Lower Duwamish Waterway Group

Port of Seattle / City of Seattle / King County / The Boeing Company

DATA REPORT: SURVEY AND SAMPLING OF LOWER DUWAMISH WATERWAY SEEPS FINAL

For submittal to

The US Environmental Protection Agency
Region 10
Seattle, WA

The Washington State Department of Ecology
Northwest Regional Office
Bellevue, WA

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Acronyms

Acronym	Definition
ARI	Analytical Resources, Inc.
BEHP	bis(2-ethylhexyl)phthalate
DOC	dissolved organic carbon
DQI	data quality indicator
Ecology	Washington State Department of Ecology
EPA	US Environmental Protection Agency
Frontier	Frontier Geosciences, Inc.
GPS	global positioning system

Acronym	Definition
LCS	laboratory control standard
LCSD	laboratory control standard duplicate
LDW	Lower Duwamish Waterway
LDWG	Lower Duwamish Waterway Group
MHHW	mean higher high water
MLLW	mean lower low water
MS	matrix spike
MSD	matrix spike duplicate
NAPL	non-aqueous phase liquid
NTU	nephelometric turbidity unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCL	practical quantitation limit
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RM	river mile
RPD	relative percent difference
SQS	Sediment Quality Standards
SVOC	semivolatile organic compound
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TPH-D	diesel-range total petroleum hydrocarbons
TPH-G	gasoline-range total petroleum hydrocarbons
TPH-MO	motor oil-range total petroleum hydrocarbons
TSS	total suspended solids
VOC	volatile organic compound
WQC	Washington State water quality criteria

1.0 Introduction

This report summarizes the results of the seep survey and sampling conducted as part of the Phase 2 Remedial Investigation (RI) for the Lower Duwamish Waterway (LDW). This study was designed to conduct a reconnaissance survey of all LDW seeps and to collect seep water from a subset of these seeps for chemical analysis. Data from this study will be used for the following purposes:

- evaluate whether seep discharges below mean higher high water (MHHW) [1] and above mean lower low water (MLLW) may significantly contribute to chemical inputs to the LDW, either through dissolved phase, colloidal phase, or product phase inputs
- determine if additional seeps should be selected for sampling in the future either as part of the Phase 2 RI, site-specific source evaluations, or as part of the source control work being conducted by the Lower Duwamish Source Control Work Group
- determine if additional surface sediment samples are needed from seep areas

Two field events were conducted to meet the objectives of this study. The first field event, conducted on May 5 to May 10, 2004, was a reconnaissance survey to identify seeps, make visual observations of seep characteristics, and measure conventional water quality parameters in the field. The second field event, conducted on June 29 to July 3, 2004, involved the collection of seep water samples for chemical analysis from a subset of seeps that were selected based on the results of the reconnaissance survey, existing data, and potential source information.[2] Section 2.0 summarizes the methods and results of the reconnaissance survey and Section 3.0 summarizes the methods and results of the seep water sampling for chemical analyses. The text is supported by the following appendices:

- Appendix A – reconnaissance survey data tables
- Appendix B – rainfall data and associated seasonal changes in groundwater elevations
- Appendix C – chain of custody forms
- Appendix D – field forms and field notes
- Appendix E – data validation report
- Appendix F – seep water analytical data tables

[1] The Source Control Work Group is responsible for implementation of plans for source characterization above MHHW.

[2] As described in Section 2.4, the subset of seeps to be sampled was selected at a meeting with EPA and Ecology on May 25, 2004. A portion of this meeting included input from stakeholders on seep selection.

- Appendix G – raw analytical laboratory data
- Appendix H – data management

2.0 Reconnaissance Survey

The objective of the reconnaissance survey was to identify seeps along the LDW, record observations, and collect field measurements of conventional water quality parameters at as many seeps as possible during the survey period, including at least one major seep per area with high seepage. Data from the reconnaissance survey in combination with potential source information and existing data were used to identify a subset of seeps for chemical analysis. Additional details on study design, rationale, and methods for the reconnaissance survey are presented in the Quality Assurance Project Plan (QAPP) for Survey and Sampling of Lower Duwamish Waterway Seeps (Windward 2004).[3]

The reconnaissance survey was conducted on May 5, 6, 7, and 10, 2004. These survey dates were selected because tides as low as -3.3 ft MLLW occurred during that period. The survey area included all shoreline areas accessible by boat along the LDW from River Mile[4] (RM) 0.0 to RM 5.0.[5]

The following sections present the seep identification process; seep observations and water quality measurements; deviations from the QAPP; and the subset of seeps that were selected for chemical analysis. Data collected during the reconnaissance survey and identified seep locations are presented in Appendix A. A full set of photographs documenting the survey can be viewed on the Lower Duwamish Waterway Group (LDWG) website; go to http://www.ldwg.org, click on *documents*, and scroll to the Seep Survey Photo Album. Photographs will also be submitted to EPA and Ecology on a CD.

2.1 SEEP IDENTIFICATION

The shoreline was accessed by boat during the reconnaissance survey. Two boats were used to maximize efficiency of the survey during the limited low tide period with water levels below +1 ft MLLW. The field crew in the first boat identified and staked the seeps. The field crew in the second boat recorded seep observations and water quality measurements at staked seeps.

Information was collected at as many seeps as possible during the reconnaissance survey. At locations where multiple seeps were flowing, one seep was selected that

[3] This document is referred to as the QAPP in the remainder of this report.

[4] River mile as measured from the southern tip of Harbor Island.

[5] Seeps within the Terminal 117 early action area, between RM 3.5 and 3.7 on the west side of the LDW, were not staked or assessed during the reconnaissance survey because seep water samples were recently collected within that area prior to this sampling event and a full data validation was conducted (Windward et al. 2004).

was considered representative of conditions in the area. Some areas with low broad areas of seepage were not identified during the survey because the low flow rates would not allow for sample collection. In addition, some areas with barges or piers resulted in restricted access and could not be surveyed. Locations of areas with broad seepage and restricted access are identified on a qualitative basis on Figure A-1 in Appendix A. A total of 82 seeps were staked by the field crew in the first boat. Seeps 1 to 26 were staked on May 5, Seeps 27 to 56 were staked on May 6, and Seeps 57 to 82 were staked on May 7. These seeps are shown in Figure 2-1.

Selected seep location coordinates were recorded with a global positioning system (GPS) and marked with stakes. In addition, compass bearings on fixed objects were recorded and a rough schematic diagram was drawn for each seep location. Each seep staked during the survey was assigned a unique alphanumeric location ID number. The first three characters of the location ID are "LDW" to identify the Lower Duwamish Waterway project area. The next two characters are "SP" to identify the type of medium (i.e., seep) observed, followed by consecutive numbers, beginning with 01, to identify the specific location within the LDW area. For example, the location ID of the first seep staked was LDW-SP-01. The sample ID number for the water quality parameter data was the location ID followed by the letter "R" to signify the reconnaissance survey, and then the letter "a" or "b" to designate the duplicate measure. For example, the sample ID for the first water quality measurement at the first seep was LDW-SP-01-R-a.

2.2 SEEP WATER QUALITY MEASUREMENTS AND OBSERVATIONS

Seep water was collected at each staked seep for measurement of conventional water quality parameters. Seep water was collected by placing a container directly under the flow, or by directing the flow into a container using a funnel with attached tubing. A Hydrolab probe was placed into the container of seep water to measure conductivity, temperature, dissolved oxygen, pH, and oxidation-reduction potential. Water quality measurements of LDW water were also made at approximately one location per river mile by lowering the Hydrolab probe into the LDW and recording measurements at both the surface and at 1 m below the surface.

Seep water quality data were collected by the field crew in the second boat at each of the 82 staked seeps. Most water quality measurements were made on the same day that the seeps were staked by the field crew in the first boat. However, some measurements were made on subsequent days because rising water levels caused some seeps to become submerged by the time the second boat arrived at the seep. Seep water quality data are presented in Table A-1 of Appendix A. Measurements were also made of LDW water quality at locations within the LDW adjacent to or directly offshore from five seeps (Seeps 19, 26, 56, 62, and 73). LDW water quality data are presented in Table A-2. These measurements were taken at 1-m depth below the LDW water surface, and were taken as close to the shore as possible; distances from the waterline at the time of sampling were as follows:

- Seep 19: 10 m
- Seep 26: 15 m
- Seep 56: adjacent to seep
- Seep 62: 40 m
- Seep 73: 21 m

At each staked seep location, observations were made of seep characteristics such as staining or discoloration, oily or other sheen, bacterial slime, odor, colored or milky discharge, formation of precipitates, vegetation, or the presence of waste material. In addition, descriptions of the seep substrate, the embankment substrate, and the seep location relative to vertical changes in the embankment or beach substrate were recorded. Qualitative flow rate estimates were made at each seep; estimates were described as either high flow (e.g., active flow), medium flow (e.g., smaller stream), or low flow (e.g., trickle). Notes on these observations are presented in Table A-2 of Appendix A.

2.3 FIELD DEVIATIONS FROM THE QAPP

Several QAPP deviations were necessary in the field because of time constraints associated with sampling during low tide levels. These deviations are noted as follows:

- Duplicate Hydrolab measurements were made only at the first two locations on the first two days instead of at all seep locations.
- The survey was conducted in some areas (Seeps 24, 25, 26, 51, 55, 56, 76, 79, 80, 81, and 82) when water level was +1 ft MLLW.
- One additional field day (May 10, 2004) was added to the survey to collect water quality measurements at Seeps 72, 75, 77, and 78.

2.4 SELECTION OF SEEPS FOR CHEMICAL ANALYSIS

Information collected during the reconnaissance survey was submitted to the US Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) on May 18, 2004. A meeting was held on May 25, 2004 with EPA and Ecology to select a subset of seeps for chemical analysis. Input from stakeholders was also received at this meeting and was considered in seep selection. These seeps were selected based on a weight-of-evidence approach, which included potential source information and existing sediment, groundwater, and seep data, in addition to information gathered during the reconnaissance survey. Additional details on potential sources and existing sediment, groundwater, and seep data are discussed in more detail in the QAPP (Windward 2004).

Eighteen seeps[6] were selected at the May 25, 2004 meeting for collection of seep water for chemical analyses. Seep locations are presented in Figure 2-1. A summary of the rationale for selecting each seep is presented in Table 2-1. Key considerations were proximity to potential sources, existing sediment data, and observations made during the reconnaissance survey. Properties listed in Table 2-1 were considered potential sources based on information from the following: 1) Appendix G of the Phase 1 remedial investigation (Windward 2003), 2) the Source Control Work Group's source matrix (Flint 2003), and 3) input from EPA, Ecology, and stakeholders at a meeting held on May 25, 2004.

Table 2-1. Summary of rationale for selecting seeps to sample for chemical analysis

SEEP	RATIONALE
10	possible historical source; sediment CSL/ML exceedances
12	adjacent to Crowley; sediment CSL/ML exceedances
20	adjacent to Jorgensen; light sheen observed in LDW water along Jorgensen property during reconnaissance survey – no sheen observed in seep or its intertidal vicinity
24	adjacent to Boeing Development Center; potential historical source from former hazardous waste site and scrap facility; sediment CSL/ML exceedances
39	adjacent to Delta Marine; potential upland dredge spoils; high seep flow
41	light sheen observed in the vicinity of the seep during reconnaissance survey
48	adjacent to Long Painting; public access area
53	adjacent to Swan Bay Holdings; black ooze at seep and petroleum odor observed during reconnaissance survey
54	adjacent to Swan Bay Holdings; grey foamy seep water and construction and metal debris observed along the bank during reconnaissance survey
61	adjacent to Glacier NW (near former Reichhold plant); discolored seep water and sulfide odor observed during reconnaissance survey
62	adjacent to Glacier NW (near former Reichhold plant); dioxins/furans detected in sediment
64	sheen in vicinity of seep and discolored seep water observed during reconnaissance survey
69	near Central Painting, McFarland Property, and Birmingham Steel; restoration site; public access; sediment SQS/SL exceedances
71	near Birmingham Steel; public access area
75	near T-108/Chiyoda property; potential historical source of PCBs, PAHs, and metals: gasoline detected in upland groundwater; discolored seep water observed during reconnaissance survey; restoration area
76	sediment CSL/ML exceedances; discolored seep water observed during reconnaissance survey
80	adjacent to James Hardie Gypsum; downgradient from Philip Services; sediment CSL/ML exceedances
82	adjacent to Lone Star; adjacent to historical hazardous waste disposal area and junkyard; downgradient from Philip Services

CSL/ML – Washington State Sediment Management Standards Cleanup Screening Level or the Maximum Level in the Dredged Material Management Program

[6] Samples were subsequently collected at 16 of the 18 selected seeps because two of the seeps (Seep 24 and Seep 53) were dry at the time of sampling.

3.0 Seep Water Sampling and Analyses

This section discusses the methods and results of sampling and chemical analyses of seep water samples.

3.1 METHODS

Seep water sampling for chemical analyses was conducted over a period of five days from June 29 to July 3, 2004. These sampling dates were selected because tides as low as -4.0 ft MLLW occurred during that period. This section discusses the methods used to collect seep water and measure field water quality parameters, and summarizes the chemical analysis methods. A detailed description of methods is presented in Section 3.2.2 of the QAPP (Windward 2004).

3.1.1 Sampling methods

All seeps identified for seep water sampling were located by the GPS coordinates and the stakes placed during the reconnaissance survey.

3.1.1.1 Seep water collection methods

This section describes the seep water collection methods for analysis of the following chemicals:

- metals
- mercury
- semi-volatile organic compounds (SVOCs)
- volatile organic compounds (VOCs)
- polychlorinated biphenyls (PCBs) as Aroclors
- organochlorine pesticides
- diesel-range total petroleum hydrocarbons (TPH-D)[7]
- gasoline-range TPH (TPH-G)
- total organic carbon (TOC)
- dissolved organic carbon (DOC)
- total suspended solids (TSS)

Seep water samples were collected using stainless steel PushPoint mini-piezometers developed and sold by MHE Products. A peristaltic pump was used to withdraw seep water from the mini-piezometer through a 2 to 3-ft length piece of Masterflex tubing.

[7] TPH-D analysis included reporting of motor oil-range TPH (TPH-MO).

The mini-piezometers were generally placed in the sediment to a depth of about 4 to 6 inches. Once the seep water ran clear (i.e., usually after about 50 mL of flow or 30 seconds of pumping), a turbidity measurement was taken.

If the turbidity was less than or equal to 5 nephelometric turbidity units (NTU), mini-piezometers were used to sample the seep if a sufficient volume of sample could be collected with the mini-piezometers. Table 3-1 summarizes the sample collection methods used at each seep. Seeps were identified as potential non-aqueous phase liquid (NAPL) seeps if a sheen or petroleum odor was observed in the immediate vicinity of the seep during the reconnaissance survey or during the seep water sampling event. TPH was analyzed in seep water collected from potential NAPL seeps.

At Seeps 10 and 62, sufficient seep water could not be collected using the mini-piezometer, so seep water was collected by placing a glass funnel with attached tubing into the flowing seep water channel and directing the flow into the sampling container (Table 3-1). At Seep 64, turbidity was less than 5 NTU on July 2, but only filtered samples and a portion of the unfiltered samples (SVOCs and PCBs) could be collected before the tide rose and covered the seep. Upon returning to the seep on July 3, the turbidity remained greater than 5 NTU using either the mini-piezometer method (after pumping for 15 minutes) or the funnel method to collect surface seep water flow. Therefore, the remaining unfiltered samples were not collected Two seep locations, 24 and 53, could not be sampled. At the intended time of sampling at Seep 24, there was no visible flow and the sediment was dry. Seep 53 was submerged because of the discharge from an upgradient outfall on June 30 and July 2. On July 3, Seep 53 was exposed, but no flow was emerging from the seep and the sediment in the vicinity of the seep was dry.

Table 3-1. Seep characteristics and sample collection methods

Seep Number	Date Collected	Location Coordinates[a]	Potential NAPL Seep	Turbidity (NTU)	Sample Collection Method	Time Collected	Approx. Water Level at Time of Collection (ft MLLW)
Seep 10	7/1/04[b]	X: 1273441 Y: 198968	no	>5	S	8:45	-1.1
Seep 12	7/1/04	X: 1272645 Y: 198679	no	≤5	MP	9:15	-2.2
Seep 20	7/1/04	X: 1276012 Y: 195160	no	≤5	MP	10:45	-3.6
Seep 24	ns[c]	na na	no	ns	ns	ns	ns
Seep 39	7/1/04	X: 1276275 Y: 192164	no	≤5	MP	13:30	+1.8
Seep 41	7/1/04	X: 1275885 Y: 193497	yes[d]	≤5	MP	12:00	-2.2

Seep Number	Date Collected	Location Coordinates[a]	Potential NAPL Seep	Turbidity (NTU)	Sample Collection Method	Time Collected	Approx. Water Level at Time of Collection (ft MLLW)
Seep 48	6/30/04	X: 1273279 Y: 197420	no	≤5	MP	7:30	0.7
Seep 53	ns[e]	na na	yes[f]	ns	ns	ns	ns
Seep 54	6/30/04	X: 1269884 Y: 200289	yes[d]	≤5	MP	9:45	-2.7
Seep 61	7/2/04	X: 1267783 Y: 203778	no	≤5	MP	11:00	-3.9
Seep 62	7/2/04[b]	X: 1267939 Y: 204000	no	>5	S	10:30	-3.4
Seep 64	7/2/04	X: 1266958 Y: 206202	yes[g]	≤5[h]	MP	12:20	-3.4
Seep 69	6/29/04	X: 1265842 Y: 208291	yes[i]	≤5	MP	13:00	5.6
Seep 71	6/29/04	X: 1265941 Y: 210357	no	≤5	MP	8:40	-1.4
Seep 75	7/3/04	X: 1267543 Y: 207510	no	≤5	MP	10:30	-1.7
Seep 76	6/29/04	X: 1268560 Y: 206456	no	≤5	MP	10:30	-0.3
Seep 80	7/1/04	X: 1268821 Y: 203600	yes[i]	≤5	MP	13:00	5.6
Seep 82	6/30/04	X: 1269372 Y: 202731	no	≤5	MP	7:00	4.1

ns – location was not sampled

na – not available

MP – mini-piezometer method

NAPL – non-aqueous phase liquid

NTU – nephelometric turbidity unit

S – surface collection method using funnel and tubing

[a] NAD 1983 State Plane Washington North

[b] VOCs were resampled on July 30, 2004 because the original VOC samples from these seeps were inadvertently discarded by the laboratory because of a miscommunication

[c] Seep 24 was not sampled because it was dry

[d] Sheen observed at seep during reconnaissance survey and again during sample collection event

[e] Seep 53 was not sampled because it was either dry or submerged in flow from a nearby outfall

[f] Black liquid and petroleum odor associated with seep in reconnaissance survey; black liquid not observed during sample collection event although petroleum odor was associated with sediment in general area

[g] Sheen observed in the LDW near the seep (no apparent association with the seep itself) during reconnaissance survey and again during sample collection event

[h] Turbidity was ≤5 NTU on July 2 before collection of unfiltered samples was completed, but >5 NTU on July 3.

[i] Added as a NAPL site during seep water chemistry sampling event because sheen was observed at seep at the time of sampling

Because of the large quantity of sample volume required for analysis, two mini-piezometers attached to separate peristaltic pumps were used at each seep location. The first chemistry sample collected was the mercury sample, using the detailed steps described in the QAPP to minimize sample contamination. Following the sampling for mercury, seep water samples were collected for metals,[8] PCBs, organochlorine pesticides, SVOCs, TPH-D, TSS, TOC, and DOC analyses. Samples for metals analyses were filtered in the field using an in-line disposable filter cartridge containing a 0.45-µm nitrocellulose filter. Mercury and DOC samples were not filtered in the field, but were instead filtered in the laboratory on the day they were received. A third mini-piezometer at each seep was used for sampling VOCs and gasoline-range TPH (TPH-G). These volatile samples were collected using at 50-mL syringe designed by MHE Products specifically for use with the PushPoint mini-piezometers.

For sample bottles requiring acidification, the preservative was added to the sample bottles prior to field collection, with the exception of mercury and DOC bottles. Mercury and DOC samples were acidified after they were filtered in the laboratory.

Turbidity was measured at each seep to determine whether the seep water sample should be filtered prior to chemical analyses.[9] If the turbidity of the seep sample was less than or equal to 5 NTU, both unfiltered and filtered samples were collected and analyzed to determine what particle size fraction was associated with the chemicals, with the exception of VOC samples, which were never filtered. If the turbidity was greater than 5 NTU (i.e., Seeps 10 and 62), then only filtered samples were collected and analyzed because there was reason to believe that the sampling method entrained sediment that was not present in the undisturbed seep flow. For samples collected from locations with the potential presence of NAPL, both the unfiltered and filtered samples were analyzed for TPH-D. For these locations, the TPH-G sample was not filtered because the volatile components would likely be lost during the filtering process. Table 3-2 summarizes the seep water chemistry samples collected at each seep, based on the turbidity results and the potential NAPL presence.

Samples for SVOCs, PCBs, and organochlorine pesticide analyses were filtered in the laboratory through a 1-µm glass fiber filter and samples for mercury were filtered in the laboratory through a 1-µm polyethylsulfone filter. These filter sizes were chosen to remove non-colloidal particles greater than 1 µm that may have been introduced into the seep water by the sampling method. Samples for metals (except mercury) analyses were filtered through a 0.45-µm nitrocellulose filter to represent the dissolved fraction for comparison to Washington State dissolved water quality criteria (WQC).

[8] Arsenic analyses were conducted on aliquots taken from the metals bottle.
[9] VOC samples were not filtered prior to analysis.

Table 3-2. Seep water chemistry samples collected

Seep Number	Unfiltered Fraction										Filtered Fraction						
	VOCs	Metals	Mercury	SVOCs	PCBs	Organochlorine Pesticides	TOC	TSS	TPH-D	TPH-G	Metals	Mercury	SVOCs	PCBs	Organochlorine Pesticides	DOC	TPH-D
Seep 10	X										X	X	X	X	X	X	
Seep 12	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 20	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 39	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Seep 48	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Seep 61	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 62	X										X	X	X	X	X	X	
Seep 64	X			X	X		X		X	X	X	X		X	X	X	
Seep 69	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Seep 71	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 75	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 76	X	X	X	X	X	X	X	X			X	X	X	X	X	X	
Seep 80	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Seep 82	X	X	X	X	X	X	X	X			X	X	X	X	X	X	

3.1.1.2 Field quality control samples

Four types of field quality control (QC) samples were collected. These samples included: 1) rinsate blanks for the sampling equipment, 2) field replicate samples, 3) trip blanks for VOCs, and 4) atmospheric field blanks for mercury. Each of these types of samples is described below.

Rinsate blank samples were created by rinsing the sample collection device (i.e., mini-piezometer with attached tubing and in-line filter, or glass funnel with attached tubing) with laboratory reverse-osmosis water. Using the mini-piezometer with attached tubing, two rinsate blanks were collected for unfiltered mercury analysis, and one rinsate blank was collected for unfiltered metals, PCBs, organochlorine pesticides, and diesel-range TPH. Using the glass funnel with attached tubing, one rinsate blank was collected for unfiltered mercury, metals, PCBs, organochlorine pesticides, and diesel-range TPH.

One field replicate sample was collected at Seep 82 and analyzed for all filtered and unfiltered parameters except TPH. One field replicate sample was collected at Seep 80 and analyzed for filtered TPH-D, and unfiltered TPH-G and TPH-D.

Each cooler with VOC samples included a trip blank sample, which was analyzed for VOCs. The trip blanks consisted of reverse osmosis water sealed in a VOC sample container by the laboratory. These blank samples were transported from the laboratory to the field and then returned to the laboratory, unopened, with the field samples.

Six atmospheric blank samples were collected. These field blanks consisted of a sample bottle filled with reverse osmosis water. At the initiation of seep water sample collection, the sample bottle lid was removed, and was then replaced immediately after the mercury sample was collected. One atmospheric blank was collected for each group of seep water samples collected within a 2-mi river section on the day those samples were collected. The sample groups and collection dates associated with each atmospheric blank are as follows:

- Seeps 69, 71, and 76 on June 29
- Seeps 48, 54, and 82 on June 30
- Seeps 20, 39, and 41 on July 1
- Seeps 10, 12, and 80 on July 1
- Seeps 61, 62, and 64 on July 2
- Seep 75 on July 3

3.1.1.3 Field measurements

Conventional water quality parameters were measured in the field using a Hydrolab probe, which was immersed in a container of seep water. The probe was allowed to equilibrate before taking measurements of conductivity, temperature, dissolved oxygen, pH, and oxidation-reduction potential. Duplicate measurements with two different Hydrolab instruments were taken at all seep locations. The results of these measurements are presented in Table F-1 in Appendix F.

Seep flow rate was calculated using one of two methods: 1) measuring the time for diverted seep flow to fill a container of known volume, or 2) measuring the width, depth, and velocity of the channel; velocity was obtained by measuring the time for a styrofoam float to cover a known distance. Flow rate data for each of the seeps sampled in the second field event are presented in Table F-2 in Appendix F.

3.1.1.4 Sample identification

Location IDs for each seep were assigned during the reconnaissance survey, as described in Section 2.1. The sample ID consisted of the location ID followed by the letter "C" to signify chemical sampling, rather than the letter "R" as used for the reconnaissance survey water quality samples. The sample ID was then followed by the letter "U" to designate an unfiltered sample, or by the letter "F" to designate a filtered sample. For example, the filtered seep water sample collected at seep location 12 was

LDW-SP-12-C-F. Field quality assurance/quality control (QA/QC) samples were assigned modified sample IDs as described below:

- Field replicate samples were assigned the same sample ID as the sample collected at that seep, followed by "FD." For example, the filtered field replicate sample collected from seep location 82 was LDW-SP-82--C-FD-F.
- Rinsate blanks were assigned the same sample ID as the sample collected at that seep, followed by "RB." For example, the rinsate blank collected at seep location 64 was LDW-SP-64-C-RB.
- Identifiers for VOC trip blanks contained the prefix "LDW-SP" followed by a unique numeric identifier, the letter "C," and the letters "TB" to designate trip blank. For example, the first trip blank submitted to the laboratory was LDW-SP-C-TB-01.
- Atmospheric blanks (primarily to account for potential atmospheric mercury contamination) were assigned the same sample ID as the sample collected at that seep, followed by "AB." For example, an atmospheric blank collected at seep location 64 was LDW-SP-64-C-AB.

3.1.1.5 Field deviations from the QAPP

Several deviations to the QAPP were made during field sampling, as described in the following paragraphs.

Seep 64 was sampled over two days because of time constraints related to the tide. Turbidity was less than 5 NTU on July 2, but only filtered samples and a portion of the unfiltered samples (SVOCs and PCBs) could be collected before the tide rose and covered the seep. Upon returning to the seep on July 3, the turbidity remained greater than 5 NTU using either the mini-piezometer method (after pumping for 15 minutes) or the funnel method to collect surface seep water flow. Therefore, the remaining unfiltered samples were not collected (metals, mercury, organochlorine pesticides,[10] and TSS).

All the sampling could not be completed by July 2, 2004 because of tidal constraints, so an additional day was needed to complete the sampling. To complete the sampling, Seep 75 was sampled and rinsate blank samples were collected on July 3, 2004.

Two locations (Seeps 24 and 53) could not be sampled. At the intended time of sampling at Seep 24, there was no visible flow and the sediment was dry. Seep 53 was submerged by flow from an upgradient outfall on June 30 and July 2. On July 3, Seep

[10] Although an unfiltered sample from Seep 64 was analyzed for PCBs, and PCBs and pesticides were analyzed in the same extract, pesticide data are not available for this sample because the pesticide standards were not analyzed. The standards were not analyzed because pesticides were not requested for this sample because the intent was to collect this sample the following day, as discussed above. Also, sufficient volume was not available for this sample to obtain relevant pesticide detection limits.

53 was exposed, but no flow was emerging from the seep and the sediment in the vicinity of the seep was dry.

An additional method that was not specified in the QAPP was used to measure flow rates at some seeps as a time-saving measure. This method involved measuring the width, depth, and velocity of the channel. The velocity was obtained by measuring the time for a styrofoam float to cover a known distance. The accuracy of this method is not expected to be substantially different than that of the method specified in the QAPP. [11]

The QAPP specified that one field replicate sample would be collected for every 10 samples analyzed for mercury. However, as a result of an oversight in the field, only one field replicate sample was collected for the 13 unfiltered samples analyzed for mercury and only one field replicate sample was collected for the 16 filtered samples analyzed for mercury.

3.1.2 Laboratory methods

The methods and procedures used to analyze the seep water samples are briefly summarized below and described in detail in the QAPP (Windward 2004).

3.1.2.1 Analytical methods

The methods used for chemical analysis of seep water samples as well as the analytical laboratory that conducted the analyses are identified in Table 3-3.

Table 3-3. Laboratory preparation and analytical methods

Parameter	Sample Preparation Method	Cleanup Method	Analytical Method	Laboratory
VOCs	EPA SW5030	none	GC/MS (EPA 8260B)	ARI
Mercury	EPA 1631E	EPA 1631E	CVAF (EPA 1631E)	Frontier
Arsenic	SM 3114C	none	HG-AFS (SM 3114C)	Frontier
Metals	1% HNO_3 closed vessel oven digest	none	ICP-MS (EPA 200.8)	Frontier
SVOCs	EPA 3510C or EPA 3520C	none	GC/MS (EPA 8270C)	ARI
PCBs as Aroclors	Manchester Method (Modified EPA 3510)	EPA 3660B (sulfur) optional[a]; EPA 3630B (silica gel) optional[a]	GC/ECD (EPA 8080)	ARI
Organochlorine pesticides	Manchester Method (Modified EPA 3510)	EPA 3660B (sulfur) optional[a]; EPA 3630B (silica gel) optional[a]	GC/ECD (EPA 8080)	ARI

[11] The flow rate method in the QAPP involved measuring the rate at which seep water flowing over a defined area filled a container of known volume.

Parameter	Sample Preparation Method	Cleanup Method	Analytical Method	Laboratory
Total organic carbon	EPA 415.1	none	Non-dispersive infrared combustion (EPA 415.1)	ARI
Dissolved organic carbon	EPA 415.1	none	Direct combustion (EPA 415.1)	ARI
Total suspended solids	EPA 160.2	none	EPA 160.2	ARI
Total petroleum hydrocarbons – gasoline range	SW 5030	none	WDOE NWTPH-G	ARI
Total petroleum hydrocarbons – diesel extended range	SW 3510C	none	WDOE NWTPH-Dx	ARI

ARI – Analytical Resources, Inc.

CVAF – cold vapor atomic fluorescence

Dx – diesel extended range

Frontier – Frontier Geosciences, Inc.

G – gasoline

GC/ECD – gas chromatography/electron capture detection

GC/MS – gas chromatography/mass spectrometry

HG-AFS – hydride generation atomic fluorescence spectroscopy

ICP-MS – inductively coupled plasma mass spectrometry

NWTPH – Northwest total petroleum hydrocarbon

WDOE – Washington Department of Ecology

[a] The need for cleanup and the type of cleanup was based on screens and the color of the extracts.

3.1.2.2 Laboratory deviations from the QAPP

Several deviations from the QAPP were made related to laboratory analysis of samples, as described in the following paragraphs.

The original VOC samples for Seeps 10 and 62 were inadvertently discarded by the laboratory prior to analysis because of a discrepancy in the chain-of-custody form. Seeps 10 and 62 were re-sampled for VOCs during a low tide on July 30, 2004.

The filtered fraction of Seep 64 was collected but not analyzed for SVOCs or TPH-D. This oversight was not discovered before holding times were exceeded for these samples. As a result, there are no SVOC or TPH-D data for filtered samples from Seep 64. However, all SVOCs and TPH-D results were undetected in unfiltered samples from Seep 64, indicating that detected results would not have been expected in the filtered samples.

Preservative was not added to the metals bottles prior to field collection on June 29, 2004. Thus, filtered and unfiltered metals samples for Seeps 69, 71, and 76 were preserved upon receipt in the laboratory on June 29, 2004. Preservation of samples in the laboratory rather than at the time of field collection is not a method deviation, and did not require the addition of data qualifiers to the results for these samples.

Samples LDW-SP-39-C-F and LDW-SP-39-C-U for metals and mercury analysis were delivered to Analytical Resources, Inc. (ARI) rather than Frontier Geosciences, Inc.

(Frontier) on July 1, 2004, so samples were delivered to Frontier on the following day, July 2. As a result, the mercury samples were filtered and preserved one day later than specified in the QAPP. Because filtration and preservation one day after sampling is not a method deviation, data qualifiers were not added to the results for these samples.

EPA method 8080 was used for analysis of both PCBs and pesticides, rather than EPA method 8082 for PCBs and EPA method 8081 for pesticides, to ensure that the lowest possible detection limits were obtained.

Although not specified in the QAPP, water samples from Seeps 69 and 80 were analyzed for TPH-D and TPH-G because a sheen was observed in the immediate vicinity of those seeps at the time of sampling.

3.2 RESULTS

Results of the seep water chemical analyses are summarized in this section and compared to WQC. Complete data tables and raw laboratory data can be found in Appendices F and G, respectively. A detailed discussion of the approach used in averaging laboratory replicates and methods for calculating total concentrations for PCBs and DDTs are presented in Appendix H.

Data validation results are also presented in this section. Quality assurance review of the chemistry data was conducted in accordance with the QA/QC requirements and technical specifications of the methods, and the National Functional Guidelines for Organic and Inorganic Data Review (EPA 1999, 2002). Sayler Data Solutions, Inc. conducted a full data validation of the analytical results. The results of the data validation are summarized in Section 3.2.2 and presented in full in Appendix E.

3.2.1 Seep water sampling results

In this section, chemical concentrations measured in seep water samples are compared to acute and chronic marine WQC for the surface waters of the State of Washington (WAC 173-201). Acute and chronic WQC for metals, with the exception of the chronic WQC for mercury, represent dissolved concentrations, so comparisons are made to filtered samples. Acute and chronic WQC for organic compounds and the chronic WQC for mercury represent total concentrations, so comparisons for these chemicals are made to unfiltered samples. Acute WQC represent instantaneous concentrations not to be exceeded at any time for organochlorine pesticides, and 1-hour average concentrations not to be exceeded more than once every three years on the average for metals and pentachlorophenol (PCP). Chronic WQC represent 24-hour average concentrations not to be exceeded at any time for organochlorine pesticides, and 4-day average concentrations not to be exceeded more than once every three years on the average for metals and PCP. Interpretation of the relevance and applicability of acute and chronic WQC to seep water data will be discussed in the Phase 2 risk assessments and RI. For example, these assessments will discuss how the tidal cycle in the LDW

would affect exposure duration and dilution (e.g., chronic exposure conditions are implausible) as well as the exposure potential for the set of organisms used to determine WQC for specific chemicals. In addition, the RI will summarize groundwater and surface water data available for the LDW, which may be useful in interpreting concentrations of some chemicals in seeps (e.g., copper). These seep data will also be reviewed to determine the need for adjacent surface sediment samples in the surface sediment QAPP.

3.2.1.1 Metals

Table 3-4 presents a summary of the metals detected in seep water samples, including the number of detections, the range of detected metals concentrations, and the range of detection limits. Results for all metals analyzed in seep water are presented in Table 3-5, and compared to marine chronic and acute WQC. Concentrations in bold in Table 3-5 are greater than their respective WQC.

Table 3-4. Summary of metals detected in seep samples

Analyte	Detection Frequency[a]	Minimum Detected Concentration (µg/L)	Maximum Detected Concentration (µg/L)	Minimum Reporting Limit (µg/L)	Maximum Reporting Limit (µg/L)
Arsenic (filtered)	17/17	0.054	253	na	na
Arsenic (unfiltered)	14/14	0.058	287	na	na
Cadmium (filtered)	17/17	0.009	0.513	na	na
Cadmium (unfiltered)	14/14	0.021	0.710	na	na
Chromium (filtered)	0/17	nd	nd	1.51	9.74
Chromium (unfiltered)	1/14	74.9	74.9	2.91	11.4
Copper (filtered)	8/17	8.16	22.8	3.28	7.77
Copper (unfiltered)	11/14	8.06	50.9	4.77	6.47
Lead (filtered)	17/17	0.036	3.00	na	na
Lead (unfiltered)	14/14	0.080	296	na	na
Mercury (filtered)	17/17	0.00062	0.0153	na	na
Mercury (unfiltered)	14/14	0.00061	0.582	na	na
Nickel (filtered)	13/17	0.84	5.25	0.040	0.040
Nickel (unfiltered)	13/14	2.80	8.83	0.040	0.040
Silver (filtered)	15/17	0.012	0.113	0.015	0.015
Silver (unfiltered)	12/14	0.026	0.126	0.015	0.015
Zinc (filtered)	17/17	3.29	164	na	na
Zinc (unfiltered)	14/14	3.49	322	na	na

na – not applicable

nd– not detected

[a] Including the field replicate sample, 17 filtered samples and 14 unfiltered samples were analyzed for all metals.

Table 3-5. Concentrations of metals in filtered and unfiltered seep water samples and marine WQC (for comparison to the unfiltered concentrations for mercury and filtered concentrations for all other metals)

Analyte (µg/L)	Seep 10	Seep 12	Seep 20	Seep 39	Seep 41	Seep 48	Seep 54	Seep 61	Seep 62	Chronic WQC	Acute WQC
Arsenic (filtered)	0.841	0.771	1.35	0.054	0.235	0.422	0.404	**72.4**[a]	6.84	36	69
Arsenic (unfiltered)	na	1.13	1.58	0.058	0.230[b]	0.618	1.30	67.2	na		
Cadmium (filtered)	0.085	0.107	0.111	0.206	0.133	0.101	0.012	0.009	0.110	9.3	42
Cadmium (unfiltered)	na	0.133	0.114	0.272	0.158	0.127[b]	0.710	0.022[b]	na		
Chromium (filtered)	6.31 U	7.06 U	8.80 U	4.36 U	6.95 U	7.58 U	4.02 U	1.83 U	7.73 U	50	1,100
Chromium (unfiltered)	na	6.34 U	11.4 U	6.01 U	3.68 U	4.58 U[b]	74.9	0.07 U[b]	na		
Copper (filtered)	**8.69 J**[a]	**12.5 J**[a]	**8.16 J**[a]	**10.1 J**[a]	**5.24 U**[a]	**10.1 J**[a]	**4.53 U**	**4.72 U**	**7.77 U**[a]	3.1	4.8
Copper (unfiltered)	na	15.8 J	10.2 J	12.2 J	5.96 U	11.1 J[b]	6.47 U	4.75 U[b]	na		
Lead (filtered)	0.252	0.129	0.096	0.051	0.036	0.154 J	0.703	0.088	0.100	8.1	210
Lead (unfiltered)	na	0.823	1.44	0.161	0.080	1.06[b]	296	0.240[b]	na		
Mercury (filtered)	0.00092	0.00074	0.00062	0.00087	0.00062	0.00132	0.0132	0.00099 J	0.00256		
Mercury (unfiltered)	na	0.00518	0.00061	0.00094[b]	0.00112	0.00109	**0.582**	0.00216[b]	na	0.025	1.8
Nickel (filtered)	1.32	4.24	5.25	2.78	2.23	1.56	0.84	0.04U	0.04 U	8.2	74
Nickel (unfiltered)	na	8.03	8.83	6.43	4.71	3.23[b]	3.92	0.04U[b]	na		
Silver (filtered)	0.021	0.053	0.112	0.028	0.036	0.053	0.015 U	0.027	0.044	1.9	1.9
Silver (unfiltered)	na	0.033	0.086	0.025	0.026	0.054[b]	0.015 U	0.030[b]	na		
Zinc (filtered)	11.97	14.1	8.08	8.30	6.07	15.8	5.45	3.29	12.2	81	90
Zinc (unfiltered)	na	16.1	10.8	9.90	7.14	17.7[b]	322	3.49[b]	na		

Table 3-5, continued

PARAMETER	SEEP 64	SEEP 69	SEEP 71	SEEP 75	SEEP 76	SEEP 80	SEEP 82	SEEP 82 (FD)	CHRONIC WQS	ACUTE WQS
Arsenic (filtered)	1.28	1.47	1.02	2.20	**253**	0.590	1.20	1.14	36	69
Arsenic (unfiltered)	na	1.64	1.91	2.49	**287**	0.855	1.46	2.20		
Cadmium (filtered)	0.045	0.016	0.023	0.021	0.091	0.011	0.513	0.503	9.3	42
Cadmium (unfiltered)	na	0.112	0.078	0.031[b]	0.204	0.037	0.569	0.606		
Chromium (filtered)	1.51 U	3.10 U	2.03 U	9.74 U	7.04 UJ	6.70 U	3.25 U	3.51 U	50	1,100
Chromium (unfiltered)	na	2.91 U	4.24 U	5.37 U[b]	5.67 U	4.61 U	5.65 U	5.81 U		
Copper (filtered)	**6.99 U[a]**	**4.63 U**	**6.07 U[a]**	**6.79 U[a]**	**3.28 UJ**	**22.8[a]**	**8.22 J[a]**	**8.27 J[a]**	3.1	4.8
Copper (unfiltered)	na	8.06 J	12.1 J	8.43 J[b]	50.9	21.4	10.9 J	13.4 J		
Lead (filtered)	0.193	0.066	0.175	0.056	3.00	0.078	0.206	0.201	8.1	210
Lead (unfiltered)	na	0.356	15.2	0.650[b]	56.4	0.277	2.31	8.29		
Mercury (filtered)	0.00126 J	0.00349	0.00201	0.00077	0.0153	0.00869	0.00380	0.00295		
Mercury (unfiltered)	na	0.0127[b]	**0.0322**	0.00171	**0.0616**	0.00646	0.0168	0.0117	0.025	1.8
Nickel (filtered)	0.04 U	3.22	1.95	1.42	2.37 J	0.04 U	3.56	3.36	8.2	74
Nickel (unfiltered)	na	4.52	3.44	3.48[b]	3.79	2.80	5.83	6.12		
Silver (filtered)	0.049	0.053	0.070	0.081	0.012	0.015 U	0.113	0.084	1.9	1.9
Silver (unfiltered)	na	0.053	0.068	0.068[b]	0.077	0.015 U	0.088	0.126		
Zinc (filtered)	3.86	3.95	10.2	5.35	**138 J[a]**	16.8	**164[a]**	**158[a]**	81	90
Zinc (unfiltered)	na	45.6	26.9	8.36[b]	309	14.1	186	201		

na – not analyzed

FD – field duplicate sample

Data qualifiers: U = not detected at reporting limit shown; J = estimated concentration; UJ = not detected at estimated reporting limit shown

Concentrations or reporting limits in BOLD are greater than their respective marine chronic WQC

[a] Concentration is greater than the marine acute WQC

[b] Result shown is average of one or more laboratory replicate analyses

Concentrations of arsenic, copper, mercury, and zinc were greater than WQC in one or more samples and are described in more detail, as follows:

- Arsenic concentrations in filtered seep water from Seeps 61 and 76 (72.4 and 253 µg/L, respectively), are greater than both the marine chronic and acute WQC (36 and 69 µg/L, respectively).
- For copper, all eight of the detected concentrations in filtered samples were greater than the marine acute and chronic WQC, with concentrations ranging from 8.16 to 22.8 µg/L. Five of the nine concentrations reported as undetected in filtered samples were greater than the marine acute WQC; all nine undetected concentrations were greater than the chronic WQC. Copper concentrations in twelve samples (nine filtered and three unfiltered) that were originally reported as detected by the laboratory were qualified as undetected during data validation because copper was detected in rinsate blanks.
- Mercury concentrations in unfiltered samples from Seep 54 (0.582 µg/L), Seep 71 (0.0322 µg/L) and Seep 76 (0.0616 µg/L) were greater than the marine chronic WQC of 0.025 µg/L.
- Zinc concentrations in filtered samples from Seep 76 (138 µg/L) and Seep 82 (164 µg/L in the sample and 158 µg/L in the field duplicate sample) were greater than the marine chronic and acute WQC (81 and 90 µg/L, respectively).

3.2.1.2 VOCs and SVOCs

VOCs or SVOCs were only detected in seep water samples collected from two locations: Seep 54 and Seep 80 (Table 3-6). Carbon disulfide and chlorobenzene were the only VOCs detected in unfiltered seep water samples. Carbon disulfide was detected at a concentration of 2.1 µg/L at Seep 54, and at a concentration of 1.1 µg/L at Seep 80. Chlorobenzene was detected in the sample from Seep 54 at 6.5 µg/L. There are no Washington State WQC for the VOCs detected in LDW seep water samples. Results for all VOCs are presented in Appendix F.

Seep 54 was the only location where any SVOCs were detected in seep water. In the unfiltered sample from Seep 54, three chlorinated benzene compounds were detected (Table 3-6). In the filtered sample from Seep 54, only 1,3-dichlorobenzene and 1,4-dichlorobenzene were detected, and at concentrations an order of magnitude lower than in the unfiltered sample. There are no Washington State WQC for the SVOCs detected in LDW seep water samples. Results for all SVOCs are presented in Appendix F.

Table 3-6. Concentrations of VOCs and SVOCs in seep water samples with any VOCs or SVOCs detected

Analyte (µg/L)	Seep 54		Seep 80
	Filtered	Unfiltered	Unfiltered
VOCs			
Carbon disulfide	na	2.4	1.1
Chlorobenzene	na	6.5	1.0 U
SVOCs			
1,2-Dichlorobenzene	1.0 U	2.9	1.0 U
1,3-Dichlorobenzene	3.6	58.3	1.0 U
1,4-Dichlorobenzene	3.9	40.2	1.0 U

U – not detected at reporting limits shown

3.2.1.3 PCBs and organochlorine pesticides

PCBs were detected in 3 of 14 unfiltered seep water samples (at Seeps 54, 64, and 71) and in 1 of 17 filtered seep water samples (at Seep 54; Table 3-7). At Seep 71, only Aroclor 1254 was detected. Aroclors 1248, 1254, and 1260 were detected at Seeps 54 and 64. Total calculated PCB concentrations in unfiltered seep water were as follows: 8.9 µg/L at Seep 54, 0.46 µg/L at Seep 64, and 0.020 µg/L at Seep 71. The seep water sample from Seep 54 was the only filtered sample in which PCBs were detected; the total PCB concentration in this filtered sample was 0.26 µg/L. PCB concentrations in unfiltered samples from Seeps 54 and 64 were greater than the marine chronic WQC of 0.03 µg/L, but not the marine acute value of 10 µg/L.

Table 3-7. Concentrations of Aroclors and organochlorine pesticides in seep water samples where at least one Aroclor or pesticide was detected

Analyte (µg/L)	Seep 39		Seep 54		Seep 64	Seep 71	Chronic WQC	Acute WQC
	Filtered	Unfiltered	Filtered	Unfiltered	Unfiltered	Unfiltered		
Aroclor-1248	0.017 U	0.017 U	0.21	4.7	0.092	0.017 U	nc	nc
Aroclor-1254	0.017 U	0.017 U	0.15 U	2.3 J	0.21 J	0.020 J	nc	nc
Aroclor-1260	0.017 U	0.017 U	0.047	1.9	0.16	0.017 U	nc	nc
PCBs (total calc'd)[a]	0.017 U	0.017 U	0.26	8.9 J	0.46 J	0.020 J	0.03	10
Heptachlor epoxide	0.0090	0.0076	0.016 U	0.0083 U	na	0.00080 U	0.0036[b]	0.053[b]

U – not detected at reporting limit shown

J – estimated concentration

na – not analyzed

nc – no criteria for individual Aroclors

[a] – Total PCBs calculated as the sum of the detected Aroclors. Summing rules are presented in Appendix H.

[b] WQC for heptachlor

The only organochlorine pesticide detected in seep water samples was heptachlor epoxide, which was detected in both the filtered and unfiltered samples collected at Seep 39 at concentrations of 0.0090 and 0.0076 µg/L, respectively. Heptachlor epoxide is a degradation product of heptachlor. The marine chronic WQC for heptachlor is 0.0036 µg/L, which is less than the concentrations of heptachlor epoxide reported in both filtered and unfiltered samples from Seep 39.

Other than heptachlor epoxide, no organochlorine pesticides were detected in seep water. However, some reporting limits in seep water samples from Seeps 54 and 61 were greater than the marine chronic WQC, as shown in Table 3-8. These reporting limits were elevated as a result of analytical interferences. All sample results for Aroclors and organochlorine pesticides are presented in Appendix F.

Table 3-8. Elevated reporting limits for non-detected pesticides in seep water samples from Seeps 54 and 61 compared to WQC

Analyte	Seep Sample	Reporting limit (µg/L)	Marine chronic WQC (µg/L)
4,4'-DDT	LDW-SP-54-C-U	0.017	0.001
	LDW-SP-61-C-U	0.0020	
Aldrin	LDW-SP-54-C-U	0.0083	0.0019[a]
Dieldrin	LDW-SP-54-C-F	0.0095	0.0019[a]
	LDW-SP-54-C-U	0.11	
	LDW-SP-61-C-U	0.027	
Endrin	LDW-SP-54-C-U	0.057	0.0023
Heptachlor	LDW-SP-54-C-U	0.0083	0.0036
Toxaphene	LDW-SP-54-C-U	0.83	0.0002
	LDW-SP-61-C-U	0.10	0.0002

[a] WQC represents sum of aldrin and dieldrin

The reporting limit for 4,4' DDT in seeps other than Seeps 54 and 61 was 0.0017 µg/L, which is slightly greater than the marine chronic WQC of 0.001 µg/L. The reporting limit for toxaphene in seeps other than Seeps 54 and 61 was 0.083 µg/L, which is greater than the marine chronic WQC of 0.0002 µg/L.

3.2.1.4 Petroleum hydrocarbons

Petroleum hydrocarbons were detected only in filtered and unfiltered seep water samples collected from Seeps 54 and 80 (Table 3-9). TPH-G and TPH-MO[12] were detected only in the unfiltered sample from Seep 54.[13] TPH-D was detected in both filtered and unfiltered seep water samples from Seeps 54 and 80 at concentrations ranging from 0.41 to 2.2 mg/L. There are no Washington State WQC for petroleum hydrocarbons.

[12] Motor oil-range petroleum hydrocarbon components are reported along with the analysis of TPH-D.
[13] TPH-G was not analyzed in filtered samples because gasoline components are volatile and would be lost during the filtering process.

Table 3-9. Concentrations of TPH in seep water samples with any TPH detections

Analyte (mg/L)	Seep 54		Seep 80		Seep 80 (Field Duplicate)	
	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered
TPH-G	na	0.29	na	0.25 U	na	0.25 U
TPH-D	1.4	2.2	0.59	0.61	0.41	0.47
TPH-MO	0.50 U	1.9	0.50 U	0.50 U	0.50 U	0.50 U

U – not detected at reporting limit shown

na – not analyzed; volatile compounds were not analyzed in filtered samples

3.2.1.5 Conventional parameters

Maximum and minimum values for field conventional parameters are presented in Table 3-10. Results for all samples are presented in Appendix F.

Table 3-10. Range of conventional parameter results in seep water samples

Parameter	Minimum	Maximum
Turbidity (NTU)	0.26	14
Temperature (°C)	13.6	20.0
Specific Conductivity (µmhos/cm)	1,020	49,360
Dissolved Oxygen (mg/L)	0.830	10.4
pH	5.83	7.42
Oxidation-reduction potential (mV)	-60	294

DOC was detected in water samples collected from six seeps at concentrations ranging from 1.96 to 14.8 mg/L (Table 3-11). DOC was not detected at a reporting limit of 1.50 mg/L in the remaining seep water samples.

Table 3-11. Concentrations of DOC, TOC, and TSS in seep water samples, along with field turbidity measurements

Seep Number	DOC (mg/L)	TOC (mg/L)	TSS (mg/L)	Turbidity (NTU)[a]	
				1	2
Seep 10	1.96 J[b]	1.50 U	na	5.7[c]	nm[c]
Seep 12	1.50 UJ	1.50 U	15.6 J	4.4	0.86
Seep 20	1.50 UJ	1.50 U	4.3 J	1.8	2.4
Seep 39	1.50 UJ	1.50 U	5.8 J	0.63	0.28
Seep 41	1.50 UJ	1.50 U[b]	7.1 J[b]	0.26	0.71
Seep 48	1.50 UJ	1.50 U	12.8[b]	0.80	1.0
Seep 54	5.00 J	6.42	14.3	2.8	2.6
Seep 61	1.50 UJ	2.57	15.8[b]	1.8	0.86
Seep 62	1.50 UJ	1.50 U	na	14[c]	nm[c]
Seep 64	1.75 J	1.50 U	na	3.7	3.9
Seep 69	5.81 J	8.55	25.0[b]	1.9	1.9
Seep 71	1.50 UJ	2.08[b]	11.3	2.8	2.0
Seep 75	1.50 UJ	3.15[b]	24.3[b]	0.59	3.6
Seep 76	6.57 J	7.78	5.2	2.2	1.4
Seep 80	14.8 J	13.4	33.3	3.2	4.8
Seep 82	1.50 UJ	1.60	5.8	2.1	3.9
Seep 82 (field duplicate sample)	1.50 UJ	2.50	11.2	2.1	3.9

U – not detected at reporting limit shown

J – estimated concentration

na – not analyzed

[a] Turbidity measures 1 and 2 were taken from the first and second mini-piezometers, respectively, except where noted.

[b] Result shown is average of one or more laboratory replicate analyses.

[c] Sample was collected using funnel and attached tubing, so turbidity was only measured once.

TOC was detected in 9 of the 14 seep water samples analyzed for TOC, at concentrations ranging from 1.60 to 13.4 mg/L (Table 3-11). TOC was not detected at a reporting limit of 1.50 mg/L in the remaining seep water samples. TSS was detected in all of the 14 samples analyzed for TSS at concentrations ranging from 4.3 to 33.3 mg/L (Table 3-11).

3.2.1.6 Field quality control sample results

A summary of the results for the field QC samples is presented below. Two types of field QC samples were analyzed, field blanks and field replicates. The detection of analytes in field blanks, including rinsate, atmospheric, and trip blanks, may result in qualification of the sample results for the detected analyte. Field replicates were analyzed and whenever possible the relative percent difference (RPD) was calculated. This information does not result in data validation qualifiers. A complete discussion of

these results and any resulting validation qualifiers is presented in the data validation report (Appendix E).

Metals

Chromium and copper were detected in two rinsate blank samples: LDW-SP-64-RB-MP-U (4.05 and 1.59 µg/L, respectively) and LDW-SP-64-RB-S-U (5.25 and 1.61 µg/L, respectively). Other metals were not detected in rinsate blanks. The RPDs for the filtered field replicate ranged from 0.606% for copper to 29.4% for silver. The RPDs for the unfiltered field replicate ranged from 2.79% for chromium to 113% for lead.

Mercury

Mercury was not detected in the field blanks. The RPD for the filtered field replicate was 25.1% and the RPD for the unfiltered field replicate was 35.8%.

Arsenic

Arsenic was not detected in the field blanks. The RPD for the filtered field replicate was 5.12% and the RPD for the unfiltered field replicate was 34.7%.

VOCs

Rinsate blanks were not analyzed for VOCs. VOCs were not detected in the trip blank samples. Field replicate precision could not be evaluated because VOCs were not detected in the sample and field replicate.

SVOCs

Bis (2-ethylhexyl)phthalate was detected in both rinsate blanks: LDW-SP-64-RB-S-U (1.2 µg/L) and LDW-SP-64-RB-MP-U (2.4 µg /L). Field replicate precision could not be evaluated because concentrations in the samples were in the range associated with laboratory blanks.

PCBs and organochlorine pesticides

One pesticide, delta-BHC, was detected in one rinsate blank (LDW-SP-64-RB-MP-U) at a concentration of 0.0035 µg/L. Delta-BHC was not detected in any LDW seep samples. Field replicate precision could not be evaluated because pesticides were not detected in the field replicates. PCBs were not detected in either the rinsate blanks or the field replicates.

Petroleum hydrocarbons

Gasoline-range TPH was not detected in the rinsate blanks and was not detected in the field replicates. Therefore, field replicate precision could not be evaluated. Diesel-range TPH was not detected in the rinsate blanks. The RPD for diesel-range TPH was 36% for the filtered field replicate and 25.9% for the unfiltered field replicate.

Conventional parameters

Rinsate blanks were not analyzed for TSS, TOC, or DOC. The RPD was 63.5% for the TSS replicate and 43.9% for the TOC replicate. DOC was not detected in the sample or the replicate so field replicate precision could not be evaluated.

3.2.2 Data validation results

Data validation resulted in the following qualifiers added to the dataset:

- all results for 2-chloroethylvinylether were rejected
- one result for bis(2-ethylhexyl)phthalate (BEHP) was rejected
- some of the detected results for chromium, copper, nickel, mercury, zinc, Aroclor 1254, and DOC were qualified as estimated
- some of the results for chromium, copper, and BEHP reported by the laboratory as detected were qualified as undetected
- some of the reporting limits for undetected results for VOCs, BEHP, and endrin aldehyde were qualified as estimated

These rejected and qualified data are described in more detail in this section for each chemical group. The complete data validation report is presented in Appendix E.

3.2.2.1 Metals

The following qualifiers were added to metals results:

- Chromium and copper were detected in both rinsate blanks at concentrations of 4.04 to 5.24 µg/L and 1.59 to 1.61 µg/L, respectively.[14] All sample results between 5 and 10 times the blank concentration were qualified as estimated (none of the chromium results and 52 percent of the copper results). All sample results below 5 times the blank concentration were qualified as undetected (97 percent of chromium results and 39 percent of the copper results).
- Chromium, nickel, copper, and zinc concentrations in sample LDW-SP-76-C-F and the lead concentration in sample LDW-SP-48-C-F were qualified as estimated because internal standard relative intensities were outside the recommended limit.

3.2.2.2 VOCs

Low recoveries for the laboratory control standard (LCS), laboratory control standard duplicate (LCSD), matrix spike (MS), or matrix spike duplicate (MSD) samples resulted in the qualification or rejection of results, as follows:

- Bromomethane reporting limits were qualified as estimated in 47 percent of the sample results because of low LCS recovery.
- Reporting limits for approximately 10 VOCs in either LDW-SP-54-C-U or LDW-SP-41-C-U were qualified as estimated because of low MS or MSD recoveries.
- The reporting limit for 2-chloroethylvinylether was rejected in all samples because the MS and MSD recovery values were less than 10%.

[14] Neither chromium nor copper was detected in the reverse-osmosis water analyzed by the laboratory during the week the seep water samples were collected.

In addition, elevated sample temperatures (14°C) when samples were received by the laboratory resulted in the qualification of VOC results as estimated for LDW-SP-10-C-U and LDW-SP-62-C-U.

3.2.2.3 SVOCs

There were two data quality issues for phthalates analyzed in the seep samples. The first issue, which relates to all phthalate results, arose because the laboratory did not wrap the rubber stopper used in the laboratory filtering apparatus with Teflon tape during filtering. Because of this, all of the filtered samples had the potential to be contaminated with phthalates from the rubber stopper. Therefore, all phthalates in the filtered samples were qualified as undetected. In addition, an elevated BEHP result in LDW-SP-61-C-F was rejected because a much higher BEHP concentration of 2,600 µg/L was detected in the filtered sample from Seep 61 (LDW-SP-61-C-F) than the BEHP concentration in the unfiltered sample from that seep (3.1 µg/L).

The second phthalate data quality issue involved method blanks. A method blank associated with one sample batch contained BEHP at a concentration of 1.2 µg/L. Criteria for method blanks require that analyte concentrations are below the reporting limit or below 10% of the lowest associated sample concentration. As a result, detected concentrations of BEHP in filtered and unfiltered samples were qualified as undetected. Although BEHP was only detected in one method blank, all results were qualified during data validation because BEHP is a common laboratory contaminant that is sporadically detected in method blanks.

3.2.2.4 Organochlorine pesticides and PCB Aroclors

Several qualifiers were applied to organochlorine pesticide and PCB Aroclor results, as follows:

- All endrin aldehyde reporting limits were qualified as estimated because of low LCS recoveries in both batches.
- The Aroclor 1254 concentration in sample LDW-SP-71-C-U was qualified as estimated because of low surrogate recoveries.
- The Aroclor 1254 concentrations in samples LDW-SP-64-C-U and LDW-SP-54-C-U were qualified as estimated because of pattern overlap with Aroclors 1248 and 1260.
- In sample LDW-SP-54-C-F, the pattern match for Aroclor 1254 was determined to be insufficient for identification. Thus, the laboratory resubmitted the results for this sample as a non-detect with an elevated reporting limit.

3.2.2.5 Total petroleum hydrocarbons

TPH-D, TPH-MO, and TPH-G data were considered acceptable for use as reported by the laboratory, and no data qualifiers were added.

3.2.2.6 Conventional parameters

DOC samples were not acidified upon receipt at the laboratory, but were instead acidified prior to analysis, which was 6 to 10 days after sample collection. Thus, all DOC results were qualified as estimated. In addition, the RPD for one sample batch laboratory duplicate exceeded the data quality indicator. As a result, TSS results for that sample batch were qualified as estimated (36 percent of the TSS results).

3.2.3 Summary of results

Table 3-12 presents a summary of chemicals detected in LDW seeps in comparison to WQC. This comparison is made as a point of reference; WQC are not directly applicable to seep data. The applicability of chronic WQC to seep water, in particular, as an indicator of risk to aquatic organisms is questionable because the extended exposure period conditions specified for chronic criteria (i.e., either 24-hour or 4-day average concentrations) are implausible for exposure of aquatic organisms to seeps in the LDW because of the tidal cycle.

Copper was the chemical most frequently detected at concentrations greater than the WQC. Copper was detected in seep water from seven seeps at concentrations greater than acute WQC. Arsenic and zinc were detected in seep water at concentrations greater than acute WQC at two seeps each. Chemicals detected in at least one seep at concentrations greater than their marine chronic WQC were copper, arsenic, zinc, mercury, total PCBs, and heptachlor epoxide.[15] Total petroleum hydrocarbons, chlorinated benzene compounds, and carbon disulfide were detected at two seeps, but WQC are not available for these chemicals. Interpretation of the relevance and applicability of acute and chronic WQC to seep water data will be discussed in the Phase 2 risk assessments and RI.

[15] Heptachlor epoxide was detected in one seep at a concentration greater than the marine chronic WQC of heptachlor. WQC are not available for heptachlor epoxide.

