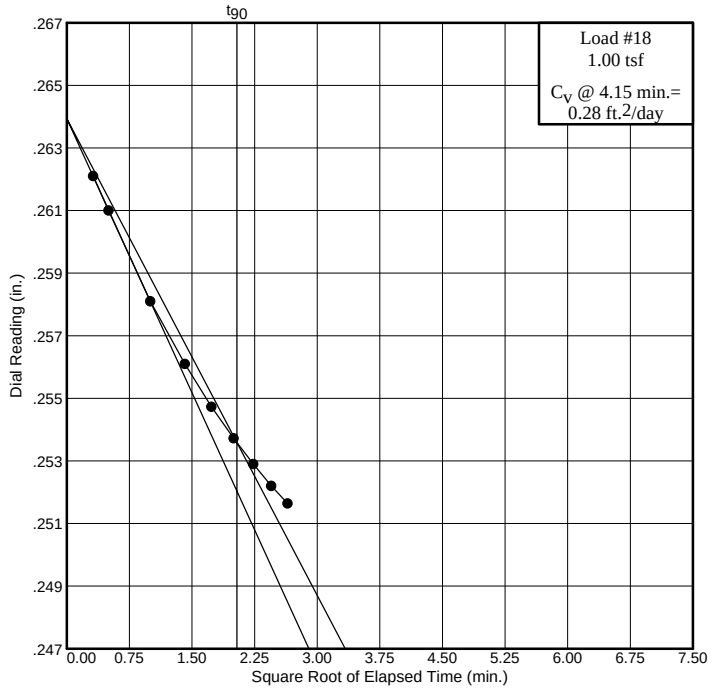
SOIL TECHNOLOGY

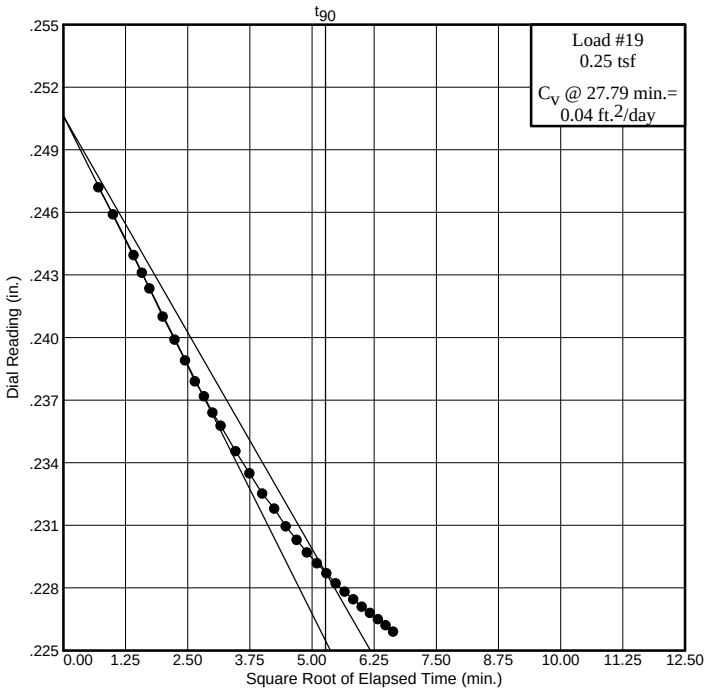
Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-3 Depth 40.5-40.6



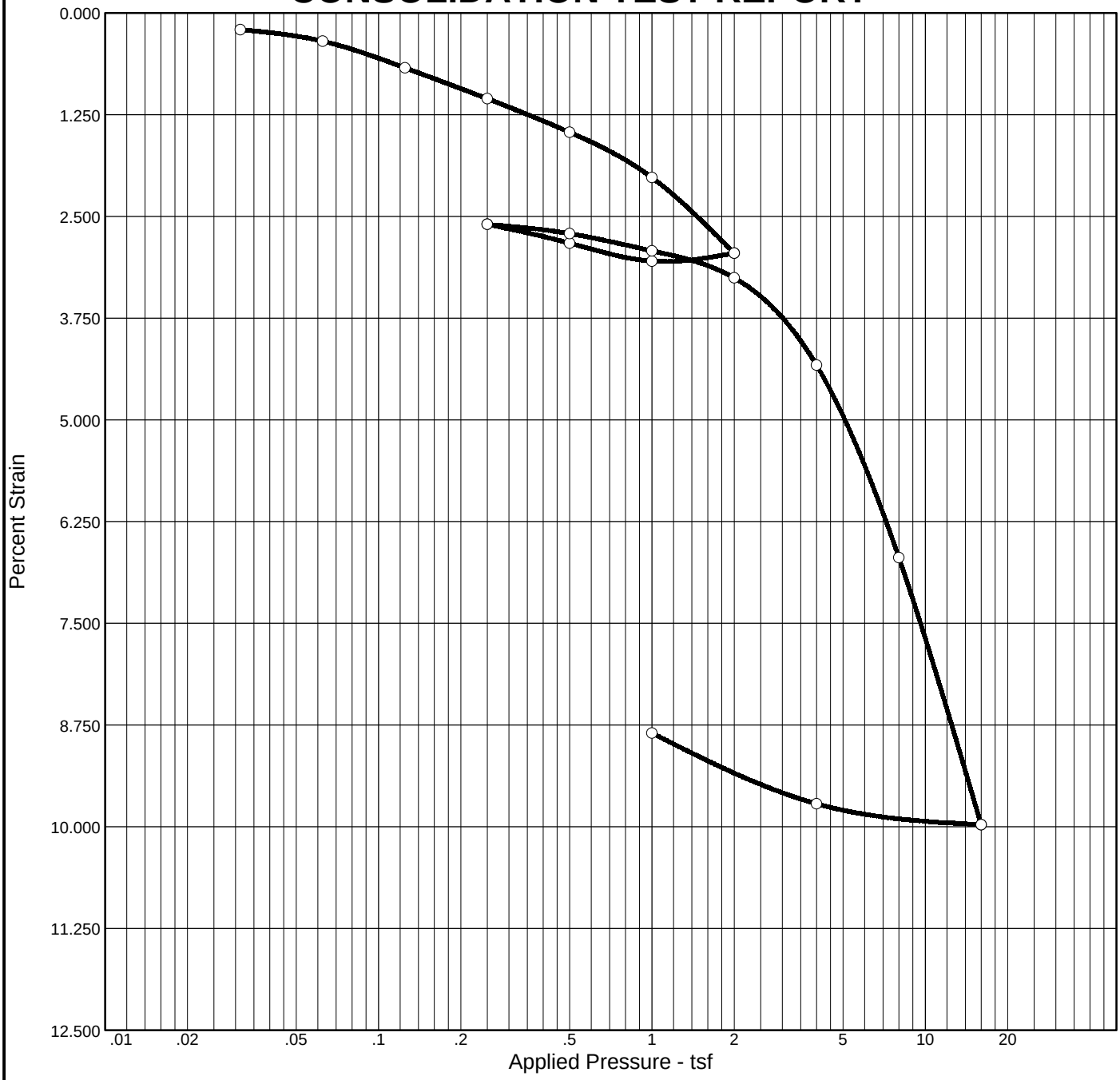




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
99.7 %	35.5 %	84.6			2.6		5.39	0.21	0.01			0.926

MATERIAL DESCRIPTION	USCS	AASHTO

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06,ST-5 Depth 51.1-51.2 ft.

Remarks:

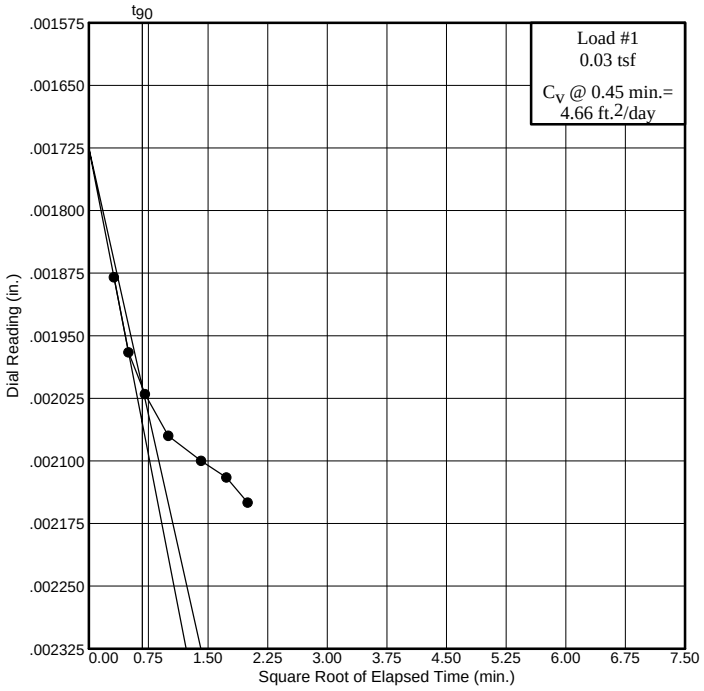
SOIL TECHNOLOGY

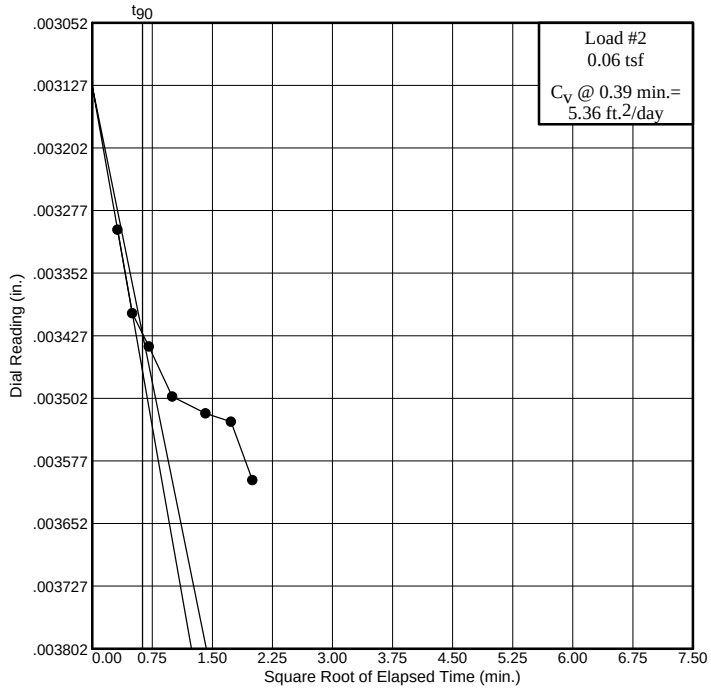
Bainbridge Island, WA

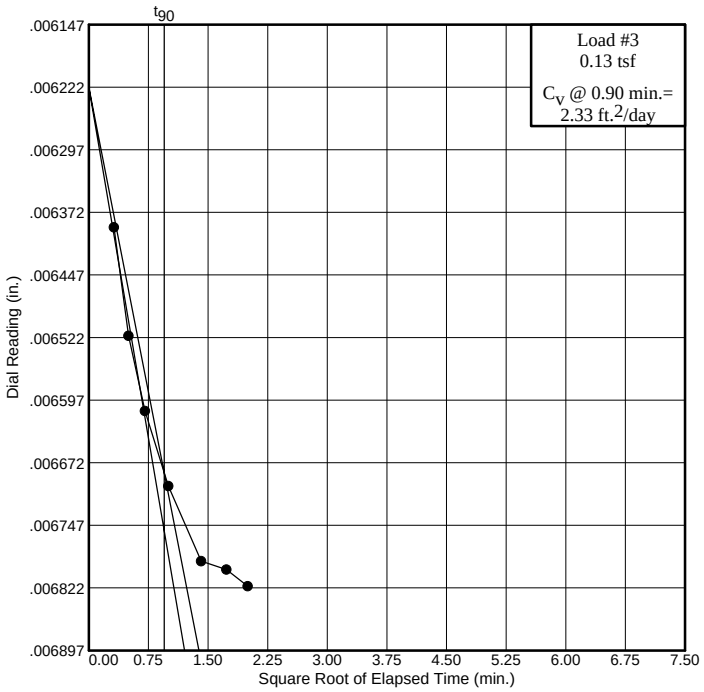
Plate 2

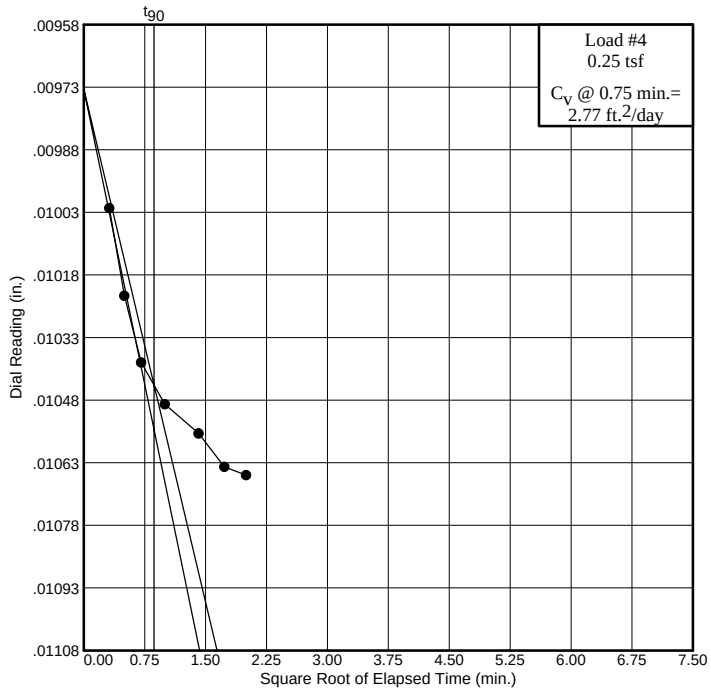
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-5 Depth 51.1-51.2 ft.







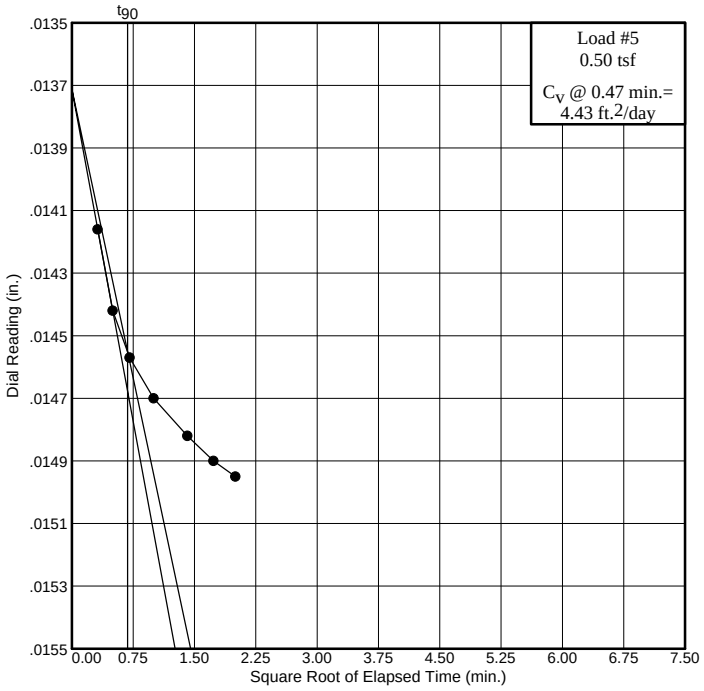


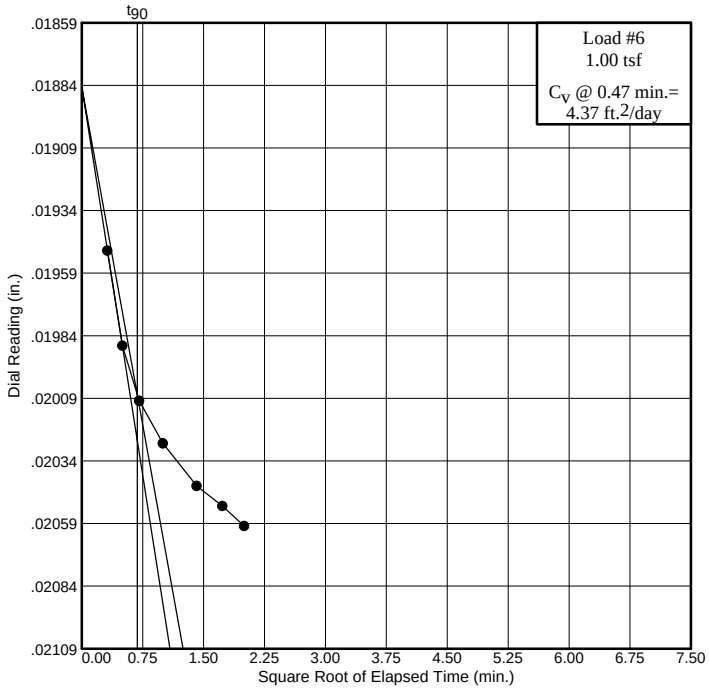
SOIL TECHNOLOGY

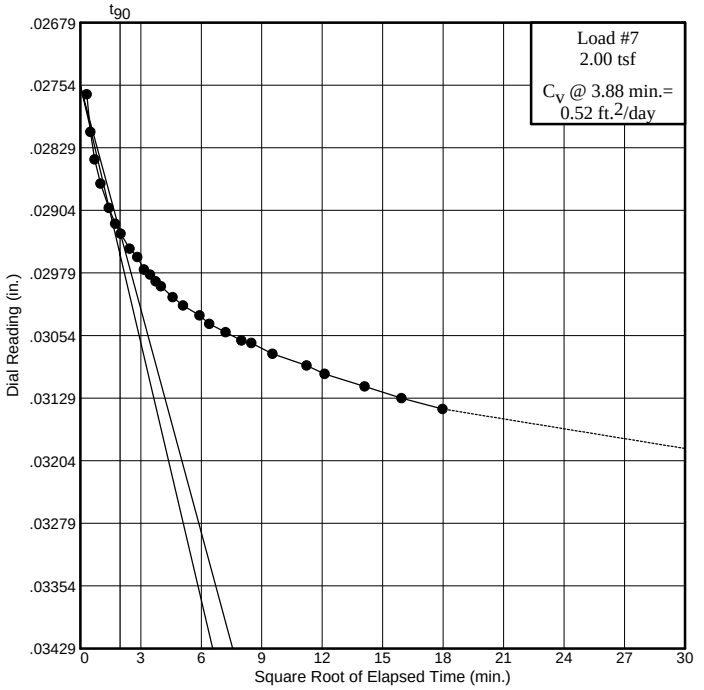
Bainbridge Island, WA

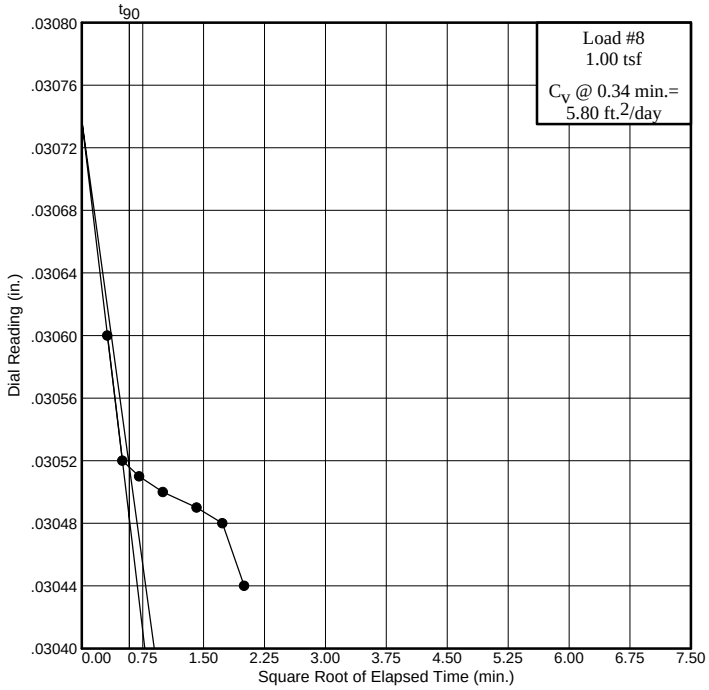
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-5 Depth 51.1-51.2 ft.







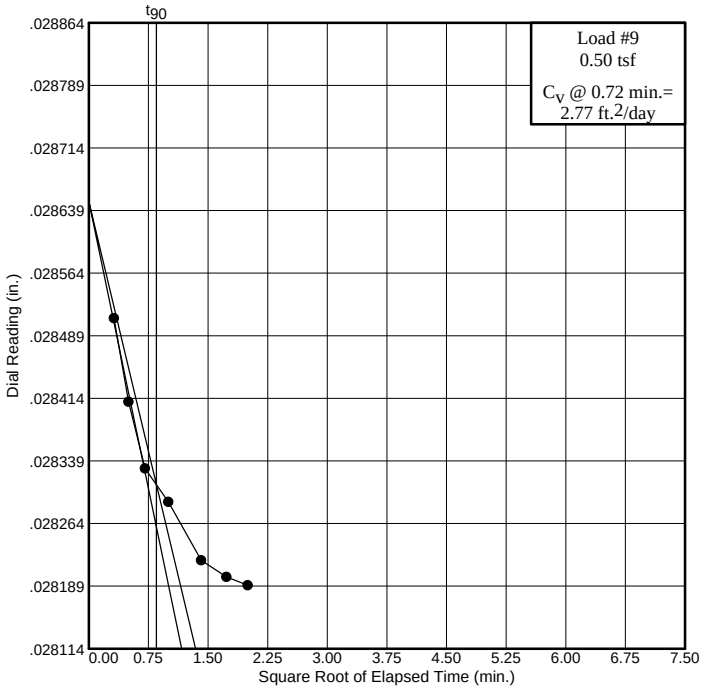


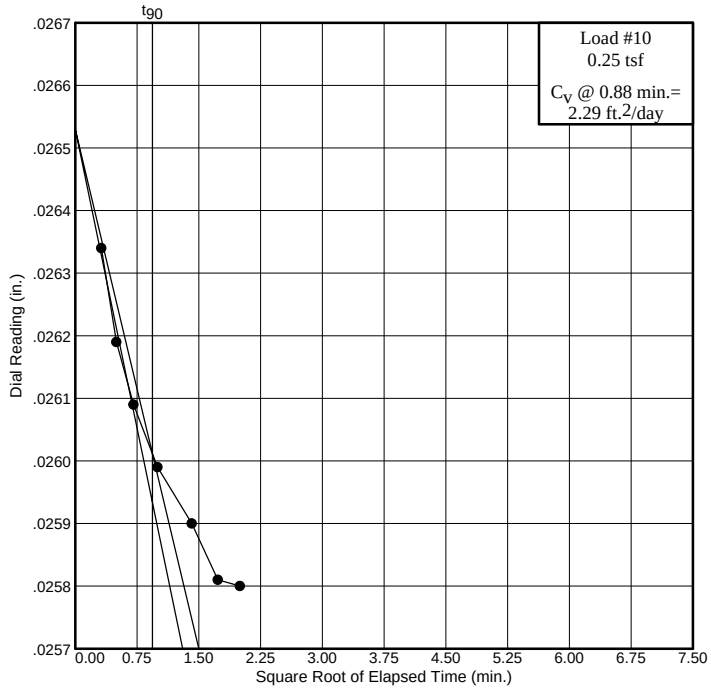
SOIL TECHNOLOGY

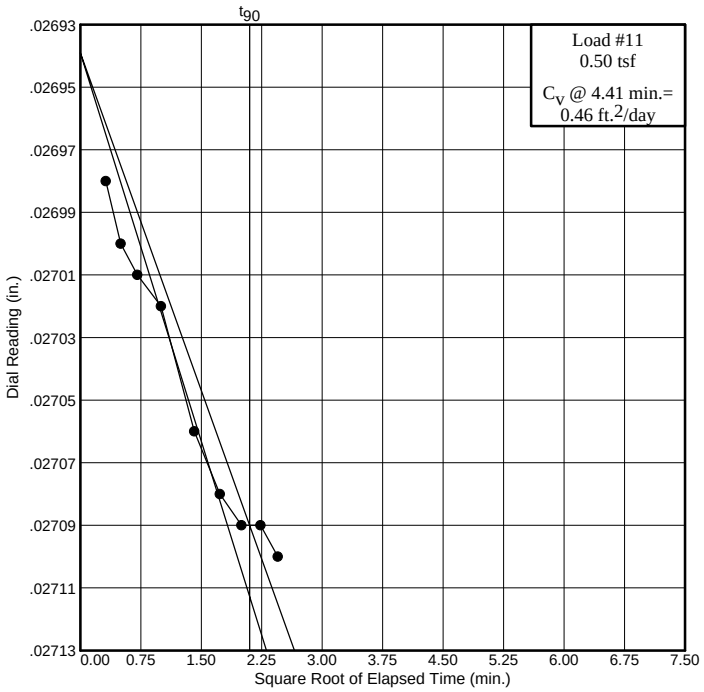
Bainbridge Island, WA

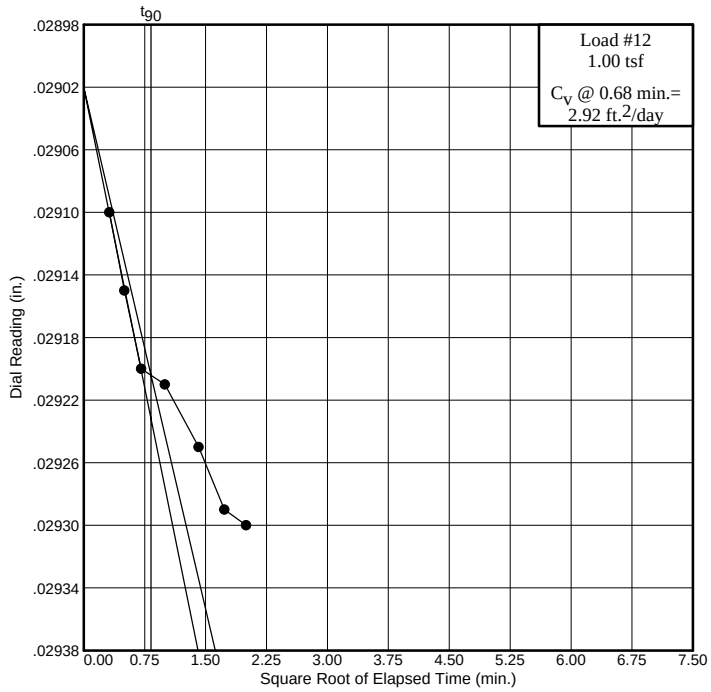
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-5 Depth 51.1-51.2 ft.







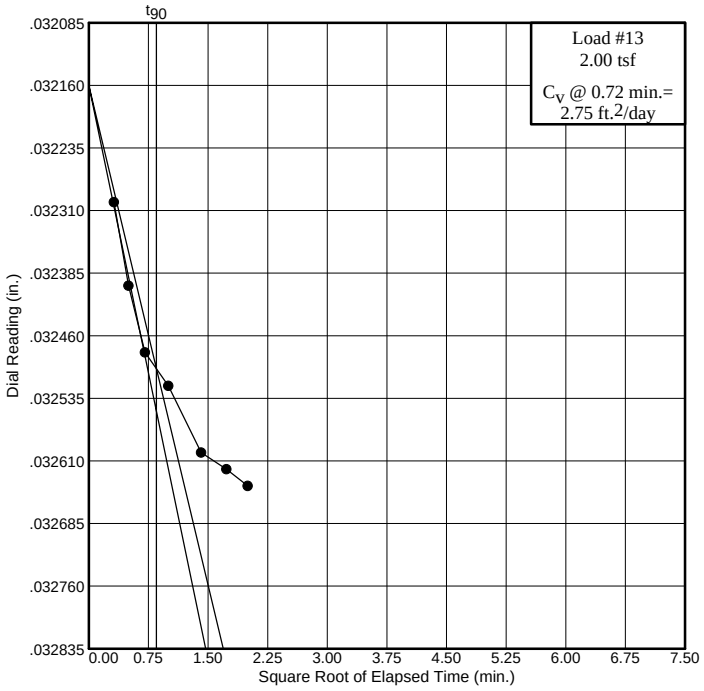


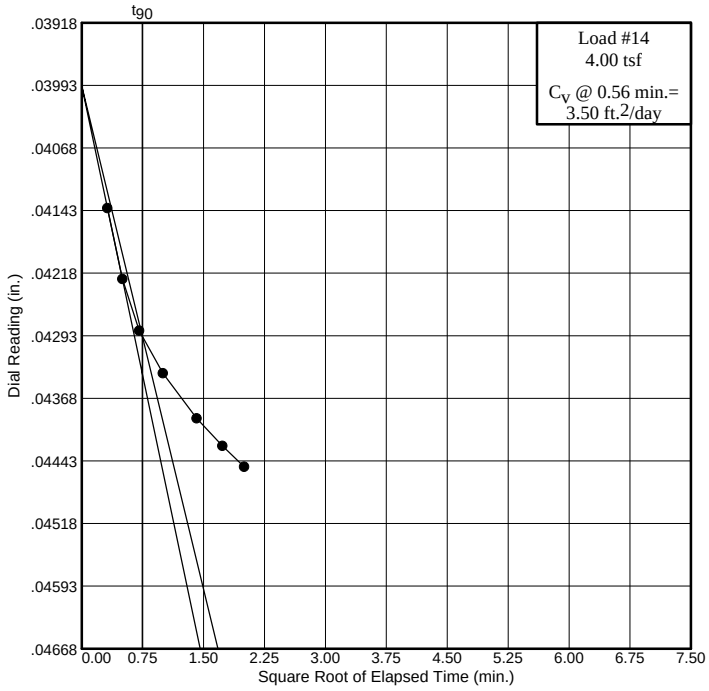
SOIL TECHNOLOGY

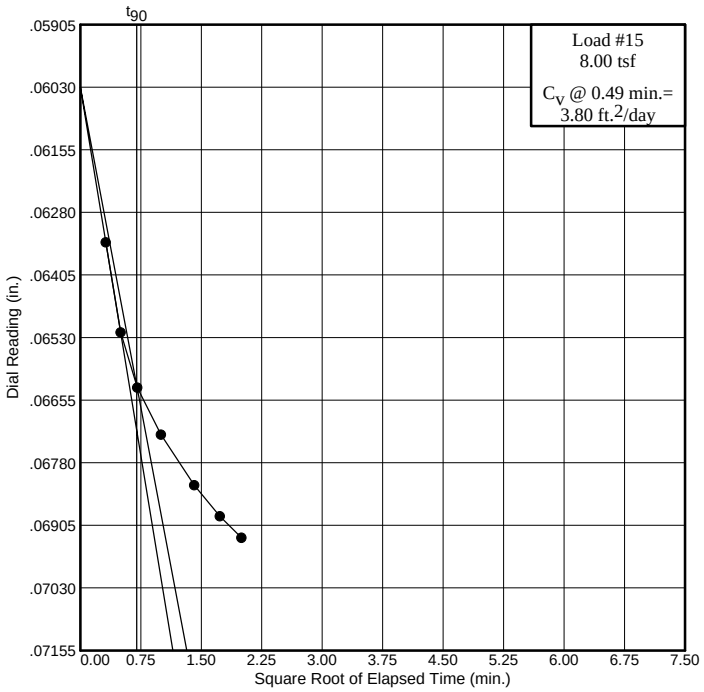
Bainbridge Island, WA

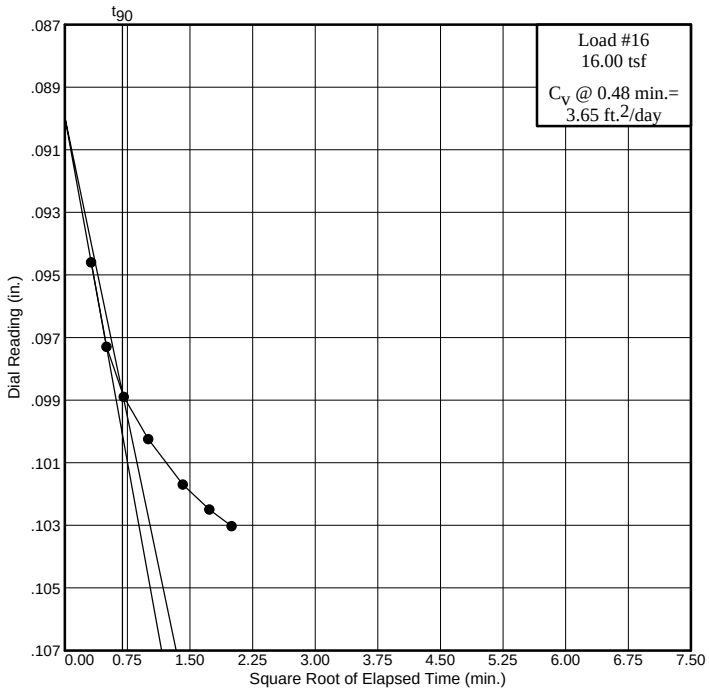
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-5 Depth 51.1-51.2 ft.







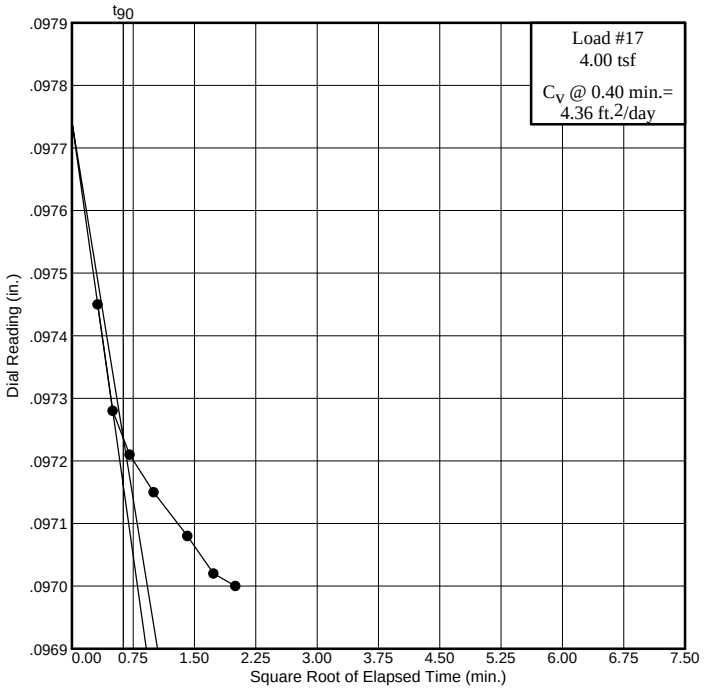


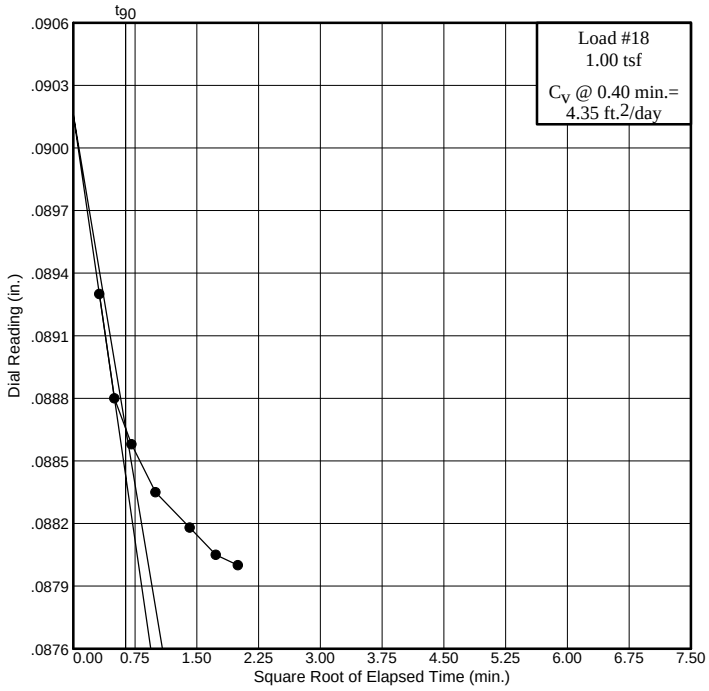
SOIL TECHNOLOGY

Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-5 Depth 51.1-51.2 ft.