Table 3-12. Summary of chemicals with concentrations greater than marine WQC in LDW seep water samples

Seep Number	Metals with Concentrations in Filtered Samples Greater than Marine Acute or Chronic WQC (µg/L)[a]			PCB, Pesticide, or Mercury with Concentrations in Unfiltered Samples Greater than Marine Chronic WQC (µg/L)[a]			Chemicals detected but with no WQC available[c]
	Arsenic	Copper	Zinc	Heptachlor epoxide	Mercury	Total PCBs	
Marine chronic WQC	36	3.1	81	0.0036 [e]	0.025	0.03	
Marine acute WQC	69	4.8	90	0.053 [e]	1.8	10	
Seep 10		8.69 J [a]					
Seep 12		12.5 J [a]					
Seep 20		8.16 J [a]					
Seep 39		10.1 J [a]		0.0076			
Seep 41		5.24 U [a]					
Seep 48		11.1 J [a]					
Seep 54		4.53 U			0.582	8.9 J	TPH-D (2.2 mg/L) TPH-G (0.29 mg/L TPH-MO (1.9 mg/L) 1,2-dichorobenzene (2.9 µg/L) 1,3-dichorobenzene (58.3 µg/L) 1,4-dichlorobenzene (40.2 µg/L) carbon disulfide (2.4 µg/L)
Seep 61	72.4 [a]	4.72 U					
Seep 62		7.77 U [a]					
Seep 64		6.99 U [a]				0.46 J	
Seep 69		4.63 U					
Seep 71		6.07 U [a]			0.0322		
Seep 75		6.79 U [a]					
Seep 76	253 [a]	3.28 UJ [a]	138 J [a]		0.0616		
Seep 80		22.8 [a]					TPH-D (0.61 mg/L)[d] carbon disulfide (1.1 µg/L)
Seep 82		8.22 J [a, b]	164 [a, b]				

[a] Concentration also greater than marine acute WQC

[b] 8.27J µg/L for copper and 158 µg/L for zinc in the field replicate sample

[c] Concentrations in unfiltered samples

[d] 0.47 mg/L in the field replicate sample

[e] WQC for heptachlor

4.0 References

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5.0 Oversized Figures

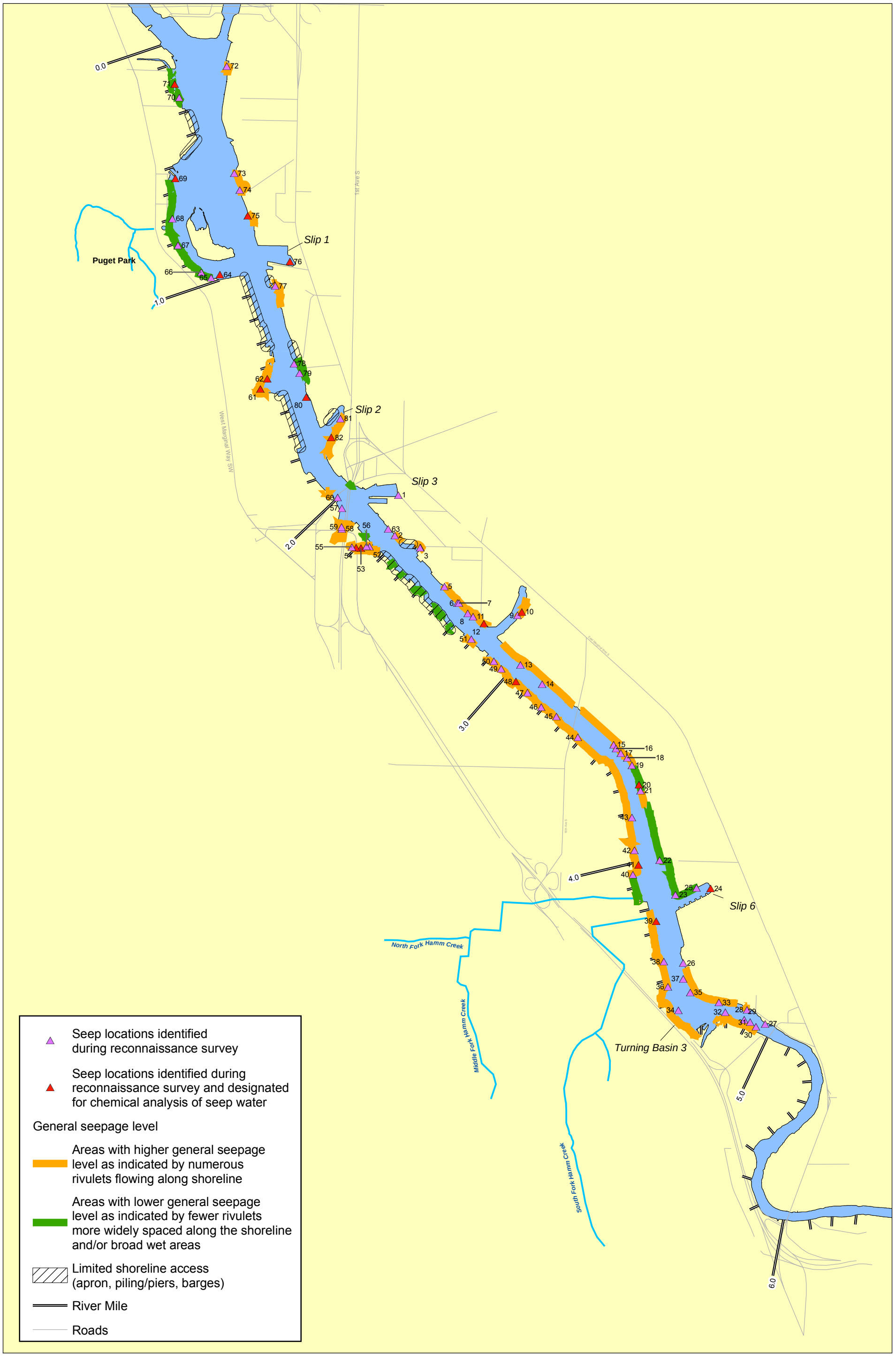

Figure 2-1. Seep locations identified during the reconnaissance survey

Prepared by STS 11/08/04 Map 1582

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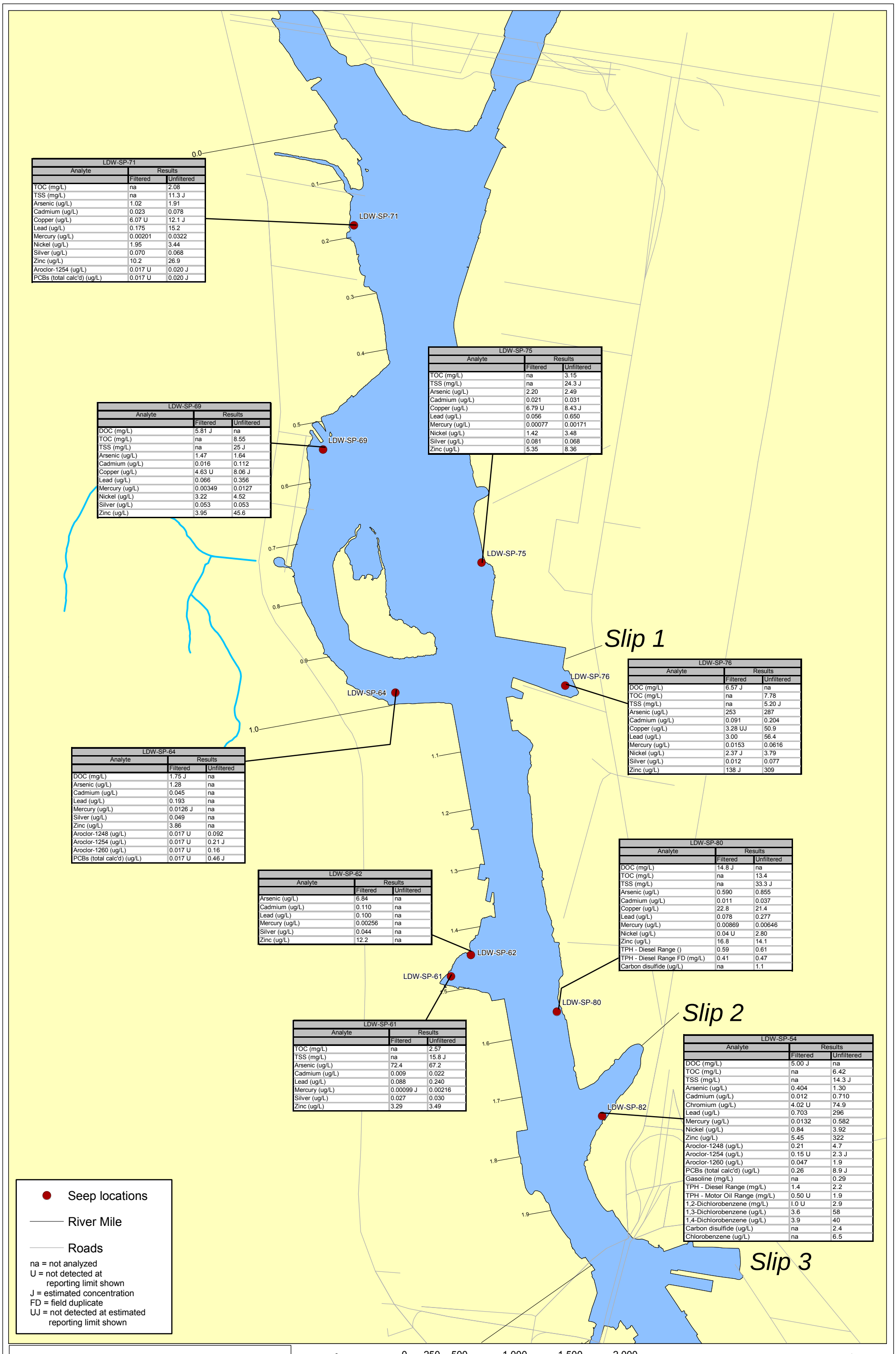

LDW-SP-71		
Analyte	Results	
	Filtered	Unfiltered
TOC (mg/L)	na	2.08
TSS (mg/L)	na	11.3 J
Arsenic (ug/L)	1.02	1.91
Cadmium (ug/L)	0.023	0.078
Copper (ug/L)	6.07 U	12.1 J
Lead (ug/L)	0.175	15.2
Mercury (ug/L)	0.00201	0.0322
Nickel (ug/L)	1.95	3.44
Silver (ug/L)	0.070	0.068
Zinc (ug/L)	10.2	26.9
Aroclor-1254 (ug/L)	0.017 U	0.020 J
PCBs (total calc'd) (ug/L)	0.017 U	0.020 J

LDW-SP-69		
Analyte	Results	
	Filtered	Unfiltered
DOC (mg/L)	5.81 J	na
TOC (mg/L)	na	8.55
TSS (mg/L)	na	25 J
Arsenic (ug/L)	1.47	1.64
Cadmium (ug/L)	0.016	0.112
Copper (ug/L)	4.63 U	8.06 J
Lead (ug/L)	0.066	0.356
Mercury (ug/L)	0.00349	0.0127
Nickel (ug/L)	3.22	4.52
Silver (ug/L)	0.053	0.053
Zinc (ug/L)	3.95	45.6

LDW-SP-75		
Analyte	Results	
	Filtered	Unfiltered
TOC (mg/L)	na	3.15
TSS (mg/L)	na	24.3 J
Arsenic (ug/L)	2.20	2.49
Cadmium (ug/L)	0.021	0.031
Copper (ug/L)	6.79 U	8.43 J
Lead (ug/L)	0.056	0.650
Mercury (ug/L)	0.00077	0.00171
Nickel (ug/L)	1.42	3.48
Silver (ug/L)	0.081	0.068
Zinc (ug/L)	5.35	8.36

LDW-SP-64		
Analyte	Results	
	Filtered	Unfiltered
DOC (mg/L)	1.75 J	na
Arsenic (ug/L)	1.28	na
Cadmium (ug/L)	0.045	na
Lead (ug/L)	0.193	na
Mercury (ug/L)	0.0126 J	na
Silver (ug/L)	0.049	na
Zinc (ug/L)	3.86	na
Aroclor-1248 (ug/L)	0.017 U	0.092
Aroclor-1254 (ug/L)	0.017 U	0.21 J
Aroclor-1260 (ug/L)	0.017 U	0.16
PCBs (total calc'd) (ug/L)	0.017 U	0.46 J

LDW-SP-76		
Analyte	Results	
	Filtered	Unfiltered
DOC (mg/L)	6.57 J	na
TOC (mg/L)	na	7.78
TSS (mg/L)	na	5.20 J
Arsenic (ug/L)	253	287
Cadmium (ug/L)	0.091	0.204
Copper (ug/L)	3.28 UJ	50.9
Lead (ug/L)	3.00	56.4
Mercury (ug/L)	0.0153	0.0616
Nickel (ug/L)	2.37 J	3.79
Silver (ug/L)	0.012	0.077
Zinc (ug/L)	138 J	309

LDW-SP-62		
Analyte	Results	
	Filtered	Unfiltered
Arsenic (ug/L)	6.84	na
Cadmium (ug/L)	0.110	na
Lead (ug/L)	0.100	na
Mercury (ug/L)	0.00256	na
Silver (ug/L)	0.044	na
Zinc (ug/L)	12.2	na

LDW-SP-80		
Analyte	Results	
	Filtered	Unfiltered
DOC (mg/L)	14.8 J	na
TOC (mg/L)	na	13.4
TSS (mg/L)	na	33.3 J
Arsenic (ug/L)	0.590	0.855
Cadmium (ug/L)	0.011	0.037
Copper (ug/L)	22.8	21.4
Lead (ug/L)	0.078	0.277
Mercury (ug/L)	0.00869	0.00646
Nickel (ug/L)	0.04 U	2.80
Zinc (ug/L)	16.8	14.1
TPH - Diesel Range ()	0.59	0.61
TPH - Diesel Range FD (mg/L)	0.41	0.47
Carbon disulfide (ug/L)	na	1.1

LDW-SP-61		
Analyte	Results	
	Filtered	Unfiltered
TOC (mg/L)	na	2.57
TSS (mg/L)	na	15.8 J
Arsenic (ug/L)	72.4	67.2
Cadmium (ug/L)	0.009	0.022
Lead (ug/L)	0.088	0.240
Mercury (ug/L)	0.00099 J	0.00216
Silver (ug/L)	0.027	0.030
Zinc (ug/L)	3.29	3.49

LDW-SP-54		
Analyte	Results	
	Filtered	Unfiltered
DOC (mg/L)	5.00 J	na
TOC (mg/L)	na	6.42
TSS (mg/L)	na	14.3 J
Arsenic (ug/L)	0.404	1.30
Cadmium (ug/L)	0.012	0.710
Chromium (ug/L)	4.02 U	74.9
Lead (ug/L)	0.703	296
Mercury (ug/L)	0.0132	0.582
Nickel (ug/L)	0.84	3.92
Zinc (ug/L)	5.45	322
Aroclor-1248 (ug/L)	0.21	4.7
Aroclor-1254 (ug/L)	0.15 U	2.3 J
Aroclor-1260 (ug/L)	0.047	1.9
PCBs (total calc'd) (ug/L)	0.26	8.9 J
Gasoline (mg/L)	na	0.29
TPH - Diesel Range (mg/L)	1.4	2.2
TPH - Motor Oil Range (mg/L)	0.50 U	1.9
1,2-Dichlorobenzene (mg/L)	I.0 U	2.9
1,3-Dichlorobenzene (ug/L)	3.6	58
1,4-Dichlorobenzene (ug/L)	3.9	40
Carbon disulfide (ug/L)	na	2.4
Chlorobenzene (ug/L)	na	6.5

Seep locations

River Mile

Roads

na = not analyzed
U = not detected at reporting limit shown
J = estimated concentration
FD = field duplicate
UJ = not detected at estimated reporting limit shown

Figure 3-1a. Locations of seeps for analysis of seep water chemistry and concentrations of detected chemicals (RM 0-2.0)

N

0 250 500 1,000 1,500 2,000 Feet

0 62.5 125 250 375 500 Meters

Wind Ward environmental LLC

Prepared by STS 11/11/04 Map 1502

W:\Projects\00-08-06_Duwamish_RI\data\gis\Seep survey

LDW-SP-53

LDW-SP-54

2.1

2.2

2.3

2.6

2.7

2.8

2.9

3.0

3.1

3.2

3.3

3.4

3.5

3.6

3.7

3.8

3.9

4.0

4.1

4.2

4.3

4.4

4.5

4.6

LDW-SP-54

Analyte	Results	
	Filtered	Unfiltered
DOC (mg/L)	5.00 J	
TOC (mg/L)	na	6.42
TSS (mg/L)	na	14.3 J
Arsenic (ug/L)	0.404	1.30
Cadmium (ug/L)	0.012	0.710
Chromium (ug/L)	4.02 U	74.9
Lead (ug/L)	0.703	296
Mercury (ug/L)	0.0132	0.582
Nickel (ug/L)	0.84	3.92
Zinc (ug/L)	5.45	322
Aroclor-1248 (ug/L)	0.21	4.7
Aroclor-1254 (ug/L)	0.15 U	2.3 J
Aroclor-1260 (ug/L)	0.047	1.9
PCBs (total calc'd) (ug/L)	0.26	8.9 J
Gasoline (mg/L)	na	0.29
TPH - Diesel Range (mg/L)	1.4	2.2
TPH - Motor Oil Range (mg/L)	0.50 U	1.9
1,2-Dichlorobenzene (mg/L)	I.0 U	2.9
1,3-Dichlorobenzene (ug/L)	3.6	58.3
1,4-Dichlorobenzene (ug/L)	3.9	40.2
Carbon disulfide (ug/L)	na	2.4
Chlorobenzene (ug/L)	na	6.5

LDW-SP-10

LDW-SP-10

Analyte	Results	
	Filtered	Unfiltered
DOC (mg/L)	1.96 J	na
Arsenic (ug/L)	0.841	na
Cadmium (ug/L)	0.085	na
Copper (ug/L)	8.69 J	na
Lead (ug/L)	0.252	na
Mercury (ug/L)	0.00092	na
Nickel (ug/L)	1.32	na
Silver (ug/L)	0.021	na
Zinc (ug/L)	11.97	na

LDW-SP-12

LDW-SP-12

Analyte	Results	
	Filtered	Unfiltered
TSS (mg/L)	na	15.6 J
Arsenic (ug/L)	0.771	1.13
Cadmium (ug/L)	0.107	0.133
Copper (ug/L)	12.5 J	15.8 J
Lead (ug/L)	0.129	0.823
Mercury (ug/L)	0.00074	0.00518
Nickel (ug/L)	4.24	8.03
Silver (ug/L)	0.053	0.033
Zinc (ug/L)	14.1	16.1

LDW-SP-48

LDW-SP-48

Analyte	Results	
	Filtered	Unfiltered
TSS (mg/L)	na	12.8 J
Arsenic (ug/L)	0.422	0.618
Cadmium (ug/L)	0.101	0.127
Copper (ug/L)	10.1 J	11.1 J
Lead (ug/L)	0.154 J	1.06
Mercury (ug/L)	0.00132	0.00109
Nickel (ug/L)	1.56	3.23
Silver (ug/L)	0.053	0.054
Zinc (ug/L)	15.8	17.7

LDW-SP-20

LDW-SP-20

Analyte	Results	
	Filtered	Unfiltered
TSS (mg/L)	na	4.30 J
Arsenic (ug/L)	1.35	1.58
Cadmium (ug/L)	0.111	0.114
Copper (ug/L)	8.16 J	10.2 J
Lead (ug/L)	0.096	1.44
Mercury (ug/L)	0.00062	0.00061
Nickel (ug/L)	5.25	8.83
Silver (ug/L)	0.112	0.086
Zinc (ug/L)	8.08	10.8

LDW-SP-41

LDW-SP-41

Analyte	Results	
	Filtered	Unfiltered
TSS (mg/L)	na	7.10 J
Arsenic (ug/L)	0.235	0.230
Cadmium (ug/L)	0.133	0.158
Lead (ug/L)	0.036	0.080
Mercury (ug/L)	0.00062	0.00112
Nickel (ug/L)	2.23	4.71
Silver (ug/L)	0.036	0.026
Zinc (ug/L)	6.07	7.14

LDW-SP-24

LDW-SP-39

LDW-SP-39

Analyte	Results	
	Filtered	Unfiltered
TSS (mg/L)	na	5.80 J
Arsenic (ug/L)	0.054	0.058
Cadmium (ug/L)	0.206	0.272
Copper (ug/L)	10.1 J	12.2 J
Lead (ug/L)	0.051	0.161
Mercury (ug/L)	0.00087	0.00094
Nickel (ug/L)	2.78	6.43
Silver (ug/L)	0.028	0.025
Zinc (ug/L)	8.30	9.90
Heptachlor epoxide (ug/L)	0.0090	0.0076

North Fork Hamm Creek

Middle Fork Hamm Creek

Slip 6

Turning Basin 3

Seep locations*

River Mile

Roads

na = not analyzed
U = not detected at reporting limit shown
J = estimated concentration

Figure 3-1b. Locations of seeps for analysis of seep water chemistry and concentrations of detected chemicals (RM 2.1-4.6)

* No samples were collected at LDW-SP-24 and LDW-SP-53 because these seeps were dry during the sampling event.

N

0 250 500 1,000 1,500 2,000 Feet

0 62.5 125 250 375 500 Meters

Wind Ward environmental LLC

Prepared by STS 11/11/04 Map 1503

W:\Projects\00-08-06_Duwamish_RI\data\gis\Seep survey

APPENDIX A. RECONNAISSANCE SURVEY DATA TABLES

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Table A-1. GPS coordinates[a] for seeps identified during the reconnaissance survey

SEEP LOCATION	X	Y
LDW-SP-01	1270793.01	201469.88
LDW-SP-02	1270718.36	200595.73
LDW-SP-03	1271273.28	200335.64
LDW-SP-04	1271265.05	200335.80
LDW-SP-05	1271788.09	199492.61
LDW-SP-06	1272073.50	199134.40
LDW-SP-07	1272106.43	199133.76
LDW-SP-08	1272299.77	198911.12
LDW-SP-09	1273373.64	198866.03
LDW-SP-10	1273465.73	198943.30
LDW-SP-11	1272413.73	198842.03
LDW-SP-12	1272645.54	198691.61
LDW-SP-13	1273439.55	197800.66
LDW-SP-14	1273905.09	197384.28
LDW-SP-15	1275453.00	196071.50
LDW-SP-16	1275505.00	195991.46
LDW-SP-17	1275610.18	195892.15
LDW-SP-18	1275748.29	195792.21
LDW-SP-19	1275848.18	195632.20
LDW-SP-20	1276000.70	195209.72
LDW-SP-21	1276039.42	195081.29
LDW-SP-22	1276451.33	193577.59
LDW-SP-23	1276791.24	192829.26
LDW-SP-24	1277551.77	192966.74
LDW-SP-25	1277247.19	192978.64
LDW-SP-26	1276960.77	191354.53
LDW-SP-27	1278735.89	190037.69
LDW-SP-28	1278342.10	190343.13
LDW-SP-29	1278280.28	190125.41
LDW-SP-30	1278532.94	189980.75
LDW-SP-31	1278411.13	190074.27
LDW-SP-32	1277871.48	190291.29
LDW-SP-33	1277731.28	190500.70
LDW-SP-34	1276854.77	190335.03
LDW-SP-35	1277113.40	190719.24
LDW-SP-36	1276629.69	190844.02
LDW-SP-37	1276958.38	191014.07
LDW-SP-38	1276541.21	191386.88
LDW-SP-39	1276376.66	192259.54
LDW-SP-40	1275872.83	193266.40
LDW-SP-41	1275992.20	193476.93
LDW-SP-42	1275903.44	193788.74
LDW-SP-43	1275851.20	194501.17
LDW-SP-44	1274677.72	196232.34
LDW-SP-45	1274212.84	196685.17
LDW-SP-46	1273887.25	196886.02
LDW-SP-47	1273588.48	197195.81
LDW-SP-48	1273337.83	197437.79
LDW-SP-49	1273021.90	197711.44
LDW-SP-50	1272864.41	197872.58
LDW-SP-51	1272375.50	198356.32
LDW-SP-52	1270170.21	200357.09
LDW-SP-53	1269984.28	200324.23
LDW-SP-54	1269881.50	200332.32
LDW-SP-55	1269791.19	200346.24
LDW-SP-56	1270104.48	200364.46
LDW-SP-57	1269572.83	201183.54
LDW-SP-58	1269572.40	200739.67
LDW-SP-59	1269565.00	200782.37
LDW-SP-60	1269482.68	201416.36
LDW-SP-61	1267807.73	203765.83
LDW-SP-62	1267956.05	203981.82
LDW-SP-63	1270572.79	200732.33
LDW-SP-64	1266933.96	206227.38
LDW-SP-65	1266743.37	206164.24
LDW-SP-66	1266531.68	206283.94
LDW-SP-67	1266020.37	206865.58
LDW-SP-68	1265899.97	207439.53
LDW-SP-69	1265966.48	208307.75
LDW-SP-70	1266050.35	210057.30
LDW-SP-71	1265949.14	210351.17
LDW-SP-72	1267080.21	210736.30
LDW-SP-73	1267240.52	208422.53
LDW-SP-74	1267361.01	208061.41
LDW-SP-75	1267535.30	207504.65
LDW-SP-76	1268446.11	206513.90
LDW-SP-77	1268127.04	205985.06
LDW-SP-78	1268534.71	204311.00
LDW-SP-79	1268658.24	204101.84
LDW-SP-80	1268800.51	203588.29
LDW-SP-81	1269544.82	203123.79
LDW-SP-82	1269343.33	202714.24

[a] NAD 1983 State Plane Washington North

Table A-2. Water quality data from seeps sampled during the reconnaissance survey

Seep Number	Date of water quality Measurements	Time	Temperature (° C)	Specific Conductivity (µmhos/cm)	Dissolved Oxygen[a] (mg/L)	pH	Oxidation-Reduction Potential[a] (mV)	Salinity[b] (ppt)
1	5/5/04	10:05	13.5	19,780	5.4	na	199	15.5
1 (duplicate)	5/5/04	10:05	13.2	19,590	5.4	na	182	15.5
2	5/5/04	10:48	12.3	26,890	6.5	na	298	22.3
2 (duplicate)	5/5/04	10:48	12.1	26,070	7.1	na	296	21.7
3	5/5/04	11:10	12.5	12,860	5.5	na	155	10.0
4	5/5/04	11:17	13.1	11,500	6.2	na	202	8.70
5	5/5/04	11:38	12.5	13,040	4.1	na	235	10.1
6	5/5/04	11:44	17.1	28,390	7.8	na	216	21.0
7	5/5/04	11:50	15.9	30,870	6.8	na	245	23.7
8	5/5/04	11:58	17.3	11,550	6.2	na	107	7.80
9	5/5/04	12:28	13.4	13530	6.1	na	234	10.3
10	5/5/04	12:36	14.7	15,040	7.8	na	93	11.1
11	5/5/04	12:07	14.1	16,670	7.0	na	147	12.7
12	5/5/04	12:15	12.2	31,260	4.8	na	250	26.5
13	5/5/04	12:47	17.8	19,540	6.1	na	84	13.7
14	5/5/04	12:56	15.7	20,360	5.8	na	80	15.1
15	5/5/04	13:10	13.1	23,780	4.2	na	166	19.1
16	5/6/04	14:20	15.4	22,900	2.0	6.7	164	17.3
17	5/5/04	13:25	13.5	14,680	3.6	na	160	11.2
18	5/5/04	13:35	13.2	19,570	6.3	na	201	15.2
19	5/7/04	12:17	12.0	25,850	2.6	6.6	193	21.6
20	5/5/04	13:45	15.6	14,680	5.5	na	176	10.6
21	5/5/04	13:55	13.6	22,620	5.4	na	179	17.9
22	5/5/04	14:05	14.4	13,930	6.1	na	211	10.3
23	5/6/04	10:42	13.0	12,120	2.5	6.7	199	9.20
23 (duplicate)	5/6/04	10:42	13.0	12,170	2.5	6.6	200	9.30
24	5/5/04	14:25	16.0	20,920	7.3	na	724	15.4
25	5/5/04	14:35	18.9	4,647	6.4	na	387	2.80
26	5/6/04	10:15	13.6	11,610	3.8	6.8	194	8.70
26 (duplicate)	5/6/04	10:15	13.7	11,700	3.4	6.8	195	8.70
27	5/6/04	11:08	12.8	20,170	2.8	6.9	193	16.1
28	5/6/04	10:51	13.7	20,250	1.7	6.2	191	15.8
28	5/6/04	10:51	13.7	20,350	1.8	6.1	188	15.9
29	5/6/04	11:35	12.7	25,990	1.9	6.4	195	21.3
30	5/6/04	11:16	12.4	27,940	2.6	6.8	196	23.2
31	5/6/04	11:21	12.4	30,030	2.4	6.7	198	25.2
32	5/6/04	11:47	14.4	15,480	2.6	6.9	196	11.6
33	5/6/04	12:10	13.3	30,890	2.3	6.6	195	25.4
34	5/6/04	12:17	19.1	3,801	2.6	7.3	182	2.30

Seep Number	Date of water quality Measurements	Time	Temperature (° C)	Specific Conductivity (µmhos/cm)	Dissolved Oxygen[a] (mg/L)	pH	Oxidation-Reduction Potential[a] (mV)	Salinity[b] (ppt)
35	5/6/04	12:30	16.1	10,290	2.3	6.6	158	7.10
36	5/6/04	13:10	15.9	21,940	2.1	6.7	180	16.3
37	5/6/04	12:45	15.7	20,500	2.3	6.5	163	15.2
38	5/6/04	13:15	15.7	10,870	2.6	7.2	183	7.60
39	5/6/04	13:23	15.7	8,304	2.0	6.9	159	5.70
40	5/6/04	13:35	14.4	25,030	1.8	5.8	188	19.6
41	5/6/04	13:41	19.4	18,550	1.9	6.7	89	12.5
42	5/6/04	13:56	15.1	2,341	2.8	7.3	131	1.50
43	5/6/04	14:08	15.9	14,070	2.8	7.1	151	10.1
44	5/7/04	12:10	11.4	32,600	2.4	6.1	200	28.3
45	5/7/04	12:03	12.1	26,630	2.2	6.3	194	22.2
46	5/6/04	14:36	13.4	24,440	2.7	7.1	174	19.6
47	5/6/04	14:46	12.4	24,550	2.4	6.7	181	20.2
48	5/6/04	14:52	13.9	20,530	2.9	7.9	181	16.0
49	5/6/04	14:59	13.0	15,830	2.3	6.5	187	12.3
50	5/7/04	11:54	11.9	37,640	2.5	5.9	190	32.8
51	5/6/04	15:08	17.7	34,580	2.5	7.7	187	25.7
52	5/7/04	11:30	13.0	15,030	2.2	7.3	60	11.6
53	5/7/04	11:20	12.6	20,490	1.9	7.0	34	16.5
54	5/7/04	11:12	12.8	9,814	2.2	6.7	138	7.40
55	5/7/04	11:00	13.1	8,190	3.0	7.0	204	6.00
56	5/6/04	15:50	14.0	11,990	2.3	6.2	197	8.90
57	5/7/04	12:40	12.4	21,980	2.8	6.6	208	17.9
58	5/7/04	13:00	14.2	20,210	2.6	6.4	205	15.6
59	5/7/04	13:10	13.3	27,190	2.7	6.7	212	22.1
60	5/7/04	13:17	12.6	26,570	1.9	6.2	193	21.9
61	5/7/04	14:00	13.0	11,390	1.4	6.9	96	8.60
62	5/7/04	13:44	12.9	15,390	2.4	7.0	212	12.0
63	5/7/04	13:25	11.8	27,200	1.6	6.4	203	23.0
64	5/7/04	14:07	12.2	18,400	1.7	6.5	154	14.8
65	5/7/04	14:20	12.0	26,490	2.7	6.7	163	22.2
66	5/7/04	14:28	12.8	16,190	2.5	6.8	172	12.7
67	5/7/04	14:41	12.1	24,150	2.8	6.9	178	20.0
68	5/7/04	14:51	17.2	21,030	3.8	8.3	174	15.1
69	5/7/04	15:00	17.1	26,850	3.4	8.3	176	19.7
70	5/7/04	15:12	12.3	30,650	2.9	6.7	186	25.9
71	5/7/04	15:18	13.8	21,030	2.7	6.8	187	16.5
72	5/10/04	16:10	13.0	26,610	3.0	7.4	164	21.9
73	5/7/04	15:35	19.1	19,330	3.1	8.7	184	13.1
74	5/7/04	15:40	21.4	17,460	3.0	7.8	183	11.1
75	5/10/04	15:45	12.7	14,950	1.7	6.5	140	11.7
76	5/7/04	16:00	13.7	16,130	2.0	6.1	174	12.3

Seep Number	Date of water quality Measurements	Time	Temperature (° C)	Specific Conductivity (µmhos/cm)	Dissolved Oxygen[a] (mg/L)	pH	Oxidation-Reduction Potential[a] (mV)	Salinity[b] (ppt)
77	5/10/04	15:30	11.8	27,730	2.2	6.1	133	23.5
78	5/10/04	15:15	12.2	25,910	2.8	6.5	123	21.5
79	5/7/04	16:20	13.4	21,770	1.5	6.1	44	17.2
80	5/7/04	16:27	14.9	13,410	3.0	6.8	86	9.80
81	5/7/04	16:34	12.7	21,460	2.8	6.7	114	17.3
82	5/7/04	16:40	13.3	14,480	2.9	6.8	124	11.1

na – not available; although the pH probe calibrated correctly the morning of 5/5/04, it did not function properly in the field on that day

[a] Data should be considered qualitative because DO values were unusually low on 5/6/04 and 5/7/04, and do not consistently correlate with the oxidation-reduction potentialvalues

[b] Calculated from temperature and conductivity

Table A-3. Water quality data from seeps and associated LDW locations sampled during the reconnaissance survey

Seep Number	Location	Date	Time	Temperature (° C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Salinity[a] (ppt)
19	seep	5/7/04	12:17	12.02	25,850	2.57	6.55	193	21.6
	LDW - surface	5/7/04	12:20	11.89	32,650[b]	3.06	6.85	191	28.0
	LDW – 1 m	5/7/04	12:25	11.90	35,850[b]	3.02	6.91	187	31.1
26	seep	5/6/04	10:15	13.60	11,610	3.80	6.84	194	8.7
	seep (duplicate)	5/6/04	10:15	13.65	11,700	3.36	6.75	195	8.7
	LDW - surface	5/6/04	10:20	11.75	22,780	3.08	7.14	197	18.9
	LDW – 1 m	5/6/04	10:25	11.75	24,860	3.13	7.06	196	20.8
56	seep	5/6/04	15:50	13.97	11,990	2.27	6.22	197	8.9
	LDW - surface	5/6/04	16:00	13.79	12,320	2.82	6.80	185	9.2
	LDW – 1 m	5/6/04	16:10	12.56	17,210	2.94	6.87	184	13.6
62	seep	5/7/04	13:44	12.87	15,390	2.39	6.95	212	12.0
	LDW - surface	5/7/04	13:50	12.87	15,890	2.99	6.84	208	12.4
	LDW – 1 m	5/7/04	13:55	11.89	17,000	2.97	6.95	210	13.7
73	seep	5/7/04	15:35	19.09	19,330	3.14	8.73	184	13.1
	LDW - surface	5/7/04	15:25	12.30	19,260	3.33	7.17	189	16.4
	LDW – 1 m	5/7/04	15:30	12.11	20,150	3.27	7.21	190	15.5

[a] Calculated from temperature and conductivity

[b] Value in field notes was one order of magnitude less. It was assumed to be a transcription error.

Table A-4. Transcribed field notes of seep observations made during the reconnaissance survey

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-01	
Flow rate	Low
Substrate description	(GP) gravel; dark gray brown; 95% gravel fill, w/riprap & debris steel; 5% muck (silt & clay); loose; wet; no odor
Seep observations	No sheen, no odor; light brown cloudy; trace of sediment
Description	Steep; riprap w/rounded gravel; construction debris to 20 ft, iron, wood, brick; pavement
Seep location	Mid-bank, about 10 ft below vegetation; angle/corner bank; near dock
LDW-SP-02	
Flow rate	Low-medium
Substrate description	(SM/GP); silty sand w/gravel, dark gray to brown; 60% fine-to-medium sand; 25% rounded gravel to 2 in; 15% silty (muck); loose, wet, overlain w/riprap (concrete) w/construction debris, cable, and pipe
Seep observations	No sheen, no odor; slime and vegetation cover surfaces, water clear to translucent yellow brown, sediment trace
Description	(below parking area), low bank seep ~15 ft (estimated) below high water; straight bank behind barge
Seep location	Broad linear seep line along toe of riprap, at low-low tide contact w/riprap (base of bank)/toe
LDW-SP-03	
Flow rate	Medium-high
Substrate description	(ML-SM); silt w/sand and gravel; dark gray to rust brown; 50% fine silt, clay, organic (muck), w/20% sand, 30% rounded gravel, very loose, wet, (base of riprap)
Seep observations	No sheen, no odor, clear to translucent trace fine sediment, rust precipitate surfaces at seep
Description	Steep riprap w/metal debris (collapsed boat rail?), broad seep area at toe/base of riprap
Seep location	Toe of riprap, about 15 ft from high water line/fence liner to broad seep area of about 10 small seeps
LDW-SP-04	
Flow rate	Medium-high
Substrate description	(ML) silt, dark brownish gray, 95% silt w/black organics fine, very soft, wet, below steep concrete blocks to 10 ft, trace of fine sand
Seep observations	Clear to trace gray sediment, no odor, no sheen, slimy surface
Description	Below dock/piling remains, steep bank of large concrete blocks, very mucky area underlain by large concrete block
Seep location	About mid-bank, below concrete blocks (north of scrap yard)
LDW-SP-05	
Flow rate	Medium-high
Substrate description	(GP) gravel and riprap, with sand and silty muck, 90% rounded gravel w/crushed concrete to 10 in, 10% sand , trace of silt muck on surface, medium to dense, wet
Seep observations	No odor, no sheen, no color or trace of sediment, slime on surface rock
Description	Step bank, south of metal scrap yard/crane
Seep location	Mid-low bank, within riprap zone

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-06	
Flow rate	High
Substrate description	(ML) silt dark grayish brown, 95% fine silt, clay, organic, trace of sand gravel, soft, wet
Seep observations	No odor/no sheen, clear to trace gray sediment, slime on surface area of seep, barnacles on piling, seep in 4-in channel, meander over broad beach ~50 ft
Description	Flat alluvial beach/bar, sand and fine silt, seep near former piling/stud
Seep location	Channelized across broad beach
LDW-SP-07	
Flow rate	High
Substrate description	(SM/ML) dark brownish gray w/some rust brown gravel, silty sand w/gravel, 80% coarse to fine sand, 15% silty, 5% gravel to 2 in, medium dense, wet
Seep observations	From channel about 20 ft across beach from stake, silty muck over beach sand w/gravel/riprap, no odor, no sheen, trace of fine sediment (muck)
Description	Channel seep from broad beach
Seep location	Stake at riprap toe, seep lower channel below semi tractor-trailer parking
LDW-SP-08	
Flow rate	Medium-High
Substrate description	(ML) silt, 95% silt, dark grayish brown, 5% fine sand, medium to soft, wet, 40-50 ft from retaining wall at bank, 6-in wide channel across bank
Seep observations	No odor/no sheen, clear; trace of gray silt
Description	Amongst former pier pilings (+20)
Seep location	Channel across broad beach
LDW-SP-09	
Flow rate	Medium-Low
Substrate description	(GP) gravel, 90% rounded gravel to 3 in, 10% fine sand and silty muck, very dense, wet, below pavement riprap
Seep observations	No odor/no sheen, clear, slime on area of seep
Description	Gravel w/broken asphalt, (below tanks)-above ground storage
Seep location	Mid-bank, moderate slope, point seep
LDW-SP-10	
Flow rate	Medium-High
Substrate description	(ML/GP) silt w/gravel, 85% silty muck, 15% round gravel, dark grayish to brown, soft, wet
Seep observations	No odor/no sheen, trace of brown sediment to clear
Description	Channel to 10 in wide, from broad seep to 20 ft, weeping from retaining wall
Seep location	Channel about 40 ft from wall, meanders across broad mucky/silty beach
LDW-SP-11	
Flow rate	High
Substrate description	(ML) silt, 95% silty muck, dark gray to brownish, soft, wet, 5% fine-medium sand, broad flat beach, w/retaining wall and building
Seep observations	No odor/no sheen, trace to cloudy w/sediment (fine)
Description	10-in wide channel, strong flow, meanders across 50-70 ft of beach
Seep location	Channel from toe of retaining wall (100+) below building/public access point

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-12	
Flow rate	High
Substrate description	(ML/SP) silt w/sand, 80% silty muck, 10% sand, 10% gravel fill, soft, wet
Seep observations	No odor/no sheen, trace of fine sediment, slimy surface
Description	Strong channel flow from toe of riprap and sheet pile, concrete surface (pallets and drums)
Seep location	Base of riprap, channel (flow) over short beach at lower low tide water
LDW-SP-13	
Flow rate	High
Substrate description	(ML) silt, dark grayish brown, 90% silty muck, 10% fine sand, soft, wet, (channel across wide low tide beach)
Seep observations	No odor/no sheen, translucent gray brown sediment
Description	Wide weeping gravel and riprap at bank, channelize to sample point
Seep location	~50 ft from toe of riprap bank, below Boeing fence vegetated area
LDW-SP-14	
Flow rate	High
Substrate description	(ML) silt, dark gray brown, 95% silty muck, soft, wet, broad flat beach/alluvium, trace of sand, gravel
Seep observations	No odor/no sheen, gray sediment
Description	Strong channel flow to 12 in wide
Seep location	Collects from broad area at toe of riprap below Boeing building; channelizes and meanders across broad ~50 ft beach alluvium w/pilings (old)
LDW-SP-15	
Flow rate	High
Substrate description	(ML) dark gray brown silty muck w/rust-color gravel, 80% silty muck, 10% fine-to-medium sand, 10% round gravel to 2 in, soft, wet, green seaweed
Seep observations	No odor/no sheen, trace of gray sediment-rust precipitate on gravel surfaces in seep channel
Description	10-in strong flowing channel from toe of riprap to narrow beach/alluvium (20 ft)
Seep location	Channel from riprap base, w/broken brick wall debris, south end of Boeing building/gravel boat ramp
LDW-SP-16	
Flow rate	Medium
Substrate description	(GP) 90% riprap fill w/5% fine-to-medium sand, 5% muck/silt, dense, wet, dark gray to brown
Seep observations	No odor/no sheen, trace of sediment
Description	Steep riprap below Boeing fence, vegetation, trickle seep sample above stake location
Seep location	Mid to lower on steep riprap bank, stake submerge ~2 ft below rising tide

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-17	
Flow rate	Medium-high
Substrate description	(GP) gravel and riprap, 90% gravel rounded to 2 in, 10% fine sand and muck, dense, wet, barnacles
Seep observations	No odor, no sheen, clear, slimy on surfaces near seep
Description	Steep bank, waterfall from riprap cover
Seep location	Mid-bank, at collapsed wooden wall, below Boeing fence and vegetation
LDW-SP-18	
Flow rate	Medium-high
Substrate description	(GP/SM) gravel w/silty sand, 70% gravel to 2 in, 20% firm to medium sand, 10% silty muck, medium, wet
Seep observations	No odor, no sheen, clear to trace sediment (suspect outfall behind lumber/pipe debris)
Description	10-in channel from toe of riprap, stacked concrete, and collapsed pilings
Seep location	Base of riprap, below Boeing fence/vegetation
LDW-SP-19	
Flow rate	Medium
Substrate description	(GP/SM) 80% [crushed] to rounded gravel w/brick, 10% sand, 10% silty (muck), dark gray to brown, firm, wet
Seep observations	No odor/no sheen, trace of gray sediment
Description	Steep riprap broken brick, concrete slabs, topped w/steel mill? Furnace slag lobes
Seep location	Very low bank, toe of brick riprap, moderate-to-strong seep, broad shallow channel to 3 ft
LDW-SP-20	
Flow rate	Medium-low
Substrate description	(GP/SM) dark gray brown, gravel w/silty sand, 70% rounded to [crushed] gravel w/brick and concrete, 20% fine sand, 10% silty muck, medium dense, wet (small channel at base of concrete wall)
Seep observations	No odor, no sheen, clear w/trace of sediment
Description	From toe of wall; narrow, flat gravelly beach visible only at low tide
Seep location	Base of 15-ft wall (concrete and steel), small channel to 4 in
LDW-SP-21	
Flow rate	High
Substrate description	(GP/SM) dark gray brown, gravel w/silty sand, 80% gravel crushed fill to 10 in, 10% coarse to fine sand, 10% silty muck, dense, wet, barnacles
Seep observations	No odor/no sheen, trace sediment to clear
Description	Steel I-beam wall to 12 ft over low sloping riprap
Seep location	Point seep, mid-bank in riprap
LDW-SP-22	
Flow rate	Medium-low
Substrate description	(GP) gravel, w/sand, 90% round gravel to 3 in, 10% fine-to-medium sand, trace, silt, dense, wet
Seep observations	No odor, no sheen
Description	Riprap; steep slope
Seep location	Seep from toe of riprap, begins channel to 12 in across

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-23	
Flow rate	Medium
Substrate description	(GP/ML) 80% riprap gravel over silty (river alluvium) bank dark gray to brown, very soft silt bank, wet, organic muck
Seep observations	No odor, no sheen, clear
Description	Steep riprap above silty river bank-beach, below vegetation and aboveground tank
Seep location	Multiple seeps from toe of riprap join rapid 4 to 6-in channel, meander/cutting silty riverbank below
LDW-SP-24	
Flow rate	Medium-low
Substrate description	(GP) dark gray brown, 95% gravel rounded to crushed rock w/riprap, 5% fine sand, dense, wet, trace of muck w/green slime
Seep observations	Clear, trace of floating white dust, (pollen?) no odor, no sheen
Description	Steep riprap slope, over gravelly sand, small channel flow
Seep location	High bank several feet below higher high water line, below fence
LDW-SP-25	
Flow rate	Medium
Substrate description	(SP/GP) dark brown, 80% coarse to fine sand, 20% crushed gravel to riprap, dense, wet, green vegetation over riprap
Seep observations	No odor, no sheen, clear to trace of fine brown sediment, green slime/vegetation in area of seep
Description	Shelf bank (collapse?), riprap and sand, steep to water line
Seep location	Mid-bank at shelf, tree trunk fallen from fence line
LDW-SP-26	
Flow rate	Medium
Substrate description	(GP) gravel, dark gray brown, 95% rounded to 3 in and large angular riprap, 5% medium-coarse sand, trace of silt, medium-dense, wet, (strong channel flow)
Seep observations	No odor, no sheen, clear w/trace of fine sediment, [little] slime/growth
Description	Gravel to riprap, moderate slope to alluvium shore beach, below vegetation/Boeing fence
Seep location	Mid-bank-gravels/riprap develop strong flowing channel carving into mud bank
LDW-SP-27	
Flow rate	Medium
Substrate description	(SM) silty sand, 80% medium to coarse sand, 15% silty, 5% pebbles to gravel (base of riprap), loose, wet (fill w/alluvium)
Seep observations	No odor/no sheen, clear to trace sediment
Description	Adjacent to concrete/steel pile wall, seep below very large (concrete to 10 ft) block of riprap
Seep location	Mid-bank at toe of riprap channel to 6 in wide

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-28	
Flow rate	Medium
Substrate description	(SM) silty sand, dark gray to brown, 80% fine-to-medium sand, 20% silty river alluvium, medium sand dense, wet, (collapsed river bank w/pilings)
Seep observations	Silty sediment translucent gray brown, no odor/no sheen
Description	Recent? Collapsed river bank along colonnade of pilings, mid-bank seep cutting steep channel
Seep location	Mid-bank multiple small seep channeling to steeply cutting 10-in channel
LDW-SP-29	
Flow rate	Medium-high
Substrate description	(ML) silt w/organics, 95% silty muck, 5% sand (fine) very soft, wet, log jam in river bank/bar, large old cedars to 30-40 ft, set in mud
Seep observations	No odor/no sheen, clear w/trace of fine sediment
Description	Wide steep mud bank w/~half dozen large stumps and logs on and in mud, no riprap below vegetated fence line
Seep location	Mid-bank below log within log jam
LDW-SP-30	
Flow rate	Medium
Substrate description	(SM) silty sand, dark gray brown, 70% fine-to-medium sand, 30% silty muck, trace of pebbles to gravel, below riprap, loose, wet, seep at large log wedged in riprap
Seep observations	Clear, no odor/no sheen, trace of sediment
Description	Lower mid-bank, river sand and silt, overlain by riprap, tree stump and log snag
Seep location	Toe of riprap at river bank, moderate channel to 5 in wide
LDW-SP-31	
Flow rate	Medium
Substrate description	(SM/ML) very silty sand, 60% fine-to-coarse sand, 40% silty alluvium (muck), trace of gravel fill, loose/soft, wet, below (concrete blocks) riprap
Seep observations	No odor/no sheen, clear
Description	Steep riprap blocks adjacent to natural bank, no riprap, seep at toe
Seep location	Low bank at riprap contact w/shoreline, below willows/fence
LDW-SP-32	
Flow rate	High
Substrate description	(ML/GP) silt w/riprap, 75% silt, 25% riprap and debris (pipe, wood), soft, wet (broad mud bank)
Seep observations	No odor/no sheen, trace of fine sediment
Description	Broad low slope mud bank w/log snags, just south of Boeing bridge
Seep location	Mid-bank at rubble/riprap outcrop in mud bank, low sloping mud bank w/snags

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-33	
Flow rate	Medium-low
Substrate description	(ML/GP) silty muck w/riprap gravel, dark gray w/rusty brown surfaces, soft, wet, river bank sediments below short pier
Seep observations	No odor/no sheen, trace of fine sediment
Description	Upper river bank muds at toe of riprap, seep channels to 4 in width down bank
Seep location	Moderate slope upper mid-bank, toe of riprap beneath existing pier structure/building
LDW-SP-34	
Flow rate	High
Substrate description	(SM/ML) dark gray brown, very silty sand, 60% very fine sand, 40% silty muck, loose/soft, wet, (river bank/bar), long seep channel from riprap
Seep observations	No odor, no sheen, trace of sediment
Description	Steep riprap along roadway above wide (~100 ft?) river bank
Seep location	Seep channels across wide bank
LDW-SP-35	
Flow rate	na
Substrate description	(ML) silt, 100% mucky silt (river bank), dark gray brown, very soft, wet
Seep observations	Clear to trace of gray sediment, no odor, no sheen
Description	Low bank, seep spring on low sloping river bank low tide zone
Seep location	Low bank, very soft muck/silt, few tree branches
LDW-SP-36	
Flow rate	Medium
Substrate description	(ML/GP) 100% silt below riprap and gravel, dark gray brown, soft, wet
Seep observations	No odor/no sheen, trace of sediment, gray
Description	Very steep riprap to low tide water, (marker submerged) small seep adjacent to large channel
Seep location	Toe of riprap below foundation/"electric substation?"
LDW-SP-37	
Flow rate	High
Substrate description	(GP/ML) dark gray to brown cobbles to 6 in, over silty river bank/muck, very soft, wet, broad river bank (low tide ~75 ft)
Seep observations	No odor/no sheen
Description	Moderate steep cobbles, base overlain w/riprap
Seep location	Broad seep zone at toe of riprap ~100 ft, 3 main channels combine to one cut channel, strong flow 2 ft across
LDW-SP-38	
Flow rate	Medium-high
Substrate description	(ML/GP)silt with gravel, dark gray brown, 70% silt (below riprap), 30% crushed gravel, (below riprap), soft, wet
Seep observations	No odor/no sheen, trace of sediment
Description	Low tide river bank w/channel seep, from toe of riprap
Seep location	Mid-bank at base of riprap, across exposed low tide bank (~30 ft)

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-39	
Flow rate	High
Substrate description	(SM/GP) silty sand and gravel, 50% fine-to-medium sand, 25% silty, 25% rounded gravel, firm, wet
Seep observations	No odor/no sheen/trace of sediment
Description	Low sloping bank to industrial yard, seep at sand/gravel contact and low tide bank
Seep location	Below Delta Marine pier, mid-bank, low/moderate slope, sand/gravel contact
LDW-SP-40	
Flow rate	Medium
Substrate description	(ML/GP) silt (95%), below steep riprap, soft, wet, dark brown gray, construction debris (wood, plastic, leaves)
Seep observations	No odor, no sheen
Description	Steep riprap below gray house
Seep location	Toe of riprap, stake submerged
LDW-SP-41	
Flow rate	High
Substrate description	(SM/GP) silty sand 60%, 40% rounded cobble fill, firm, wet (dark gray brown)
Seep observations	Slow/weeping seep along 100 ft of bank between mooring piles, sheen at seep, (light; not observed in river)
Description	Low to moderate grade cobbles and sand to high level of riprap and vegetation
Seep location	From cobble/sand, silt (mid-bank) contact, south of work pier/barge repair
LDW-SP-42	
Flow rate	Medium-high
Substrate description	(SM/GP) 60% silty sand, 40% rounded cobbles and small riprap; firm, wet (dark gray to brown)
Seep observations	No odor/no sheen, trace of sediment
Description	Low to moderate slope cobbles to small riprap top, seep forms small channel to 6 in
Seep location	Mid-bank at cobble/riprap contact w/river silty sand, vegetation/white building (set back), (grounded barges to south)
LDW-SP-43	
Flow rate	High
Substrate description	(GP/ML) 80% angular dark gray gravel fill, 20% silty muck river bank, soft/firm, wet
Seep observations	No odor/no sheen, trace of sediment
Description	Low-grade mud bank grading to fill rock and large riprap levee/vegetated (Boeing fence)
Seep location	Low bank broad head forms channel across silty (muck) to 6-in, good flow
LDW-SP-44	
Flow rate	Medium-high
Substrate description	(ML/SM) very silty sand, dark gray brown, 50% fine-to-coarse sand/trace of gravel, 50% silty, soft, wet
Seep observations	No odor/no sheen, trace of gray sediment
Description	Steep riprap topped with about 6 ft of concrete blocks
Seep location	Very low bank, strong seep from base of riprap, below Marina parting, channels 10 in wide

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-45	
Flow rate	Low
Substrate description	(ML/SM) very silty sand, dark gray to brown, 60% firm to coarse sand, 40% silty muck, soft-firm, wet, trace of riprap from above
Seep observations	No sheen/no odor, trace of gray sediment
Description	Moderate to steep riprap w/tires, seep at riverbank contact
Seep location	Very low bank, seep at base of rubble brick; weeping seep to short channel
LDW-SP-46	
Flow rate	Medium-high
Substrate description	(SM/GP) 60% fine-to-medium sand, 20% silty muck, 20% crushed brick fill, debris (tires, wood) and small riprap, firm, wet
Seep observations	No odor/no sheen, trace of sediment
Description	Steep brick concrete riprap over river bank, mud with sand, broad seep to 10 ft forming small channels
Seep location	Low bank, base of riprap on low tide river bank
LDW-SP-47	
Flow rate	Medium-high
Substrate description	(SM/GP) silty sand with gravel and riprap, dark grayish brown, soft/loose, wet
Seep observations	No odor/no sheen, trace of sediment
Description	Steep riprap below vegetated fence line
Seep location	Low bank, base of riprap at start/contact over mud bank/river's edge
LDW-SP-48	
Flow rate	High
Substrate description	(SM/GP) 60% fine-to-medium sand, 20% rounded pebbles to occasional riprap, 20% silty muck, firm, wet
Seep observations	No odor/no sheen, clear w/trace of sediment
Description	Low-to-moderate beach/shore access area
Seep location	Low-to-mid-bank channel steep from broad beach sand/access point
LDW-SP-49	
Flow rate	Medium
Substrate description	(SM/GP) silty sand, dark grayish brown, 40% silt muck, 60% fine-to-coarse sand, firm, wet
Seep observations	No odor/no sheen, clear w/trace of sediment
Description	20-ft wide mud bank with seep, 10 ft below steep riprap bank and vegetation
Seep location	"Spring" seep, low river bank, forming channel to 10-in width
LDW-SP-50	
Flow rate	Medium
Substrate description	(ML/SM) 80% dark gray to brown silty muck, 10% fine sand, 10% riprap concrete debris, very soft, wet
Seep observations	No odor/no sheen, trace of sediment (gray)
Description	Construction debris w/concrete pour? ledge over river bank muds w/seep
Seep location	Low bank, point/spring seep; low slope, river bank behind barge, vegetated levee

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-51	
Flow rate	Medium-low
Substrate description	(SM) silty sand, dark grayish brown, 60% fine-to-coarse sand, 40% silt muck river bank, firm to soft, wet
Seep observations	No odor/no sheen, trace of gray sediment
Description	Steep riprap above seep, seep weeps across 20-ft length forming small channels
Seep location	Low bank, base of brick riprap bank, below tractor trailer parking
LDW-SP-52	
Flow rate	Low
Substrate description	(GP-SM) 90% rounded gravel (to 2-in), 10% fine sand w/silt, medium dense, wet, dark grayish-brown
Seep observations	No sheen/sulfide odor, light gray w/gray to black sediment
Description	From base of wood wall, seep small w/white slime
Seep location	Low bank, below wood retaining wall, w/concrete pour, seep at contact w/river bed, muck/grass
LDW-SP-53	
Flow rate	Low
Substrate description	(SM/GP) silty sand with pebbles, 60% sand, 25% pebbles, 15% silts, firm, wet
Seep observations	Black ooze (NAPL?), little flow, no sheen, TPH odor
Description	NAPL? seep at bottom of channel, steep sloping bank, with wood terrace below; asphaltic blob topped with vegetated levee
Seep location	Low low bank adjacent to horizontal timber/ties within channel inlet
LDW-SP-54	
Flow rate	Low
Substrate description	(GP) 90% rounded pebbles, 5% sandy, 5% silty, firm, wet
Seep observations	Trace sheen, trace odor, “gray water” sulfide and trace petroleum odor, clear to trace gray sediment
Description	moderate slope of pebbles , sand and silt
Seep location	Upper bank , small trickle seep, below dock with structure and metal debris levee
LDW-SP-55	
Flow rate	na
Substrate description	(GP) Anthropogenic fill, with silt, dark grayish brown, firm-dense, wet, in terminus of inlet
Seep observations	No odor/no sheen; trace of fine brown sediment
Description	Steep, riprap and construction debris bank adjacent to pier/dock with structure
Seep location	Mid-bank at base of former cement truck tumbler? in asphalt concrete rubble w/gravel
LDW-SP-56	
Flow rate	na
Substrate description	(GP/SM) gravel with silty sand, 50% rounded pebbles to large concrete riprap, 40% fine-to-medium sand, 10% silty muck surface, firm, wet
Seep observations	No odor/no sheen
Description	Steep riprap bank in inlet channel, gravelly channel seep
Seep location	Mid-bank in steep riprap below vegetation and stacked drums

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-57	
Flow rate	High
Substrate description	(GP) 95% gravel rounded and crushed to 2 in, riprap, medium, wet
Seep observations	No odor/no sheen trace of brown sediment
Description	Moderate sloping riprap at 1st Ave bridge pilings over river bank sediment; strong seep from toe of riprap
Seep location	Mid-bank, among bridge caisson/pilings, vegetated levee with roadside guardrail
LDW-SP-58	
Flow rate	Medium-low
Substrate description	(SM) 75% fine-to-coarse sand, 25% silty, firm-loose, wet, broken pilings along bank
Seep observations	No sheen/no odor, trace of gray sediment
Description	Sand berm fencing with geotextile collapse above slump at seep, broad and shallow with narrow channels
Seep location	Low bank above tributary stream, below sand ledge at roadway/guardrail, former pilings to the right and left
LDW-SP-59	
Flow rate	Medium-low
Substrate description	(SM/GP) silty sand with gravel, 60% fine-to-medium sand, 20% silty, 20% round angular gravel (fill), loose, wet
Seep observations	No sheen/no odor, trace of gray sediment
Description	Beneath roadway bridge, slump of fill sand and gravel; seep weeps from broad 15-ft slump, forms multiple channels
Seep location	Low bank above tributary stream, below sand ledge at roadway/guardrail, former pilings to the right and left
LDW-SP-60	
Flow rate	Medium-low
Substrate description	(SM) silty sand, dark grayish brown, 70% fine-to-medium sand, 40% silty muck, soft-loose, wet, below small brick riprap and pier debris
Seep observations	No sheen/no odor, trace of gray sediment
Description	Low sloping riverbed with sand below riprap and pilings, collapsing decking overhead
Seep location	Mid-bank at riprap toe over silty beach sand below decrepit dock/pilings, little flow to multiple channels
LDW-SP-61	
Flow rate	Medium-high
Substrate description	(ML) 100% dark gray w/brown river muck, trace of fine sand, very soft, wet, below gravel/riprap and debris
Seep observations	Water dark yellow w/black sediment and floating black organic silt/clay (muck), sulfide odor
Description	Low flat riverbank below steep riprap w/log snags, drum and rebar in riprap
Seep location	Very low bank, in river bed, spring-like flow, dark organic fines, strong flow from broad area of seeps w/multiple channels in soft muck

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-62	
Flow rate	Low
Substrate description	(GP/ML) gravel and silt, 50% gravel grading to riprap in matrix of muck with trace of sand, dark gray to brown, stiff, wet
Seep observations	No odor/ no sheen, trace of brown sediment
Description	Low sloping river bank sediments below riprap, concrete and rock, vegetated levee
Seep location	Mid-bank at base of riprap over riverbank, very slow flow, one narrow channel
LDW-SP-63	
Flow rate	Medium
Substrate description	(ML/SM) silty with sand, 60% silty muck, 40% firm to medium sand, trace of gravel to 1 in, soft-firm, wet, some rust-color slime over gravel
Seep observations	No odor/no sheen, slime, trace of floating orange organics
Description	Steep riprap over bank
Seep location	Low bank, toe of large concrete riprap over river bank sediments, between piles
LDW-SP-64	
Flow rate	Medium
Substrate description	(SM/GP) silty sand w/gravel, 60% fine-to-coarse sand, 20% rounded pebbles to crushed rock in riprap, 20% silty muck; firm, wet; trace of shells/barnacle detritus
Seep observations	No odor/no sheen, light brownish yellow
Description	Steep riprap rock overlain by crushed rock top w/vegetation and fence at silos
Seep location	Low bank at toe of riprap, contact w/riverbank silts and sand (slow/small seep)
LDW-SP-65	
Flow rate	Low
Substrate description	(GP/SM) silty sand w/gravel, dark gray to brown, 60% sand fine-to-coarse, 20% silty muck w/20% crushed gravel to fine; firm, wet
Seep observations	No odor/ no sheen, clear to trace of brown sediment
Description	Top of low tide riverbank, base of riprap, small low flow seep to single channel, about 4 in wide
Seep location	Low bank at toe of crushed rock riprap topped with lobe of concrete, vegetation, and fence
LDW-SP-66	
Flow rate	Medium-high
Substrate description	(SP/GM) gravelly sand with silt, 50% fine-to-coarse sand, 25% pebbles to large riprap rock, 25% silty river sediment, dark to medium brown, firm to loose, wet
Seep observations	No odor/ no sheen, trace of brown sediment
Description	Low sloping gravelly beach over river low tide mud flat, strong seep from 20 ft wide weepy area, forms 10-in wide cutting channel
Seep location	Lower beach strand at river bar low tide muck

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-67	
Flow rate	High
Substrate description	(GP) gravel (brick riprap) w/ 5% sand, 5% muck, dense, wet (seep strong from brick pile)
Seep observations	No sheen/no odor, trace of gray sediment
Description	Steep brick riprap over flat tidal flat to Kellogg Island
Seep location	Very low bank, top of tidal flat, base of brick riprap, strong flowing channelized, meanders 100 ft to river
LDW-SP-68	
Flow rate	Medium-low
Substrate description	(SM/GP) shelly silty sand w/crushed brick, 60% fine-to-medium sand, 20% red brick, 10% silty black muck, 10% white broken shells, firm/medium, wet
Seep observations	No odor/no sheen, clear to trace of brown sediment
Description	Low sloping sands mix w/ brick collapse from above log snags topped w/steep brick and log wall with trees and canes
Seep location	Mid-bank at base of brick riprap and log wall, broad weep zone to 50 ft wide, forms several shallow low flow channels
LDW-SP-69	
Flow rate	Medium-low
Substrate description	(ML) 100% silty muck, w/drift logs, trace of shells, very soft, dark gray w/brown surface, wet
Seep observations	No sheen/no odor, trace of gray sediment
Description	100 ft of natural low-loping mud and drift log bank to lowland vegetation/trees
Seep location	Very low bank, about 100 ft from vegetation/fence; springs from below log jam in muck
LDW-SP-70	
Flow rate	Medium-high
Substrate description	(GP) 95% rounded gravel w/brick, 5% sand, gray to brown, loose, wet (fill behind wall)
Seep observations	No odor/no sheen, clear
Description	Low sloping sands to steel wall w/pilings; strong “waterfall” seep onto beach sands
Seep location	Mid-bank from hole in steel plate wall below deck w/structure
LDW-SP-71	
Flow rate	Medium-low
Substrate description	(SM) silty sand at riprap pile, 80% firm medium sand, 20% silty, firm/medium dense, wet
Seep observations	No odor/no sheen, trace of fine gray silt, *Fucus* algae at pilings
Description	Low sloping beach over broad river bank
Seep location	Mid-bank at riprap outcrop in beach sands, with multiple pilings, medium flow seep, channels to 6 in
LDW-SP-72	
Flow rate	Medium
Substrate description	85% riprap covered partially with concrete flows, 5% gravel, 10% coarse to medium sand
Seep observations	No odor/no sheen, slight yellow color
Description	Steep concrete covered riprap, small trees and vegetation at top of bank, *Fucus* and green on riprap
Seep location	Seep flows from toe of riprap bank

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-73	
Flow rate	Medium-low
Substrate description	(SP) 95% medium to fine sand, dark gray, loose, wet, cover peat ledge to 2-ft thick
Seep observations	No odor/no sheen, clear to trace of gray sediment, trace of foamy bubbles
Description	Low sloping broad beach w/peat, construction debris and fill gravel at low bank
Seep location	Mid- to upper bank above peat ledge, large area of weeping seep (about 100 ft linear) above peat shelf
LDW-SP-74	
Flow rate	Medium
Substrate description	(SM) dark gray to brown silty sand, 60% fine-to-medium sand, 30% silty w/10% crushed gravel at riprap, loose, wet
Seep observations	No odor/no sheen, yellowish color, trace of gray sediment
Description	Low sloping natural bank topped with gravel and riprap to road
Seep location	Very low bank, channel from broad weeping area to 100 ft in former slip?/cove below public access park
LDW-SP-75	
Flow rate	Medium-low
Substrate description	Riprap (90%), silty medium sand (10%)`
Seep observations	No odor, no sheen, pale yellowish color, some suspended fines (minimal)
Description	Moderately sloped riprap w/Fucus
Seep location	Seep flows from base of riprap
LDW-SP-76	
Flow rate	Low
Substrate description	(GP/SM) gravel w/silty sand, 70% rounded gravel to 2 in., 20% fine-to-medium sand, 10% silty, loose, wet
Seep observations	No odor/no sheen, light yellow color, trace of sediment
Description	Low sloping gravel below wooden broken shoreline
Seep location	Low bank at pilings below collapsed decking; low flow from small weeping area about 10 ft across
LDW-SP-77	
Flow rate	Medium
Substrate description	Pipes, wood planks, metal debris, cut-off piling; medium sand, gravel (fill gravel 2-3 in), cobble and riprap
Seep observations	No odor/no sheen, clear sample
Description	Large (8 x 10 ft) concrete structure w/moderate slope riprap/concrete/gravel surrounding
Seep location	Seep flows from base of concrete structure from which a large metal pipe extends into waterway
LDW-SP-78	
Flow rate	Medium
Substrate description	(GP/SM) 15% silty sand, some gravel (5%), riprap bank (80%)
Seep observations	No odor/no sheen, clear sample
Description	Moderate slope, riprap, concrete chunks w/ *Fucus* and green algae
Seep location	Seep located lower mid-bank in concrete/riprap w/trace of gravel

SEEP LOCATION ID	OBSERVATIONS[a, b]
LDW-SP-79	
Flow rate	Medium
Substrate description	(GP/ML) 80% gravel rounded to 2 in, 20% dark gray silt (muck), loose, wet
Seep observations	No sheen/no odor, trace of gray sediment
Description	Moderate to steep riprap slope w/multiple cut-off pilings, vegetated top w/tractor trailer parking
Seep location	Low bank, toe of riprap at cutoff piling w/*Fucus* algae (low flowing small seep)
LDW-SP-80	
Flow rate	Medium
Substrate description	(GP/SM) gravel w/silty sand, dark gray-brown, 50% gravel riprap, 25% silt, 25% fine-to-medium sand, loose, wet
Seep observations	No odor/no sheen, clear
Description	Steep bank, cut edge of peat to 5 ft overlain w/large riprap topped w/industrial yard (concrete? gypsum?)
Seep location	Mid-bank above peat shelf to 5 ft, seep at toe of riprap
LDW-SP-81	
Flow rate	Medium
Substrate description	(GP w/SM) 90% concrete and brick riprap, with 10% silty sand (dark gray to brown, loose, wet
Seep observations	No sheen/no odor, trace of gray sediment
Description	Steep riprap bank, gravel and brick
Seep location	Mid-bank, small steady seep in concrete-brick riprap
LDW-SP-82	
Flow rate	Medium-high
Substrate description	(GP/SM) 60% pebbles to cobbles to 2 in, 20% fine-to-medium sand, 20% silty loose, wet with *Fucus* algae
Seep observations	No odor/no sheen; trace of gray sediment
Description	Broad bank of sand/gravel to 25 ft overlain (steeply) by pavement slabs as riprap
Seep location	Mid-bank, moderate spring-like from 5-ft-wide area in sand and gravel

Note: Observations were made by Tim Fitzgerald in the second boat, except for flow rate observations, which were made by Windward personnel in the first boat

[a] All percentages are field-estimated

[b] Flow rate is defined as low if seep could be sampled, but had a very low flow, whereas flow rate was defined as high if the flow resulted in a significant rivulet and flow was strong

GP – poorly sorted gravel

ML -- silt

SP – poorly sorted sand

SM – silty sand

GM – silty gravel

muck – organic-rich silt and clay

APPENDIX B. RAINFALL DATA AND ASSOCIATED SEASONAL CHANGES IN GROUNDWATER ELEVATIONS

Appendix B. Rainfall Data and Associated Seasonal Changes in Groundwater Elevations

Rainfall during the spring of 2004 was lower than the most recent 16-yr average (Figure B-1). Thus, some stakeholders expressed concern that some seeps may not have been observed this spring because of the drier than normal conditions, particularly in February, March, and April. To assess this concern, available rainfall and groundwater level data from 1994-1995 and from this year were evaluated, as discussed below.

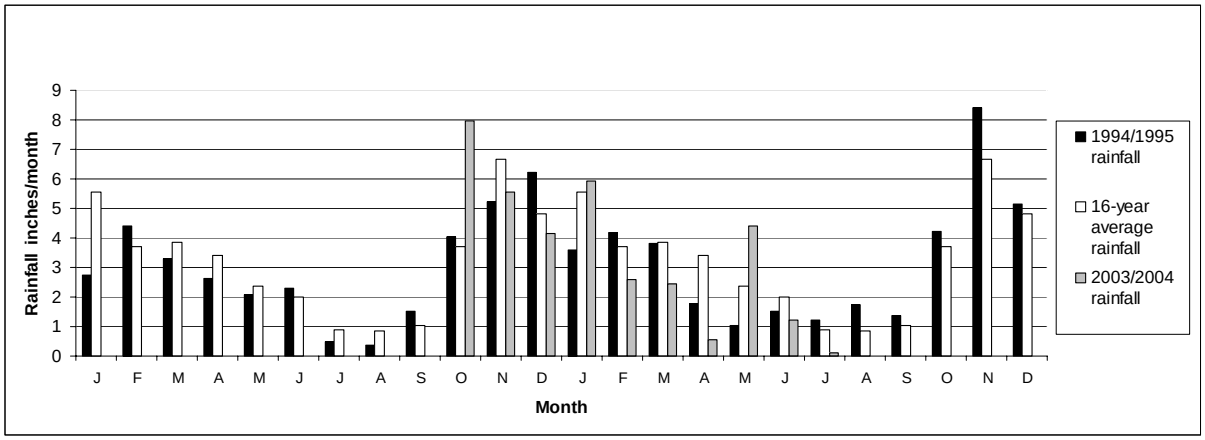


Figure B-1. Monthly rainfall at Auburn, Washington in 1994/1995 and 2003/2004 relative to the 16-year average

Figure B-1 presents rainfall data for January 1994-December 1995, October 2003-July 2004, and the 16-yr average from King County's rain gage in Auburn.[1] Rainfall was substantially higher than the 16-yr average in October 2003 and May 2004,[2] but lower in February, March, April, June, and July of 2004. Table B-1 shows cumulative rainfall for February through April and October through July for 1994/1995, 2003/2004, and the 16-yr average. The cumulative rainfall from October 2003 through July 2004 was 2.1 inches lower than the 16-yr average.

[1] The 16-yr average in Auburn will not necessarily match the rainfall average in LDW due to variations in rainfall by subbasin. However, the relative differences should be indicative of those in the LDW

[2] May 2004 rainfall was almost twice the 16-year average rainfall for May.

Table B-1. Cumulative rainfall (inches) at Auburn, Washington in 1994/1995 and 2003/2004 relative to the 16-year average

YEAR	FEBRUARY TO APRIL	OCTOBER TO JULY
1994/1995	10.0	32.6
2003/2004	5.6	34.9
16-year average	9.8	37.0

The seasonal variations in groundwater levels were evaluated using data from 1994 and 1995 collected as part of the Boeing Plant 2 Comprehensive Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI; Weston 1998). Two groundwater monitoring wells, located in the northern (PL2 -270A) and southern (PL2-319A) portion of the facility, were selected for this analysis. These monitoring wells are located along the eastern edge of the Plant 2 facility where tidal effects are negligible. The RFI report presents the groundwater elevations for September 1994, March 1995, August 1995, and November 1995. As shown in Table B-2, groundwater elevations varied by about 1.5-2.0 ft seasonally in each monitoring well. The groundwater elevations measured in March 2004 were 8-11 in. less than levels measured in March 1995.

Table B-2. Groundwater elevations at Boeing Plant 2 monitoring wells

MONITORING WELL	GROUNDWATER ELEVATION (ft above MLLW)[a]				
	SEPTEMBER 1994	MARCH 1995	AUGUST 1995	NOVEMBER 1995	MARCH 2004
PL2-270A	7.9	9.4	8.0	8.7	8.6
PL2-319A	9.0	10.9	9.4	9.8	9.9

[a] Groundwater elevations were adjusted to MLLW by adding 6.1 ft to the NGVD 29 references used in the RFI report (Weston 1998).

Most of the seeps observed during the reconnaissance survey were emerging in the mid-to-lower intertidal zone. Based on the groundwater elevations of 8.6 to 9.9 ft relative to MLLW measured in March 2004, and the relatively minor seasonal variations in groundwater elevation in 1994-1995, it is not expected that groundwater levels in May 2004 would have been so low that seeps within the intertidal zone would be dry. Therefore, it does not appear that the lower than normal rainfall this spring would have had a significant effect on the ability to identify or sample seeps.

REFERENCE

Weston. 1998. Human health and environmental evaluation, RCRA facility investigation, Duwamish Waterway sediment, Boeing Plant 2, Seattle/Tukwila, Washington. Roy F. Weston, Inc., Seattle, WA.

APPENDIX C: CHAIN OF CUSTODY FORMS

1 of 1 GU26

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1112

Project/Client Name: LDW-Seep Sampling
Windward Project No:
Contact Name: Ben Bergquist
Sampled By: RAC + BB

Ship to: ARI
Attn: Sue Dunnihoo
Shipping address: hand delivered

Shipping Date: 6/29/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					PCBs/Pest(s)	SVOCs (1)	VOCs (3)	TSS (1)	TOC (1)	DOC (1)		
6/29/04	0840	LDW-SP-71-C-F	5	H2O	X	X				X		Filter
	0840	LDW-SP-71-C-U	9		X	X	X	X	X			
	1030	LDW-SP-76-C-F	5		X	X				X		Filter
	1030	LDW-SP-76-C-U	9		X	X	X	X	X			
	1300	LDW-SP-69-C-F	5		X	X				X		Filter
6/29/04	1300	LDW-SP-69-C-U	9	H2O	X	X	X	X	X			
Total Number of Containers			42	Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Florer	JEFF HANSEN	Print name:	
Signature: J. Florer		Signature:	
Company: Windward	Company: ART	Company:	Company:
Date/Time: 6/29/04 1450	Date/Time: 6/29/04 1450	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
● 200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

12,108

To be completed by Laboratory upon sample receipt:

Date of receipt: 06/29/2004	Laboratory W.O. #:
Condition upon receipt: c	Time of receipt:
Cooler temperature:	Received by:

1 of 1

1.0/4.4/4.6

2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1115

Project/Client Name: LDW Seep Sampling
Windward Project No:
Contact Name: Berit Berquist / Joanna Flora
Sampled By: RAC, JMF, BB

Ship to: ARI
Attn: Sue Dunnihoo
Shipping address: hand delivered

Shipping Date: 6/30/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	TSS 1-1L	PCB/Pest 3-1L	SVOC 2-500mL	TOC 1-250mL	DOC 1-250mL	VOC 3-40mL	TPH-D 2-500mL	TPH-G 2-40mL	Comments / Instructions [Jar tag number(s)]
6/30/04	0730	LDW-SP-48-C-U	~~10~~ 10	H_2O	X	X	X	X		X			
	0730	LDW-SP-48-C-F	6			X	X		X				Filter prior analysis
	0945	LDW-SP-~~48~~54-C-U	14		X	X	X	X		X	X	X	
	0945	LDW-SP-54-C-F	~~6~~ 8			X	X		X		X		Filter prior analysis
1225	~~1225~~	LDW-SP-82-C-U	10		X	X	X	X		X			
	1225	LDW-SP-82-C-F	6			X	X		X				Filter
	1225	LDW-SP-82-C-FD-U	10		X	X	X	X		X			
6/30/04	1225	LDW-SP-82-C-FD-F	6	H_2O		X	X		X				Filter

Total Number of Containers [ ] Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Flor	[signature] E. Branson	Print name:	
Signature: J. Flora	Company: ARI	Signature:	Company:
Company: Windward	Date/Time: 6/30/04 - 1517	Company:	Date/Time:
Date/Time: 6/30/04 1517		Date/Time:	

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Windward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

3.5, 4.5, 5.0, 4.0, 4.5,
4.0, 3.5, 5.5, 6.0°C

1 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1117

Project/Client Name: LDW-Seep Sampling
Windward Project No:
Contact Name: Beri+Bergquist
Sampled By: RAC, BB, JMF

Ship to: ARI
Attn: Sue Dunnihoo hand delivered
Shipping address:

Shipping Date: 7/1/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)								Comments / Instructions [Jar tag number(s)]
					TSS (1-1L)	TOC (1-250)	DOC (1-250)	PCB/Pest (3-1L)	VOC (3-40ml)	SVOC (2-500ml)	TPH-D (2-40ml)	TPH-G (2-40ml)	
7/1/04	8:45	LDW-SP-10-C-F	8	H_2O			X	X		X	X		Filter prior to analysis
7/1/04	9:15	LDW-SP-12-C-F	8				X	X		X	X		
7/1/04	10:45	LDW-SP-20-C-F	8				X	X		X	X		
7/1/04	12:00	LDW-SP-41-C-F	8				X	X		X	X		
7/1/04	12:00	LDW-SP-41-C-MS-F	8				X	X		X	X		
7/1/04	12:00	LDW-SP-41-C-MSD-F	8				X	X		X	X		Filter prior to analysis
~~7/1/04~~	~~8:45~~	~~LDW-SP-10-C-U~~			X	X		X	X	X	X	X	
7/1/04	9:15	LDW-SP-12-C-U	13		X	X		X	X	X	X	X	
7/1/04	10:45	LDW-SP-20-C-U	13		X	X		X	X	X	X	X	
7/1/04	12:00	LDW-SP-41-C-U	13		X	X		X	X	X	X	X	
7/1/04	12:00	LDW-SP-41-C-MS-U	13		X	X		X	X	X	X	X	
7/1/04	12:00	LDW-SP-41-C-MSD-U	13		X	X		X	X	X	X	X	
				H_2O									

Total Number of Containers

Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Flower	JEFF HAM	Print name:	
Signature: J. Flower		Signature:	
Company: Windward	Company: ARI	Company:	Company:
Date/Time: 7/1/04 1530	Date/Time: 7/1/04 1530	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC

- 200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

2 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1302

Project/Client Name: LDW Seep Sample
Windward Project No:
Contact Name: Berit Bergquist
Sampled By: RAC, BHB, JMF

Ship to: ARI
Attn: Sue Dunnihoo
Shipping address: hand delivered

Shipping Date: 7/1/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)								Comments / Instructions [Jar tag number(s)]
					TSS	TOC	DOC	PCB/Pest	VOC	TPH-G	SVOC	TPH-D	
7/1/04	1330	LDW-SP-39-C-F	8	H_2O			X	X			X	X	Filter
"	0700	LDW-SP-80-C-F	8	"			X	X			X	X	Filter
"	1330	LDW-SP-39-C-U	13	"	X	X		X	X	X	X	X	
7/1/04	0700	LDW-SP-80-C-U	13	H_2O	X	X		X	X	X	X	X	
Total Number of Containers				Purchase Order / Statement of Work #									

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Floor	Print name: Jeff Ham	Print name:	
Signature:	Signature:	Signature:	
Company: Windward	Company: ARI	Company:	Company:
Date/Time: 7/1/04 1530	Date/Time: 7/1/04 1530	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Wind Ward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

1 of 1

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1269

Project/Client Name: LDW-Seep Sampling
Windward Project No:
Contact Name: Berit Berquist
Sampled By: JMF, RAC, BAB, TND

Ship to: ARI
Attn: Sue Dunnihoo
Shipping address: hand delivered

Shipping Date: 7/2/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	TSS (1)	TOC (1)	PCB/Pest (3)	SVOC (2)	VOC (3)	DOC (1)	TPH-G (2)	TPH-D (2)	Comments / Instructions [Jar tag number(s)]
7/2/04	~~1030~~	~~LDW-SP-62-C-U~~	~~3~~	~~H_2O~~					X				
	1030	LDW-SP-62-C-F	~~8~~ 9 6	H_2O			X	X	X no	X			Filter
	1100	LDW-SP-61-C-U	11		X	X	X	X	X				
	1100	LDW-SP-61-C-F	6				X	X		X	X no		Filter
		~~LDW-SP-62-C-AB~~											
	1220	LDW-SP-64-C-U	6		no	no	X 1	X	X 2		X 1	X no	Only 3-40mL for both TPH + VOC
	1220	LDW-SP-64-C-F	~~8~~ 8				X	X		X		X	
	1340	LDW-SP-69-C-U	4								X ~~no~~ yes	X	
7/2/04	1340	LDW-SP-69-C-F	2	H_2O							X no	X	Filter

Hold until 7/3

Total Number of Containers | Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name:	[signature]	Print name:	
Signature:	Company: ARI	Signature:	Company:
Company:		Company:	
Date/Time:	Date/Time: 7/2/04 1530	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Windward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

To be completed by Laboratory upon sample receipt:

Date of receipt: 7/2/04	Laboratory W.O. #: GU74
Condition upon receipt: OK	Time of receipt:
Cooler temperature: 5.5	Received by:

3.0/5.0

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested:
ARI Client Company: Windward Environmental	Phone: 206-577-1294
Client Contact: Berit Berquist	
Client Project Name: LDW-SeepSampling	
Client Project #:	Samplers: RAC, BAB, JMF

Date: 7/3/04
Page: 1 of 1
No. of Coolers: Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	PCB/Pest (3-1L)	SVOC (2-500mL)	VOC (3-40mL)	TPH-D (2-500mL)	TSS (1-1L)	TOC (1-250mL)	DOC (1-250mL)		Notes/Comments
LDW-SP-75-C-U	7/3/04	1030	H_2O	10	X	X	X		X	X			
LDW-SP-75-C-MS/MSD-U		1030		3	X								
LDW-SP-75-C-F		1030		6	X	X					X		Filter
LDW-SP-75-C-MS/MSD-F		1030		3	X								Filter
LDW-SP-64-RB-S-U		1300		7	X	X		X					
LDW-SP-64-RB-MP-U	7/3/04	1230	H_2O	7	X	X		X					

Comments/Special Instructions
Please filter + analyze LDW-SP-64-C-F samples submitted on 7/2/04 + analyze LDW-SP-64-C-U samples also submitted 7/2/04

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	J. Florer			
Printed Name:	Joanna Florer	Eric Branson		
Company:	Windward Env.	ART		
Date & Time:	7/3/04 1510	7/3/04 1510		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alernate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: GX14	Turn-around Requested: ✓	Date: 7/30/04	
ARI Client Company: Windward Env.	Phone: 206 378-1364	Page: 1 of 1	
Client Contact: Bent Berquist	(206 577-1291)	No. of Coolers: 1	Cooler Temps: 14°C
Client Project Name: LDW-Seep Sampling			
Client Project #:	Samplers: JMF, TJD		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOAs								Notes/Comments
7/30													
LDW-SP-10-C-U	7/30/04	1100	H_2O	3	X								
LDW-SP-62-C-U	7/30/04	1130	H_2O	3	X								
Trip blank	~~7/30~~/04 7/26/04	—	H_2O	1	X								

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Joanna Flaver	Printed Name: S. DUNNIHOO	Printed Name:	Printed Name:
	Company: Windward	Company: ARI	Company:	Company:
	Date & Time: 7/30/04 1830	Date & Time: 07/30/2004 1830	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alernate retention schedules have been established by work-order or contract.

1 of 1

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1113

Project/Client Name: LDW-Seep Sampling
Ship to: Frontier
Windward Project No:
Attn: Russell
Shipping Date: 6/29/04
Contact Name: Berit Berquist
Shipping address: hand delivered
Airbill Number:
Sampled By: RA C + BB

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) Mercury	Metals						Comments / Instructions [Jar tag number(s)]
6/29/04	13:00	LDW-SP-69-C-F	2	H_2O	X	X	AL-C-8218 / FGS-B-405					filter and fix
	13:00	LDW-SP-69-C-U	2		X	X	AL-C-505 / FGS-B-1017					
	8:40	LDW-SP-71-C-F	2		X	X	AL-C-2852 / FGS-C-046					filter and fix
	8:40	LDW-SP-71-C-U	2		X	X	AL-C-872 / FGS-B-1100					
	10:30	LDW-SP-76-C-F	2		X	X	AL-C-2191 / FGS-B-917					filter and fix
	10:30	LDW-SP-76-C-U	2	H_2O	X	X	AL-C-2691 / FGS-B-1129					
6/29/04	13:00	LDW-SP-69-C-AB	1	H_2O	X		FGS-B-558					

Total Number of Containers: 13
Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Florer	Barry Hodge	Print name:	
Signature: J. Florer		Signature:	
Company: Windward	Company: Frontier Geosciences	Company:	Company:
Date/Time: 6/29/04 1545	Date/Time: 6-29-04 / 1545	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.
* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Windward environmental LLC
• 200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

VTSR: 1545
Cooler temp: 2.0°C
Hand-delivered

To be completed by Laboratory upon sample receipt:

1 of 1

Windward Environmental

Pm: Frank

9

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1114

Project/Client Name: LDW-Seep Sampling
Windward Project No:
Contact Name: Bent Berqui
Sampled By: JMF, RAC, BB

Ship to: Frontier
Attn: Frank Colich
Shipping address: hand delivered

Shipping Date: 6/30/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required): Mercury	Metals	Hg Bottle	Hg Bottle		TM		Comments / Instructions [Jar tag number(s)]
6/30/04	0730	LDW-SP-48-C-U (T)	2	H_2O	X	X	CLB	820		ALC	883	
	0730	LDW-SP-48-C-F (D)*	2		X	X	CLB	805		ALC	495	Filter Hg
	0945	LDW-SP-54-C-U (T)	2		X	X	FGS-B	870*				*
	0945	LDW-SP-54-C-F (D)*	2		X	X	CLB-	636		ALC	2465	Filter Hg
	1225	LDW-SP-82-C-U (T)	2		X	X	FGS-B	579		ALC	2357	
		LDW-SP-82-C-F (D)*	2		X	X	VC	26		~~ALC~~	~~510~~	Filter Hg ALC-2912
		LDW-SP-82-C-FD-U (T)	2		X	X	CMC	166		ALC	510	**
		LDW-SP-82-C-FD-F (D)*	2		X	X	FGS-B	1087		ALC	2746	Filter Hg
6/30/04	1225	LDW-SP-82-C-AB (T)	1	H_2O	X		CLB	612				CLB-612

Total Number of Containers: 17

Purchase Order / Statement of Work #

1) Released by: Joanna Florer
Print name: J. Floor
Signature:
Company: Windward
Date/Time: 6/30/04 1605

1) Rec'd by: Cliff Pett Chrissy Pruett
Company: Frontier
Date/Time: 6/30/04 415

2) Released by: * Bag not labeled w/ site
Print name:
Signature:
Company: ** Bag ID Bottle labeled "LDW-SP-82-CF"
Date/Time:

1) Rec'd by: Melissa Ottearn
Frontier 6.30.04 16:45
Company:
Temp: 0.6°C
Date/Time:
VTSR: 1610

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

* - TM filtered in field; Hg (to be) filtered in lab

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory WO #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Windward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

1 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1116

Project/Client Name: LDW-Seep Sampling
Windward Project No:
Contact Name: Bert Berquist
Sampled By: RAC, BB, JMF

Ship to: Frontier
Attn: Frank Colich
Shipping address: Hand delivered

Shipping Date: 7/1/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) Mercury	Metals						Comments / Instructions [Jar tag number(s)]
7/1/04	8:45	LDW-SP-10-C-F	2	H_2O	X	X	AL-C-2572	FGS-B-1147				filter + fix Hg (dissolved)
7/1/04	9:15	LDW-SP-12-C-F	2		X	X	AL-C-2891	FGS-B-091				↓
7/1/04	10:45	LDW-SP-20-C-F	2		X	X	AL-C-2419	FGS-B-682				
7/1/04	12:00	LDW-SP-41-C-F	2		X	X	AL-C-2042	FGS-B-459				filter + fix Hg
~~7/1/04~~	~~12:00~~	~~LDW-SP-41-C-MS-F~~	~~2~~									Please discard - DO
~~7/1/04~~	~~12:00~~	~~LDW-SP-41-C-MSD-F~~	~~2~~		~~X~~							not analyze
~~7/1/04~~	~~8:45~~	~~LDW-SP-10-C-U~~	~~2~~		~~X~~	~~X~~						~~Totals~~
7/1/04	9:15	LDW-SP-12-C-U	2		X	X	AL-C-2590	FGS-B-1075				totals
7/1/04	10:45	LDW-SP-20-C-U	2		X	X	AL-C-1772	FGS-B-694				totals
7/1/04	12:00	LDW-SP-41-C-U	2		X	X	AL-C-2831	FGS-B-797				Totals
~~7/1/04~~	~~12:00~~	~~LDW-SP-41-C-MS-U~~	~~2~~									↓
~~7/1/04~~	~~12:00~~	~~LDW-SP-41-C-MSD-U~~	~~2~~									Please discard - DO
				H_2O								not analyze
Total Number of Containers				Purchase Order / Statement of Work #								

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Florer	Barry Hodge / FGS	Print name:	
Signature: J. Florer	Company: Frontier Geosciences	Signature:	Company:
Company: Windward	Date/Time: 7-1-04 / 1630	Company:	Date/Time:
Date/Time: 7/1/04 1630		Date/Time:	

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

Windward environmental LLC
• 200 West Mercer Street * Hand delivered *
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

Cooler temp. 0.0 °C

To be completed by Laboratory upon sample receipt:

[redacted]

2 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1301

Project/Client Name: LDW-Seep Sampling
Windward Project No:
Contact Name: Berit Bergquist
Sampled By: RAC, BMB, JMF

Ship to: Frontier
Attn: Frank Colich
Shipping address: hand delivered

Shipping Date: 7/1/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required)							Comments / Instructions [Jar tag number(s)]
					Total Mercury	Total Metals	Dissolved Metals	Dissolved Mercury				
7/1/04	0700	LDW-SP-80-C-F	2	H_2O			X	X	AZ-C-2467/FGS-B-211			
	0700	LDW-SP-80-C-U	2		X	X			AZ-C-3198/FGS-B-509			
	0700	LDW-SP-80-C-AB-U	1		X				FGS-B-606			
	1045	LDW-SP-20-C-AB-U	1		X				FGS-B-949			
	1330	LDW-SP-39-C-F	2				X	X				
7/1/04	1330	LDW-SP-39-C-U	2	H_2O	X	X						

Total Number of Containers | Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Florer	Barry Hodge - FGS	Print name:	
Signature: J. Florer		Signature:	
Company: Windward	Company: Frontier Geosciences	Company:	Company:
Date/Time: 7/1/04 1630	Date/Time: 7-1-04 / 1630	Date/Time:	Date/Time:

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

* - sent to APL; will arrive 7-2-04

* Hand delivered *

Cooler temp: 0.0°C

To be completed by Laboratory upon sample receipt:

Date of Receipt | Laboratory WO #
Condition of Receipt | Time of Receipt
Cooler Temperature | Received by

WindWard environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

2 of 2

Windward Environmental

CHAIN-OF-CUSTODY/TEST REQUEST FORM

1301

Project/Client Name: LDW-Seep Sampling
Windward Project No:
Contact Name: Berit Berquist
Sampled By: RAC, BAB, JMF

Ship to: Frontier
Attn: Frank Colich
Shipping address: hand delivered

Shipping Date: 7/1/04
Airbill Number:

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required): Total Mercury	Total Metals	Dissolved Metals	Dissolved Mercury				Comments / Instructions [Jar tag number(s)]
~~7/1/04~~	~~0700~~	~~LDW-SP-80-C-F~~	~~2~~	~~H_2O~~			~~X~~	~~X~~	~~AL-C-2[illegible]/FGS-B-[illegible]~~			
~~|~~	~~0700~~	~~LDW-SP-80-C-U~~	~~2~~	~~|~~	~~X~~	~~X~~			~~AL-C-3[illegible]/FGS-B-[illegible]~~			
~~|~~	~~0700~~	~~LDW-SP-80-C-DB-U~~	~~1~~	~~|~~	~~X~~				~~FGS-B-[illegible]~~			
~~|~~	~~1045~~	~~LDW-SP-20-C-AB-U~~	~~1~~	~~|~~	~~X~~				~~FGS-B-[illegible]~~			
*	1330	LDW-SP-39-C-F	2	|			X	X	AL-C-3008/FGS-B-130			
* 7/1/04	1330	LDW-SP-39-C-U	2	H_2O	X	X			AL-C-2243/AL-C-6902*			
												*-sampled in 500 ml poly (~300 ml); to be transferred to teflon or glass in lab

Total Number of Containers: Purchase Order / Statement of Work #

1) Released by:	1) Rec'd by:	2) Released by:	1) Rec'd by:
Print name: Joanna Florer	~~Bauny Hodges/FGS~~	Print name: samples misdelivered yesterday to ARI; delivered by ARI (by hand)	Bauny Hodges/FGS
Signature: J. Florer	Company: ~~Frontier Geosciences~~	Signature:	Company: Frontier Geosciences
Company: Windward	Date/Time: ~~7-1-04/1630~~	Company:	Date/Time: 7-2-04/1430
Date/Time: 7/1/04 1630		Date/Time:	

* Distribution: White and yellow copies accompany shipment; pink-consignor's copy; white-consignee return with results; yellow-consignee's copy.

VTSR: 1330 Cooler Temp: ÷0.2°C

* Instructions for completion of Chain-of-Custody/Test Request Form on back.

*- Sent to ARI; will arrive 7-2-04

To be completed by Laboratory upon sample receipt:

Date of receipt:	Laboratory WO #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Windward environmental LLC
200 West Mercer Street
Suite 401
Seattle, WA 98119
Tel: 206.378.1364
Fax: 206.217.0089

* Hand delivered *

~~Cooler temp: ÷0.2°C~~

Frontier Geosciences Inc.

Environmental Research & Specialty Analytical Laboratory

414 Pontius Avenue North, Suite B Seattle WA 98109
(206) 622-6960 fax (206) 622-6870 Info@Frontier.WA.com

Chain-of-Custody Record & Laboratory Analysis Request

Date: 7/2/04 Page: 1 of 1

Client Company: Windward
Address:

CONTACT: Berit Bergquist
Phone: 206 577-1291 Fax:
Email:
Project Name: LDW Seep Sample
Contract/PO #:

Frontier Project Manager: Frank Colich
Guaranteed Turnaround Time:
Confirmation of Sample Arrival at Frontier: ☐ YES ☐ NO
Quality Assurance Level: ☐ Standard ☐ High
Disposal*: ☐ Frontier Dispose ☐ Return to Client ☐ Ship to 3rd Party**
*All samples are held for at least 2 months after date of receipt.
Please note that after this time they are disposed of or returned to the client.
Clients may request a longer holding time by writing to the Frontier Project Manager.
**Please discuss this with the Frontier Project Manager.
Carrier Information: FED EX ☐ UPS ☐ Other ☐
Tracking # *Hand delivered*

Engraved Bottle ID	Sample ID	Matrix	# Bottles	Date/Time Sampled	Sample Collected By	Preservation	Analysis Requested/Comments
ALC-654	LDW-SP-62-C-F	H2O	1	7/2/04	BAB, RAC	HNO_3	Dissolved Metals
ALC-336	LDW-SP-62-C-U	H2O	1	7/2/04	BAB, RA	HNO_3	Total Metals
ALC-2253	LDW-SP-61-C-F		1			HNO_3	Dissolved Metals
ALC-926	LDW-SP-64-C-F		1			HNO_3	Dissolved Metals
Hg-459	LDW-SP-62-C-F					—	Dissolved Hg - filter
FGS-C-078	LDW-SP-64-C-F					—	Dissolved Hg - filter
SF-1012	LDW-SP-61-C-U					—	Total Hg
FGS-C-217	LDW-SP-61-C-F					—	Dissolved Hg - filter
FGS-C-092	LDW-SP-62-C-AB					—	Total Hg - Atmospheric blank
						—	~~Total Hg - Atmospheric blank~~

Sample Receipt
C.O.C. Seal Intact? ☐ YES ☐ NO ☒ N/A
Cooler Temperature: 1.0 °C
Comments:

VTSR: 1600

[1]Matrix Codes:
FW = fresh water (salinity < 0.5 ppth)
BW = brackish water
SW = seawater
WW = wastewater
SE = sediment
SO = soil
AT = animal tissue
PT = plant tissue
TR = trap
PP = petroleum product
OT = other

Relinquished by:	Relinquished by:
Print name: Johanna Flower	Print name:
Company: Windward	Company:
Date: 7/2/04 Time: 1615	Date: Time:
Received by: Barry Hodges	Received by:
Print name: Barry Hodges	Print name:
Company: Frontier Geosciences	Company:
Date: 7-2-04 Time: 1615	Date: Time:

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: | Turn-around Requested:

Date: 7/3/04

Client Company: Windward Environmental | Phone: 206-577-1291

Page: 1 of 1

Client Contact: Berit Berquist

No. of Coolers: | Cooler Temps:

Client Project Name: LDW-Seep Sampling

Client Project #: | Samplers: RAG, BAB, JMF

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Total Hg	Total Metals	Dissolved Hg	Dissolved Metals					Notes/Comments
LDW-SP-75-C-U	7/3/04	1030	H_2O	2	X	X			AL-C-3028 / SWF-218				
LDW-SP-75-C-F	"	1030	"	2			X	X	AL-C-129 / FGS-C-24	filter + fix Hg			
LDW-SP-75-C-RB-U	"	1030	"	1	X				FGS-C-106				
LDW-SP-75-C-AB-U	"	1030	"	1	X				FGS-C-902 / ~~FGS-C-106~~ RM 7-3-04				
LDW-SP-64-C-RB-S-U	"	1300	"	2	X	X			AL-C-3093 / SPW-487				
LDW-SP-64-C-RB-MP-U	7/3/04	1230	H_2O	2	X	X			AL-C-2649 / FGS-C-009				

Comments/Special Instructions: LDW-SP-64-C-U + LDW-SP-64-C-F from 7/2/04 ~~can be~~ which were on hold can be analyzed

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature) Berit Berquist	(Signature) Barry Hodges	(Signature)	(Signature)
Printed Name: Berit Berquist	Printed Name: BARRY HODGES	Printed Name:	Printed Name:
Company: Windward Env.	Company: Frontier Geosciences	Company:	Company:
Date & Time: 7/3/04 15:15	Date & Time: 7-3-04 / 1515	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client:*

Hand delivered Cooler Temp: 0.0°C

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

APPENDIX D: FIELD FORMS AND FIELD NOTEBOOKS

D.1 RECONNAISSANCE SURVEY FORMS: SEEP LOCATIONS

D.2 RECONNAISSANCE SURVEY FORMS: WATER QUALITY

D.3 RECONNAISSANCE SURVEY FORMS: SEEP OBSERVATIONS

D.4 SEEP WATER COLLECTION FORMS

D.5 FIELD NOTEBOOKS

D.1 Reconnaissance Survey Forms: Seep Locations

Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW - seep survey **Project Task:** seep recon

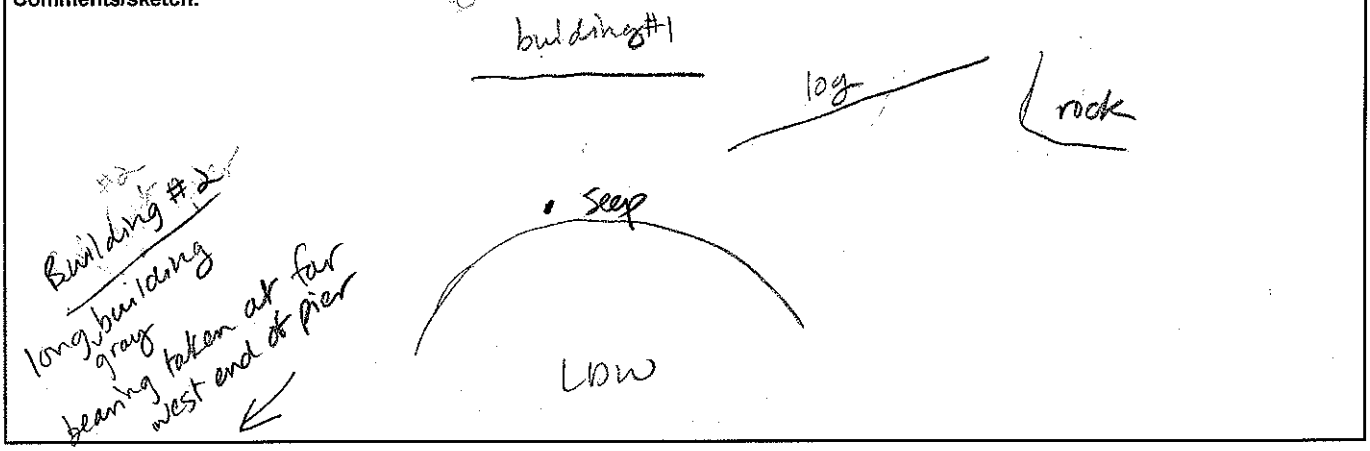
Date: 5/5/09 **Crew:** KG, JF, BB, DH, KT, RT

Weather: Partly cloudy **Photo no.** na

Name of person filling out form: Benit Bergquist

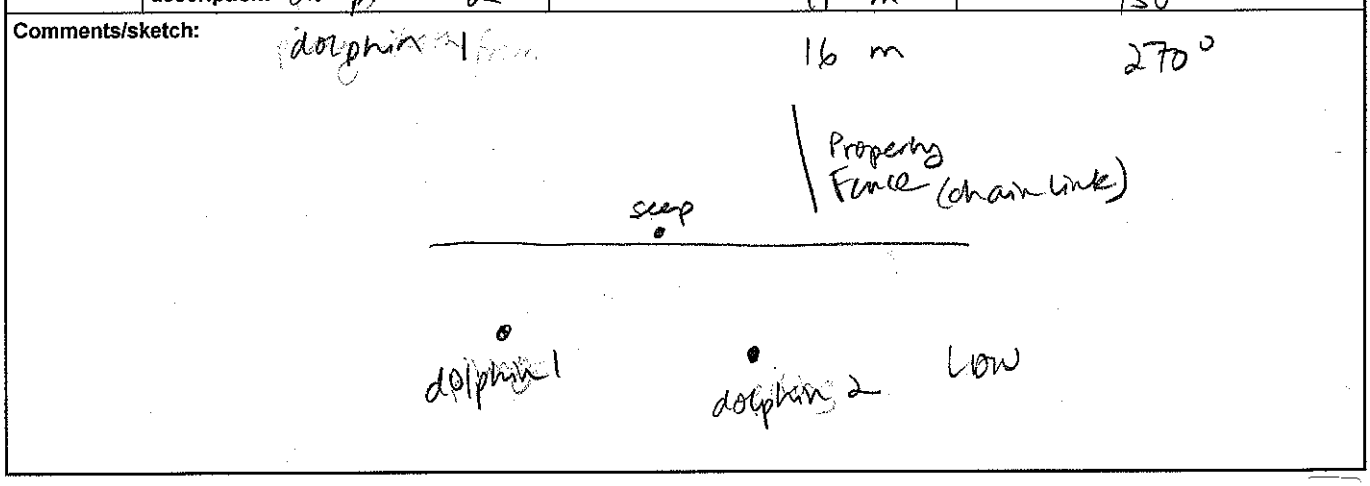
Location ID: LDW-SP-01-R-a		**Time:** 9:55 am		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 19.797		**Northing (y)** 47 32 .6## .598	
Bearing 1:	**Object description:** Building #1	**Distance:** 13 m		**Compass direction**	160°
Bearing 2:	**Object description:** Building #2	**Distance:** 154 m		**Compass direction**	30°

Comments/sketch:



Location ID: LDW-SP-02-R-a		**Time:** 10:10 am		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 19.811		**Northing (y)** 47 32 .404	
Bearing 1:	**Object description:** fence	**Distance:** 14 m		**Compass direction**	85°
Bearing 2:	**Object description:** dolphin 2	**Distance:** 11 m		**Compass direction**	150°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW - seep survey **Project Task:** seep recon

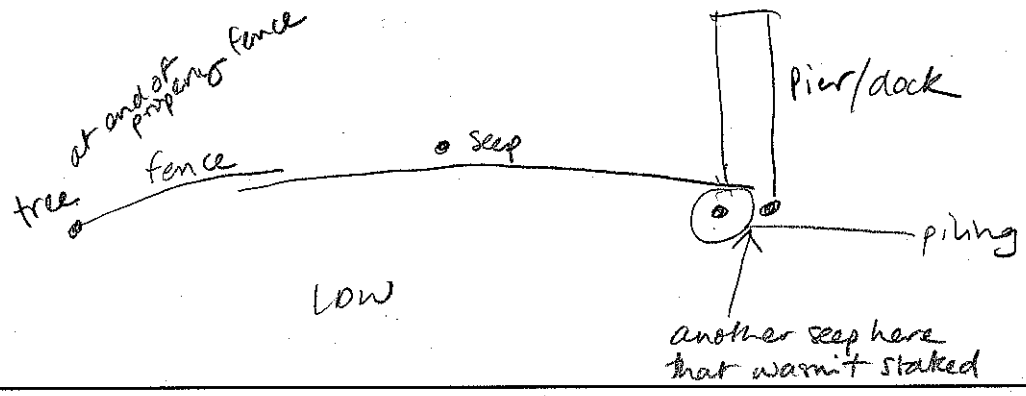
Date: 5/5/09 **Crew:** KG, JF, BB, DH, KT, RT

Weather: partly cloudy **Photo no.** na

Name of person filling out form: Berit Bergquist

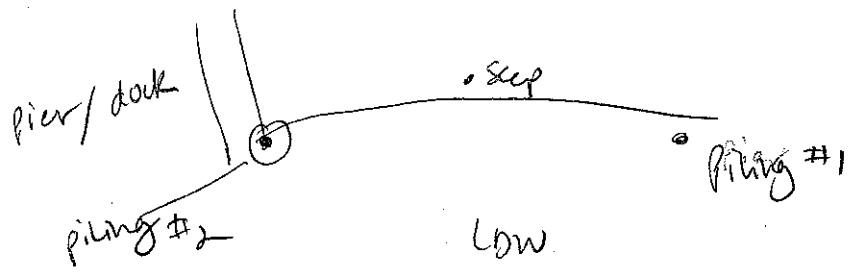
Location ID: LDW-SP-03-R-a		**Time:** 10:15 am		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 19.675		**Northing (y)** 47 32.363	
Bearing 1:	**Object description:** piling	**Distance:** 8 m		**Compass direction**	140
Bearing 2:	**Object description:** tree	**Distance:** 18 m		**Compass direction**	305

Comments/sketch:



Location ID: LDW-SP-04-R-a		**Time:** 10:30 am		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 19.677		**Northing (y)** 47 32.363	
Bearing 1:	**Object description:** piling #1	**Distance:** 6 m		**Compass direction**	220°
Bearing 2:	**Object description:** piling #2	**Distance:** 5 m		**Compass direction**	345

Comments/sketch:



WindWard environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW – seep survey **Project Task:** seep recon

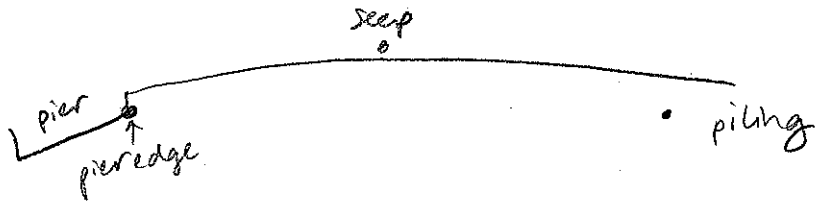
Date: 5/5/04 **Crew:** KG, JF, BB, OH, KT, RT

Weather: partly cloudy **Photo no.** na

Name of person filling out form: Berit Bergquist

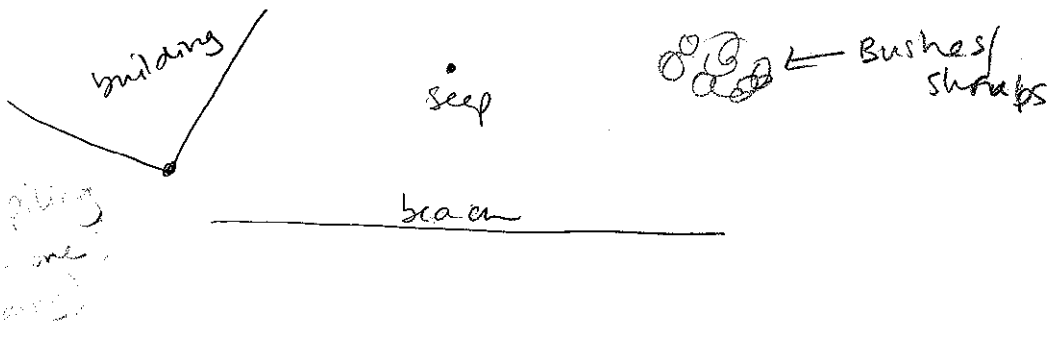
Location ID: LDW-SP-05-R-a	Time: 10:45	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 122 19.546	Northing (y) 47 32.226	
Bearing 1:	Object description: Pier edge	Distance: 31 m	Compass direction 295°
Bearing 2:	Object description: Piling	Distance: 21 m	Compass direction 130°

Comments/sketch:



Location ID: LDW-SP-06-R-a	Time: 11:06	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 122 19.475	Northing (y) 47 32.168	
Bearing 1:	Object description: Building	Distance: 18 m	Compass direction 70°
Bearing 2:	Object description: Bushes/shrubs	Distance: 56 m	Compass direction 330°

Comments/sketch:



Wind Ward LLC environmental

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

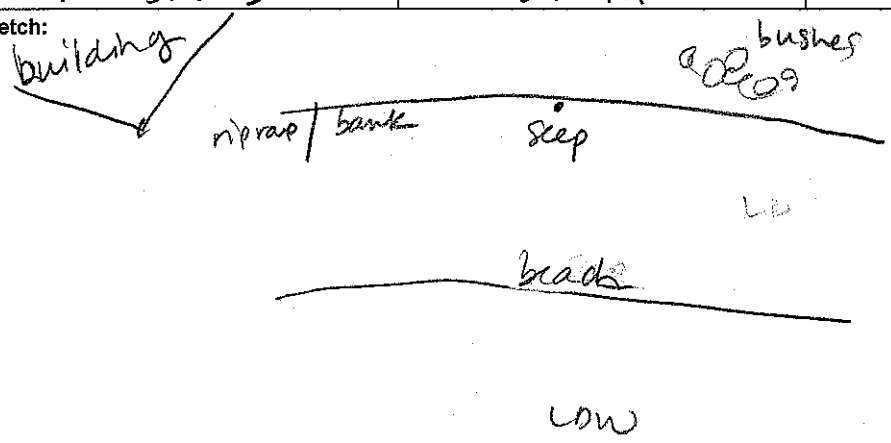
Date: 5/5/04 **Crew:** KG, JF, BB, DH, KT, RT

Weather: partly cloudy **Photo no.** na

Name of person filling out form: Benit Bergquist

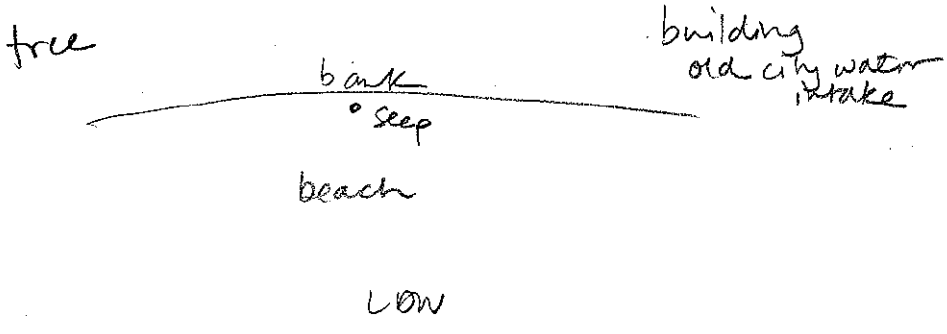
Location ID: LDW-SP-07-R-a	Time: 11:11	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 1221 9.467	Northing (y) 47 32.168	
Bearing 1:	Object description: Building	Distance: 9 m	Compass direction 75°
Bearing 2:	Object description: Bushes	Distance: 21 m	Compass direction 315°

Comments/sketch:



Location ID: LDW-SP-08-R-a	Time: 11:19	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 122 19.419	Northing (y) 47 32.132	
Bearing 1:	Object description: tree	Distance: 38 m	Compass direction 315°
Bearing 2:	Object description: building	Distance: 51 m	Compass direction 75°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey Project Task: seep recon

Date: 5/5/04 Crew: KG, JF, BB, OH, KT, RT

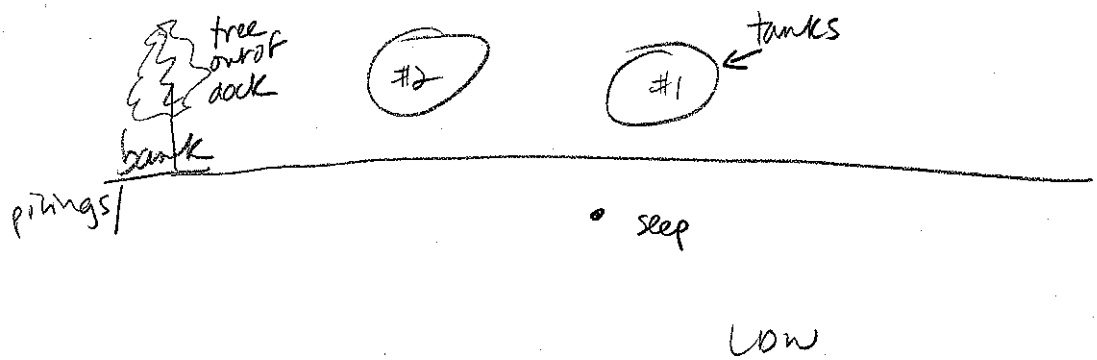
Weather: partly cloudy Photo no. na

Name of person filling out form: Benir Bergquist

Location ID: LDW-SP-09-R-a	Time: 11:36	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122 19.158	Northing (y) 47 32.128

	Object description:	Distance:	Compass direction
Bearing 1:	Tank #1	6 m	130°
Bearing 2:	Tree	25 m	45°

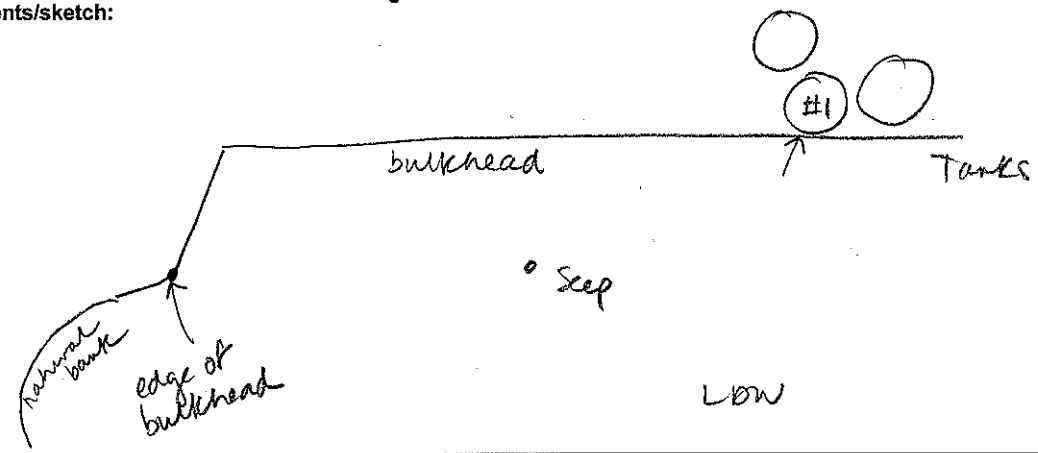
Comments/sketch:



Location ID: LDW-SP-10-R-a	Time: 11:39	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122 19.136	Northing (y) 47 32.141

	Object description:	Distance:	Compass direction
Bearing 1:	Tank #1	28 m	185°
Bearing 2:	Bulkhead edge	63 m	10°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW Seep survey **Project Task:** seep recon

Date: 5/5/04 **Crew:** KG, JF, BB, DH, KT, RT

Weather: partly cloudy **Photo no.** na

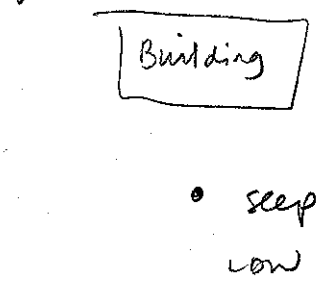
Name of person filling out form:

Location ID: LDW-SP-11-R-a	**Time:** 11:52		**Photo #: See Form 5**
GPS Coordinates:	**Easting (x):** 122 19.391		**Northing (y)** 47 32.121
Bearing 1:	**Object description:**	**Distance:**	**Compass direction**
Bearing 2:	**Object description:**	**Distance:**	**Compass direction**

Comments/sketch:

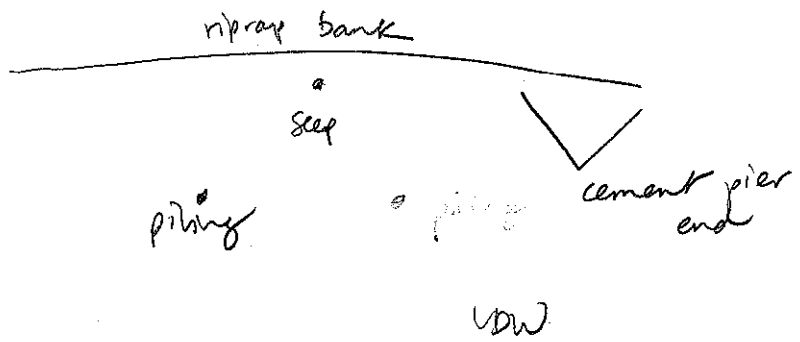
Sketch not needed - too mucky to get bearings

Directly in front of old water intake



Location ID: LDW-SP-12-R-a	**Time:** 12:01		**Photo #: See Form 5**
GPS Coordinates:	**Easting (x):** 122 19.334		**Northing (y)** 47 32.097
Bearing 1:	**Object description:** pier end	**Distance:** 29 m	**Compass direction** 100°
Bearing 2:	**Object description:** piling	**Distance:** 17 m	**Compass direction** 165°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LOW Seep Survey Project Task: seep recon

Date: 5/5/09 Crew: KG, JF, BB, DH, KT, RT

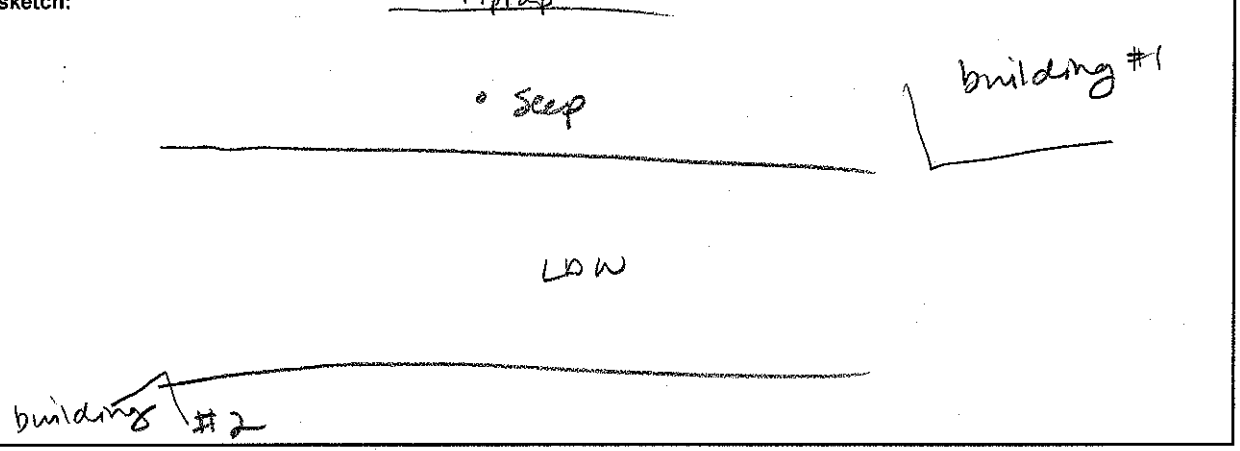
Weather: Sunny Photo no. na

Name of person filling out form: Berit Bergquist

Location ID: LOW-SP-13-R-a	Time: 12:15 pm	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122°19.137	Northing (y) 47°31.953

	Object description:	Distance:	Compass direction
Bearing 1:	Building #1	84	80°
Bearing 2:	Building #2	156	235°

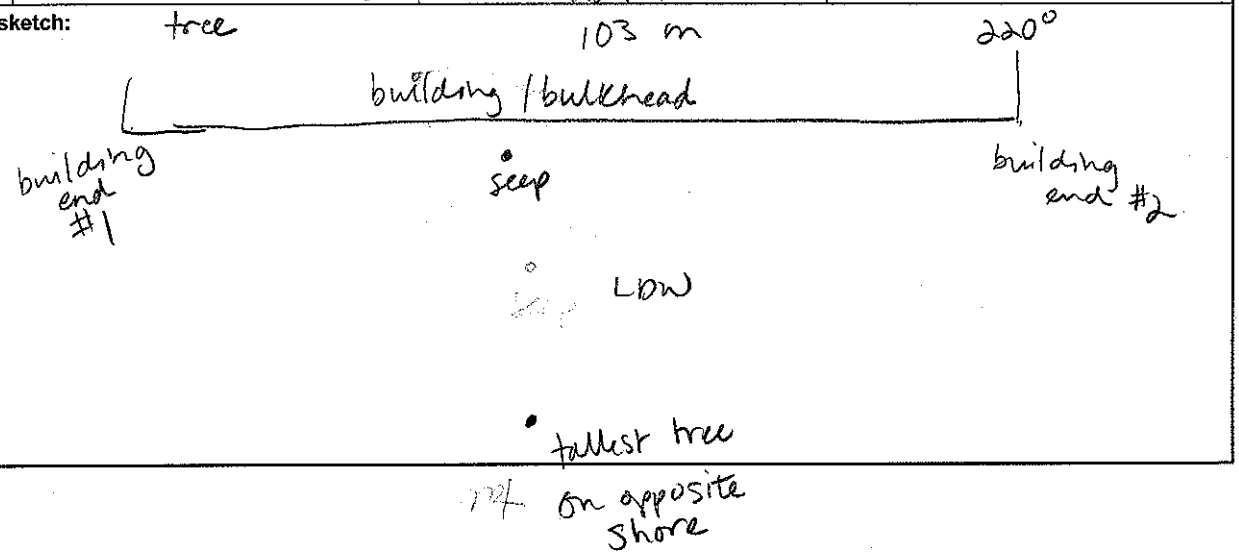
Comments/sketch:



Location ID: LOW-SP-14-R-a	Time: 12:22	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122°19.022	Northing (y) 47°31.886

	Object description:	Distance:	Compass direction
Bearing 1:	Building end #1	122 m	315°
Bearing 2:	" #2	164 m	95°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW Seep Survey Project Task: seep recon

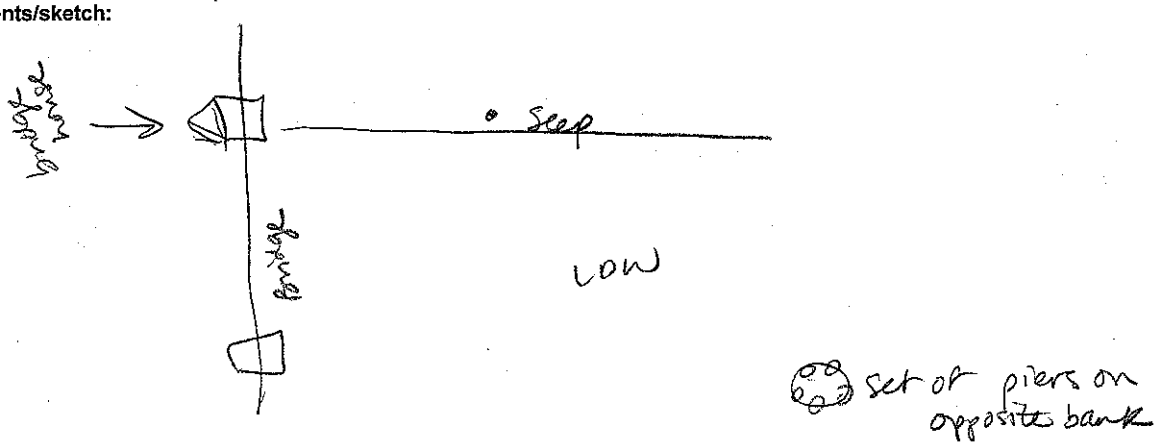
Date: 5/5/04 Crew: KG, JF, BB, DH, KT, RT

Weather: Sunny Photo no. na

Name of person filling out form: Benit Bergquist

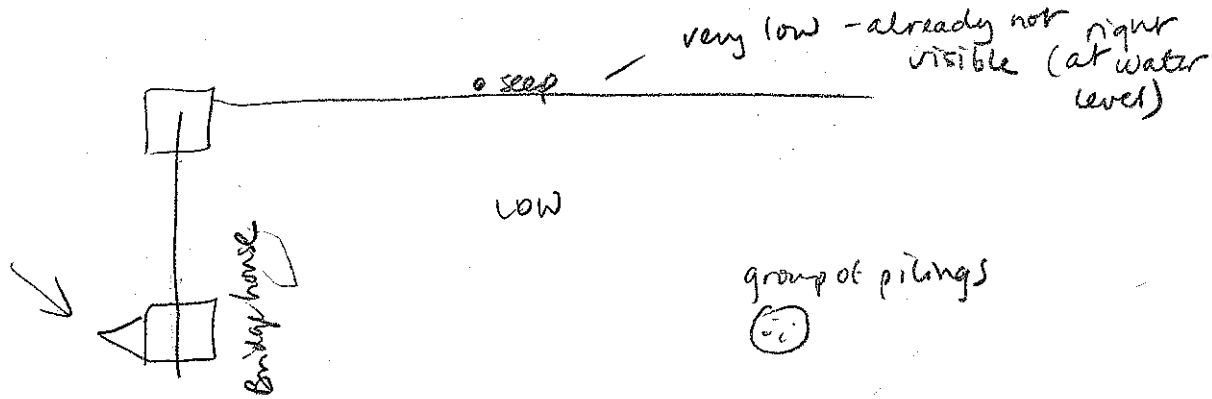
Location ID: LDW-SP-15-R-A	Time: 12:35	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 122° 18.640	Northing (y) 47° 31.675	
Bearing 1:	Object description: Bridge house	Distance: 293 m	Compass direction 290°
Bearing 2:	Object description: piers	Distance: 121 m	Compass direction 155°

Comments/sketch:



Location ID: LDW-SP-16-R-A	Time: 12:43	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 122 18.627	Northing (y) 47 31.662	
Bearing 1:	Object description: Bridge house	Distance: 309 m	Compass direction 275°
Bearing 2:	Object description: piers	Distance: 84 m	Compass direction 170°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

Date: 5/5/09 **Crew:** KG, JF, BB, DH, KT, RT

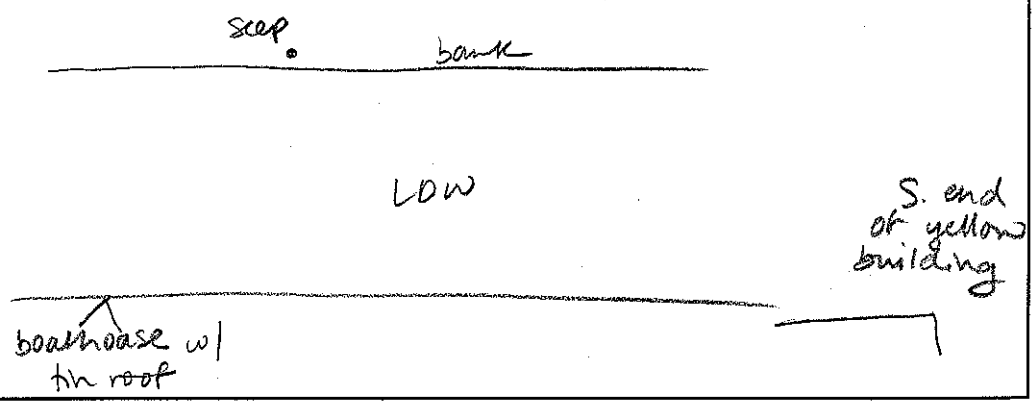
Weather: sunny **Photo no.** na

Name of person filling out form:

Location ID: LDW-SP-17-R-a		**Time:** 12:48		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122° 18.601		**Northing (y)** 47° 31.646	
Bearing 1:	**Object description:** boathouse	**Distance:** 94 m		**Compass direction**	225°
Bearing 2:	**Object description:** Yellow Building	**Distance:** 210 m		**Compass direction**	160°

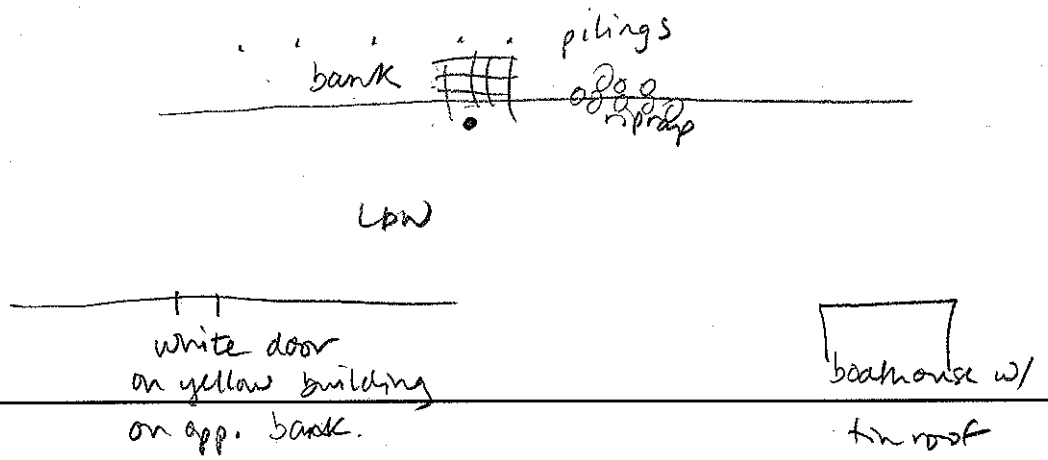
Comments/sketch:

This may be the city



Location ID: LDW-SP-18-R-a		**Time:** 12:54		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122° 19.567		**Northing (y)** 47° 31.630	
Bearing 1:	**Object description:** boathouse	**Distance:** 122 m		**Compass direction**	250°
Bearing 2:	**Object description:** white door	**Distance:** 145 m		**Compass direction**	185°

Comments/sketch:



WindWard environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

Date: 5/5/04 **Crew:** KF, JF, BB, DH, KT, KT

Weather: Sunny **Photo no.** na

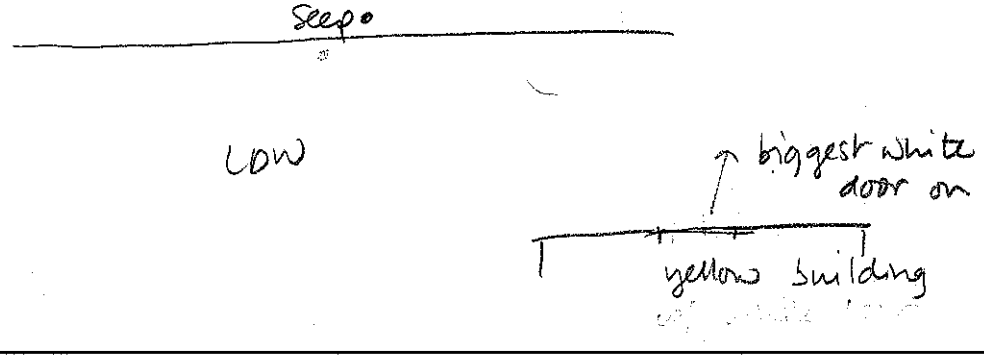
Name of person filling out form: Berit Bergquist

Location ID: LDW-SP-19-R-a	Time: 1:00	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 18.542	Northing (y) 47° 31.604

Bearing 1:	Object description: Boathouse	Distance: 161 m	Compass direction 255°
Bearing 2:	Object description: White door	Distance: 130 m	Compass direction 205°

Comments/sketch:

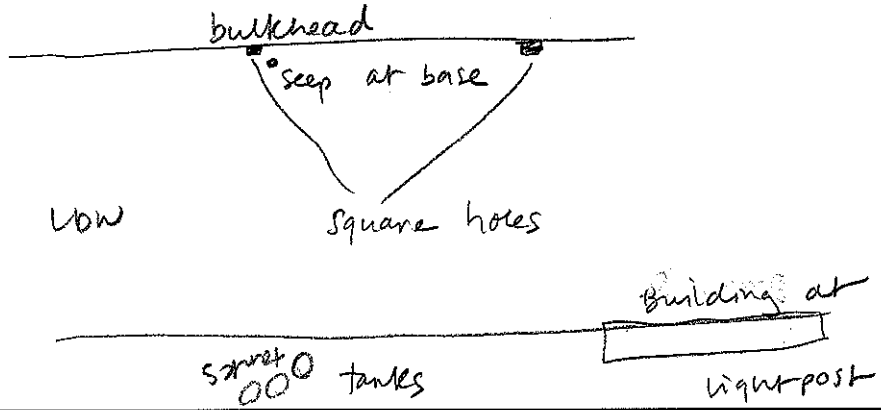
2nd seep - not staked, nearby
47° 31.594
122° 18.536
3rd seep - discolored
47° 31.579
122° 18.528



Location ID: LDW-SR20-R-a	Time: 1:10	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 18.503	Northing (y) 47° 31.535

Bearing 1:	Object description: Building	Distance: 141 m	Compass direction 180°
Bearing 2:	Object description: tanks	Distance: 145 m	Compass direction 255°

Comments/sketch:



47° 31.561
122° 18.515
cone-shaped pile of debris/metal → sheen at base of this area near waterline

Christy Brown
Rhone Poulenc RPM

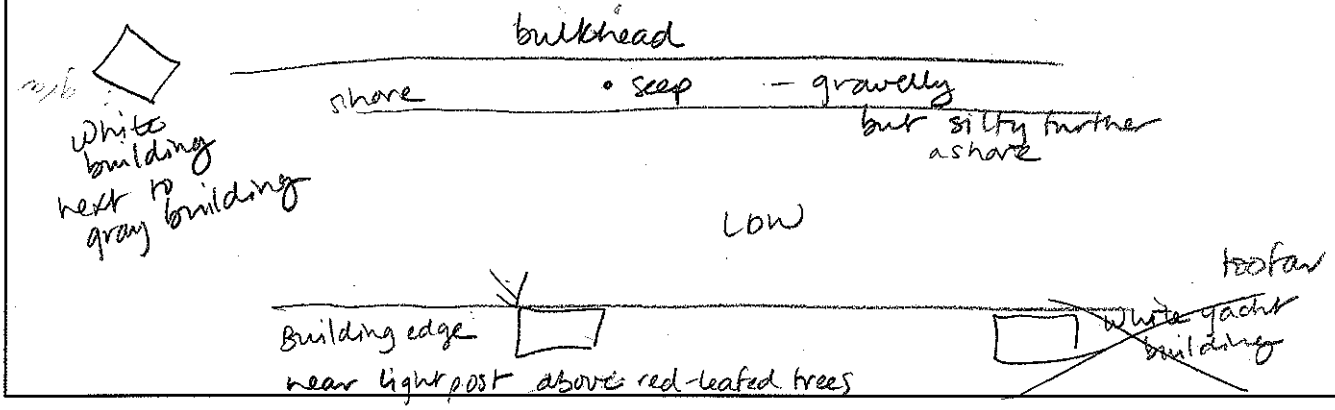
Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW | Project Task: Seep recon
Date: 5/5/04 | Crew: KG, JF, BB, DH, KT, RT
Weather: partly cloudy | Photo no. na
Name of person filling out form: Benit Bergquist

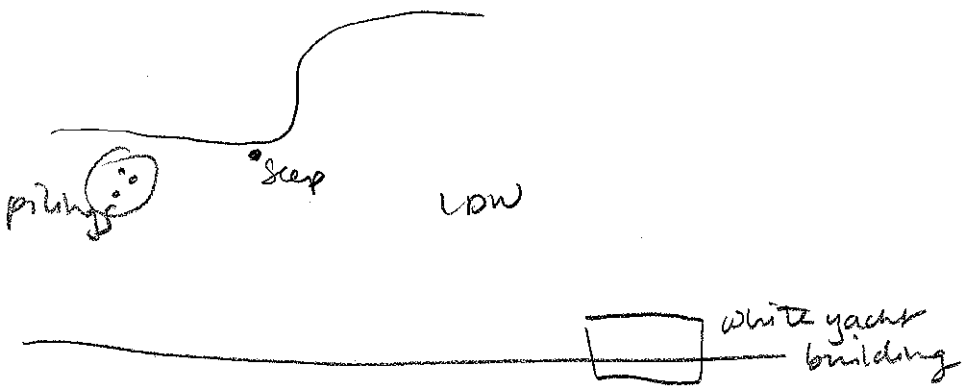
Location ID: LDW-SP-21-R-a		Time: 1:23		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122° 18.493		Northing (y) 47° 31.514	
Bearing 1:	Object description: Building or light post	Distance: 178m		Compass direction	250°
Bearing 2:	Object description: ~~white gray = blue~~ Building	Distance: 348 m		Compass direction	335°

Comments/sketch:



Location ID: LDW-SP-22-R-a		Time: 1:45		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122° 18.386		Northing (y) 47° 31.268	
Bearing 1:	Object description: Pilings	Distance: 7 m		Compass direction	280°
Bearing 2:	Object description: Building	Distance: 321 m		Compass direction	175°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey Project Task: seep recon

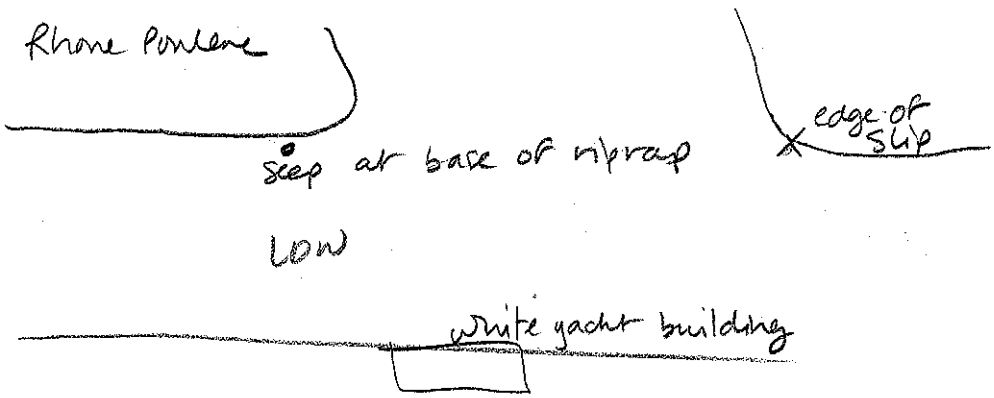
Date: 5/5/04 Crew: KG, JF, BB, DH, KT, RT