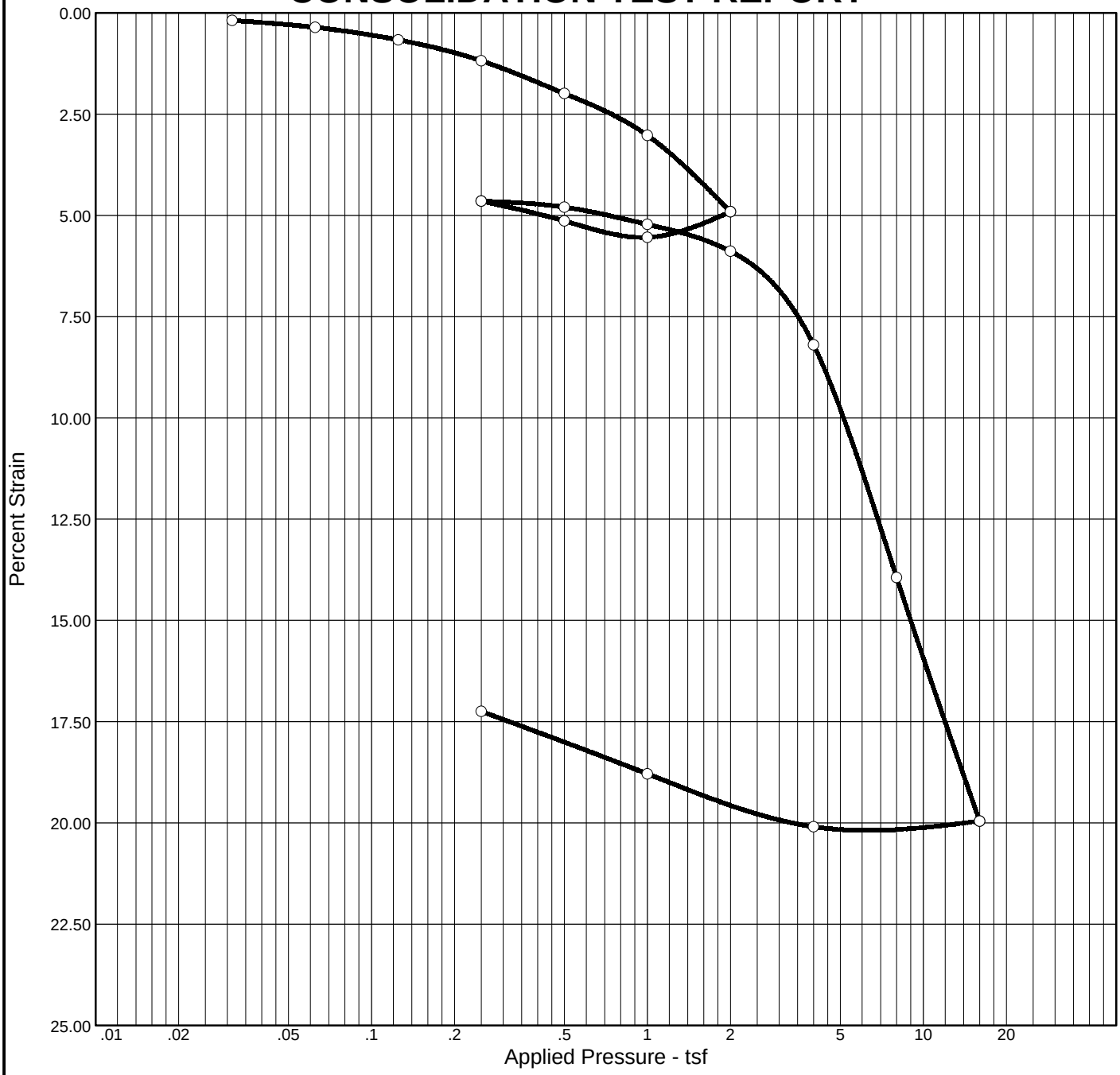




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
97.9 %	56.7 %	64.8	66	37	2.55		3.96	0.49	0.04			1.477

MATERIAL DESCRIPTION	USCS	AASHTO
	SILT MH	

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06,ST-7 Depth 61.1-61.2 ft.

Remarks:
Secondary at 2 TSF

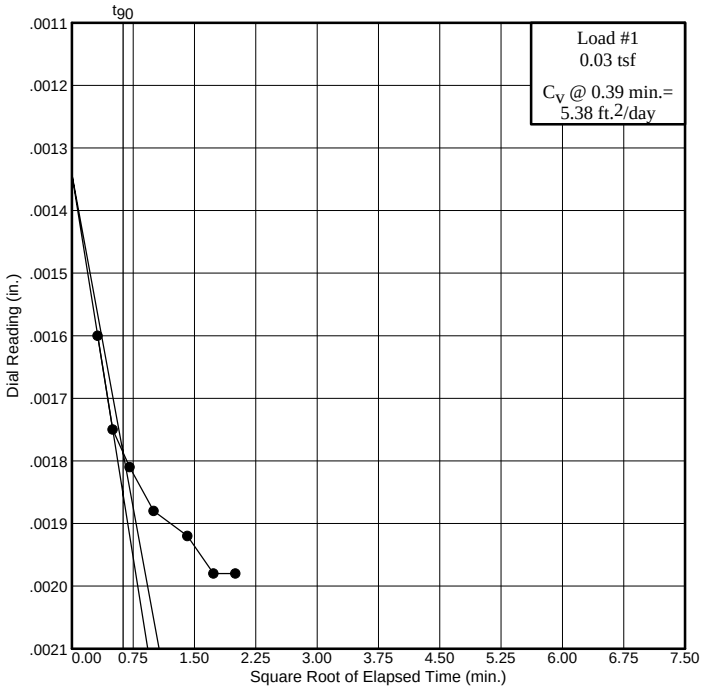
SOIL TECHNOLOGY

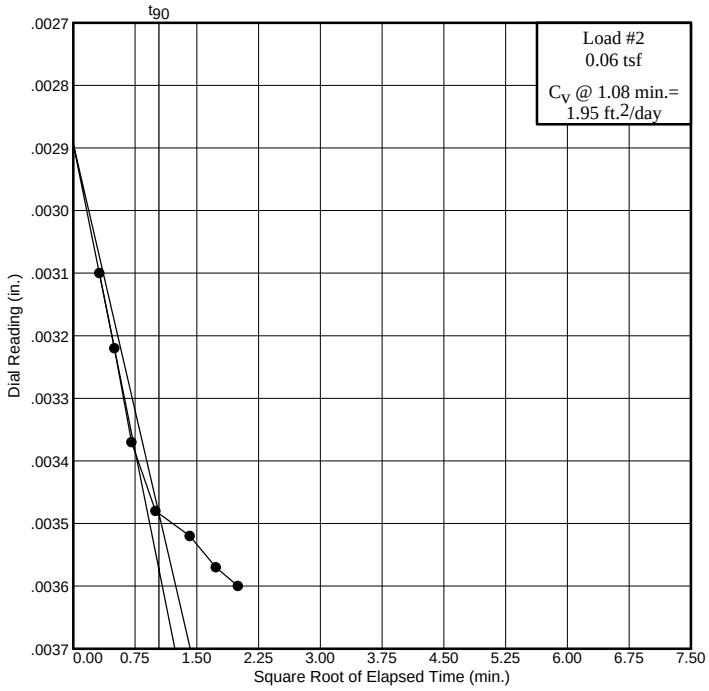
Bainbridge Island, WA

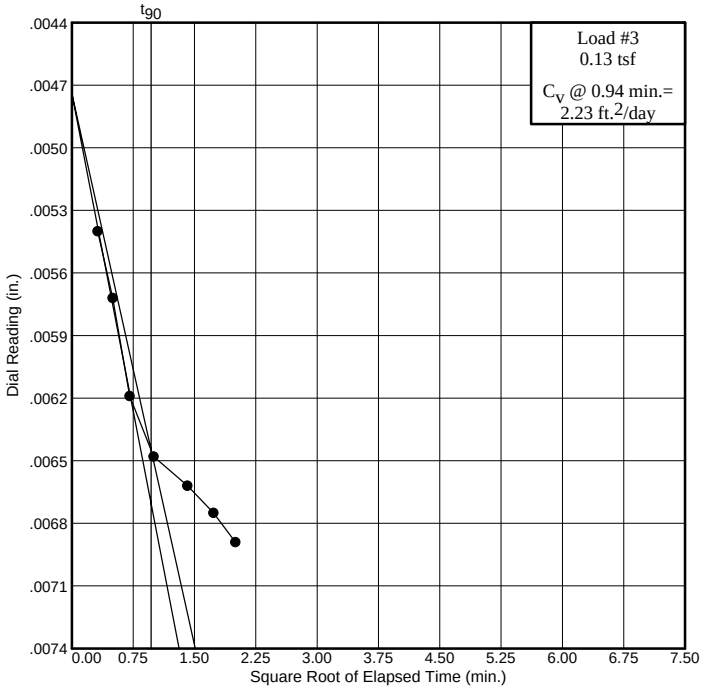
Plate 5

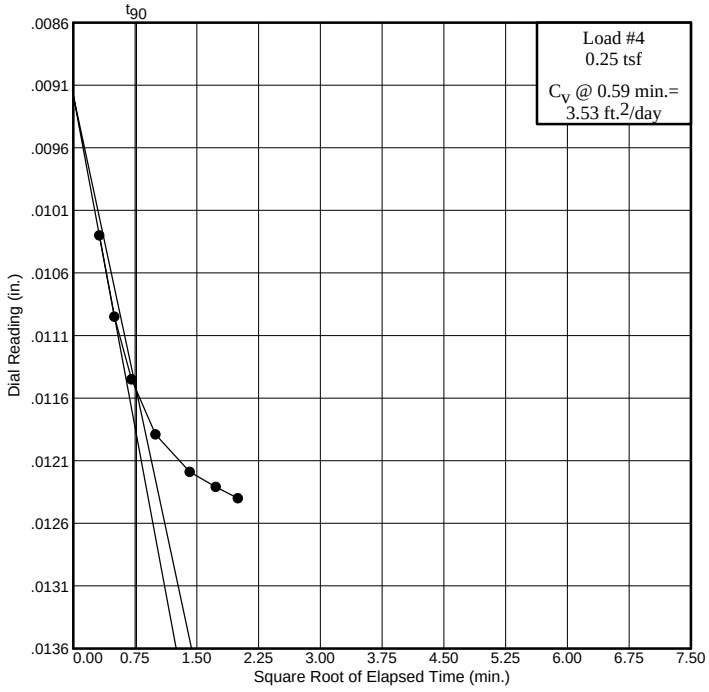
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-7 Depth 61.1-61.2 ft.







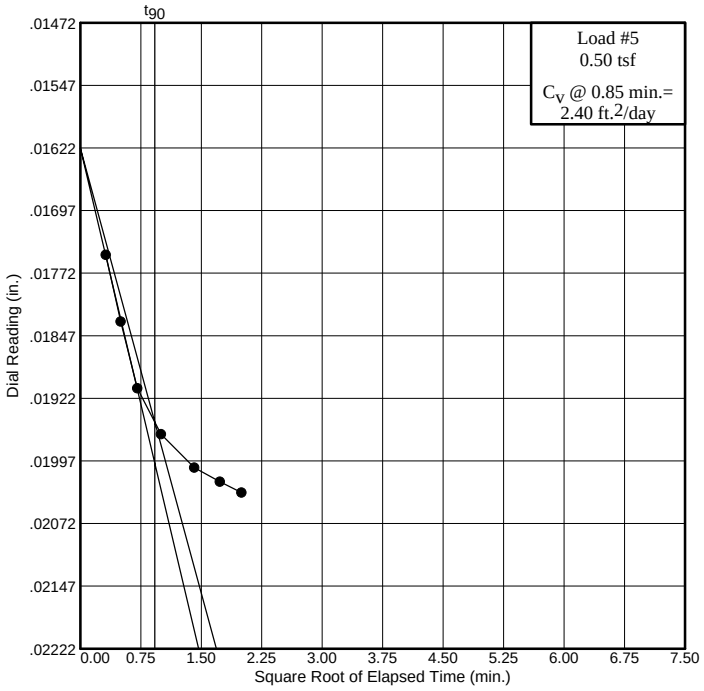


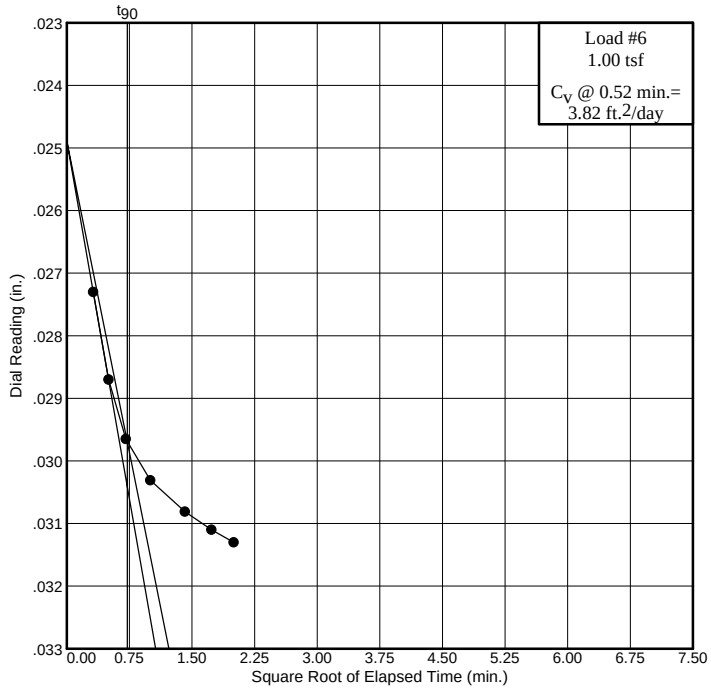
SOIL TECHNOLOGY

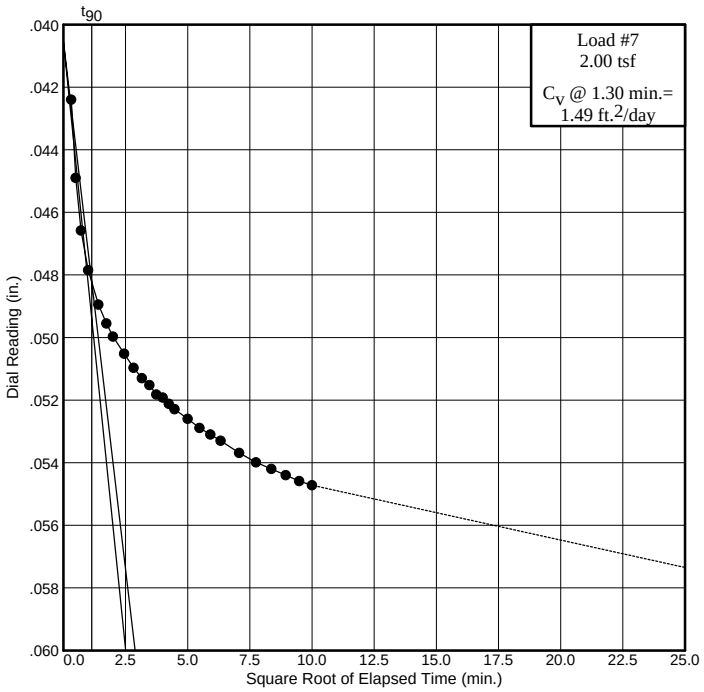
Bainbridge Island, WA

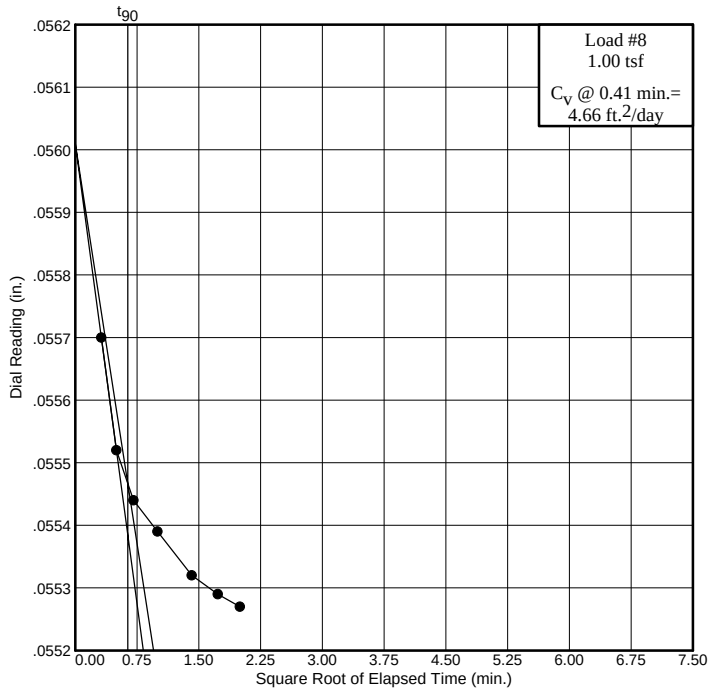
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-7 Depth 61.1-61.2 ft.







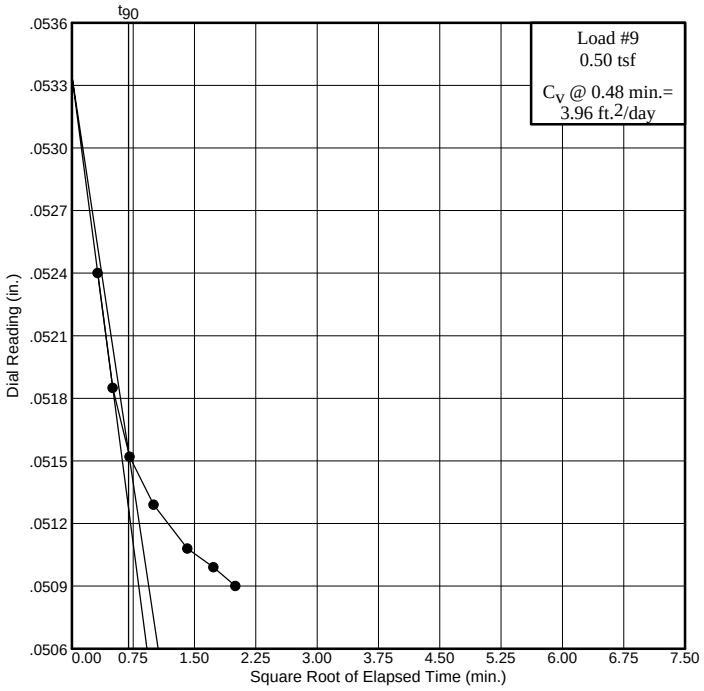


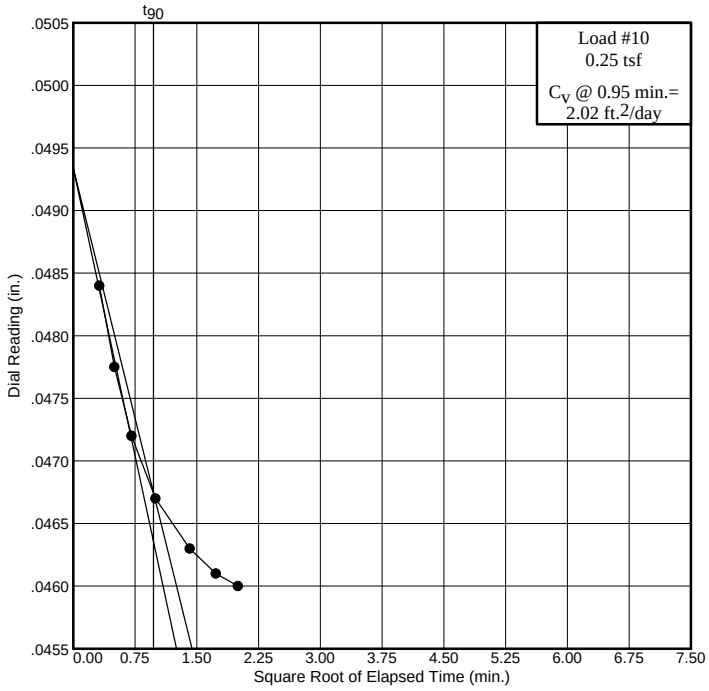
SOIL TECHNOLOGY

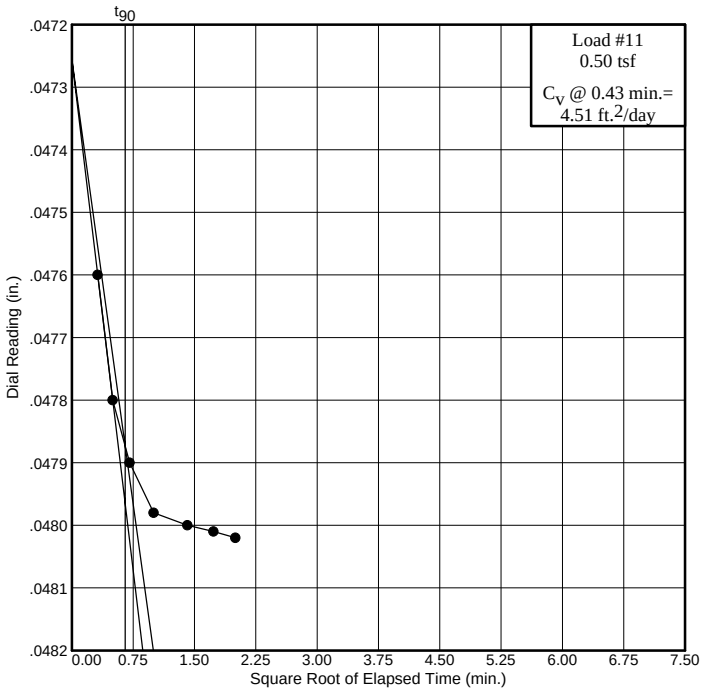
Bainbridge Island, WA

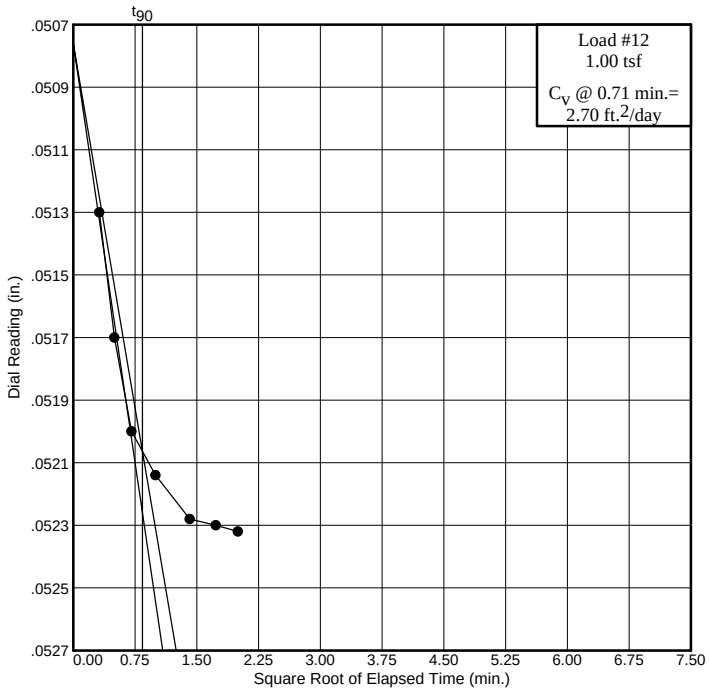
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-7 Depth 61.1-61.2 ft.







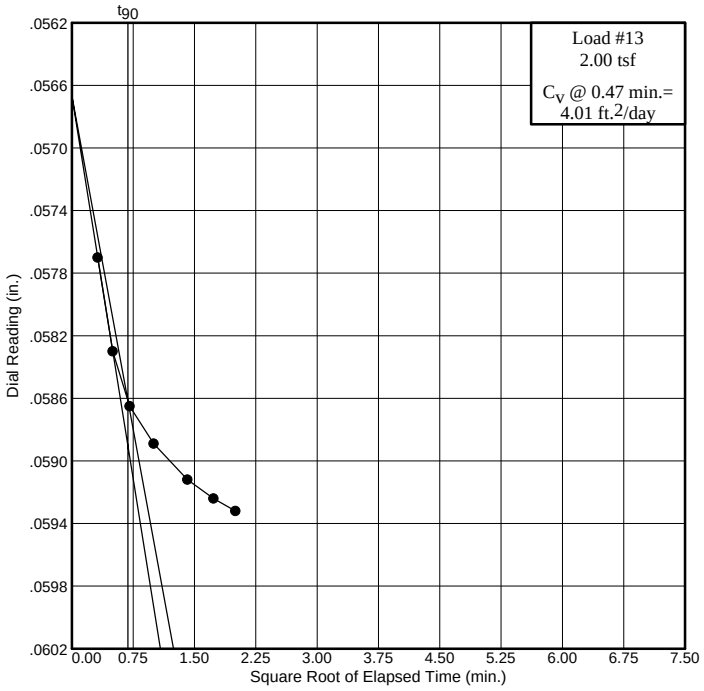


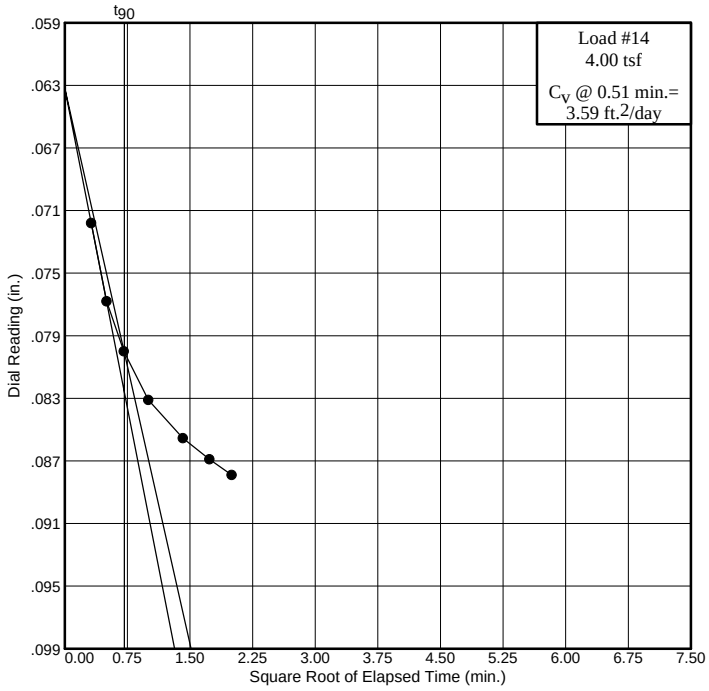
SOIL TECHNOLOGY

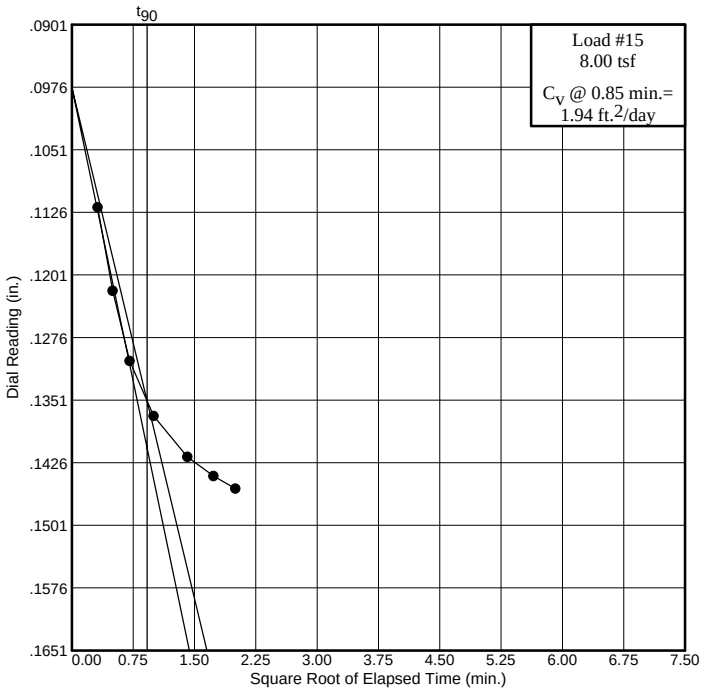
Bainbridge Island, WA

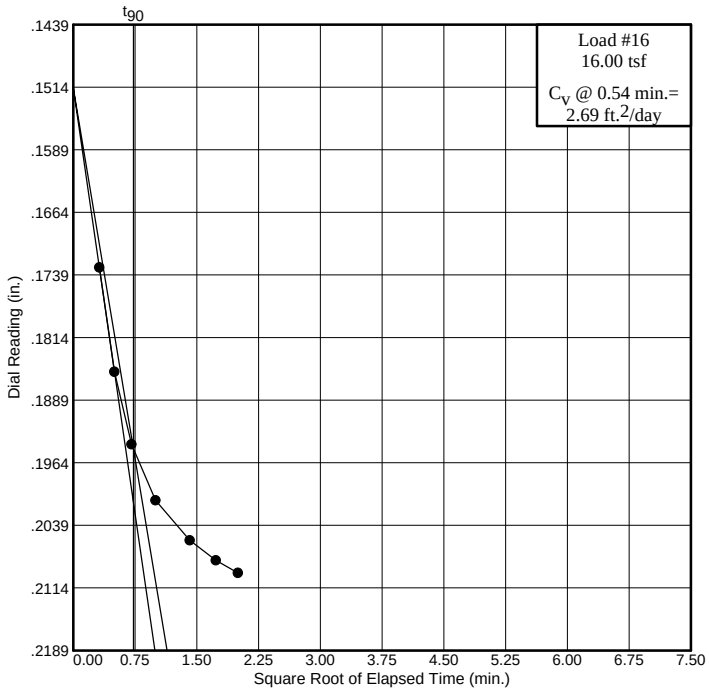
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-7 Depth 61.1-61.2 ft.







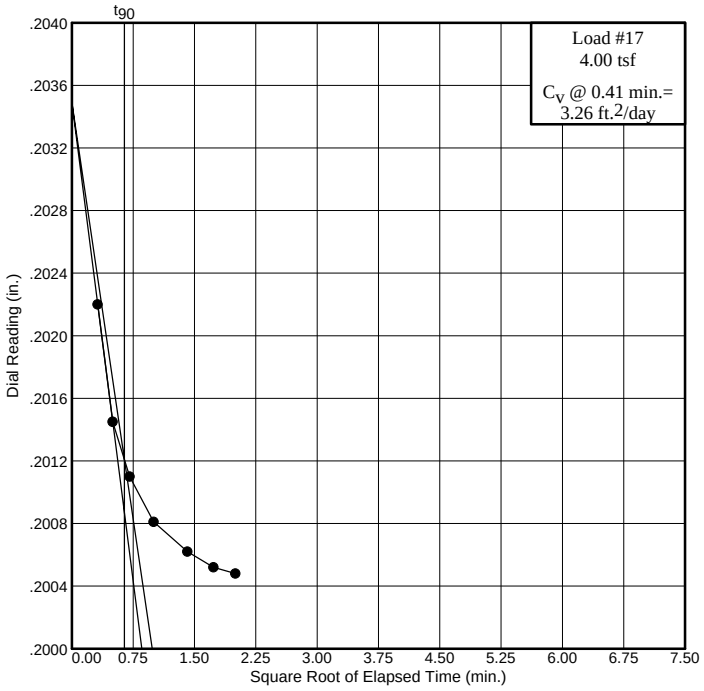


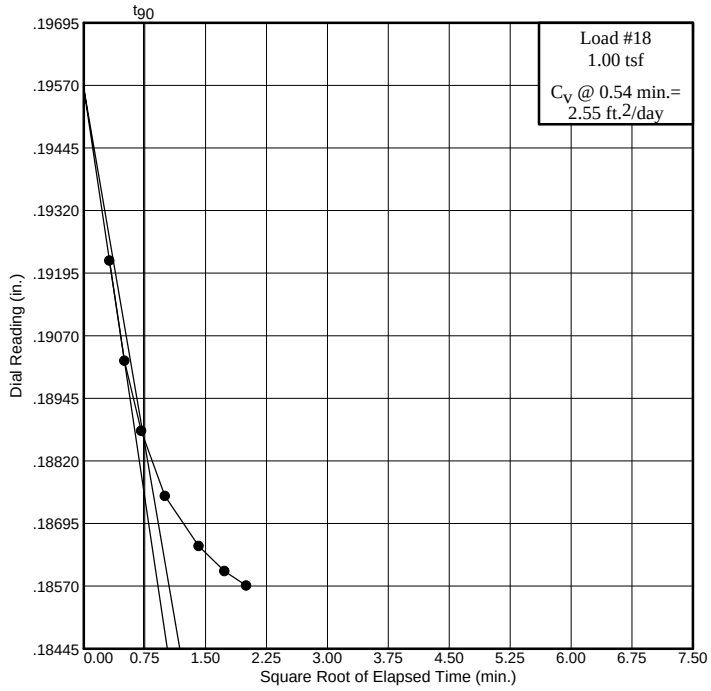
SOIL TECHNOLOGY

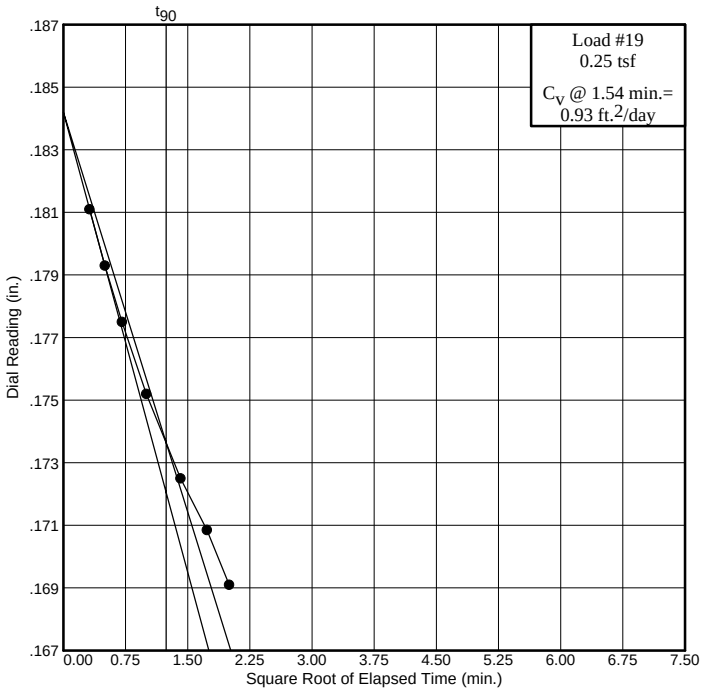
Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-7 Depth 61.1-61.2 ft.



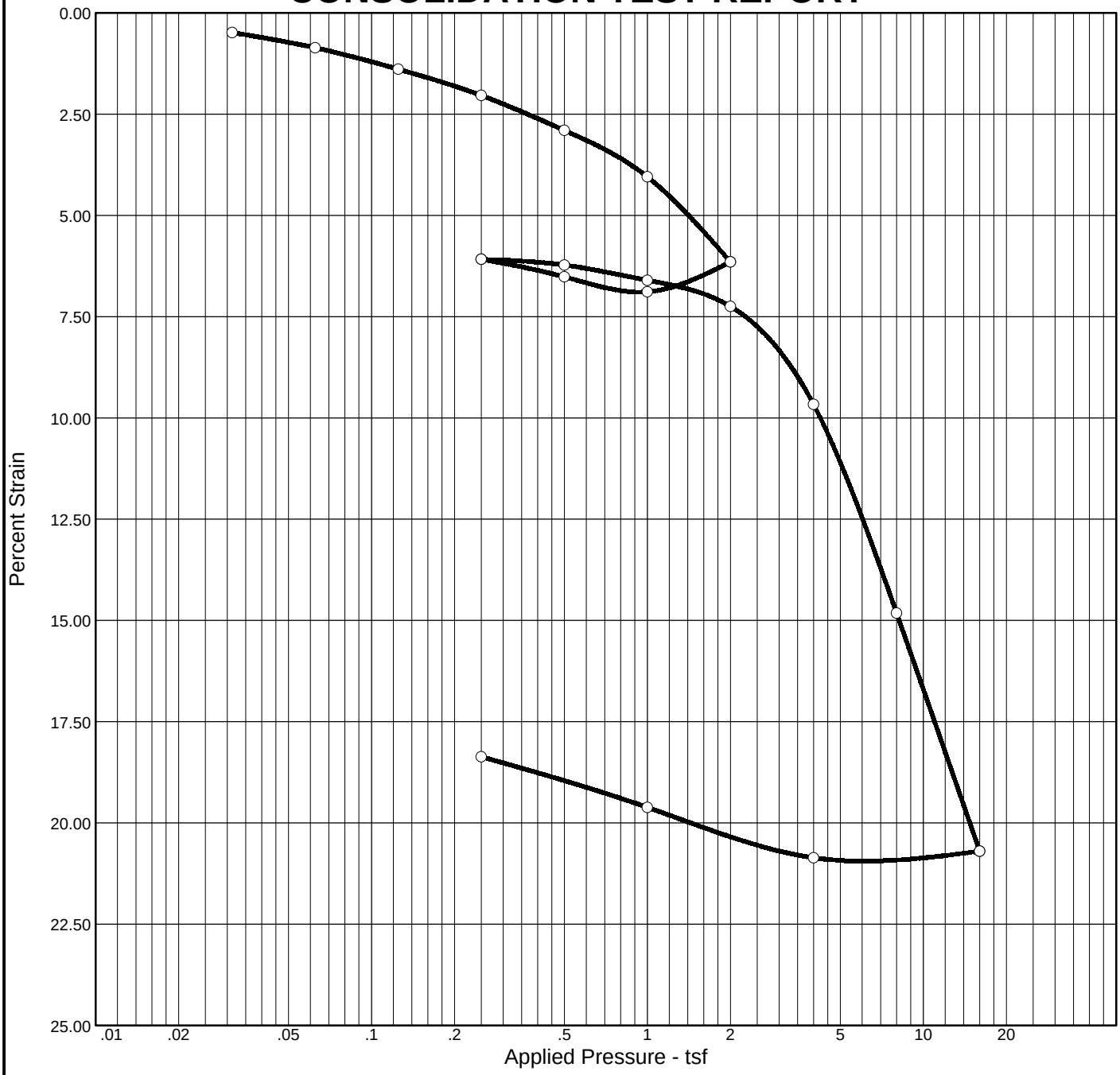




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
Sat.	Moist.											
97.1 %	53.7 %	66.6	48	11	2.6		3.81	0.48	0.04			1.438

MATERIAL DESCRIPTION	USCS	AASHTO
	Silt ML	---

Project No. J-06-2135 **Client:** AMEC Portland

Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004

Location: B-3-06,ST-9 Depth 71.0-71.1 ft.