Weather: partly cloudy Photo no. na

Name of person filling out form: Bent Beraquist

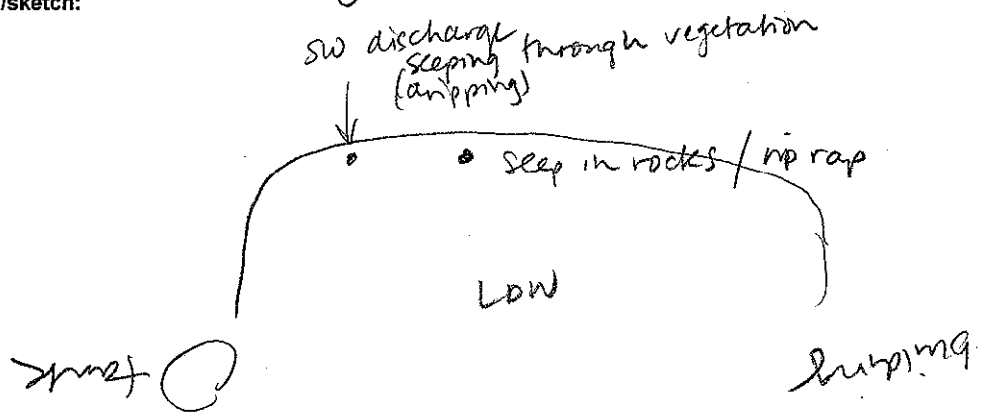
Location ID: LDW-SP-23-R-a	Time: 1:56 pm		Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 18.300		Northing (y) 47° 31.146
Bearing 1:	Object description: Slip edge	Distance: 107 m	Compass direction 155°
Bearing 2:	Object description: Building	Distance: 237 m	Compass direction 230°

Comments/sketch:



Location ID: LDW-SP-24-R-a	Time: 2:11 pm		Photo #: See Form 5
GPS Coordinates:	Easting (x): 122 18.116		Northing (y) 47 31.171
Bearing 1:	Object description: tank	Distance: 178 m	Compass direction 265°
Bearing 2:	Object description: building	Distance: 176 m	Compass direction 180°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW Seep survey **Project Task:** Seep recon

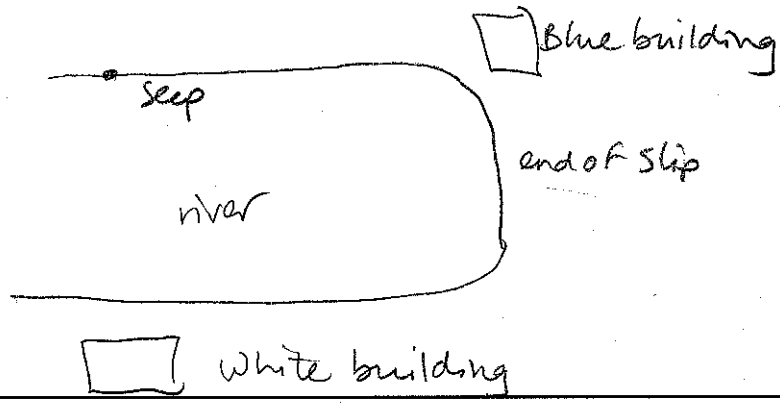
Date: 5/5/09 **Crew:** KG, JF, BB, DH, KT, RT

Weather: partly cloudy **Photo no.** na

Name of person filling out form: Bert Bergquist

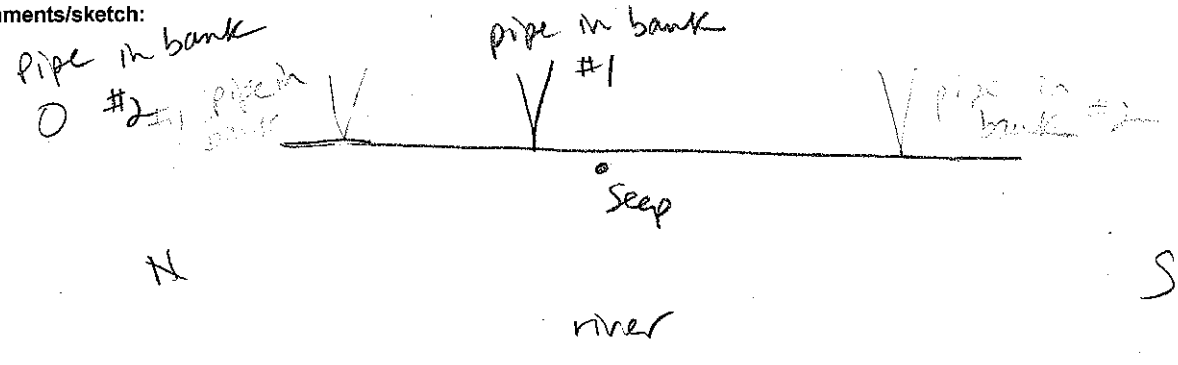
Location ID: LDW-SP-25-R-a	**Time:** 2:18		**Photo #: See Form 5**
GPS Coordinates:	**Easting (x):** 122° 18.190		**Northing (y)** 47° 31.172
Bearing 1:	**Object description:** white building	**Distance:** 140 m	**Compass direction** 145°
Bearing 2:	**Object description:** blue building	**Distance:** 94 m	**Compass direction** 150°

Comments/sketch:



Location ID: LDW-SP-26-R-a	**Time:** 2:34		**Photo #: See Form 5**
GPS Coordinates:	**Easting (x):** 122° 18.252		**Northing (y)** 47° 30.904
Bearing 1:	**Object description:** Pipe #1	**Distance:** 7 m	**Compass direction** 30°
Bearing 2:	**Object description:** Pipe #2	**Distance:** 33 m	**Compass direction** 325°

Comments/sketch:



WindWard environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey Project Task: seep recon

Date: 5/6/04 Crew: KF, JF, BB, DH, KT, RT

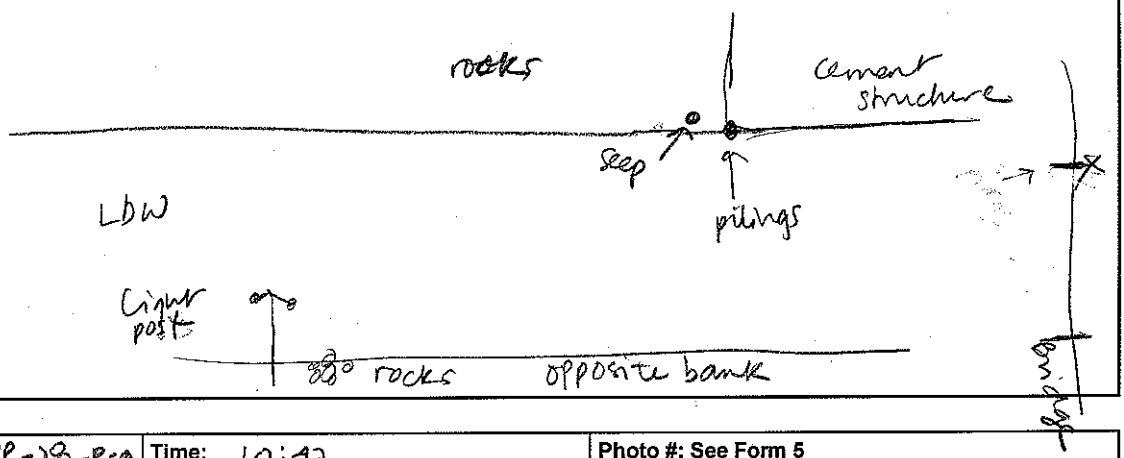
Weather: sunny Photo no. na

Name of person filling out form: Benir Bergquist

Location ID: LDW-SP-27-R-a	Time: 10:32	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122 17.815	Northing (y) 47° 30.693

	Object description	Distance	Compass direction
Bearing 1:	X on bridge	165 m	115°
Bearing 2:	Rocks below light post	99 m	195°

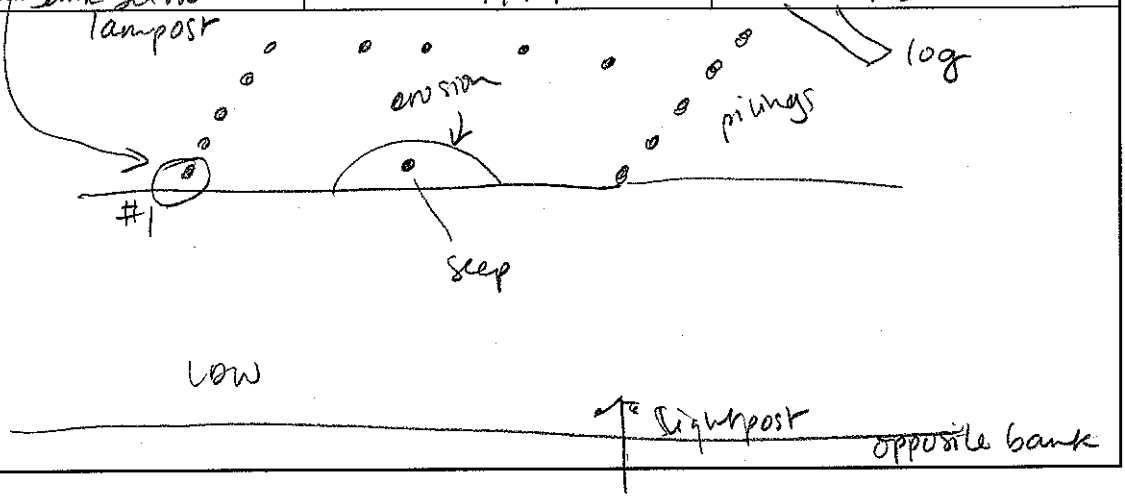
Comments/sketch:



Location ID: LDW-SP-28-R-a	Time: 10:42	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122 17.912	Northing (y) 47 30.742

	Object description	Distance	Compass direction
Bearing 1:	piling #1	26 m	210°
Bearing 2:	Bank below lamppost	94 m	155°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

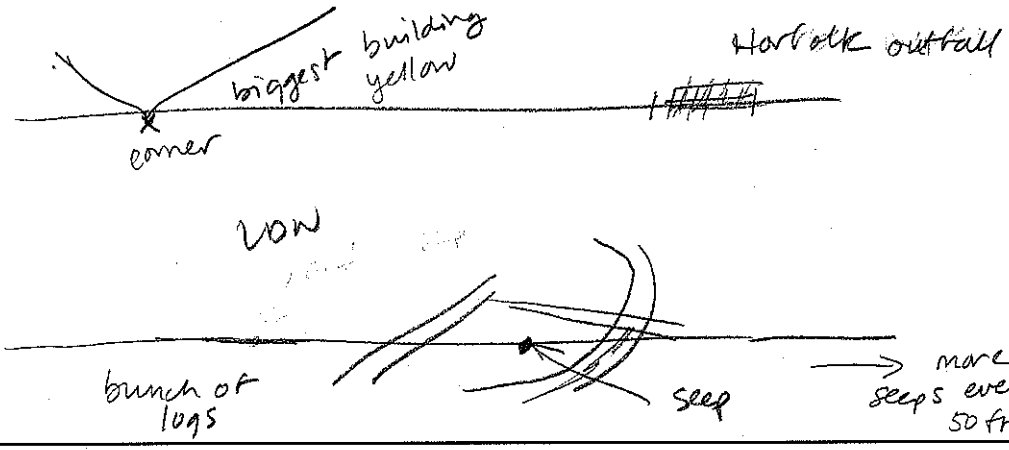
Date: 5/6/09 **Crew:** KG, JF, BB, DH, KT, RT

Weather: hazy **Photo no.** na

Name of person filling out form: Benir Bergquist

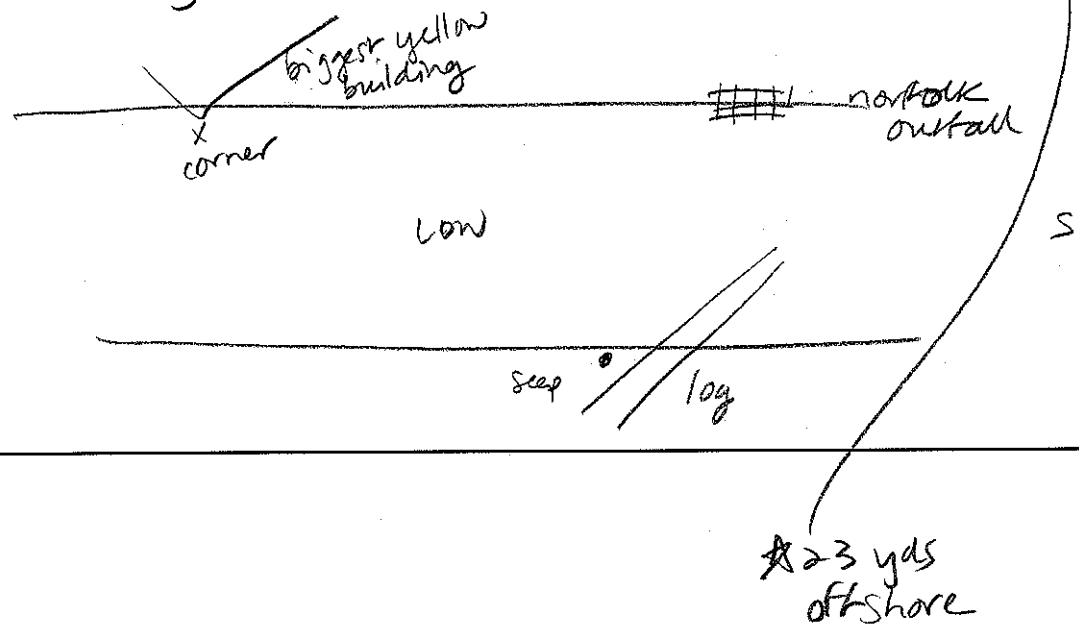
Location ID: LDW-SP-29-R-a		**Time:** 10:57		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 17.926		**Northing (y)** 47 30.706	
Bearing 1:	**Object description:** Norfolk outfall	**Distance:** 126 m		**Compass direction**	350°
Bearing 2:	**Object description:** building corner	**Distance:** 167 m		**Compass direction**	325°

Comments/sketch:



Location ID: LDW-SP-30-R-a		**Time:** 11:03		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122° 17.864		**Northing (y)** 47° 30.683	
Bearing 1:	**Object description:** outfall	**Distance:** 94 m		**Compass direction**	335°
Bearing 2:	**Object description:** building corner	**Distance:** 192 m		**Compass direction**	315°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LOW seep survey Project Task: seep recon

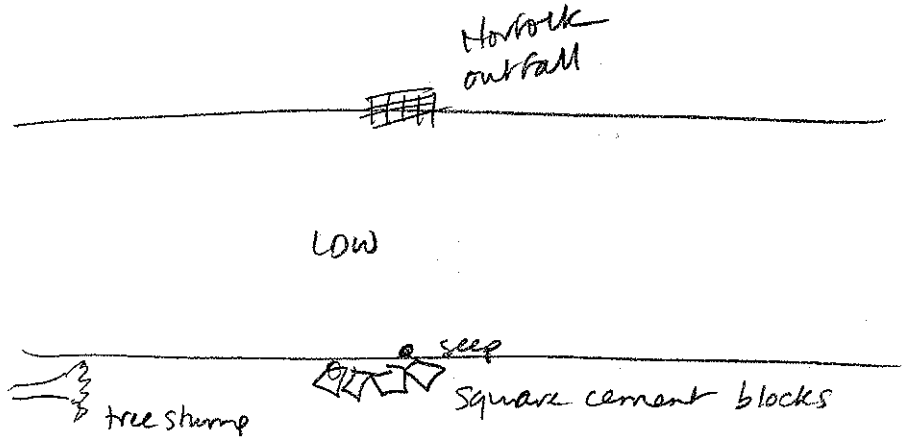
Date: 5/6/04 Crew: KO, JF, BB, DH, KT, RT

Weather: hazy Photo no. na

Name of person filling out form: Benit Bergquist

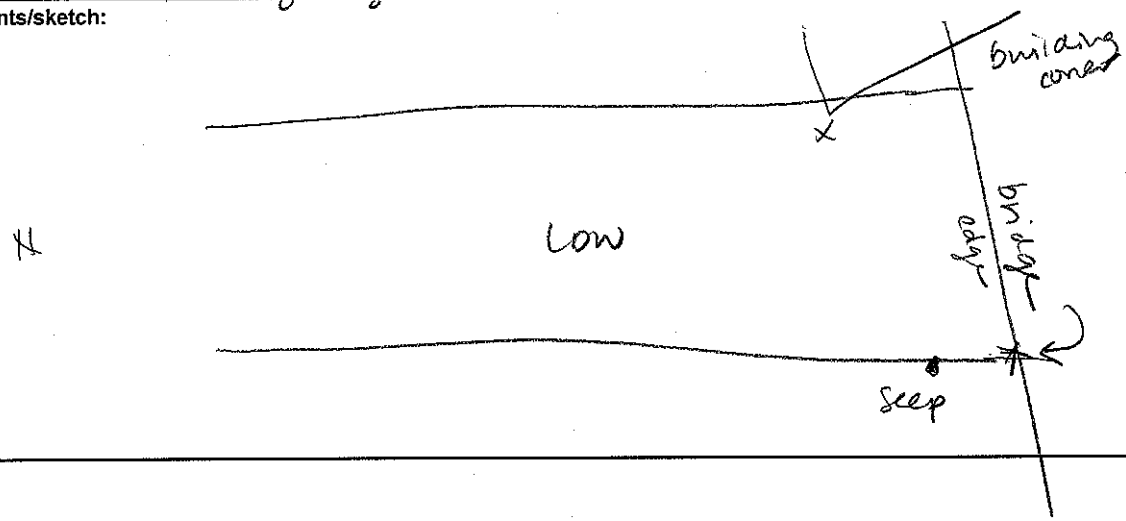
Location ID: LOW-SP-31-R-a	Time: 11:18		Photo #: See Form 5 ★ 31 yds offshore
GPS Coordinates:	Easting (x): 122° 18.894		Northing (y) 47° 30.698
Bearing 1: Object description: stump	Distance: 31 m		Compass direction 260°
Bearing 2: Object description: outfall	Distance: 88 m		Compass direction 335°

Comments/sketch:



Location ID: LOW-SP-32-R-a	Time: 11:25		Photo #: See Form 5 ★ 40 ft offshore
GPS Coordinates:	Easting (x): 122° 18.026		Northing (y) 47° 30.732
Bearing 1: Object description: Building	Distance: 35 m		Compass direction 150°
Bearing 2: Object description: Bridge edge	Distance: 110 m		Compass direction 300°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

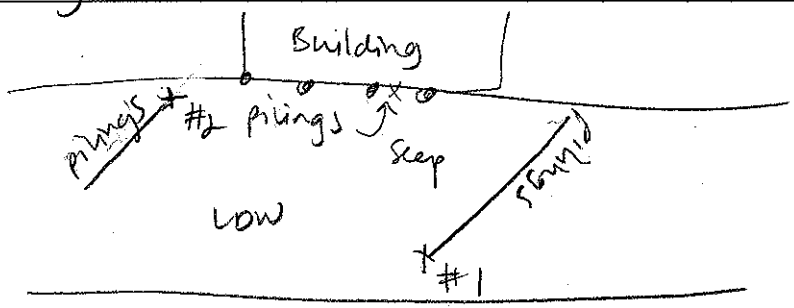
Date: 5/6/09 **Crew:** KG, JF, BB, DH, KT, RT

Weather: hazy **Photo no.** na

Name of person filling out form: Benit Bergquist

Location ID: LDW-SP-33-R-a		**Time:** 11:34		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122°18.061		**Northing (y)** 47 30.766	
Bearing 1:	**Object description:** Piling #1	**Distance:** 22 m		**Compass direction**	155°
Bearing 2:	**Object description:** Piling #2	**Distance:** 8 m		**Compass direction**	250°

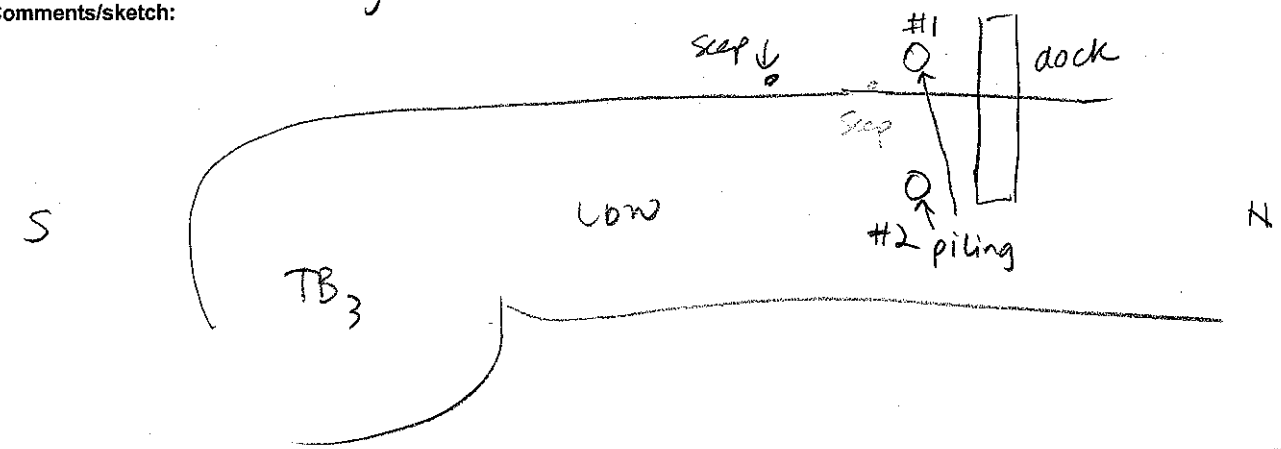
Comments/sketch:



47 30.742
122 17.912
broad seepage
off mudflat

Location ID: LDW-SP-34-R-a		**Time:** 11:48		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 18.273		**Northing (y)** 47 30.736	
Bearing 1:	**Object description:** Piling #1	**Distance:** 27 m		**Compass direction**	270°
Bearing 2:	**Object description:** Piling #2	**Distance:** 21 m		**Compass direction**	335°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey Project Task: seep recon

Date: 5/6/09 Crew: KG, JF, BB, DH, KT, RT

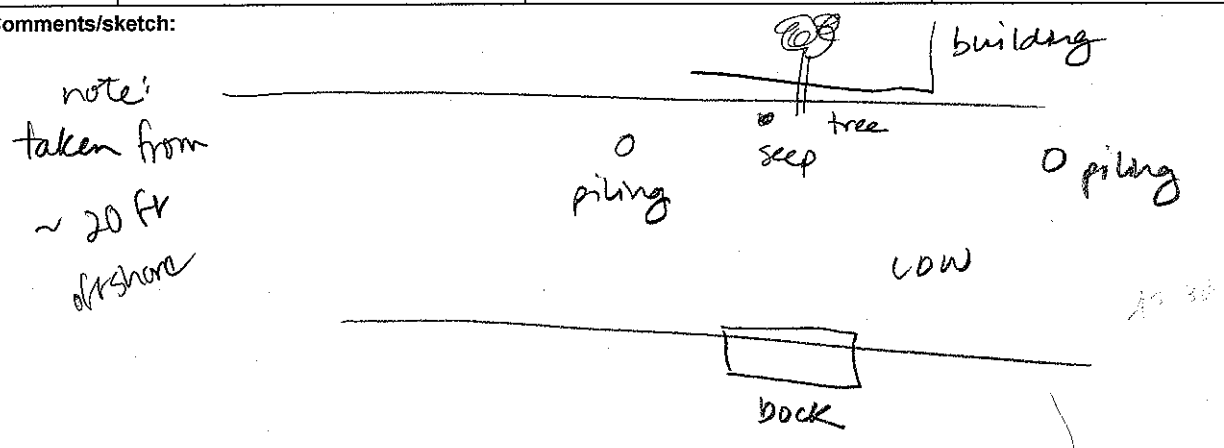
Weather: hazy Photo no. na

Name of person filling out form: Berit Bergquist

Location ID: LDW-SP-35-R-a	Time: 12:04	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122 18.212	Northing (y) 47 30.800

	Object description	Distance	Compass direction
Bearing 1:	Dock	126 m	210°
Bearing 2:	tree	43 m	40°

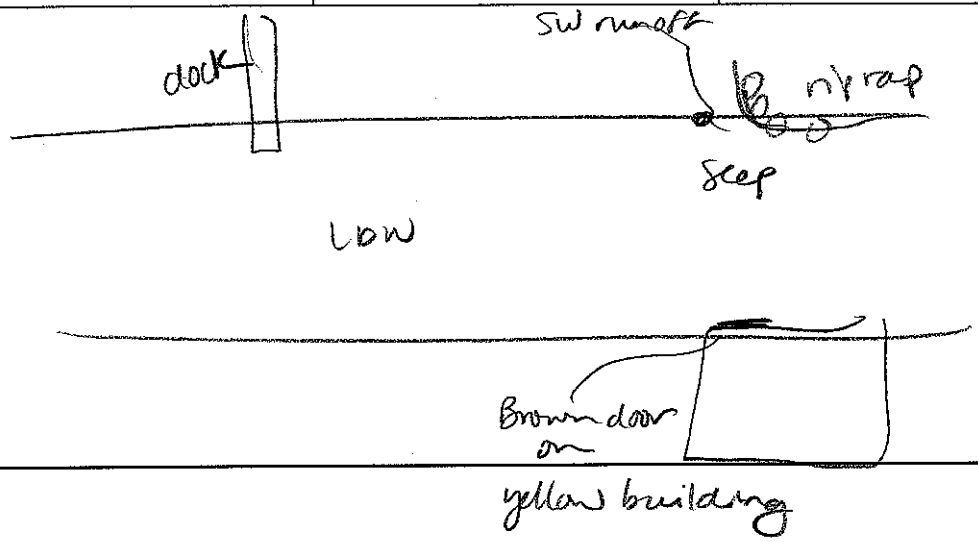
Comments/sketch:



Location ID: LDW-SP-36-R-a	Time: 12:16	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122°18.330	Northing (y) 47 30.819

	Object description	Distance	Compass direction
Bearing 1:	Building door	236 m	~~30~~ 5°
Bearing 2:	Dock	110 m	160°

Comments/sketch:



WindWard environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LOW seep survey **Project Task:** seep recon

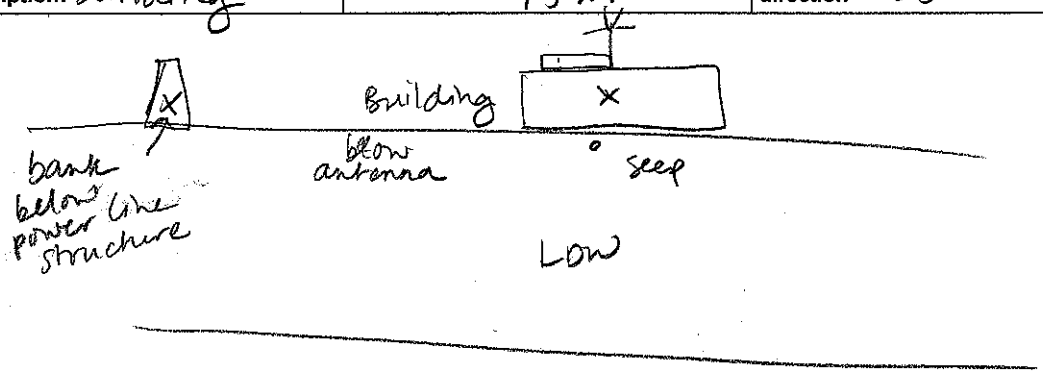
Date: 5/6/09 **Crew:** KG, JF, BB, DH, KT, RT

Weather: hazy **Photo no.** na

Name of person filling out form: Berit Bergquist

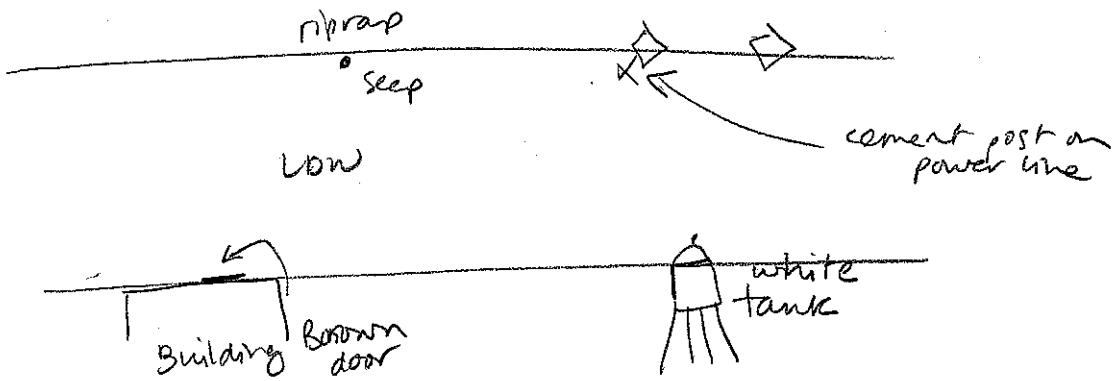
Location ID: LOW-SP-37-R-a		**Time:** 12:20		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 18.251		**Northing (y)** 47 30.848	
Bearing 1:	**Object description:** tower	**Distance:** 117 m		**Compass direction** 340°	
Bearing 2:	**Object description:** building	**Distance:** 75 m		**Compass direction** 25°	

Comments/sketch:



Location ID: LOW-SP-38-R-a		**Time:** 12:28		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122° 18.354		**Northing (y)** 47° 30.908	
Bearing 1:	**Object description:** Brown door on building	**Distance:** 121		**Compass direction** 60°	
Bearing 2:	**Object description:** Post	**Distance:** 37 m		**Compass direction** X60°	

Comments/sketch:



Windward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

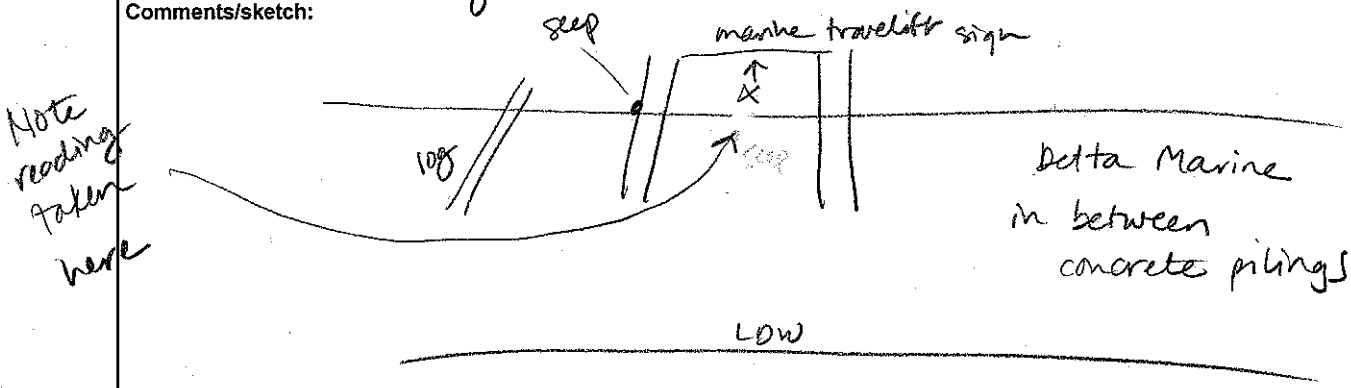
Date: 5/6/04 **Crew:** KG, JF, BB, DH, KJ, RT

Weather: **Photo no.** na

Name of person filling out form: Berit Bergquist

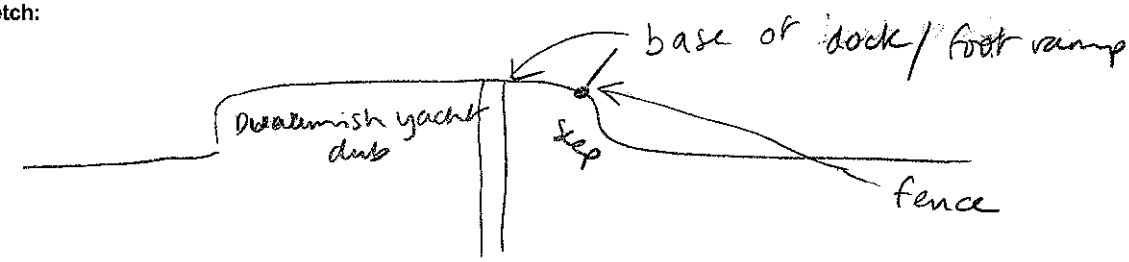
Location ID: LDW-SP-39-R-a	**Time:** 12:35	**Photo #: See Form 5**	
GPS Coordinates:	**Easting (x):** 122 18.398	**Northing (y)** 47 31.051	
Bearing 1:	**Object description:** sign	**Distance:** 76 m	**Compass direction** 270°
Bearing 2:	**Object description:** log	**Distance:** 21 m	**Compass direction** 180°

Comments/sketch:



Location ID: LDW-SP-40-R-a	**Time:** 12:48	**Photo #: See Form 5**	
GPS Coordinates:	**Easting (x):** 122° 18.525	**Northing (y)** 47° 31.215	
Bearing 1:	**Object description:** Boat ramp	**Distance:** 20 m	**Compass direction** 130°
Bearing 2:	**Object description:** fence	**Distance:** 6 m	**Compass direction** 295°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

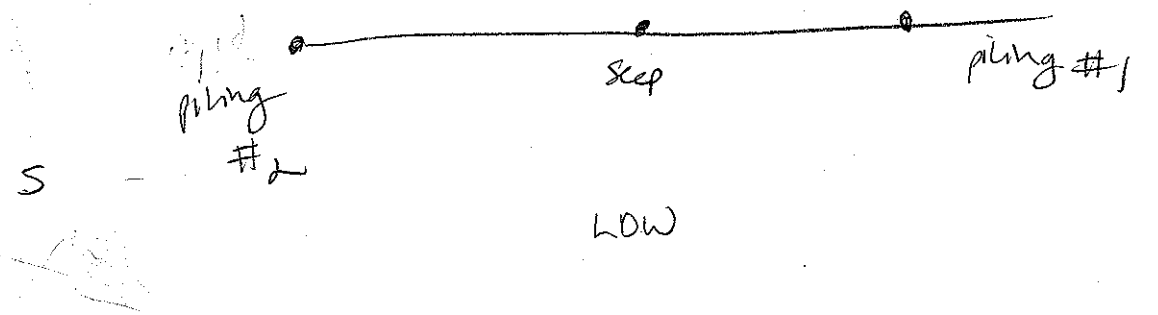
Date: 5/6/04 **Crew:** KG, JF, BB, DH, KT, RT

Weather: light clouds **Photo no.** na

Name of person filling out form: Berit Bergquist

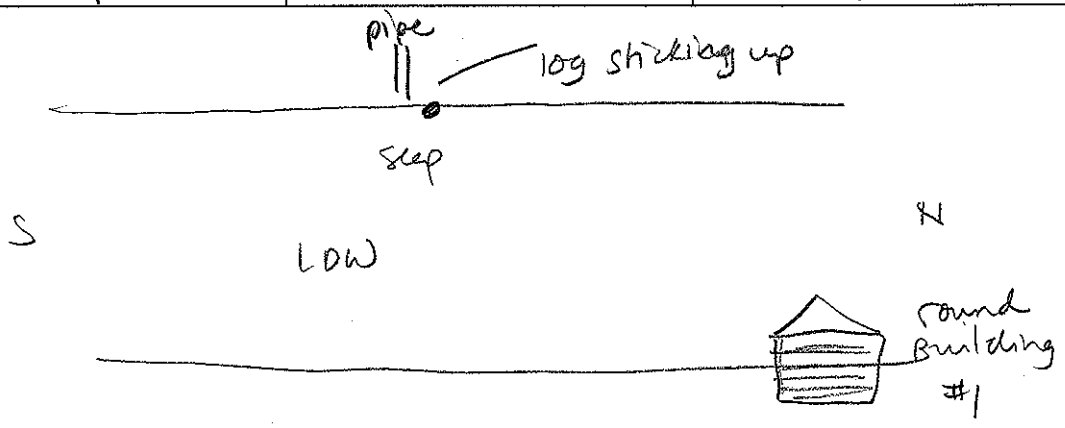
Location ID: LDW-SP-41-R-a		**Time:** 12:59		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 18.497		**Northing (y)** 47° 31.250	
Bearing 1:	**Object description:** Piling #1	**Distance:** 9 m		**Compass direction**	340°
Bearing 2:	**Object description:** " #2	**Distance:** 22 m		**Compass direction**	135°

Comments/sketch:



Location ID: LDW-SP-42-R-a		**Time:** 1:13		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 18.520		**Northing (y)** 47 31.301	
Bearing 1:	**Object description:** Building #1	**Distance:** 191 m		**Compass direction**	20°
Bearing 2:	**Object description:** Pipe	**Distance:** 11 m		**Compass direction**	230°

Comments/sketch:



WindWard environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW Seep survey Project Task: Seep recon

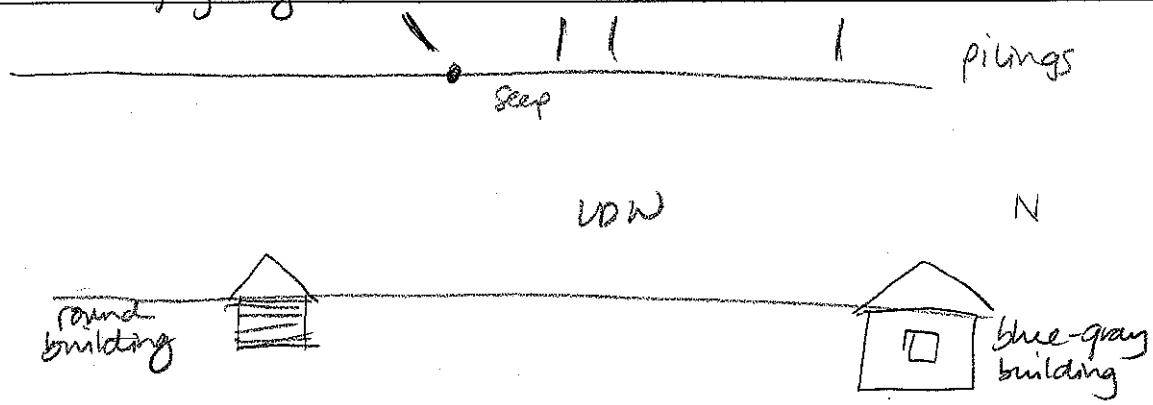
Date: 5/6/09 Crew: KG, JF, BB, DH, KT, RT

Weather: Light clouds Photo no. na

Name of person filling out form: Benit Bergquist

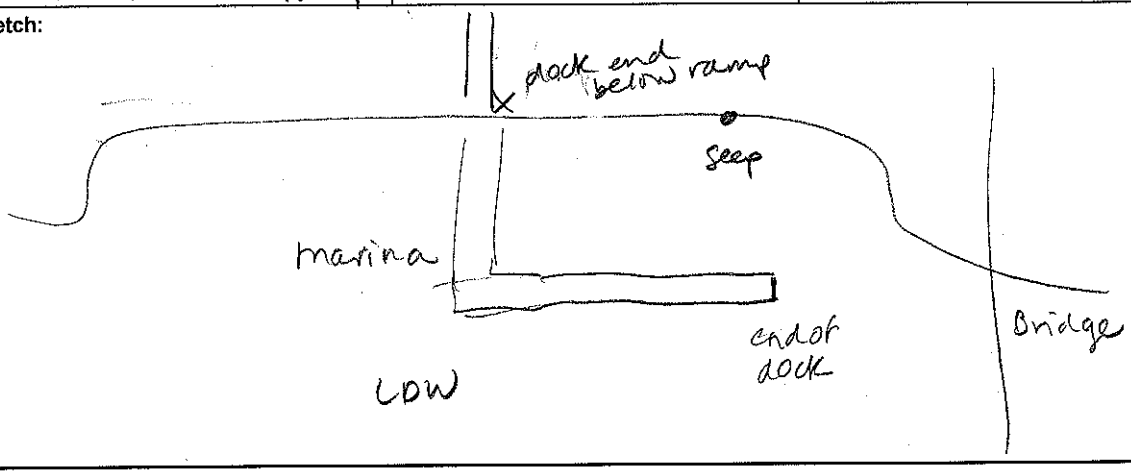
Location ID: LDW-SP-43-R-a	Time: 1:21	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 122 18.536	Northing (y) 47 31.418	
Bearing 1: Object description: Round building	Distance: 140 m	Compass direction	105°
Bearing 2: Object description: Blue-gray bldng	Distance: 323 m	Compass direction	350°

Comments/sketch:



Location ID: LDW-SP-44-R-a	Time: 1:41	Photo #: See Form 5	
GPS Coordinates:	Easting (x): 122° 18.829	Northing (y) 47° 31.699	
Bearing 1: Object description: Dock end	Distance: 11 m	Compass direction	265°
Bearing 2: Object description: Dock end below ramp	Distance: 89 m	Compass direction	110°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LOW Seep survey Project Task: Seep Recon

Date: 5/6/04 Crew: KC, JF, BB, DH, KT, RT

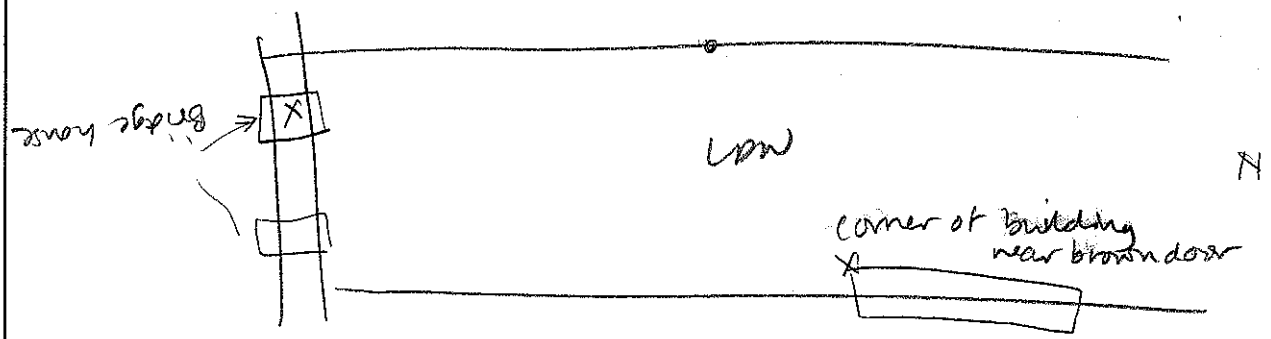
Weather: Light clouds Photo no. n.a

Name of person filling out form: Berit Bergquist

Location ID: LOW-SP-45-R-a	Time: 1:55	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122 18.944	Northing (y) 47 31.772

Bearing 1:	Object description: Bridge house	Distance: 117m	Compass direction 95°
Bearing 2:	Object description: Building	Distance: 145m	Compass direction 350°

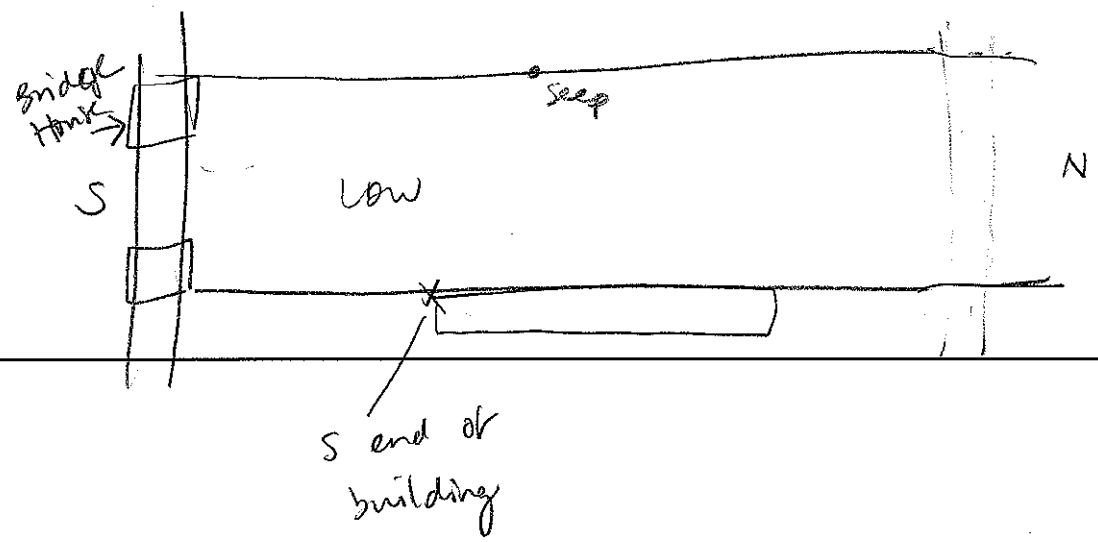
Comments/sketch:



Location ID: LOW-SP-46-R-a	Time: 2:02	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 19.024	Northing (y) 47° 31.804

Bearing 1:	Object description: S. end Building	Distance: 159	Compass direction 50°
Bearing 2:	Object description: Bridge house	Distance: 240 m	Compass direction 105°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

Date: 5/6/04 **Crew:** KG, JF, BB, DH, KT, RT

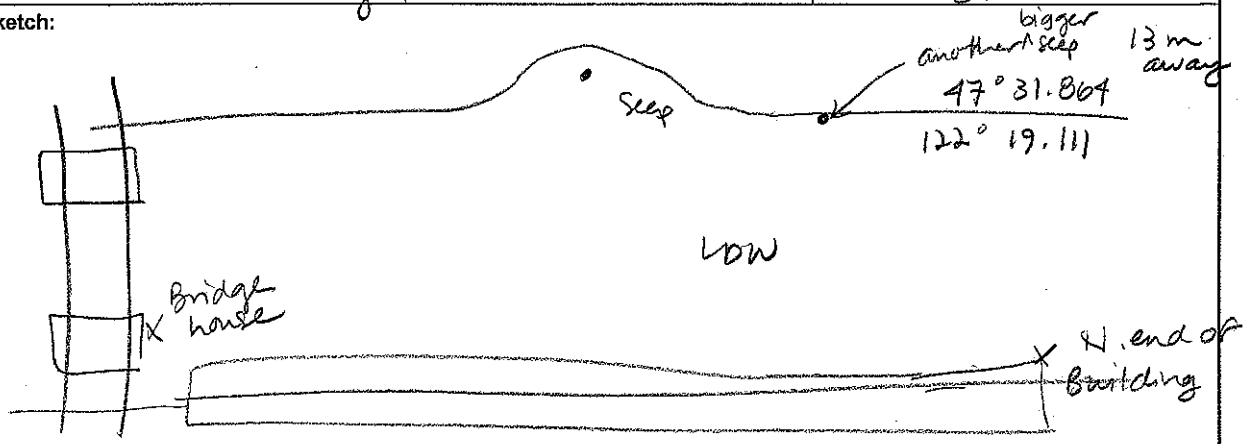
Weather: partly cloudy **Photo no.** na

Name of person filling out form: Bent Berggquist

Location ID: LDW-SP-47-R-a	Time: 2:10	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 19.098	Northing (y) 47° 31.854

	Object description:	Distance:	Compass direction
Bearing 1:	Bridge house	343 m	110°
Bearing 2:	N. end building	164 m	335°

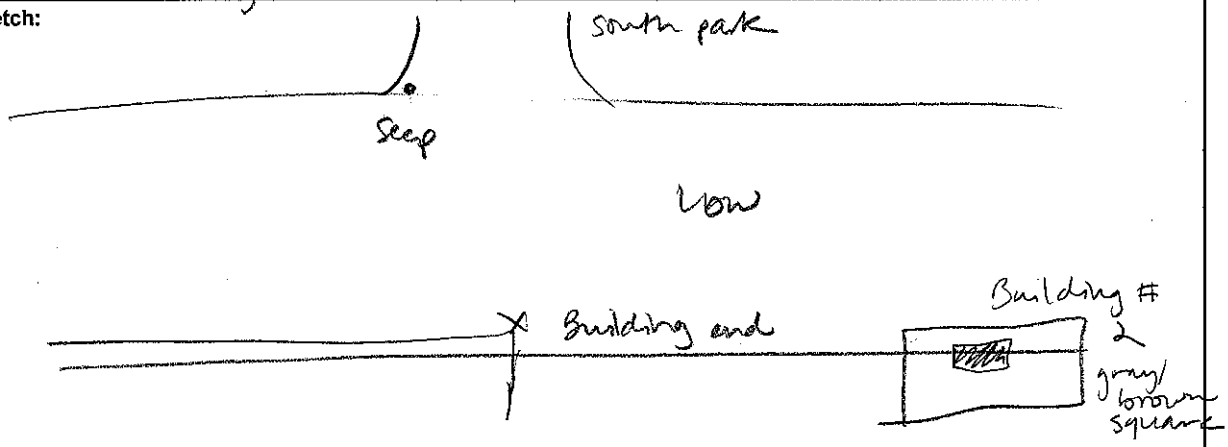
Comments/sketch:



Location ID: LDW-SP-48-R-a	Time: 2:21	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 19.160	Northing (y) 47° 31.893

	Object description:	Distance:	Compass direction
Bearing 1:	Building end	141 m	270°
Bearing 2:	Building #2	246 m	353°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LOW **Project Task:** seep recon

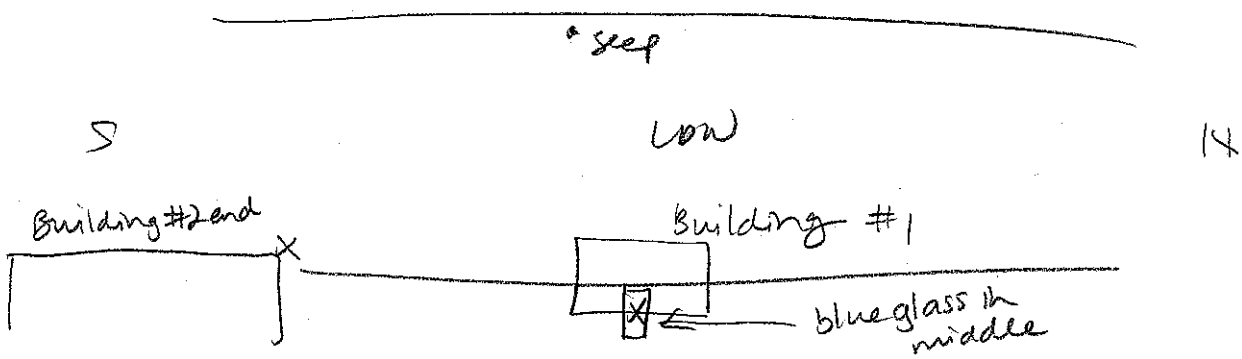
Date: 5/6/04 **Crew:** KG, JF, BB, DH, KT, RT

Weather: cloudy **Photo no.** na

Name of person filling out form: Berit Bergquist

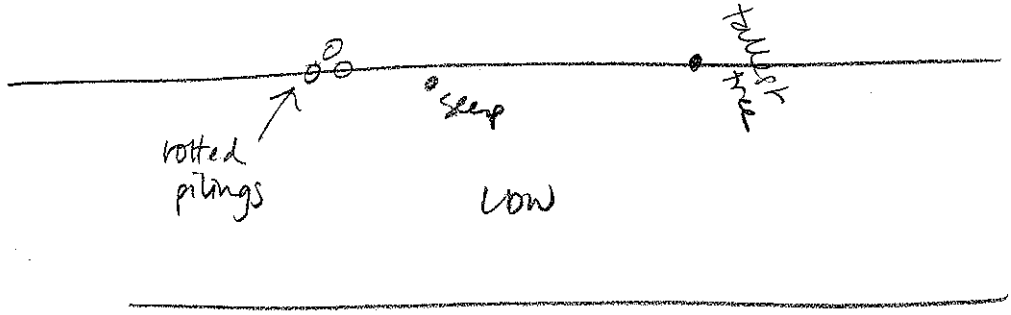
Location ID: LOW-SP-49-R-a	**Time:** 2:27		**Photo #: See Form 5**
GPS Coordinates:	**Easting (x):** 122 19.238		**Northing (y)** 47° 31.937
Bearing 1:	**Object description:** Building #2 end	**Distance:** 206 m	**Compass direction** 70°
Bearing 2:	**Object description:** Building #1	**Distance:** 196 m	**Compass direction** 140

Comments/sketch:



Location ID: LOW-SP-50-R-a	**Time:** 2:33		**Photo #: See Form 5**
GPS Coordinates:	**Easting (x):** 122° 19.277		**Northing (y)** 47° 31.963
Bearing 1:	**Object description:** pilings	**Distance:** ~3 m can't get reading	**Compass direction** 115°
Bearing 2:	**Object description:** tree	**Distance:** 156 m	**Compass direction** 280°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey **Project Task:** seep recon

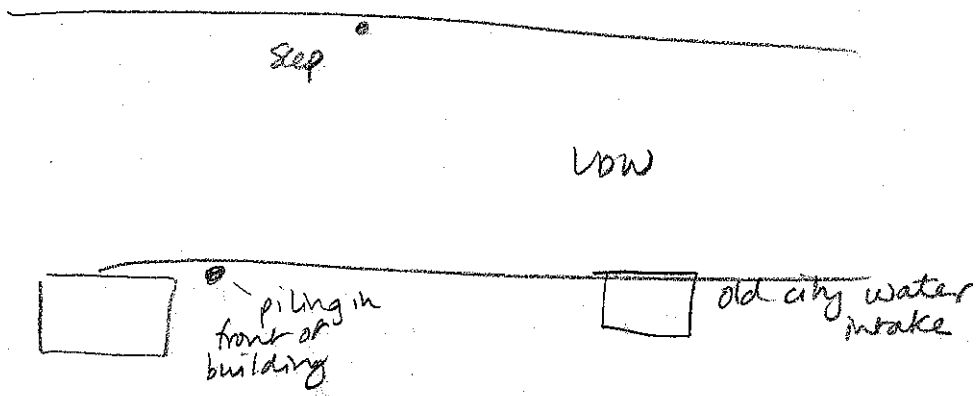
Date: 5/6/04 **Crew:** KG, JF, BB, DH, KT, RT

Weather: cloudy **Photo no.** na

Name of person filling out form: Benit Bergquist

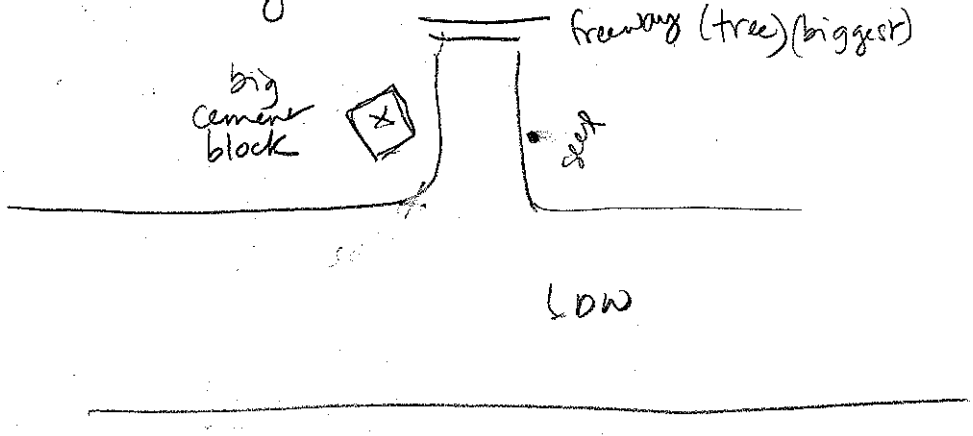
Location ID: LDW-SP-51-R-a		**Time:** 2:40		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122 19.398		**Northing (y)** 47 32.041	
Bearing 1:	**Object description:** piling	**Distance:** 151 m		**Compass direction**	73°
Bearing 2:	**Object description:** water intake	**Distance:** 166 m		**Compass direction**	339°

Comments/sketch:



Location ID: LDW-SP-52-R-a		**Time:** 3:11		**Photo #: See Form 5**	
GPS Coordinates:		**Easting (x):** 122° 19.943		**Northing (y)** 47° 32.363	
Bearing 1:	**Object description:** block	**Distance:** 35 m		**Compass direction**	122°
Bearing 2:	**Object description:** trees freeway	**Distance:** 120 m		**Compass direction**	241°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey Project Task: seep recon

Date: 5/16/04 Crew: KG, JF, BB, DH, KT, RT

Weather: cloudy Photo no. na

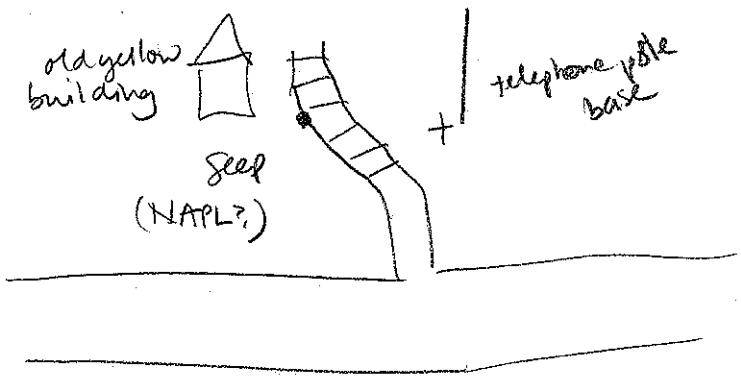
Name of person filling out form: Benit Bergquist

Location ID: LDW-SP-53-R-a	Time: 3:18	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 19.988	Northing (y) 47 32.357

Bearing 1:	Object description: Pole base	Distance: 25 m	Compass direction 116°
Bearing 2:	Object description: Building	Distance: 35 m	Compass direction 220°

Comments/sketch:

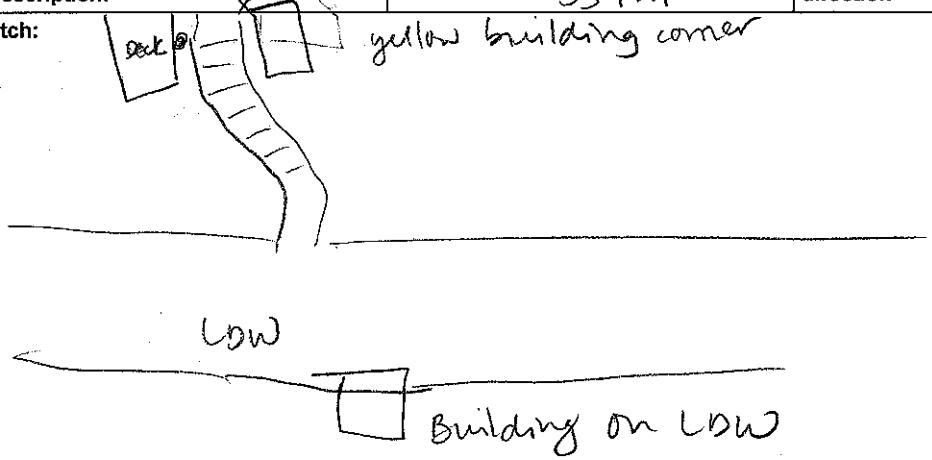
#100 point of interest black ooze
47 32.354
122 19.991



Location ID: LDW-SP-54-R-a	Time: 3:26	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 20.013	Northing (y) 47° 32.358

Bearing 1:	Object description: Building corner	Distance: 31 m	Compass direction 298°
Bearing 2:	Object description: Building on LDW	Distance: 354 m	Compass direction 68°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW seep survey Project Task: seep recon

Date: 5/6/04 Crew: KG, JF, BB, DH, KT, RT

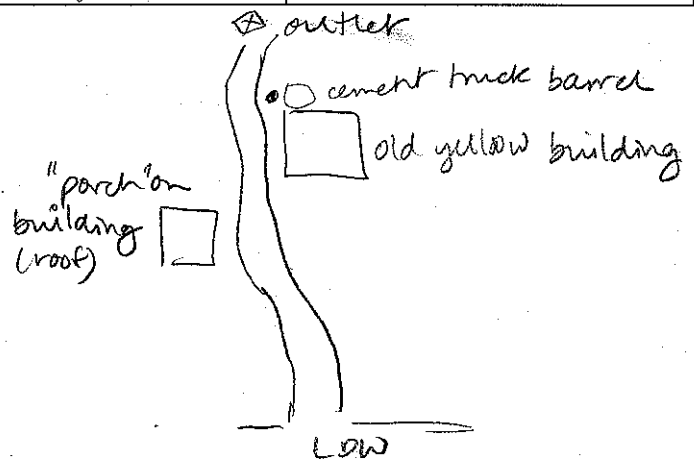
Weather: Cloudy Photo no. na

Name of person filling out form: Berit Bergquist

Location ID: LDW-SP-55-R-a	Time: 3:37	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 20.035	Northing (y) 47° 32.360

	Object description:	Distance:	Compass direction
Bearing 1:	roof of porch	35 m	115°
Bearing 2:	outlet	19 m	252°

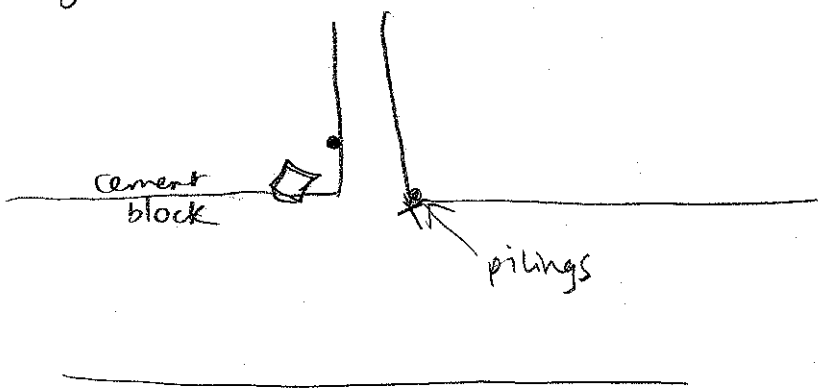
Comments/sketch:



Location ID: LDW-SP-56-R-a	Time: 3:45	Photo #: See Form 5
GPS Coordinates:	Easting (x): 122° 19.959	Northing (y) 47° 32.364

	Object description:	Distance:	Compass direction
Bearing 1:	cement block	40 m	110°
Bearing 2:	Pilings	48m	60°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW Seep Survey **Project Task:** Seep recon

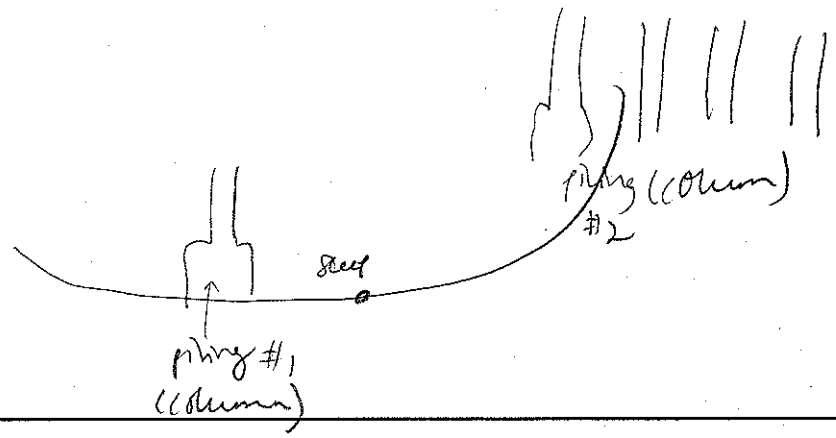
Date: 5/7/04 **Crew:** Bent, Joanna, Doug H., Kym T., Rick T.,

Weather: overcast, light rain **Photo no.**

Name of person filling out form: Joanna Florer

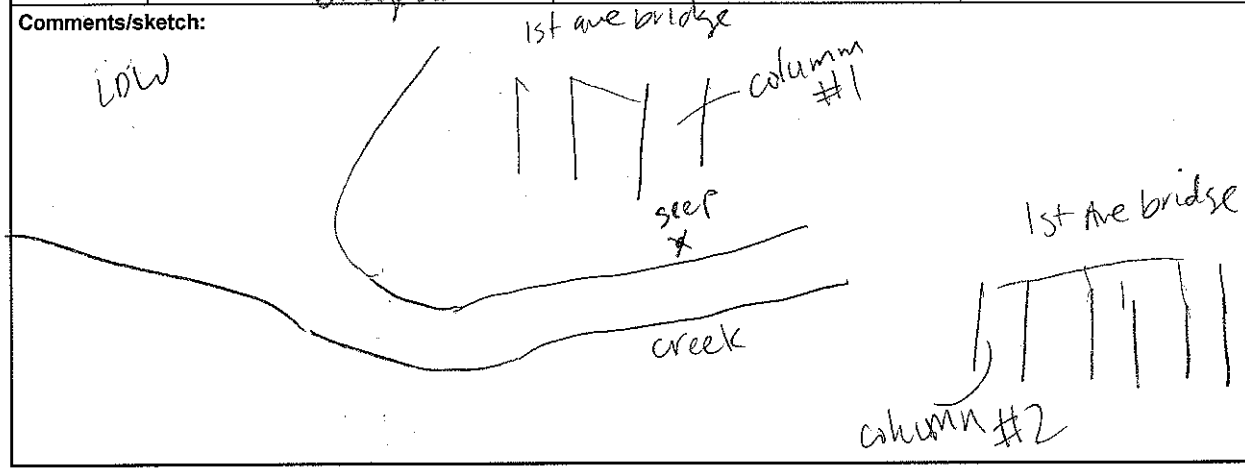
Location ID: LDW-SP-57		**Time:** 1109		**Photo #: See Form 5**
GPS Coordinates:		**Easting (x):** 122 20.092		**Northing (y)** 47 32.497
Bearing 1:	**Object description:** cement bridge column (1st Ave)	**Distance:** 6 m		**Compass direction** 70°
Bearing 2:	**Object description:** cement bridge column (1st Ave)	**Distance:** 37 m		**Compass direction** 175°

Comments/sketch:



Location ID: LDW-SP-58		**Time:** 1118		**Photo #: See Form 5**
GPS Coordinates:		**Easting (x):** 122 20.090		**Northing (y)** 47 32.424
Bearing 1:	**Object description:** Cement bridge column	**Distance:** 18m		**Compass direction** 150°
Bearing 2:	**Object description:** Cement bridge column	**Distance:** 36m		**Compass direction** 205°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task:

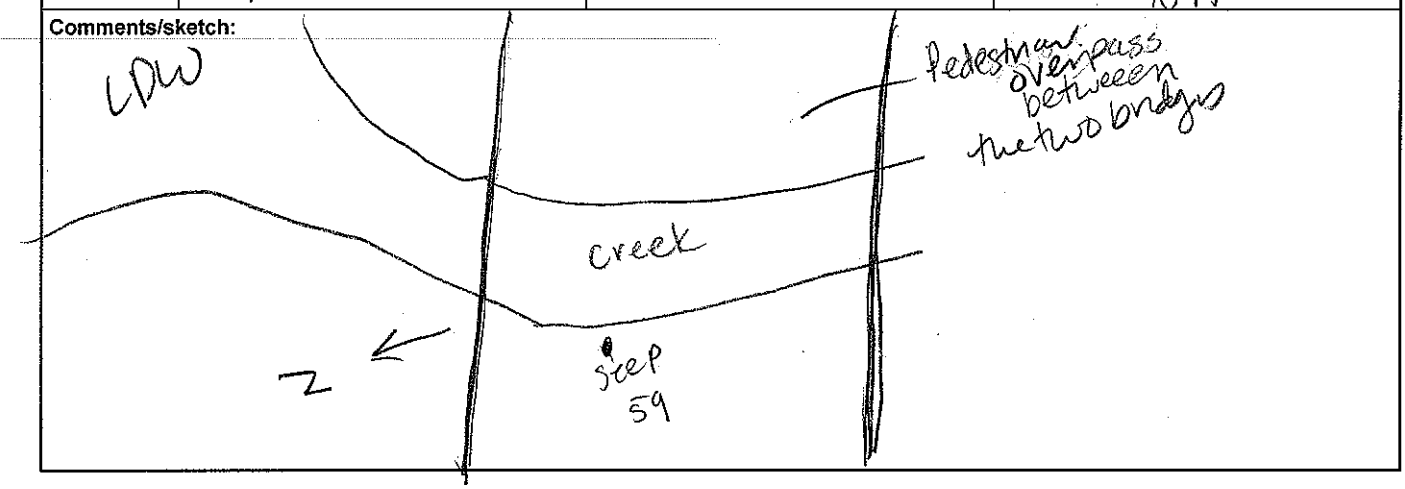
Date: 5/7/04 Crew: BB, JF, DH, KT, + RT

Weather: Overcast, light rain Photo no. NA

Name of person filling out form: Joanna Florer

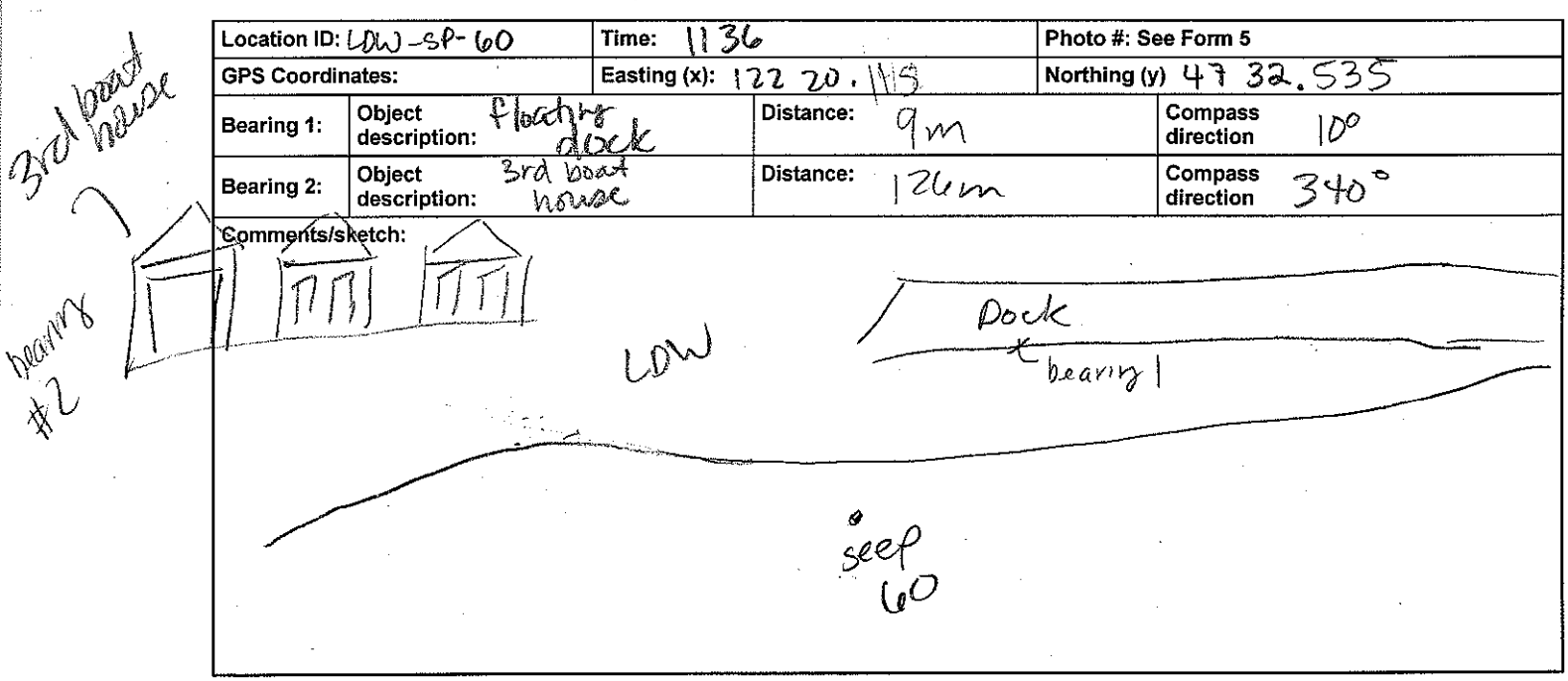
Location ID: LDW-SP-59		Time: 1123		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.092		Northing (y) 47 32.431	
Bearing 1:	Object description: NA	Distance: NA		Compass direction	NA
Bearing 2:	Object description: NA	Distance: NA		Compass direction	NA

Comments/sketch:



Location ID: LDW-SP-60		Time: 1136		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.115		Northing (y) 47 32.535	
Bearing 1:	Object description: floating dock	Distance: 9m		Compass direction	100°
Bearing 2:	Object description: 3rd boat house	Distance: 126m		Compass direction	340°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW Seep Survey Project Task: Seep Recon

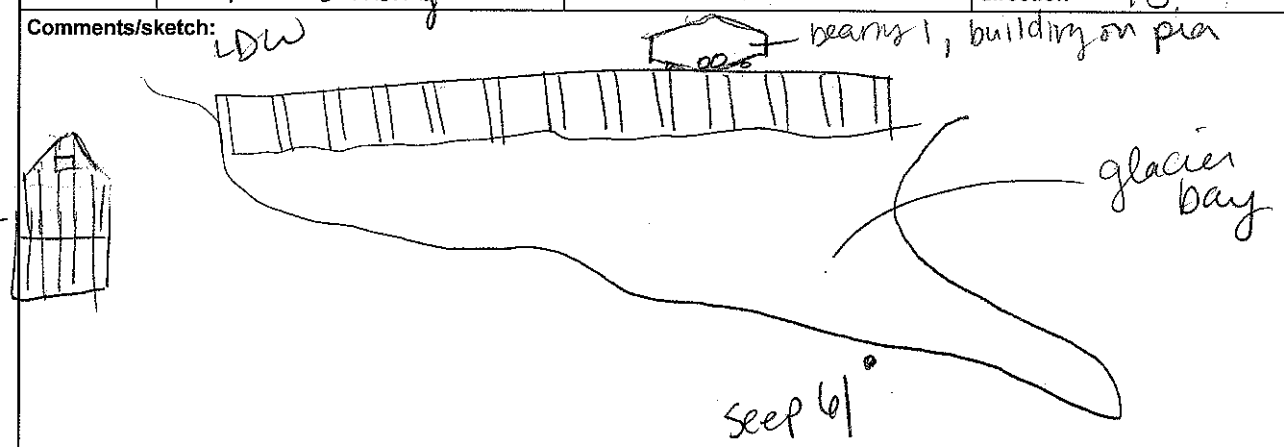
Date: 5/7/04 Crew: BB, JF, DH, KT + RT

Weather: overcast, light rain Photo no. NA

Name of person filling out form: Joanna Florer

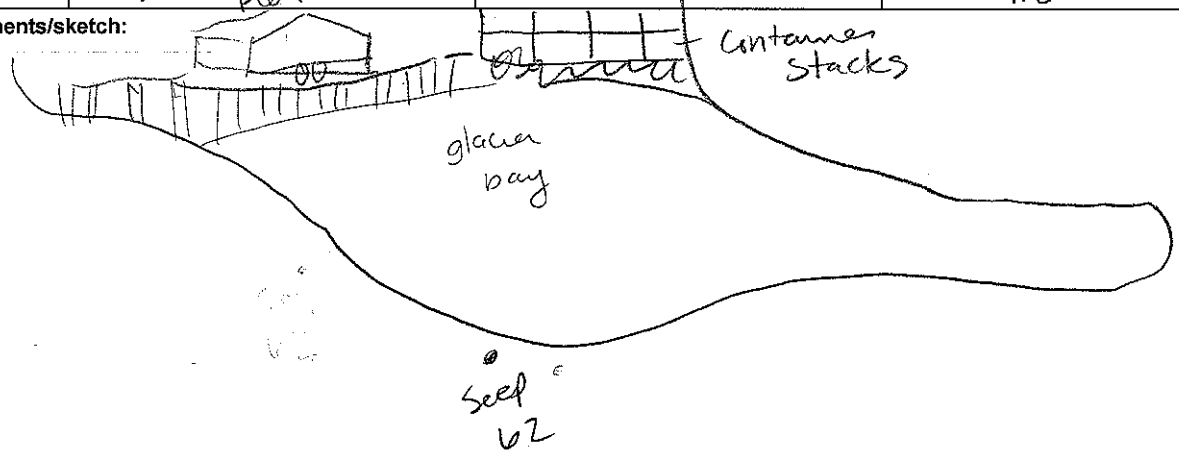
Location ID: LDW-SP-61		Time: 1156		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122°20.533		Northing (y) 47°32.916	
Bearing 1:	Object description: crane building on top of pier	Distance: 125m		Compass direction	70°
Bearing 2:	Object description: metal building	Distance: 94m		Compass direction	15°

Comments/sketch:



Location ID: LDW-SP-62		Time: 1203		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122°20.498		Northing (y) 47°32.952	
Bearing 1:	Object description: container stacks	Distance: 133m		Compass direction	145°
Bearing 2:	Object description: crane on top of pier	Distance: 97m		Compass direction	115°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep Recon

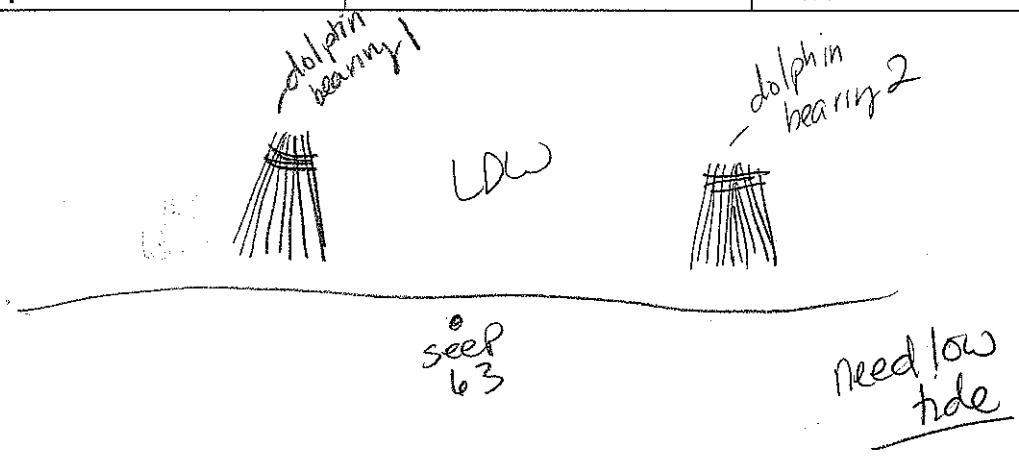
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: overcast, light rain Photo no. NA

Name of person filling out form: Joanna Florer

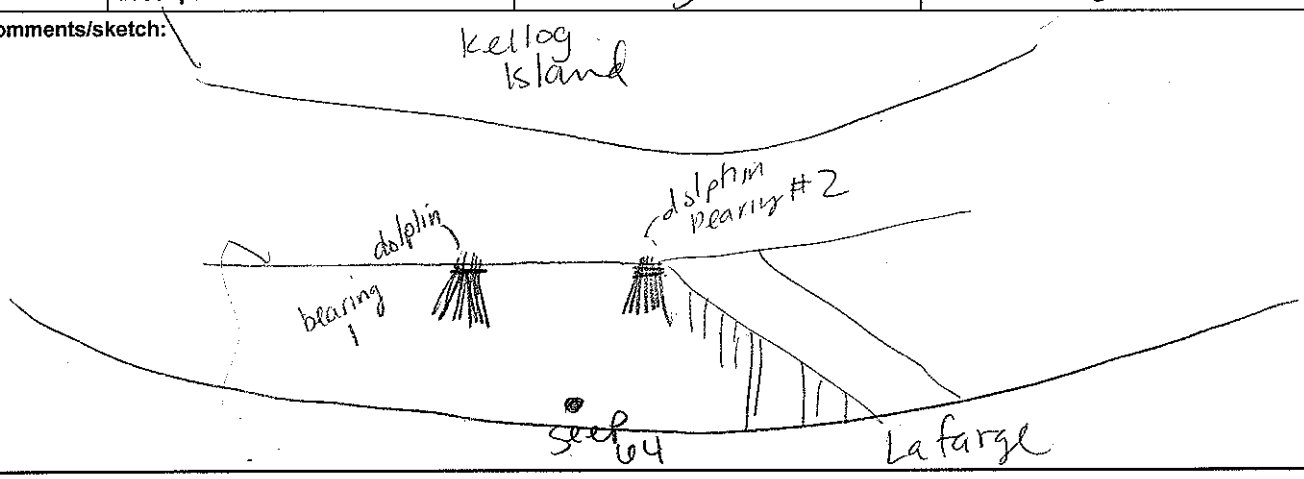
Location ID: LDW-SP-63		Time: 1226		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 19.847		Northing (y) 47 32.426	
Bearing 1:	Object description: wood dolphin	Distance: 9m		Compass direction	155°
Bearing 2:	Object description: wood dolphin	Distance: 8m		Compass direction	260°

Comments/sketch:



Location ID: LDW-SP-64		Time: 1237		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.757		Northing (y) 47 33.318	
Bearing 1:	Object description: Dolphin	Distance: 17m		Compass direction	340°
Bearing 2:	Object description: Dolphin	Distance: 30m		Compass direction	35°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-SeepSurvey **Project Task:** Seep Recon

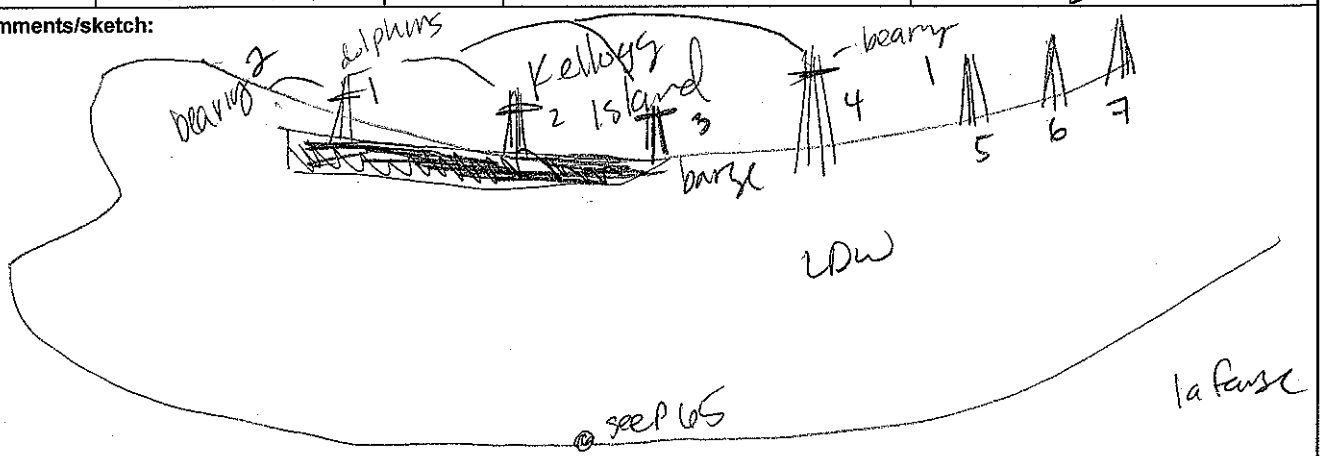
Date: 5/7/04 **Crew:** BB, JF, DH, KT + RT

Weather: overcast, light rain **Photo no.** NA

Name of person filling out form: Joanna Flower

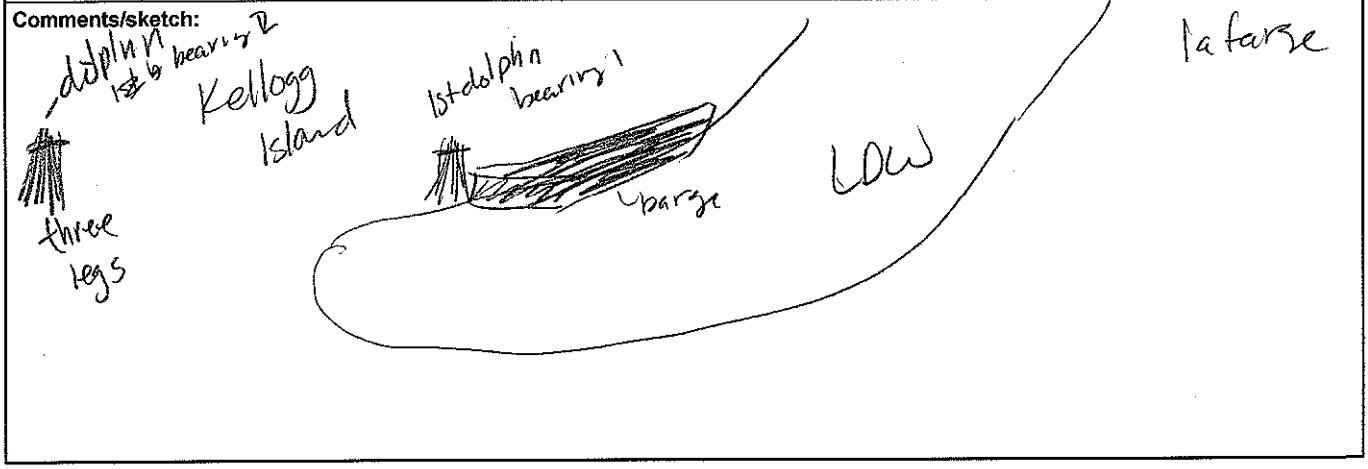
Location ID: LDW-SR-65		Time: 1250		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 1222 20.803		Northing (y) 4733.307	
Bearing 1:	Object description: 1st dolphin	Distance: 93m		Compass direction	335°
Bearing 2:	Object description: 4th dolphin	Distance: 160m		Compass direction	30°

Comments/sketch:



Location ID: LDW-SR-66		Time: 1256		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 1222 20.855		Northing (y) 47 33.326	
Bearing 1:	Object description: dolphin	Distance: 74m		Compass direction	25°
Bearing 2:	Object description: dolphin	Distance: 131m		Compass direction	320°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep Recon

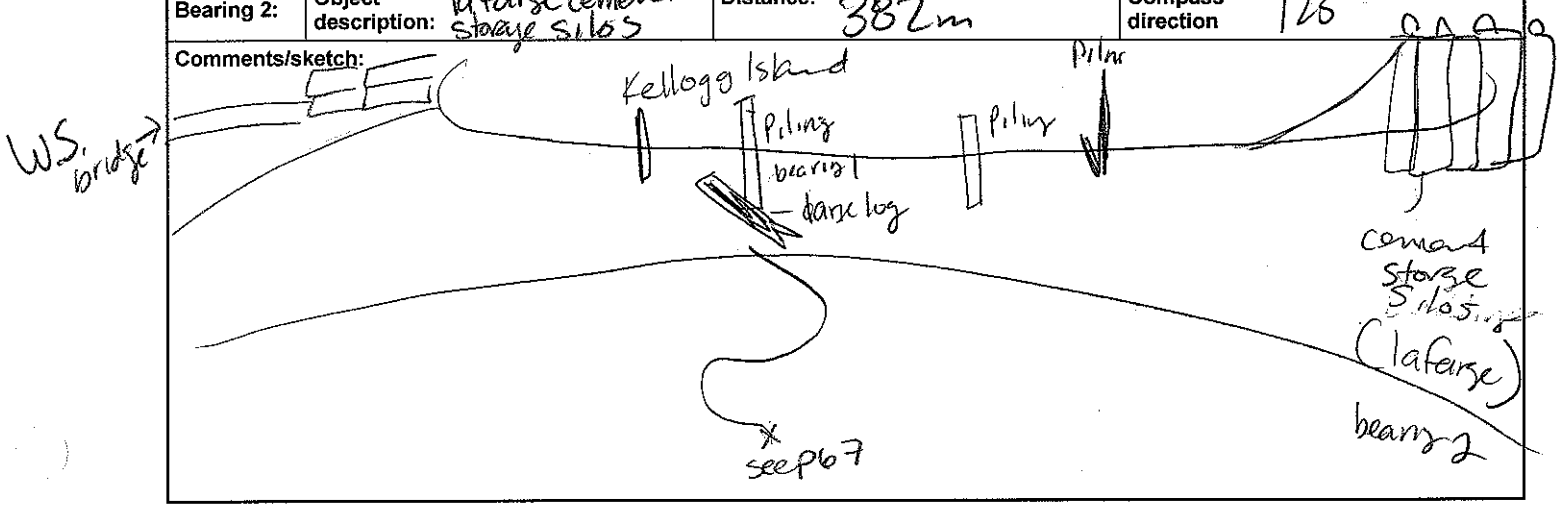
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: overcast, light rain Photo no. VI9

Name of person filling out form: Joanna Florer

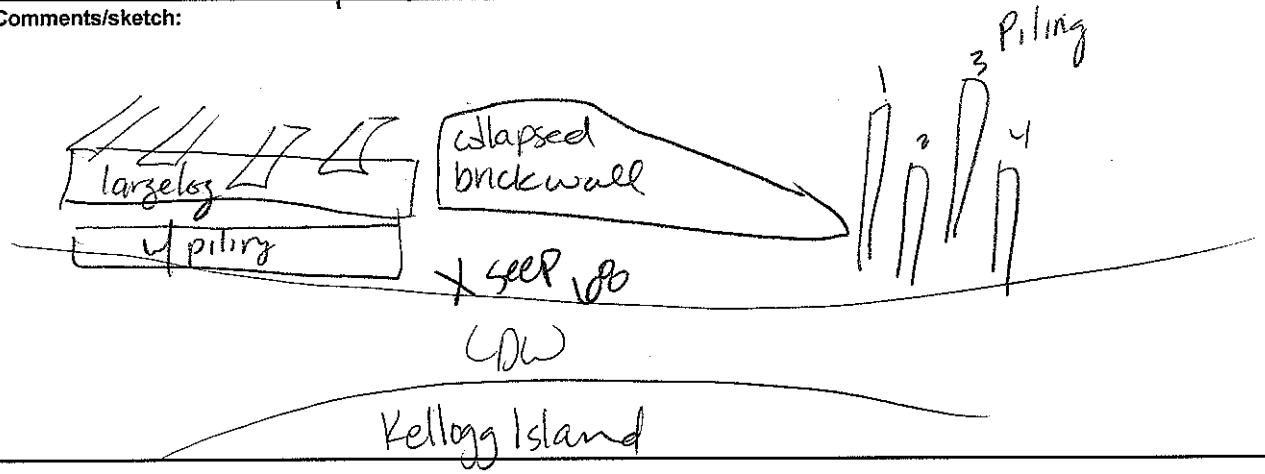
Location ID: LDW-SP-67		Time: 1309		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.982		Northing (y) 47 33.420	
Bearing 1:	Object description: Piling w/ large log in front	Distance: 59m		Compass direction	46°
Bearing 2:	Object description: lafarge cement storage silos	Distance: 382m		Compass direction	125°

Comments/sketch:



Location ID: LDW-SP-68		Time: 1319		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 21.014		Northing (y) 47 33.514	
Bearing 1:	Object description: large horizontal log	Distance: 12m		Compass direction	265°
Bearing 2:	Object description: 1st piling	Distance: 10m		Compass direction	205°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep Recon

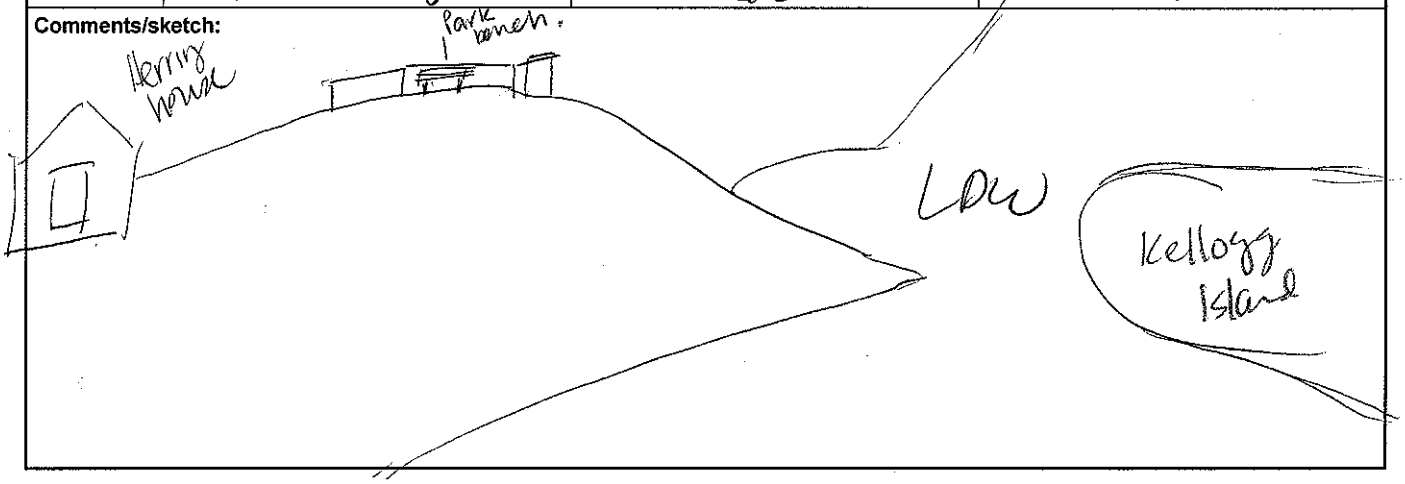
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: Over cast light rain Photo no. NA

Name of person filling out form: Joanna Plorer

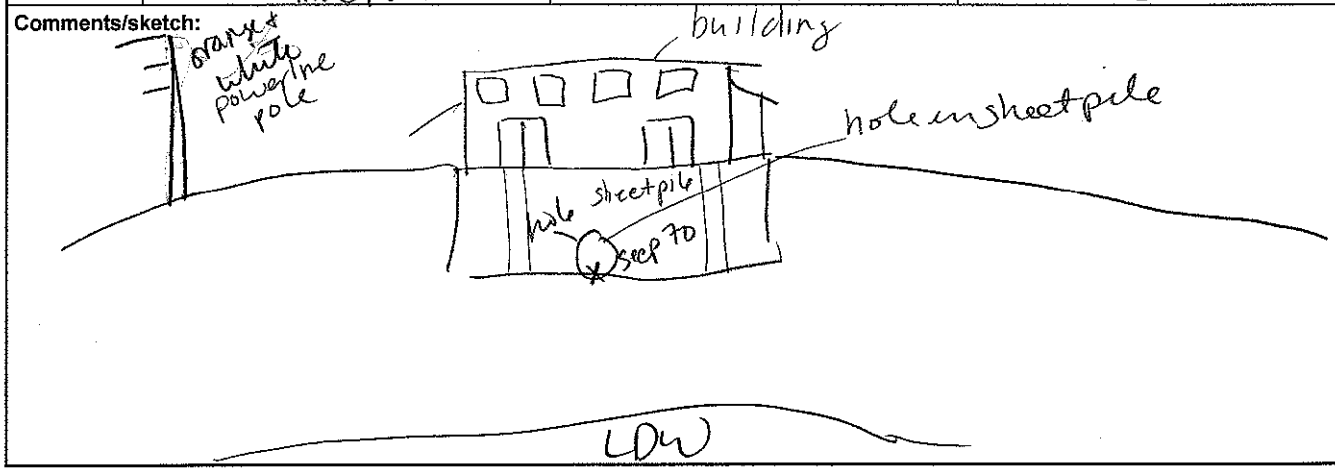
Location ID: LDW-SP-69		Time: 1330		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 21.002		Northing (y)	47 33.657
Bearing 1:	Object description: park bench	Distance:	26 m	Compass direction	300°
Bearing 2:	Object description: herring house	Distance:	65 m	Compass direction	260°

Comments/sketch:



Location ID: LDW-SP-70		Time: 1346		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.990		Northing (y)	47 33.945
Bearing 1:	Object description: building above seep - beige, metal	Distance:	7m	Compass direction	230°
Bearing 2:	Object description: orange & white power line pole	Distance:	211 m	Compass direction	150°

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep Recon

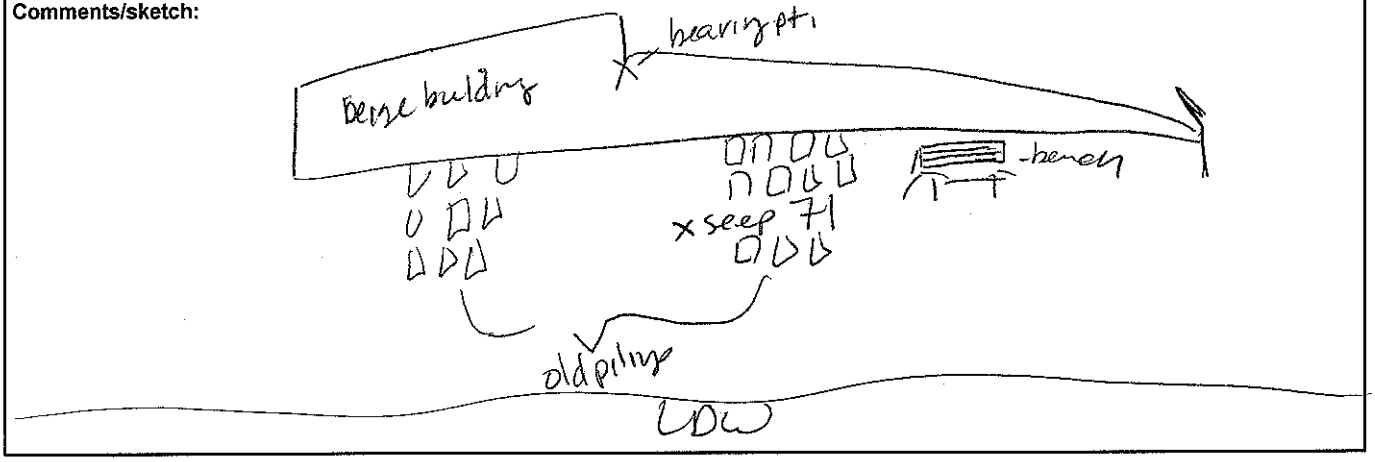
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: overcast, light rain Photo no. NA

Name of person filling out form: Joanna Florer

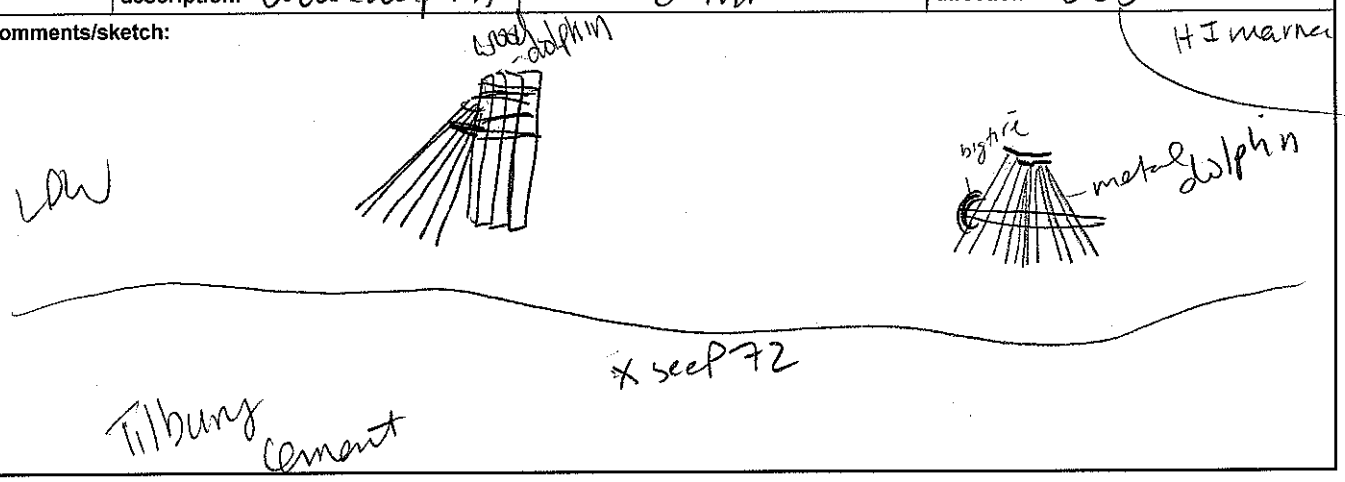
Location ID: LDW-SP-71		Time: 1354		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 21.016		Northing (y) 47 33.993	
Bearing 1:	Object description: large beige building	Distance: 35m		Compass direction	255°
Bearing 2:	Object description: bench	Distance: 38m		Compass direction	305°

Comments/sketch:



Location ID: LDW-SP-72		Time: 1411		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.743		Northing (y) 47 34.060	
Bearing 1:	Object description: metal dolphin	Distance: 22m		Compass direction	300
Bearing 2:	Object description: wood dolphin	Distance: 24m		Compass direction	205

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep Recon

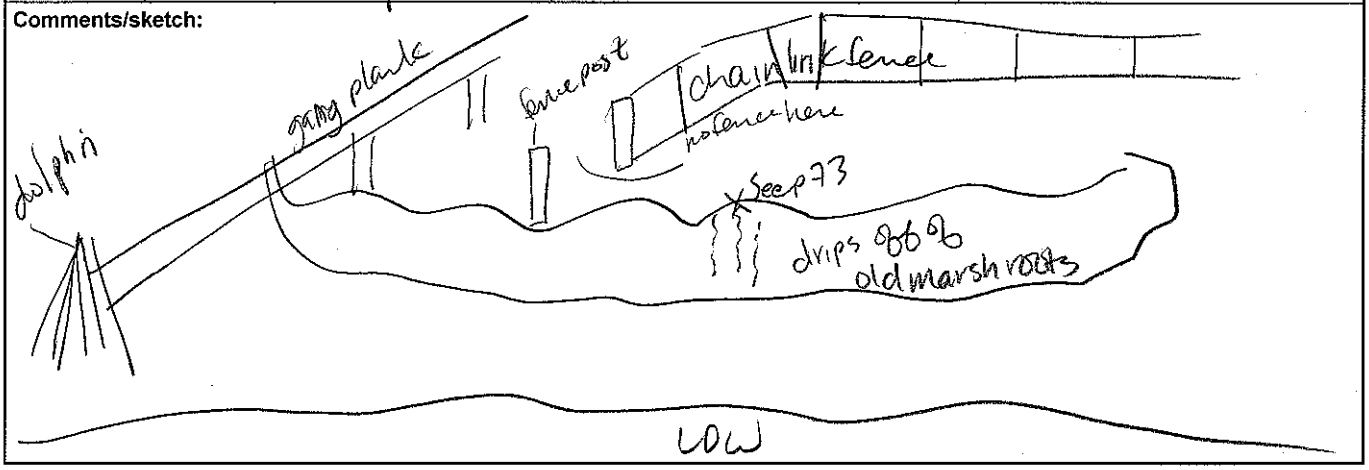
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: overcast, light rain Photo no. N/A

Name of person filling out form: Joanna Florer

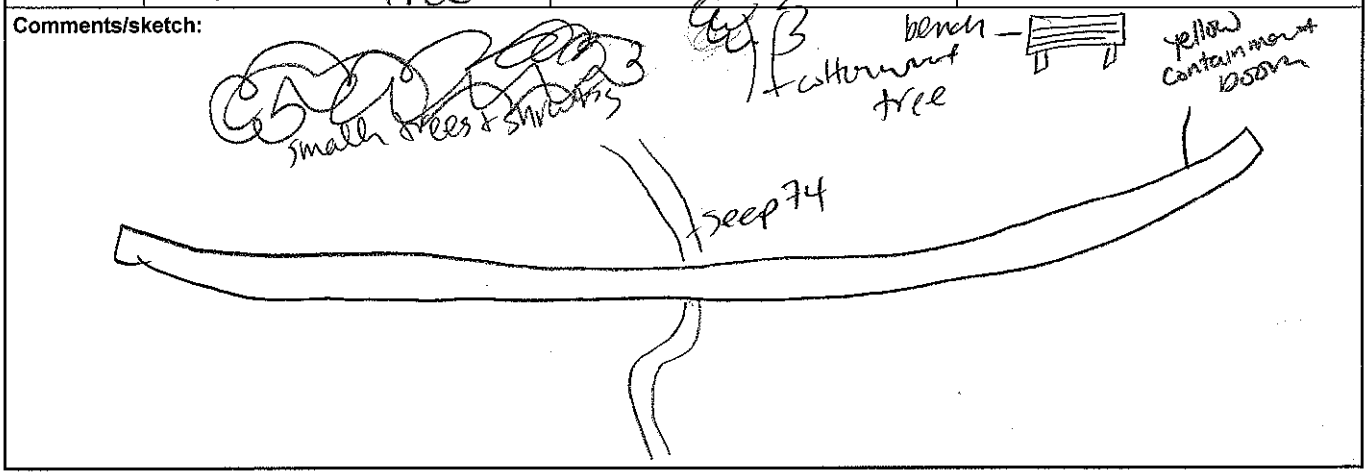
Location ID: LDW-SP-73		Time: 1430		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.693		Northing (y) 47 33.680	
Bearing 1:	Object description: dolphin at end of gangplank	Distance: 19m		Compass direction	280°
Bearing 2:	Object description: fence post	Distance: 6m		Compass direction	25°

Comments/sketch:



Location ID: LDW-SP-74		Time: 1436		Photo #: See Form 5	
GPS Coordinates:		Easting (x):		Northing (y)	
Bearing 1:	Object description: park bench	Distance: 26 m		Compass direction	135
Bearing 2:	Object description: large cottonwood tree	Distance: 38m		Compass direction	80

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep Recon

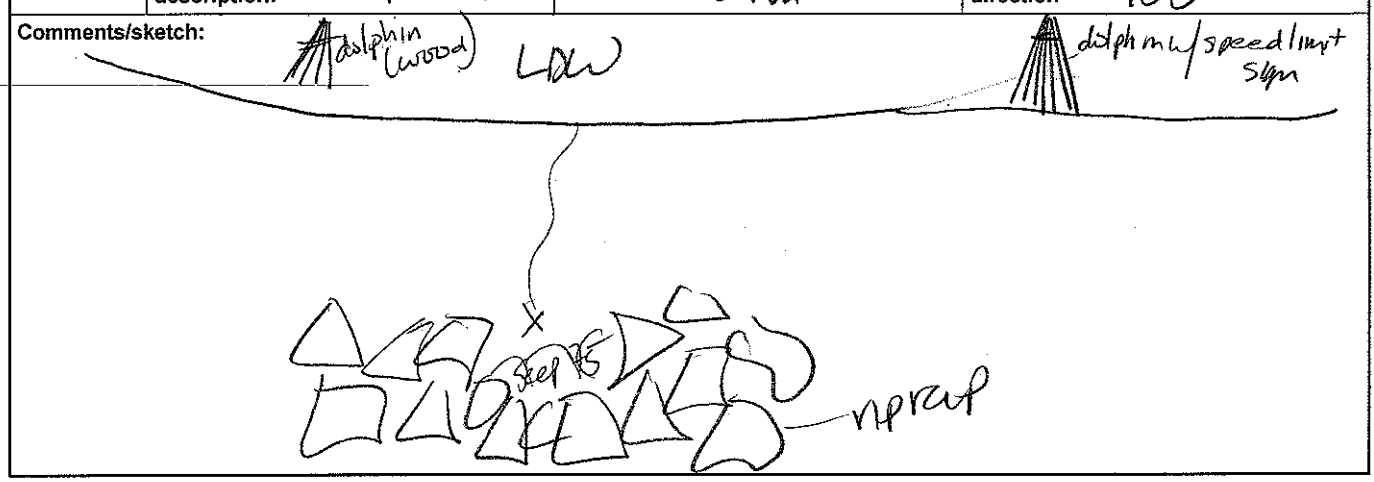
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: overcast, light rain Photo no. NA

Name of person filling out form: Joanna Flower

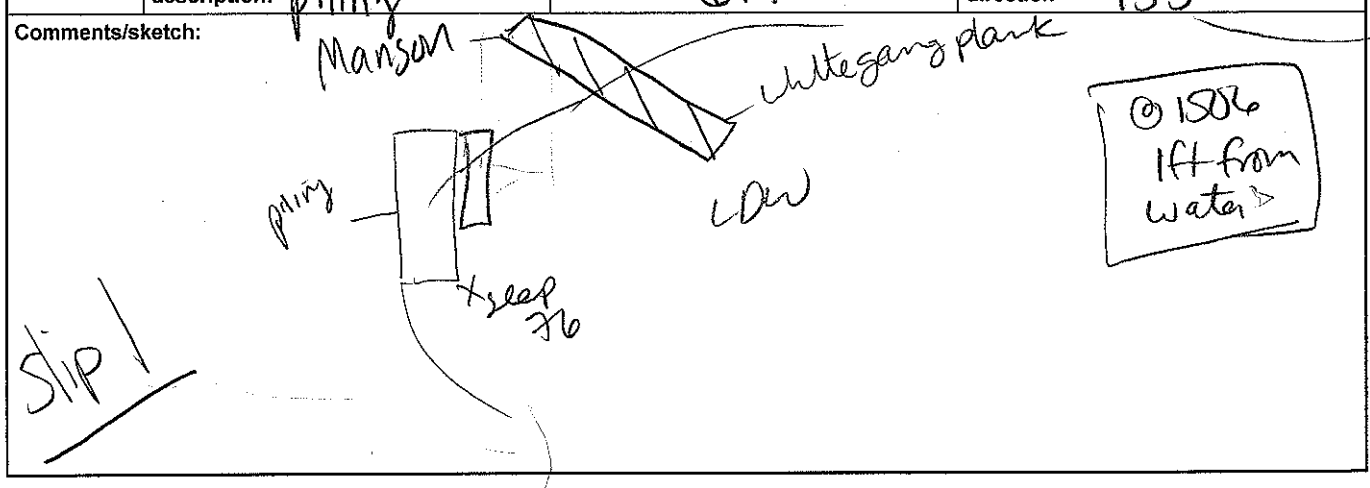
Location ID: LDW-SP-75		Time: 1446		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 1220.617		Northing (y)	4733.530
Bearing 1:	Object description: dolphin w/ sign	Distance: 98m		Compass direction	325°
Bearing 2:	Object description: 1st dolphin → S	Distance: 89m		Compass direction	155°

Comments/sketch:



Location ID: LDW-SP-76		Time: 1506		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 1220.391		Northing (y)	4733.370
Bearing 1:	Object description: white gangplank	Distance: 27m		Compass direction	210
Bearing 2:	Object description: piling	Distance: 6in		Compass direction	155

Comments/sketch:



Wind Ward environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep recon

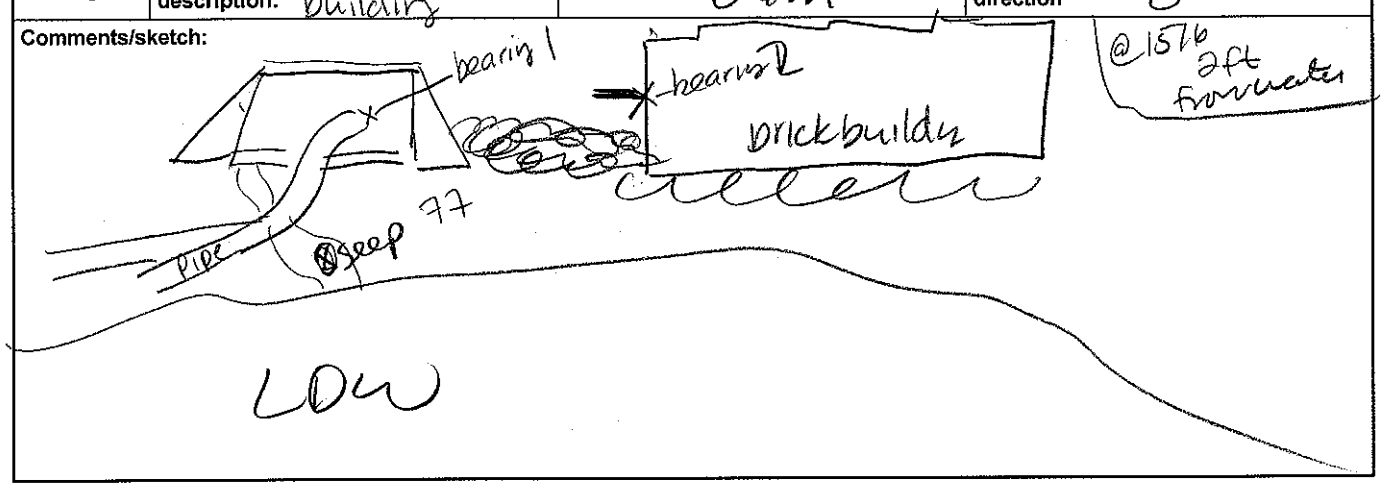
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: overcast, light rain Photo no. NA

Name of person filling out form: Joanna Florer

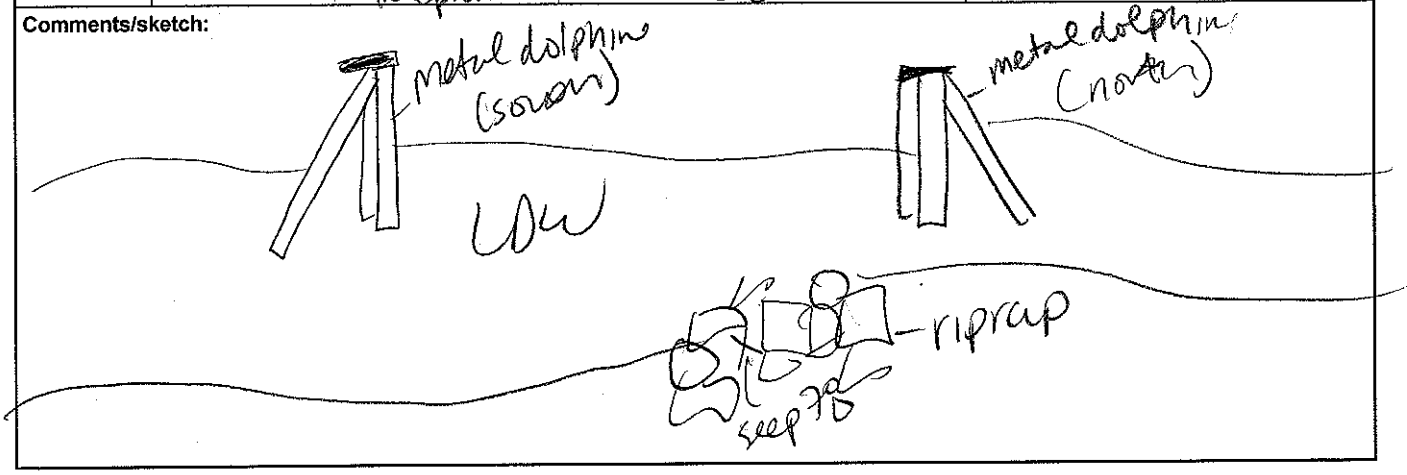
Location ID: LDW-SP-77		Time: 1516		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.466		Northing (y)	47 33.282
Bearing 1:	Object description: pipe out to outfall	Distance: 13m		Compass direction	45°
Bearing 2:	Object description: grey brick building	Distance: 26m		Compass direction	80°

Comments/sketch:



Location ID: LDW-SP-78		Time: 1527		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 122 20.359		Northing (y)	47 33.008
Bearing 1:	Object description: metal dolphin	Distance: 18		Compass direction	270
Bearing 2:	Object description: metal dolphin	Distance: 22		Compass direction	180

Comments/sketch:



Wind Ward environmental LLC

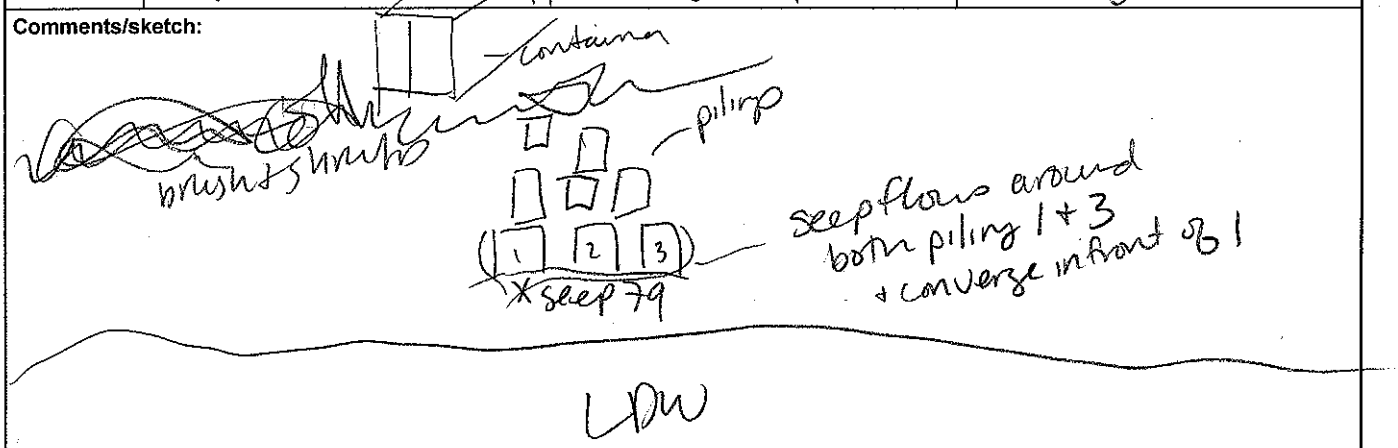
FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW - Seep Survey Project Task: Seep Recon
Date: 5/7/04 Crew: BB, JF, DH, KT, RT
Weather: overcast, light rain Photo no. NA
Name of person filling out form: Joanna Florer

Location ID: LDW-SP-79	Time: 1538	Photo #: See Form 5
GPS Coordinates:	Easting (x): 1220,328	Northing (y) 47 32.974

	Object description	Distance	Compass direction
Bearing 1:	piling 3	2in	105
Bearing 2:	white container	20m	70

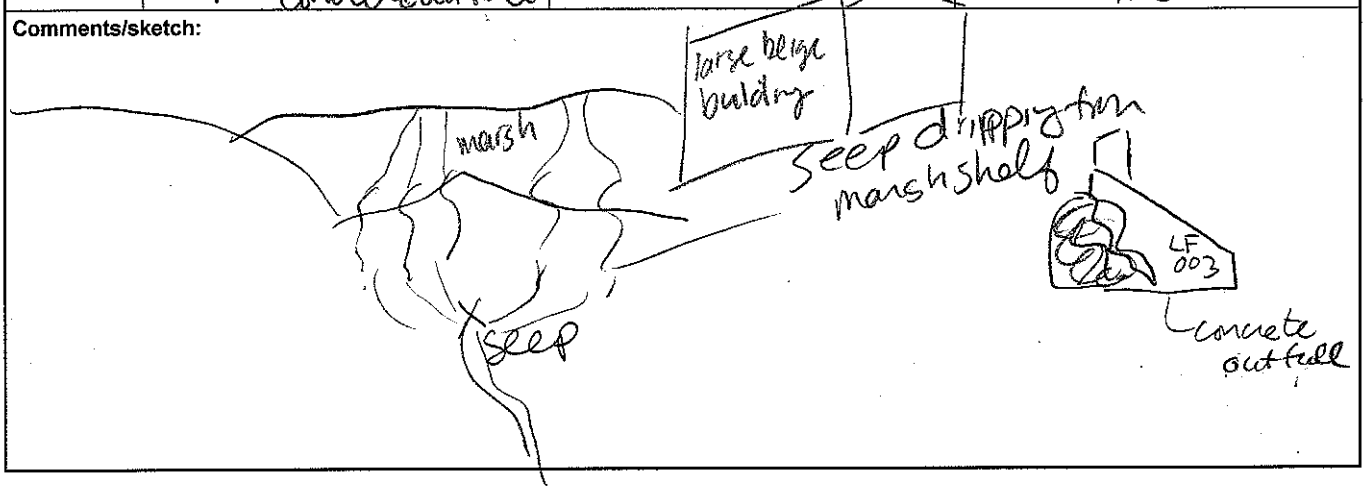
Comments/sketch:



Location ID: LDW-SP-80	Time: 1545	Photo #: See Form 5
GPS Coordinates:	Easting (x): 1220,291	Northing (y) 47 32.890

	Object description	Distance	Compass direction
Bearing 1:	beige building	53m	325
Bearing 2:	concrete outfall	17m	125

Comments/sketch:



WindWard environmental LLC

FORM 3. SEEP RECONNAISSANCE SURVEY FORM A

Project Name: LDW-Seep Survey Project Task: Seep Recon

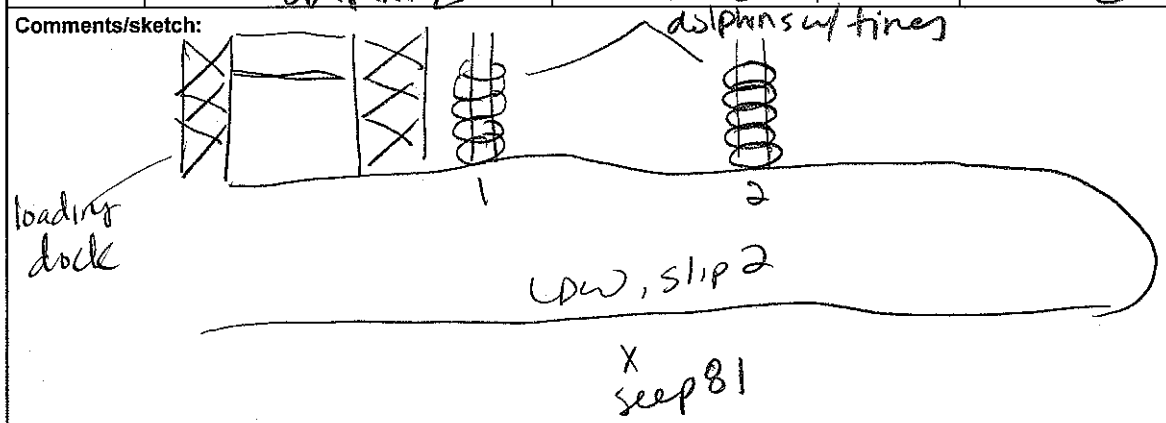
Date: 5/7/04 Crew: BB, JF, DH, KT, RT

Weather: clear Photo no. NA

Name of person filling out form: Joanna Florer

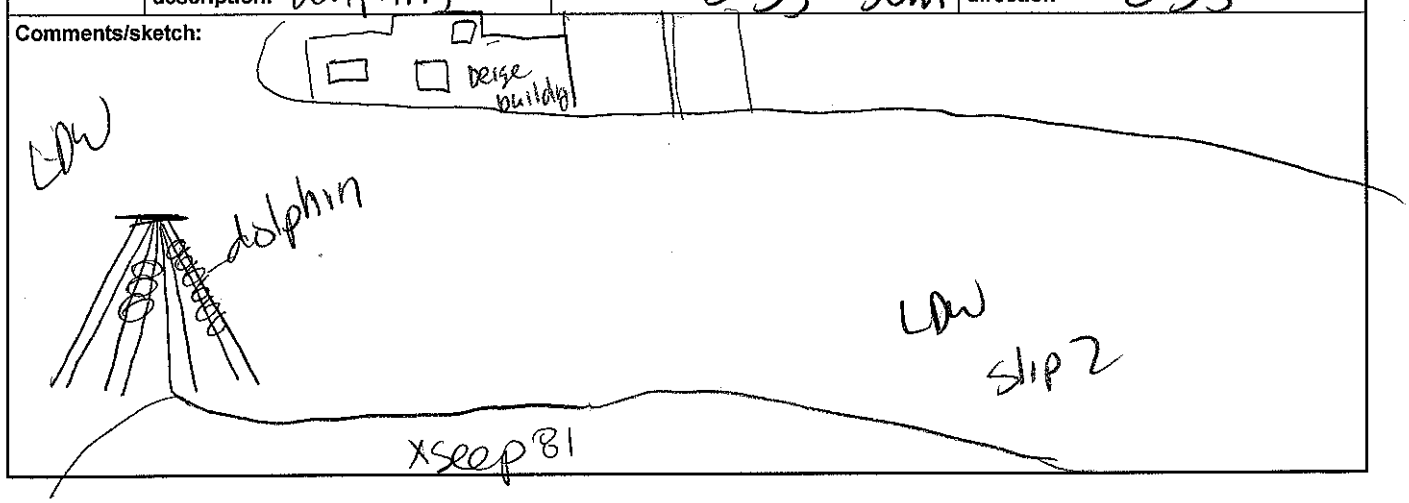
Location ID: LDW-SP-81		Time: 1552		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 1222 0, 108		Northing (y) 47 32, 816	
Bearing 1:	Object description: dolphin 1	Distance: 56m		Compass direction	275
Bearing 2:	Object description: dolphin 2	Distance: 55 m		Compass direction	285

Comments/sketch:



Location ID: LDW-SP-82		Time: 1601		Photo #: See Form 5	
GPS Coordinates:		Easting (x): 1222 0.155		Northing (y) 47 32.748	
Bearing 1:	Object description: beige building	Distance: ~~285~~ 101m		Compass direction	285
Bearing 2:	Object description: dolphin	Distance: ~~235~~ 30m		Compass direction	235

Comments/sketch:



D.2 Reconnaissance Survey Forms: Water Quality

(1)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI Seep Survey Project Task: Reconnaissance Survey

Date: 05-May-2004 Crew: RAC, Jane Sexton, Tim Fitzgerald, Eric Parker

Weather: cloudy w/ sun breaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 01	Easting (x):	Northing (y)	Time: 10:05

Qualitative description of flow rate: low

	Temp	SpC	DO	pH	ORP	~~Turbidity~~	Salinity
1	13.54	19783	5.40	7.23	199		15.5
2	13.18	19590	5.35	8.51	182		15.5
3							

Comments: 1+2
took samples approx. 1 ft down bank from stake

x/y coordinates for each seep provided in Boat 1 field sheets

Location ID: Seep 02	Easting (x):	Northing (y)	Time: 1048

Qualitative description of flow rate: low-med

	Temp	SpC	DO	pH	ORP	~~Turbidity~~	Salinity
1	12.34	26885	6.52	12?	298		22.3
2	12.13	26067	7.08	11?	296		21.7
3							

Comments:
Sample collected 6 ft southwest from stake 6ft

Location ID: Seep03	Easting (x):	Northing (y)	Time: 1110

Qualitative description of flow rate: med-high

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	12.48	12864	5.46	12.4?	155		10.0
2							
3							

Comments:
Sample collected 8ft northwest from stake 8ft

(2)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 05 MAY - 2004 Crew: PMZ, Jane Sexton, Tim Fitzgerald, Eric Parker

Weather: Cloudy with sunbreaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep04	Easting (x): -	Northing (y) -	Time: 1117
Qualitative description of flow rate: med-high			

Temp	SpC ms/cm	DO	pH	ORP	Turbidity	Salinity
1 13.10	1 11.5	1 6.21	1 13.95 ?	1 202	1	1 8.7
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Took sample right at stake
XY coordinates for each seep provided in Boat 1 field Sheets

Location ID: Seep05	Easting (x): -	Northing (y) -	Time: 1138
Qualitative description of flow rate: med-high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.47	1 13042	1 4.05	1 13 ?	1 235	1	1 10.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Took sample right at stake

Location ID: Seep06	Easting (x): -	Northing (y) -	Time: 1144
Qualitative description of flow rate: high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 17.12	1 28386	1 7.80	1 8.82	1 216	1	1 21.0
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Took sample right at stake

(3)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep Survey Project Task: Recon Survey

Date: 05-MAY-2004 Crew: RAL, JB, TF, EP

Weather: Cloudy with sun breaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep07	Easting (x):	Northing (y)	Time: 1150
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.9	30869	6.80	10.6?	245		23.7
2							
3							

Comments:
Sample collected 10ft SW of stake; lots of footprints; selected location based on undisturbed water/area.

x/y coordinates for each seep provided in boat 1 field sheets

Location ID: Seep08	Easting (x):	Northing (y)	Time: 1158
Qualitative description of flow rate: med-high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	17.3	11545	6.24	10?	107		7.8
2							
3							

Comments:
Sample collected 2ft above stake in seep

Location ID: Seep 11	Easting (x):	Northing (y)	Time: 1207
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	14.05	16665	7.00	11.9?	147		12.7
2							
3							

Comments:
Sample collected at stake

(4)

WindWard environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI- Seep Survey Project Task: Recon Survey

Date: 05-May-2004 Crew: RAL, JS, TF, EP

Weather: Cloudy with sun breaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 12	Easting (x):	Northing (y)	Time: 1215
Qualitative description of flow rate: high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.22	1 31257	1 4.76	1 13.3 ?	1 250	1	1 26.5
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

xy coordinates for each seep provided in boat 1 field sheets

Location ID: Seep 9	Easting (x):	Northing (y)	Time: 1228
Qualitative description of flow rate: high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.43	1 13529	1 6.13	1 13.7 ?	1 234	1	1 10.3
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Location ID: Seep 10	Easting (x):	Northing (y)	Time: 1236
Qualitative description of flow rate: high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 14.74	1 15040	1 7.80	1 —	1 93	1	1 11.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected 15 ft N of stake in same main channel

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW- RI -Seep Survey Project Task: Recon Survey

Date: 05-MAY-2004 Crew: RAC, JS, TF, EP

Weather: Cloudy with sun breaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 13	Easting (x):	Northing (y)	Time: 1247
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	17.82	19535	6.14	11.4?	84		13.7
2							
3							

Comments:
Sample collected 20ft east of stake

xy coordinates for each seep provided in Boat 1 field sheets

Location ID: Seep 14	Easting (x):	Northing (y)	Time: 1256
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.69	20359	5.82	11.23?	80		15.1
2							
3							

Comments:
Sample collected 15ft east of stake

Location ID: Seep 15	Easting (x):	Northing (y)	Time: 1310
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	13.11	23776	4.15	—	166		19.1
2							
3							

Comments:
Sample collected at the stake

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep Survey Project Task: Recon Survey

Date: 05-MAY-2004 Crew: RAC, JS, TF, EP

Weather: Cloudy with sunbreaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 25	Easting (x):	Northing (y)	Time: 1435
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 18.89	1 4647	1 6.43	1 11.4?	1 387	1	1 ~~34.7~~
2	2	2	2	2	2	2 2.8
3	3	3	3	3	3	3

Comments:

Sample taken at stake

XY coordinates for each seep provided in Boat 1 field sheets

Location ID:	Easting (x):	Northing (y)	Time:
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

5/5/04

Location ID:	Easting (x):	Northing (y)	Time:
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

(6)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 05-MAY-2004 Crew: RAC, JS, TF, EP

Weather: Cloudy with Sun breaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 17	Easting (x):	Northing (y)	Time: 1325
Qualitative description of flow rate: med-high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.50	1 14678	1 3.6	1 —	1 160	1	1 11.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected about 3ft east of stake

XY coordinates for each seep provided in Boat Field Sheets

Location ID: Seep 18	Easting (x):	Northing (y)	Time: 1335
Qualitative description of flow rate: med-high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.18	1 19571	1 6.25	1 —	1 201	1	1 15.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
sample collected at stake; outfall with hinged flapper 20ft east of stake

Location ID: Seep 20	Easting (x):	Northing (y)	Time: 1345
Qualitative description of flow rate: med-low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 15.6	1 14680	1 5.53	1 13?	1 176	1	1 10.6
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Wind/Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 05 - MAY - 2004 Crew: RAC, JB, TF, EP

Weather: Cloudy with sunbreaks Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 21	Easting (x):	Northing (y)	Time: 1355
Qualitative description of flow rate: high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.6	1 22622	1 5.35	1 —	1 179	1	1 17.9
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

Sample collected at stake

XY Coordinates for each Seep provided in Boat 1 field Sheets

Location ID: Seep 22	Easting (x):	Northing (y)	Time: 1405
Qualitative description of flow rate: med-low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 14.4	1 13931	1 6.14	1 —	1 211	1	1 10.3
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

Sample collected at stake

Location ID: Seep 24	Easting (x):	Northing (y)	Time: 1425
Qualitative description of flow rate: med-low			

Temp	SpC ~~µS/cm~~	DO	pH	ORP	Turbidity	Salinity
1 16.04	1 209.2	1 7.31	1 12.7?	1 724	1	1 15.4
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

Sample collected at stake

(1)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep Survey Project Task: Recon Survey

Date: 06-MAY-2004 Crew: RAC, JS, EP, TF

Weather: Hazy with sun Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 26	Easting (x):	Northing (y)	Time: 1015
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.60	1 11612	1 3.80	1 6.84	1 194	1	1 8.7
2 13.65	2 11704	2 3.36	2 6.75	2 195	2	2 8.7
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY Coordinates for each Seep provided in Boat 1 field Sheets

Location ID: Seep 26 Surface	Easting (x): 122 18.266	Northing (y) 47 30.897	Time: 10:20
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.75	1 22780	1 3.08	1 7.14	1 197	1	1 18.9
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample measurements taken ≈ 50 ft. off shore from stake in ≈ 6" of water (Surface Reading)

47 30.897 N
122.18.266 W

Location ID: Seep 26 1m depth	Easting (x): 122 18.266	Northing (y) 47 30.897	Time: 10:25
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.75	1 24860	1 3.13	1 7.06	1 196	1	1 20.8
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample measurements taken ≈ 50 ft off shore from stake in ≈ 1m of water (1m depth Reading)

(2)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 06-MAY-2004 Crew: RAC, JS, EP, TF

Weather: Hazy w/ Sun Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 23	Easting (x):	Northing (y)	Time: 1042

Qualitative description of flow rate: med

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.01	1 12118	1 2.51	1 6.71	1 199	1	1 9.2
2 12.97	2 12165	2 2.52	2 6.64	2 200	2	2 9.3
3	3	3	3	3	3	3

Comments:
Sample collected 3ft N of stake

XY coords for each seep provided in boat 1 field forms

Location ID: Seep 28	Easting (x):	Northing (y)	Time: 1051

Qualitative description of flow rate: med

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.67	1 20245	1 1.72	1 6.17	1 191	1	1 15.8
2 13.65	2 20348	2 1.78	2 6.14	2 188	2	2 15.9
3	3	3	3	3	3	3

Comments:
Sample collected at 3ft S of stake

Location ID: Seep 27	Easting (x):	Northing (y)	Time: 1108

Qualitative description of flow rate: med

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.75	1 20169	1 2.81	1 6.87	1 193	1	1 16.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

(3)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 06-MAY-2004 Crew: RAC, JS, EP, TF

Weather: Hazy with sun Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 30	Easting (x):	Northing (y)	Time: 1116

Qualitative description of flow rate: med

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.44	1 27938	1 2.60	1 6.81	1 196	1	1 23.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY Coords for each seep provided in Boat I field forms

Location ID: Seep 31	Easting (x):	Northing (y)	Time: 1121

Qualitative description of flow rate: med

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.40	1 30034	1 2.36	1 6.71	1 198	1	1 25.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Location ID: Seep 29	Easting (x):	Northing (y)	Time: 1135

Qualitative description of flow rate: med high

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.70	1 25989	1 1.86	1 6.37	1 195	1	1 21.3
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW – RI – Seep Survey Project Task: Recon Survey

Date: 06-MAY-2004 Crew: RAZ, JS, EP, TF

Weather: Hazy with Sun Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 32	Easting (x):	Northing (y)	Time: 1147
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	14.42	15482	2.60	6.94	196		11.6
2							
3							

Comments:

Sample collected at stake

XY coords for each seep are provided in Boat 1 field forms

Location ID: Seep 33	Easting (x):	Northing (y)	Time: 1210
Qualitative description of flow rate: med-low			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	13.28	30891	2.25	6.60	195		25.4
2							
3							

Comments:

Sample collected at stake

Location ID: Seep 34	Easting (x):	Northing (y)	Time: 1217
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	19.10	38010	2.55	7.34	182		~~2.3276~~
2							2.3
3							

Comments:

Sample collected 5 ft W of stake

(5)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LOW-RI-Seep Survey Project Task: Recon Survey

Date: 06-MAY-2004 Crew: RAL, JB, EP, TF

Weather: Hazy with sun (windy) Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 35	Easting (x):	Northing (y)	Time: 12:30

Qualitative description of flow rate

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	16.07	10293	2.32	6.58	158		7.1
2							
3							

Comments:

XY Coordinates for each seep are provided in Boat 1 field forms.