Remarks:
Plot includes secondary at 2 tsf

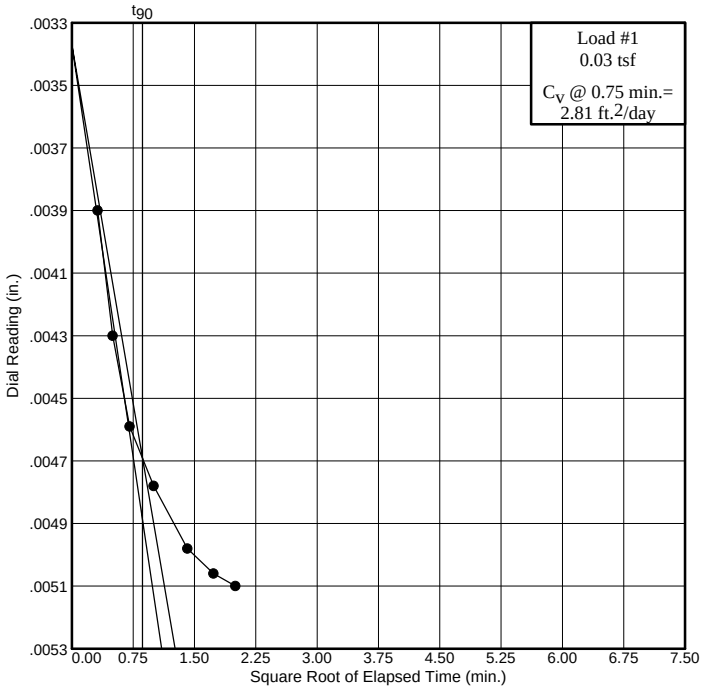
SOIL TECHNOLOGY

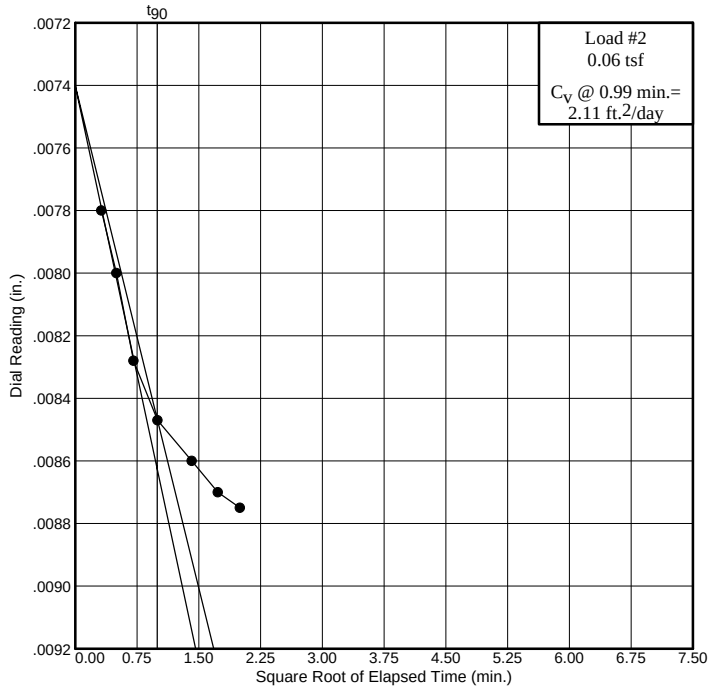
Bainbridge Island, WA

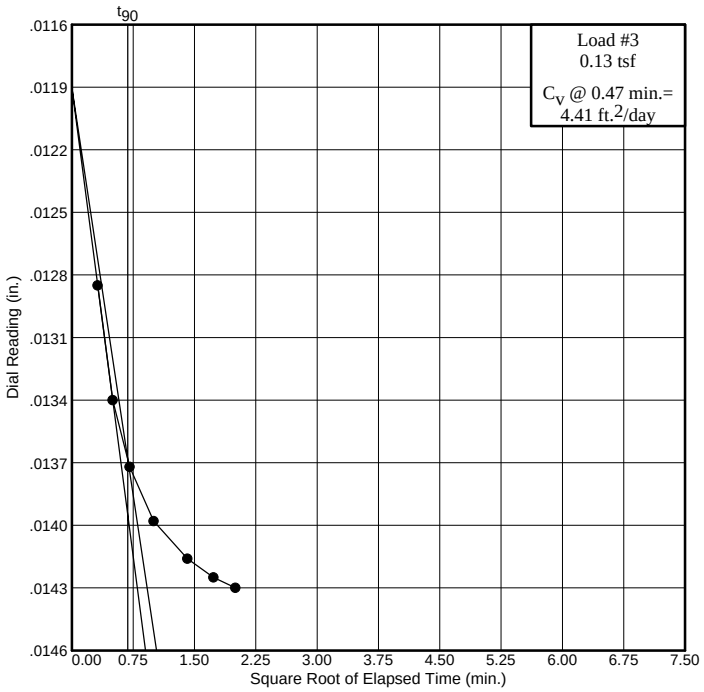
Plate 6

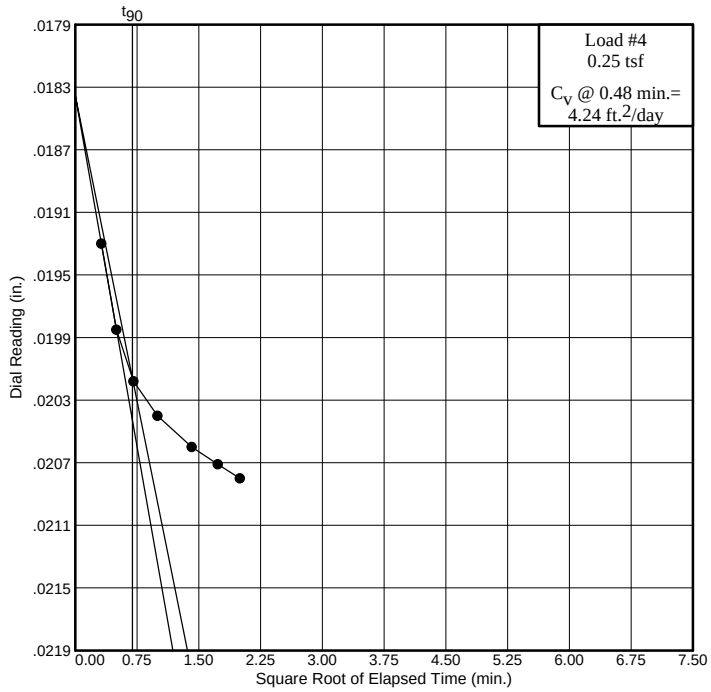
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-9 Depth 71.0-71.1 ft.







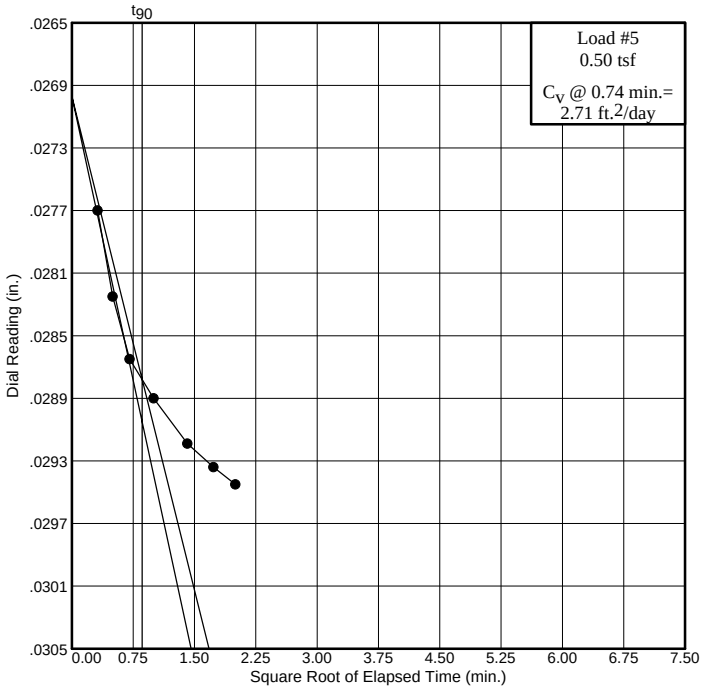


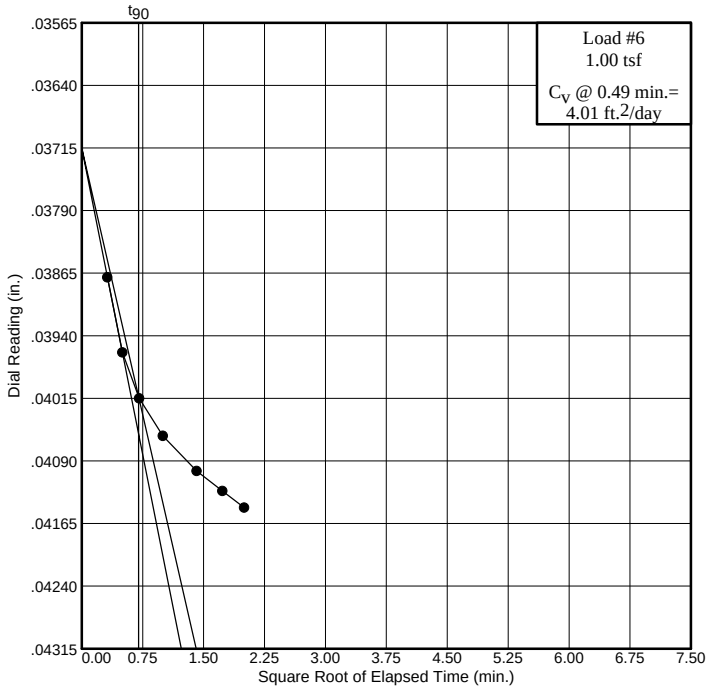
SOIL TECHNOLOGY

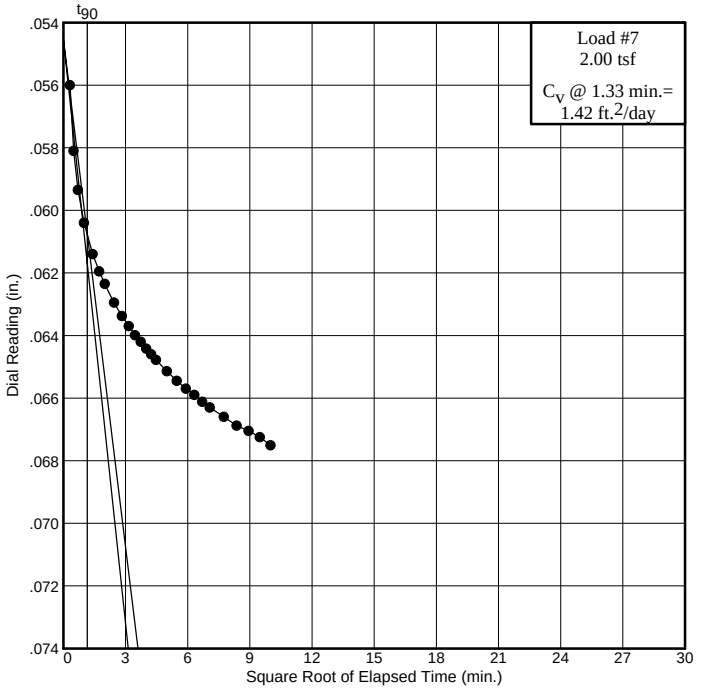
Bainbridge Island, WA

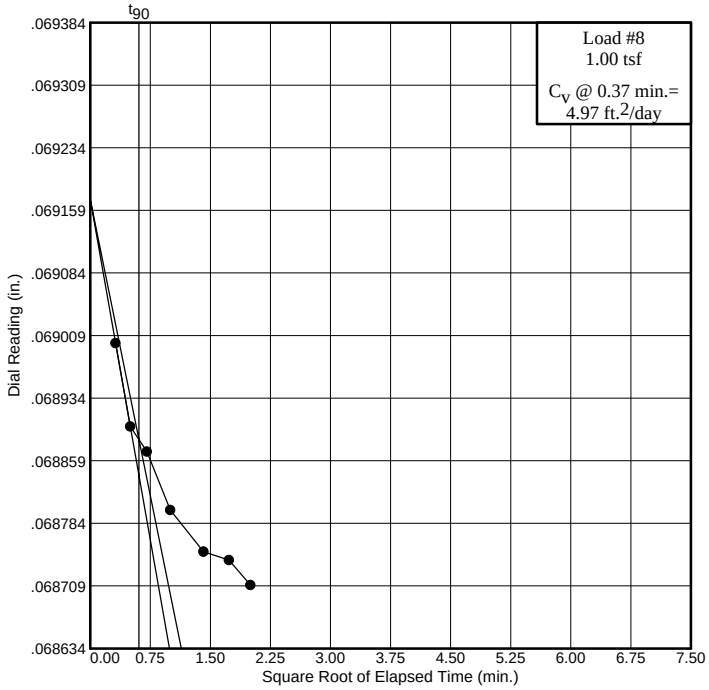
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-9 Depth 71.0-71.1 ft.







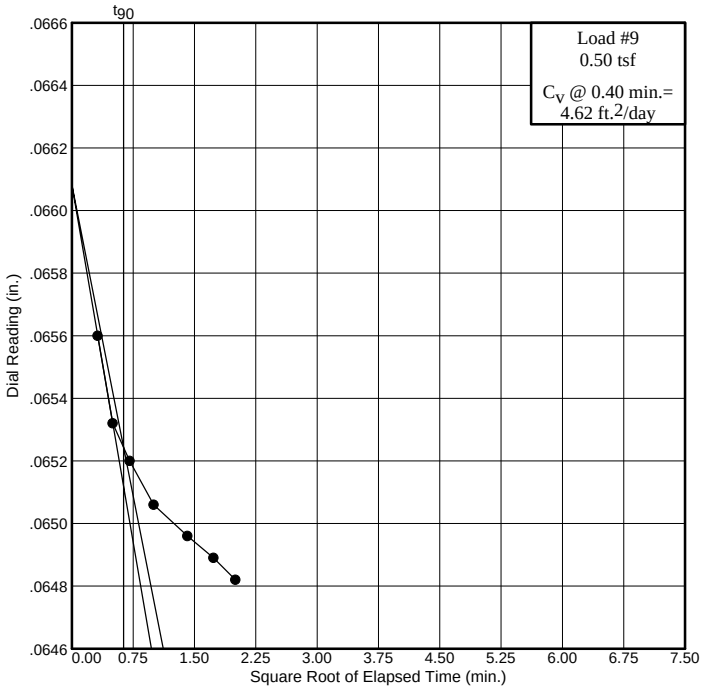


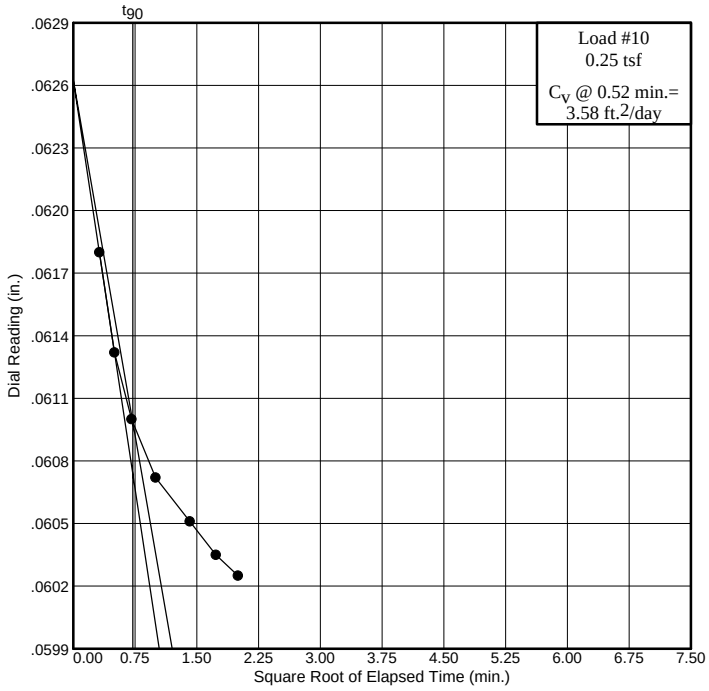
SOIL TECHNOLOGY

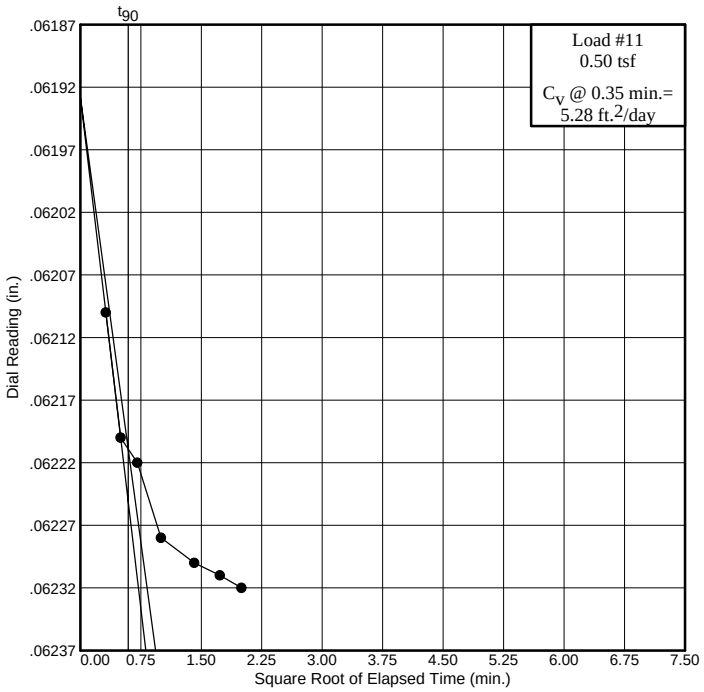
Bainbridge Island, WA

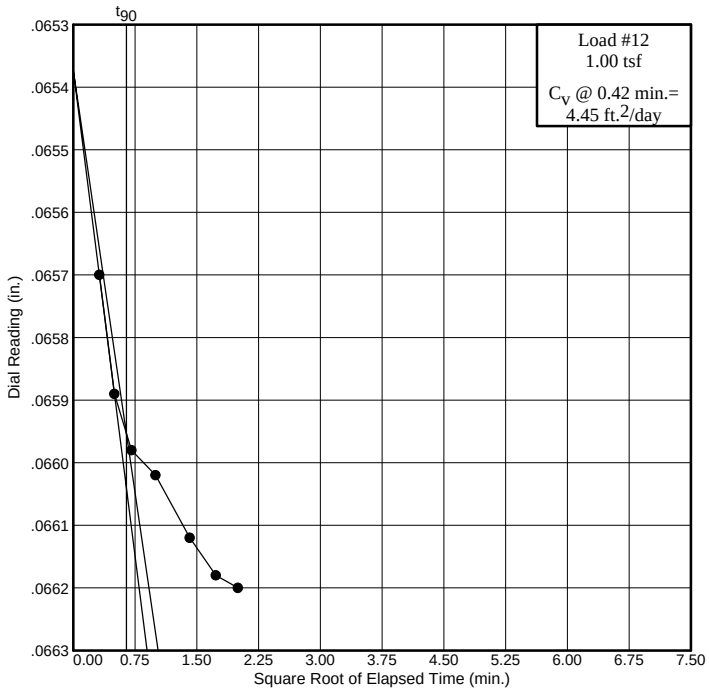
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-9 Depth 71.0-71.1 ft.







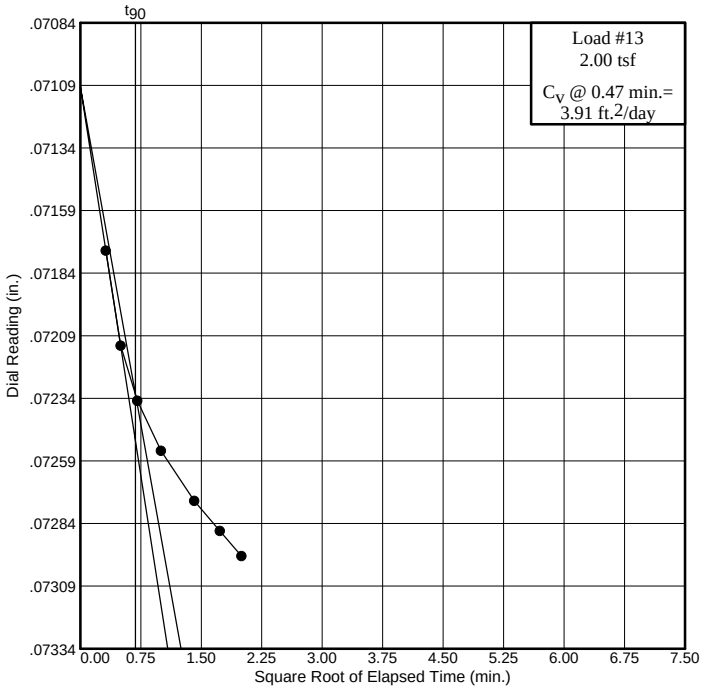


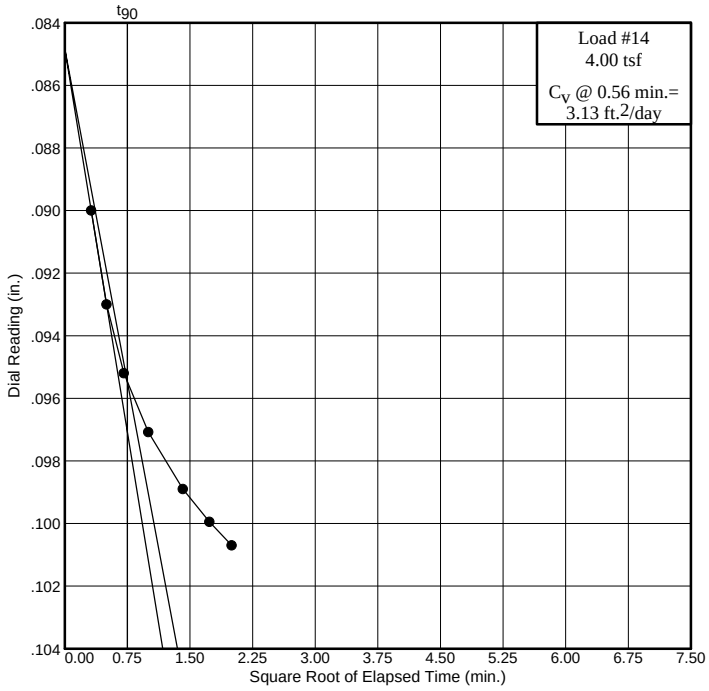
SOIL TECHNOLOGY

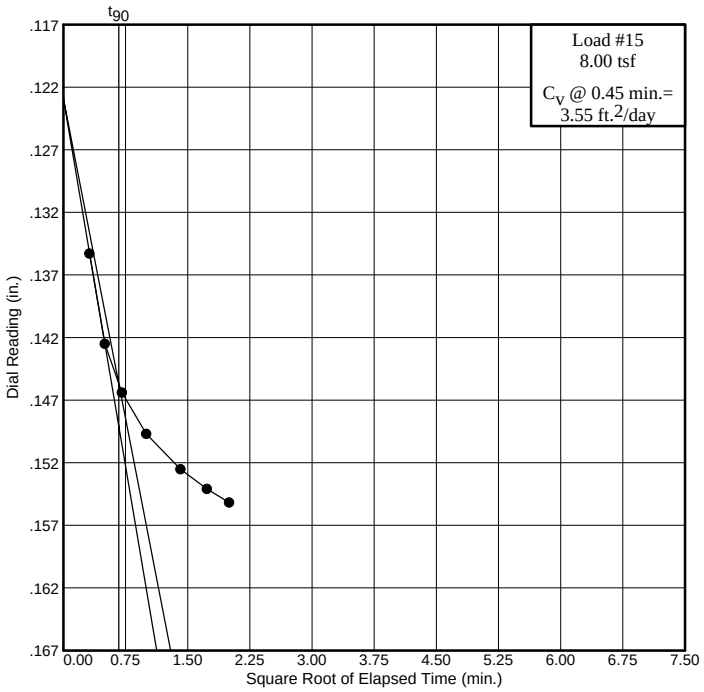
Bainbridge Island, WA

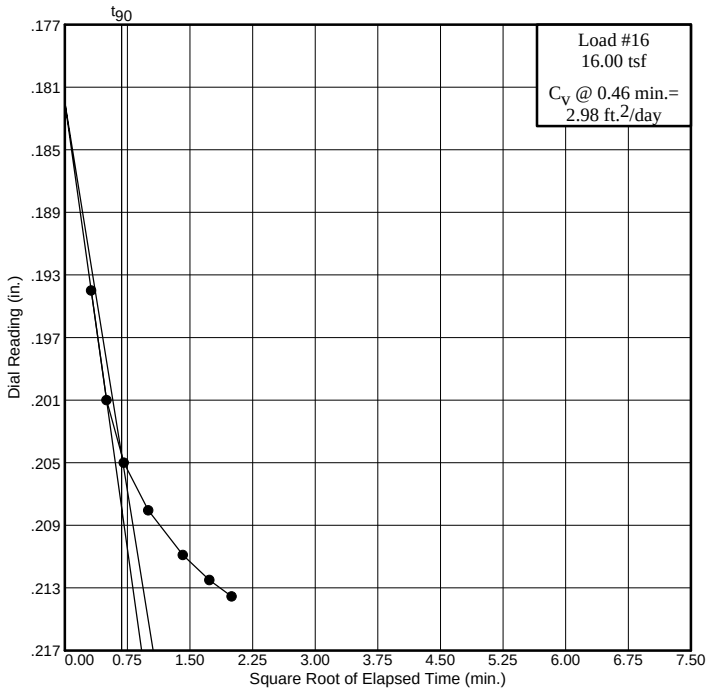
Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-9 Depth 71.0-71.1 ft.







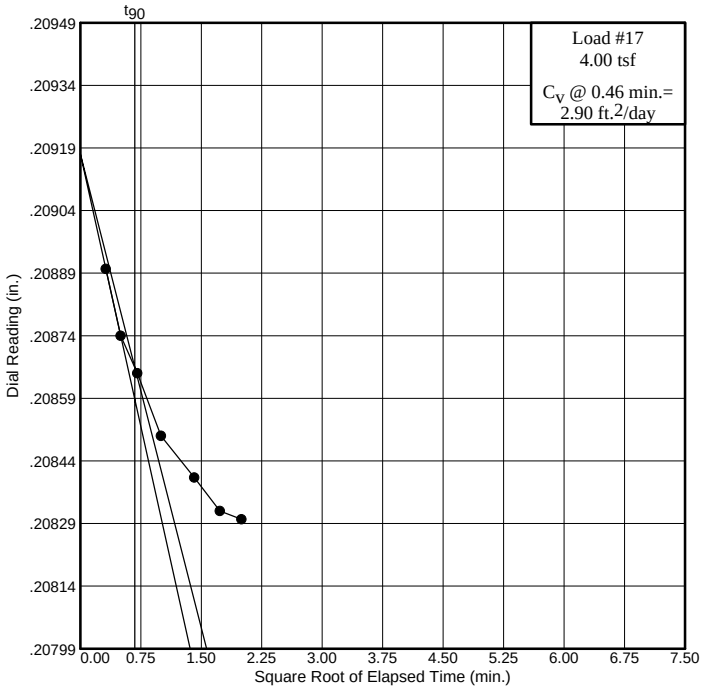


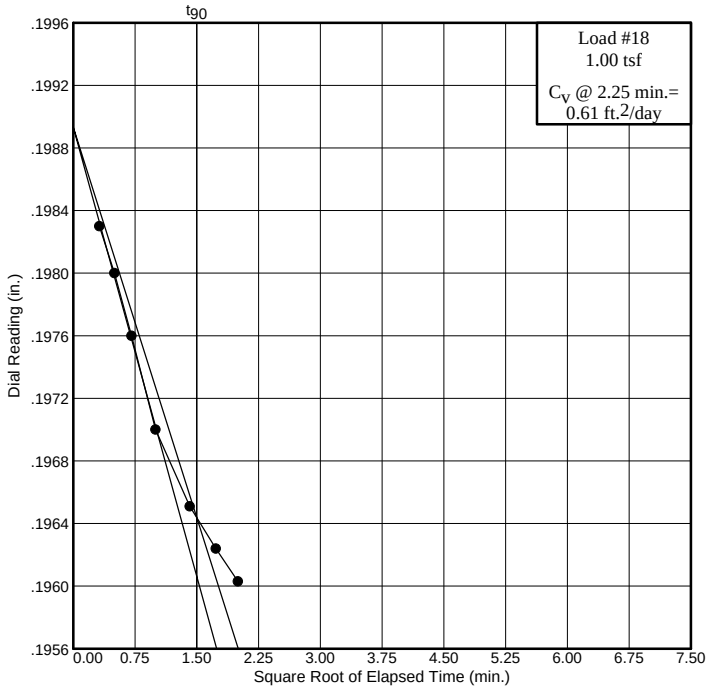
SOIL TECHNOLOGY

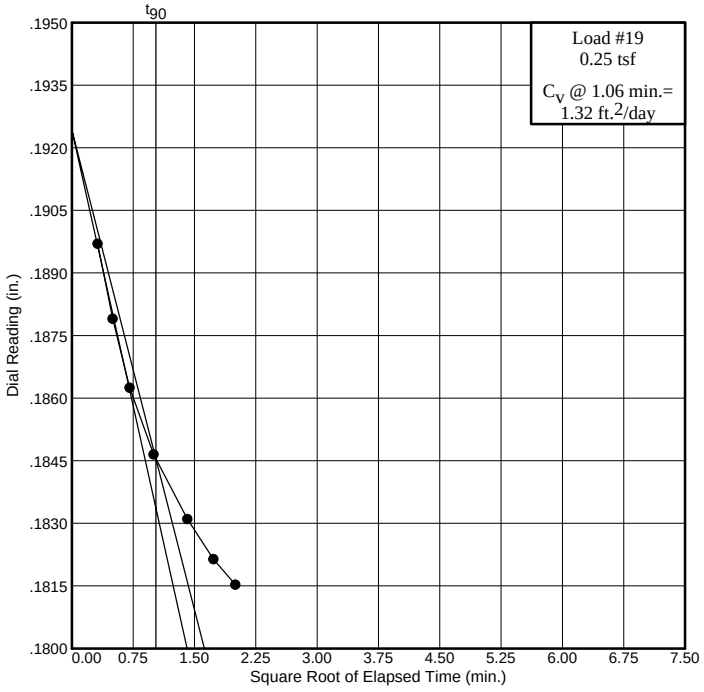
Bainbridge Island, WA

Dial Reading vs. Time

Project No.: J-06-2135
Project: RP WDL Geotechnical Soil Testing
0-61M-10703-65-3 TO-PDX-004
Location: B-3-06,ST-9 Depth 71.0-71.1 ft.



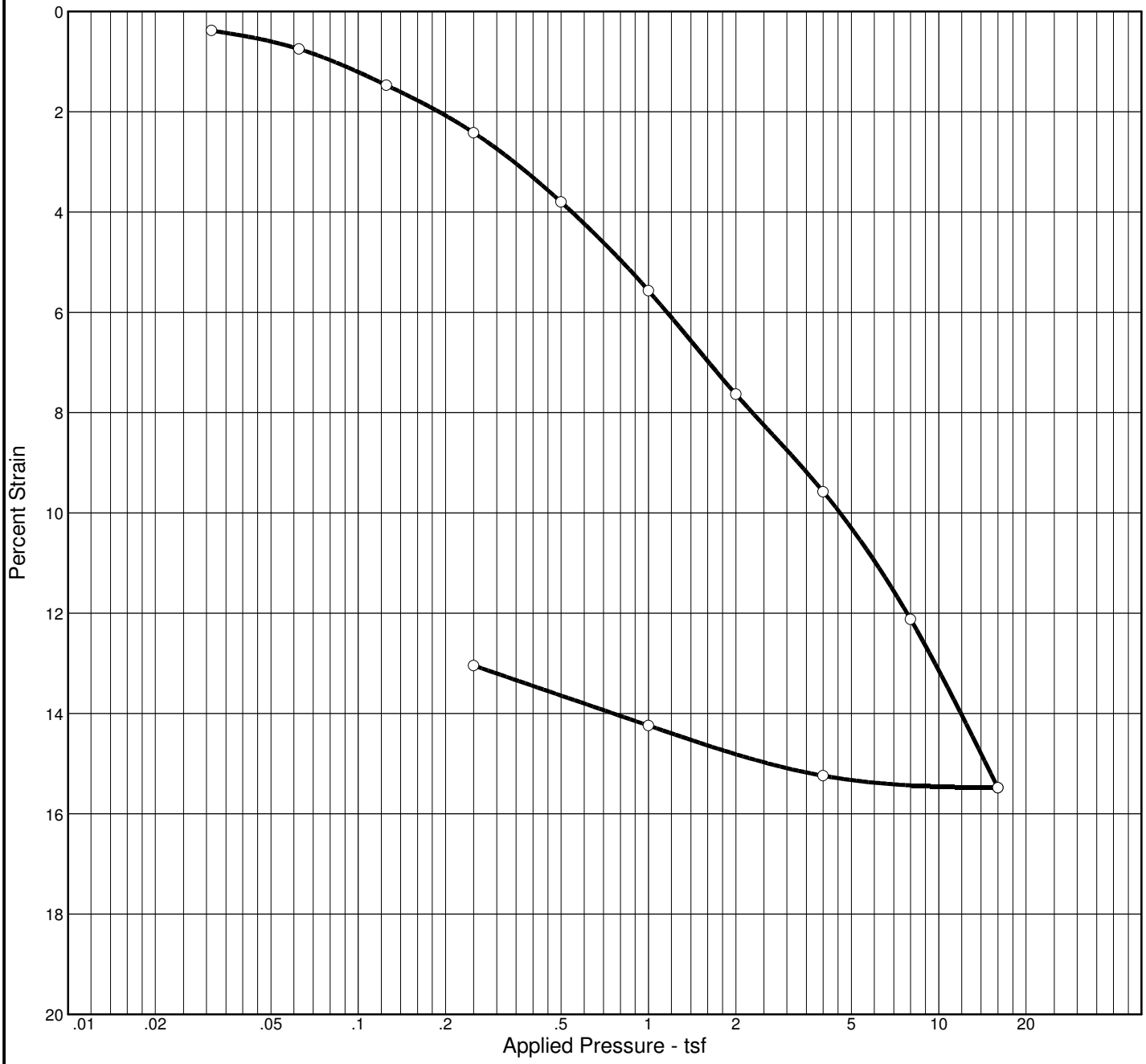




SOIL TECHNOLOGY

Bainbridge Island, WA

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture								
99.6 %	39.6 %	80.1	39	5	2.62		2.76	0.23	1.043

MATERIAL DESCRIPTION	USCS	AASHTO
Soft to m-stiff,wet,grey,sandy Silt	ML	----

Project No. 0-61M- **Client:** AMEC Earth & Environmental, Inc.

Project: RP-Portland Site
J-06-2160

Source: RP-18G **Sample No.:** ST-4 **Elev./Depth:** 51.0-51.1

Remarks:
Soft to medium stiff,wet,grey, Silt

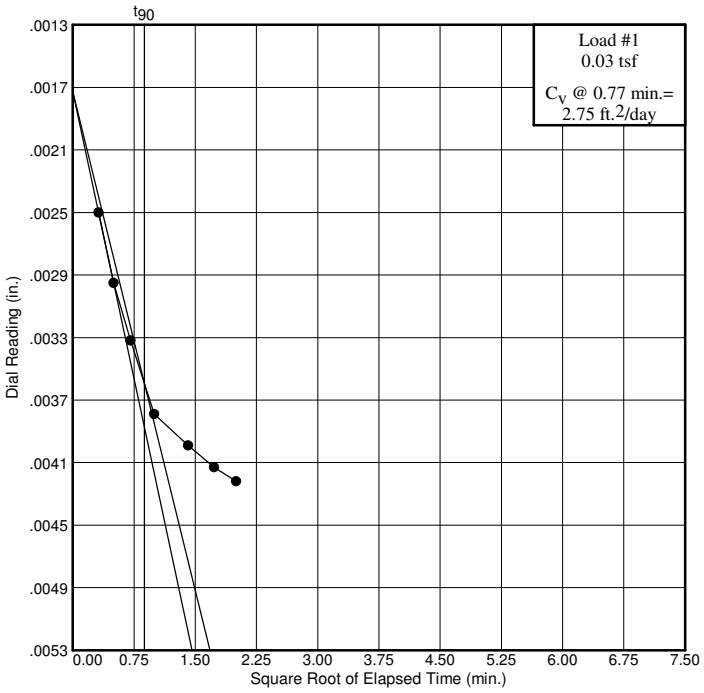
CONSOLIDATION TEST REPORT

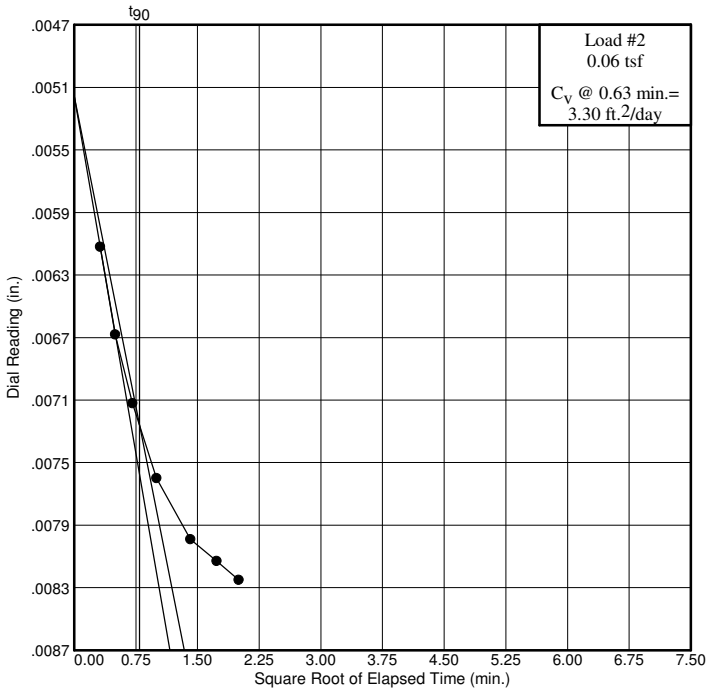
SOIL TECHNOLOGY

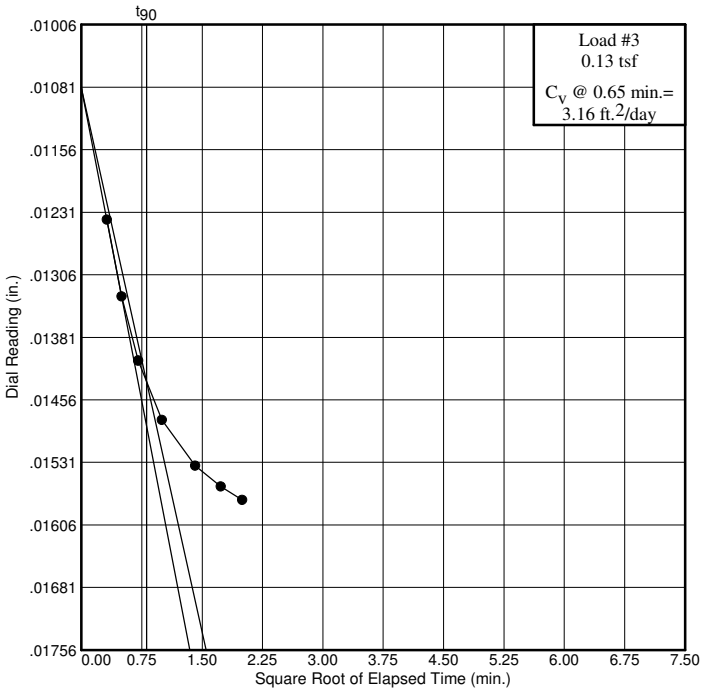
Figure 1

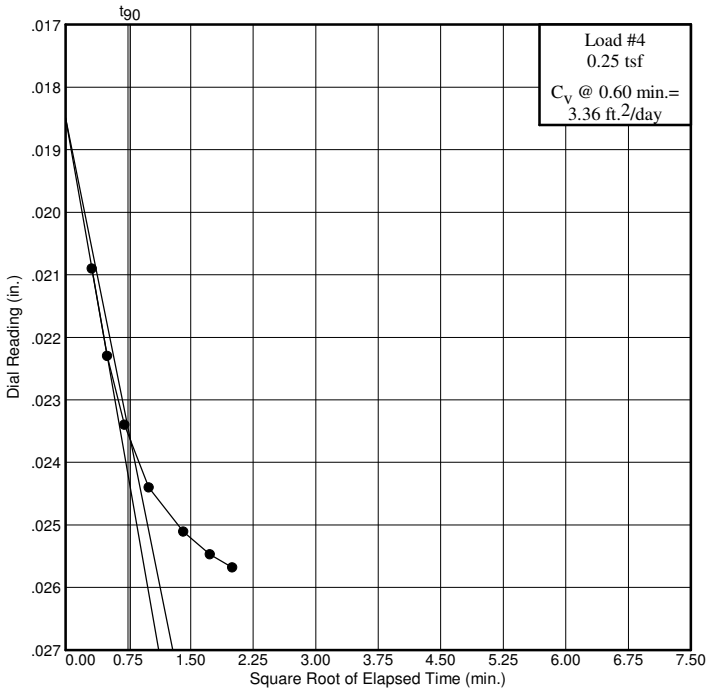
Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-4 Elev./Depth: 51.0-51.1









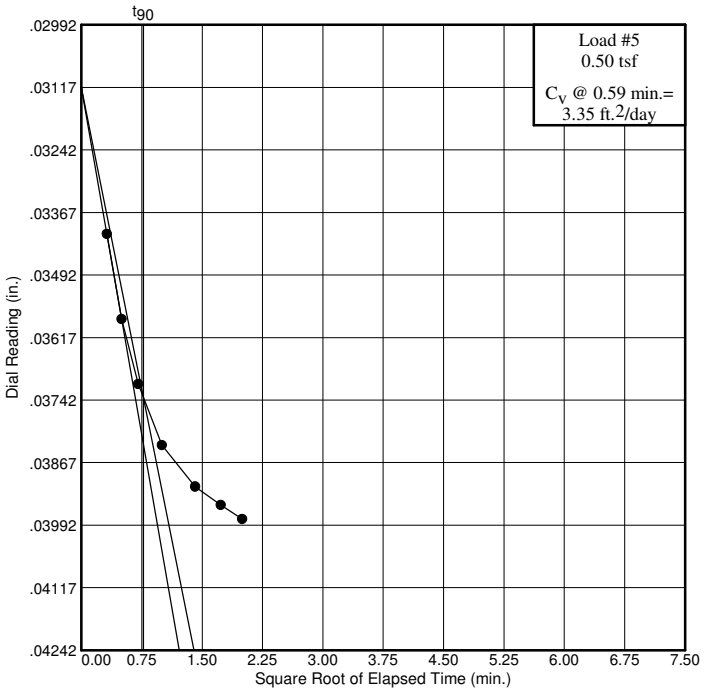
Dial Reading vs. Time

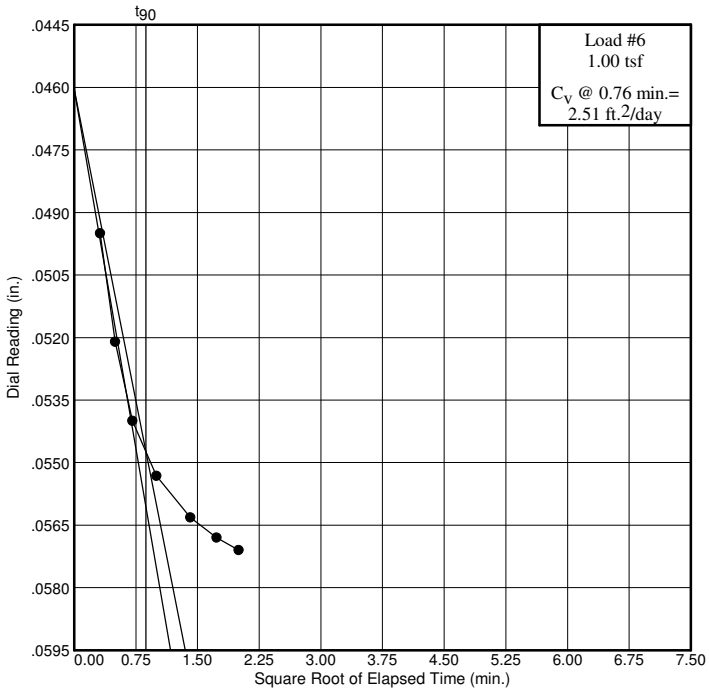
SOIL TECHNOLOGY

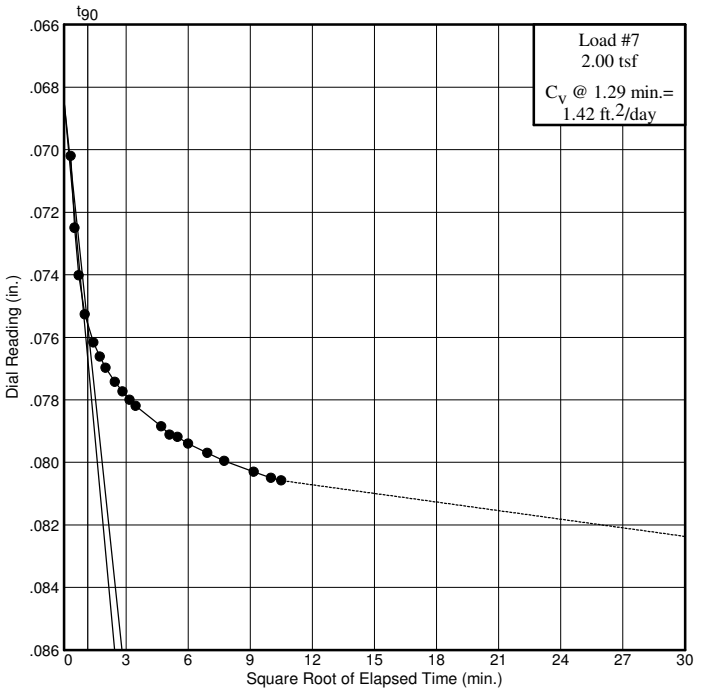
Figure 2

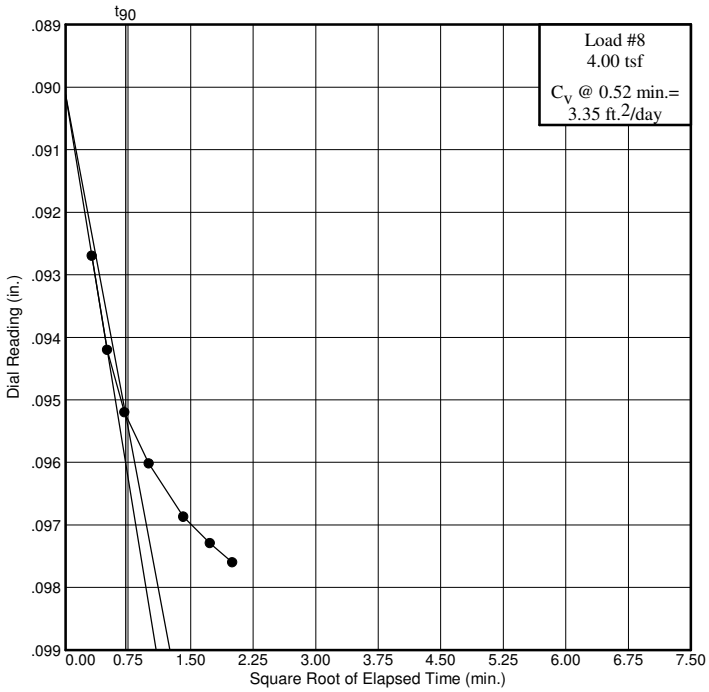
Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-4 Elev./Depth: 51.0-51.1









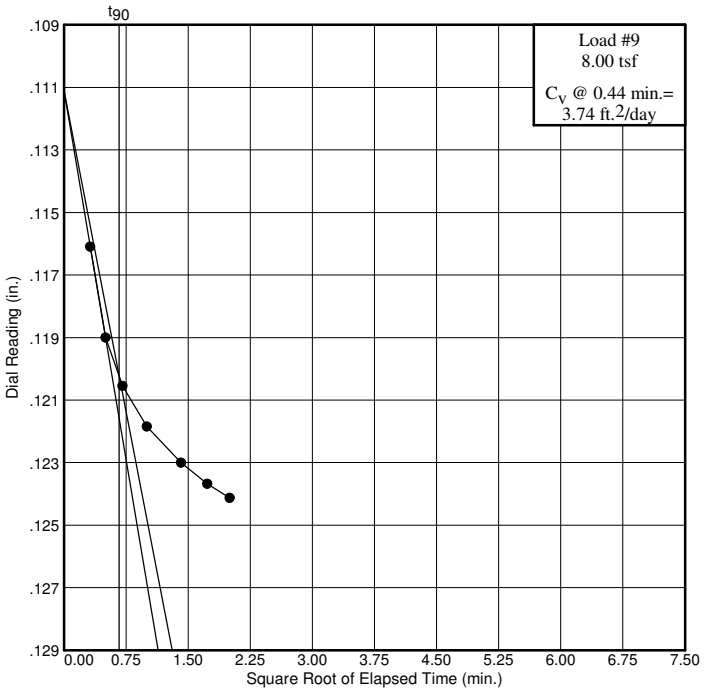
Dial Reading vs. Time

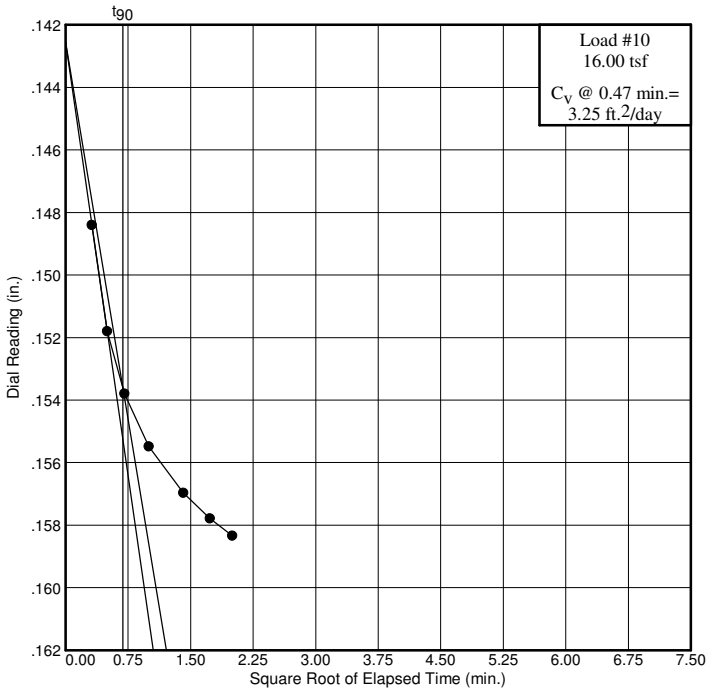
SOIL TECHNOLOGY

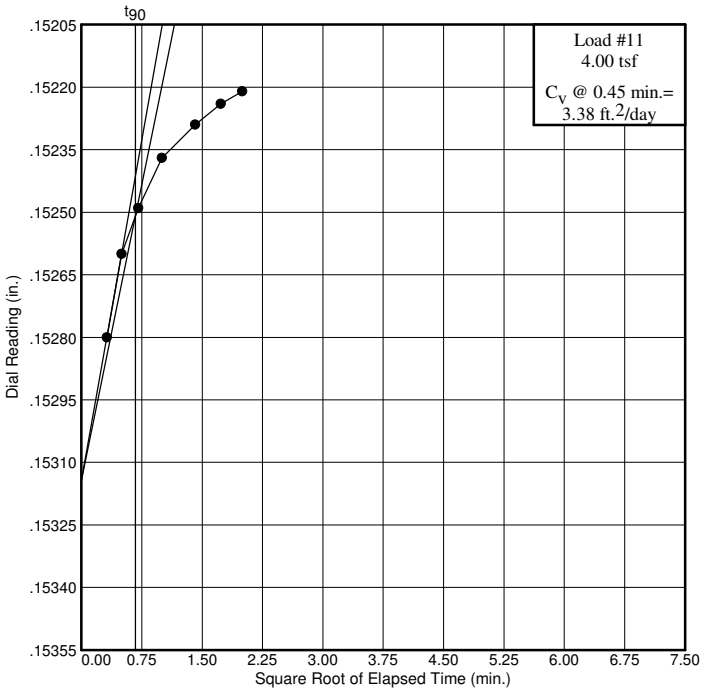
Figure 3

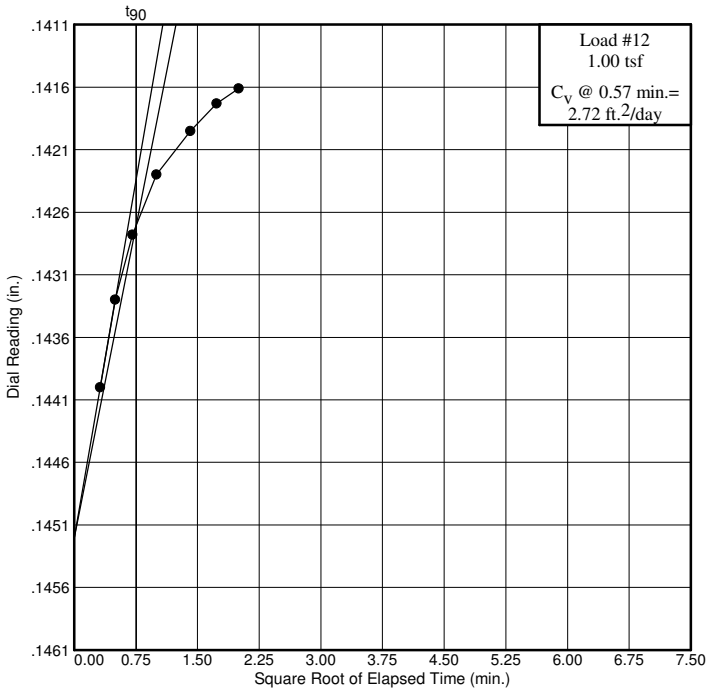
Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-4 Elev./Depth: 51.0-51.1









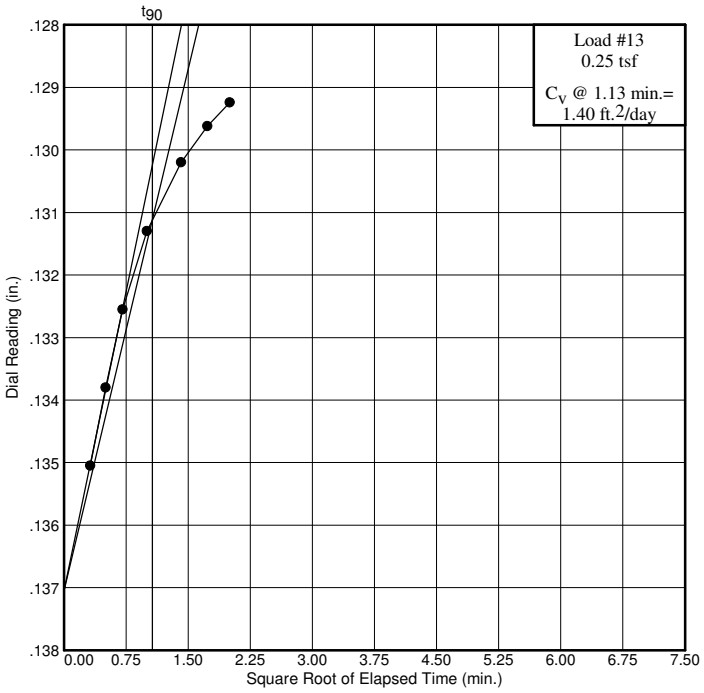
Dial Reading vs. Time

SOIL TECHNOLOGY

Figure 4

Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-4 Elev./Depth: 51.0-51.1



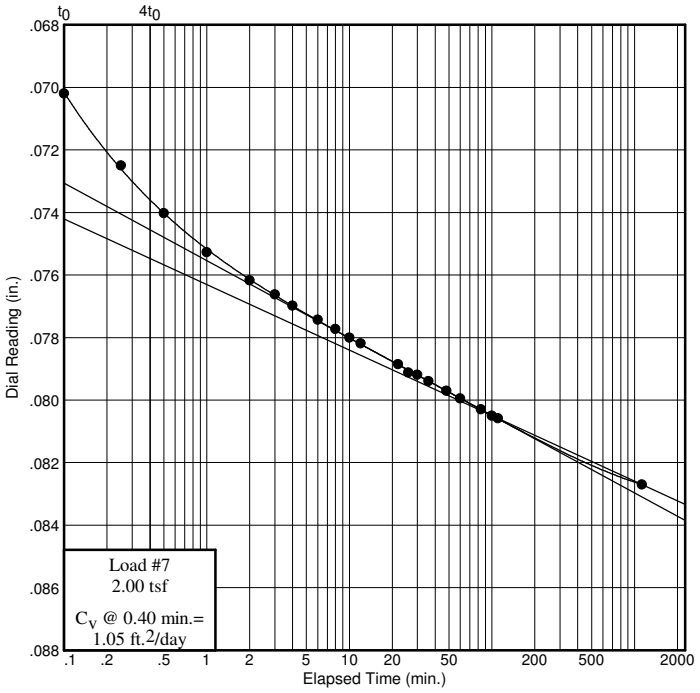
Dial Reading vs. Time

SOIL TECHNOLOGY

Figure 5

Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-4 Elev./Depth: 51.0-51.1

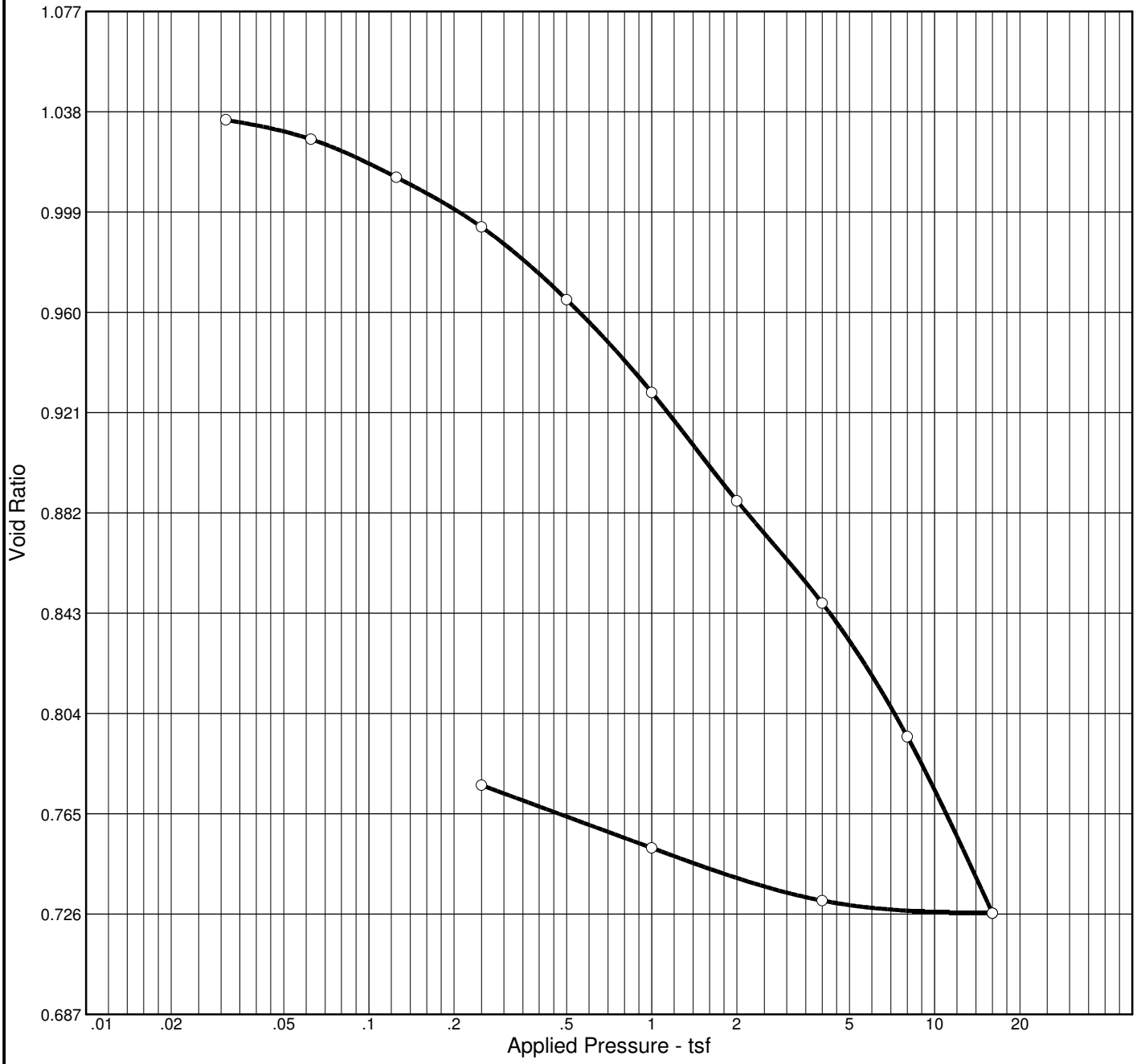


Dial Reading vs. Time

SOIL TECHNOLOGY

Figure 2

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture								
99.6 %	39.6 %	80.1	39	5	2.62		2.76	0.23	1.043

MATERIAL DESCRIPTION	USCS	AASHTO
Soft to m-stiff,wet,grey,sandy Silt	ML	----

Project No. 0-61M- **Client:** AMEC Earth & Environmental, Inc.

Project: RP-Portland Site
J-06-2160

Source: RP-18G **Sample No.:** ST-4 **Elev./Depth:** 51.0-51.1

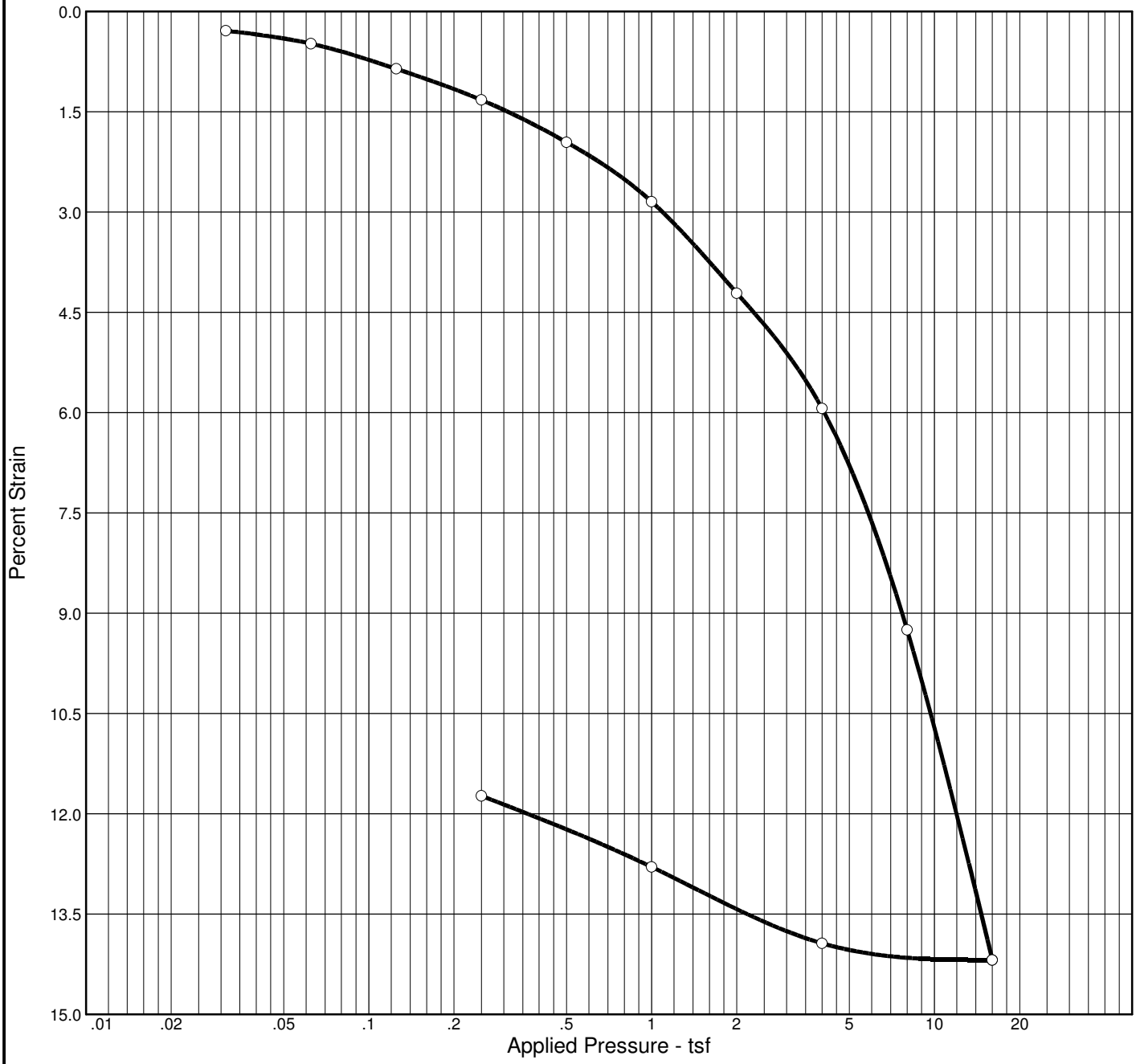
Remarks:
Soft to medium stiff,wet,grey, Silt

CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

Figure 1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture								
100.0 %	41.3 %	80.1	36	5	2.7		4.97	0.35	1.116

MATERIAL DESCRIPTION	USCS	AASHTO
Medium stiff,wet,tan,Silt	ML	----

Project No. 0-61M- **Client:** AMEC Earth & Environmental, Inc.

Project: RP-Portland Site
J-06-2160

Source: RP-18G **Sample No.:** ST-5 **Elev./Depth:** 61.2-61.3

Remarks:
Medium stiff,wet,tan Silt

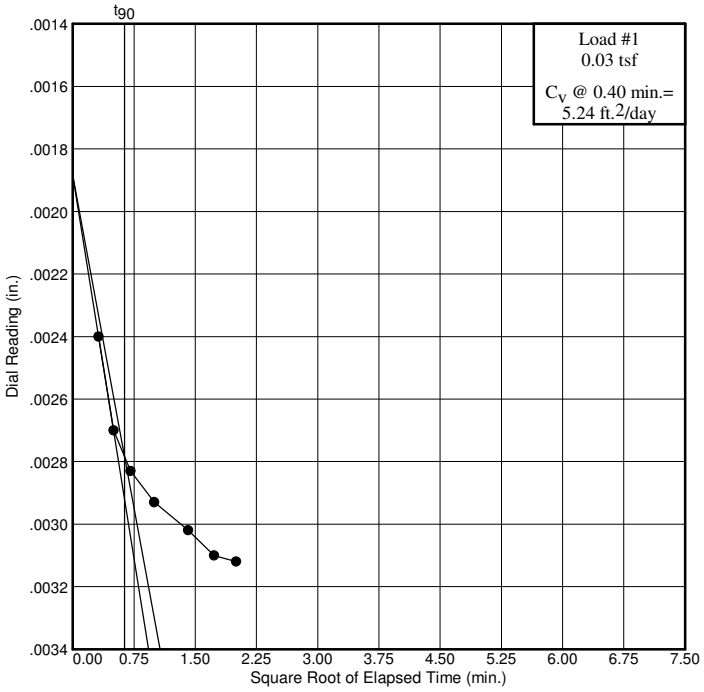
CONSOLIDATION TEST REPORT

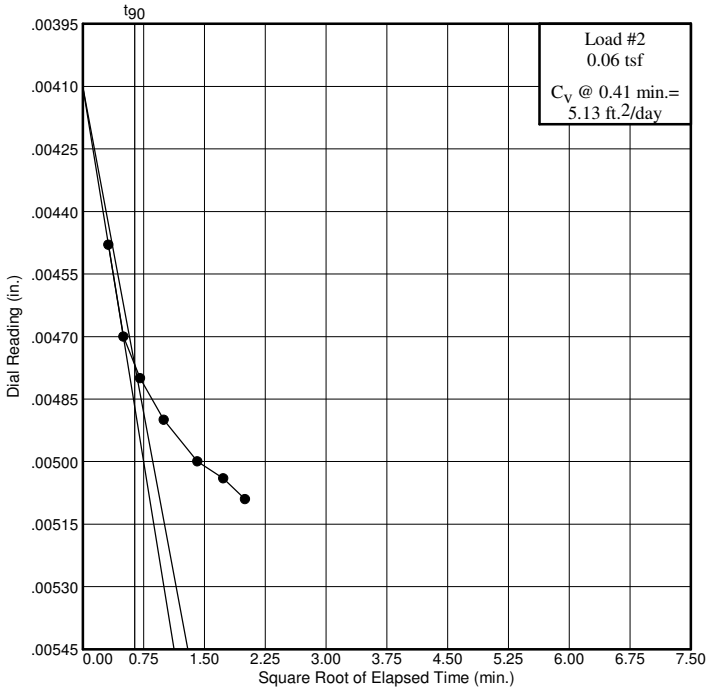
SOIL TECHNOLOGY

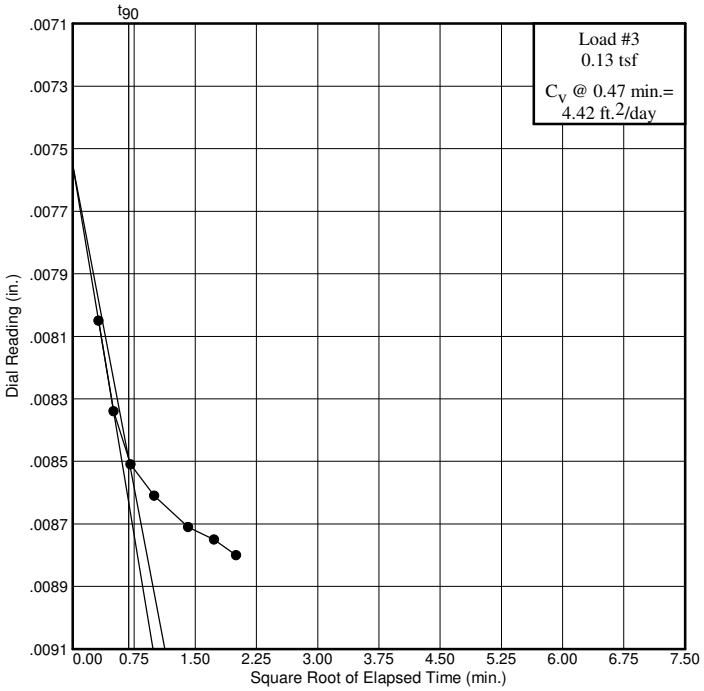
Figure 2

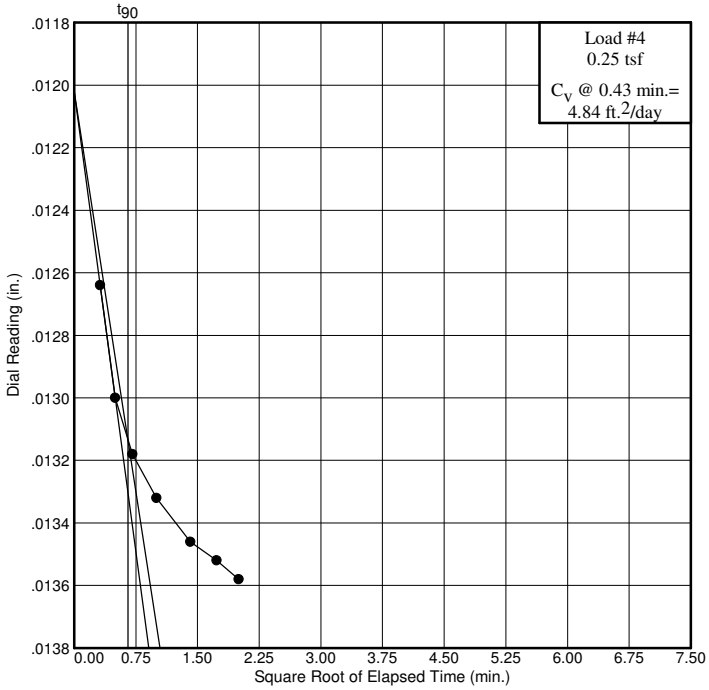
Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-5 Elev./Depth: 61.2-61.3