Location ID: Seep 37	Easting (x):	Northing (y)	Time: 12:45

Qualitative description of flow rate high

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.69	20495	2.25	6.48	163		15.2
2							
3							

Comments:

Location ID: Seep 36	Easting (x):	Northing (y)	Time: 1310

Qualitative description of flow rate med

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.90	21941	2.13	6.67	180		16.3
2							
3							

Comments:

Sample collected from seep at toe of riprap; not from flow from outfall

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Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 06-May-2004 Crew: RAZ, JS, EP, TF

Weather: Hazy with sun (windy) Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 38	Easting (x):	Northing (y)	Time: 1315
Qualitative description of flow rate: med - high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.72	10865	2.61	7.22	183		7.6
2							
3							

Comments:
Sample collected at stake

XY Coordinates for each seep are provided in Boat I field forms.

Location ID: Seep 39	Easting (x):	Northing (y)	Time: 1323
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.67	8304	2.04	6.93	159		5.7
2							
3							

Comments:
Sample collected 15ft W of Stake

Location ID: Seep 40	Easting (x):	Northing (y)	Time: 1335
Qualitative description of flow rate: med			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	14.36	25030	1.83	5.75	188		19.4
2							
3							

Comments:
Sample collected at Stake

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Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep Survey Project Task: Recon Survey

Date: 06-MAY-2004 Crew: RAE, JS, EP, TF

Weather: Hazy with sun (windy Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 41	Easting (x):	Northing (y)	Time: 1341
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	19.35	18553	1.86	6.68	89		12.5
2							
3							

Comments:

Sample collected at Stake

XY Coordinates for each seep are provided in Boat 1 field forms.

Location ID: Seep 42	Easting (x):	Northing (y)	Time: 1356
Qualitative description of flow rate: med-high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.08	2341	2.82	7.32	131		22.0
2							
3							

Comments:

Sample collected at stake

Location ID: Seep 43	Easting (x):	Northing (y)	Time: 1408
Qualitative description of flow rate: high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.93	14069	2.77	7.14	151		10.1
2							
3							

Comments:

Sample collected at Stake

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Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep survey
Project Task: Recon survey
Date: 06-MAY-2004
Crew: RAC, JS, EP, TF
Weather: Hazy with sun (windy)
Photo no.
Name of person filling out form: Jane Sexton

Location ID: Seep 16	Easting (x):	Northing (y)	Time: 1420
Qualitative description of flow rate: med			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	15.35	12290	2.04	6.68	164	1	~~8.8~~
2	2	2	2	2	2	2	17.3
3	3	3	3	3	3	3	3

Comments:
Sample collected at toe of rip rap; approx. 12 ft E of stake

XY Coordinates for each seep are provided in Boat 1 field forms.

Location ID: Seep 46	Easting (x):	Northing (y)	Time: 1436
Qualitative description of flow rate: med-high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	13.38	24435	2.68	7.11	174	1	19.6
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3

Comments:
Sample collected at the stake

Location ID: Seep 47	Easting (x):	Northing (y)	Time: 1446
Qualitative description of flow rate: med-high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	12.36	24545	2.41	6.73	181	1	20.2
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3

Comments:
Sample collected at stake at toe of rip rap

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Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep survey Project Task: Recon survey

Date: 06-MAY-2004 Crew: RAC, JS, EP, TF

Weather: Cloudy & windy Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 48	Easting (x):	Northing (y)	Time: 1452
Qualitative description of flow rate: high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.93	1 20529	1 2.88	1 7.92	1 181	1	1 16.0
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected approx 12 Ft NW of stake

XY Coordinates for each seep are provided in Boat 1 field forms.

Location ID: Seep 49	Easting (x):	Northing (y)	Time: 1459
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.95	1 15825	1 2.28	1 6.50	1 187	1	1 12.3
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at the stake

Location ID: Seep 51	Easting (x):	Northing (y)	Time: 1508
Qualitative description of flow rate: med-low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 17.74	1 34580	1 2.52	1 7.71	1 187	1	1 25.7
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected approx. 8 Ft S of stake

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Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI - Seep Survey Project Task: Recon survey

Date: 06-MAY-2004 Crew:

Weather: Cloudy + windy Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 56	Easting (x):	Northing (y)	Time: 1550

Qualitative description of flow rate

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.97	1 11991	1 2.27	1 6.22	1 197	1	1 8.9
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

XY Coordinates for each Seep are provided in Boat Field forms

Location ID: Seep 56 Surface	Easting (x):	Northing (y)	Time: 1600

Qualitative description of flow rate

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.79	1 12315	1 2.82	1 6.80	1 185	1	1 9.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

~6" of water (surface reading)

Same as coordinates for Seep 56; immediately adjacent to Seep 56

Location ID: Seep 56 (1m)	Easting (x):	Northing (y)	Time: 1610

Qualitative description of flow rate

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.56	1 17210	1 2.94	1 6.87	1 184	1	1 13.6
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

@ 1m of water (Sub Surface reading)

Same coord for Seep 56; immediately adjacent to Seep 56

(1)

Wind/Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Seep Recon

Date: 07-MAY-2004 Crew: RAC, JS, TF, EP

Weather: Cloudy, rain Photo no.

Name of person filling out form: Jana Sexton

Location ID: Seep 55	Easting (x):	Northing (y)	Time: 1100
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.11	1 8190	1 2.96	1 7.00	1 204	1	1 6.0
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

sample collected at stake

XY Coordinates for all stations provided in Boat / field forms.

Location ID: Seep 54	Easting (x):	Northing (y)	Time: 1112
Qualitative description of flow rate low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.83	1 9814	1 2.18	1 6.72	1 138	1	1 7.4
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

Sample collected at stake

Location ID: Seep 53	Easting (x):	Northing (y)	Time: 1120
Qualitative description of flow rate low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.63	1 ~~20494~~	1 1.90	1 6.95	1 34	1	1 16.5
2	2 20494	2	2	2	2	2
3	3	3	3	3	3	3

Comments:

Sample collected stake.

(2)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 07 - MAY - 2004 Crew: RAC, JS, TF, EP

Weather: Cloudy, rain Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 52	Easting (x):	Northing (y)	Time: 1130
Qualitative description of flow rate: low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.99	1 15026	1 2.15	1 7.28	1 60	1	1 11.6
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY Coordinates for all stations provided in Boat / Field forms.

Location ID: Seep 50	Easting (x):	Northing (y)	Time: 1154
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.86	1 37642	1 2.50	1 5.91	1 190	1	1 32.8
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Location ID: Seep 45	Easting (x):	Northing (y)	Time: 1203
Qualitative description of flow rate: low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.14	1 26629	1 2.16	1 6.25	1 194	1	1 22.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
sample collected at stake

(3)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-SeepSurvey Project Task: Recon survey

Date: 07-MAY-2004 Crew: RAZ, JB, TF, EP

Weather: Cloudy, rain Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 44	Easting (x):	Northing (y)	Time: 1210
Qualitative description of flow rate: med-high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.42	1 32595	1 2.38	1 6.11	1 200	1	1 28.3
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY Coordinates for all stations provided in Boat / Field forms.

Location ID: Seep 19	Easting (x):	Northing (y)	Time: 1217
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.02	1 25845	1 2.57	1 6.55	1 193	1	1 21.6
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Location ID: Seep 19 (6 inches)	Easting (x):	Northing (y)	Time: 1220
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.89	1 3265	1 3.06	1 6.85	1 191	1	1 2.3 or
2	2	2	2	2	2	2 28
3	3	3	3	3	3	3

Comments:
Water quality measurements collected approx 6 inches deep below surface
30-35 ft from shore
47° 31.603 N 122° 18.549 W

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Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep survey Project Task: Recon survey

Date: 07-May-2004 Crew: RAC, JS, TF, EP

Weather: Cloudy, rain Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 19 (1m)	Easting (x):	Northing (y)	Time: 1225
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.90	1 3585	1 3.02	1 6.91	1 187	1	1 2.6 or
2	2	2	2	2	2	2 31.1
3	3	3	3	3	3	3

Comments:
Water quality measurements collected approx 1 m below surface
30-35 ft from shore (same location as 6" sample collection)

47° 31.603 N 122° 18.549 W

Location ID: Seep 57	Easting (x):	Northing (y)	Time: 1240
Qualitative description of flow rate high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.35	1 21980	1 2.77	1 6.62	1 208	1	1 17.9
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY Coordinates for all stations provided in Boat 1 field forms.

Location ID: Seep 58	Easting (x):	Northing (y)	Time: 1300
Qualitative description of flow rate med-low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 14.16	1 20212	1 2.56	1 6.36	1 205	1	1 15.6
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

(5)

Wind/Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon survey

Date: 07 - May - 2004 Crew: RAC, JS, TF, EP

Weather: Cloudy, rain Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 59	Easting (x):	Northing (y)	Time: 1310
Qualitative description of flow rate: med-low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.26	1 27189	1 2.68	1 6.74	1 212	1	1 22.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Collected at stake

XY Coordinates for all stations provided in Boat / Field forms.

Location ID: Seep 60	Easting (x):	Northing (y)	Time: 1317
Qualitative description of flow rate: med-low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.56	1 26565	1 1.93	1 6.24	1 193	1	1 21.9
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected 15 ft SE of stake

Location ID: Seep 63	Easting (x):	Northing (y)	Time: 1325
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.76	1 27196	1 1.59	1 6.37	1 203	1	1 23.0
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

(6)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep survey Project Task: Recon survey

Date: 07 - May - 2004 Crew: RAC, JS, TF, EP

Weather: Cloudy, rain Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 62	Easting (x):	Northing (y)	Time: 1344
Qualitative description of flow rate: low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.87	1 15394	1 2.39	1 6.95	1 212	1	1 12.0
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY coordinates for all stations provided in Boat 1 field forms

Location ID: Seep 62 (6")	Easting (x):	Northing (y)	Time: 1350
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity 12.4
1 12.87	1 15892	1 2.99	1 6.84	1 208	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
45 yds from shore
Water quality measurements collected approx 6" below surface
47° 32.940 N 122° 20.472 W

Location ID: Seep 62 (1m)	Easting (x):	Northing (y)	Time: 1355
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity 13.7
1 11.89	1 16997	1 2.97	1 6.95	1 210	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
45 yds from shore (same location as 6" sample collection)
Water quality measurements collected approx 1 m below surface
47° 32.940 N 122° 20.472 W

(7)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon Survey

Date: 07 - May - 2004 Crew: RAZ, JS, TF, EP

Weather: Cloudy, rainy Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 61	Easting (x):	Northing (y)	Time: 1400
Qualitative description of flow rate: med - high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.02	1 11390	1 1.35	1 6.92	1 96	1	1 8.6
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at Stake
Very heavy on suspended sediments, H_2S odor

XY Coordinates for all stations provided in Boat 1 field forms

Location ID: Seep 64	Easting (x):	Northing (y)	Time: 1407
Qualitative description of flow rate			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.17	1 18395	1 1.67	1 6.49	1 154	1	1 14.8
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Location ID: Seep 65	Easting (x):	Northing (y)	Time: 1420
Qualitative description of flow rate: low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.98	1 26485	1 2.65	1 6.69	1 163	1	1 22.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at Stake

(8)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon survey

Date: 07 - May - 2004 Crew: RAL, JS, TF, EP

Weather: Cloudy, rainy Photo no.

Name of person filling out form: Jime Sexton

Location ID: Seep 66	Easting (x):	Northing (y)	Time: 1428

Qualitative description of flow rate: med-high

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.76	1 16189	1 2.50	1 6.79	1 172	1	1 12.7
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

xy Coordinates provided for all stations in Boat / Field forms.

Location ID: Seep 67	Easting (x):	Northing (y)	Time: 1441

Qualitative description of flow rate: very high

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.05	1 24148	1 2.80	1 6.93	1 178	1	1 20.0
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Location ID: Seep 68	Easting (x):	Northing (y)	Time: 1451

Qualitative description of flow rate: med-low

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 17.15	1 21029	1 3.78	1 8.34 ?	1 174	1	1 15.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
sample collected at stake

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep survey Project Task: Recon survey

Date: 07 - May - 2004 Crew: RAL, JS, TF, EP

Weather: Cloudy, Rainy Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 69	Easting (x):	Northing (y)	Time: 1500
Qualitative description of flow rate: med - low			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	17.13	26850	3.41	8.29 ?	176		19.7
2							
3							

Comments:
Sample collected at stake

XY Coordinates for all stations provided in Boat 1 Field forms.

Location ID: Seep 70	Easting (x):	Northing (y)	Time: 1512
Qualitative description of flow rate: med - high			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	12.26	30654	2.85	6.73	186		25.9
2							
3							

Comments:
Sample collected at stake

Location ID: Seep 71	Easting (x):	Northing (y)	Time: 1518
Qualitative description of flow rate: med - low			

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	13.75	21033	2.71	6.75	187		16.5
2							
3							

Comments:
Sample collected at stake

(2)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: UW-SeepSurvey Project Task: Seep Recon

Date: 5/16/04 Crew: JMF & RAL

Weather: light rain, overcast Photo no.

Name of person filling out form: Joanna Flower

Location ID: UW-SP-72	Easting (x):	Northing (y)	Time: 1610

Qualitative description of flow rate med

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	12.59	126604	3.01	7.36	164	1	21.9
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3

Comments: sample taken below stake

Location ID:	Easting (x):	Northing (y)	Time:

Qualitative description of flow rate

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3

Comments: Not used

Location ID:	Easting (x):	Northing (y)	Time:

Qualitative description of flow rate

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3

Comments: Not used

(10)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon survey

Date: 07 - MAY - 2004 Crew: RAC, JS, TF, EP

Weather: Cloudy, rainy Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 73(6")	Easting (x):	Northing (y)	Time: 1525

Qualitative description of flow rate

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.30	1 19259	1 3.33	1 7.17	1 189	1	1 15.5
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Water quality measurements collected approx. 6" below surface
23 yds from shore

47° 33.677 N 122° 20.708 W

Location ID: Seep 73(1m)	Easting (x):	Northing (y)	Time: 1530

Qualitative description of flow rate

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.11	1 20150	1 3.27	1 7.21	1 190	1	1 16.4
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Water quality measurements collected approx 1m below surface
23 yds from shore (same location as 6" sample collection)

47° 33.677 N 122° 20.708 W

Location ID: Seep 73	Easting (x):	Northing (y)	Time: 1535

Qualitative description of flow rate med - low

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 19.09	1 19333	1 3.14	1 8.73	1 184	1	1 13.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY Coordinates provided for all stations in Boat 1 field forms.

(11)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep survey Project Task: Recon survey

Date: 07-MAY-2004 Crew: RAZ, JS, TF, EP

Weather: Cloudy, rainy Photo no.

Name of person filling out form: Jane Saxton

Location ID: Seep 74	Easting (x):	Northing (y)	Time: 1540
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 21.42	1 17455	1 2.95	1 7.76	1 183	1	1 11.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY coordinates for all stations provided in Boat / field forms.

Location ID: Seep 76	Easting (x):	Northing (y)	Time: 1600
Qualitative description of flow rate: low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.71	1 16134	1 2.01	1 6.10	1 174	1	1 12.3
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

Location ID: Seep 79	Easting (x):	Northing (y)	Time: 1620
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.41	1 21768	1 1.54	1 6.14	1 44	1	1 17.2
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected 10ft SE of stake

(12)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW - RI - Seep Survey Project Task: Recon survey

Date: 07-MAY-2004 Crew: RAL, JS, TF, EP

Weather: Cloudy, rainy Photo no.

Name of person filling out form: Jane Sexton

Location ID: Seep 80	Easting (x):	Northing (y)	Time: 1627
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 14.93	1 13411	1 2.96	1 6.76	1 86	1	1 9.8
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

XY Coordinates for each station are provided in Boat 1 field forms.

Location ID: Seep 81	Easting (x):	Northing (y)	Time: 1634
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.68	1 21460	1 2.79	1 6.65	1 114	1	1 17.3
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
sample collected at stake

Location ID: Seep 82	Easting (x):	Northing (y)	Time: 1640
Qualitative description of flow rate: med-high			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 13.27	1 14477	1 2.90	1 6.76	1 124	1	1 11.1
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments:
Sample collected at stake

(1)

Wind Ward environmental LLC

FORM 4. SEEP RECONNAISSANCE SURVEY FORM B

Project Name: LDW-RI-Seep Survey Project Task: Recon Survey

Date: 10-MAY-2004 Crew: RAC, JMF

Weather: Rainy, Windy Photo no.

Name of person filling out form: Joanna Flores

Location ID: LDW-SP-78	Easting (x):	Northing (y)	Time: 1515
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.20	1 25910	1 2.75	1 6.46	1 123	1	1 21.5
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments: sample taken at stake - no photo; retrieve still from video footage

Location ID: LDW-SP-77	Easting (x):	Northing (y)	Time: 1530
Qualitative description of flow rate: med			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 11.76	1 27727	1 2.23	1 6.14	1 133	1	1 23.5
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments: sample taken above stake - no photo, retrieve still from video footage

Location ID: LDW-SP-75	Easting (x):	Northing (y)	Time: 1545
Qualitative description of flow rate: med-low			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 12.66	1 14946	1 1.74	1 6.52	1 140	1	1 11.7
2	2	2	2	2	2	2
3	3	3	3	3	3	3

Comments: Sample taken at stake - no photo, retrieve photo from video footage

D.3 Reconnaissance Survey Forms: Seep Observations

(1)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seeps Duwamish **Project Task:** _____

Date: 5/5/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 01	**Photo number:** 8
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	Gravel (GP) dk. gry. Brn, 95% gravel Fill, w/Rip Rap + debris steel 5% muck (silt + clay organic), loose, wet, no odor.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO sheen, light brown clay, no odor to trace sediment.
Description of embankment that seep flows from and general seep characteristics:	Steep, Rip Rap w/ rounded gravel, Construction debris to 20'Ft, Iron, wood, brick, pavement.
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank ~ 10' below vegetation, angle/Corner bank near dock.

Seep number: 02	**Photo number:** 9
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SP/GP) silty sand with gravel, dk gray to brown, 60% Fine to medium Sand, 25% rounded gravel to 2-inches, 15% silty (muck), loose, wet. overlain w/ Rip Rap (Concrete) w/ construction debris, cable + pipe
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor, no sheen, slime and vegetation cover surface water clear to Trans lucent yellow brn. sediment trace,
Description of embankment that seep flows from and general seep characteristics:	(below parking area) low bank seep ~ 15' (est) below high water straight bank behind barge.
Seep location relative to vertical changes in embankment or beach substrate:	broad linear seep line along toe of rip rap - low low water contact w/ Rip Rap (base of bank) / toe

Seep number:	**Photo number:**
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

(3)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Scrap Survey **Project Task:** _____

Date: 5/5/04 **Name of person filling out form:** Tim Fitzgerald (For POS)

Seep number: 03	**Photo number:** 10
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML-SM) Silt w/sand and gravel, dk. gray to rust brown, 50% Fine silt, clay, organic (Muck), w/20% sand, 30% rounded gravel, very loose, wet, (base of Rip Rap)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no sheen, no odor, clear to translucent trace fine sediment, rust precipitate surfaces at seep.
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap w/ metal debris (collapsed boat rack?) Broad seep area at toe/base of Rip Rap
Seep location relative to vertical changes in embankment or beach substrate:	Toe of Rip Rap. above 15' from high water line/fence line - broad seep area ~10' small seeps

Seep number: 04	**Photo number:** 11
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) Silt, dk. brownish gray, 95% silt w/ blk organics Fine, very soft, wet, below steep concrete blocks to 10' feet. Trace fine sand.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	Clear to trace gray sediment, no odor no sheen, slimy surfaces.
Description of embankment that seep flows from and general seep characteristics:	below dock/pilings, steep bank of lg. concrete blocks, very mucky area underlain by "block".
Seep location relative to vertical changes in embankment or beach substrate:	~Mid bank below concrete blocks, (North of scrap yard)

Seep number: 05	**Photo number:** 12
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) gravel and Rip Rap, with sand and silty muck, 90% rounded gravel w/crushed concrete to 10 inches, sand 10%, Trace silt muck on surface, medium to dense, wet,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor no sheen no color trace sediment, slime on surface rock,
Description of embankment that seep flows from and general seep characteristics:	steep bank, South of metal scrap yard/crane.
Seep location relative to vertical changes in embankment or beach substrate:	mid/low bank, within Rip Rap zone,

(3)

Windward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Survey Duwamish **Project Task:**

Date: 05/05/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 06	**Photo number:** 13
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) Silt dk grayish brown, 95% fine silt, clay, organic, trace sand gravel, soft, wet,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor, no sheen, clear to trace fine gray sediment. slime on surface area of seep, barnacles on piling, seep in 4-inch channel, meander over broad beach ~50')
Description of embankment that seep flows from and general seep characteristics:	Flat alluvial beach/bar, sand and fine silt, seep near former piling/stub.
Seep location relative to vertical changes in embankment or beach substrate:	channelized across broad beach.

Seep number: 07	**Photo number:** 14 dk. brownish gray w/some rust brown gravel.
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SP/ML) Silty sand with gravel. 80% coarse to fine sand, 15% silty, 5% gravel to 2-inches, medium dense, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	~ ~~about~~ from channel about 20' across beach from stake, silty mucks over beach sand w/ gravel/Rip Rip No odor, no sheen, trace fine sediment (muck)
Description of embankment that seep flows from and general seep characteristics:	channel seep from broad beach.
Seep location relative to vertical changes in embankment or beach substrate:	stake at Rip Rap toe, "seep lower channel below Semitruck parking

Seep number: 08	**Photo number:** 15
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) Silt 95% silt, dk. grayish brown, 5% fine sand, medium to soft, wet, 40-50' from retaining wall at bank. 6" wide channel across beach.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, clear. Trace gry silt.
Description of embankment that seep flows from and general seep characteristics:	amongs form pier pilings (+20)
Seep location relative to vertical changes in embankment or beach substrate:	channel across broad beach

(4)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep / Duwamish **Project Task:** _____

Date: 5/5/04 **Name of person filling out form:** Tim Fitzgerald.

Seep number: 11	**Photo number:** 16
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) Silt 95% silty "muck" dk gray to brownish soft, wet, 5% Fine-medium sand, broad flat beach w/ retaining wall + building.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, trace to c/dy w/ sediment (Fine)
Description of embankment that seep flows from and general seep characteristics:	10-inch channel strong flow, meanders across 50-70' of beach.
Seep location relative to vertical changes in embankment or beach substrate:	Channel from toe of retaining wall, (100+) below building/public access point.

Seep number: 12	**Photo number:** (dark grayish brown) 17
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/SP) Silt w/ sand, 80% silty muck, 10% sand, 10% gravel Fill, soft, wet,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, trace fine sediment, slimy surface
Description of embankment that seep flows from and general seep characteristics:	strong channel flow from toe of Rip Rap, and sheet pile. Concrete surface (Pallets + Drums)
Seep location relative to vertical changes in embankment or beach substrate:	base of rip/rap, channel (flow) over short beach Low Low water.

Seep number: 09	**Photo number:** 18 /#19 sample bucket "clear"
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) Gravel. 90% rounded gravel to 3-inches, 10% Fine sand and silty "muck", very dense, wet, below steep pavement Rip Rap
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	clear, no odor/no sheen. slime on area of seep.
Description of embankment that seep flows from and general seep characteristics:	gravel w/ broken asphalt, (below tanks) - above ground storage
Seep location relative to vertical changes in embankment or beach substrate:	mid bank, moderate slope, point seep

(5)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 5/5/04 **Name of person filling out form:** _____

Seep number: 10	**Photo number:** 20
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/GP) Silt w/ gravel, 85% silty "mucky" 15% round gravel, dark grayish brown, soft, wet, –
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor/No sheen, Trace brown sediment to clear,
Description of embankment that seep flows from and general seep characteristics:	Channel to 10-inches wide, From broad seep to 20' weepy Fron retaining wall.
Seep location relative to vertical changes in embankment or beach substrate:	channel about 40' From wall, Meanders across broad muck/silty beach

Seep number: 13	**Photo number:** 21
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) silt, dk. grayish brown, 90% silty muck, 10% Fine sand, soft, wet, (channel across wide low tide beach)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor, no sheen, Translucent gray brown sediment,
Description of embankment that seep flows from and general seep characteristics:	wide weepy ground + Rip rip at bank Channelizes to sample point.
Seep location relative to vertical changes in embankment or beach substrate:	about 50 From toe of Rip RAP bank, below Boeing Fuel vegetated area

Seep number: 14	**Photo number:** 22
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) silt, dk gry, brown, 95% silty "muck", soft, wet, broad Flat beach/alluvium, Trace sand gravel,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, gray sediment,
Description of embankment that seep flows from and general seep characteristics:	strong channel Flow to 12-inches wide,
Seep location relative to vertical changes in embankment or beach substrate:	Collects From broad area Toe of Rip Rap below Boeing Bulk channelizes meanders across broad ~50' beach alluvium w/ pilings (old)

Wind Ward environmental LLC

(6)

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 05/05/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 15	**Photo number:** 23
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) silt "muck" dark gray brown w/ rust color gravel, 80% silty muck 10% fine medium sand, 10% round gravel to 2-inches soft, wet, green "sea weed"
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor no sheen, trace gray sediment - rust precipitate on gravel surfaces in seep channel
Description of embankment that seep flows from and general seep characteristics:	10-inch strong flow channel from toe of Rip Rap to narrow beach/alluvium (20')
Seep location relative to vertical changes in embankment or beach substrate:	Channel from Rip Rap base, w/ Broken brick wall debris, South end of Boeing built/gravel boat ramp

15 covered

Seep number: 17	**Photo number:** 24 - dk. grayish brown
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) gravel and Rip Rap, 90% gravel rounded to 2-inches, 10% fine sand w/ "muck", dense, wet, barnacles
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, clear, "slime" on surfaces near seep,
Description of embankment that seep flows from and general seep characteristics:	steep bank, waterfall from Rip Rap cover,
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank, at collapse wooden wall, below Boeing fence + vegetation

Seep number: 18	**Photo number:** 25
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) gravel w/ silty sand, 70% gravel to 2-inches, 20% fine to medium sand, 10% silty "muck", medium, wet,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, clear to trace gry sediment (suspect outfall behind (rubber/pipe debris)
Description of embankment that seep flows from and general seep characteristics:	10-inch channel from toe of Rip Rip, stkd concrete and collapse pilings,
Seep location relative to vertical changes in embankment or beach substrate:	Base of Rip Rap Below Boeing fence/vegetation,

19 - covered/submerged

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 5/5/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 20	**Photo number:** ~~NO PHOTO~~ 26 dk. grayish brown.
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) Gravel w/ silty sand 70% rounded to crushed gravel w/ brick and concrete, 20% Fine sand, 10% silty muck, medium dense, wet, (SMALL channel a base of concrete wall)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor no sheen, clear w/ trace brown sediment
Description of embankment that seep flows from and general seep characteristics:	Toe wall NARROW Flat low tide gravelly beach
Seep location relative to vertical changes in embankment or beach substrate:	BASE OF 15' WALL (CONCRETE + STEEL) SMALL channel to 4-inches

Seep number: 21	**Photo number:** 27 dk grayish brown.
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) Gravel w/ silty sand, 80% gravel CRUSHED FILL TO 10-inches, 10% coarse to fine sand, 10% silty muck, dense, wet, barnacles
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor/no sheen, tr. sediment to clear
Description of embankment that seep flows from and general seep characteristics:	Steel I-beam WALL TO 12' over low sloping Rip Rap.
Seep location relative to vertical changes in embankment or beach substrate:	point seep, mid bank in Rip Rap

Seep number: 22	**Photo number:** 28
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) Gravel with sand, 90% round gravel to 3-inches, 10% sand Fine to medium, Trace silt, dense, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor no sheen
Description of embankment that seep flows from and general seep characteristics:	Rip Rap steep slope
Seep location relative to vertical changes in embankment or beach substrate:	Seep From TOE OF RIPRAP, begins channel to 12" across.

23 - Submerged

(8)

WindWard environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep/Duwamish **Project Task:**

Date: 05/05/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 24	**Photo number:** 29 dk grayish brown
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) 95% gravel rounded to crushed rock w/ RipRap, 5% fine sand, dense, wet, trace "muck" w/ green slime
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	clear, trace floaty white "Dust", "pollen?" no odor no sheen,
Description of embankment that seep flows from and general seep characteristics:	steep RipRap slope, over gravelly sand, small channel flow
Seep location relative to vertical changes in embankment or beach substrate:	high bank several feet below hi hi water line, below fence and 747 tail.

Seep number: 25	**Photo number:** 30 dk brown,
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SP/GP) 80% coarse to fine sand, 20% crushed gravel to RipRap, loose, wet, green vegetation over RipRap
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, clear to trace fine brown sediment, green slime/vegetation in area of seep
Description of embankment that seep flows from and general seep characteristics:	shelf bank (collapse?) RIPRAP and sand, steep to water line,
Seep location relative to vertical changes in embankment or beach substrate:	mid bank at shelf, tree trunk follow from fenceline.

Seep number: 26	**Photo number:** 31
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	submerged return at low tide 10 A.M.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

(1)

Windward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Duwamish
Date: 5/6/04
Project Task:
Name of person filling out form: Tim Fitzgerald

Seep number: 26	**Photo number:** 32
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) Gravel, dark grayish brown, 95% rounded to 3-inches and large angular Rip Rap, 5% medium-coarse sand, trace silt, medium dense, wet, (strong channel flow)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen, clear w/ trace fine sediment, little slime/growth.
Description of embankment that seep flows from and general seep characteristics:	~~mid bank~~ gravel to Rip Rap moderate slope to alluvium shore beach. below vegetation / BOEing fence
Seep location relative to vertical changes in embankment or beach substrate:	mid bank - gravels / Rip Rap develop strong flowing channel carving into mud bank

Seep number: 23	**Photo number:** 33
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/ML) 80% Rip Rap gravel over silty (river alluvium) bank dark gray to brown, very soft silt bank, wet, organic "muck"
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor / no sheen, clear.
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap above silty river bank - beach. below veg and above ground TANK.
Seep location relative to vertical changes in embankment or beach substrate:	multiple seeps from toe of Rip Rap to in rapid 4-6 inch channel, meander/cutting silty river bank below

Seep number: 28	**Photo number:** 34
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM) Silty Sand, dark gray to brown, 80% fine to medium sand 20% silty river alluvium, medium sand dense, wet, (collapsed river bank w/ pilings)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	silty sediment transducent gray brown, no odor / no sheen
Description of embankment that seep flows from and general seep characteristics:	recent? collapsed river bank along colonade of pilings mid bank seep cutting steep channel
Seep location relative to vertical changes in embankment or beach substrate:	mid bank multiple small seep channeling to steeply cutting 10" channel.

(2)

Wind/Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Duwamish **Project Task:** _____

Date: 5/6/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 27	**Photo number:** 35
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM) silty sand, 80% med to coarse sand, 15% silt, 5% pebbles to gravel, (base of Rip Rap), loose, wet (Fill w/ some alluvium)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen, clear to trace sediment,
Description of embankment that seep flows from and general seep characteristics:	adjacent to concrete/steel pile wall, seep below very large (concrete to 10') block Rip Rap
Seep location relative to vertical changes in embankment or beach substrate:	mid bank at toe of Rip Rap channel to 6" wide.

Seep number: 30	**Photo number:** 36
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM) silty sand, dark greyish brown, 70% fine to med sand, 30% silty muck, trace pebbles to gravel, below Rip Rap, loose, wet, seep at large log wedge in Rip Rap
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	clear no odor/no sheen trace sediment
Description of embankment that seep flows from and general seep characteristics:	Lower mid bank, river sand + silt overlain by Rip Rap, tree stump + log snag.
Seep location relative to vertical changes in embankment or beach substrate:	toe of Rip Rap at riverbank, moderate channel to 5-inch wide.

Seep number: 31	**Photo number:** 37
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/ML) very silty sand, 60% fine to coarse sand 40% silty alluvium (muck), trace gravel Fill, loose/soft, wet, below (concrete blocks) Rip Rap
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen, clear
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap Blocks adjacent to "natural" bank (no Rip Rap). seep at toe.
Seep location relative to vertical changes in embankment or beach substrate:	Low bank at Rip Rap contact w/ shoreline below willows/fence.

(3)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seeps Duwamish **Project Task:** _____

Date: 5/6/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 29	**Photo number:** 38
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) Silt w/organics, 95% silty "muck," 5% sand (Fine) very soft, wet, Log Jam in River bank/bar /large old cedars to 30-40', set in mud.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor/no sheen Clear w/ Trace Fine sediment
Description of embankment that seep flows from and general seep characteristics:	Wide steep mud bank w/ ~½ dozen large stumps and ~~logs~~ on ad in mud. No Rip Rap below vegetated/veg line
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank below log w/in log jam

Seep number: 32	**Photo number:** 39
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/GP) silt w/ Rip Rap, 75% silt, 25% Rip Rap and debris (pipe, wood), 80 Ft, wet. (broad mud bank)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor/no sheen Trace Fine sediment,
Description of embankment that seep flows from and general seep characteristics:	Broad low slope mud bank w/ ~~the~~ Log snags, Just South of Boeing Bridge
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank at rubble/Rip Rap outcrop in mud bank low sloping mudbank w/ snags.

Seep number: 33	**Photo number:** 40
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/GP) silty "muck" w/ Rip Rap Gravel, dark gray w/rusty Brown surfaces, soft, wet. Riverbank sediments below short pier.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor/no sheen, Trace Fine sediment
Description of embankment that seep flows from and general seep characteristics:	upper Riverbank muds at toe of Rip Rap Seep channels to 4" wide down bank
Seep location relative to vertical changes in embankment or beach substrate:	moderate slope upper mid bank, toe of Rip Rap beneath exist pier structure/Building

(4)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep/Drainage **Project Task:** _____

Date: 5/6/14 **Name of person filling out form:** Tim Fitzgerald

Seep number: 34	**Photo number:** 41 dark grayish brown
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/ML) very silty sand, 60% very fine sand 40% silty "muck", loose/soft, wet, (river bank/bar) along seep channel from Rip Rap
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	~~steep RIP Rap~~ No odor no sheen, trace sediment
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap along roadway above wide (~100(?)) river bank.
Seep location relative to vertical changes in embankment or beach substrate:	seep channels across wide bank

Seep number: 35	**Photo number:** 42
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) silt, 100% "mucky" silt (riverbank) dark greyish brown, very soft, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	Clear to trace brown sediment No odor/no sheen.
Description of embankment that seep flows from and general seep characteristics:	low bank, seep spring on low sloping riverbank low tide zone
Seep location relative to vertical changes in embankment or beach substrate:	low bank. V. soft muck/silt. Few tree branches.

Seep number: 37	**Photo number:** 43
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/ML) dark grey to brownish cobbles to 6" rocks, over silty river bank/muck, v. soft, wet. broad river bank (low tide ~75')
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor/ no sheen
Description of embankment that seep flows from and general seep characteristics:	moderate steep cobbles base overlain w/Rip Rap.
Seep location relative to vertical changes in embankment or beach substrate:	Toe of Rip Rap broad seep zone ~100, 3 main channels combine to one cut Channel sitting flow 2' across

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Wind/Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 5/6/14 **Name of person filling out form:** Tim Fitzgerald

Seep number: 36	**Photo number:** 44
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	no odor/no sheen trace sediment(grey)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	(ML/GP) 100% silt below Rip Rap ad gravel, dark grayish brown, soft, wet,
Description of embankment that seep flows from and general seep characteristics:	very steep Rip Rap to low tide water, (marker submerged) small seep adjacent to large channel.
Seep location relative to vertical changes in embankment or beach substrate:	TO of Rip Rap below foundation/ "electric substation?"

Seep number: 38	**Photo number:** 45 (dark grayish brown)
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/GP) ~~River~~ 90% silt (below Rip Rap) 10% crushed gravel (below Rip Rap) soft, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen trace sediment
Description of embankment that seep flows from and general seep characteristics:	low tide river bank w/ channel "seep" from toe of Rip Rap
Seep location relative to vertical changes in embankment or beach substrate:	mid bank at base of Rip Rap across exposed low tide bank (30')

Seep number: 39	**Photo number:** 46
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) silty sand/gravel, 50% fine medium sand, 25% silty, 25% rounded gravel, firm, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen/trace sediment
Description of embankment that seep flows from and general seep characteristics:	low sloping bank to industrial yard, seep at sand/gravel contact and low tide bank.
Seep location relative to vertical changes in embankment or beach substrate:	below Delta Marie pier, mid bank low/moderate slope sand/gravel contact.

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 5/6/14 **Name of person filling out form:** _____

Seep number: 40	**Photo number:** 47
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/GP) Silt (95%) below steep Rip Rap, soft, wet dark brownish gray, construction debris (wood, plastic, leaves)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor No sheen s
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap below gray house,
Seep location relative to vertical changes in embankment or beach substrate:	toe of Rip Rap stake submerged,

Seep number: 41	**Photo number:** 48
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) silty sand-60%, 40% rounded cobble Fill, firm, wet (dark gray to brown)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	slow/weepy seep along 100' of bank between moony piles, sheen at seep, light not observed in River
Description of embankment that seep flows from and general seep characteristics:	low to moderate grade cobbles and sand to high levee of Rip Rap and vegetation,
Seep location relative to vertical changes in embankment or beach substrate:	From cobble/sand/silt (mid bank) contact ~~North~~ south of workpier/barge repair.

Seep number: 42	**Photo number:** 49
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) 60% silty sand 40% rounded cobbles + small Rip Rap Firm, wet. (dark gray to brown)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor/NO sheen trace sediment
Description of embankment that seep flows from and general seep characteristics:	low to moderate slope cobbles to small Rip Rap top. seep forms small channel to 6" inches
Seep location relative to vertical changes in embankment or beach substrate:	mid bank at cobble/Rip Rap contact w river silty sand. vegetation / white bur lily (set back.) (grounded barges to south)

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 5/6/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 43	**Photo number:** 50
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	GP/ML - 80% angular dark grey gravel Fill, 20% silty "muck" riverbank, soft/firm, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen trace sediment
Description of embankment that seep flows from and general seep characteristics:	low grade mud bank grading to Fill rock and large Rip Rap / fence / vegetated (Boeing Fence)
Seep location relative to vertical changes in embankment or beach substrate:	Low bank broad head forms channel across silty(muck) to 6" goodFlow.

Seep number: 16	**Photo number:** 51
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) 90% Rip Rap Fill w/ 5% Fine med. sand, 5% muck/silt, dense, wet; dark grey to brown
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen/trace sediment
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap below Boeing Fence, vegetation. "Trickle" seep sample above stake location.
Seep location relative to vertical changes in embankment or beach substrate:	mid to lower on steep Rip Rap bank, stake submerge ~2-foot below mid tide

Seep number: 46	**Photo number:** 52
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) 60% Fine to medium sand, 20% silty muck, 20% crushed brick Fill, debris (Tires, wood) Firm, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen trace sediment
Description of embankment that seep flows from and general seep characteristics:	steep Brick concrete Rip Rap over riverbank mud w/ sand, Broad seep ~ 10' forming small channels
Seep location relative to vertical changes in embankment or beach substrate:	Low Bank base of Fill Rip Rap on Low Tide River bank

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep / Dunamish **Project Task:** _____

Date: 5/6/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 47	**Photo number:** 53
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) silty sand w/gravel+Rip Rap dark grayish brown. soft/loose, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor/no sheen trace sediment
Description of embankment that seep flows from and general seep characteristics:	Steep Rip Rap below vegetated Fence line.
Seep location relative to vertical changes in embankment or beach substrate:	low bank, base of steep Rip Rap at start/contact over mud bank/River's edge

Seep number: 48	**Photo number:** 54
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) 60% Fine to coarse sand, 20% rounded pebbles to 1" dia. occassional Rip Rap, 20% silty "muck", Firm, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor/ no sheen clear w/trace sediment
Description of embankment that seep flows from and general seep characteristics:	Low to moderate Beach/shore access area
Seep location relative to vertical changes in embankment or beach substrate:	Low to mid bank channel step From Broad Beach sand/access point (Stake submerged)

Seep number: 49	**Photo number:** 55
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) Silty sand, dark grayish brown, 40% silt (muck) 60% Fine to coarse sand, Firm, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor/ no shee clear trace sedi
Description of embankment that seep flows from and general seep characteristics:	20' wide mud bank w/ seep, 10' below steep Rip Rap bank and vegetation.
Seep location relative to vertical changes in embankment or beach substrate:	"spritzy" seep low river bank. Forms channel to 10-inches width

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Dunamish **Project Task:** _____

Date: 5/6/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 57	**Photo number:** 56
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	Silty Sand (SM) dark grayish brown, 60% Fine to coarse sd 40% silt (muck) river bank, Firm to soft, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen Trace gray sediment
Description of embankment that seep flows from and general seep characteristics:	Steep Rip Rap above seep. seep weeps across 20' length, Form small channels
Seep location relative to vertical changes in embankment or beach substrate:	Low bank, base of Brick Rip Rap bank, below Tractor Trailer parking

Seep number: 53	**Photo number:** 57
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) silty sand w/ pepples, 60% sand, 25% pebbles, 15% silt, Firm, wet,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	Black (NAPL?) ooze, little flow, no sheen/ hi TPH odor
Description of embankment that seep flows from and general seep characteristics:	NAPL Seep, at bottom of channel, steep slopy bank w/ wood terrace below Asphaltic Blob topped w/ vegetated levee.
Seep location relative to vertical changes in embankment or beach substrate:	low Low bank, adjacent to horizontal Timber ties w/in Channel (~~name?~~) TROTSKY, hi

Seep number: 54	**Photo number:** 58
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	gray Foamy very small seep,
Description of embankment that seep flows from and general seep characteristics:	mod. slope w/ pier columns, construction and metal debris
Seep location relative to vertical changes in embankment or beach substrate:	mid bank, below decayed pier/platform Trace/very light flow

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Wind/Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep / Duwamish
Date: 5/6/04
Project Task:
Name of person filling out form: Tim Fitzgerald

Seep number: 56	**Photo number:** 59
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/Sm) gravel w/ silty sand 50% rounded pebbles to large concrete Rip Rap, w/ 40% Fine to medium sand, 10% silty (mud) surface. firm, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor / no sheen
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap bank in Thatsky channel gravelly channel seep.
Seep location relative to vertical changes in embankment or beach substrate:	mid bank, in steep Rip Rap. below vegetation and stacked Drums

Seep number:	**Photo number:**
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

Seep number:	**Photo number:**
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

(1)

Windward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Duwamish
Date: 5/7/04
Project Task:
Name of person filling out form:

Seep number: 55	**Photo number:** 60
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) Anthropogenic Fill, with silt, dark greyish brown, Firm-dense, wet, in terminus of trotsky inlet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen Trace fine ~~brown~~ brown sediment
Description of embankment that seep flows from and general seep characteristics:	steep, rip rap and construction debris bank adjacent to pier/dock w/ structure.
Seep location relative to vertical changes in embankment or beach substrate:	seep mid bank at base of former cement truck tumbler? in asphalt concrete rubble w/ gravel

Seep number: 54	**Photo number:** 61
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) 90% rounded cobbles, 5% sandy 5% silty,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	Trace sheen, trace odor "gray water" sulfide? clear, to trace sediment (gray) w/ trace TPH
Description of embankment that seep flows from and general seep characteristics:	moderate slope, pebbles, sand, silt,
Seep location relative to vertical changes in embankment or beach substrate:	upper bank small "trickle seep below dock w/ structure. w/ metal debris, levee.

Seep number: 53	**Photo number:** 62
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	see 05/06/04 second visit / retry water quality test.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	chemical/sulfide odor, no sheen/blk sediment seep w/in very black muck like gray color,
Description of embankment that seep flows from and general seep characteristics:	at timber see description 05/06/04
Seep location relative to vertical changes in embankment or beach substrate:	very low bank; below mudbank

(2)

Windward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep / Duwamish R. **Project Task:**

Date: 05/07/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 52	**Photo number:** 63
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP-SM) 90% rounded gravel to 2-inches, 10% fine sand w/ silt, medium dense, wet dark grayish brown
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No sheen / sulfide odor lite gray w/ grey to blk sediment
Description of embankment that seep flows from and general seep characteristics:	seep from base of woodwall, seep small w/ white slime.
Seep location relative to vertical changes in embankment or beach substrate:	v. Low bank, below wood retaining wall, w/ concrete pour, seep at contact w/ river bed / muck / gravel

Seep number: 50	**Photo number:** 64
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML w/ GP) 80% dark grey to brown silty muck, 10% fine sand 10% Rip Rap concrete debris, very soft, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor / no sheen trace sediment (gray)
Description of embankment that seep flows from and general seep characteristics:	construction debris w/ concrete pour? / edge over river bank muds w/ seep
Seep location relative to vertical changes in embankment or beach substrate:	Low bank, point / spring seep low slope, river bank behind barge, vegetated / levee,

Seep number: 45	**Photo number:** 65
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/SM) very silty sand, dark grey to brown, 60% fine to coarse sand, 40% silty "muck", soft-firm, wet, trace Rip Rap from above,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No sheen / no odor, trace gray sediment
Description of embankment that seep flows from and general seep characteristics:	moderate to steep Rip Rap w/ Tires, seep at river bank contact
Seep location relative to vertical changes in embankment or beach substrate:	very low bank, seep at base of rubble brick weeping seep to short channel.

Wind Ward environmental LLC

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FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep / Duwamish **Project Task:** _____

Date: 05/07/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 44	**Photo number:** 66
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML/SM) very silty sand, dark grey brown, 60% fine to coarse sand trace gravel, 40% silt, soft, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor / NO sheen trace grey sediment
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap topped w/ ~6' concrete blocks,
Seep location relative to vertical changes in embankment or beach substrate:	very low bank, strong seep from base of Rip Rap, below Marina Park, Channel 10' wide,

Seep number: 19	**Photo number:** 67
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) 80% crushed to rounded gravel w/ brick, 10% sand, 10% silty (muck) dark grey brown, FIRM, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor / no sheen trace grey sediment.
Description of embankment that seep flows from and general seep characteristics:	steep Rip ~~Rock~~ Rap broken brick, concrete slabs, topped w/ steel mill? Furnace slag lobes,
Seep location relative to vertical changes in embankment or beach substrate:	very low bank, toe of Brick Rip Rap. mod strong seep, Broad shallow channel to 3' foot.

Seep number: 57	**Photo number:** 68
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) 95% gravel rounded and crushed to 2 inches, with Rip Rap, medium brush, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor no sheen trace brown sediment
Description of embankment that seep flows from and general seep characteristics:	mod sloped Rip Rap at bridge pilings over River bank sediment strong seep from TOE of Rip Rap.
Seep location relative to vertical changes in embankment or beach substrate:	mid bank, among bridge caisson/pilings 1st Ave, vegetated levee w/ roadside guardrail

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 5/7/04 **Name of person filling out form:** Tim Fitzgerall

Seep number: 58	**Photo number:** 69
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM) ~~95% Sil~~ 75% Fine to coarse sand, 25% silty, Firm, ~~to~~ loose, wet. Broken pilings along Bank.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen Trace Fine grey sand
Description of embankment that seep flows from and general seep characteristics:	Sand berm Fencing w/ geo Fabric collapse above slump at seep, ~10' Broad, shallow w/ narrow channels
Seep location relative to vertical changes in embankment or beach substrate:	Low bank above tributary stream, below sand edge at roadway/guardrail, ~~Form~~ pilings (R) and (L) slow seep.

Seep number: 59	**Photo number:** 70
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GR) silty sand w/ gravel, 60% Fine-med sand, 20% silty, 20% round to angular gravel (Fill) loose, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen Trace Fine grey sand.
Description of embankment that seep flows from and general seep characteristics:	Beneath roadway/bridge, slump of Fill sand/gravel, seep wraps from Broad to 15' slump, forms multiple small channels
Seep location relative to vertical changes in embankment or beach substrate:	Low bank above tributary stream (SA-seep 58)

Seep number: 60	**Photo number:** 71
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM) Silty sand, dark grey/ish brown, 70% Fine to medium sand, 40% silty "muck", soft-loose, wet, below small brick RipRap and pier debris.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen. Trace Fine sand + silt sediment (gray)
Description of embankment that seep flows from and general seep characteristics:	Low sloping riverbed w/ sand below RipRap at pilings, collapsing decking overhead.
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank at RIP RAP Toe over silty beach sand below decrepit Dock/pilings, little Flow to multiple Channels

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep / Dumonish
Date: 5/7/04
Project Task:
Name of person filling out form: Tim Fitzgerald

Seep number: 63	**Photo number:** 72
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML-SM) silt w/sand 60% ~~fine~~ silt w/"muck" 40% Fine to medium sand, trace gravel to 1-inch, SOFT-FIRM, wet. (some rust color slime over gravel)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor / no sheen slime? Trace floaty orange organics?
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap over riverbank
Seep location relative to vertical changes in embankment or beach substrate:	Low bank, toe of long concrete rip rap over river bank sediments, between moorg piles

Seep number: 62	**Photo number:** 73
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/ML) Gravel and silt, 60% gravel grading to Rip Rap in matrix of muck w/ trace sand, dark grey to brown, SOFT, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor no sheen trace brown sediment (color)
Description of embankment that seep flows from and general seep characteristics:	low sloping riverbank sediments below RipRap Concrete and Rock, vegetated levee.
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank, at base of Rip Rap over River bank, very slow flow over narrow channels

Seep number: 61	**Photo number:** 74
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	seep water - dark yellow w/ Black sediment and floaty blk organic silt/clay (muck) sulfide odor,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	(ML) 100% dark gray w/ brown river muck, trace fine sand, very soft, wet below gravel / Rip Rap and debris
Description of embankment that seep flows from and general seep characteristics:	Low Flat Riverbank below steep Rip Rap w/ Log snags, Drum and Rebar in Rip Rap.
Seep location relative to vertical changes in embankment or beach substrate:	Very low bank, in river bed, spring like flow dark-/organic fines, strong flow from broad area of seeps w/ multiple channels form in soft muck

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Duwamish **Project Task:** _____

Date: 05/07/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 64	**Photo number:** 75
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) silty sand w/gravel, 60% Fine to coarse sand, 20% rounded pebbles to crushed Rock in Rip Rap, 20% silty "muck", Firm, wet. trace shells/barnacle debris,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor / no sheen light brownish/yellow.
Description of embankment that seep flows from and general seep characteristics:	steep Rip Rap Rock overlain by crushed rock top w/vegetation and Fence at silo's.
Seep location relative to vertical changes in embankment or beach substrate:	low bank at toe of Rip Rap, contact w/ Riverbank silts and sand. (slow/small seep.)

Seep number: 65	**Photo number:** 76
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) silty sand w/gravel, dark grey to brown, 60% sand Fine to coarse, 20% silty muck, w/20% crushed gravel to fine Firm, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor/no sheen clear to trace brown sediment
Description of embankment that seep flows from and general seep characteristics:	Top of low tide riverbank, base of Rip Rap. Small low Flow Seep to style channel. ~4-inches
Seep location relative to vertical changes in embankment or beach substrate:	low bank at toe of crushed rock Rip Rap topped w/lobe of concrete, vegetation and Fence.

Seep number: 66	**Photo number:** 77
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) gravelly sand with silt, 50% Fine to coarse Sand, 25% pebble to large Rip Rap rocks, 25% silty river sediment, dark to medium Brown, Firm to loose, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	NO odor / no sheen / trace brown sediment,
Description of embankment that seep flows from and general seep characteristics:	low sloping gravelly beach over River low tide mud flat, strong seep From Broad 20' wide weepy area, Forms 10-inch wide gully channel.
Seep location relative to vertical changes in embankment or beach substrate:	Lower beach strand at river bar/low tide muck,

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: _____ **Project Task:** _____

Date: 05/07/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 67	**Photo number:** 78
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) gravel, (Brick RipRap) w/ 5% sand 5% muck, dense, wet (seep strong from Brick pile)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor / no sheen trace gray sediment
Description of embankment that seep flows from and general seep characteristics:	steep Brick RipRap over Flat tidal flat to Kellog Island
Seep location relative to vertical changes in embankment or beach substrate:	very low bank, top of tidal flat, base of brick RipRap, strong flow in channelized, meanders 100' to Rich Kellog Island

Seep number: 68	**Photo number:** 79
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM/GP) shelly silty sand w/ Crushed Brick, 60% Fine to med sand, 20% red brick, 10% silty Black "muck", 10% white broken shells, firm/medium, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor / no sheen clear to trace brown sediment
Description of embankment that seep flows from and general seep characteristics:	low sloping sands mix w/ brick collapse from above log snags topped w/ steep brick + log wall with trees + caves.
Seep location relative to vertical changes in embankment or beach substrate:	mid bank at base of Brick RipRap and log wall, Broadway 30' to 50' wide, Forms several shallow low flow channels

Seep number: 69	**Photo number:** 80
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(ML) 100% Silty "muck" w/ Drift logs, Trace shells, very soft, dark grey w/ Brown surface, wet,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor / no sheen clear, ~~to~~ trace gray sediment,
Description of embankment that seep flows from and general seep characteristics:	100' of "natural" low ~~grad~~ sloping mud and drift log bank to Low land vegetation / Trees
Seep location relative to vertical changes in embankment or beach substrate:	Restoration Very low bank, ~100' From vegetation / Trees "springs" from below log Jam in muck.

Wind/Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep/Duwamish **Project Task:**

Date: 05/07/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 70	**Photo number:** 81
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP) 95% rounded gravel w/ brick, 5% sand, gray to brown, loose, wet. (Fill behind wall)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor / no sheen clear.
Description of embankment that seep flows from and general seep characteristics:	low slope sands to steel wall w/ pilings strong "waterfall" seep onto beach sands
Seep location relative to vertical changes in embankment or beach substrate:	mid bank from hole in steel plate wall below deck w/ structure

Seep number: 71	**Photo number:** 82
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM) silty sand at RipRap pile, 80% fine med sand, 20% silty, fine/med loose, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen, trace fine gray silt. Fucus algae at pilings
Description of embankment that seep flows from and general seep characteristics:	Low slope beach over broad river bank,
Seep location relative to vertical changes in embankment or beach substrate:	mid bank at RipRap outcrop in beach sands, with multiple pilings, medium flow seep, channels to 6" inches

Seep number: 73	**Photo number:** 83
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SP) 95% med to fine sand, (dark gray) loose, wet, (over peat ledge to 2+ foot thick)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen clear to trace gray sediment trace foamy/bubbles.
Description of embankment that seep flows from and general seep characteristics:	low slope ~~beach~~ broad beach w/ peat, construction debris and fill gravel at low bank.
Seep location relative to vertical changes in embankment or beach substrate: weeping	mid to upper bank above peat ledge, seep large area above peat shelf. ~100' linear

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Wind/Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Downriver **Project Task:** _____

Date: 05/07/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 74	**Photo number:** 84
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(SM) dark grey to brown silty sand, 60% Fine to medium sand, 30% silt w/10% crushed gravel at Rip Rap, loose, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen, yellowish color, trace grey sediment
Description of embankment that seep flows from and general seep characteristics:	low slopy natural bank topped w/gravel + Rip Rap to road. Strong flowing muddy channel across mudflat
Seep location relative to vertical changes in embankment or beach substrate:	very low bank, channel from Broad weepy area ~100' in former slip?/cove below public access park

Seep number: 76	**Photo number:** 85
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	GP/SM gravel w/silty sand, 70% rounded gravel to 2 inch, 20% Fine to med sand, 10% silt, loose, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/no sheen lite yellow color, trace sediment.
Description of embankment that seep flows from and general seep characteristics:	low slopy gravel below wooden ~~deck~~ broken shoreline
Seep location relative to vertical changes in embankment or beach substrate:	low bank at pilings below collapsed decking - low flow from small weepy area about 10' across.

Seep number: 79	**Photo number:** 86
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/ML) 80% gravel rounded to 2-inches, 20% dark grey silt (muck) loose, wet.
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no sheen/trace sulfide odor, white precipitate on gravels at seep.
Description of embankment that seep flows from and general seep characteristics:	Moderate to steep Rip Rap slope, w/multiple cutoff pilings vegetated top w/tractor trailer parking.
Seep location relative to vertical changes in embankment or beach substrate:	Low bank, toe of Rip Rap at cutoff piling w/Fucus Algae, (low flowing small seep)

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Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: Seep Runway **Project Task:** _____

Date: 5/7/04 **Name of person filling out form:** Tim Fitzgerald

Seep number: 80	**Photo number:** 87 dark grey brown,
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) gravel w/ silty sand, 50% gravel Rip Rap, 25% silt 25% Fine to medium sand, loose, wet
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	lite grey w/ trace brown sediment, no odor/no sheen
Description of embankment that seep flows from and general seep characteristics:	Steep bank, cut edge of peat lens to 5-Foot, overlain w/ Large Rip Rap topped w/ industrial yard (concrete? Gypsum?)
Seep location relative to vertical changes in embankment or beach substrate:	Mid Bank above peat shelf to 5' Foot, Seep at toe of Rip Rap

Seep number: 81	**Photo number:** 88
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP w/SM) 90% concrete & brick Rip Rap, w/ 10% silty sand dark grey to brown loose wet,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no sheen / no odor clear.
Description of embankment that seep flows from and general seep characteristics:	Steep Rip Rap bank, gravel + Brick.
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank, small steady seep in concrete brick Rip Rap

Seep number: 82	**Photo number:** 89
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	(GP/SM) 60% pebbles to cobbles 2-inches, 20% Fine to medium sand, 20% silty, loose, wet w/ Fucus,
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor/ no sheen Trace grey color and sediment
Description of embankment that seep flows from and general seep characteristics:	broad bank of sand/gravel to 25', overlain (steeply) by pavement slabs as Rip Rap.
Seep location relative to vertical changes in embankment or beach substrate:	Mid bank, moderate spring like flow 5' wide area in sand, gravel

(1)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: LDW-RI - Seep Survey **Project Task:** Seep Recon

Date: 10-MAY-2004 **Name of person filling out form:** Bob Conglith

Seep number: Seep 78	**Photo number:** N/A
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	Silty Sand, Some gravel, Riprap bank (15%) (5%) (80%)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor / No Sheen Clear Sample
Description of embankment that seep flows from and general seep characteristics:	Moderate Slope, riprap, Concrete chunks w/ focus and green algae
Seep location relative to vertical changes in embankment or beach substrate:	Seep located lower mid bank in concrete/riprap w/ trace gravel

Seep number: Seep 77	**Photo number:** N/A
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	Pipes, wood planks, metal debris, cut off piling medium Sand, gravel (fill gravel 2"-3"), cobble & riprap
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor / No Sheen clear Sample
Description of embankment that seep flows from and general seep characteristics:	Large (8'x10') concrete structure w/ moderate slope riprap/concrete/gravel surrounding
Seep location relative to vertical changes in embankment or beach substrate:	Seep flows from base of concrete structure from which a large metal pipe extends into waterway

Seep number: 75	**Photo number:** N/A
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	Rip rap, Silty Medium Sandy ~~Silt~~ (90%) (10%)
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor, no sheen, Pale yellowish color Some suspended fines (minimal)
Description of embankment that seep flows from and general seep characteristics:	moderately sloped riprap w/ focus
Seep location relative to vertical changes in embankment or beach substrate:	Seep flows from base of rip rap

(2)

Wind Ward environmental LLC

FORM 5. SEEP RECONNAISSANCE SURVEY FORM C

Project Name: LDW-R2-Seep Survey **Project Task:** Seep Recon

Date: 10-MAY-2004 **Name of person filling out form:** Bob Complith

Seep number: 72	**Photo number:** N/A
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	Ripap covered partially w/ concrete flows (85%) Some gravel (5%) (10%) Coarse + medium Sands
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor, No Sheen, Slight yellow color
Description of embankment that seep flows from and general seep characteristics:	Steep grade concrete covered rip rap, Small trees at top of bank w/ concrete facility in upland
Seep location relative to vertical changes in embankment or beach substrate:	Seep flows from toe of rip rap/concrete bank. Focus on ripap + Some green algae

Seep number:	**Photo number:**
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	Not used
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

Seep number:	**Photo number:**
Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay):	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	Not used
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

D.4 Seep Water Collection Forms

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LOW **Project Task:** Seep water collection

Date: 7/2/09 **Crew:**

Weather: overcast **Photo no.** 140, 141 (flow) 115, 116 (sample)

Location ID: SP-10	Easting (x): 47°32.145 N	Northing (y): 122°19.142	Time: 9:30

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2
			5.68	

Sample collection method:	surface collection w/ funnel and tubing
Flow rate collection method:	width, depth & velocity
Volume of container:	na
Time to fill container:	na
Ag **Calculated flow rate:**	0.0025 m³/sec

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL #1	1 15.03	1 27,229	1 9.80	1 6.32	1 88	1	1
HL #2	2 15.02	2 31,607	2 9.03	2 6.79	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

Couldn't be sampled on 7/1 because of rising tide. Seep flow emerged at base of wall. Water couldn't be withdrawn using mini-piezometer at base of wall. Either dry underneath or material was too fine and piezometer was clogged. Therefore, surface collection method used.

LOW SpC: HL#1 = 10160 HL#2 = 11764

Flow rate:

2 channels drain about 250 ft of wall

channel #1 width 0.6ft
depth 1 in
sec. 4.1 sec/5ft
= 0.0017 m³/sec

channel #2 width = 6 in
depth = 0.5 in
sec = 3.7 sec/5ft
= 0.00080 m³/sec

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	silt w/ gravel
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen
Description of embankment that seep flows from and general seep characteristics:	retaining wall, with flat beach, channelized flow
Seep location relative to vertical changes in embankment or beach substrate:	Seep flows in channel across broad beach

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW Project Task: Seep survey

Date: 06.30.04 Crew: BB, JF, BC, TD, MS

Weather: sunny Photo no. 107-108. (109 - seeping from ret. wall)

Location ID: SP-1D	~~Easting (x)~~:	~~Northing (y)~~:	Time: 11:40 -0.93 MLLW

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2

Sample collection method:	
Flow rate collection method:	
Volume of container:	
Time to fill container:	
Calculated flow rate:	

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4

Comments: unable to sample in remaining time (tide rising)

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW
Project Task: Seepwater Collection
Date: 7/30/04
Crew: Thai Do, J. Florer
Weather: Overcast
Photo no. 140, 141 (flow) 115, 116 (sample)

Location ID: SP-10	Easting (x): 47° 32.145N	Northing (y): 122° 19.142	Time: 1100
Sample collection method:	surface collection w/ funnel + tubing		
Flow rate collection method:	timed volume		
Volume of container:	40mL		
Time to fill container:	16.84 sec		
Calculated flow rate:			

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 19.03 C	1 33278	1 13.14 mg/L	1 6.82	1 —	1 1.82	1 —
2	2	2	2	2	2	2

HL #2

Comments:
Re-sample for VOAs

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	silt w/ gravel
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no ~~odor~~ odor or sheen
Description of embankment that seep flows from and general seep characteristics:	retaining wall w/ broad flat beach, channelized flow
Seep location relative to vertical changes in embankment or beach substrate:	seep is relatively level & flows in channel across broad flat beach

Flow Rate

	Channel #1	Channel #2
depth	1.25 in	0.5 in
width	7.5 in	4 in
Length	5 ft	5 ft
time	3.6 s	5.9 s

Wind/Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW Project Task: Seep water collection

Date: 7/1/09 Crew:

Weather: overcast Photo no. 117, 118

Location ID: SP-12	Easting (x): 47°32.095 N	Northing (y): 122°19.334 W	Time: 9:15

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2
	MP1 4.35 | MP2 0.86			

Sample collection method:	mini-piezometer
Flow rate collection method:	na
Volume of container:	
Time to fill container:	
Calculated flow rate:	

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL#1	1 13.56	1 8.47	1 12351	1 5.94	1 108	1	1
HL#2	2 13.71	2 8.30	2 99361	2 6.63	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

SPC of LDW

HL#1 = 18,124

HL#2 = 20,973

water level too high to measure flow rate; channelized flow area submerged

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	silt w/ sand
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen
Description of embankment that seep flows from and general seep characteristics:	riprap and sheet pile
Seep location relative to vertical changes in embankment or beach substrate:	flow at base of riprap

Wind/Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW Project Task: Seep water collection

Date: 7/1/09 Crew:

Weather: overcast Photo no. 119-120, 121-122

Location ID: SP-20	Easting (x): 47° 31.527	Northing (y): 122° 18.500W	Time: 10:45

Turbidity Check:	Mini-piezometer		Surface sample	
	MP 1 ~~Meter 1~~	MP 2 ~~Meter 2~~	Meter 1	Meter 2
	1.75	2.44		

Sample collection method:	mini-piezometer
Flow rate collection method:	width, depth, velocity
Volume of container:	nm
Time to fill container:	nm
Avg. Calculated flow rate:	0.00124 m³/sec

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL #1	1 15.02	1 27295	1 8.46	1 6.93	1 158	1	1
HL #2	2 15.05	2 31,648	2 8.86	2 7.32	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

SpC of LDW
HL #1 = 3383
HL #2 = 3873

Flow rate: (7/2/09)

Channel #1: length = 5 ft, width = 0.4 ft, depth = 1 in, sec = 4.5 sec → = 0.0010 m³/sec

#2: 5 ft, 0.6 ft, 0.75 in, 3.7, 9:55, 7/2 → = 0.0014 m³/sec

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	gravel with silty sand
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen
Description of embankment that seep flows from and general seep characteristics:	flat gravelly beach along a wall (concrete/steel)
Seep location relative to vertical changes in embankment or beach substrate:	seep flow at base of wall

Wind/Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW
Project Task: Seep water collection
Date: 7/2/09
Crew: BB, TD, BC, JF, S
Weather:
Photo no. 135, 136

Location ID: SP-24	Easting (x):	Northing (y):	Time: 7:40

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2

Sample collection method:	
Flow rate collection method:	
Volume of container:	
Time to fill container:	
Calculated flow rate:	

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4

Comments:

No seep flow, not able to dig or insert mini-piezometer because seep was located in rip rap. Water level was about +2.5; was +1.8 during recon survey

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW **Project Task:** seep water collection

Date: 7/1/04 **Crew:**

Weather: sunny **Photo no.** 128-132

Location ID: SP-39	Easting (x): 47°31.035	Northing (y): 122°18.422	Time: 13:30

Turbidity Check:	Mini-piezometer		Surface sample	
	MP1 ~~Meter 1~~	MP2 ~~Meter 2~~	Meter 1	Meter 2
	0.63	0.28		

Sample collection method:	mini-piezometer
Flow rate collection method:	width, depth, velocity
Volume of container:	nm
Time to fill container:	nm
Calculated flow rate:	0.000397 m³/sec

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL#1	1 17.86	1 32931	1 9.05	1 6.28	1 192	1	1
HL#2	2 18.16	2 37913	2 9.34	2 6.94	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

SpC of LDW = HL#1 = 1522
HL#2 = 1808

Flow rate
channel length = 5ft
" width = 1.2ft
" depth = 1/8 in
vol/time = 4.5 sec

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	silty sand/gravel
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen
Description of embankment that seep flows from and general seep characteristics:	Low sloping bank
Seep location relative to vertical changes in embankment or beach substrate:	mid-bank, in eroded depression

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LOW Project Task: Seep water collection

Date: 7/1/04 Crew:

Weather: Sunny Photo no. 123-127

Location ID: SP-41	Easting (x): 47°31.253N	Northing (y): 122°18.523W	Time: 12:00

Turbidity Check:	Mini-piezometer		Surface sample	
	MP1 ~~Meter 1~~	MP2 ~~Meter 2~~	Meter 1	Meter 2
	0.26	0.71		

Sample collection method:	mini-piezometer
Flow rate collection method:	nm
Volume of container:	nm
Time to fill container:	nm
Calculated flow rate:	nm

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL#1	1 18.20	1 15029	1 8.39	1 6.85	1 180	1	1
HL#2	2 18.20	2 17457	2 7.64	2 6.97	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

SpC of LOW
HL#1 = 3227
HL#2 = 3690

not possible to measure flow rate because of low substrate flow from broad wet bank

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	silty sand and cobble
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no sheen/odor
Description of embankment that seep flows from and general seep characteristics:	low to moderate slope of cobbles/sand; rip rap and vegetation at high water
Seep location relative to vertical changes in embankment or beach substrate:	seep sampled near beach/riprap contact; beach generally wet from broad low seepage

23280

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW — Project Task: Seep water collection

Date: 6/30/09 — Crew: BB, JC, BC, TD, MS

Weather: partly cloudy — Photo no. 103-104

Location ID: SP-48	Easting (x): 47° 31.890	Northing (y): 122° 19.174	Time: 07:30

Turbidity Check:	Mini-piezometer				Surface sample	
	Meter 1		Meter 2		Meter 1	Meter 2
	MP1 1 * 1.00	MP2 * 7.62	MP1 0.80	MP2 1.04		

Sample collection method:	
Flow rate collection method:	velocity, depth, width
Volume of container:	
Time to fill container:	
Calculated flow rate:	0.0017 m³/sec

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
Reading # 1	1 17.22	1 33,354	1 4.04	1 6.29	1	1	1
2	2 17.19	2 28,653	2 6.61	2 5.86	2 294	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4

Comments:

SpC 18620 (#1), 21585 (#2) > LDW adjacent to seep

flow rate:
velocity of piece of styrofoam = 3.8 sec / 4 ft
width of channel ≈ 4 inches
depth ≈ 2 inches
Revised flow rate collection method used because of time constraints. Method suggested by Mick Easterly, agency oversight.