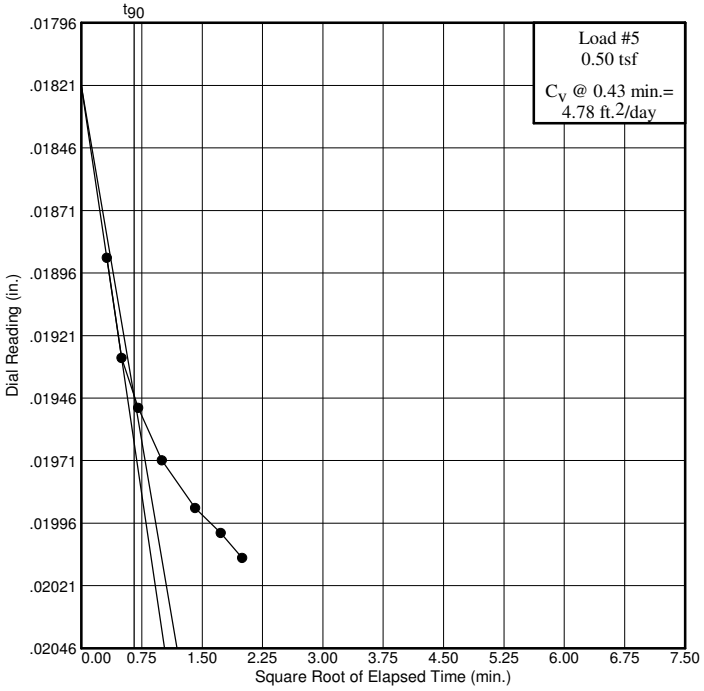
Dial Reading vs. Time

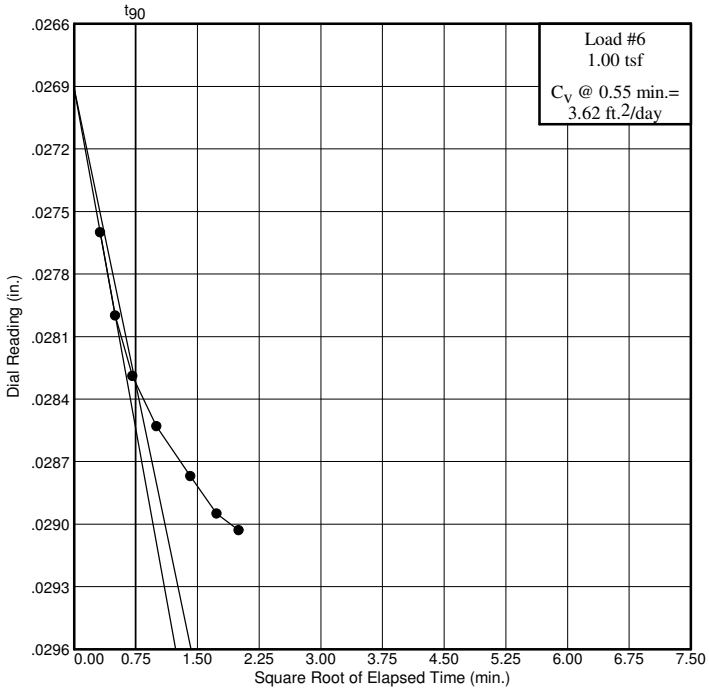
SOIL TECHNOLOGY

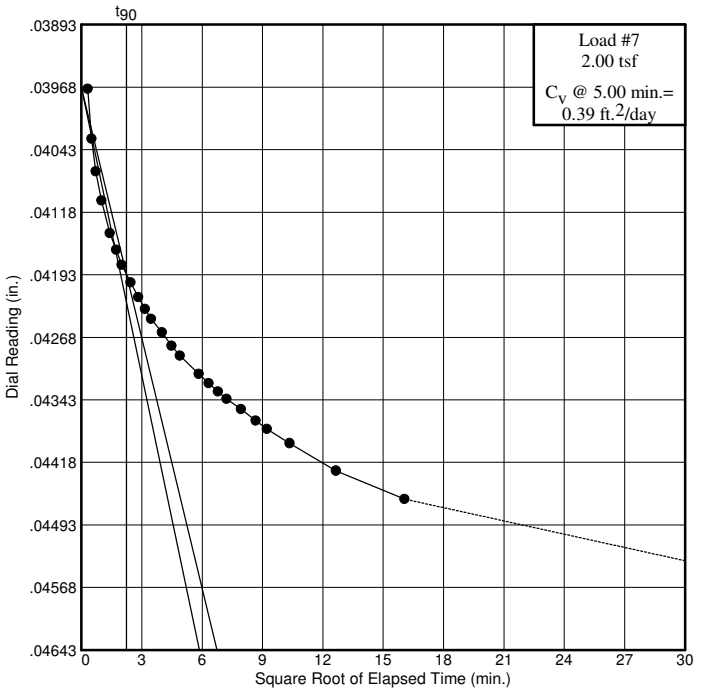
Figure 3

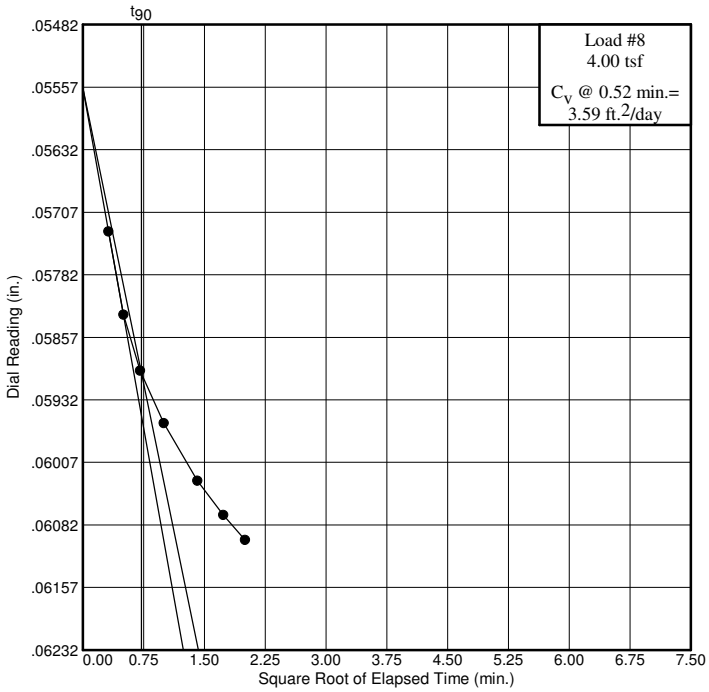
Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-5 Elev./Depth: 61.2-61.3









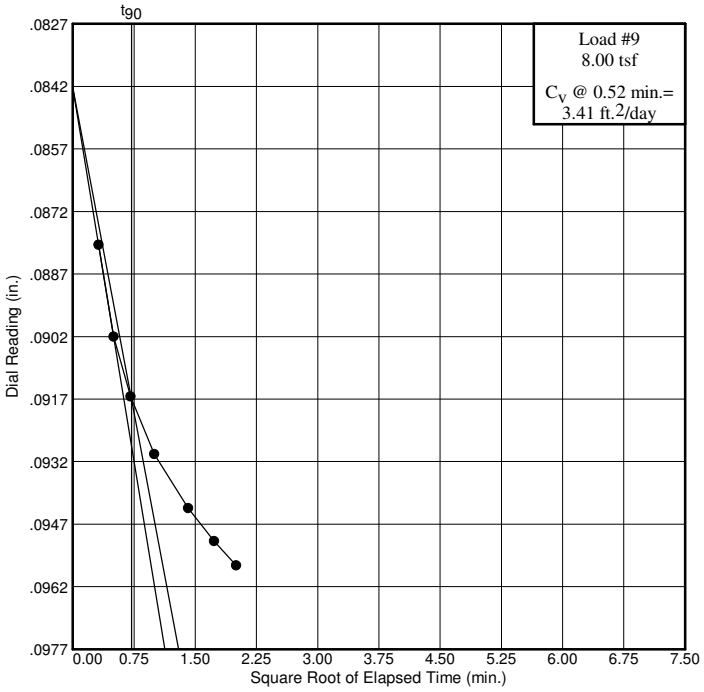
Dial Reading vs. Time

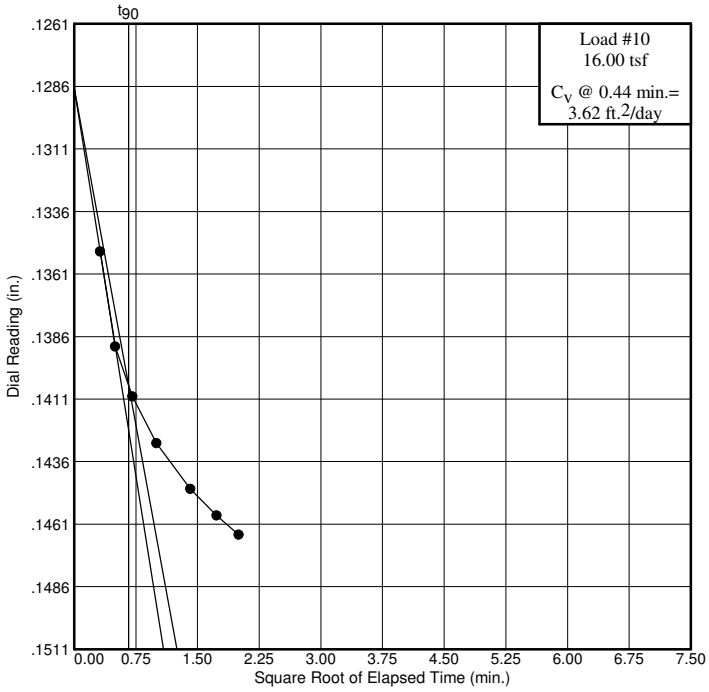
SOIL TECHNOLOGY

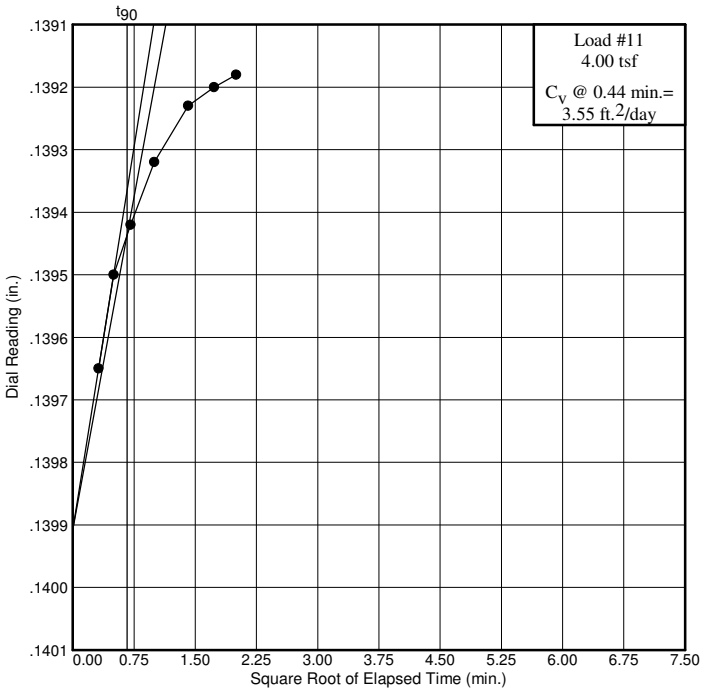
Figure 4

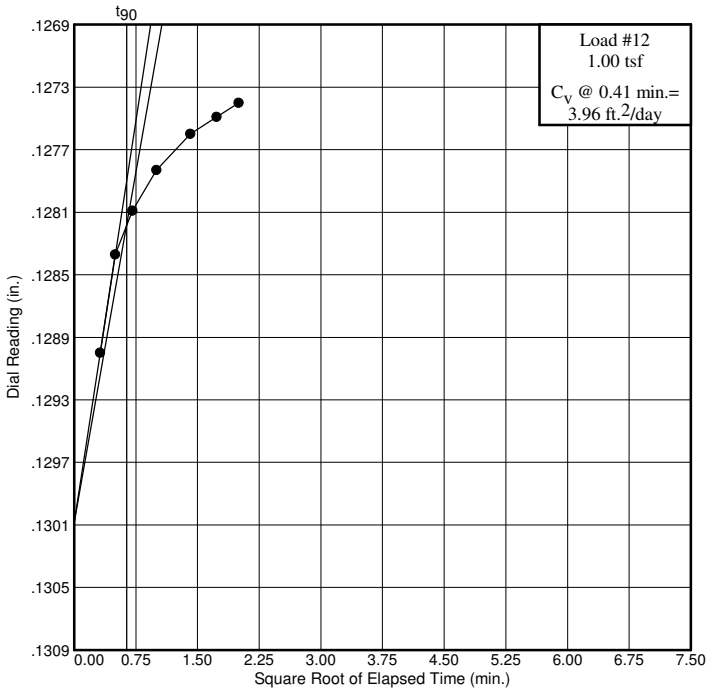
Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-5 Elev./Depth: 61.2-61.3









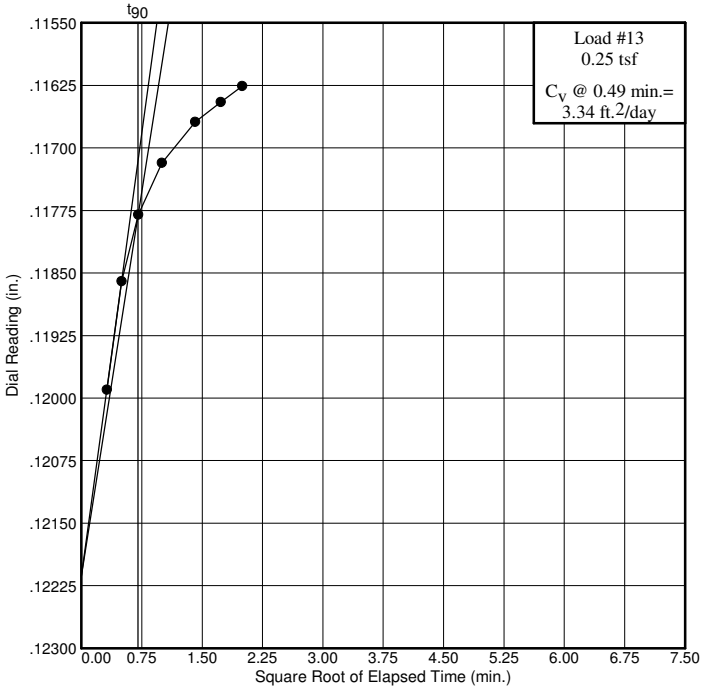
Dial Reading vs. Time

SOIL TECHNOLOGY

Figure 5

Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-5 Elev./Depth: 61.2-61.3



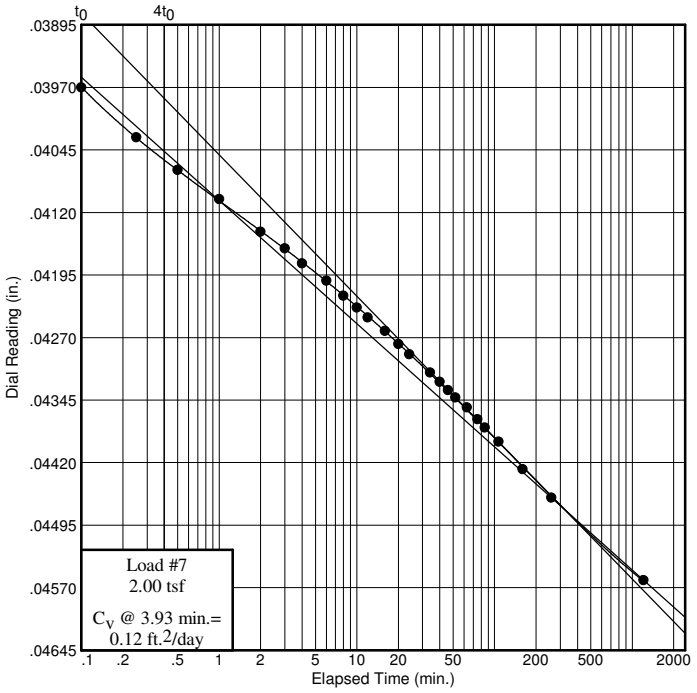
Dial Reading vs. Time

SOIL TECHNOLOGY

Figure 6

Dial Reading vs. Time

Project No.: 0-61M-107030 P65 T3
Project: RP-Portland Site
J-06-2160
Source: RP-18G Sample No.: ST-5 Elev./Depth: 61.2-61.3

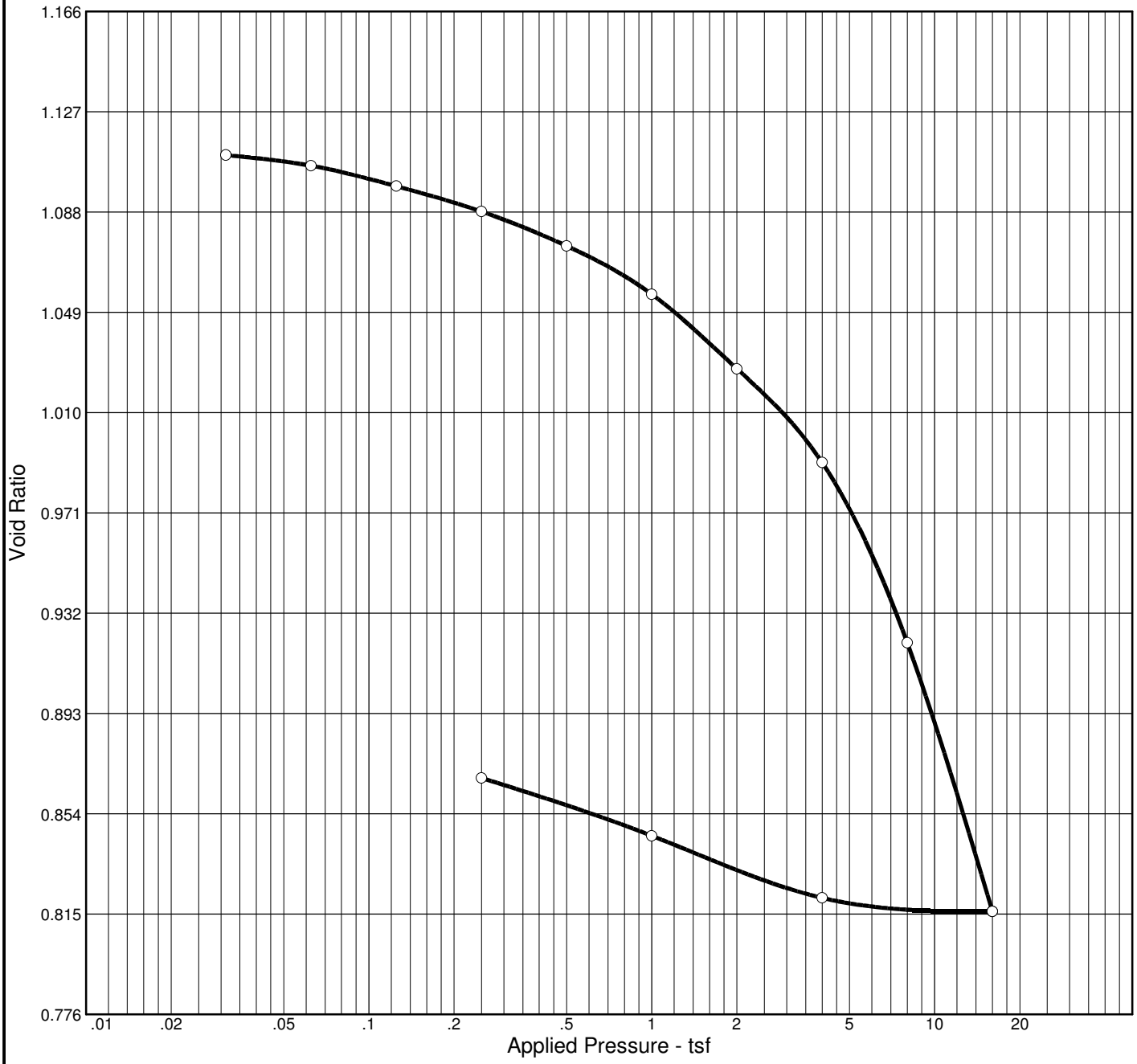


Dial Reading vs. Time

SOIL TECHNOLOGY

Figure 3

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture								
100.0 %	41.3 %	80.1	36	5	2.7		4.97	0.35	1.116

MATERIAL DESCRIPTION	USCS	AASHTO
Medium stiff,wet,tan,Silt	ML	----

Project No. 0-61M- **Client:** AMEC Earth & Environmental, Inc.

Project: RP-Portland Site
J-06-2160

Source: RP-18G **Sample No.:** ST-5 **Elev./Depth:** 61.2-61.3

Remarks:
Medium stiff,wet,tan Silt

CONSOLIDATION TEST REPORT

SOIL TECHNOLOGY

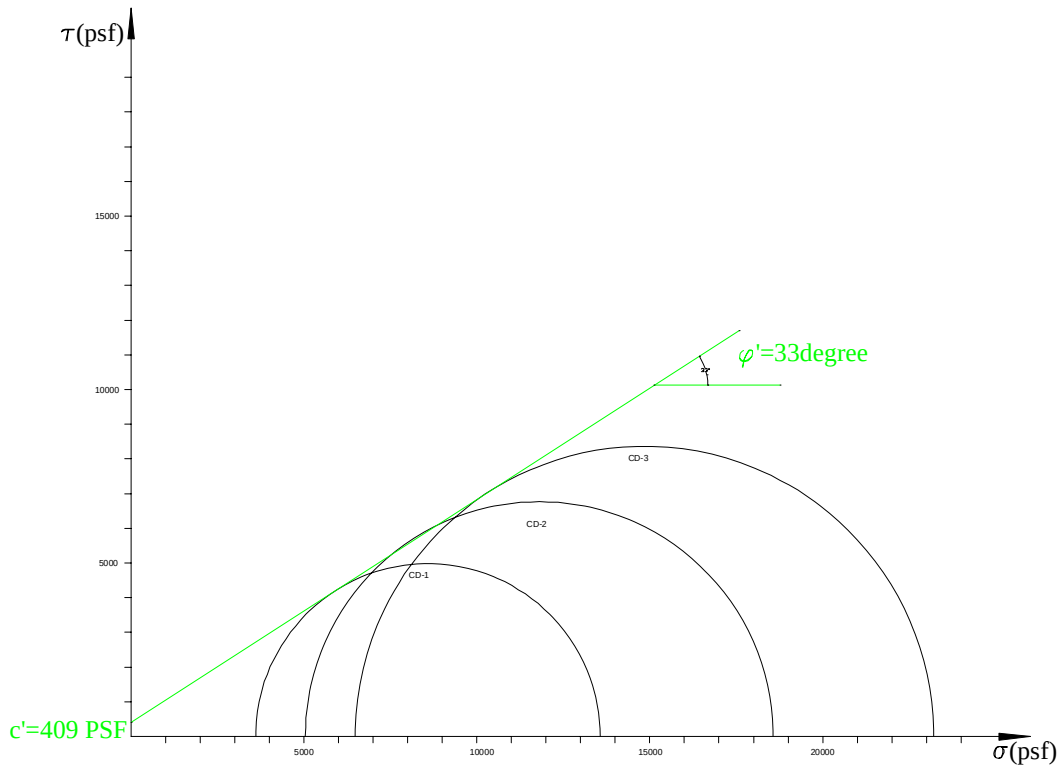
Figure 2

Triaxial Shear Testing

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
Portland, Oregon USA 97224
Tel +1 (503) 639-3400
Fax +1 (503) 620 7892

Consolidated Drained (CD)Triaxial Test Results

Project Name:	RP-WDL-IRAM	Date:	6/27/2006
Project Number:	061M-10703-PH65-T-3	Boring Location:	B-2
Source:	Boring	Sample ID:	ST-4
Tested by:	Soil Technology	Depth (ft):	40.4~41.9



CONSOLIDATED DRAINED TRIAXIAL TEST
B-2, @41.0'

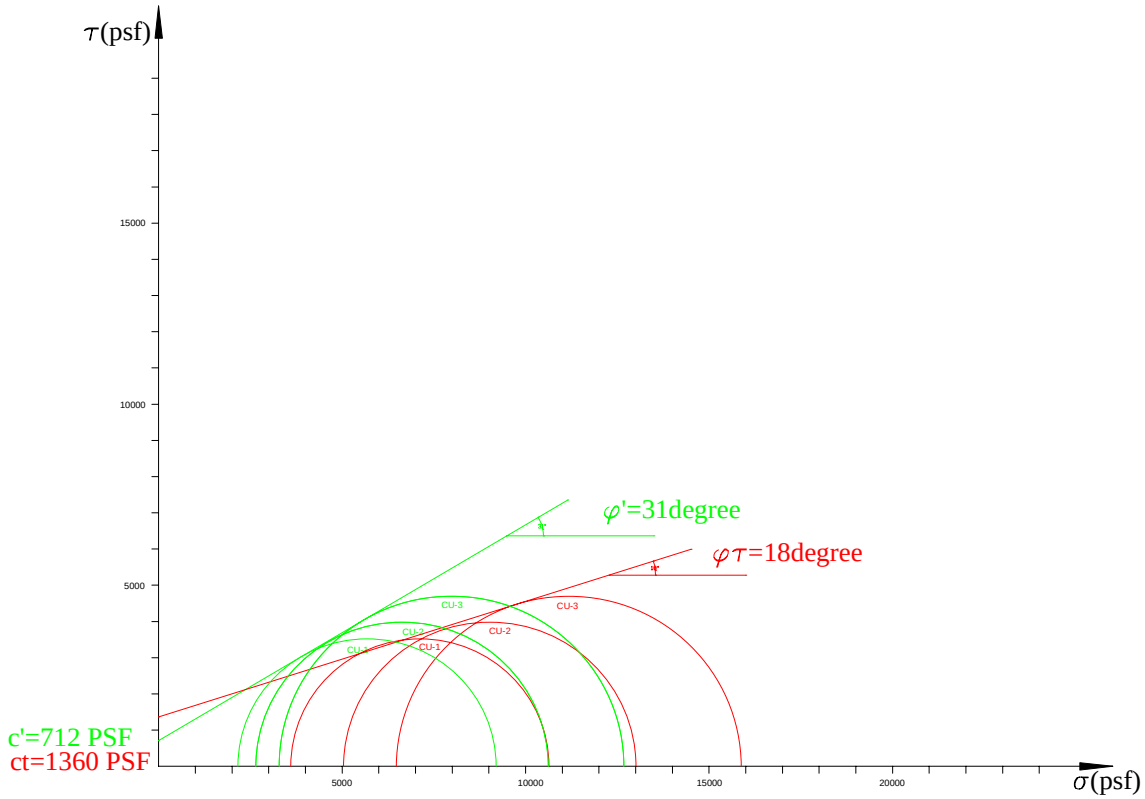
Soil Type	Liquid Limit	Plastic Limit	Plasticity Index	Mosture Content (%)	Dry Unit Weight (pcf)
MH	53	36	17	47	74

Total Friction Angle (degree)	Total Cohesion (psf)	Effective Friction Angle (degree)	Effective Cohesion (psf)
-	-	33	409

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
Portland, Oregon USA 97224
Tel +1 (503) 639-3400
Fax +1 (503) 620 7892

Consolidated Undrained (CU)Triaxial Test Results

Project Name:	RP-WDL-IRAM	Date:	6/21/2006
Project Number:	061M-10703-PH65-T-3	Boring Location:	B-2
Source:	Boring	Sample ID:	ST-8
Tested by:	Soil Technology	Depth (ft):	60.5~62.0



CONSOLIDATED UNDRAINED TRIAXIAL TEST
B-2, @61.0'

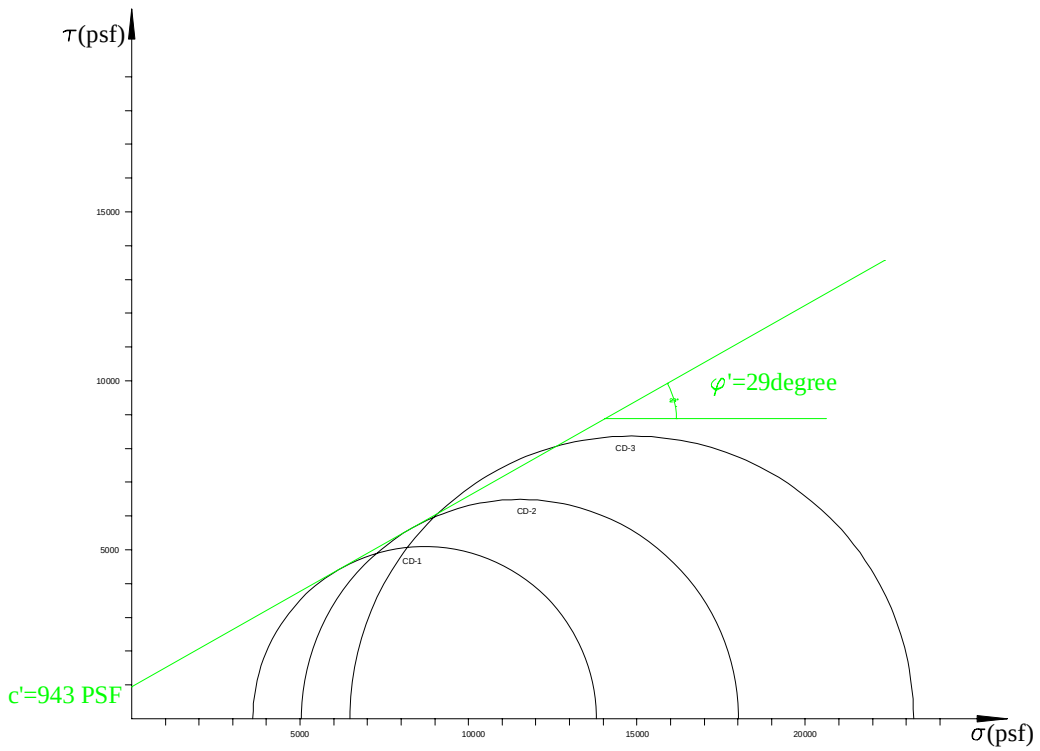
Soil Type	Liquid Limit	Plastic Limit	Plasticity Index	Mosture Content (%)	Dry Unit Weight (pcf)
ML	46	28	18	32	91.7

Total Friction Angle (degree)	Total Cohesion (psf)	Effective Friction Angle (degree)	Effective Cohesion (psf)
18	1360	31	712

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
Portland, Oregon USA 97224
Tel +1 (503) 639-3400
Fax +1 (503) 620 7892

Consolidated Drained (CD)Triaxial Test Results

Project Name:	RP-WDL-IRAM	Date:	6/21/2006
Project Number:	061M-10703-PH65-T-3	Boring Location:	B-3
Source:	Boring	Sample ID:	ST-6
Tested by:	Soil Technology	Depth (ft):	55.4~55.9



CONSOLIDATED DRAINED TRIAXIAL TEST
B-3, @51.0'

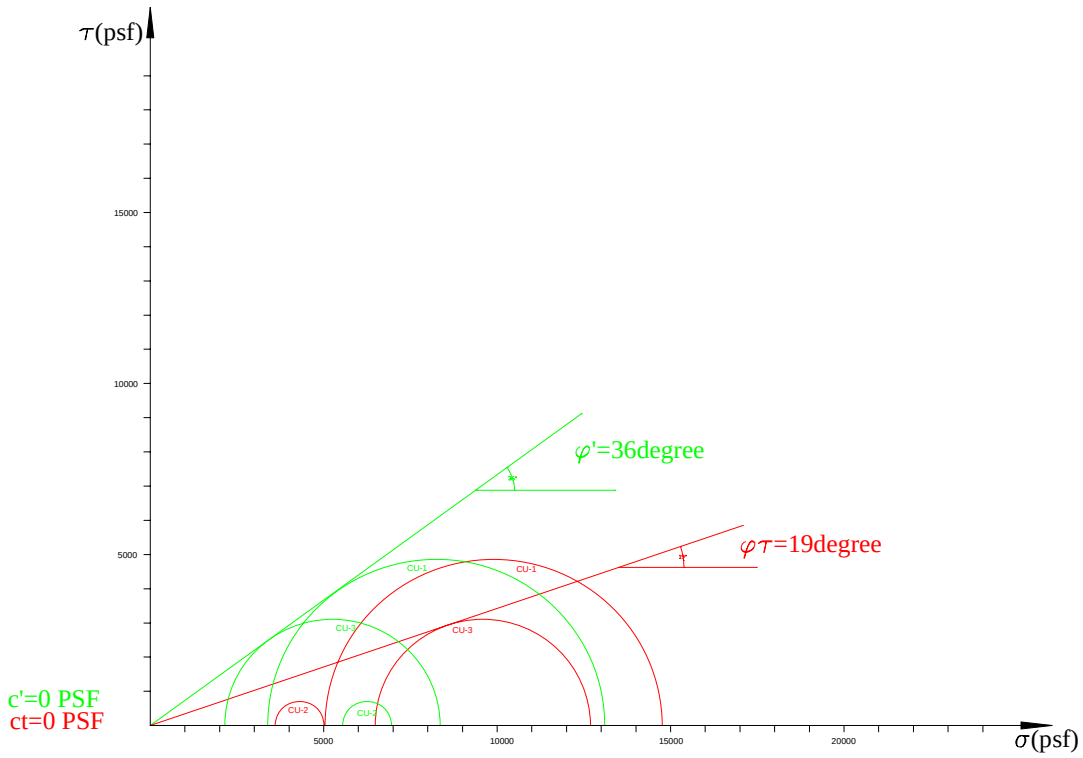
Soil Type	Liquid Limit	Plastic Limit	Plasticity Index	Mosture Content (%)	Dry Unit Weight (pcf)
ML-MH	50	39	12	44.2	76

Total Friction Angle (degree)	Total Cohesion (psf)	Effective Friction Angle (degree)	Effective Cohesion (psf)
-	-	29	943

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
Portland, Oregon USA 97224
Tel +1 (503) 639-3400
Fax +1 (503) 620 7892

Consolidated Undrained (CU)Triaxial Test Results

Project Name:	RP-WDL-IRAM	Date:	6/14/2006
Project Number:	061M-10703-PH65-T-3	Boring Location:	B-3
Source:	Boring	Sample ID:	ST-12
Tested by:	Soil Technology	Depth (ft):	85.4~86.9



CONSOLIDATED UNDRAINED TRIAXIAL TEST
B-3, @86.0'

Soil Type	Liquid Limit	Plastic Limit	Plasticity Index	Mosture Content (%)	Dry Unit Weight (pcf)
CL	NA	NA	NA	37	86

Total Friction Angle (degree)	Total Cohesion (psf)	Effective Friction Angle (degree)	Effective Cohesion (psf)
19	0	36	0

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
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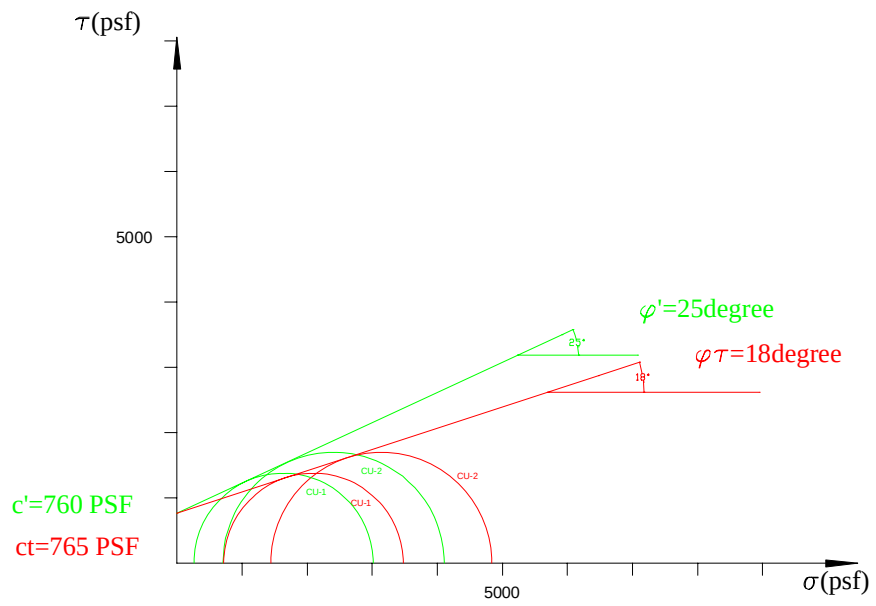
Tel +1 (503) 639-3400
Fax +1 (503) 620 7892

Consolidated Undrained (CU)Triaxial Test Results

Project Name:	RP-WDL-IRAM	Date:	9/5/2006
Project Number:	061M-10703-PH65-T-3	Boring Location:	RP-18G
Source:	Boring	Sample ID:	ST-3
Tested by:	Soil Technology	Depth (ft):	40.4~41.9



CONSOLIDATED UNDRAINED TRIAXIAL TEST
RP-18, @41.0'