*MP1 and MP2 - first and second mini-piezometers from which water was pumped

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	sand and silty muck
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no sheen / odor
Description of embankment that seep flows from and general seep characteristics:	low to moderate beach, with riprap to the south of beach; park access
Seep location relative to vertical changes in embankment or beach substrate:	sand at base of riprap

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW **Project Task:** Seep water collection

Date: 6/30/09 **Crew:** BB, JC, BC, TD, MS

Weather: overcast to sunny **Photo no.** 105-106

Location ID: SP-54	Easting (x): 47° 32.351	Northing (y): 122° 20.012	Time: 09:45

Turbidity Check:	Mini-piezometer				Surface sample	
	Meter 1		Meter 2		Meter 1	Meter 2
	MP1 4.56	MP2 3.90	MP1 2.77	MP2 2.62	nm	nm

Sample collection method:	mini piezometer
Flow rate collection method:	not measured
Volume of container:	nm
Time to fill container:	nm
Calculated flow rate:	nm

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
#1/#1	1 17.96	19754	1 6.00	1 7.03	1 -59	1	1
#2	2 17.60	2 11,326	2 2.95	2 7.42	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

SpC 78.7 (#1)

SpC 83.9 (#2)

light sheen noted on the surface of the sample collected for hydrolab

Hydrogen sulfide odor on same sample

sheen on the seep itself

Unable to measure flow because of low, broad seepage

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	Sheen at seep, H_2S odor
Description of embankment that seep flows from and general seep characteristics:	moderate slope below decaying structure
Seep location relative to vertical changes in embankment or beach substrate:	Seep sampled near top of embankment

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW
Project Task: Seep sampling
Date: 07.02.04
Crew: BB, JF, BC, TD, SR
Weather: overcast
Photo no. 145-

Location ID: SP-61	~~Easting (x)~~: 47°32.918 N	~~Northing (y)~~: 122°20.539 W	Time: 11:00

Turbidity Check:	Mini-piezometer		Surface sample	
	MP1 ~~Meter 1~~	MP2 ~~Meter 2~~	Meter 1	Meter 2
	1.83	0.86	nm	nm

Sample collection method:	mini-piezometer
Flow rate collection method:	width, depth & velocity
Volume of container:	nm
Time to fill container:	nm
Calculated flow rate:	0.00752 m3/sec

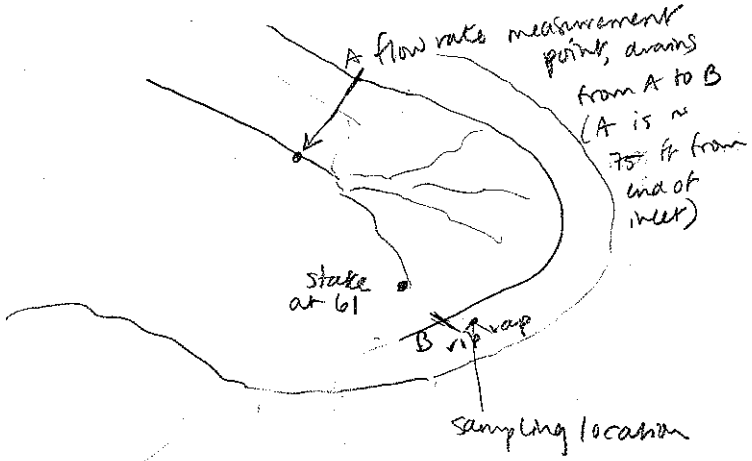
	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
H/L1	1 15.55	1 12353	1 7.52	1 6.85	1 138	1	1
H/L2	2 15.66	2 14281	2 7.40	2 7.13	2 na	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

Sample collected about 20 ft upgradient from stake at upwelling seep

bacterial sheen on surface in vicinity of sampling area

velocity = 5 ft/4 sec
Depth = 1.5 in
Width = 1.7 ft.



Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	gravel and silt
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen at seep collection location (upgradient of staked seep)
Description of embankment that seep flows from and general seep characteristics:	low flat riverbank below riprap and logs.
Seep location relative to vertical changes in embankment or beach substrate:	seep emerges just below riprap.

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW Project Task: Seep water collection

Date: 6/29/09 Crew:

Weather: sunny Photo no. 96, 97

Location ID: SP-62	Easting (x):	Northing (y):	Time: 11:50

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2

Sample collection method:	
Flow rate collection method:	
Volume of container:	
Time to fill container:	
Calculated flow rate:	

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4

Comments:

Seep too dry to sample.
Will check back at lower tide on another day.

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

2958956

Wind/Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW | Project Task: Seep survey

Date: 07.02.04 | Crew: BB, JE, BC, TA SR

Weather: overcast, windy | Photo no. 142-143, 144 (Funnel collection)

Location ID: SP-62	~~Easting (x):~~ 47°32.955N	Northing (y): 122°20.502W	Time: 10:30
Turbidity Check:	~~Meter #1~~ Mini-piezometer		Surface sample
	~~1- Meter 1~~	~~2- Meter 2~~	Start ~~Meter 1~~ / Finish ~~Meter 2~~
	~~50.0 NTU~~		50.0 NTU / 13.9 NTU
Sample collection method:	Funnel		
Flow rate collection method:	Funnel / beaker used to collect drainage		
Volume of container:			
Time to fill container:			
Calculated flow rate:	.000005 m³/sec.		

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL1	1 16.40	1 21,501	1 7.42	1 6.70	1 253	1	1
HL2	2 16.43	2 24,953	2 6.69	2 7.10	2 —	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

1. Seep water could not be pumped using mini-piezometer; they appeared to be clogged.

Flow rate: (7/2/04)

100 mL in 20 sec

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	gravel and silt
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen
Description of embankment that seep flows from and general seep characteristics:	low sloping river bank below riprap, concrete and rock
Seep location relative to vertical changes in embankment or beach substrate:	Sampled at stake, at base of riprap. One isolated seep flowing.

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW | Project Task: ☑ Seep collection

Date: 7/30/04 | Crew: T. Do, J. Florer

Weather: overcast + D | Photo no.

Location ID: SP62	Easting (x):		Northing (y):		Time: 1130	
Sample collection method:	Surface collection w/ funnel + tubing					
Flow rate collection method:	~~rotameter~~ distance timed volume					
Volume of container:	40 mL					
Time to fill container:	16.8 sec					
Calculated flow rate:						

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1 19.05	1 31897	19.55	1 6.75	1 —	19.76	1 —
2	2	2	2	2	2	2

HC#2

Comments:
Re-sample for VOAs

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	gravel + silt
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor no sheen
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW | Project Task: seep sample

Date: 07.02.04 | Crew: BB, JF, BC, TD, SR

Weather: overcast | Photo no. 149-150

Location ID: SP-64	~~Easting~~ (x): 47°33.314N	~~Northing~~ (y): 122°20.751W	Time: 12:20

Turbidity Check:	Mini-piezometer		Surface sample	
	P_1 Meter 1	P_2 Meter 2	Meter 1	Meter 2
	19.6/28.1/8.71	29.9/6.64/3.89		

Sample collection method:	
Flow rate collection method:	
Volume of container:	
Time to fill container:	
Calculated flow rate:	

Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4

Comments: unable to collect H/L samples for H_2O quality parameters b/c of rising tide (12:45) - stopped sampling

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	
Description of embankment that seep flows from and general seep characteristics:	
Seep location relative to vertical changes in embankment or beach substrate:	

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW
Project Task: LDW-Seep Sampling
Date: 7/3/04
Crew: RAC, BAB, JMF
Weather: Overcast
Photo no. ~~153~~ see 6/2/04

Location ID: SP-64	Easting (x): See 6/2/04	Northing (y):	Time: 1200

Turbidity Check:	Mini-piezometer		Surface sample	
	MP1 ~~Meter 1~~	MP2 ~~Meter 2~~	Meter 1	Meter 2
	31.9 / 35.6	47.2	26.1	

Sample collection method:	Minipiezometer
Flow rate collection method:	beaker used to collect channel drainage
Volume of container:	nm
Time to fill container:	nm
Calculated flow rate:	.00013 m3/sec

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL#1	1 14.10	1 31498	1 7.32	1 6.19	1 241	1	1
HL#2	2 14.68	2 37265	2 9.49	2 6.98	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:
Turbidity did not go down after 15min w/ piezometer

Flow rate:
4 channels along about 3 ft of area below riprap. Channels approximately the same size. ~250 ml in 8 secs for each channel.

SpC in LDW
HL#1 = 26729
HL#2 = 31727

0.00003125 m³/sec each x 4 channels
= 0.000125 m³/sec
= 0.00013 m³/sec

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	silty sand with gravel
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen
Description of embankment that seep flows from and general seep characteristics:	steep riprap rock
Seep location relative to vertical changes in embankment or beach substrate:	at base of rip rap; contact with riverbank silts and sand

Wind/Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW Project Task: seep water collection

Date: 6/29/04 Crew: BC, JF, TD, BA, MS, ME

Weather: sunny Photo no. 101-102 98-100(surface)

Location ID: SP-69	Easting (x): 47° 33. ~~654~~ 654	Northing (y): 122° 21.032	Time: 13:00

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2
	2.08	1.87		

Sample collection method:	mini-piezometer
Flow rate collection method:	too low to measure
Volume of container:	
Time to fill container:	
Calculated flow rate:	

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL#2	1 18.95	1 12105	1 12.75	1 6.14	1	1	1
HL#1	2 19.97	2 10480	2 1.41	2 6.~~27~~ 22	2 134	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

0.47mm 1.94mm (2nd piezometer reading)
cannot measure flow-rate because of low flow

Sheen on surface of sediment on broad seep flow

very low flow (broad) across surface; barely discernable. Very dry below the surface when dug out w/shovel.

SpC of LDW water adjacent to seep = 20,030

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	~~silty muck~~ towards LDW sand/silt below surface at sampling location
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	sheen on surface of sediment near high tide mark n. of sampling location
Description of embankment that seep flows from and general seep characteristics:	gently sloping embankment. Sampling location at edge of vegetation.
Seep location relative to vertical changes in embankment or beach substrate:	very low bank

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW
Project Task: Seep water collection
Date: 6/29/04
Crew: BC, JF, TD, BB, MS, BZ, ME
Weather: sunny
Photo no. 91-93

Location ID: SP-71	~~Easting (x):~~ 47° 33.994 N	~~Northing (y):~~ 122° 21.018 W	Time: 8:20

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2
	2.78	① 5.66 ② 2.03	nc	nc

Sample collection method:	mini piezometer
Flow rate collection method:	diversion of flow with edging material into graduated container
Volume of container:	2L
Time to fill container:	14.87 sec
Calculated flow rate:	~~7.44 sec/L~~ = .00013 m3/sec

Hydrolab #
~~1~~ 2
~~2~~ 1

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
1	17.60	123870	2.43	6.11			
2	19.04	20390	0.83	5.83	116		
3							
4							

Comments:
mini-piezometer depth = 0.63 ft.

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	80% fine med sand, 20% silty wood debris in sediment
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor, no sheen
Description of embankment that seep flows from and general seep characteristics:	low sloping beach over broad river bank
Seep location relative to vertical changes in embankment or beach substrate:	mid bank at rip rap outcrop

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW | Project Task: seep water collection form

Date: 7/3/04 | Crew: JF, BC, BB

Weather: overcast | Photo no. 152

Location ID: SP-75	Easting (x): 47 33.531	Northing (y): 12220.615	Time: 1030

Turbidity Check:	Mini-piezometer		Surface sample	
	MP1 ~~Meter 1~~	MP2 Meter 2	Meter 1	Meter 2
	0.59	3.6	nm	nm

Sample collection method:	mini piezometer
Flow rate collection method:	funnel / tubing / graduated container
Volume of container:	
Time to fill container:	
Calculated flow rate:	0.000148 m^3/sec

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL#1	1 15.83	1 26055	1 8.34	1 6.88	1 189	1	1
HL#2	2 14.94	2 30259	2 8.42	2 7.30	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

SpC from LDW

HL#1 28507

HL#2 33048

Flow rate from 2 channelized areas

#1 600 mL in 4.9 sec = .00012 m^3/sec

#2 250 mL in 8.8 sec = .000028 m^3/sec

sum = 0.000148 m^3/sec

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	silty med sand
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen (color?)
Description of embankment that seep flows from and general seep characteristics:	moderate slope of rip rap with low sloping bank at base
Seep location relative to vertical changes in embankment or beach substrate:	seep at base of rip rap

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW Project Task: seep water collection

Date: 06.29.04 Crew: BC, JF, TD, BB, MS, BZ, ME

Weather: sunny Photo no. 94-95

Location ID: SP-76	~~Easting (x):~~ 47° 33.361	~~Northing (y):~~ 122 20.363	Time: 1030

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2
	2.17 | 2.15	6-7 | 1.4		

Sample collection method:	~~mini piezometer~~ (MHES) Mark Henery ENV. Samp.
Flow rate collection method:	Seep flow too small and broad to take quantitative measure
Volume of container:	
Time to fill container:	
Calculated flow rate:	

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
Hydrolab #2	1 15.27	1 1020	1 0.83	1 6.38	1 114	1	1
#2	2 14.81	2 1146	2 ~~5.33~~ 5.33	2 6.25	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

Seep water from meter 2 @ 6-7 in Meter 1 = 5.58

New sample meter #1 = 2.15

clear water, not yellow as in notes > after pumping a few minutes

New sample meter #2 = 1.4

→ when in bottles, a light yellow color observed

unable to take flow rate because of broad low flow

19,970 = SpC of surface grab in LDW adjacent to seep @ 11:15

SpC (#1 & #2) 23,250

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	gravel w/ silty sand
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	No odor/sheen; light yellow color
Description of embankment that seep flows from and general seep characteristics:	Low sloping gravel below wooden broken shoreline
Seep location relative to vertical changes in embankment or beach substrate:	Low bank at pilings below collapsed decking

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW | Project Task: Seep water collection

Date: 7/1/09 | Crew: BB, JC, BC, TD, MS

Weather: overcast | Photo no. 112-114

Location ID: SP-80	Easting (x): 47° 32.892	Northing (y): 122° 20.286	Time: 7:00

Turbidity Check:	Mini-piezometer		Surface sample	
	Meter 1	Meter 2	Meter 1	Meter 2
	MP1: 3.17 / MP2: 4.83			

Sample collection method:	mini-piezometer
Flow rate collection method:	container in channel
Volume of container:	channel 1: 100 mL / channel 2: 200 mL
Time to fill container:	10 sec / 10 sec / 10 sec
Calculated flow rate:	0.000015 m³/sec

AVG

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
HL#2	1 15.94	1 16760	1 6.83	1 6.71	1	1	1
HL#1	2 15.94	2 14280	2 8.16	2 6.25	2 -60	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments:

Oil sheen at surface and entering LDW from seep, H_2S odor, TPH sample collected. Sheen appeared in seep water when mini-piezometer was moved up and down; appeared to be discharging from seep.

channel 1: 100 mL in 10 sec

channel 2: 200 mL in 10 sec

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	gravel w/ silty sand
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	sheen at seep, and entering the LDW from seep
Description of embankment that seep flows from and general seep characteristics:	steep bank, peat shelf at bottom of rip rap
Seep location relative to vertical changes in embankment or beach substrate:	on peat shelf at toe of rip rap

Wind Ward environmental LLC

FORM 6. SEEP WATER COLLECTION FORM

Project Name: LDW Project Task: seep sampling

Date: 06.30.04 Crew: ~~BB~~, JF, BC, TD, MS

Weather: sunny Photo no. 110-111

Location ID: SP-82	~~Easting~~ (x): 47°32.751	~~Northing~~ (y): 122°20.148	Time: 12:25

Turbidity Check:	Mini-piezometer				Surface sample	
	Meter 1		Meter 2		Meter 1	Meter 2
	MP1	MP2	MP1	MP2		
	3.11	4.82	2.14	3.87	nm	nm

Sample collection method:	mini-piezometer
Flow rate collection method:	container in channel, measured @ 1:45 on 7/3/04
Volume of container:	2L 2L
Time to fill container:	3 sec 3 sec
Calculated flow rate:	0.00067 m³/sec

	Temp	SpC	DO	pH	ORP	Turbidity	Salinity
~~#1~~ 2	1 18.81	1 16139	1 8.18	1 6.36	1 231	1	1
	2 19.12	2 18668	2 10.39	2 6.54	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4

Comments: SpC 20pBZ (#2)
17,352 (#1)

Substrate description (e.g., rock, soil, cobble, gravel, sand, silt, clay)	pebbles with sand and silt
Seep observations (e.g., sheen, bacterial slime, staining, odor, waste material, colored discharge, precipitates, vegetation):	no odor or sheen
Description of embankment that seep flows from and general seep characteristics:	Broad bank of sand/gravel with pavement slabs as rip rap
Seep location relative to vertical changes in embankment or beach substrate:	near base of rip rap

D.5 Field Notebooks

05-May-2004

Seep Survey / Boat 2 Field Notes

Crew Bob Complita - Windward
Jane Soxton - Exponent
Tim Fitzgerald - POS consultant
Eric Parker - RSS

Weather Cloudy w/ sun breaks

09:45 Left 1st Ave S Boat ramp (on water)

10.00 Arrive Seep 1
10:05 Took Sample 1 measurements
10.15 took Sample 2 measurements

10:40 Arrive Seep 2
10:50 Took Sample 1
10:55 Took Sample 2

11:00 Arrive Seep 3

11:15 Arrive Seep 4
11:35 Arrive Seep 5

05-MAY-2004

1142	Arrive	Seep	6
1148	Arrive	Seep	7
1155	Arrive	Seep	8
1205	Arrive	Seep	11
1213	Arrive	Seep	12
1225	Arrive	Seep	9
1234	"	"	10
1245	"	"	13
1254	"	"	14
1307	"	"	15
1323	"	"	17
1332	"	"	18
1343	"	"	20

1352	Arrive	Seep	21
1400	"	"	22
1422	"	"	24
1430	"	"	25

* Seeps Skipped due to high water. Will re-visit on 06-MAY-2004 at lower tide

Seep 16
Seep 19
Seep 23
Seep 26

Done Sampling @ 14:45 off water @ 15:30

END Bob Complita

05-MAY-2004

06-MAY-2004

Seep Survey Boat 2 field notes cont'd

Crew: Bob Complitn
Jane Soxton
Eric Parker
tim Fitzgerald

Seeps missed on 05-MAY
Seep 16 ✓
" 19
" 23 ✓
" 26 ✓

Weather: Hazey w/ Sun + wind

09:40 Left 1st Ave S boat ramp (on water)

Seep #	Arrival Time
26	10:15
26	Surface Sample taken off shore from Seep 26 @ ~6" depth @ 10:20
26	Sample taken off shore from Seep 26 @ ~1m depth @ 10:25
23	10:40
28	10:48
27	11:05
30	11:10
31	11:17
29	11:30
32	11:44

06 MAY 2004

Seeps missed due to tidal elevation being too high; will try again 07-MAY

Seep 19
Seep 44
Seep 45
Seep 50
Seep 52

Seep #	Arrival time
33	12:05
34	12:14
35	12:27
37	12:40
36	13:05
38	13:12
39	13:20
40	13:30
41	13:38
42	1353
43	14:05

Seep #	Arrival time
16	1417
46	1433
47	1440
48	1450
49	1454
51	1504
56	1545
56	Surface Sample readings taken ~6" below water surface @ 1600
56	Sample readings taken ~1m below water Surface @ 16:10

END Bob Complitn 06-MAY-2004

07-MAY-2004
Seep Survey Boat 2 Field Notes Cont'd

Crew: Bob Complin
Jane Sexton
Tim Fitzgerald
Eric Parker

Seeps missed on 06-MAY
Seep 19 ✓
" 44 ✓
" 45 ✓
" 50 ✓
" 52 ✓

Weather Overcast, rain

1045 Left Harbor Island Marina (on water).

Seep #	Arrival Time

Seeps missed due to tide height
Seep 72
Seep 75
Seep 77
Seep 78

END Bob Complin 07-MAY-2004

10-MAY-2004

Seep Survey Boat 2 Field Notes cont'd

Crew: Bob Complitta
Joanna Flores

Weather: Rain, windy

1500 Left Harbor Is Marina (on water)

Seeps to do: 72 ✓
75 ✓
77 ✓
78 ✓

Seep #	Arrival Time
78	1515
77	1530
75	1545
72	1610

1630 Return to Harbor Is Marina

END

Bob Complitta 10-MAY-2004

6/29/04

Seep Sampling.

crew: Berit Bergquist
Bob Complitta
Megan
Thai Do
Joanna Flores

Oversight:
Mick Easterly ACOE
Bernie Zavala EPA

Seep 71 arrive @ 0710

Difficulty in pumping due to tubing connections. Sampling did not begin sample collection until 0840. Completed sample collection at 9:20. Used tubing without teflon - only Masterflex.

6/30/04

Same crew w/o Bernie Zavala

At Trotsky seep S3 was underwater while we were there, will try again at lower tide (Thurs or Fri)

Seep 10 was too silty for mini-piezometer. Seep was coming out of bulkhead + not upwelling + tide was coming up will return later.

12:05
checked seep 62 but still dry

~1:30
After sampling seep 82 we went to seep 80, but tide was too high to complete sampling, so we didn't start sampling.

7/1/04

Crew: Same crew - no EPA oversight

First went to Seep 80
Pump from Frontier broke. John B. on Chinook called Marc Patten w/ the county to arrange for pickup of another pump. Used Port pump.

Due to time constraints, flow rate was not measured (no channelized flow)

Returned to SP-10; sampled with funnel + tubing.

Flow rate was not measured at sites where it could have been, because of time constraints, & except for SP-39 which was the last seep scheduled for the day, and there was time.

7/2/04

Benit, Bob, Thai, Joanna, Suzanne

Started at 7:00. Arrived at SP-24 about 7:30, but no flow at this seep.

8:30 - went into Trotsky for seep 53. Seep was still submerged, and plenty of flow still discharging at outfall.

9:55 - measured flow at seep 20

10:00 - flow not low enough at SP-12 to measure flow rate (-2.5 hide)

10:15 went to 62

10:45 went to 61

12:00 went to 64 - only collected filtered samples because of high turbidity and rising tide.

7/3/04

crew: Joanna, Bob & Benit

Went to seep 75 and collected sample @ 10:30. Collected morning rinsate blank

Went to SP-64 and turbidity remained high w/ mini-piezometer after 15 min of pumping. Since we already collected filtered samples on 7/2 no more samples were collected. Collected rinsate blanks using mini-piezometer w/ tubing and funnel w/ tubing.

Collected flow rate info at 61 and 62 ~ 1:30. Also at SP-30.

Went to Trotsky to check seep 5B. Seep was exposed - lower flow from outlet. However no flow was coming from seep. Sheen was not observed at other seeps.

LDW-Seep chem Collection 6/29/04

1st day of Seep Sampling

Sampled seeps: 71 @ 0840
: 76 @ 1030
: 69 @ 1300

- Atmospheric blank 1 collected from seep 69 @ 1300

6/30/04

Sampled seeps: 48 @ 0730
54 @ 0945
82 @ 1225

-Atmospheric blank + field duplicates taken from seep 82 @ 1225

-Seep 54 had TPH sample collected

7/1/04

1st seep sampled: SP-80 @ 0700
- TPH Samples collected due to sheen at site
- Atmosphere blank collected #3

- SP-10 @ 0845
- only collected filtered samples

- SP-12 @ 0915

- SP-20 @ 10:45
  Atmospheric blank collected #4

- SP-41 @ 12:00
  MS/MSD
  sheen @ site, breaks upon contact (bacterial)
- SP-39 @ 1330

SP-80 0700 overcast 07.01.04

Turbidity - Meter 1 = 3.17 (P1); 4.83 (P2)

Location 47° 32.892 N 122° 20.286 W
Photos 112-114 - oil sheen at surface and entering LDW, H_2S odor

Hydro lab #2

Temp	D.O	Spc	pH
15.97	6.83	116760	6.71

Hydro lab #1

Temp	D.O	Spc	pH	ORP
15.94	8.16	14280	6.25	-60

Spc of LDW
H/L 1 20,398
H/L 2 23,694

Flow rate not measured due to time constraints

07.01.04

SP-10 08:45 overcast
Sampled w/ surface collection method
funnel w/ tubing in channel
Turbidity meter #1 = 5.68

location 47° 32.145N 122° 19.142W
Photos 115-116

Hydrolab #1

Temp	D.O.	SpC	pH	ORP
15.03	19.80	27,229	6.32	88

Hydrolab #2

Temp	D.O.	SpC	pH
15.02	9.03	31607	6.79

Spc of LDW
H/L 1 = 10160
H/L 2 = 11764

07.01.04

SP-12 09:15 overcast

Turbidity meter #1 4.35 (p1) 0.86 (p2)

location 47° 32.095 N 122° 19.334W
Photos 117-118

Hydrolab #1

Temp	D.O.	SpC	pH	ORP
13.56	8.47	42351	5.94	108

Hydrolab #2

Temp	D.O.	SpC	pH
13.71	8.30	49361	6.63

SpC of LDW
H/L 1 = 18,124
H/L 2 = 20,973

SP-20 : 10:45 overcast 07.01.04

Turbidity meter #1 (p1) 1.75 , (p2) 2.44

Location: 47° 31.527 N 122° 18.500W

Photos: 119-120 , 121-122 Sample

Hydrolab #1

Temp	D.O	SpC	pH	ORP
15.02	8.46	27,245	6.93	158

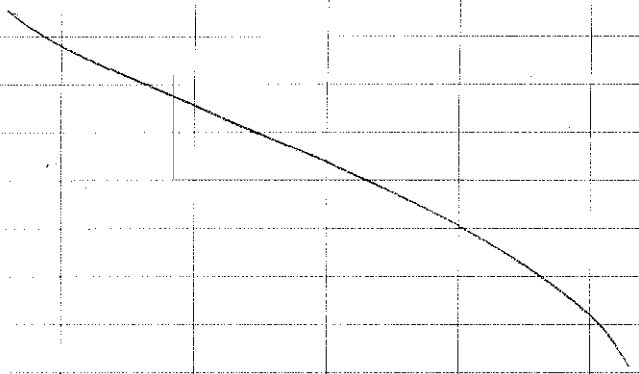
Hydrolab #2

Temp	D.O.	SpC	pH
15.05	8.86	31648	7.32

SpC of LDW

H/L #1: 3383

H/L #2: 3873



SP-41 12:00 sunny 07.01.04

Turbidity meter #1 0.26 (p1), 0.71 (p2)

Location: 47° 31.253 N 122° 18.523 W

Photos: 123-127

Hydrolab #1

Temp	D.O	SpC	pH	ORP
18.20	8.39	15029	6.85	180

Hydrolab #2

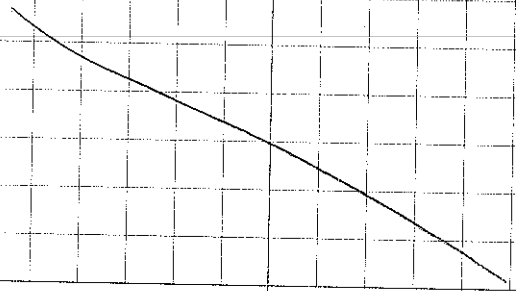
Temp	D.O.	SpC	pH
18.20	7.64	17457	6.97

SpC of LDW

H/L #1 = 3227

H/L #2 = 3690

Broad wet bank - not possible to measure flow rate



07.01.04

SP-39 13:30 sunny

Turbidity meter #1 0.63 (p1) 0.78 (p2)

Location: 47°31.035N 122° 18.422W

Photos - 128-130, 131, 132

Hydrolab #1

Temp	DO	SpC	pH	ORP
17.86	9.05	32931	6.28	192

Hydrolab #2

Temp	DO	SpC	pH
18.16	9.34	37913	6.94

SpC at LDW

H/L #1: 4522

H/L #2: 4808

Flow rate:

channel length - 5 ft.

channel width - 1.2 ft.

channel depth - 1/8 in.

Rate - 4.5 sec

End of day

7/2/04 overcast

SP-62 @ 10:30 am

atmospheric blank #5 collected

only filtered samples collected

SP-61 @ 11am

SP-64 @ 12:20 pm

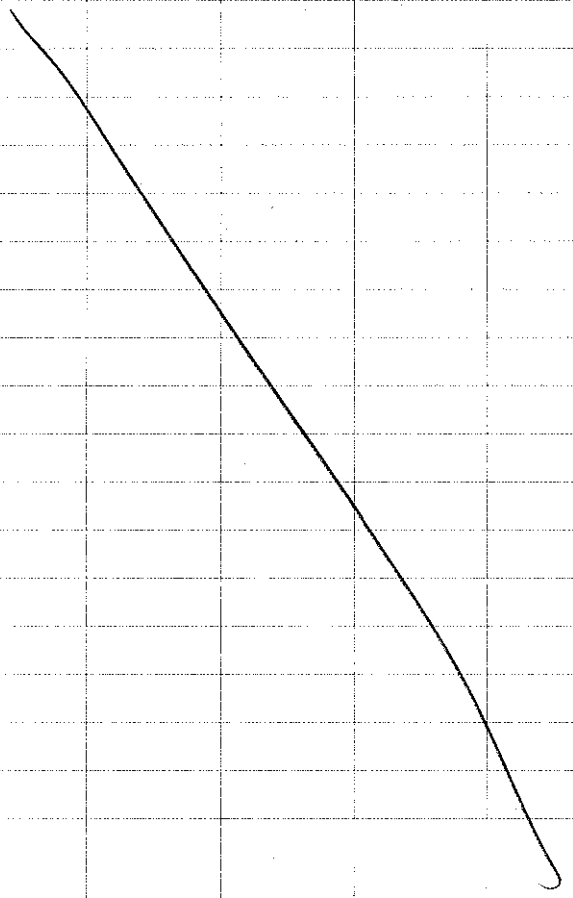
- as result of incoming tide, not all samples collected (stopped 12:45)
- samples not collected:
  - 2 of 3 PCB/Pest samples (unfiltered)
  - TPH-D unfiltered samples (2)
  - unfiltered metals
  - unfiltered mercury
  - TOC
  - TSS
  - 2 of 5 VOCs

SP-75 @ 1:15 pm

no samples collected because tide too high.

continued...

SP-69 @ 1:40pm
- collected TPH-D samples (4)
- collected TPH-G samples (2)
(added samples to previous collection at this site).



7/3/04

SP-75 @ 1030
- collected Atmospheric blank #6 for total Hg
- collected Rinsate blank for Total Hg
- collected MS/MSD for PCB/Pest
  3:1L - unfiltered
  3:1L - filtered

SP-64 @ 1200 - TPH site
- collected Rinsate blank for unfiltered (total)
  - PCB/Pest: 3-1L (LDW-SP-64-C-RB-MP-4)
  - Hg: 1-500mL
  - Metals: 1-500mL
  - TPH-D: 2-500mL
  - SVOC: 2-500mL
- ~~TPH-G & TPH-D collected @ 1200~~ @ 1330 for Mini Piezo method (MP)
- collected Rinsate blank for unfiltered for Surface method (SM) @ 1300 (total) (LDW-SP-64-C-RB-S-4)
  - PCB/Pest
  - Hg
  - Metals
  - TPH-D
  - SVOC

  } same volume as above

Turbidity was >5, so no sample was collected will use yesterday's instead

APPENDIX E. DATA VALIDATION REPORT

14257 93rd Court NE
Bothell, Washington 98011
(425) 820-7504
cari@saylerdata.com

Sayler Data Solutions, Inc.

DATA VALIDATION REPORT

Survey and Sampling of Lower Duwamish Waterway Seeps Data

Prepared for:
Windward Environmental LLC
200 W. Mercer St. Suite 401
Seattle, WA 98119

November 4, 2004

1.0 Introduction

Data validation was performed the following laboratory data packages:

Sample Date	Lab	Report Number(s)	Report Date(s)
06/29/2004	Analytical Resources	GU26	08/03/2004
06/30/2004		GU45	08/03/2004
07/01/2004		GU59	
07/02/2004		GU76	
07/02-07/03/2004		GU83	
07/1/2004		GV04	08/03/2004
07/30/2004		GX14	08/16/2004
06/29-07/03/2004	Frontier Geosciences	-	07/29/2004

Metals analyses were performed by Frontier Geosciences Inc. (FGS) in Seattle, Washington. All other analyses were performed by Analytical Resources, Inc. (ARI) in Tukwila, Washington.

Validation was performed by Cari Sayler. For ARI data, laboratory batches for each method were selected for full validation based on concentrations of contaminants and a sufficient number of samples to meet the 20% requirement. FGS did not assign samples to separate preparation batches and the analytical batches were analyte dependant. For FGS data, the first eight samples analyzed for each method underwent full validation. A summary validation was performed on the remaining batches. A sample cross reference, indicating the validation type is provided in section 13.0 of this report.

Numeric quality control criteria for the requirements listed below are presented in the laboratory reports, in the project Quality Assurance Project Plan (QAPP), in the analytical methods, or in EPA's functional guidelines for data validation. Data qualifiers are summarized in Section 14.0 of this report.

2.0 Sample Custody and Preservation

Sample custody was maintained as required from sample collection to receipt at the laboratory. The samples were received intact with the proper documentation, with one exception: Trip blanks submitted with 6/29, 6/30 and 7/1 samples were not listed on the chain of custody. Trip blanks were analyzed for volatiles and, where appropriate, TPH-gasoline.

Sample and fractions analyzed matched chain of custodies with the following exceptions: Semivolatile and TPH-diesel analyses were not performed on sample LDW-SP-64-C-F due to insufficient sample volume. Pesticide analysis was cancelled for sample LDW-SP-64-C-U because it was not required due to high field turbidity results.

The QAPP requirement for sample preservation is 4°C. Functional Guidelines expands on this requirement as 4 $\pm$ 2 ^{o}C. Sample receipt temperatures ranged from 1.8 to 6°C in batches GU45, GU59, GU76, GU83, and GV04. The sample receipt temperatures for batch GU26 were 10.8 and 12.2^{o}C. The samples were collected within a few hours of delivery to the laboratory and samples may not have completely cooled. The sample receipt temperature for batch GX14 was 14°C. Samples were delivered to the laboratory 6½ to 7 hours after sample collection. All volatile results in batch GX14 were qualified as estimated.

3.0 Volatile Organic Analyses

The samples were analyzed by EPA Method 8260B. The following data requirements were evaluated:

- Quality control analysis frequencies
- Multiple analysis results
- Analysis holding times
- Instrument performance check (tune) ion abundances (full validation only)
- Instrument calibration (full validation only)
- Laboratory blank contamination
- Trip blank contamination
- Surrogate recoveries
- MS recoveries
- MS/MSD relative percent differences (RPDs)
- LCS recoveries
- Field replicate precision
- Internal standard areas and retention time shifts (full validation only)
- Compound identifications (full validation only)
- Compound quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to batch GU45.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per analytical batch or one per twenty samples: method blank, LCS, MS, and MSD. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, LCS, LCSD, and appropriate surrogates. MS/MSD were analyzed with batch F3071004A and F3071404A. Due to insufficient sample volume, no MS/MSD were analyzed with batch F5080504A. A frequency of 1/20 was achieved for MS/MSD and no qualifiers were assigned.

Multiple analysis results: Six compounds were analyzed by both 8260B and by 8270C: 1,2-Dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, naphthalene and hexachlorobutadiene.

The best result to report was selected based on the following guidelines:

(1) If both results were non-detects, the lower reporting limit was selected.
(2) If one result was not detected and the other detected, the detection was selected.
(3) If both results were detections the following additional criteria were applied:
    (a) If one result was off-scale and one was on-scale, the on-scale result was selected.
    (b) If associated QC results indicated high bias, the lower concentration result was selected.
    (c) If associated QC results indicated no, low, or mixed biases, the higher concentration result was selected.

Sample results not selected as the best result to report were qualified R2, rejected due to the availability of a better result analyzed by another method.

Analysis holding times: Samples must be analyzed within 14 days of collection. All samples were analyzed within the holding time. However, as noted above, due to elevated cooler temperatures all volatile results in batch GX14 were qualified as estimated.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No target analytes were detected in the method blanks.

Trip blank results: Criteria for trip blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No target analytes were detected in the trip blanks.

Instrument calibration: Functional guidelines criteria for calibrations include minimum response factors of 0.05, maximum %RSDs of 30% for initial calibration compounds with average response factor quantitations, minimum correlation coefficients of 0.990 for initial calibration compounds with linear or quadratic quantitations, and continuing calibration maximum % differences of ±25%.

The initial calibration %RSDs and/or correlation coefficients were within criteria, all response factors were above the 0.05 minimum, and the continuing calibration differences were within the ±25% range for target analytes.

Instrument performance check (tune) ion abundances: Ion abundance criteria exist for 8 ions in bromofluorobenzene. These criteria were met in each 12-hour standard.

Internal standard areas and retention time shifts: Internal standard area counts in each sample must not vary by more than a factor of 2 from the associated 12-hour standard. The internal standard retention times in each sample must not vary by more than ±30 seconds from the associated 12-hour standard. All internal standard areas and retention times were within range.

Surrogate recoveries: The DQI for accuracy is 75-125%. Several samples have recovery values outside the laboratory control limits, but within the QAPP DQI limits. No qualifiers were assigned.

LCS recoveries and RPDs: DQI for accuracy is 75-125% and the DQI for precision is <30%. The following recoveries were outside the DQI:

QC Sample	Analyte	% Recovery
F3071004A LCS	1,2-Dibromo-3-chloropropane	68.4
F3071004A LCS	2-Hexanone	67.2
F3071004A LCS	Naphthalene	73.0
F3071404A LCS	Bromomethane	65.2
F3071404A LCSD	Bromomethane	68.4
F5080504A LCS	1,2,4-Trichlorobenzene	130
F5080504A LCSD	1,2,4-Trichlorobenzene	126

For 1,2-dibromo-3-chloropropane, 2-hexanone, and naphthalene, qualifiers are not required because the average LCS/LCSD recovery is within limits. For 1,2,4-Trichlorobenzene, qualifiers were not required because the recoveries are above the DQI. 1,2,4-Trichlorobenzene was not detected in any of the samples. Bromomethane reporting limits were qualified as estimated in the associated samples.

All other LCS and LCSD recoveries and all LCS/LCSD RPD values met the DQI.

MS recoveries: The DQI for accuracy is 75-125%.

Batch	QC Sample	Analyte	% Recovery
F3071004A	LDW-SP-54-C-U MS	1,2,4-Trichlorobenzene	71.8
F3071004A	LDW-SP-54-C-U MS	1,2,4-Trimethylbenzene	67.8
F3071004A	LDW-SP-54-C-U MS	1,3,5-Trimethylbenzene	67.8
F3071004A	LDW-SP-54-C-U MS	2-Chloroethylvinylether	ND
F3071004A	LDW-SP-54-C-U MS	4-Isopropyltoluene	59.2
F3071004A	LDW-SP-54-C-U MS	Acrolein	66.4
F3071004A	LDW-SP-54-C-U MS	Bromomethane	74.0
F3071004A	LDW-SP-54-C-U MS	Hexachlorobutadiene	49.6
F3071004A	LDW-SP-54-C-U MS	n-Propylbenzene	66.0
F3071004A	LDW-SP-54-C-U MS	Styrene	48.6
F3071004A	LDW-SP-54-C-U MSD	2-Chloroethylvinylether	ND
F3071004A	LDW-SP-54-C-U MSD	4-Isopropyltoluene	74.2
F3071004A	LDW-SP-54-C-U MSD	4-Methyl-2-Pentanone (MIBK)	128

Batch	QC Sample	Analyte	% Recovery
F3071004A	LDW-SP-54-C-U MSD	Bromomethane	73.0
F3071004A	LDW-SP-54-C-U MSD	Hexachlorobutadiene	72.2
F3071004A	LDW-SP-54-C-U MSD	Styrene	60.0
F3071404A	LDW-SP-41-C-U MS	2-Chloroethylvinylether	ND
F3071404A	LDW-SP-41-C-U MS	Bromomethane	59.6
F3071404A	LDW-SP-41-C-U MS	Methyl Iodide	70.8
F3071404A	LDW-SP-41-C-U MSD	2-Chloroethylvinylether	ND
F3071404A	LDW-SP-41-C-U MSD	Bromomethane	70.6
F3071404A	LDW-SP-41-C-U MSD	Styrene	65.4

For 2-Chloroethylvinylether, the reporting limit in all samples has been rejected because the MS and MSD recovery values were less than 10%. The reporting limits for the remaining analytes were qualified as estimated in the native samples only.

MS/MSD RPDs: The DQI for precision is <30%. The following RPDs exceeded the DQI:

Batch	QC Sample	Analyte	RPD
F3071004A	LDW-SP-54-C-U MS/MSD	Hexachlorobutadiene	37.1
F3071404A	LDW-SP-41-C-U MS/MSD	Styrene	33.4

Hexachlorobutadiene and styrene were not detected in the native samples and no qualifiers were necessary.

Field replicate precision: LDW-SP-82-C-FD-U was a field replicate. Volatile analytes were not detected in the sample/field replicate. Field replicate precision could not be evaluated.

Compound identifications: Spectra of positive results were evaluated for compliance with identification criteria. The retention times for positive results were within the retention time windows. Chromatograms were reviewed for evidence of false negatives. No discrepancies were noted.

Compound quantitations: Concentrations of 1,2-dichlorobenzene in samples and QC samples were recalculated to verify sample quantitations. Concentrations of carbon disulfide, chlorobenzene 1,3-dichlorbenzene and 1,4-dichlorobenzene in sample LDW-SP-54-C-U were also recalculated. No discrepancies were noted.

Overall assessment: Documentation was found to be clear and complete. No calculation, identification, or transcription errors were noted. Calibration data and instrument performance check results demonstrate acceptable instrument performance. Low LCS, LCSD, MS and MSD recoveries resulted in some estimated reporting limits and the rejection of 2-Chloroethylvinylether.

With the exception of 2-Chloroethylvinylether, volatile organic data as qualified are acceptable for use.

4.0 Semivolatile Organic Analyses

The samples were analyzed by EPA Method 8270C. The following data requirements were evaluated:

- Quality control analysis frequencies
- Multiple analysis results
- Extraction and analysis holding times
- Instrument performance check (tune) ion abundances (full validation only)
- Instrument calibration (full validation only)
- Laboratory blank contamination
- Surrogate recoveries
- MS recoveries
- MS/MSD relative percent differences (RPDs)
- LCS recoveries
- Field replicate precision
- Internal standard areas and retention time shifts (full validation only)
- Compound identifications (full validation only)
- Compound quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to batch GU45.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per analytical batch method blank, laboratory control sample matrix spike, and matrix spike duplicate. In addition, surrogate compounds must be measured in each field and quality control sample.

Required quality control samples were analyzed. MS/MSDs were analyzed on samples LDW-SP-41-C-F and LDW-SP-41-C-U in batch SV0702A, and LDW-SP-75-C-F and LDW-SP-75-C- U in batch SV0707A.

Multiple analysis results: Two analyses were performed for sample LDW-SP-61-C-F due to a concentration exceeding the calibration range. The best result to report was selected based on the guidelines described in section 3.0. Sample results not selected as the best result to report were qualified R1, rejected due to the availability of better results.

In the unfiltered samples, six compounds were analyzed by both 8260B and by 8270C: 1,2-Dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, naphthalene and hexachlorobutadiene. The best result to report was selected based on the guidelines described in section 3.0. Sample results not selected as the best result to report were qualified R2, rejected due to the availability of a better result analyzed by another method.

Analysis holding times: Samples must be extracted within 7 days of collection. Extracts must be analyzed within 40 days of extraction. All samples were extracted and analyzed within holding time.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. The method blank associated with batch SV0707A contained bis(2-ethylhexyl) phthalate at a concentration of 1.2 µg/L. Bis(2-ethylhexyl)phthalate was not detected in the method blank associated with batch SV0702A. Due to the sporadic nature of contamination, concentrations of bis(2-ethylhexyl)phthalate below ten times the blank level in any sample are qualified as undetected at the reported concentration.

A high level of bis(2-ethylhexyl)phthalate was detected in the filtered sample from Seep 61 (LDW-SP-61-C-F, 2300 ug/L) with consistent concentrations reported for the undiluted and diluted sample. Bis(2-ethylhexyl)phthalate was present in the unfiltered sample from seep 61 at a much lower level ((LDW-SP-61-C-U, 3.1 ug/L). The laboratory attributed this to contamination from the rubber stopper used in the filtering apparatus which was not wrapped with Teflon tape.

The bis(2-ethylhexyl)phthalate result in sample LDW-SP-61-C-F was rejected and is unusable for any purpose. Because the Teflon tape was not used for any of the filtered samples, all phthalates in the remaining filtered samples were qualified as undetected.

Field blank results: Criteria for field blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. Rinsate blanks LDW-SP-64-RB-S-U (1.2 ug/L) and LDW-SP-64-RB-MP-U (2.4 ug/L) contained bis(2-ethylhexyl)phthalate. Samples were already qualified due to laboratory blank contamination and no further qualifiers were assigned.

Instrument calibration: Functional guidelines criteria for calibrations include minimum response factors of 0.05, initial calibration maximum relative standard deviations (RSDs) of 30%, and continuing calibration maximum % differences of ±25%.

The initial calibration RSDs were within the criteria. All initial and continuing calibration response factors were above the 0.05 minimum. Continuing calibration % differences were within criteria.

Instrument performance check (tune) ion abundances: Ion abundance criteria exist for 11 ions in decafluorotriphenylphosphine. These criteria were met in each 12-hour standard.

Internal standard areas and retention time shifts: Internal standard area counts in each sample must not vary by more than a factor of 2 from the associated 12-hour standard. The internal standard retention times in each sample must not vary by more than ±30 seconds from the associated 12-hour standard. All internal standard areas and retention times were within range.

Surrogate recoveries: The DQI for accuracy is 20-130%. Laboratory reported control limits for surrogate recoveries ranged from 27-136 to 47-101%. Surrogates were not recovered in sample LDW-SP-61-C-F due to the necessary dilution factor. No qualifiers were assigned. All other surrogate recoveries were within both limits.

LCS recoveries: The DQI for accuracy is 20-130%. The LCS recoveries were within limits.

MS recoveries: The DQI for accuracy is 20-130%. All MS and MSD recoveries met the DQI for accuracy.

MS/MSD RPDs: The DQI for precision is RPD ≤30%. All MS/MSD RPDs met the DQI for precision.

Field replicate precision: LDW-SP-82-C-FD-F and LDW-SP-82-C-FD-U were field replicates. The only compounds detected in the sample/field replicates are laboratory contaminants. Field replicate precision could not be evaluated.

Compound identifications: Spectra of positive results were evaluated for compliance with identification criteria. The retention times for positive results were within the retention time windows. Chromatograms were reviewed for evidence of false negatives. No discrepancies were noted.

Compound quantitations: Concentrations of 1,3-dichlorobenzene, 1,4-dichlorobenzene, bis(2-ethylhexyl)phthalate, and the surrogate 2,4,6-tribromophenol were recalculated to verify sample quantitations. No discrepancies were noted.

Overall assessment: Documentation was found to be clear and complete. No calculation or transcription errors were noted. Multiple analysis results were reduced to the most appropriate result. Accuracy and precision was within acceptable limits. Some results for common laboratory contaminants were qualified as undetected and one bis(2-ethylhexyl)phthalate result was rejected as unusable.

With the exception of one bis(2ethylhexyl)phthalate result, semivolatile organic data are acceptable for use as qualified.

5.0 Pesticide Analyses

Analyses were performed by EPA Method 8080 modified, with silica gel cleanup. The following data requirements were evaluated:

- Quality control analysis frequencies
- Multiple analysis results
- Extraction and analysis holding times
- Instrument calibration (full validation only)
- Laboratory blank contamination
- Field blank contamination
- Surrogate recoveries
- MS recoveries
- MS/MSD relative percent differences (RPDs)
- LCS recoveries
- Field replicate precision
- Internal standard areas and retention time shifts (full validation only)
- Compound identifications (full validation only)
- Compound quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to batch GU59.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per analytical batch or one per twenty samples: method blank, laboratory control sample, matrix spike, and matrix spike duplicate. In addition, surrogate compounds must be measured in each field and quality control sample.

Required quality control samples were analyzed. MS/MSDs were analyzed on samples LDW-SP-41-C-F in batch PE0702A and LDW-SP-75-C- U in batch PE0707A.

Multiple analysis results: Multiple analyses were not reported.

Holding times: Samples must be extracted within 7 days of collection. Extracts must be analyzed within 40 days of extraction. All samples were extracted and analyzed within holding times.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No contamination was detected in the method blank.

Field blank results: Criteria for field blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. Delta-BHC was found in LDW-SP-64-RB-MP-U at a concentration of 0.0035 ug/L. Delta-BHC was not detected in any sample and no qualifiers were assigned.

Instrument calibration: Data usability criteria for calibrations include minimum correlation coefficients of 0.990 or maximum RSDs of ±20% for each initial calibration, and maximum % differences of ±25% for each continuing calibration. DDT and Endrin breakdown must be individually below 20% and combined below 30%.

All initial calibration compound RSDs were within 20%. All continuing calibration % differences were within ±25%. The % breakdowns were acceptable.

Surrogate recoveries: Laboratory reported control limits for surrogate recoveries were 25-118 for TCMX and 25-134 for DCBP. The DQI for accuracy was 50-150%.

The following surrogate recoveries were outside the DQI.

Sample ID	Surrogate	% Recovery
LDW-SP-10-C-F	Tetrachlorometaxylene	32.5
LDW-SP-12-C-F	Tetrachlorometaxylene	48.8
LDW-SP-12-C-U	Tetrachlorometaxylene	42.8
LDW-SP-20-C-F	Tetrachlorometaxylene	44.5
LDW-SP-20-C-U	Tetrachlorometaxylene	48.5
LDW-SP-61-C-U	Tetrachlorometaxylene	44.5
LDW-SP-62-C-F	Tetrachlorometaxylene	39.0
LDW-SP-64-C-F	Decachlorobiphenyl	49.2
LDW-SP-64-C-F	Tetrachlorometaxylene	49.2

Sample ID	Surrogate	% Recovery
LDW-SP-69-C-F	Decachlorobiphenyl	49.8
LDW-SP-69-C-F	Tetrachlorometaxylene	38.2
LDW-SP-69-C-U	Decachlorobiphenyl	33.8
LDW-SP-69-C-U	Tetrachlorometaxylene	39.5
LDW-SP-71-C-F	Tetrachlorometaxylene	33.8
LDW-SP-71-C-U	Tetrachlorometaxylene	38.2
LDW-SP-75-C-F	Tetrachlorometaxylene	45.2
LDW-SP-75-C-U	Decachlorobiphenyl	48.2
LDW-SP-75-C-U	Tetrachlorometaxylene	41.0
LDW-SP-76-C-F	Tetrachlorometaxylene	31.8
LDW-SP-76-C-U	Tetrachlorometaxylene	34.0
LDW-SP-80-C-U	Tetrachlorometaxylene	35.0
LDW-SP-82-C-FD-U	Decachlorobiphenyl	44.2
LDW-SP-82-C-FD-U	Tetrachlorometaxylene	34.5

All surrogate recoveries were within the laboratory limits. None of the samples with both surrogate recoveries below the DQI contained pesticides. No qualifiers were assigned.

Please note that the reported pesticide surrogate recoveries that do not match the reported PCB recoveries were reported from a different column. According to the laboratory, pesticide surrogate recoveries were reported from the column with the higher concentration and PCB surrogate recoveries were reported from the first column. The method does not specify procedures for choosing surrogate results, and both procedures are considered acceptable.

LCS recoveries: The DQI for accuracy was 50-150%. The recoveries of endrin aldehyde in the LCS from batch PE0702A (12.0%) and in the LCS from batch PE0707A (42.8%) were below the DQI. The reporting limit for endrin aldehyde was estimated in all associated samples. All other LCS recoveries were within these limits.

MS recoveries: The DQI for accuracy was 50-150%. The recovery of gamma-BHC in LDW-SP-75-C-U MSD (49.0%) was slightly below the DQI. No qualifiers were assigned. All other MS and MSD recoveries were within limits.

MS/MSD RPDs: The RPD for aldrin in LDW-SP-75-C-U MS/MSD (36.5%) exceeded the DQI for precision of <30%. Aldrin was not detected in the associated samples and no qualifiers were assigned. All other RPDs were within limits.

Field replicate precision: LDW-SP-82-C-FD-F and LDW-SP-82-C-FD-U were field replicates. Pesticides were not detected in the sample/field replicates. Field replicate precision could not be evaluated.

Compound identifications: Chromatograms and quantitation reports were reviewed for accuracy of compound identifications. No discrepancies were noted. Additionally, according to the laboratory narrative, a standard addition analysis was

performed on sample LDW-SP-39-C-U which confirmed the identification of heptachlor epoxide.

Compound quantitations: Concentrations of delta-BHC, gamma chlordane, and heptachlor epoxide were recalculated to verify sample quantitations. No discrepancies were noted.

Overall assessment: Calibration and instrument performance data indicate acceptable performance. Dual column confirmations were performed. Quality control results demonstrated acceptable levels of precision. Low LCS recoveries resulted in estimated endrin aldehyde reporting limits. Pesticide data, as qualified, are acceptable for use.

6.0 PCB Analyses

Analyses were performed by EPA Method 8080 modified, with silica gel cleanup. The following data requirements were evaluated:

- Quality control analysis frequencies
- Multiple analysis results
- Extraction and analysis holding times
- Instrument calibration (full validation only)
- Laboratory blank contamination
- Surrogate recoveries
- MS recoveries
- MS/MSD relative percent differences (RPDs)
- LCS recoveries
- Field replicate precision
- Internal standard areas and retention time shifts (full validation only)
- Compound identifications (full validation only)
- Compound quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to batch GU45.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per analytical batch or one per twenty samples: method blank, laboratory control sample, matrix spike, and matrix spike duplicate. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample and appropriate surrogates. MS/MSDs were analyzed on samples LDW-SP-41-C-U in batch PB0702A and LDW-SP-75-C-F in batch PB0707A. No MS/MSDs were analyzed in batch PB0709A due to insufficient sample volume. A frequency of 1/20 was achieved and no qualifiers were assigned.

Multiple analysis results: Sample LDW-SP-54-C-U was diluted and reanalyzed due to concentrations exceeding the calibration range. The best result to report was selected based on the guidelines described in section 3.0. Sample results not selected as the best result to report were qualified R1, rejected due to the availability of better results.

Holding times: Samples must be extracted within 7 days of collection. Extracts must be analyzed within 40 days of extraction. All samples were extracted and analyzed within holding times.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No contamination was detected in the method blanks.

Field blank results: Criteria for field blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No contamination was detected in the field blanks.

Instrument calibration: Data usability criteria for calibrations include minimum correlation coefficients of 0.990 or maximum RSDs of ±20% for each initial calibration, and maximum % differences of ±25% for each continuing calibration. All initial calibration compound RSDs were within 20%. Continuing calibration data was missing from the data package. Resubmissions were provided. All continuing calibration % differences were within ±25%.

Surrogate recoveries: Laboratory reported control limits for surrogate recoveries were 25-118 for TCMX and 25-134 for DCBP. The DQI for accuracy was 50-150%.

The following surrogate recoveries were outside the DQI.

Sample ID	Surrogate	% Recovery
LDW-SP-10-C-F	TCMX	32.5
LDW-SP-12-C-F	TCMX	48.8
LDW-SP-12-C-U	TCMX	42.8
LDW-SP-20-C-F	TCMX	44.5
LDW-SP-20-C-U	TCMX	48.5
LDW-SP-54-C-F	DCBP	43.2
LDW-SP-54-C-U DL	DCBP	D
LDW-SP-54-C-U DL	TCMX	D
LDW-SP-61-C-U	TCMX	44.5
LDW-SP-62-C-F	DCBP	45.8
LDW-SP-62-C-F	TCMX	39.0
LDW-SP-64-C-F	DCBP	46.8
LDW-SP-64-C-F	TCMX	49.2
LDW-SP-69-C-F	DCBP	37.8
LDW-SP-69-C-F	TCMX	38.2
LDW-SP-69-C-U	DCBP	28.2
LDW-SP-69-C-U	TCMX	39.5
LDW-SP-71-C-F	DCBP	49.0
LDW-SP-71-C-F	TCMX	33.8
LDW-SP-71-C-U	DCBP	40.8

Sample ID	Surrogate	% Recovery
LDW-SP-71-C-U	TCMX	38.2
LDW-SP-75-C-F	TCMX	45.2
LDW-SP-75-C-U	DCBP	36.2
LDW-SP-75-C-U	TCMX	41.0
LDW-SP-76-C-F	DCBP	40.8
LDW-SP-76-C-F	TCMX	31.8
LDW-SP-76-C-U	DCBP	44.8
LDW-SP-76-C-U	TCMX	34.0
LDW-SP-80-C-U	TCMX	35.0
LDW-SP-82-C-FD-U	DCBP	43.0
LDW-SP-82-C-FD-U	TCMX	34.5
LDW-SP-82-C-U	DCBP	45.5

For sample LDW-SP-54-C-U DL, a dilution factor of 20 was used and control limits do not apply. Except for sample LDW-SP-54-C-U DL, all surrogate recoveries were within the laboratory limits.

Only one of the samples with both surrogate recoveries below the DQI contained PCBs. The Aroclor 1254 result in sample LDW-SP-71-C-U was qualified as estimated.

Please note that the reported PCB surrogate recoveries that do not match the reported pesticite recoveries were reported from a different column. According to the laboratory, pesticide surrogate recoveries were reported from the column with the higher concentration and PCB surrogate recoveries were reported from the first column. The method does not specify procedures for choosing surrogate results, and both procedures are considered acceptable.

LCS recoveries: The DQI for accuracy was 50-150%. The Aroclor 1016 recovery (48.2%) in the LCS from batch PB0707B was slightly below the DQI. No qualifiers were assigned. All other LCS recoveries were within limits.

MS recoveries: The DQI for accuracy was 50-150%. The Aroclor 1016 recovery (48.3%) in LDW-SP-75-C-F MSD was slightly below the DQI. No qualifiers were assigned. All other MS and MSD recoveries were within limits.

MS/MSD RPDs: The DQI for precision is <30%. All RPDs were within limits.

Field replicate precision: LDW-SP-82-C-FD-F and LDW-SP-82-C-FD-U were field replicates. PCBs were not detected in the sample/field replicates. Field replicate precision could not be evaluated.

Compound identifications: Chromatograms and quantitation reports for each sample in batch GU45 were reviewed for accuracy of compound identifications. Identifications of Aroclors 1248 and 1260 were confirmed. Upon initial review, the identification of Aroclor 1254 could not be confirmed due to the pattern overlap with Aroclors 1248 and 1260. On-site at the laboratory, the validator viewed sample chromatograms on-screen with overlays from the calibration standards. The presence of Aroclor 1254 was confirmed for sample LDW-SP-64-C-U and both

analyses of LDW-SP-54-C-U, although the quantitation is likely biased somewhat high due to the pattern overlap with Aroclors 1248 and 1260. The Aroclor 1254 result in these two samples were qualified as estimated.

In consultation with laboratory personnel, it was determined that the pattern match for Aroclor 1254 in sample LDW-SP-54-C-F was insufficient for identification. The laboratory agreed to resubmit the results for this sample with Aroclor 1254 as a non-detect with an elevated reporting limit.

Compound quantitations: Concentrations of Aroclors 1248, 1254, and 1260 in batch GU45 were recalculated to verify sample quantitations. Other than peak selection discrepancies eliminated with the change in Aroclor 1254 identification for sample LDW-SP-54-C-F, no discrepancies were noted.

Overall assessment: Calibration and instrument performance data indicate acceptable performance. Dual column confirmations were performed. Multiple analysis results were reduced to the most appropriate value. Quality control results demonstrated acceptable levels of precision. One result was estimated due to low surrogate recoveries and two results were estimated due to quantitation interferences. One result was changed to a non-detect. PCB data, as resubmitted and qualified, are acceptable for use.

7.0 Gasoline Range Petroleum Hydrocarbon Analyses

Analyses were performed by WA DOE Method NWTPH-G. The following data requirements were evaluated:

- Quality control analysis frequencies
- Multiple analysis results
- Extraction and analysis holding times
- Instrument calibration (full validation only)
- Laboratory blank contamination
- Trip blank contamination
- Surrogate recoveries
- MS recoveries
- MS/MSD relative percent differences (RPDs)
- LCS recoveries
- Field replicate precision
- Compound identifications (full validation only)
- Compound quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to batches GU45 and GV04.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per analytical batch: method blank and laboratory control sample. The following quality control samples must be analyzed for each 20

samples: matrix spike and matrix spike duplicate. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample, laboratory control sample duplicate and appropriate surrogates. MS/MSDs were analyzed on sample LDW-SP-41-C-U in batch P1070604A. A frequency of 1/20 was achieved for MS/MSDs.

Multiple analysis results: Multiple analyses were not reported.

Holding times: Samples must be analyzed within 14 days of collection. All samples were analyzed within holding times. However, cooler temperatures for samples in batches GU26 exceeded recommended ranges, and results were qualified as estimated.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No contamination was detected in the method blank.

Trip blank results: Criteria for trip blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. Gasoline was not detected in the trip blanks.

Instrument calibration: Method criteria for calibrations include minimum correlation coefficients of 0.990 and % differences $\pm$15% for each standard in the initial calibration, and maximum % differences of $\pm$20% for each calibration check standard. The laboratory uses a maximum response factor RSD of 20%, which is an acceptable substitution for the minimum correlation coefficient criteria, and this criterion was met. Errors in the reported response factors were noted and the laboratory resubmitted the calibration form.

The $\pm$15% criteria was exceeded (-18% & +18%) in the two lowest standards of the initial calibration associated with batch GU45. This exceedance is slight, and no qualifiers were assigned.

All calibration check % differences were within $\pm$20%.

Surrogate recoveries: Method criteria for surrogate recoveries are 50-150%. The DQI for accuracy was 75-125%. Surrogate recoveries were within both limits.

LCS recoveries: The DQI for accuracy was 75-125%. The LCS recoveries were within these limits.

MS recoveries: The DQI for accuracy was 75-125%. MS and MSD recoveries were within limits.

MS/MSD RPDs: The DQI for precision is <30%. The MS/MSD RPD was within limits.

Field replicate precision: LDW-SP-82-C-FD-U was a field replicate. Gasoline was not detected in the sample/field replicate and field replicate precision could not be evaluated.

Compound identifications: Chromatograms and quantitation reports for each sample in batch GU45 and GV04 were reviewed for accuracy of compound identifications. The method defined quantitation range was used. Low levels of petroleum hydrocarbons were detected at Seep 54. The laboratory reported this detected result as not identifiable.

Compound quantitations: Concentrations of gasoline range organics and surrogates from each sample in batches GU45 and GV04 were recalculated to verify sample quantitations. No discrepancies were noted.

Overall assessment: Documentation for calibrations required some clarification and corrections from the laboratory. Calibration data indicate acceptable performance. Quality control results demonstrated acceptable levels of accuracy and precision. Gasoline range hydrocarbon data, as reported, are acceptable for use.

8.0 Extended Diesel Range Petroleum Hydrocarbon Analyses

Analyses were performed by WA DOE Method NWTPH-Dx. The following data requirements were evaluated:

- Quality control analysis frequencies
- Multiple analysis results
- Extraction and analysis holding times
- Instrument calibration (full validation only)
- Laboratory blank contamination
- Field blank contamination
- Surrogate recoveries
- MS recoveries
- MS/MSD relative percent differences (RPDs)
- LCS recoveries
- Field replicate precision
- Compound identifications (full validation only)
- Compound quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to batch GU45 and GV04.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per analytical batch: method blank and laboratory control sample. The following quality control samples must be analyzed for each 20 samples: matrix spike, matrix spike duplicate, and matrix duplicate. In addition, surrogate compounds must be measured in each field and quality control sample.

Each batch included a method blank, laboratory control sample, laboratory control sample duplicate and appropriate surrogates. MS/MSDs were analyzed on sample LDW-SP-41-C-U and LDW-SP-41-C-F in batch TD0702A. A frequency of 1/20 was achieved for MS/MSDs.

No matrix duplicates were analyzed due to limited sample volume. Precision is evaluated based on MS/MSD and sample/field replicate variability and no qualifiers were assigned.

Multiple analysis results: Multiple analyses were not reported.

Holding times: Samples must be extracted within 7 days of collection. Extracts must be analyzed within 40 days of extraction. All samples were extracted and analyzed within holding times.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No contamination was detected in the method blank.

Field blank results: Criteria for field blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. No target analytes were detected in the field blanks.

Instrument calibration: Method criteria for calibrations include minimum correlation coefficients of 0.990 and % differences ±15% for each standard in the initial calibration, and maximum % differences of ±15% for each calibration check standard. The laboratory uses a maximum response factor RSD of 20%, which is an acceptable substitution for the minimum correlation coefficient criteria. This criterion was met.

The % differences for each standard in the initial calibration were within ±15%. All calibration check % differences were within ±15%.

Surrogate recoveries: Laboratory control limits for surrogate recoveries are 46-123%. The DQI for accuracy was 30-160%. Surrogate recoveries were within both limits.

LCS recoveries: The DQI for accuracy was 30-160%. The LCS recoveries were within these limits.

MS recoveries: The DQI for accuracy was 30-160%. MS and MSD recoveries were within limits.

MS/MSD RPDs: The DQI for precision is <30%. The MS/MSD RPDs were within limits.