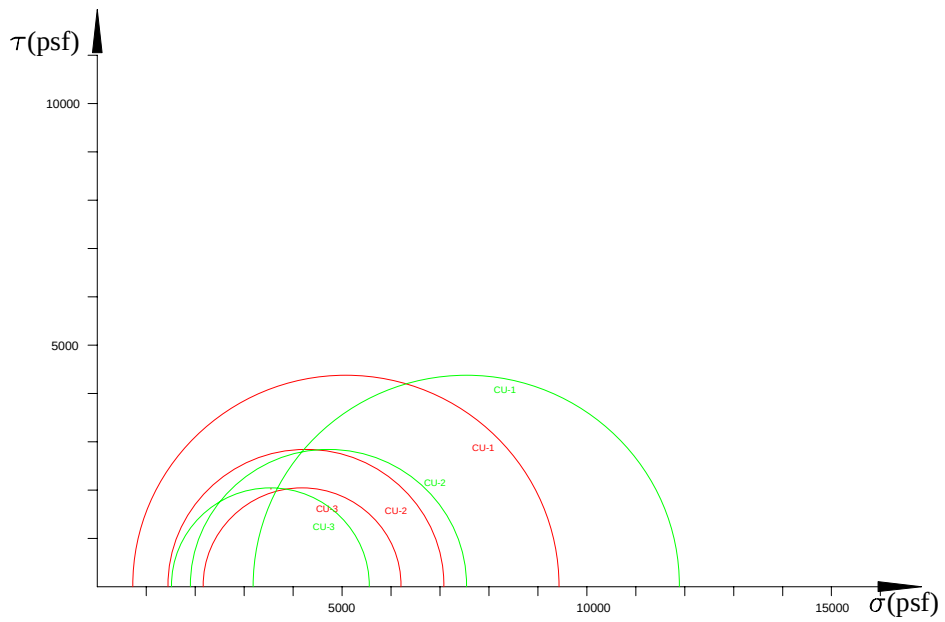
Soil Type	Liquid Limit	Plastic Limit	Plasticity Index	Mosture Content (%)	Dry Unit Weight (pcf)
ML	NA	NA	NA	65	63

Total Friction Angle (degree)	Total Cohesion (psf)	Effective Friction Angle (degree)	Effective Cohesion (psf)
18	765	25	760

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
Portland, Oregon USA 97224
Tel +1 (503) 639-3400
Fax +1 (503) 620 7892

Consolidated Undrained (CU)Triaxial Test Results

Project Name:	RP-WDL-IRAM	Date:	9/12/2006
Project Number:	061M-10703-PH65-T-3	Boring Location:	RP-18G
Source:	Boring	Sample ID:	ST-6
Tested by:	Soil Technology	Depth (ft):	80.5~82



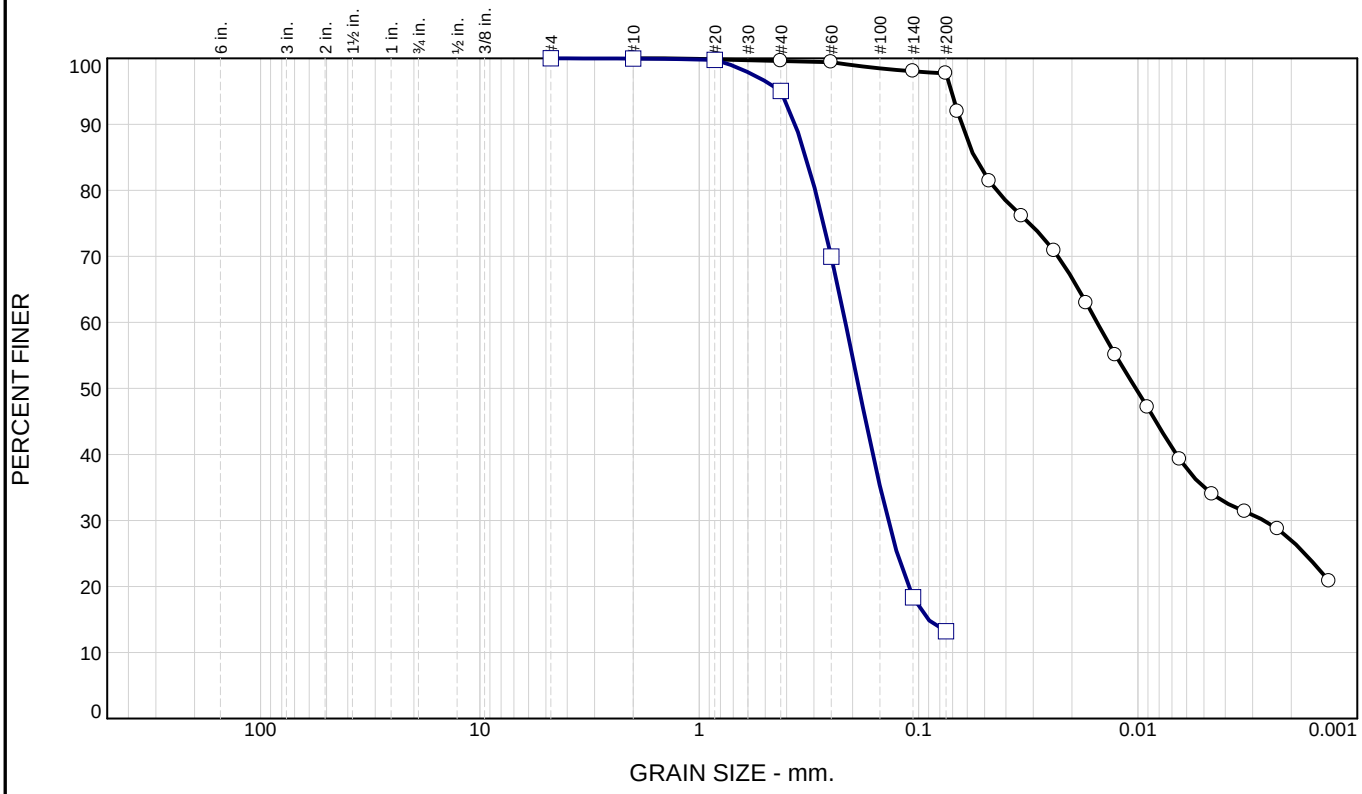
CONSOLIDATED UNDRAINED TRIAXIAL TEST
RP-18 ST-6 @ 80.0'

Soil Type	Liquid Limit	Plastic Limit	Plasticity Index	Mosture Content (%)	Dry Unit Weight (pcf)
ML	NA	NA	NA	34.7	89

Total Friction Angle (degree)	Total Cohesion (psf)	Effective Friction Angle (degree)	Effective Cohesion (psf)
-	-	-	-

Grain Size

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	2	63	35	CL	A-7-6(19)	24	41
□	0	0	87	13		SM		---	---

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □	
	GRAIN SIZE		
D_{60}	0.0154	0.2156	
D_{30}	0.0027	0.1376	
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○	PERCENT FINER □	
#4		100	
#10	100	100	
#20	100	100	
#40	100	95	
#60	99	70	
#140	98	18	
#200	98	13	

Material Description

○ Tan, greenish black silt with clay

□ Grey sand

REMARKS:

○

□

○ Source of Sample: B-1-06 Depth: 27.9-28.0 Sample Number: ST-2

□ Source of Sample: B-1-06 Depth: 48.6-48.7 Sample Number: ST-5

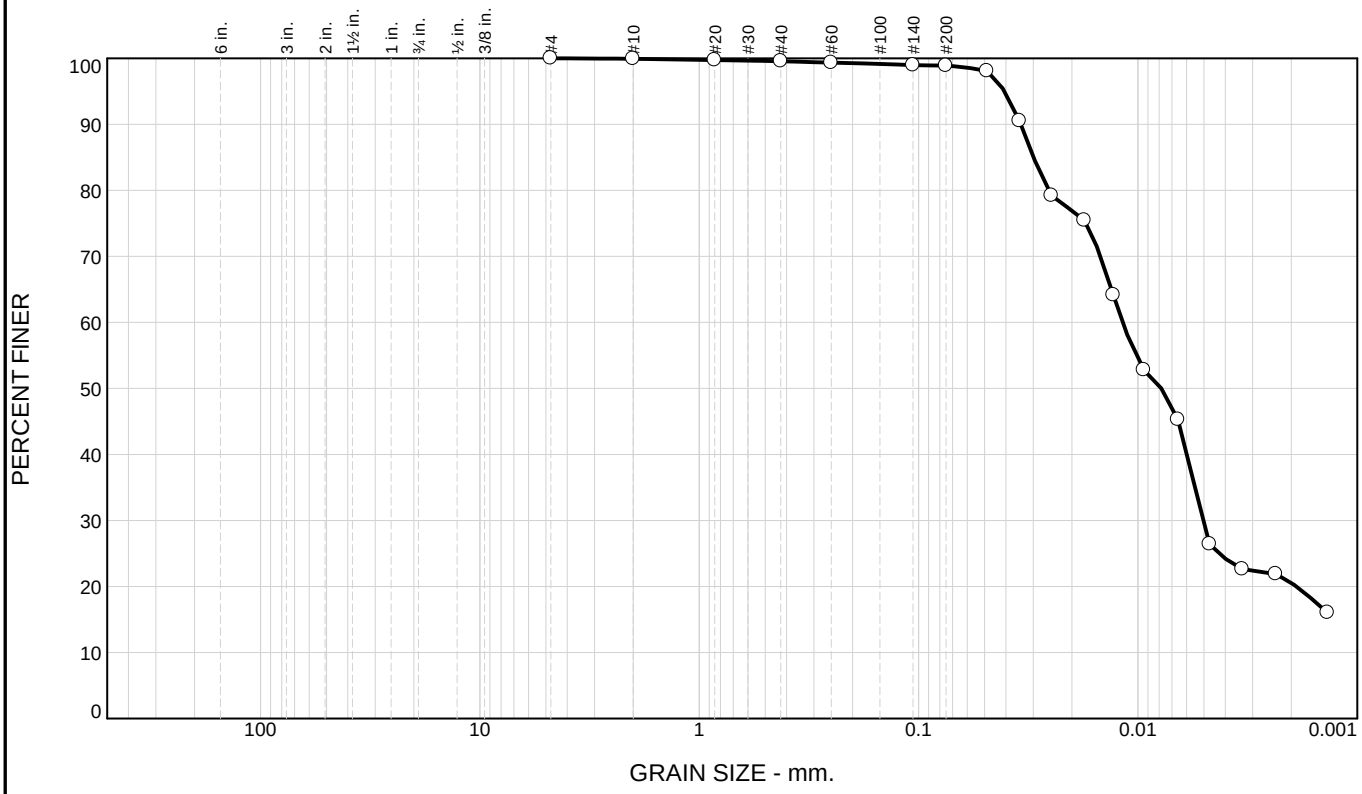
SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.

Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 Figure 1

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	1	70	29	MH	A-7-5(58)	40	86

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.0117		
D_{30}	0.0051		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	100		
#10	100		
#20	100		
#40	100		
#60	99		
#140	99		
#200	99		

Material Description

○ Silt

REMARKS:

○ During hydrometer foaming during first readings
F.M.=0.02

○ Location: B-2-06,ST-1 Depth 26.3-26.4 ft. Depth: 26.3-26.4 ft. Sample Number: ST-1

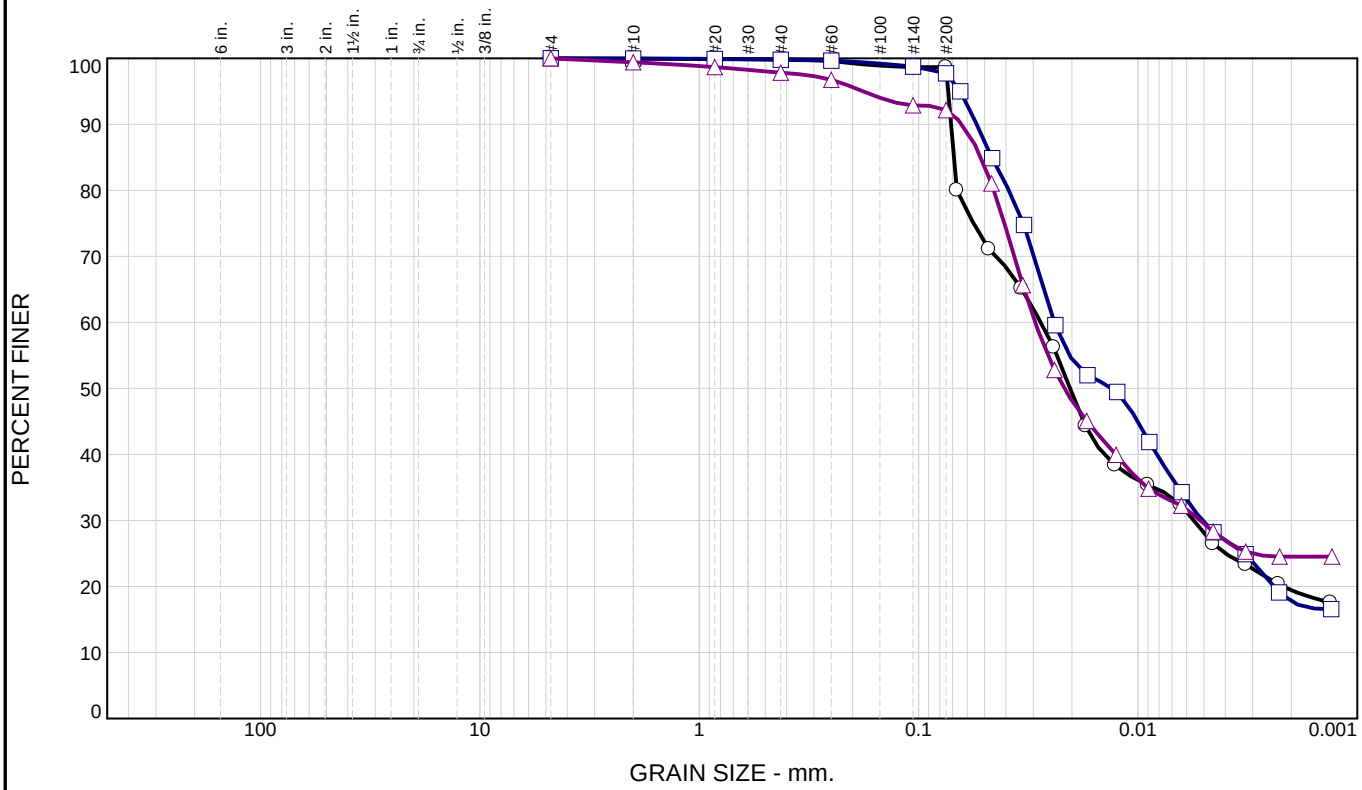
SOIL TECHNOLOGY

Client: AMEC Portland

Project: RP-Project Geotechnical Testing
Project No.0-61M-107030 P65 T3

Project No.: J-06-2135 Figure 1

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	1	71	28	MH	A-7-5(35)	35	63
□	0	0	2	68	30	MH	A-7-5(23)	36	53
△	0	0	8	62	30	ML	A-5(13)	34	44

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
GRAIN SIZE			
D_{60}	0.0277	0.0241	0.0294
D_{30}	0.0056	0.0051	0.0052
D_{10}			
COEFFICIENTS			
C_c			
C_u			

SIEVE number size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
#4	100	100	100
#10	100	100	99
#20	100	100	99
#40	100	100	98
#60	100	100	97
#140	99	99	93
#200	99	98	92

Material Description

○ Grey silt with clay

□ Grey silt with clay

△ Grey silt with clay

REMARKS:

○

□

△

○ Source of Sample: B-2-06 Depth: 35.1-37.0 Sample Number: ST-3

□ Source of Sample: B-2-06 Depth: 41.4-41.9 Sample Number: ST-4

△ Source of Sample: B-2-06 Depth: 45.8 - 45.9 Sample Number: ST-5

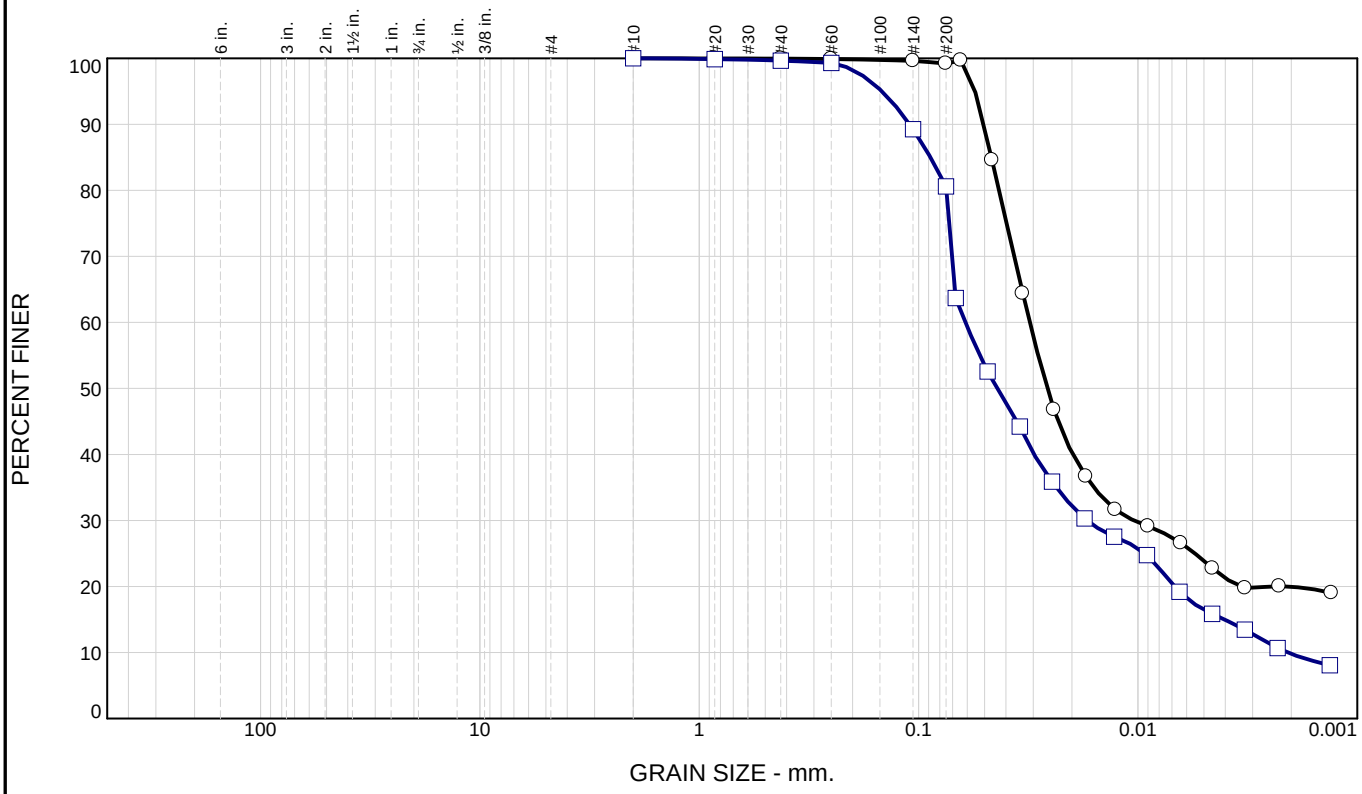
SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.

Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 Figure 2

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	1	75	24	ML	A-4(0)	NP	NV
□	0	0	19	65	16	ML	A-4(0)	NP	NV

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □	
	GRAIN SIZE		
D_{60}	0.0311	0.0612	
D_{30}	0.0104	0.0171	
D_{10}		0.0021	
	COEFFICIENTS		
C_c		2.29	
C_u		29.44	

SIEVE number size	PERCENT FINER ○	PERCENT FINER □	
#10	100	100	
#20	100	100	
#40	100	100	
#60	100	99	
#140	100	89	
#200	99	81	

Material Description

○ Grey silt with sand

□ Dark grey silt with sand

REMARKS:

○

□

○ Source of Sample: B-2-06 Depth: 55.9-56.0 Sample Number: ST-7

□ Source of Sample: B-2-06 Depth: 66.5 - 66.6 Sample Number: ST-9

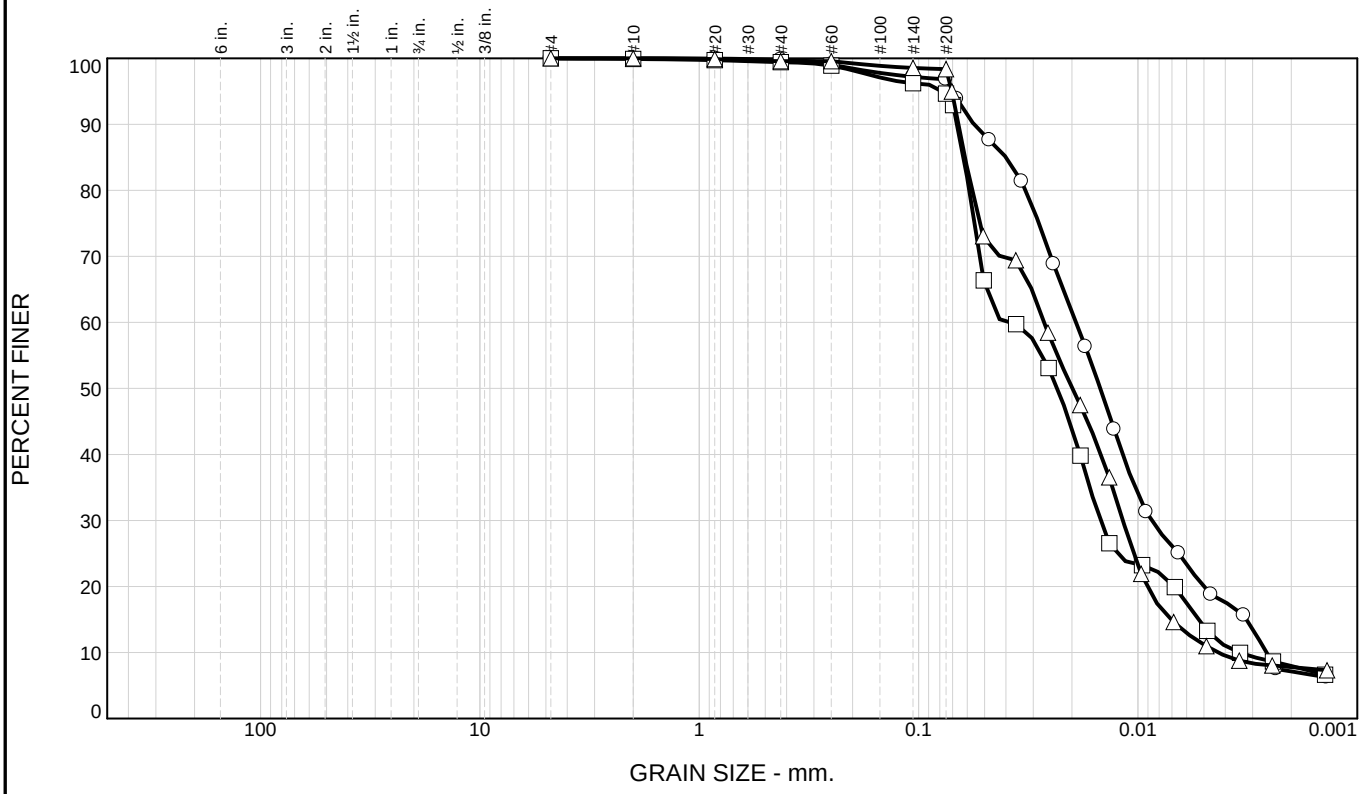
SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.

Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 Figure 3

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	3	77	20	MH	-----	37	66
□	0	0	5	81	14	ML	-----	37	48
△	0	0	2	87	11	MH	-----	39	50

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
GRAIN SIZE			
D_{60}	0.0191	0.0400	0.0268
D_{30}	0.0087	0.0149	0.0117
D_{10}	0.0026	0.0035	0.0043
COEFFICIENTS			
C_c	1.52	1.60	1.19
C_u	7.34	11.59	6.21

SIEVE number size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
#4	100	100	100
#10	100	100	100
#20	100	100	100
#40	100	99	100
#60	99	99	100
#140	97	96	99
#200	97	95	98

Material Description

○ Silt

□ Silt

△ Silt

REMARKS:

○ F.M.=0.03

□ F.M.=0.04

△ F.M.=0.02

○ Location: B-3-06 ST-7 Depth 61.1-61.2 ft Depth: 61.1-61.2 ft Sample Number: ST-7

□ Location: B-3-06 ST-9 Depth 71.0-71.1 ft Depth: 71.0-71.1 ft Sample Number: ST-9

△ Location: B-3-06 ST-6 Depth 54.0-54.5 ft Depth: 54.0-54.5 ft Sample Number: ST-6

SOIL TECHNOLOGY

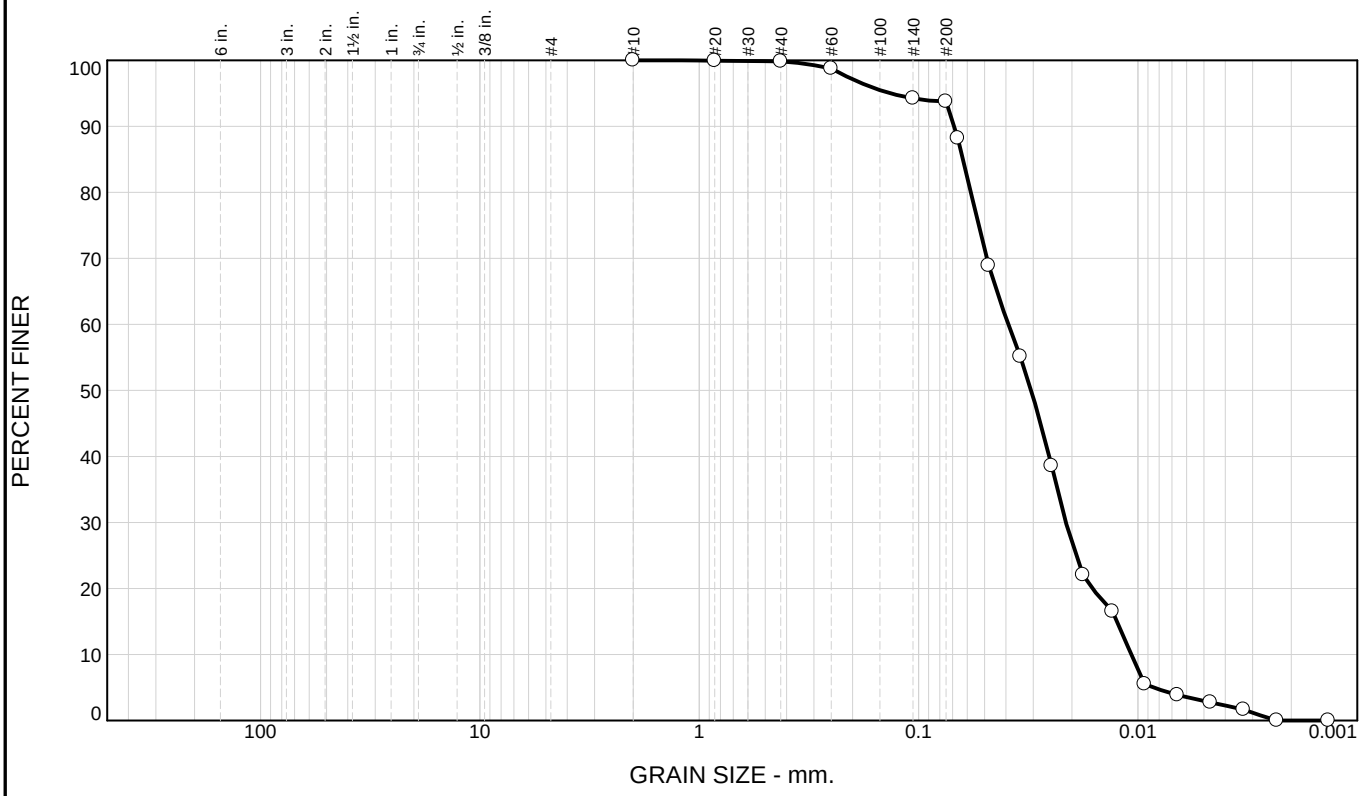
Client: AMEC Portland

Project: RP-Project Geotechnical Testing
Project No.0-61M-107030 P65 T3

Project No.: J-06-2135

Figure 3

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	6	91	3	ML	-----	NP	NV

SIEVE inches size	PERCENT FINER ○		
	GRAIN SIZE		
D_{60}	0.0389		
D_{30}	0.0213		
D_{10}	0.0108		
	COEFFICIENTS		
C_c	1.08		
C_u	3.62		

SIEVE number size	PERCENT FINER ○		
#10	100		
#20	100		
#40	100		
#60	99		
#140	94		
#200	94		

Material Description

○ Silt

REMARKS:

○ F.M.=0.05

○ Location: B-3-06 ST-17 Depth 110.5-110.6 ft Depth: 110.5-110.6 ft Sample Number: ST-17

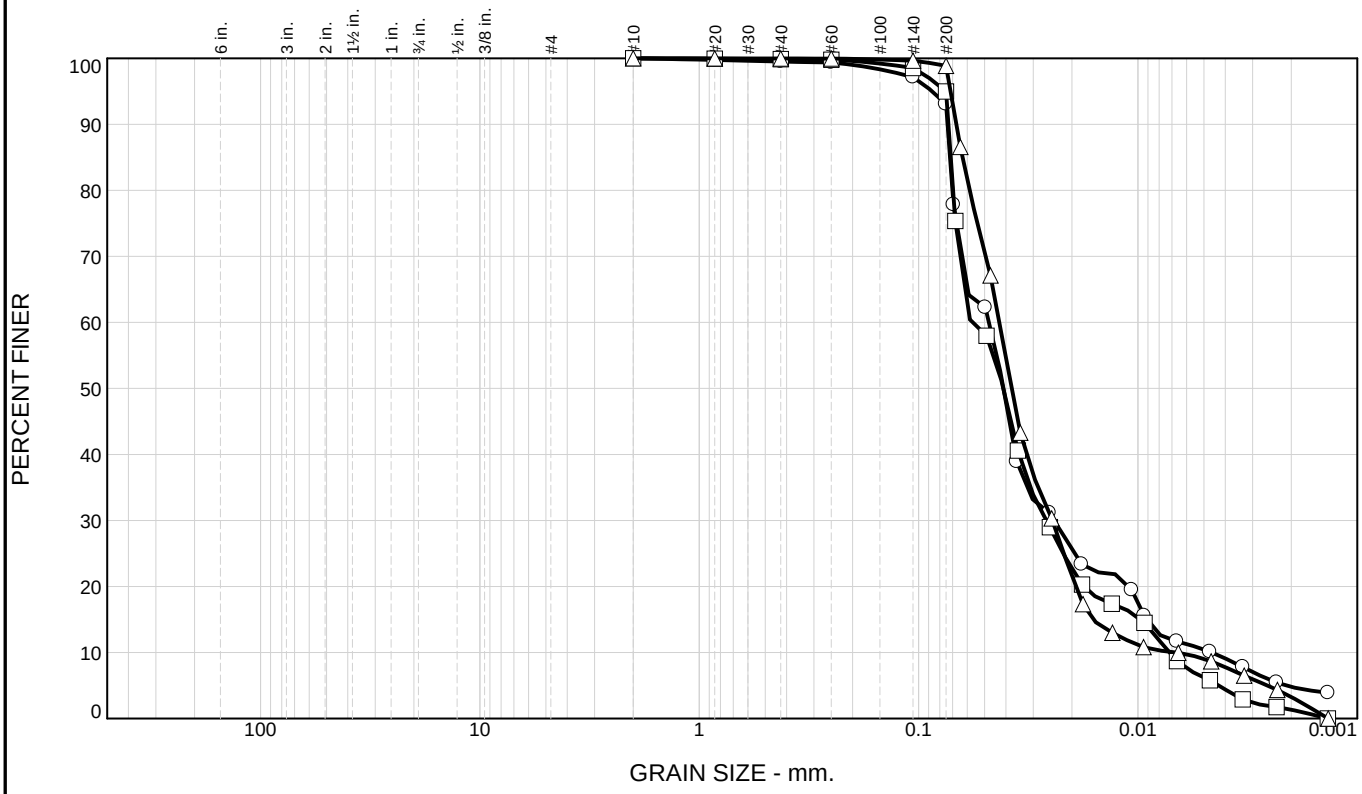
SOIL TECHNOLOGY

Client: AMEC Portland

Project: RP-Project Geotechnical Testing
Project No.0-61M-107030 P65 T3

Project No.: J-06-2135 Figure 5

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	7	83	10	ML	-----	35	44
□	0	0	5	89	6	ML	-----	NP	NV
△	0	0	1	90	9	ML	-----	NP	NV

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
GRAIN SIZE			
D_{60}	0.0471	0.0576	0.0428
D_{30}	0.0239	0.0262	0.0245
D_{10}	0.0046	0.0072	0.0067
COEFFICIENTS			
C_c	2.63	1.65	2.11
C_u	10.22	7.97	6.40

SIEVE number size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
#10	100	100	100
#20	100	100	100
#40	100	100	100
#60	99	100	100
#140	97	99	100
#200	93	95	99

Material Description

○ Silt

□ Silt

△ Silt

REMARKS:

○ F.M.=0.03

□ F.M.=0.01

△ F.M.=0.00

○ Location: B-3-06 ST-11 Depth 81.1-81.3 ft Depth: 81.1-81.3 ft Sample Number: ST-11

□ Location: B-3-06 ST-13 Depth 90.5-90.6 ft Depth: 90.5-90.6 ft Sample Number: ST-13

△ Location: B-3-06 ST-15 Depth 100.7-100.8 ft Depth: 100.7-100.8 ft Sample Number: ST-15

SOIL TECHNOLOGY

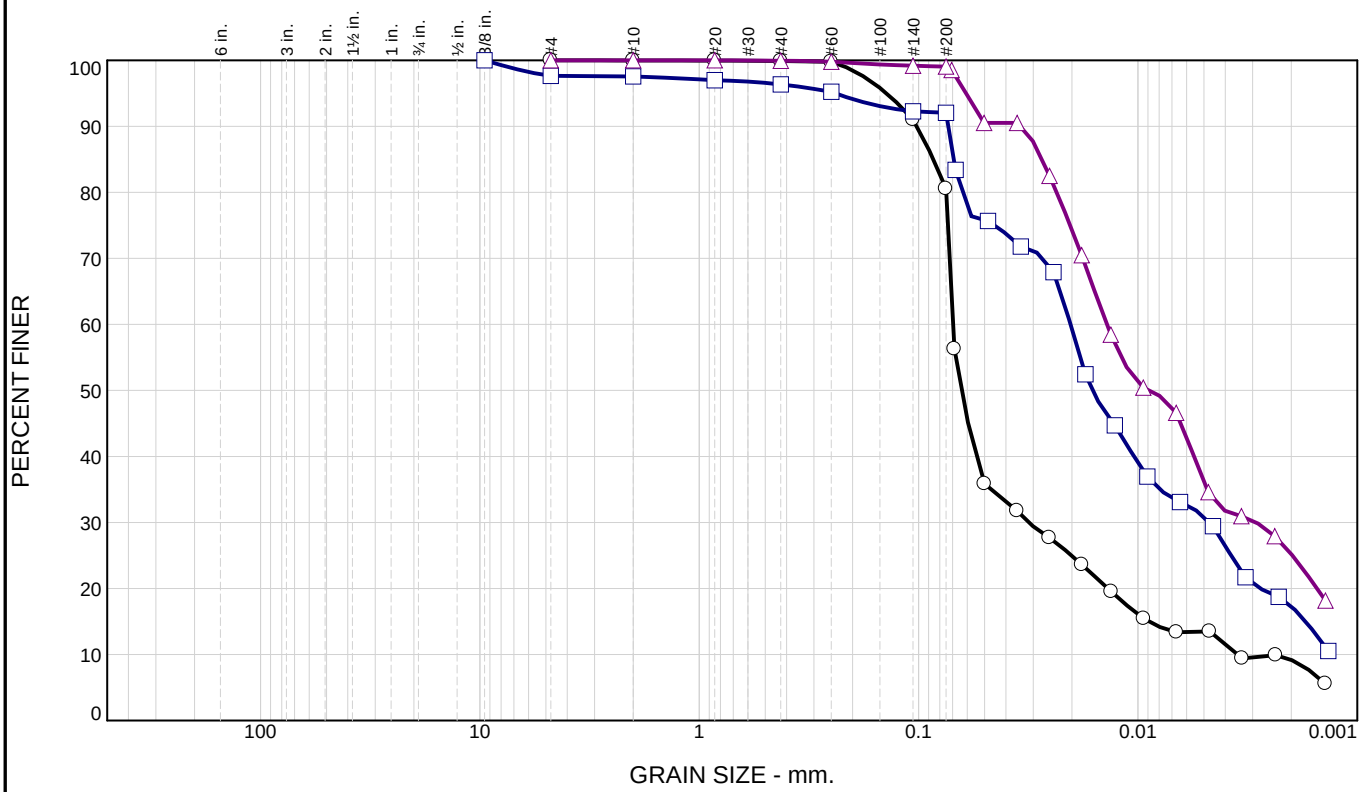
Client: AMEC Portland

Project: RP-Project Geotechnical Testing
Project No.0-61M-107030 P65 T3

Project No.: J-06-2135

Figure 4

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0	0	19	68	13	ML	A-4(4)	33	36
□	0	2	6	61	31	MH	A-7-5(77)	61	125
△	0	0	1	63	36	CH	A-7-5(70)	32	91

SIEVE inches size	PERCENT FINER ○	□	△
.375		100	
GRAIN SIZE			
D_{60}	0.0697	0.0203	0.0139
D_{30}	0.0316	0.0047	0.0029
D_{10}	0.0036		
COEFFICIENTS			
C_c	4.02		
C_u	19.52		

SIEVE number size	PERCENT FINER ○	□	△
#4	100	98	100
#10	100	98	100
#20	100	97	100
#40	100	96	100
#60	100	95	100
#140	91	92	99
#200	81	92	99

Material Description

○ Black/brown silt

□ Black silt

△ Grey clay with silt

REMARKS:

○

□

△

○ Source of Sample: B-3-06 Depth: 51.1 - 51.2 Sample Number: ST-5

□ Source of Sample: B-3-06 Depth: 36.3 - 36.4 Sample Number: ST-2

△ Source of Sample: B-3-06 Depth: 41.5 - 41.6 Sample Number: ST-3

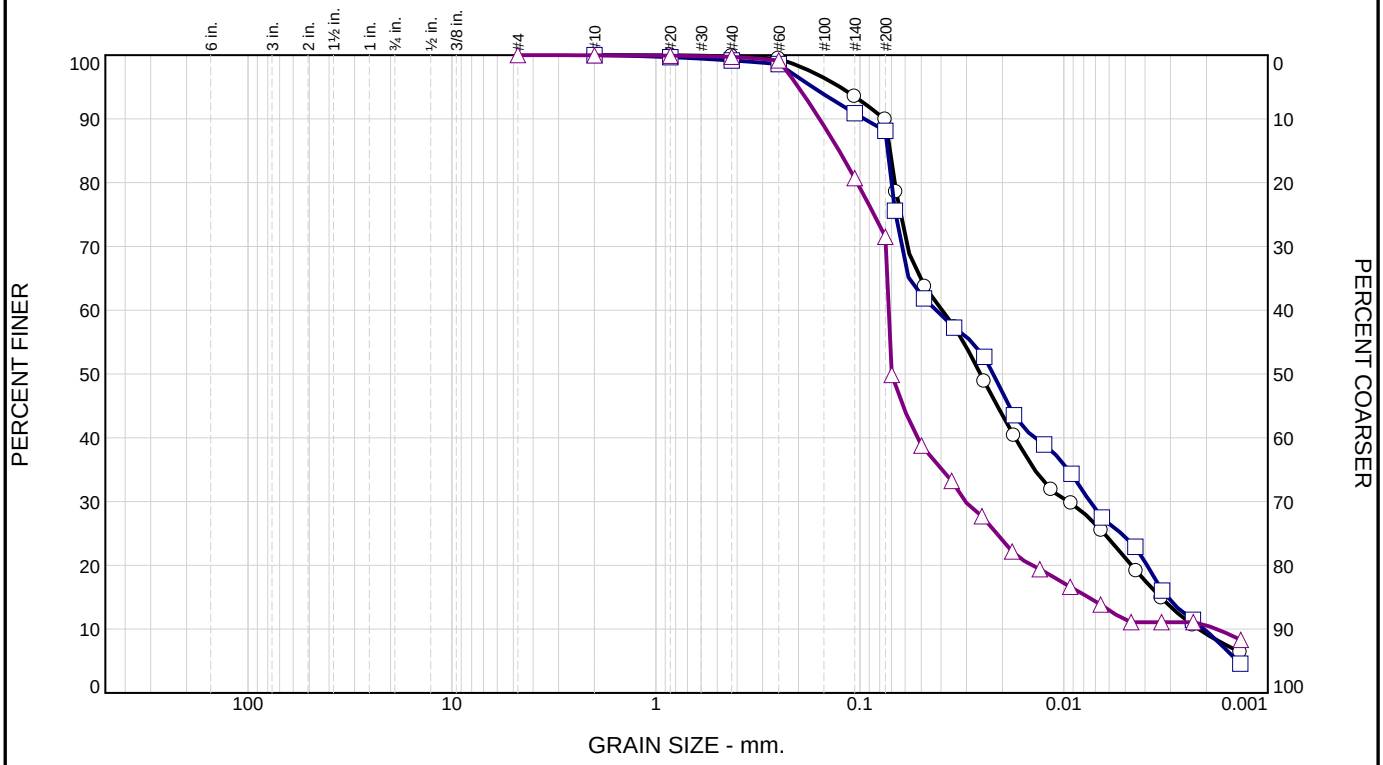
SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.

Project: West Doane Lake Treatability Study Portland - RP Site

Project No.: J-06-2135 Figure 4

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	0.0	10.1	68.7	21.2	MH	A-7-5(28)	46	68
□	0.0	0.0	11.9	63.5	24.6	ML	A-4(0)	NP	NV
△	0.0	0.0	28.5	60.1	11.4	ML	A-4(4)	34	39

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
GRAIN SIZE			
D_{60}	0.0394	0.0421	0.0722
D_{30}	0.0095	0.0075	0.0305
D_{10}	0.0022	0.0021	0.0018
COEFFICIENTS			
C_c	1.05	0.64	7.24
C_u	18.03	20.55	40.59

SIEVE number size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
#4			100.0
#10	100.0	100.0	100.0
#20	100.0	99.7	99.9
#40	99.8	99.2	99.7
#60	99.4	98.6	99.2
#140	93.5	90.9	80.7
#200	89.9	88.1	71.5

USC Classification

○ Grey, sandy Silt

□ silt

△ Soft to m-stiff,wet,grey,sandy Silt

REMARKS:

○ CU#2 Failure plane

□ CU#1 Failure plane

△ Consolidation sample

○ Source of Sample: RP-18-G Depth: 40.9-41.4 Sample Number: ST-3

□ Source of Sample: RP-18-G Depth: 41.4-41.9 Sample Number: ST-3@

△ Source of Sample: RP-18-G Depth: 51.0-51.1 Sample Number: ST-4

SOIL TECHNOLOGY

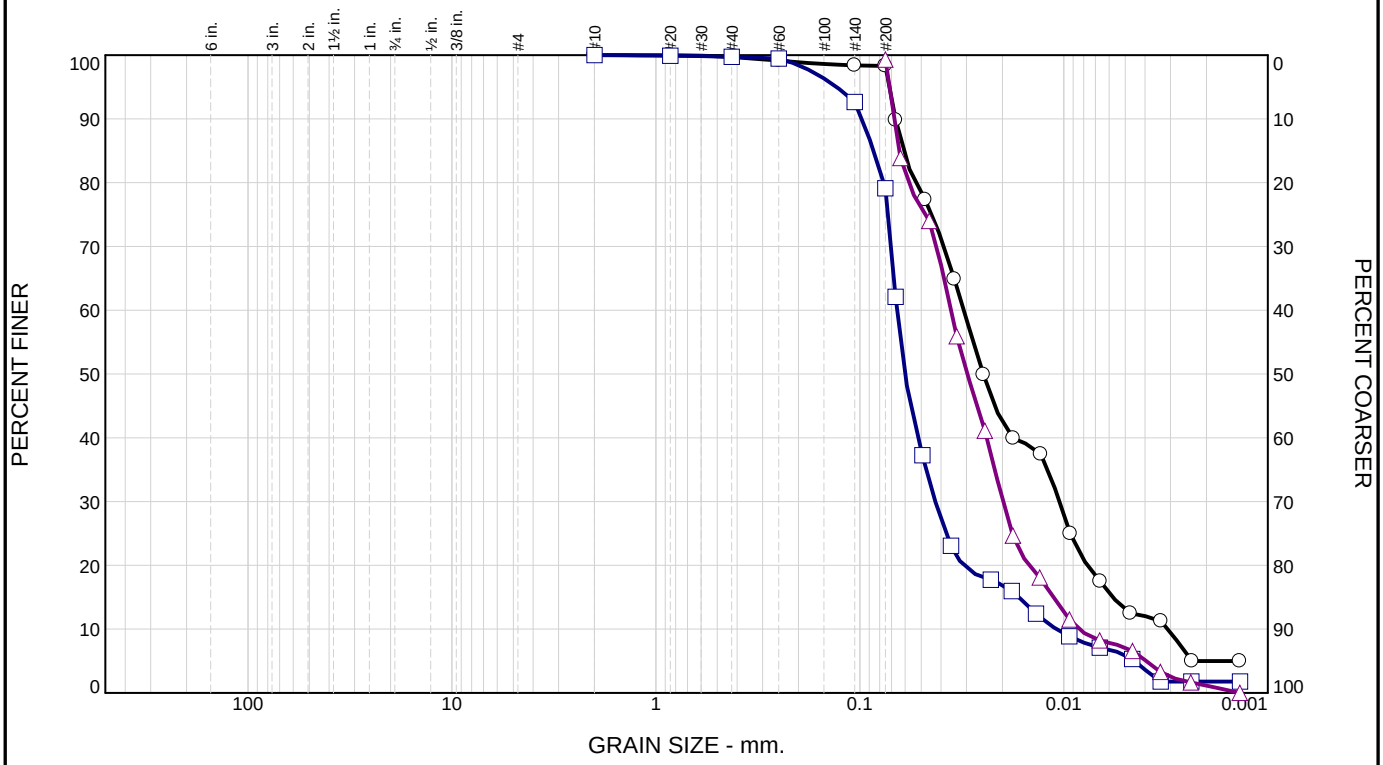
Client: AMEC Earth & Environmental, Inc.

Project: RP-Portland Site
J-06-2160

Project No.: 0-61M-107030 P65 T3 Figure 1

Tested By: RGSII **Checked By:** RGS

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	0.0	1.7	85.3	13.0	ML	A-4(7)	31	36
□	0.0	0.0	20.9	73.1	6.0	ML	A-4(0)	NP	NV
△					7.1			NP	NV

SIEVE inches size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
GRAIN SIZE			
D_{60}	0.0309	0.0658	0.0358
D_{30}	0.0105	0.0427	0.0199
D_{10}	0.0031	0.0109	0.0084
COEFFICIENTS			
C_c	1.17	2.54	1.31
C_u	10.10	6.05	4.25

SIEVE number size	PERCENT FINER ○	PERCENT FINER □	PERCENT FINER △
#10	100.0	100.0	
#20	100.0	99.9	
#40	99.7	99.7	
#60	99.2	99.5	
#140	98.4	92.7	
#200	98.3	79.1	99.3

USC Classification
○ Medium stiff,wet,tan,Silt
□ silt with sand
△ silt

REMARKS:
○ Consolidation sample
□ CU#1 Failure Plane
△ CU#3 Failure Plane

○ Source of Sample: RP-18-G Depth: 61.2-61.3 Sample Number: ST-5
□ Source of Sample: RP-18-G Depth: 80.5-81.0 Sample Number: ST-6
△ Source of Sample: RP-18-G Depth: 81.5-82.0 Sample Number: ST-6

SOIL TECHNOLOGY

Client: AMEC Earth & Environmental, Inc.
Project: RP-Portland Site
J-06-2160
Project No.: 0-61M-107030 P65 T3 Figure 2

Tested By: RGSII **Checked By:** RGS

APPENDIX E

Finite Element Modeling

APPENDIX E
FINITE ELEMENT MODELING
0-61M-107030/PHASE 65/T3

AMEC Earth & Environmental, Inc. (AMEC) conducted finite element model (FEM) analysis of the proposed West Doane Lake (WDL) Interim Remedial Action Measure (IRAM) sediment cap and final remedy fill activities to evaluate the impacts on the adjacent BNSF Railway Company (BNSF) embankment. The analysis was conducted using the computer program PLAXIS version 7.2. Five cross sections were evaluated at the Rhône-Poulenc (RP) Site, in Areas A, B, C, D, and E as defined in Section 10.2 and on Figure 2 of this report. AMEC developed idealized soil profiles and defined soil units using data from the subsurface exploration program and existing RP Site exploration logs. Physical soil properties were determined through laboratory testing, published values or relationships, or on RP Site-specific relationships. The idealized soil profiles, soil units, and physical soil properties are defined on Figures 9 through 13.

Soil behavior was modeled using two soil deformation models included by the PLAXIS software. PLAXIS refers to these models as the Soft Soil Creep model, which was used for native soils, and the Hardening Soil Model, which was used for the RP fill and the BNSF embankment. These models are based on the Modified Cam Clay (Cam Clay) and Duncan's Hyperbolic soil models, respectively.

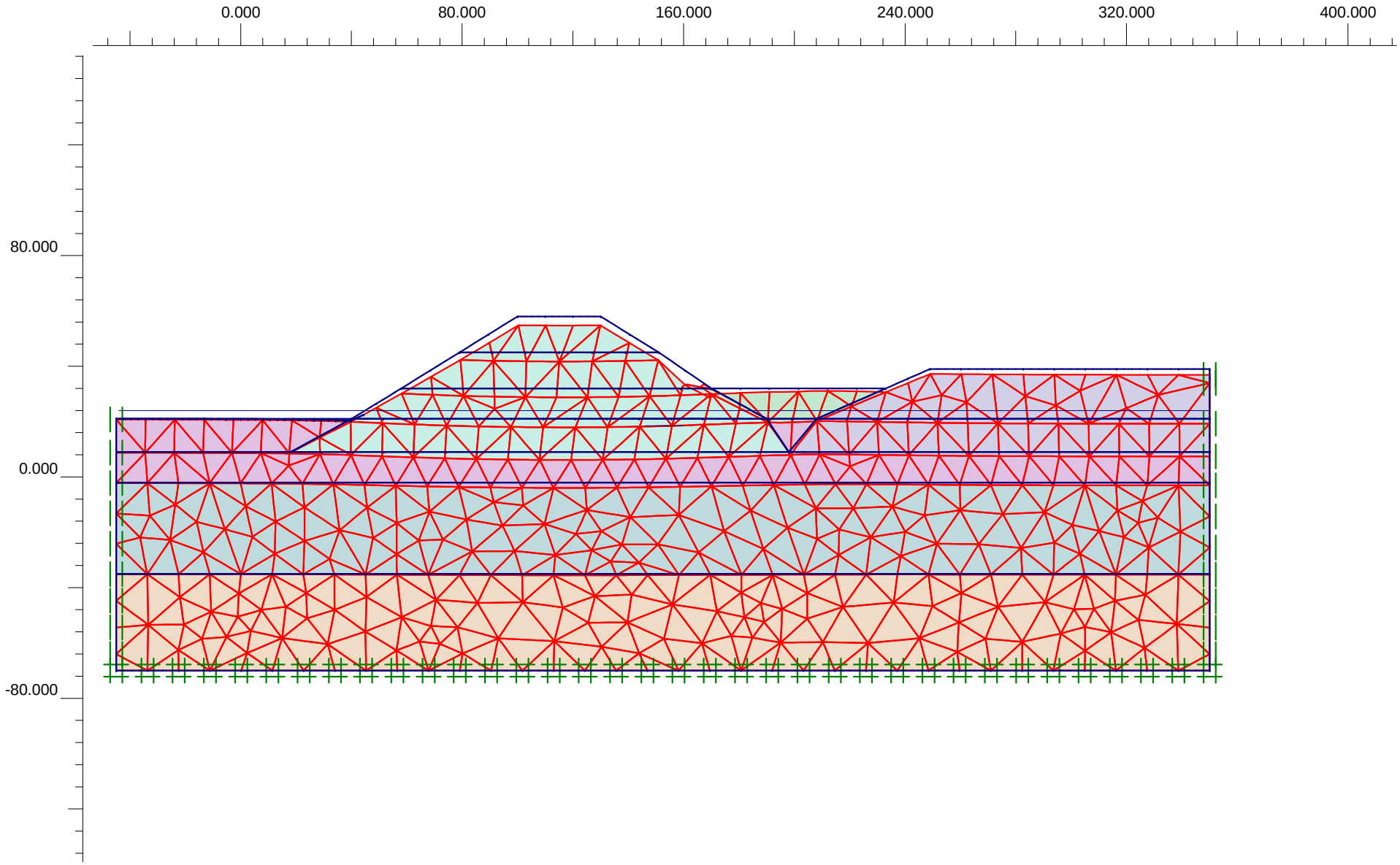
The Soft Soil Creep model used to model native soils accounts for "pseudo-elastic" strains, plastic yielding, and viscous properties of soft soil, which is used to evaluate time dependent strains associated with secondary creep. The native soil was modeled using undrained strength parameters. Input parameters for the Soft Soil Creep model include cohesion, friction angle, dilatancy angle, modified swelling index, and modified compression index. The cohesion and friction angle were based on the laboratory testing program or published values. The two modified index properties were calculated using published relationships with void ratio, compression index, and the recompression index.

The fill soils comprising the BNSF embankment and the RP fill were evaluated using the Hardening Soil Model. Similar to the Soft Soil Creep model, the Hardening Soil Model accounts for pseudo-elastic strains and plastic yielding, but it also accounts for stress dependent strain rates. Input parameters for the Hardening Soil Model include cohesion, friction angle, dilatancy angle, secant modulus, tangent modulus, and a stress dependency coefficient. For fill soils, these input parameters were estimated based on SPT blow counts or assumed soil properties. AMEC's analysis assumes drained soil strength parameters for all fill soils.

Vertical deformation of the native soil was calculated below the crest of the BNSF embankment, at the toe of the BNSF embankment, at the center of WDL, and below

the crest of the RP fill. Calculations included both the total magnitude of settlement, and the time rate of settlement resulting from the loads imposed on the subsurface soil, during four construction events.

The four loading events included the construction of the BNSF embankment, construction of the RP fill, construction of the proposed WDL sediment cap, and the final remedial fill activities. With the exception of the construction of the BNSF embankment, each construction event was represented by one calculation phase. Due to the height and slope of the BNSF embankment, and the compressible nature of the underlying soil, the BNSF embankment construction was modeled over a series of three calculation phases to avoid failure of the embankment. Each loading event was punctuated by a relatively long period of dormancy. Accordingly, the analysis includes a consolidation time step following each loading event. In total, these series of events were modeled over 13 phases, which are described in the table included with the following documentation.

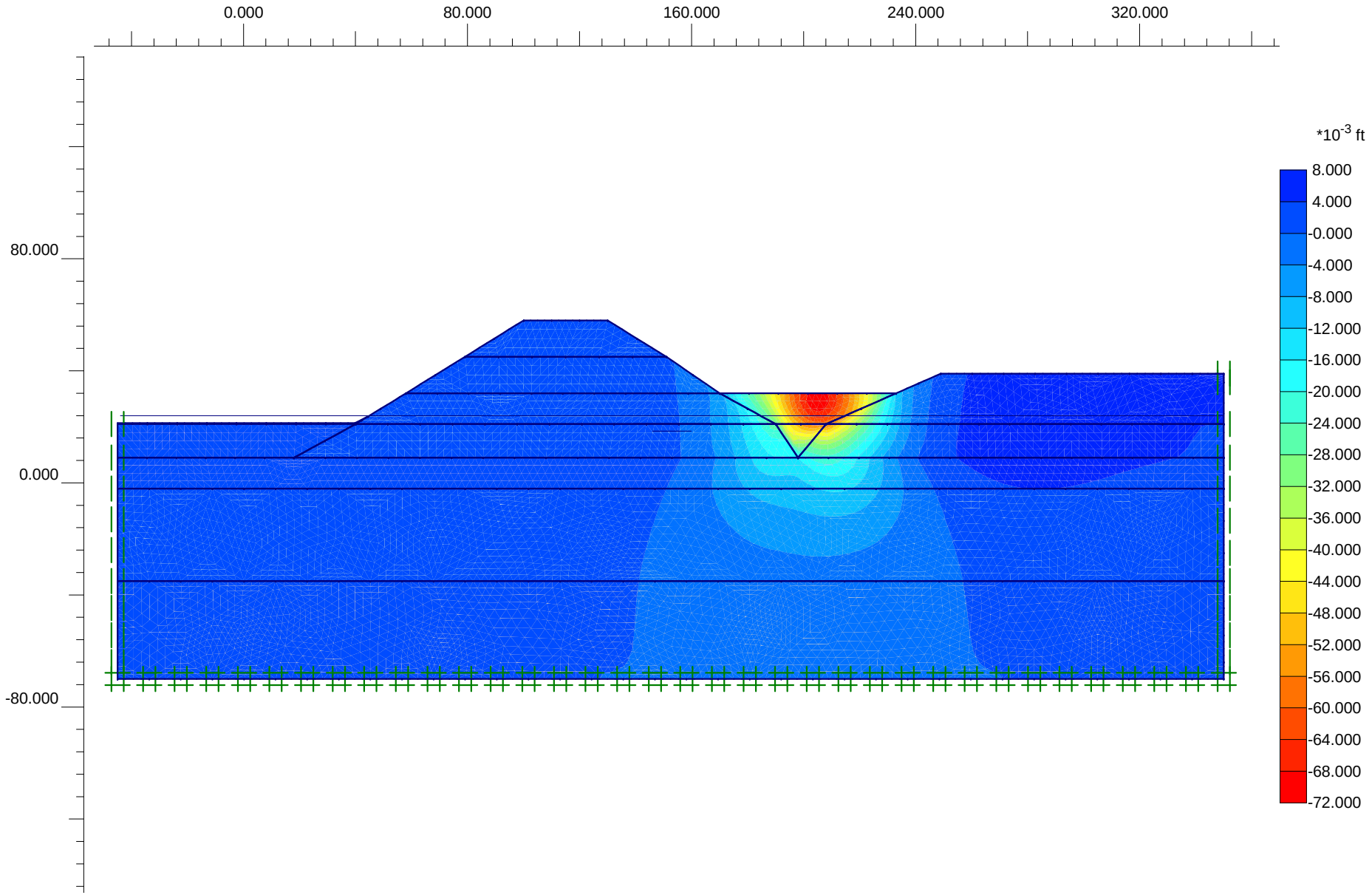


Deformed Mesh
Extreme total displacement 37.89 ft
(displacements scaled up 500.00*10^{-3} times)

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area A Deformed Mesh			
Project name	**Step**	**Date**	**User name**
AreaA4	158	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137



Vertical incremental displacements
Extreme vertical displacement increment -70.70*10^{-3} ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area A IRAM Fill Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaA4	123	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

Plaxis - Finite Element Code for Soil and Rock Analyses

Project description : RP-65-Area A

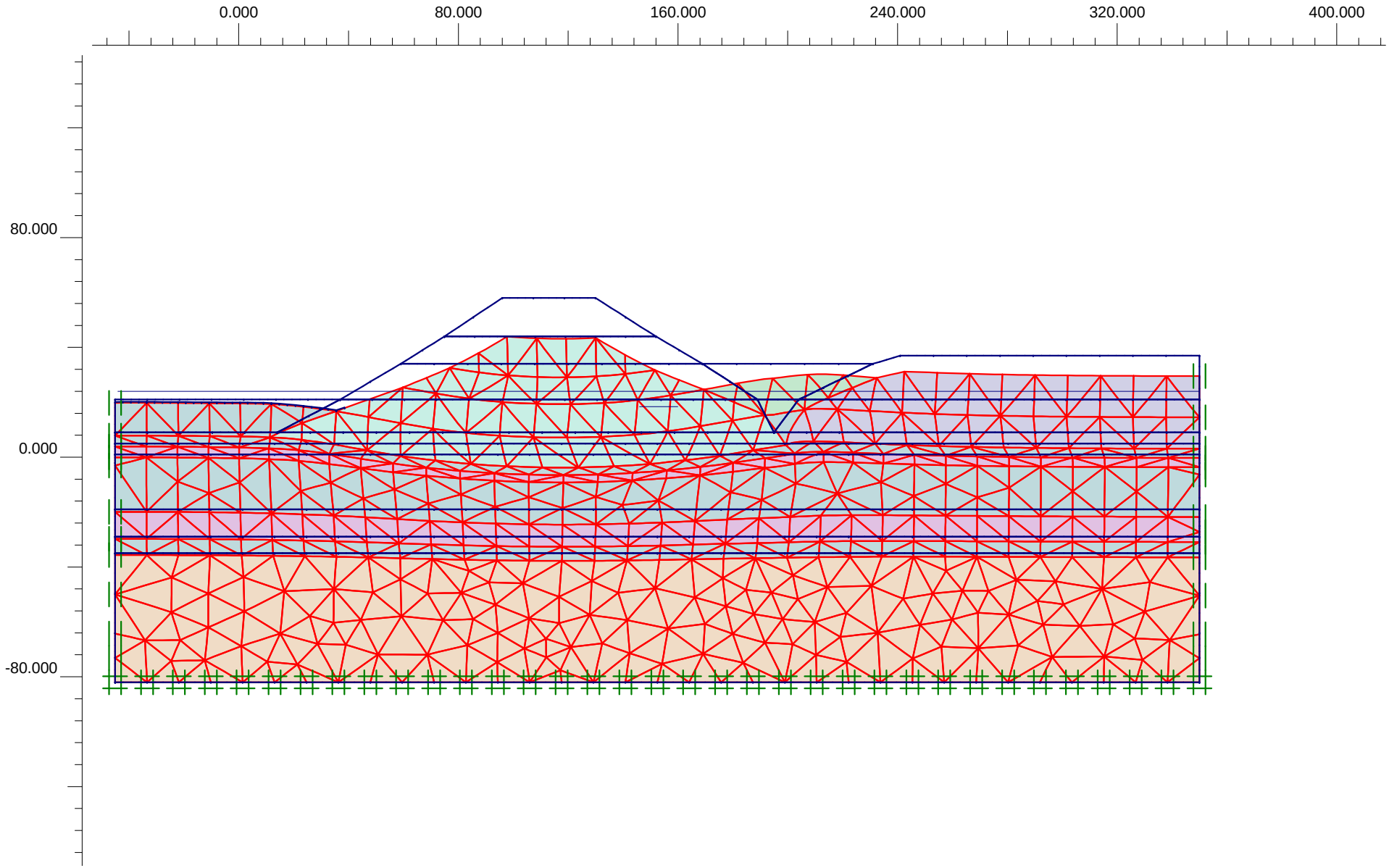
Date : 03/29/2007

User name : AMEC Earth - Environmental

Project name : AreaA4.plx

Output : Calculations list

Identification	Phase No.	Start from	Calculation	Loading input	First	Last	Water	Log info
Initial phase	0	N/A	N/A	N/A			0	N/A
Embank 1	1	0	Plastic	Staged construction	1	5	0	No errors.
1 Consolidation	2	1	Consolidation	Ultimate time	6	19	0	No errors.
Embank 2	3	2	Plastic	Staged construction	20	27	0	No errors.
2 Consolidation	4	3	Consolidation	Ultimate time	28	36	0	No errors.
Embankment 3	5	4	Plastic	Staged construction	37	40	0	No errors.
3 Consolidation	6	5	Consolidation	Ultimate time	41	66	0	No errors.
3 Consol	7	6	Consolidation	Ultimate time	67	81	0	No errors.
RpFill	8	7	Plastic	Staged construction	82	87	0	No errors.
Rp-Consol	9	8	Consolidation	Ultimate time	88	98	0	No errors.
<Phase 10>	10	9	Consolidation	Ultimate time	99	119	0	No errors.
IRAM Fill	11	10	Plastic	Staged construction	120	123	0	No errors.
IRAM Fill Consol	12	11	Consolidation	Ultimate time	124	142	0	No errors.
<Phase 13>	13	12	Consolidation	Ultimate time	143	158	0	No errors.

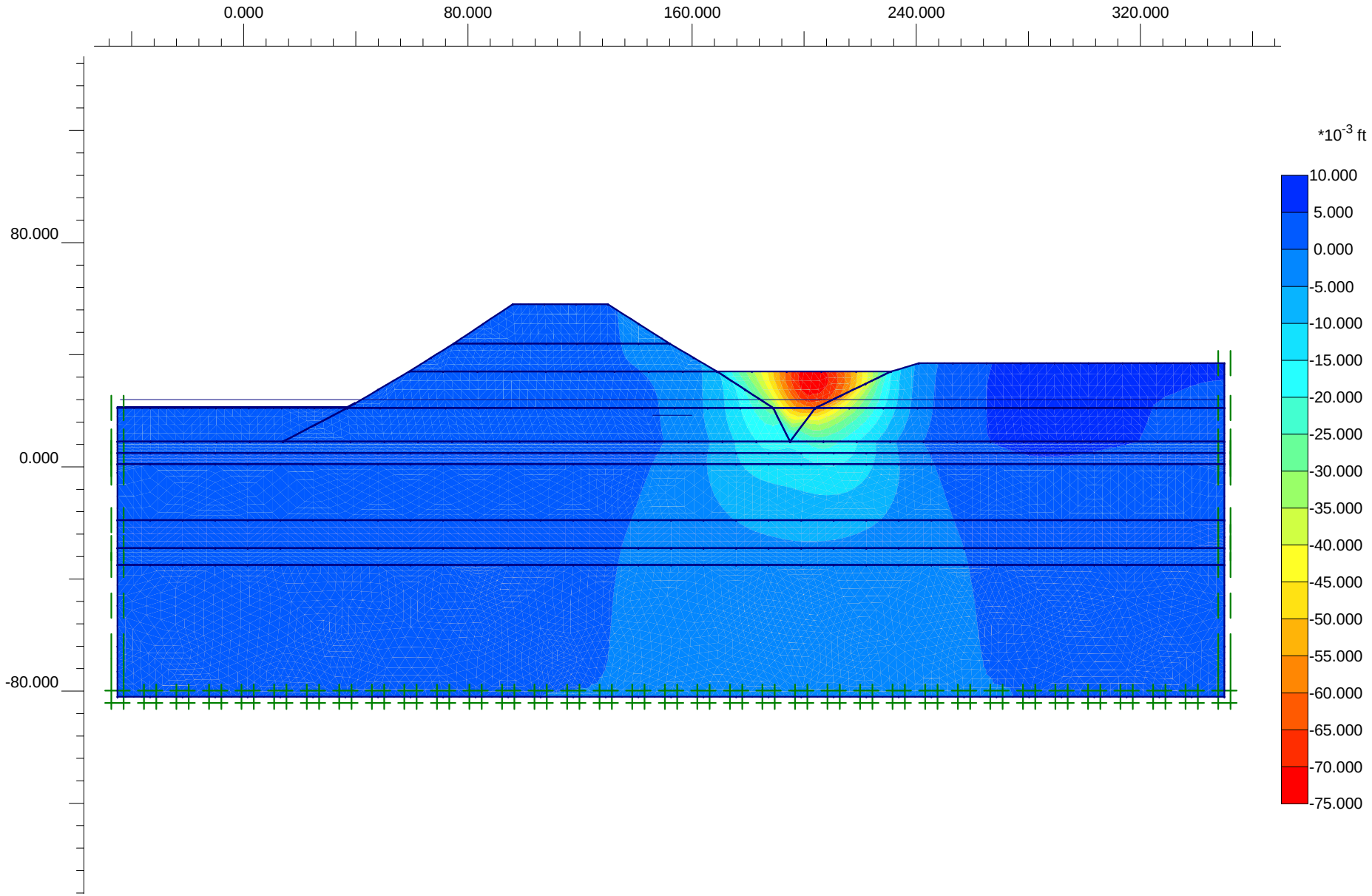


Deformed Mesh
Extreme total displacement 7.48 ft
(displacements scaled up 2.00 times)

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area B Deformed Mesh			
Project name	Step	Date	User name
AreaB2	162	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137



Vertical incremental displacements
Extreme vertical displacement increment -74.54*10^{-3} ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area B IRAM Fill Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaB2	130	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

Plaxis - Finite Element Code for Soil and Rock Analyses

Project description : RP-65-Area B

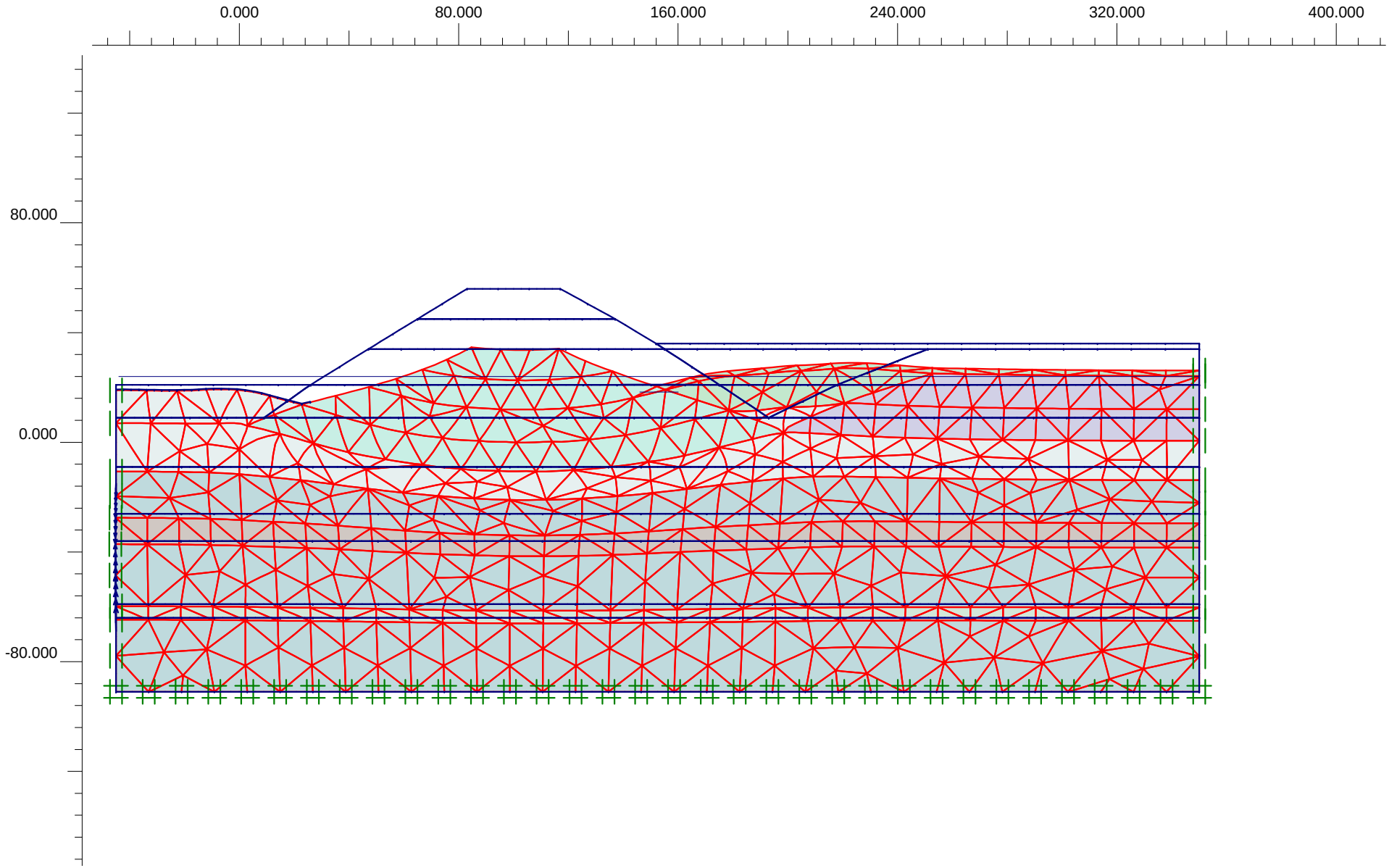
Date : 03/29/2007

User name : AMEC Earth - Environmental

Project name : AreaB2.plx

Output : Calculations list

Identification	Phase No.	Start from	Calculation	Loading input	First	Last	Water	Log info
Initial phase	0	N/A	N/A	N/A			0	N/A
Embank 1	1	0	Plastic	Staged construction	1	5	1	No errors.
1 Consolidation	2	1	Consolidation	Ultimate time	6	21	1	No errors.
Embank 2	3	2	Plastic	Staged construction	22	26	3	No errors.
2 Consolidation	4	3	Consolidation	Ultimate time	27	41	3	No errors.
Embankment 3	5	4	Plastic	Staged construction	42	48	5	No errors.
3 Consolidation	6	5	Consolidation	Ultimate time	49	71	5	No errors.
3 Consol	7	6	Consolidation	Ultimate time	72	88	5	No errors.
Rp-Fill	15	7	Plastic	Staged construction	89	94	15	No errors.
Rp-Consol	9	15	Consolidation	Ultimate time	95	95	5	No errors.
<Phase 10>	10	9	Consolidation	Ultimate time	96	126	5	No errors.
IRAM Fill	11	10	Plastic	Staged construction	127	130	11	No errors.
IRAM Fill Consol	12	11	Consolidation	Ultimate time	131	146	11	No errors.
Consolidation to 529852dyas	13	12	Consolidation	Ultimate time	147	162	11	No errors.

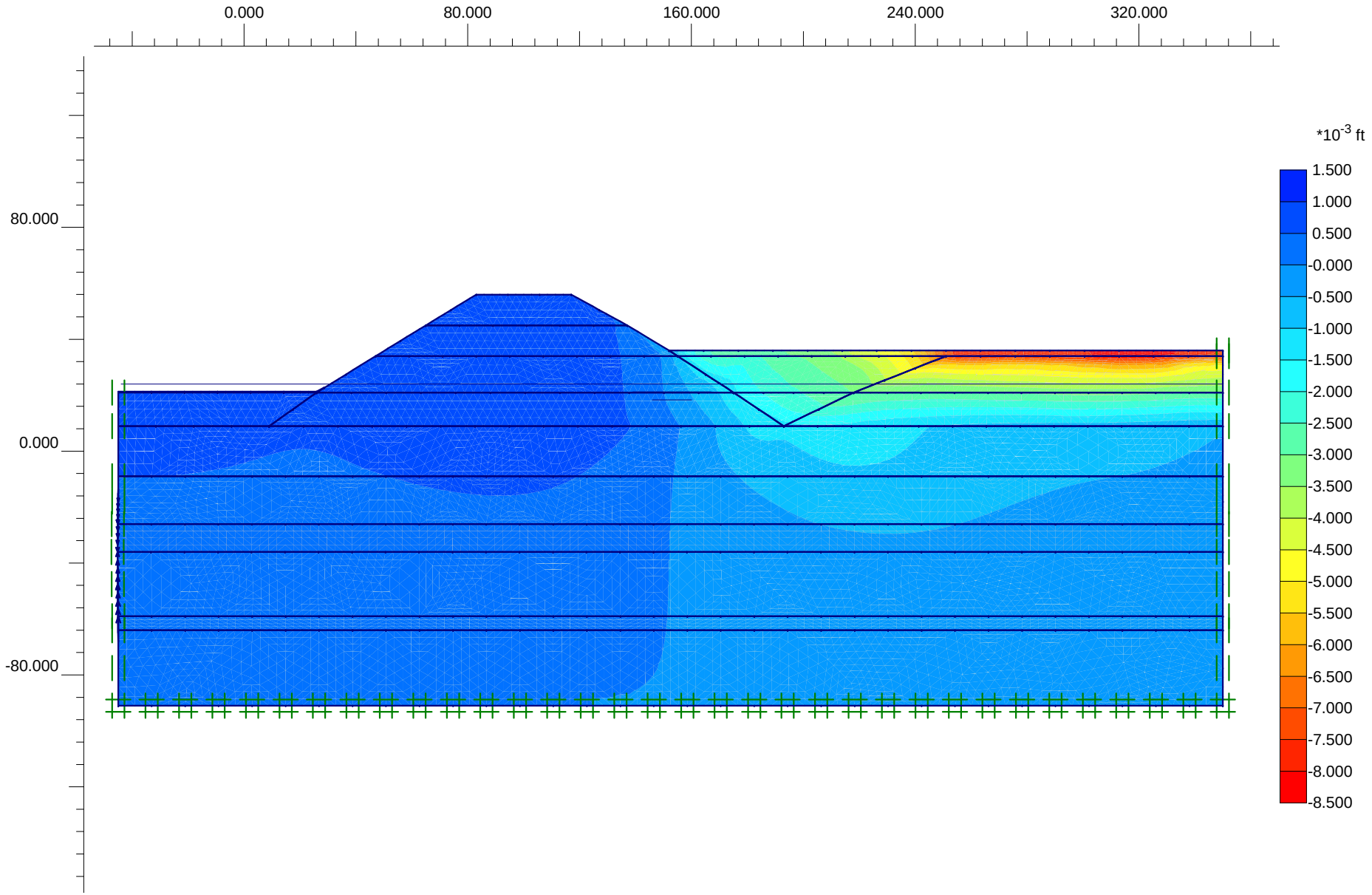


Deformed Mesh
Extreme total displacement 11.23 ft
(displacements scaled up 2.00 times)

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area C Deformed Mesh			
Project name	**Step**	**Date**	**User name**
AreaC2	241	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

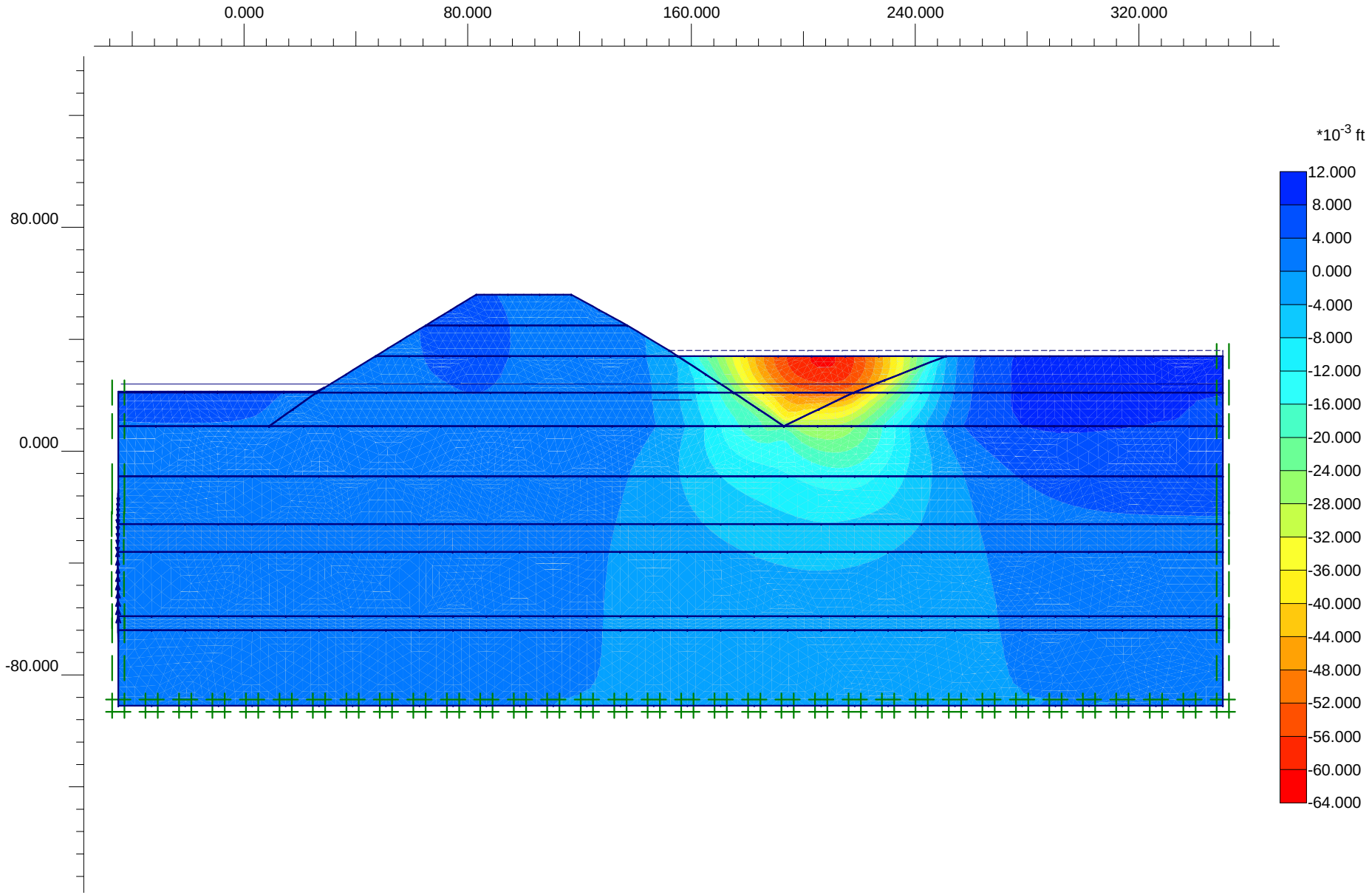


Vertical incremental displacements
Extreme vertical displacement increment -8.26*10^{-3} ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area C Final Remediation Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaC2	223	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137



Vertical incremental displacements
Extreme vertical displacement increment -60.70*10^{-3} ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area C IRAM Fill Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaC2	171	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

Plaxis - Finite Element Code for Soil and Rock Analyses

Project description : RP-65-Area C

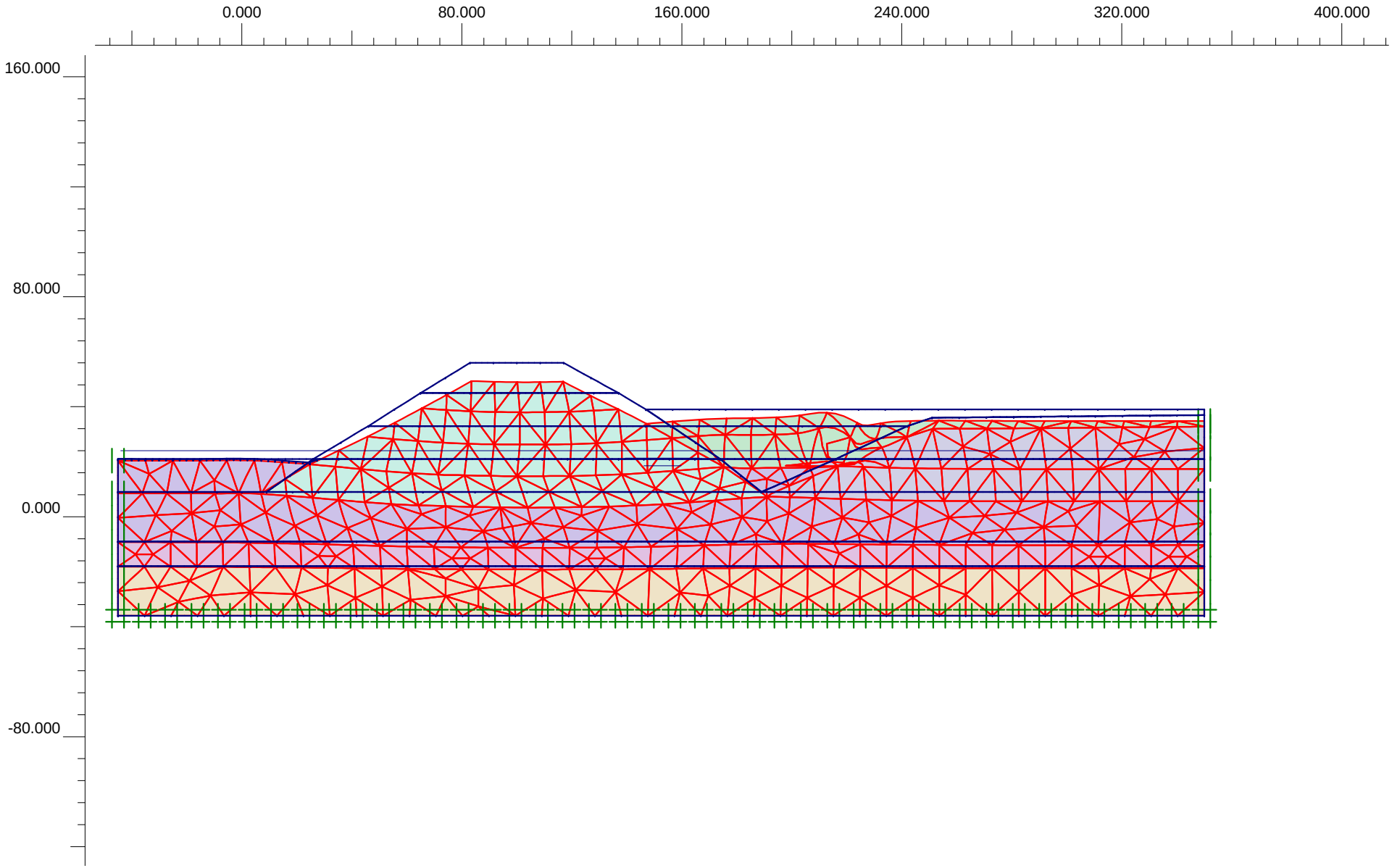
Date : 03/29/2007

User name : AMEC Earth - Environmental

Project name : AreaC2.plx

Output : Calculations list

Identification	Phase No.	Start from	Calculation	Loading input	First	Last	Water	Log info
Initial phase	0	N/A	N/A	N/A			0	N/A
Embank 1	1	0	Plastic	Staged construction	1	9	0	No errors.
1 Consolidation	2	1	Consolidation	Ultimate time	10	25	0	No errors.
Embank 2	16	2	Plastic	Staged construction	26	28	0	No errors.
2 Consol	17	16	Consolidation	Ultimate time	29	30	0	No errors.
Embankment 3	5	17	Plastic	Staged construction	31	36	0	No errors.
3 Consolidation	6	5	Consolidation	Ultimate time	37	38	0	No errors.
3 Consol	7	6	Consolidation	Ultimate time	39	114	0	No errors.
<Phase 14>	14	7	Consolidation	Ultimate time	115	141	0	No errors.
RpFill	8	14	Plastic	Staged construction	142	145	0	No errors.
Rp-Consol	9	8	Consolidation	Ultimate time	146	146	0	No errors.
<Phase 10>	10	9	Consolidation	Ultimate time	147	165	0	No errors.
IRAM Fill	11	10	Plastic	Staged construction	166	171	0	No errors.
IRAM Fill Consol	12	11	Consolidation	Ultimate time	172	215	0	No errors.
Final Remediation Fill	13	12	Plastic	Staged construction	216	223	0	No errors.
Final Remediation Consol	15	13	Consolidation	Ultimate time	224	225	0	No errors.
consol	18	15	Consolidation	Ultimate time	226	241	0	No errors.

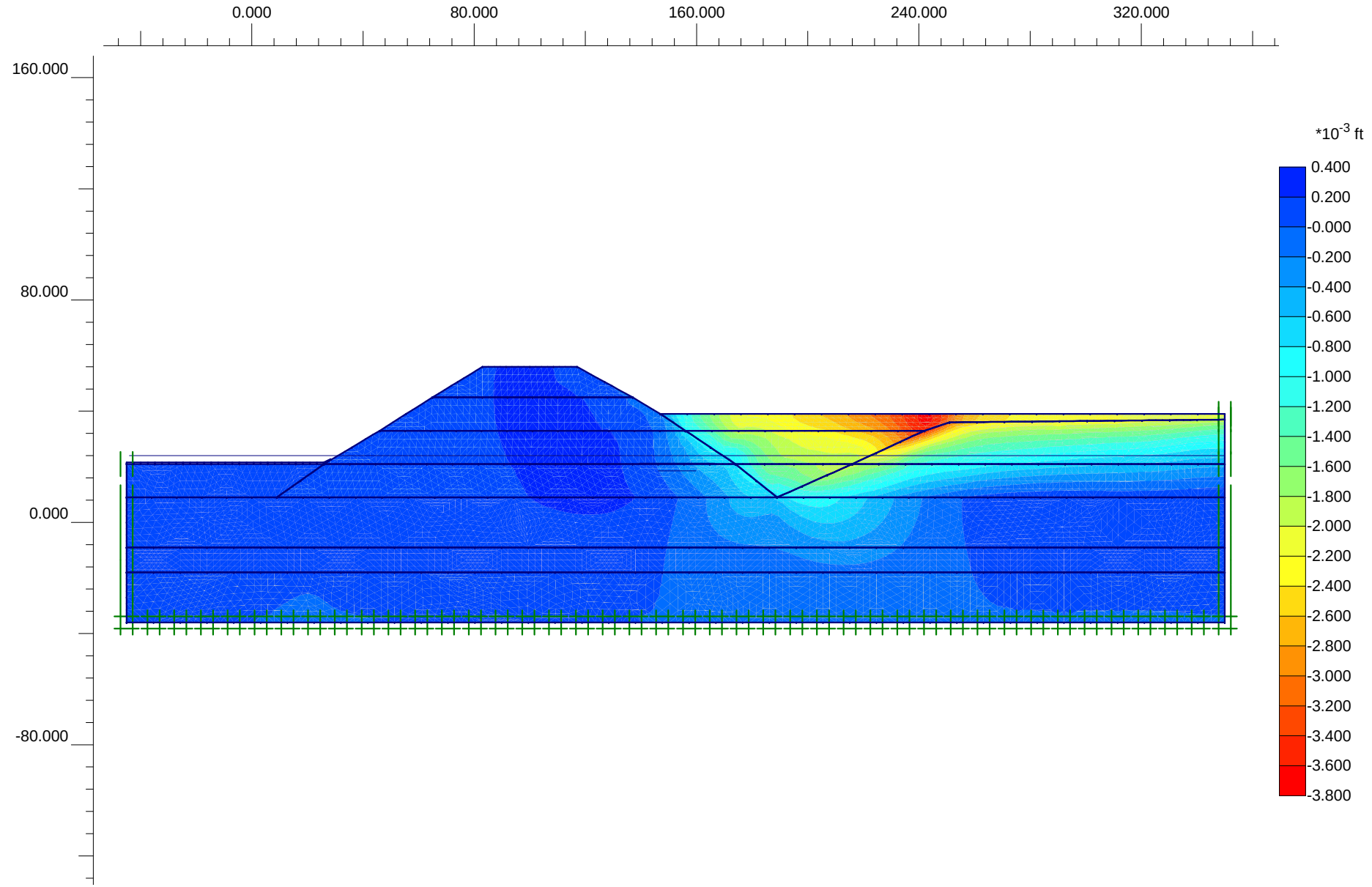


Deformed Mesh
Extreme total displacement 25.30 ft
(displacements at true scale)

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area D Deformed Mesh			
Project name	**Step**	**Date**	**User name**
AreaD2	353	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

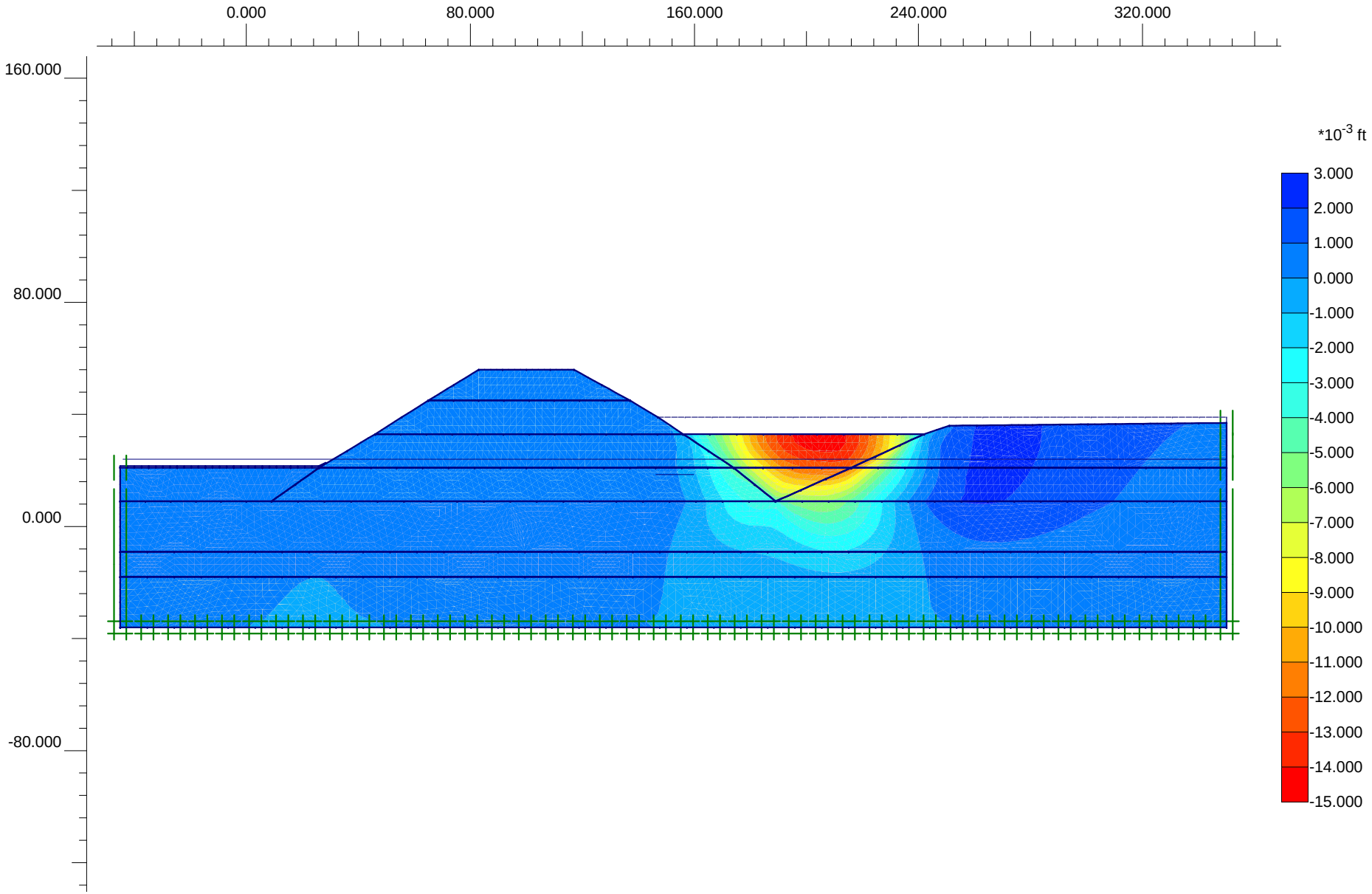


Vertical incremental displacements
Extreme vertical displacement increment -3.67*10^{-3} ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area D Final Remediation Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaD2	333	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137



Vertical incremental displacements
Extreme vertical displacement increment -14.69*10^{-3} ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area D IRAM Fill Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaD2	278	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

Plaxis - Finite Element Code for Soil and Rock Analyses

Project description : RP-65-Area D

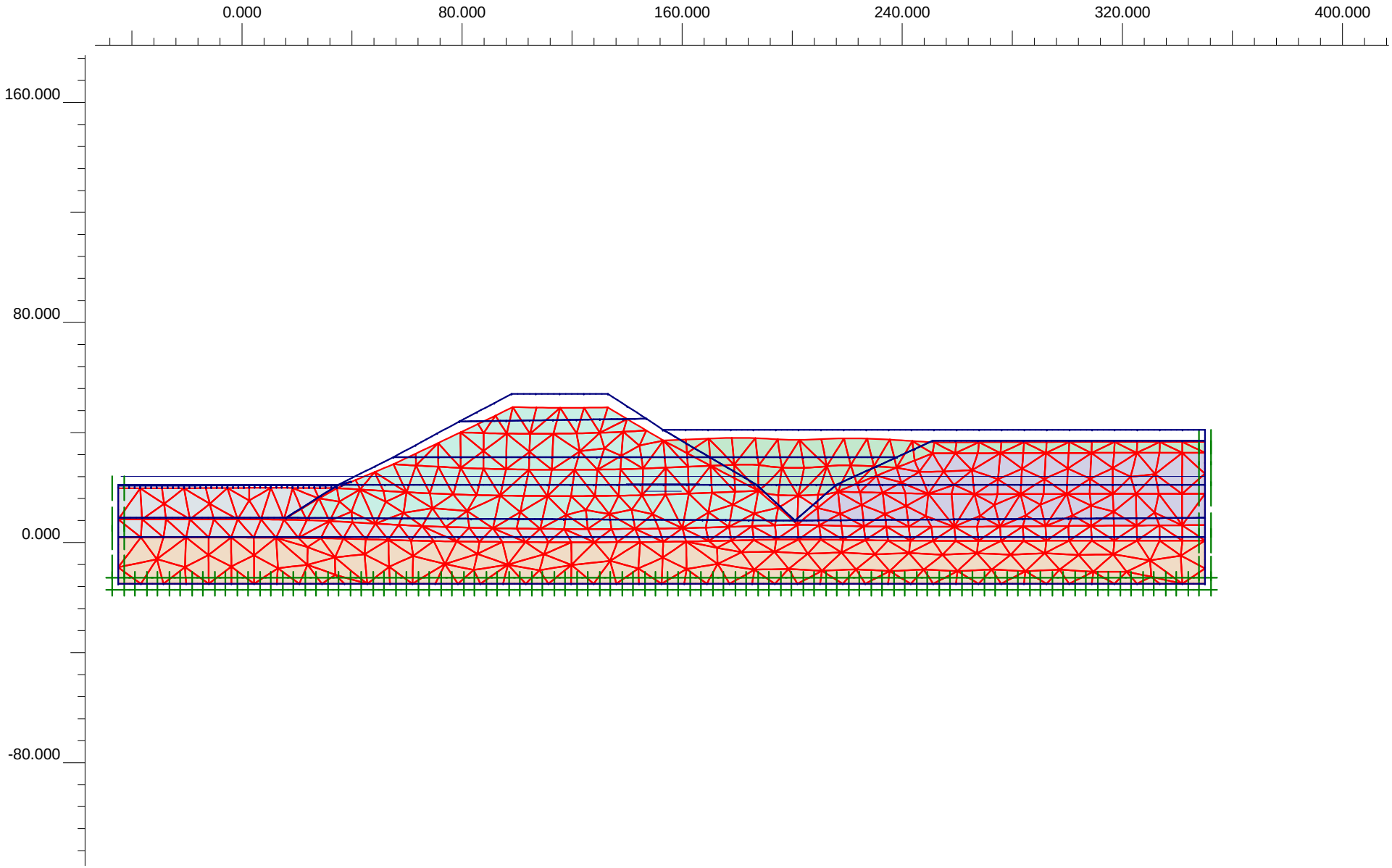
Date : 03/29/2007

User name : AMEC Earth - Environmental

Project name : AreaD2.plx

Output : Calculations list

Identification	Phase No.	Start from	Calculation	Loading input	First	Last	Water	Log info
Initial phase	0	N/A	N/A	N/A			0	N/A
Embank 1	1	0	Plastic	Staged construction	1	8	0	No errors.
1 Consolidation	2	1	Consolidation	Ultimate time	9	37	0	No errors.
Embank 2	3	2	Plastic	Staged construction	38	47	0	No errors.
2 Consolidation	4	3	Consolidation	Ultimate time	48	78	0	No errors.
Embankment 3	5	4	Plastic	Staged construction	79	85	0	No errors.
3 Consolidation	6	5	Consolidation	Ultimate time	86	132	0	No errors.
3 Consol	7	6	Consolidation	Ultimate time	133	178	0	No errors.
<Phase 14>	14	7	Consolidation	Ultimate time	179	230	0	No errors.
RpFill	8	14	Plastic	Staged construction	231	238	0	No errors.
Rp-Consol	9	8	Consolidation	Ultimate time	239	245	0	No errors.
<Phase 10>	10	9	Consolidation	Ultimate time	246	270	0	No errors.
IRAM Fill	11	10	Plastic	Staged construction	271	278	0	No errors.
IRAM Fill Consol	12	11	Consolidation	Ultimate time	279	327	0	No errors.
Final Remediation Fill	13	12	Plastic	Staged construction	328	333	0	No errors.
Final Remediation Fill Consol	15	13	Consolidation	Ultimate time	334	353	0	No errors.

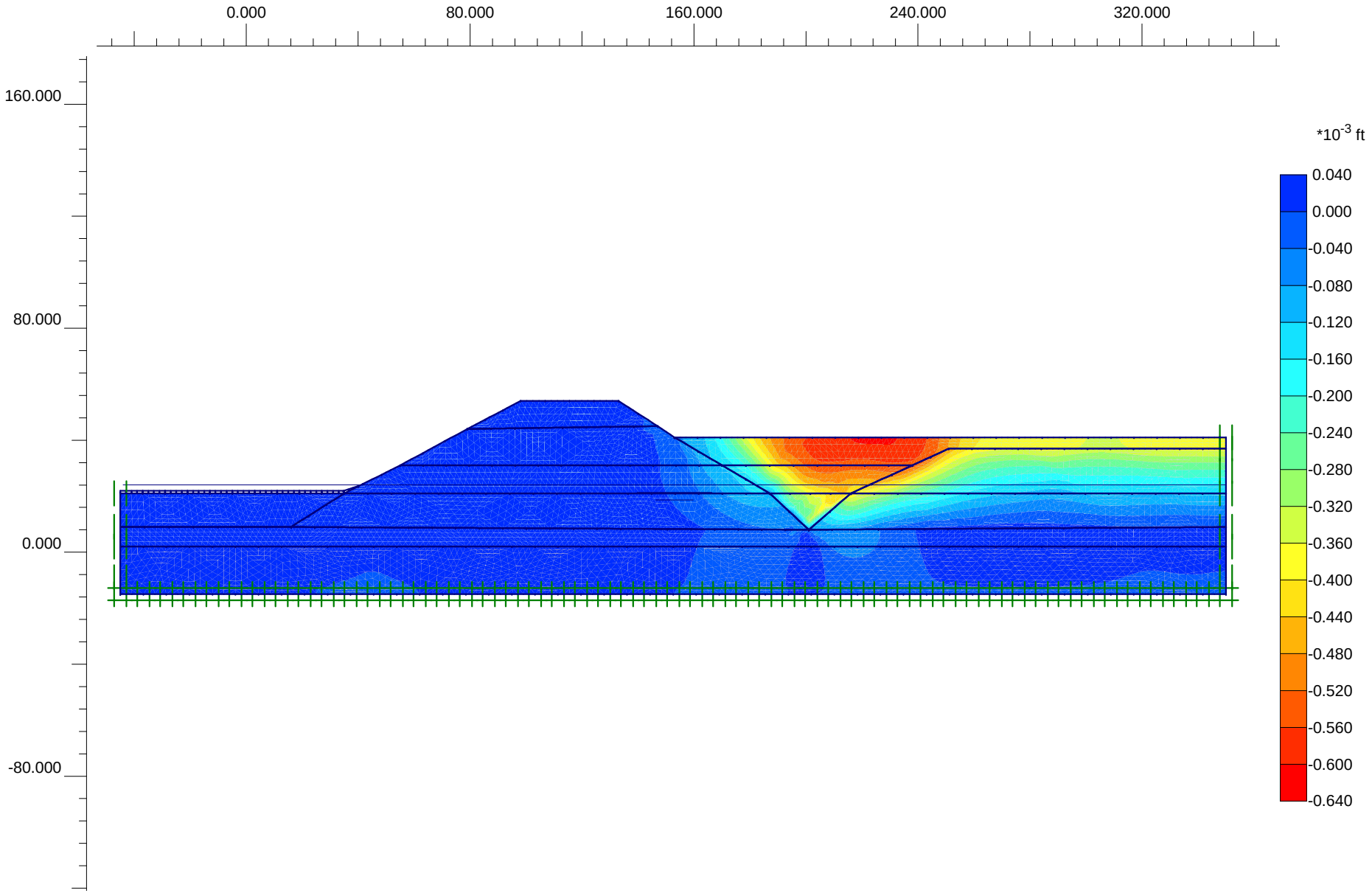


Deformed Mesh
Extreme total displacement 2.51 ft
(displacements scaled up 2.00 times)

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area E Deformed Mesh			
Project name	*Step*	*Date*	*User name*
AreaE2	175	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

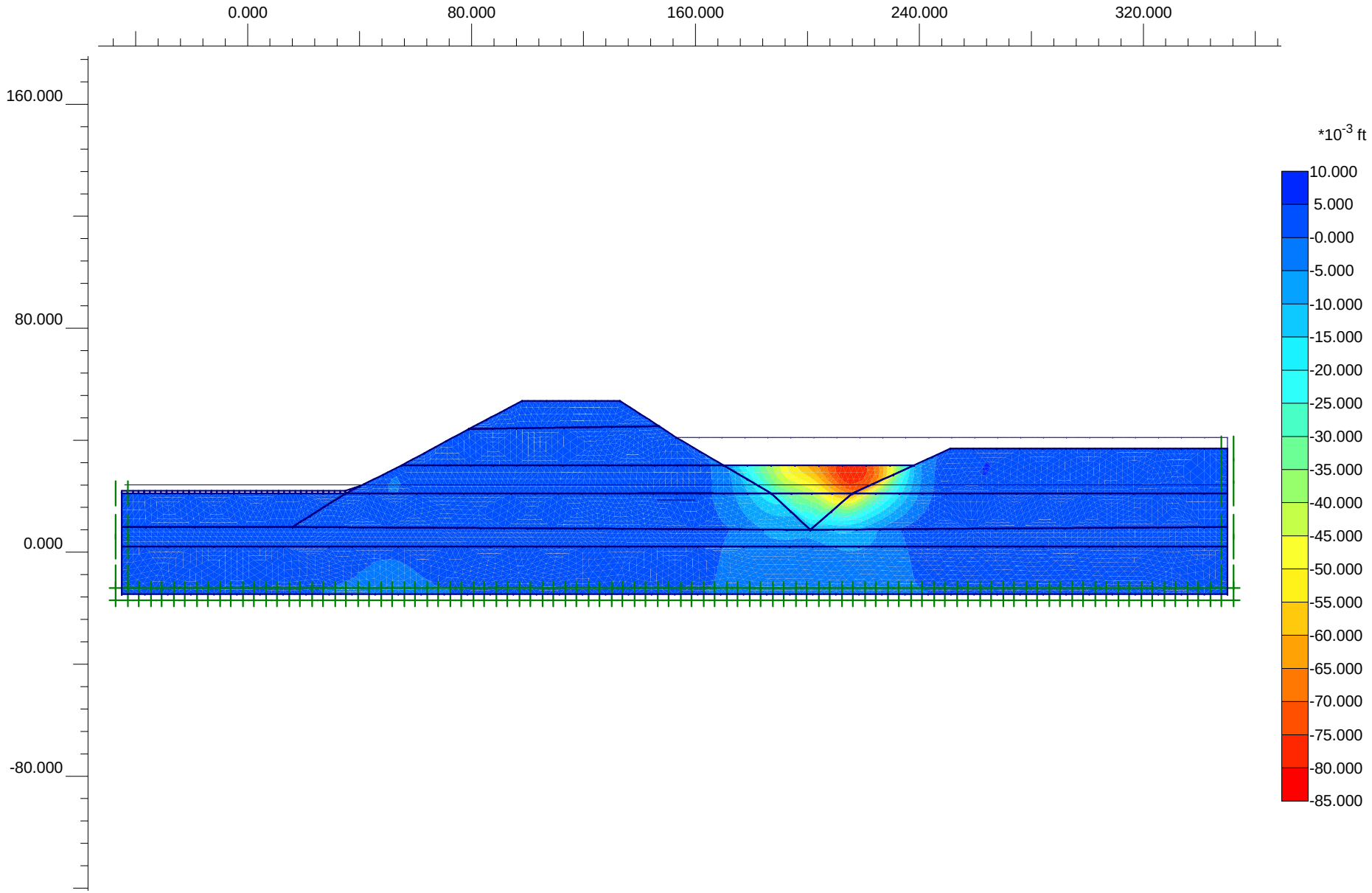


Vertical incremental displacements
Extreme vertical displacement increment -606.25*10^-6 ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area E Final Remediation Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaE2	156	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137



Vertical incremental displacements
Extreme vertical displacement increment -79.94*10^{-3} ft

PLAXIS
Finite Element Code for Soil and Rock Analyses

Project description			
RP-65-Area E IRAM Fill Vertical Incremental Displacement			
Project name	**Step**	**Date**	**User name**
AreaE2	90	03/29/07	AMEC Earth - Environmental

Version 7.12.8.137

Plaxis - Finite Element Code for Soil and Rock Analyses

Project description : RP-65-Area E

Date : 03/29/2007

User name : AMEC Earth - Environmental

Project name : AreaE2.plx

Output : Calculations list

Identification	Phase No.	Start from	Calculation	Loading input	First	Last	Water	Log info
Initial phase	0	N/A	N/A	N/A			0	N/A
Embank 1	1	0	Plastic	Staged construction	1	7	1	No errors.
1 Consolidation	2	1	Consolidation	Ultimate time	8	17	1	No errors.
Embank 2	3	2	Plastic	Staged construction	18	27	3	No errors.
2 Consolidation	4	3	Consolidation	Ultimate time	28	30	3	No errors.
Embankment 3	5	4	Plastic	Staged construction	31	34	5	No errors.
3 Consolidation	6	5	Consolidation	Ultimate time	35	41	5	No errors.
3 Consol	7	6	Consolidation	Ultimate time	42	47	5	No errors.
<Phase 14>	14	7	Consolidation	Ultimate time	48	53	5	No errors.
RpFill	8	14	Plastic	Staged construction	54	63	5	No errors.
Rp-Consol	9	8	Consolidation	Ultimate time	64	71	5	No errors.
<Phase 10>	10	9	Consolidation	Ultimate time	72	84	5	No errors.
IRAM Fill	11	10	Plastic	Staged construction	85	90	11	No errors.
IRAM Fill Consol	12	11	Consolidation	Ultimate time	91	111	11	No errors.
Final Remediation Fill	13	12	Plastic	Staged construction	112	156	13	No errors.
Final Remediation Fill Consol	15	13	Consolidation	Ultimate time	157	159	13	No errors.
Consol	16	15	Consolidation	Ultimate time	160	175	13	No errors.