Field replicate precision: Field replicate results are as follows:

Field Rep ID	Sample ID	Analyte	FD Result (mg/L)	Sample Result (mg/L)	RPD
LDW-SP-80-C-FD-F	LDW-SP-80-C-F	Diesel Range Hydrocarbons	0.41	0.59	36.0
LDW-SP-80-C-FD-U	LDW-SP-80-C-U	Diesel Range Hydrocarbons	0.47	0.61	25.9

Qualifiers are not assigned based on field replicate results.

Compound identifications: Chromatograms and quantitation reports were reviewed for accuracy of compound identifications. The method defined quantitation range

was used. Low levels of petroleum hydrocarbons were detected at Seep 54 and Seep 80. The laboratory reported each detected result as not identifiable.

Compound quantitations: Concentrations of diesel range organics and o-terphenyl were recalculated to verify sample quantitations. No discrepancies were noted.

Overall assessment: Documentation was found to be clear and complete. Calibration data indicate acceptable performance. Quality control results demonstrated acceptable levels of accuracy and precision. Extended diesel range hydrocarbon data, as reported, are acceptable for use.

9.0 Metals Analyses

Analyses were performed by EPA Method 200.8 modified. The following data requirements were evaluated:

- Quality control analysis frequencies
- Analysis holding times
- ICP-MS tune mass calibration and resolution: (full validation only)
- Instrument calibration (full validation only)
- Laboratory blank contamination
- SRM recoveries
- Laboratory duplicate precision
- MS recoveries
- MS/MSD relative percent differences
- ICP-MS internal standard relative intensities (full validation only)
- Field replicate precision
- Analyte quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to data associated with samples LDW-SP-71-C-F, LDW-SP-71-C-U, LDW-SP-76-C-F, LDW-SP-76-C-U, LDW-SP-69-C-U, LDW-SP-69-C-F, LDW-SP-48-C-F, LDW-SP-48-C-U, LDW-SP-54-C-F, and LDW-SP-54-C-U.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per batch or one per twenty samples: method blank, LCS, MS and laboratory duplicate. Each analytical batch contained a method blank, SRM, MS, MSD, and laboratory duplicate. The SRM serves as the LCS, and requirements are considered met.

Holding times: Samples must be analyzed within 6 months of collection. The samples were analyzed within the holding times.

Instrument tune mass calibration and resolution: Functional Guidelines criteria for ICP-MS mass calibration are 1) peak widths of 0.75 amu or less at 5% peak height or peak widths of 0.8 any or less at 10% peak height; 2) mass differences of 0.1 amu or less; and 3) signal intensity RSDs of <5%. Tuning solution data was not present

in the data package. The laboratory was contacted and two tuning reports were submitted. These tunes met criteria #1 and #2 above.

The laboratory associated the tune data analyzed on 7/6 with samples analyzed 7/6 and 7/13 and the tune data analyzed on 7/14 with samples analyzed 7/14 and 7/15. Method 200.8 does not require daily mass calibration if periodic performance data demonstrates that the instrument meets criteria. The laboratory analyzes a performance solution daily which contains a different set of metals (magnesium, rhodium, lead cesium and barium) in order to measure oxides and background as well as sensitivity. The daily performance solution met criteria #3 above for the data submitted 7/6, 7/13, and 7/14. Daily performance report was not available for 7/15 due to accidental erasure of the data file.

No qualifiers were assigned based on these discrepancies.

Instrument calibration: Functional guidelines criterion for calibration verifications is a maximum % difference of ±10%. Method 200.8 specifies a criteria of ±10% for corrective action and ±15% for sample re-analysis. All calibration verification % differences associated with reported samples were within ±10%.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. This criterion was met.

Field blank results: Criteria for field blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. The following analytes were present in the rinsate blanks at a level above the reporting limit:

Sample ID	Analyte	Value (ug/L)
LDW-SP-64-C-RB-MP-U	Chromium	4.05
LDW-SP-64-C-RB-MP-U	Copper	1.59
LDW-SP-64-S-RB-U	Chromium	5.25
LDW-SP-64-S-RB-U	Copper	1.61

Samples from Seeps 10 and 62 are associated with rinsate blank LDW-SP-64-S-RB-U. All other samples are associated with rinsate blank LDW-SP-64-C-RB-MP-U. All sample results between 5 and 10 times the blank concentration were qualified as estimated. All sample results below 5 times the blank concentration were qualified as undetected.

SRM recoveries: The DQI for accuracy is 75-125%. The SRM recoveries were within these limits.

MS recoveries: The DQI for accuracy is 75-125%. The MS recoveries were within this range.

Laboratory duplicate RPDs: The DQI for precision is <35% and is applicable when concentrations exceed 5 times the reporting limit. The functional guidelines criteria for concentrations below 5 times the reporting limit is +/- the reporting limit. These criteria were met.

Internal standard relative intensities: Functional guidelines criterion for internal standards is relative intensities within 60-125% of the initial calibration blank. The following internal standard relative intensities were outside the 60-125% limit:

Sample	Internal standard	%RI
LDW-SP-76-C-F	Scandium 45	138.8%
LDW-SP-48-C-F	Platinum 195	51.7%

Chromium, nickel, copper, and zinc results in sample LDW-SP-76-C-F and the lead result in sample LDW-SP-48-C-F were qualified as estimated.

All other relative intensities were within limits.

Field replicate precision: Field replicate results are as follows:

Replicate ID	Sample ID	Analyte	Replicate Result (µg/L)	Sample Result (µg/L)	RPD
LDW-SP-82-FD-F	LDW-SP-82-C-F	Cadmium	0.503	0.513	1.97
LDW-SP-82-FD-F	LDW-SP-82-C-F	Chromium	3.51	3.25	7.69
LDW-SP-82-FD-F	LDW-SP-82-C-F	Copper	8.27	8.22	0.606
LDW-SP-82-FD-F	LDW-SP-82-C-F	Lead	0.201	0.206	2.45
LDW-SP-82-FD-F	LDW-SP-82-C-F	Nickel	3.36	3.56	5.78
LDW-SP-82-FD-F	LDW-SP-82-C-F	Silver	0.084 B	0.113 B	29.4
LDW-SP-82-FD-F	LDW-SP-82-C-F	Zinc	158	164	3.73
LDW-SP-82-FD-U	LDW-SP-82-C-U	Cadmium	0.606	0.569	6.29
LDW-SP-82-FD-U	LDW-SP-82-C-U	Chromium	5.81	5.65	2.79
LDW-SP-82-FD-U	LDW-SP-82-C-U	Copper	13.4	10.9	20.6
LDW-SP-82-FD-U	LDW-SP-82-C-U	Lead	8.29	2.31	113
LDW-SP-82-FD-U	LDW-SP-82-C-U	Nickel	6.12	5.83	4.85
LDW-SP-82-FD-U	LDW-SP-82-C-U	Silver	0.126 B	0.088 B	35.5
LDW-SP-82-FD-U	LDW-SP-82-C-U	Zinc	201	186	7.75

Qualifiers are not assigned based on field replicate results.

Analyte quantitations: Concentrations of cadmium were recalculated to verify sample quantitations.

Overall assessment: No transcription errors were noted. Calibration data demonstrate acceptable instrument performance. Quality control results demonstrate acceptable accuracy. Low and high internal standard relative intensities and field blank contamination resulted in estimated data.

The metals data, as qualified, are acceptable for use.

10.0 Mercury Analyses

Analyses were performed by EPA Method 1631E. The following data requirements were evaluated:

- Quality control analysis frequencies
- Preparation and analysis holding times

- Instrument calibration (full validation only)
- Laboratory blank contamination
- SRM recoveries
- Laboratory duplicate precision
- MS recoveries
- Field replicate precision
- Analyte quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to data associated with samples LDW-SP-48-C-F, LDW-SP-48-C-U, LDW-SP-54-C-F, LDW-SP-69-C-F, LDW-SP-69-C-U, LDW-SP-71-C-F, LDW-SP-71-C-U, LDW-SP-76-C-F, and LDW-SP-76-C-U.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per batch or one per twenty samples: three method blanks, LCS, MS, MSD, and laboratory duplicate. Each analytical batch contained three or four method blanks, SRM, MS, MSD, and laboratory duplicate. The SRM serves as the LCS, and requirements are considered met.

Holding times: Samples must be analyzed within 28 days of collection. The samples were analyzed within the holding times.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. These criteria were met.

Field blank results: Criteria for field blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. Mercury was not detected in the rinsate, funnel, or piezometer blanksInitial calibration: Method criteria for initial calibration include 5 point calibration with an RSD $\leq$15% and a low standard recovery of 75-125%. The laboratory performed a linear regression calculation and appropriately substituted the correlation coefficient requirement of greater than 0.995 for the RSD requirement. Correlation coefficients and low standard recoveries met criteria.

Calibration verifications: The Functional Guidelines criterion for calibration verification is a maximum % difference of $\pm$20%. The method specifies laboratory generated control limits and the laboratory utilizes 75-125% limits. All calibration verifications met both criteria.

SRM recoveries: The DQI for accuracy is 75-125%. The SRM recoveries were within these limits.

MS recoveries: The DQI for accuracy is 75-125%. The water MS recoveries were within this range.

Laboratory duplicate RPDs: The DQI for precision is <25% and is applicable when concentrations exceed 5 times the reporting limit. The functional guidelines criteria for concentrations below 5 times the reporting limit is +/- the reporting limit. These criteria were met.

Field replicate precision: Field replicate results are as follows:

Replicate ID	Sample ID	Analyte	Replicate Result (ng/L)	Sample Result (ng/L)	RPD
LDW-SP-82-FD-F	LDW-SP-82-C-F	Mercury	2.95	3.80	25.1
LDW-SP-82-FD-U	LDW-SP-82-C-U	Mercury	11.7	16.8	35.8

Qualifiers are not assigned based on field replicate results.

Analyte quantitations: Concentrations the first eight samples were recalculated to verify sample quantitations. The quantitation method followed laboratory SOPs.

Overall assessment: Documentation was found to be clear and complete. No calculation or transcription errors were noted. Calibration data demonstrate acceptable instrument performance. Quality control results demonstrate acceptable accuracy and precision. Two results were estimated due to ambient blank contamination.

The mercury data, as qualified, are acceptable for use.

11.0 Arsenic Analyses

Analyses were performed by Standard Method 3114C. The following data requirements were evaluated:

- Quality control analysis frequencies
- Preparation and analysis holding times
- Instrument calibration (full validation only)
- Laboratory blank contamination
- SRM recoveries
- Laboratory duplicate precision
- MS recoveries
- Field replicate precision
- Analyte quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to data associated with samples LDW-SP-10-C-F, LDW-SP-12-C-F, LDW-SP-12-C-U, LDW-SP-20-C-F, LDW-SP-20-C-U, LDW-SP-62-C-F, LDW-SP-75-C-F, LDW-SP-75-C-U, and LDW-SP-80-C-F.

Quality control analysis frequencies: The QAPP specifies that the following quality control samples be analyzed one per batch or one per twenty samples: three method blanks, LCS, MS, MSD, and laboratory duplicate. Each analytical batch contained four method blanks, SRM, MS, MSD, and laboratory duplicate. The SRM serves as the LCS, and requirements are considered met.

Holding times: Samples must be analyzed within 6 months of collection. The samples were analyzed within the holding times.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. These criteria were met.

Field blank results: Criteria for field blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. Mercury was not detected in the field blanks. These criteria were met.

Initial calibration: The laboratory analyzed an 8-point calibration curve. The correlation coefficient was above 0.995. The low standard recovery was within 75-125%.

Calibration verifications: Continuing calibration verification % differences were within ±20%.

SRM recoveries: The DQI for accuracy is 75-125%. The SRM recoveries were within these limits.

MS recoveries: The DQI for accuracy is 75-125%. The water MS recoveries were within this range.

Laboratory duplicate RPDs: The DQI for precision is <25% and is applicable when concentrations exceed 5 times the reporting limit. The functional guidelines criteria for concentrations below 5 times the reporting limit is +/- the reporting limit. These criteria were met.

Field replicate precision: Field replicate results are as follows:

Replicate ID	Sample ID	Analyte	Replicate Result (µg/L)	Sample Result (µg/L)	RPD
LDW-SP-82-FD-F	LDW-SP-82-C-F	Arsenic	1.14	1.20	5.12
LDW-SP-82-FD-U	LDW-SP-82-C-U	Arsenic	2.2	1.55	34.7

Qualifiers are not assigned based on field replicate results.

Analyte quantitations: Concentrations the first eight samples were recalculated to verify sample quantitations. The quantitation method followed laboratory SOPs.

Overall assessment: Documentation was found to be clear and complete. No calculation or transcription errors were noted. Calibration data demonstrate acceptable instrument performance. Quality control results demonstrate acceptable precision and accuracy.

The arsenic data, as reported, are acceptable for use.

12.0 General Chemistry Analyses

Analysis of the water samples were performed by EPA Method 160.2 for total suspended solids (TSS) and EPA Method 415.1 for total organic carbon (TOC) and dissolved organic carbon (DOC).The following data requirements were evaluated:

- Quality control analysis frequencies
- Holding times
- Instrument calibration (full validation only)
- Laboratory blank contamination
- SRM recoveries
- Laboratory triplicate relative standard deviations (RSDs)
- MS recoveries
- Field replicate precision
- Compound quantitations (full validation only)

Unless otherwise specified, discussions below for full validation data requirements refer only to batch GU45.

Quality control analysis frequencies: For TSS, the QAPP requires the analysis of one matrix replicate per twenty samples and one method blank per batch. For TOC and DOC, the QAPP requires the analysis of one matrix replicate, one matrix spike, and one LCS per twenty samples, as well as one method blank in each batch or SDG. The following quality control samples were analyzed in each batch:

Analysis	QC samples
TSS	Method blank, LCS, and duplicate
TOC	Method blank, SRM, MS, and duplicate
DOC	Method blank, SRM, MS, and duplicate

The SRM serves as the LCS for TOC and DOC, and requirements are considered met.

Holding times: The holding times listed in the QAPP are 28 days for TOC and DOC, and 7 days for TSS. Samples were analyzed within the holding time. However, the DOC samples were not acidified upon receipt at the laboratory. Samples were acidified prior to analysis, 6 to 10 days after sample collection. DOC results were qualified as estimated.

Laboratory blank results: Criteria for method blanks are that analyte concentrations must be below the PQL, or below 10% of the lowest associated sample concentration. The method blank results met these criteria.

Instrument calibration: Instrument calibration correlation coefficients for TOC were above the 0.990 minimum and calibration verification standard recovery values were within the 90-110% criterion.

LCS, SRM, and MS recoveries: The DQI for accuracy is 75-125%. All LCS, SRM, and MS recoveries were within these limits.

Laboratory duplicate RPDs: The DQI for precision is <20% and is applicable when concentrations exceed 5 times the reporting limit. The functional guidelines criteria for concentrations below 5 times the reporting limit is +/- the reporting limit. These criteria were met for TOC and DOC.

The RPD for lab duplicate LDW-SP-41-C-U (87.3%) exceeded the DQI. All TSS results in lab batch EPA_160.2-070204_1 were qualified as estimated.

Field replicate precision: Field replicate results are as follows:

Field Rep ID	Sample ID	Analyte	FD Result (mg/L)	Sample Result (mg/L)	RPD
LDW-SP-82-C-FD-U	LDW-SP-82-C-U	TSS	5.8	11.2	63.5
LDW-SP-82-C-FD-U	LDW-SP-82-C-U	TOC	1.6	2.5	43.9
LDW-SP-82-C-FD-F	LDW-SP-82-C-F	DOC	ND	ND	NA

Qualifiers are not assigned based on field replicate results.

Compound quantitations: Raw instrument output for TOC and handwritten data sheets for TSS were missing from the data package. The laboratory resubmitted the missing information. Concentrations from samples and QC in batch GU45 for each analyte were recalculated to verify sample quantitations. No discrepancies were noted.

Overall assessment: With resubmission, documentation was found to be clear and complete. Calibration data indicate acceptable instrument performance. Quality control results demonstrate acceptable levels of accuracy. Lab duplicate variability resulted in some estimated TSS concentrations. Sample preservation resulted in estimated DOC concentrations.

General chemistry data, as qualified, are acceptable for use.

13.0 Sample Cross Reference

ARI Extraction batch numbers are shown in the following table. Shaded text indicates that a full validation was performed.

SampID	Sample Date	Lab ID	VOCs	SVOCs	Pest	PCBs	Gas	Diesel	TOC/DOC	TSS
LDW-SP-71-C-F	06/29/04	GU26A		SV0702A	PE0702A	PB0702A			070904_1704	
LDW-SP-71-C-U	06/29/04	GU26B	F3071004A	SV0702A	PE0702A	PB0702A			070104_1100	063004_1718
LDW-SP-76-C-F	06/29/04	GU26C		SV0702A	PE0702A	PB0702A			070904_1704	
LDW-SP-76-C-U	06/29/04	GU26D	F3071004A	SV0702A	PE0702A	PB0702A			070104_1100	063004_1718
LDW-SP-69-C-F	06/29/04	GU26E		SV0702A	PE0702A	PB0702A			070904_1704	
LDW-SP-69-C-U	06/29/04	GU26F	F3071004A	SV0702A	PE0702A	PB0702A			070104_1100	063004_1718
Trip Blank		GU26G	F3071004A							
LDW-SP-48-C-U	06/30/04	GU45A	F3071004A	SV0707A	PE0707A	PB0707B			070104_1100	070704_1815
LDW-SP-48-C-F	06/30/04	GU45B		SV0707A	PE0707A	PB0707B			070904_1704	
LDW-SP-54-C-U	06/30/04	GU45C	F3071004A	SV0707A	PE0707A	PB0707B	P2070104A	TD0702A	070104_1100	070704_1815
LDW-SP-54-C-F	06/30/04	GU45D		SV0707A	PE0707A	PB0707B		TD0702A	070904_1704	
LDW-SP-82-C-U	06/30/04	GU45E	F3071004A	SV0707A	PE0707A	PB0707B			070104_1100	070704_1815
LDW-SP-82-C-F	06/30/04	GU45F		SV0707A	PE0707A	PB0707B			070904_1704	
LDW-SP-82-C-FD-U	06/30/04	GU45G	F3071004A	SV0707A	PE0707A	PB0707B			070104_1100	070704_1815
LDW-SP-82-C-FD-F	06/30/04	GU45H		SV0707A	PE0707A	PB0707B			070904_1704	
Trip Blank		GU45I	F3071004A				P2070104A			
LDW-SP-10-C-F	07/01/04	GU59A		SV0702A	PE0702A	PB0702A		TD0702A	070904_1704	
LDW-SP-12-C-F	07/01/04	GU59B		SV0702A	PE0702A	PB0702A		TD0702A	070904_1704	
LDW-SP-20-C-F	07/01/04	GU59C		SV0702A	PE0702A	PB0702A		TD0702A	070904_1704	
LDW-SP-41-C-F	07/01/04	GU59D		SV0702A	PE0702A	PB0702A		TD0702A	070904_1704	
LDW-SP-12-C-U	07/01/04	GU59E	F3071404A	SV0702A	PE0702A	PB0702A	P1070604A	TD0702A	070104_1100	070204_1540
LDW-SP-20-C-U	07/01/04	GU59F	F3071404A	SV0702A	PE0702A	PB0702A	P1070604A	TD0702A	070104_1100	070204_1540
LDW-SP-41-C-U	07/01/04	GU59G	F3071404A	SV0702A	PE0702A	PB0702A	P1070604A	TD0702A	070104_1100	070204_1540
LDW-SP-39-C-F	07/01/04	GU59H		SV0702A	PE0702A	PB0702A		TD0702A	070904_1704	
LDW-SP-80-C-F	07/01/04	GU59I		SV0702A	PE0702A	PB0702A		TD0702A	070904_1704	
LDW-SP-39-C-U	07/01/04	GU59J	F3071404A	SV0702A	PE0702A	PB0702A	P1070604A	TD0702A	070104_1100	070204_1540
LDW-SP-80-C-U	07/01/04	GU59K	F3071404A	SV0702A	PE0702A	PB0702A	P1070704A	TD0702A	070104_1100	070204_1540
Trip Blank		GU59L	F3071404A				P1070604A			
LDW-SP-62-C-F	07/02/04	GU76A		SV0707A	PE0707A	PB0707B			070904_1704	
LDW-SP-61-C-U	07/02/04	GU76B	F3071404A	SV0707A	PE0707A	PB0707B			071504_1002	070704_1740
LDW-SP-61-C-F	07/02/04	GU76C		SV0707A	PE0707A	PB0707B			070904_1704	
LDW-SP-69-C-U	07/02/04	GU76D					P1070604A	TD0707A		
LDW-SP-69-C-F	07/02/04	GU76E						TD0707A		
LDW-SP-75-C-U	07/03/04	GU83A	F3071404A	SV0707A	PE0707A	PB0707B			071504_1002	070704_1740
LDW-SP-75-C-F	07/03/04	GU83B		SV0707A	PE0707A	PB0707B			070904_1704	
LDW-SP-64-RB-S-U	07/03/04	GU83C		SV0707A	PE0707A	PB0707B		TD0707A		
LDW-SP-64-RB-MP-U	07/03/04	GU83D		SV0707A	PE0707A	PB0707B		TD0707A		
LDW-SP-64-C-U	07/02/04	GU83E	F3071404A	SV0707A		PB0709A	P1070604A	TD0707A		
LDW-SP-64-C-F	07/02/04	GU83F			PE0707A	PB0707B			070904_1704	
LDW-SP-80-C-FD-F	07/01/04	GV04A						TD0707A		

SampID	Sample Date	Lab ID	VOCs	SVOCs	Pest	PCBs	Gas	Diesel	TOC/DOC	TSS
LDW-SP-80-C-FD-U	07/01/04	GV04B					P1070704A	TD0707A		
LDW-SP-10-C-U	07/30/04	GX14A	F5080504A							
LDW-SP-62-C-U	07/30/04	GX14B	F5080504A							
Trip Blank		GX14C	F5080504A							

FGS analytical batch numbers are shown in the following tables. Shaded text indicates that a full validation was performed.

Sample ID	Sample Date	Metals	Hg	As
LDW-SP-71-C-F	06/29/04	A1/A2	B1	C2
LDW-SP-71-C-U	06/29/04	A1/A2	B1	C2
LDW-SP-76-C-F	06/29/04	A1/A2	B1	C2
LDW-SP-76-C-U	06/29/04	A1/A2	B2	C2
LDW-SP-69-C-AB	06/29/04		B1	
LDW-SP-69-C-U	06/29/04	A1/A2	B1	C2
LDW-SP-69-C-F	06/29/04	A1/A2	B1	C2
LDW-SP-48-C-F	06/30/04	A1/A2	B1	C2
LDW-SP-48-C-U	06/30/04	A1/A2	B1	C2
LDW-SP-54-C-F	06/30/04	A1/A2	B1	C2
LDW-SP-54-C-U	06/30/04	A1/A2	B1	C2
LDW-SP-82-FD-U	06/30/04	A1/A2	B1	C2
LDW-SP-82-C-AB	06/30/04		B1	
LDW-SP-82-C-F	06/30/04	A1/A2	B1	C2
LDW-SP-82-C-U	06/30/04	A1/A2	B1	C2
LDW-SP-82-FD-F	06/30/04	A1/A2	B1	C2
LDW-SP-80-C-F	07/01/04	A1/A2	B2	C1
LDW-SP-80-C-AB-U	07/01/04		B2	
LDW-SP-80-C-U	07/01/04	A1/A2	B2	C2

Sample ID	Sample Date	Metals	Hg	As
LDW-SP-10-C-F	07/01/04	A1/A2	B2	C1
LDW-SP-12-C-U	07/01/04	A1/A2	B2	C1
LDW-SP-12-C-F	07/01/04	A1/A2	B2	C1
LDW-SP-20-C-F	07/01/04	A1/A2	B2	C1
LDW-SP-20-C-U	07/01/04	A1/A2	B2	C1
LDW-SP-20-C-AB-U	07/01/04		B2	
LDW-SP-41-C-U	07/01/04	A1/A2	B2	C1
LDW-SP-41-C-F	07/01/04	A1/A2	B2	C1
LDW-SP-39-C-F	07/01/04	A1/A2	B2	C1
LDW-SP-39-C-U	07/01/04	A1/A2	B2	C1
LDW-SP-64-C-F	07/02/04	A3/A4	B3	C1
LDW-SP-61-C-F	07/02/04	A3/A4	B3	C1
LDW-SP-61-C-U	7/2/2004	A3/A4	B3	C1
LDW-SP-62-C-F	7/2/2004	A3/A4	B3	C1
LDW-SP-62-C-AB	7/2/2004		B3	
LDW-SP-75-C-F	07/03/04	A1/A2	B1	C1
LDW-SP-75-C-U	07/03/04	A1/A2	B1	C1
Funnel Blank	7/8/2004		B1	
Piezometer Blank	7/8/2004		B1	

14.0 Qualified Summary Table

Sample	Analyte	Qualifier	Reason
Volatile Organic Analyses			
LDW-SP-48-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-48-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-48-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-48-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-48-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-48-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-48-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-54-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-54-C-U	1,2,4-Trimethylbenzene	UJ	Low MS Recovery
LDW-SP-54-C-U	1,3,5-Trimethylbenzene	UJ	Low MS Recovery
LDW-SP-54-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-54-C-U	4-Isopropyltoluene	UJ	Low MS Recovery
LDW-SP-54-C-U	4-Methyl-2-Pentanone (MIBK)	UJ	Low MSD Recovery
LDW-SP-54-C-U	Acrolein	UJ	Low MS Recovery
LDW-SP-54-C-U	Bromomethane	UJ	Low MS and MSD Recovery
LDW-SP-54-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-54-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-54-C-U	n-Propylbenzene	UJ	Low MS Recovery
LDW-SP-54-C-U	Styrene	UJ	Low MS and MSD Recovery
LDW-SP-82-C-FD-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-82-C-FD-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-82-C-FD-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-82-C-FD-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-82-C-FD-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-82-C-FD-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-82-C-FD-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-82-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-82-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-82-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-82-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-82-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-82-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-82-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-10-C-U	1,1,1,2-Tetrachloroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,1,1-Trichloroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,1,2,2-Tetrachloroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,1,2-Trichloro-1,2,2-trifluoroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,1,2-Trichloroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,1-Dichloroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,1-Dichloroethene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,1-Dichloropropene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2,3-Trichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2,3-Trichloropropane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2,4-Trichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2,4-Trimethylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2-Dibromo-3-chloropropane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2-Dichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2-Dichloroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,2-Dichloropropane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,3,5-Trimethylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,3-Dichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,3-Dichloropropane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	1,4-Dichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	2,2-Dichloropropane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	cis-1,2-Dichloroethene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	cis-1,3-Dichloropropene	UJ	Elevated cooler temperatures

Sample	Analyte	Qualifier	Reason
LDW-SP-10-C-U	m,p-Xylene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	trans-1,2-Dichloroethene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	trans-1,3-Dichloropropene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	trans-1,4-Dichloro-2-butene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	2-Butanone	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-10-C-U	2-Chlorotoluene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	2-Hexanone	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	4-Chlorotoluene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	4-Isopropyltoluene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	4-Methyl-2-Pentanone (MIBK)	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Acetone	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Acrolein	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Acrylonitrile	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Benzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Bromobenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Bromochloromethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Bromodichloromethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Bromoethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Bromoform	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Bromomethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Carbon Disulfide	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Carbon Tetrachloride	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Chlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Chloroethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Chloroform	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Chloromethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Dibromochloromethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Dibromomethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Ethylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Ethylene Dibromide	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Hexachlorobutadiene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Isopropylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Methyl Iodide	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Methylene Chloride	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Naphthalene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	n-Butylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	n-Propylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	o-Xylene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	sec-Butylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Styrene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	tert-Butylbenzene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Tetrachloroethene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Toluene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Trichloroethene	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Trichlorofluoromethane	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Vinyl Acetate	UJ	Elevated cooler temperatures
LDW-SP-10-C-U	Vinyl Chloride	UJ	Elevated cooler temperatures
LDW-SP-12-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-12-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-12-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-12-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-12-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-12-C-U	Bromomethane	UJ	Low LCS/LCSD recovery
LDW-SP-12-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-12-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-20-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-20-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-20-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-20-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-20-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-20-C-U	Bromomethane	UJ	Low LCS/LCSD recovery
LDW-SP-20-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-20-C-U	Naphthalene	R2	Analyzed by another method with lower RL

Sample	Analyte	Qualifier	Reason
LDW-SP-39-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-39-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-39-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-39-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-39-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-39-C-U	Bromomethane	UJ	Low LCS/LCSD recovery
LDW-SP-39-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-39-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-41-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-41-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-41-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-41-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-41-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-41-C-U	Bromomethane	UJ	Low LCS, LCSD, MS and MSD recoveries
LDW-SP-41-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-41-C-U	Methyl Iodide	UJ	Low MS Recovery
LDW-SP-41-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-41-C-U	Styrene	UJ	Low MSD Recovery
LDW-SP-61-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-61-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-61-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-61-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-61-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-61-C-U	Bromomethane	UJ	Low LCS/LCSD recovery
LDW-SP-61-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-61-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-62-C-U	1,1,1,2-Tetrachloroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,1,1-Trichloroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,1,2,2-Tetrachloroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,1,2-Trichloro-1,2,2-trifluoroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,1,2-Trichloroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,1-Dichloroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,1-Dichloroethene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,1-Dichloropropene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2,3-Trichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2,3-Trichloropropane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2,4-Trichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2,4-Trimethylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2-Dibromo-3-chloropropane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2-Dichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2-Dichloroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,2-Dichloropropane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,3,5-Trimethylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,3-Dichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,3-Dichloropropane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	1,4-Dichlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	2,2-Dichloropropane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	cis-1,2-Dichloroethene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	cis-1,3-Dichloropropene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	m,p-Xylene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	trans-1,2-Dichloroethene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	trans-1,3-Dichloropropene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	trans-1,4-Dichloro-2-butene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	2-Butanone	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-62-C-U	2-Chlorotoluene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	2-Hexanone	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	4-Chlorotoluene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	4-Isopropyltoluene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	4-Methyl-2-Pentanone (MIBK)	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Acetone	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Acrolein	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Acrylonitrile	UJ	Elevated cooler temperatures

Sample	Analyte	Qualifier	Reason
LDW-SP-62-C-U	Benzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Bromobenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Bromochloromethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Bromodichloromethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Bromoethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Bromoform	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Bromomethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Carbon Disulfide	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Carbon Tetrachloride	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Chlorobenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Chloroethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Chloroform	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Chloromethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Dibromochloromethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Dibromomethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Ethylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Ethylene Dibromide	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Hexachlorobutadiene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Isopropylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Methyl Iodide	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Methylene Chloride	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Naphthalene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	n-Butylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	n-Propylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	o-Xylene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	sec-Butylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Styrene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	tert-Butylbenzene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Tetrachloroethene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Toluene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Trichloroethene	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Trichlorofluoromethane	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Vinyl Acetate	UJ	Elevated cooler temperatures
LDW-SP-62-C-U	Vinyl Chloride	UJ	Elevated cooler temperatures
LDW-SP-64-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-64-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-64-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-64-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-64-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-64-C-U	Bromomethane	UJ	Low LCS/LCSD recovery
LDW-SP-64-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-64-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-69-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-69-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-69-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-69-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-69-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-69-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-69-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-71-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-71-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-71-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-71-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-71-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-71-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-71-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-75-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-75-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-75-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-75-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-75-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-75-C-U	Bromomethane	UJ	Low LCS/LCSD recovery
LDW-SP-75-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-75-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-76-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL

Sample	Analyte	Qualifier	Reason
LDW-SP-76-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-76-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-76-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-76-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-76-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-76-C-U	Naphthalene	R2	Analyzed by another method with lower RL
LDW-SP-80-C-U	1,2,4-Trichlorobenzene	R2	Analyzed by another method with lower RL
LDW-SP-80-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-80-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-80-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with same result
LDW-SP-80-C-U	2-Chloroethylvinylether	R	Not Recovered in MS/MSDs
LDW-SP-80-C-U	Bromomethane	UJ	Low LCS/LCSD recovery
LDW-SP-80-C-U	Hexachlorobutadiene	R2	Analyzed by another method with lower RL
LDW-SP-80-C-U	Naphthalene	R2	Analyzed by another method with lower RL
Semivolatile Organic Analyses			
LDW-SP-48-C-F	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-48-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-54-C-U	1,2-Dichlorobenzene	R2	Analyzed by another method with detected result
LDW-SP-54-C-U	1,3-Dichlorobenzene	R2	Analyzed by another method with higher concentration
LDW-SP-54-C-U	1,4-Dichlorobenzene	R2	Analyzed by another method with higher concentration
LDW-SP-54-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-82-C-FD-F	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-82-C-FD-F	Di-n-Butylphthalate	U	Likely laboratory contamination
LDW-SP-39-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-41-C-F	Diethylphthalate	U	Likely laboratory contamination
LDW-SP-41-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-61-C-F	bis(2-Ethylhexyl)phthalate	R1	Analysis with on-scale result available
LDW-SP-61-C-F	Di-n-Butylphthalate	U	Likely laboratory contamination
LDW-SP-61-C-F DL	1,2,4-Trichlorobenzene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	1,2-Dichlorobenzene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	1,3-Dichlorobenzene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	1,4-Dichlorobenzene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	1,4-Dioxane	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,2'-Oxybis(1-Chloropropane)	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,4,5-Trichlorophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,4,6-Trichlorophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,4-Dichlorophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,4-Dimethylphenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,4-Dinitrophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,4-Dinitrotoluene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2,6-Dinitrotoluene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2-Chloronaphthalene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2-Chlorophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2-Methylnaphthalene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2-Methylphenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2-Nitroaniline	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	2-Nitrophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	3,3'-Dichlorobenzidine	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	3-Nitroaniline	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4,6-Dinitro-2-Methylphenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4-Bromophenyl-phenylether	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4-Chloro-3-methylphenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4-Chloroaniline	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4-Chlorophenyl-phenylether	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4-Methylphenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4-Nitroaniline	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	4-Nitrophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Acenaphthene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Acenaphthylene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Anthracene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Benzo(a)anthracene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Benzo(a)pyrene	R1	Analysis with lower RL available

Sample	Analyte	Qualifier	Reason
LDW-SP-61-C-F DL	Benzo(b)fluoranthene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Benzo(g,h,i)perylene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Benzo(k)fluoranthene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Benzoic Acid	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Benzyl Alcohol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	bis(2-Chloroethoxy) Methane	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Bis-(2-Chloroethyl) Ether	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	bis(2-Ethylhexyl)phthalate	R	Laboratory contamination
LDW-SP-61-C-F DL	Butylbenzylphthalate	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Carbazole	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Chrysene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Dibenz(a,h)anthracene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Dibenzofuran	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Diethylphthalate	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Dimethylphthalate	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Di-n-Butylphthalate	R1	Analysis with detected result available
LDW-SP-61-C-F DL	Di-n-Octyl phthalate	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Fluoranthene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Fluorene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Hexachlorobenzene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Hexachlorobutadiene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Hexachlorocyclopentadiene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Hexachloroethane	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Indeno(1,2,3-cd)pyrene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Isophorone	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Naphthalene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Nitrobenzene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	N-Nitroso-Di-N-Propylamine	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	N-Nitrosodiphenylamine	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Pentachlorophenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Phenanthrene	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Phenol	R1	Analysis with lower RL available
LDW-SP-61-C-F DL	Pyrene	R1	Analysis with lower RL available
LDW-SP-61-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-62-C-F	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-64-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-64-RB-MP-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-64-RB-S-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-69-C-F	Diethylphthalate	U	Likely laboratory contamination
LDW-SP-71-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-75-C-F	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-75-C-U	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-76-C-F	bis(2-Ethylhexyl)phthalate	U	Laboratory contamination
LDW-SP-76-C-F	Diethylphthalate	U	Likely laboratory contamination
Pesticide Analyses			
LDW-SP-48-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-48-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-54-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-54-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-82-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-82-C-FD-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-82-C-FD-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-82-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-10-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-12-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-12-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-20-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-20-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-39-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-39-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-41-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-41-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-61-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-61-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-62-C-F	Endrin Aldehyde	UJ	Low LCS recoveries

Sample	Analyte	Qualifier	Reason
LDW-SP-64-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-69-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-69-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-71-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-71-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-75-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-75-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-76-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-76-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-80-C-F	Endrin Aldehyde	UJ	Low LCS recoveries
LDW-SP-80-C-U	Endrin Aldehyde	UJ	Low LCS recoveries
PCB Analyses			
LDW-SP-54-C-F	Aroclor 1254	U	Poor pattern match
LDW-SP-54-C-U	Aroclor 1248	R1	Analysis with on-scale result available
LDW-SP-54-C-U	Aroclor 1254	J	Quantitation interference from Aroclors 1248 and 1260 overlap
LDW-SP-54-C-U DL	Aroclor 1016	R1	Analysis with lower RL available
LDW-SP-54-C-U DL	Aroclor 1221	R1	Analysis with lower RL available
LDW-SP-54-C-U DL	Aroclor 1232	R1	Analysis with lower RL available
LDW-SP-54-C-U DL	Aroclor 1242	R1	Analysis with lower RL available
LDW-SP-54-C-U DL	Aroclor 1254	R1	Analysis with lower concentration available
LDW-SP-54-C-U DL	Aroclor 1260	R1	Analysis with same result available
LDW-SP-64-C-U	Aroclor 1254	J	Quantitation interference from Aroclors 1248 and 1260 overlap
LDW-SP-71-C-U	Aroclor 1254	J	Low surrogate recovery
Metals Analyses			
LDW-SP-10-C-F	Chromium	U	RB Contamination
LDW-SP-10-C-F	Copper	J	RB Contamination
LDW-SP-12-C-F	Chromium	U	RB Contamination
LDW-SP-12-C-F	Copper	J	RB Contamination
LDW-SP-12-C-U	Chromium	U	RB Contamination
LDW-SP-12-C-U	Copper	J	RB Contamination
LDW-SP-20-C-F	Chromium	U	RB Contamination
LDW-SP-20-C-F	Copper	J	RB Contamination
LDW-SP-20-C-U	Chromium	U	RB Contamination
LDW-SP-20-C-U	Copper	J	RB Contamination
LDW-SP-39-C-F	Chromium	U	RB Contamination
LDW-SP-39-C-F	Copper	J	RB Contamination
LDW-SP-39-C-U	Chromium	U	RB Contamination
LDW-SP-39-C-U	Copper	J	RB Contamination
LDW-SP-41-C-F	Chromium	U	RB Contamination
LDW-SP-41-C-F	Copper	U	RB Contamination
LDW-SP-41-C-U	Chromium	U	RB Contamination
LDW-SP-41-C-U	Copper	U	RB Contamination
LDW-SP-48-C-F	Chromium	U	RB Contamination
LDW-SP-48-C-F	Copper	J	RB Contamination
LDW-SP-48-C-F	Lead	J	Low internal standard intensity
LDW-SP-48-C-U	Chromium	U	RB Contamination
LDW-SP-48-C-U	Copper	J	RB Contamination
LDW-SP-54-C-F	Chromium	U	RB Contamination
LDW-SP-54-C-F	Copper	U	RB Contamination
LDW-SP-54-C-U	Copper	U	RB Contamination
LDW-SP-61-C-F	Chromium	U	RB Contamination
LDW-SP-61-C-F	Copper	U	RB Contamination
LDW-SP-61-C-U	Chromium	U	RB Contamination
LDW-SP-61-C-U	Copper	U	RB Contamination
LDW-SP-62-C-F	Chromium	U	RB Contamination
LDW-SP-62-C-F	Copper	U	RB Contamination
LDW-SP-64-C-F	Chromium	U	RB Contamination
LDW-SP-64-C-F	Copper	U	RB Contamination
LDW-SP-69-C-F	Chromium	U	RB Contamination
LDW-SP-69-C-F	Copper	U	RB Contamination
LDW-SP-69-C-U	Chromium	U	RB Contamination
LDW-SP-69-C-U	Copper	J	RB Contamination
LDW-SP-71-C-F	Chromium	U	RB Contamination

Sample	Analyte	Qualifier	Reason
LDW-SP-71-C-F	Copper	U	RB Contamination
LDW-SP-71-C-U	Chromium	U	RB Contamination
LDW-SP-71-C-U	Copper	J	RB Contamination
LDW-SP-75-C-F	Chromium	U	RB Contamination
LDW-SP-75-C-F	Copper	U	RB Contamination
LDW-SP-75-C-U	Chromium	U	RB Contamination
LDW-SP-75-C-U	Copper	J	RB Contamination
LDW-SP-76-C-F	Chromium	UJ	RB Contamination, high internal standard intensity
LDW-SP-76-C-F	Copper	UJ	RB Contamination, high internal standard intensity
LDW-SP-76-C-F	Nickel	J	High internal standard intensity
LDW-SP-76-C-F	Zinc	J	High internal standard intensity
LDW-SP-76-C-U	Chromium	U	RB Contamination
LDW-SP-80-C-F	Chromium	U	RB Contamination
LDW-SP-80-C-U	Chromium	U	RB Contamination
LDW-SP-82-C-F	Chromium	U	RB Contamination
LDW-SP-82-C-F	Copper	J	RB Contamination
LDW-SP-82-C-U	Chromium	U	RB Contamination
LDW-SP-82-C-U	Copper	J	RB Contamination
LDW-SP-82-FD-F	Chromium	U	RB Contamination
LDW-SP-82-FD-F	Copper	J	RB Contamination
LDW-SP-82-FD-U	Chromium	U	RB Contamination
LDW-SP-82-FD-U	Copper	J	RB Contamination
General Chemistry Analyses			
LDW-SP-48-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-54-C-F	Dissolved Organic Carbon	J	Sample not preserved upon receipt at lab
LDW-SP-82-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-82-C-FD-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-10-C-F	Dissolved Organic Carbon	J	Sample not preserved upon receipt at lab
LDW-SP-12-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-20-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-39-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-41-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-61-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-62-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-64-C-F	Dissolved Organic Carbon	J	Sample not preserved upon receipt at lab
LDW-SP-69-C-F	Dissolved Organic Carbon	J	Sample not preserved upon receipt at lab
LDW-SP-71-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-75-C-F	Dissolved Organic Carbon	UJ	Sample not preserved upon receipt at lab
LDW-SP-76-C-F	Dissolved Organic Carbon	J	Sample not preserved upon receipt at lab
LDW-SP-80-C-F	Dissolved Organic Carbon	J	Sample not preserved upon receipt at lab
LDW-SP-12-C-U	Total Suspended Solids	J	Lab duplicate
LDW-SP-20-C-U	Total Suspended Solids	J	Lab duplicate
LDW-SP-39-C-U	Total Suspended Solids	J	Lab duplicate
LDW-SP-41-C-U	Total Suspended Solids	J	Lab duplicate
LDW-SP-80-C-U	Total Suspended Solids	J	Lab duplicate

15.0 Abbreviations and Definitions

DV Qualifier	Definition
U	The material was analyzed for, but was not detected above the level of the associated value.
J	The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.

DV Qualifier	Definition
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.
R1	This sample result has been rejected in favor of a more accurate and/or precise result. The other result should be used.
R2	This sample result has been rejected in favor of a result from another method.

Abbreviation	Definition
DL	Dilution
DV	Data validation
FD	Field replicate
LCS	Laboratory control sample
MS	Matrix spike
MSD	Matrix spike duplicate
RE	Reanalysis or re-extraction/reanalysis
RL	Reporting limit
RPD	Relative percent difference
Surr	Surrogate

16.0 References

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Method 3114 – Arsenic and Selenium by Hydride Generation/Atomic Absorption Spectrometry, *Standard Methods for Examination of Water & Wastewater*

APPENDIX F. SEEP WATER ANALYTICAL DATA TABLES

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Table F-1. Results of Hydrolab and turbidity meter measurements of seep water sampled during the second sampling event

Seep Number	Turbidity (NTU)		Temperature (°C)		Specific Conductivity (µmhos/cm)		Salinity (ppt)		Dissolved Oxygen (mg/L)		pH		Oxidation-reduction potential (mV) [a]
	1	2	HL 1	HL 2	HL 1	HL 2	HL 1	HL 2	HL 1	HL 2	HL 1	HL 2	HL 1
Seep 10	5.7[b]	nm[b]	15.0	15.0	27,230	31,070	21.1	24.5	9.80	9.03	6.32	6.79	88
Seep 12	4.4	0.86	13.6	13.7	42,350	49,360	35.8	>42.0	8.47	8.30	5.94	6.63	108
Seep 20	1.8	2.4	15.0	15.1	27,250	31,650	21.2	24.9	8.46	8.86	6.93	7.32	158
Seep 39	0.63	0.28	17.9	18.2	32,930	37,910	24.3	28.1	9.05	9.34		6.28	192
Seep 41	0.26	0.71	18.2	18.2	15,030	17,460	10.2	12.0	8.39	7.64	6.85	6.97	180
Seep 48	0.80	1.0	17.2	17.2	28,650	33,350	21.2	25.0	6.61	4.04	5.86	6.29	294
Seep 54	2.8	2.6	18.0	17.6	9,754	11,330	6.4	7.6	6.00	2.95	7.03	7.42	-59
Seep 61	1.8	0.86	15.6	15.7	12,350	14,280	8.8	10.3	7.52	7.40	6.85	7.13	138
Seep 62	14[b]	nm[b]	16.4	16.4	21,500	24,950	15.8	18.5	7.42	6.69	6.70	7.10	253
Seep 64	3.7[c]	3.9[c]	14.4	14.7	31,500	37,270	25.2	30.1	7.32	9.49	6.19	6.98	241
Seep 69	1.9	1.9	20.0	19.0	10,480	12,110	6.6	7.9	1.41	12.8	6.22	6.14	134
Seep 71	2.8	2.0	19.0	17.6	20,390	23,870	14.0	17.2	0.830	2.43	5.83	6.11	116
Seep 75	0.59	3.6	15.8	14.9	26,060	30,260	19.7	23.8	8.34	8.42	6.88	7.30	189
Seep 76	2.2	1.4	15.3	14.8	1,020	1,146	<2.0	<2.0	0.830	5.33	6.38	6.25	114
Seep 80	3.2	4.8	15.9	15.9	14,280	16,760	10.2	12.2	8.16	6.83	6.25	6.71	-60
Seep 82	2.1	3.9	18.8	19.1	16,140	18,670	10.9	12.6	8.18	10.4	6.36	6.54	231

HL – Hydrolab

nm – not measured

Note: turbidity measures 1 and 2 were taken from the first and second mini-piezometers, respectively, except where noted.

[a] The second Hydrolab did not have a meter for oxidation-reduction potential, so only one measurement was made

[b] Sample was collected using funnel and attached tubing, so only one turbidity measure was taken (see note above)

[c] These were turbidity measurements at this seep on 7/2/04. The tide rose before unfiltered samples for TOC, TSS, and metals could be collected on this day. An attempt was made to resample the seep on 7/3/04, but turbidity did not decrease to <5 NTU, so the remaining unfitered samples were not collected.

Table F-2. Flow rates measured at seeps during seep chemistry sampling event from June 30 to July 3, 2004

SEEP NUMBER	FLOW RATE (m^3/sec)	DESCRIPTION
Seep 10	0.0025	Seep flow emerging from base of retaining wall into two exposed channels draining about 250 ft of wall
Seep 12	na	Broad flow entering channelized area; water level too high to obtain flow rate
Seep 20	0.0024	Localized seep flow from base of retaining wall entering two exposed channels
Seep 39	0.00039	Flow from single seep emerging from bank and forming one channel
Seep 41	na	Low surface flow from broad wet bank; not possible to obtain flow rate
Seep 48	0.0017	Broad seep flow from base of riprap and along the beach entering one exposed channel draining about 50 ft
Seep 54	na	Low surface flow from broad seepage; not possible to obtain flow rate
Seep 61	0.0075	Broad seep flow from base of riprap entering large channel draining about 150 ft of shoreline
Seep 62	0.000005	Single small seep emerging from riprap
Seep 64	0.00013	Seep flow from localized source at base of riprap entering 4 small channels
Seep 69		Low surface flow from broad seepage; not possible to obtain flow rate
Seep 71	0.00013	Broad flow from base of riprap
Seep 75	0.00015	Seep flow from single seep at base of riprap entering two channels
Seep 76		Seep flow very low and broad; not possible to obtain flow rate
Seep 80	0.00003	Channelized seep flow ffrom single seep emerging from peat shelf at top of rip rap
Seep 82	0.00067	Broad flow from base of riprap entering one channel

na – not available

Table F-3. Chemistry results for LDW seep water samples: organochlorine pesticides and PCBs

ANALYTE	LDW-SP-10-C-F	LDW-SP-10-C-U	LDW-SP-12-C-F	LDW-SP-12-C-U	LDW-SP-20-C-F	LDW-SP-20-C-U	LDW-SP-39-C-F	LDW-SP-39-C-U	LDW-SP-41-C-F	LDW-SP-41-C-U	LDW-SP-48-C-F	LDW-SP-48-C-U	LDW-SP-54-C-F	LDW-SP-54-C-U
Organochlorine Pesticides (µg/L)														
4,4'-DDD	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.021 U	0.18 U
4,4'-DDE	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.17 U
4,4'-DDT	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.017 U
Aldrin	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0083 U
alpha-BHC	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0070 U	0.0039 U	0.00080 U	0.00080 U	0.00080 U	0.0083 U
alpha-Chlordane	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0018 U	0.0083 U
alpha-Endosulfan	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0083 U
beta-BHC	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0026 U	0.0090 U	0.00080 U	0.00080 U	0.0083 U
beta-Endosulfan	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.011 U	0.26 U
DDTs (total-calc'd)	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.021 U	0.18 U
delta-BHC	0.00080 U	na	0.00080 U	0.00080 U	0.0092 U	0.00080 U	0.0051 U	0.0031 U	0.00080 U	0.0066 U	0.0029 U	0.0021 U	0.00080 U	0.0083 U
Dieldrin	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0095 U	0.11 U
Endosulfan sulfate	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.017 U
Endrin	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.057 U
Endrin aldehyde	0.0017 UJ	na	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.061 UJ
Endrin ketone	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.017 U
gamma-BHC	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0083 U
gamma-Chlordane	0.00080 U	na	0.00080 U	0.00080 U	0.0040 U	0.00080 U	0.00080 U	0.00080 U	0.0054 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0083 U
Heptachlor	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0083 U
Heptachlor epoxide	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0090	0.0076	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.016.0 U	0.0083 U
Methoxychlor	0.0083 U	na	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.083 U
Toxaphene	0.083 U	na	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.83 U
PCBs (µg/L)														
Aroclor-1016	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.17 U
Aroclor-1221	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.17 U
Aroclor-1232	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.17 U
Aroclor-1242	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.17 U
Aroclor-1248	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	**0.21**	**4.7**
Aroclor-1254	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.15 U	**2.3 J**
Aroclor-1260	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	**0.047**	**1.9**
PCBs (total calc'd)	0.017 U	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	**0.26**	**8.9 J**

ANALYTE	LDW-SP-61-C-F	LDW-SP-61-C-U	LDW-SP-62-C-F	LDW-SP-62-C-U	LDW-SP-64-C-F	LDW-SP-64-C-U	LDW-SP-69-C-F	LDW-SP-69-C-U	LDW-SP-71-C-F	LDW-SP-71-C-U	LDW-SP-75-C-F	LDW-SP-75-C-U	LDW-SP-76-C-F	LDW-SP-76-C-U
Organochlorine Pesticides (µg/L)														
4,4'-DDD	0.0049 U	0.0020 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
4,4'-DDE	0.058 U	0.038 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
4,4'-DDT	0.0017 U	0.0020 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Aldrin	0.00080 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
alpha-BHC	0.00080 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
alpha-Chlordane	0.038 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
alpha-Endosulfan	0.00080 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
beta-BHC	0.00080 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0019 U	0.00080 U	0.00080 U
beta-Endosulfan	0.0017 U	0.0020 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
DDTs (total-calc'd)	0.058 U	0.038 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
delta-BHC	0.0083 U	0.0010 U	0.012 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.013 U	0.0049 U	0.00080 U	0.00080 U
Dieldrin	0.0017 U	0.027 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Endosulfan sulfate	0.0017 U	0.0020 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Endrin	0.0017 U	0.0020 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Endrin aldehyde	0.0017 UJ	0.0020 UJ	0.0017 UJ	na	0.0017 UJ	na	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ
Endrin ketone	0.0017 U	0.0020 U	0.0017 U	na	0.0017 U	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
gamma-BHC	0.00080 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
gamma-Chlordane	0.00080 U	0.0010 U	0.0017 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0032 U
Heptachlor	0.00080 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
Heptachlor epoxide	0.00080 U	0.0010 U	0.00080 U	na	0.00080 U	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.0018 U	0.00080 U	0.00080 U	0.00080 U
Methoxychlor	0.0083 U	0.010 U	0.0083 U	na	0.0083 U	na	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U
Toxaphene	0.083 U	0.10 U	0.083 U	na	0.083 U	na	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U
PCBs (µg/L)														
Aroclor-1016	0.017 U	0.020 U	0.017 U	na	0.017 U	0.04 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1221	0.017 U	0.020 U	0.017 U	na	0.017 U	0.04 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1232	0.017 U	0.020 U	0.017 U	na	0.017 U	0.04 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1242	0.017 U	0.020 U	0.017 U	na	0.017 U	0.04 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1248	0.017 U	0.020 U	0.017 U	na	0.017 U	**0.092**	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1254	0.017 U	0.020 U	0.017 U	na	0.017 U	**0.21 J**	0.017 U	0.017 U	0.017 U	0.020 J	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1260	0.017 U	0.020 U	0.017 U	na	0.017 U	**0.16**	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
PCBs (total calc'd)	0.017 U	0.020 U	0.017 U	na	0.017 U	**0.46 J**	0.017 U	0.017 U	0.017 U	0.020 J	0.017 U	0.017 U	0.017 U	0.017 U

ANALYTE	LDW-SP-80-C-F	LDW-SP-80-C-FD-F	LDW-SP-80-C-FD-U	LDW-SP-80-C-U	LDW-SP-82-C-F	LDW-SP-82-C-FD-F	LDW-SP-82-C-FD-U	LDW-SP-82-C-U
Organochlorine Pesticides (µg/L)								
4,4'-DDD	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
4,4'-DDE	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
4,4'-DDT	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Aldrin	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
alpha-BHC	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
alpha-Chlordane	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
alpha-Endosulfan	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
beta-BHC	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
beta-Endosulfan	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
DDTs (total-calc'd)	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
delta-BHC	0.00080 U	na	na	0.00080 U	0.0039 U	0.00080 U	0.00080 U	0.00080 U
Dieldrin	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Endosulfan sulfate	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Endrin	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Endrin aldehyde	0.0017 UJ	na	na	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ	0.0017 UJ
Endrin ketone	0.0017 U	na	na	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
gamma-BHC	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
gamma-Chlordane	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
Heptachlor	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
Heptachlor epoxide	0.00080 U	na	na	0.00080 U	0.00080 U	0.00080 U	0.00080 U	0.00080 U
Methoxychlor	0.0083 U	na	na	0.0083 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U
Toxaphene	0.083 U	na	na	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U
PCBs (µg/L)								
Aroclor-1016	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1221	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1232	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1242	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1248	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1254	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
Aroclor-1260	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U
PCBs (total calc'd)	0.017 U	na	na	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U

Detected concentrations shown in **BOLD** na – not analyzed

Data qualifiers: U = not detected at reporting limit shown; J = estimated concentration; UJ = not detected at estimated reporting limit shown

Table F-4. Chemistry results for LDW seep water samples: conventionals, metals, and TPH

ANALYTE	LDW-SP-10-C-F	LDW-SP-10-C-U	LDW-SP-12-C-F	LDW-SP-12-C-U	LDW-SP-20-C-F	LDW-SP-20-C-U	LDW-SP-39-C-F	LDW-SP-39-C-U	LDW-SP-41-C-F
Conventionals (mg/L)									
Dissolved organic carbon	**1.96 J** [a]	na	1.50 UJ	na	1.50 UJ	na	1.50 UJ	na	1.50 UJ
Total organic carbon	na	na	na	1.50 U	na	1.50 U	na	1.50 U	na
Total suspended solids	na	na	na	**15.6 J**	na	**4.3 J**	na	**5.8 J**	na
Metals (µg/L)									
Arsenic	**0.841**	na	**0.771**	**1.13**	**1.35**	**1.58**	**0.054**	**0.058**	**0.235**
Cadmium	**0.085**	na	**0.107**	**0.133**	**0.111**	**0.114**	**0.206**	**0.272**	**0.133**
Chromium	6.31 U	na	7.06 U	6.34 U	8.80 U	11.4 U	4.36 U	6.01 U	6.95 U
Copper	**8.69 J**	na	**12.5 J**	**15.8 J**	**8.16 J**	**10.2 J**	**10.1 J**	**12.2 J**	5.24 U
Lead	**0.252**	na	**0.129**	**0.823**	**0.096**	**1.44**	**0.051**	**0.161**	**0.036**
Mercury	**0.00092**	na	**0.00074**	**0.00518**	**0.00062**	**0.00061**	**0.00087**	**0.00094**[a]	**0.00062**
Nickel	**1.32**	na	**4.24**	**8.03**	**5.25**	**8.83**	**2.78**	**6.43**	**2.23**
Silver	**0.021**	na	**0.053**	**0.033**	**0.112**	**0.086**	**0.028**	**0.025**	**0.036**
Zinc	**11.97**	na	**14.1**	**16.1**	**8.08**	**10.8**	**8.30**	**9.90**	**6.07**
TPH (mg/L)[b]									
Gasoline	na	na	na	0.25 U	na	0.25 U	na	0.25 U	na
TPH - diesel range	0.25 U	na	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
TPH - motor oil range	0.50 U	na	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

ANALYTE	LDW-SP-41-C-U	LDW-SP-48-C-F	LDW-SP-48-C-U	LDW-SP-54-C-F	LDW-SP-54-C-U	LDW-SP-61-C-F	LDW-SP-61-C-U	LDW-SP-62-C-F	LDW-SP-62-C-U
Conventionals (mg/L)									
Dissolved organic carbon	na	1.50 UJ	na	5.00 J	na	1.50 UJ	na	1.50 UJ	na
Total organic carbon (TOC)	1.50 U [a]	na	1.50 U	na	**6.42**	na	**2.57**	na	na
Total suspended solids	**7.1 J** [a]	na	**12.8** [a]	na	**14.3**	na	**15.8** [a]	na	na
Metals (µg/L)									
Arsenic	**0.230** [a]	**0.422**	**0.618**	**0.404**	**1.30**	**72.4**	**67.2**	**6.84**	na
Cadmium	**0.158**	**0.101**	**0.127** [a]	**0.012**	**0.710**	**0.0090**	**0.022** [a]	**0.11**	na
Chromium	3.68 U	7.58 U	4.58 U [a]	4.02 U	**74.9**	1.83 U	0.07 U [a]	7.73 U	na
Copper	5.96 U	**10.1 J**	**11.1 J** [a]	4.53 U	6.47 U	4.72 U	4.75 U [a]	7.77 U	na
Lead	**0.080**	**0.154 J**	**1.06** [a]	**0.703**	**296**	**0.088**	**0.240** [a]	**0.10**	na
Mercury	**0.00112**	**0.00132**	**0.00109**	**0.0132**	**0.582**	**0.00099 J**	**0.00216** [a]	**0.00256**	na
Nickel	**4.71**	**1.56**	**3.23** [a]	**0.84**	**3.92**	0.04 U	0.04 U [a]	0.04 U	na
Silver	**0.026**	**0.053**	**0.054** [a]	0.015 U	0.015 U	**0.027**	**0.030** [a]	**0.044**	na
Zinc	**7.14**	**15.8**	**17.7** [a]	**5.45**	**322**	**3.29**	**3.49** [a]	**12.2**	na
TPH (mg/L) [b]									
Gasoline	0.25 U	na	na	na	**0.29**	na	na	na	na
TPH - diesel range	0.25 U	na	na	**1.4**	**2.2**	na	na	na	na
TPH - motor oil range	0.50 U	na	na	0.50 U	**1.9**	na	na	na	na

ANALYTE	LDW-SP-64-C-F	LDW-SP-64-C-U	LDW-SP-69-C-F	LDW-SP-69-C-U	LDW-SP-71-C-F	LDW-SP-71-C-U	LDW-SP-75-C-F	LDW-SP-75-C-U	LDW-SP-76-C-F
Conventionals (mg/L)									
Dissolved organic carbon	**1.75 J**	na	**5.81 J**	na	1.50 UJ	na	1.50 UJ	na	**6.57 J**
Total organic carbon (TOC)	na	na	na	**8.55**	na	**2.08** [a]	na	**3.15** [a]	na
Total suspended solids	na	na	na	**25.0** [a]	na	**11.3**	na	**24.3** [a]	na
Metals (µg/L)									
Arsenic	**1.28**	na	**1.47**	**1.64**	**1.02**	**1.91**	**2.20**	**2.49**	**253**
Cadmium	**0.045**	na	**0.016**	**0.112**	**0.023**	**0.078**	**0.021**	**0.031** [a]	**0.091**
Chromium	1.51 U	na	3.10 U	2.91 U	2.03 U	4.24 U	9.74 U	5.37 U [a]	7.04 UJ
Copper	6.99 U	na	4.63 U	**8.06 J**	6.07 U	**12.1 J**	6.79 U	**8.43 J** [a]	3.28 UJ
Lead	**0.193**	na	**0.066**	**0.356**	**0.175**	**15.2**	**0.056**	**0.650** [a]	**3.00**
Mercury	**0.00126 J**	na	**0.00349**	**0.0127** [a]	**0.00201**	**0.0322**	**0.00077**	**0.00171**	**0.0153**
Nickel	0.04 U	na	**3.22**	**4.52**	**1.95**	**3.44**	**1.42**	**3.48** [a]	**2.37 J**
Silver	**0.049**	na	**0.053**	**0.053**	**0.070**	**0.068**	**0.081**	**0.068** [a]	**0.012**
Zinc	**3.86**	na	**3.95**	**45.6**	**10.2**	**26.9**	**5.35**	**8.36** [a]	**138 J**
TPH (mg/L) [b]									
TPH – gasoline range	na	0.25 U	na	0.25 U	na	na	na	na	na
TPH - diesel range	na	0.25 U	0.25 U	0.25 U	na	na	na	na	na
TPH - motor oil range	na	0.50 U	0.50 U	0.50 U	na	na	na	na	na

ANALYTE	LDW-SP-76-C-U	LDW-SP-80-C-F	LDW-SP-80-C-FD-F	LDW-SP-80-C-FD-U	LDW-SP-80-C-U	LDW-SP-82-C-F	LDW-SP-82-C-U	LDW-SP-82-C-FD-F	LDW-SP-82-C-FD-U
Conventionals (mg/L)									
Dissolved organic carbon	na	14.8 J	na	na	na	1.50 UJ	na	1.50 UJ	na
Total organic carbon (TOC)	7.78	na	na	na	13.4	na	2.50	na	1.60
Total suspended solids	5.2	na	na	na	33.3	na	11.2	na	5.8
Metals (µg/L)									
Arsenic	**287**	**0.590**	na	na	**0.855**	**1.20**	**1.46** [a]	**1.14**	**2.20**
Cadmium	**0.204**	**0.011**	na	na	**0.037**	**0.513**	**0.569**	**0.503**	**0.606**
Chromium	5.67 U	6.70 U	na	na	4.61 U	3.25 U	5.65 U	3.51 U	5.81 U
Copper	**50.9**	**22.8**	na	na	**21.4**	**8.22 J**	**10.9 J**	**8.27 J**	**13.4 J**
Lead	**56.4**	**0.078**	na	na	**0.277**	**0.206**	**2.31**	**0.201**	**8.29**
Mercury	**0.0616**	**0.00869**	na	na	**0.00646**	**0.00380**	**0.0168**	**0.00295**	**0.0117**
Nickel	**3.79**	0.04 U	na	na	**2.80**	**3.56**	**5.83**	**3.36**	**6.12**
Silver	**0.077**	0.015 U	na	na	0.015 U	**0.113**	**0.088**	**0.084**	**0.126**
Zinc	**309**	**16.8**	na	na	**14.1**	**164**	**186**	**158**	**201**
TPH (mg/L) [b]									
TPH – gasoline range	na	na	na	0.25 U	0.25 U	na	na	na	na
TPH - diesel range	na	**0.59**	**0.41**	**0.47**	**0.61**	na	na	na	na
TPH - motor oil range	na	0.50 U	0.50 U	0.50 U	0.50 U	na	na	na	na

Note: detected concentrations are shown in **BOLD.**

na – not analyzed

Data qualifiers: U = not detected at reporting limit shown; J = estimated concentration; UJ = not detected at estimated reporting limit shown

[a] Result shown is average of one or more laboratory replicate analyses

[b] Although not required in the project QAPP, TPH – diesel range and TPH – motor oil range were analyzed in samples from Seeps 10, 12, 20, and 39, and TPH – gasoline range was analyzed in samples from Seeps 12 and 20.

Table F-5. Chemistry results for LDW seep water samples: semivolatile organic compounds

ANALYTE (µg/L)	LDW-SP-10-C-F	LDW-SP-10-C-U	LDW-SP-12-C-F	LDW-SP-12-C-U	LDW-SP-20-C-F	LDW-SP-20-C-U	LDW-SP-39-C-F	LDW-SP-39-C-U	LDW-SP-41-C-F	LDW-SP-41-C-U	LDW-SP-48-C-F	LDW-SP-48-C-U	LDW-SP-54-C-F	LDW-SP-54-C-U	LDW-SP-61-C-F	LDW-SP-61-C-U	LDW-SP-62-C-F	LDW-SP-62-C-U
1,2,4-Trichlorobenzene	1.0 U	5.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 UJ
1,2-Dichlorobenzene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.9**	1.0 U	1.0 U	1.0 U	1.0 UJ
1,3-Dichlorobenzene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.6**	**58.3**	1.0 U	1.0 U	1.0 U	1.0 UJ
1,4-Dichlorobenzene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.9**	**40.2**	1.0 U	1.0 U	1.0 U	1.0 UJ
1,4-Dioxane	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
2,4,5-Trichlorophenol	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
2,4,6-Trichlorophenol	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
2,4-Dichlorophenol	3.0 U	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	na
2,4-Dimethylphenol	3.0 U	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	na
2,4-Dinitrophenol	25 U	na	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	na
2,4-Dinitrotoluene	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
2,6-Dinitrotoluene	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
2-Chloronaphthalene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
2-Chlorophenol	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
2-Methylnaphthalene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
2-Methylphenol	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
2-Nitroaniline	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
2-Nitrophenol	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
3,3'-Dichlorobenzidine	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
3-Nitroaniline	6.0 U	na	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	na
4,6-Dinitro-o-cresol	15 U	na	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	na
4-Bromophenyl phenyl ether	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
4-Chloro-3-methylphenol	2.0 U	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na
4-Chloroaniline	3.0 U	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	na
4-Chlorophenyl phenyl ether	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
4-Methylphenol	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
4-Nitroaniline	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
4-Nitrophenol	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
Acenaphthene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Acenaphthylene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Anthracene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Benzo(a)anthracene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Benzo(a)pyrene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na

ANALYTE (µg/L)	LDW-SP-10-C-F	LDW-SP-10-C-U	LDW-SP-12-C-F	LDW-SP-12-C-U	LDW-SP-20-C-F	LDW-SP-20-C-U	LDW-SP-39-C-F	LDW-SP-39-C-U	LDW-SP-41-C-F	LDW-SP-41-C-U	LDW-SP-48-C-F	LDW-SP-48-C-U	LDW-SP-54-C-F	LDW-SP-54-C-U	LDW-SP-61-C-F	LDW-SP-61-C-U	LDW-SP-62-C-F	LDW-SP-62-C-U
Benzo(b)fluoranthene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Benzo(g,h,i)perylene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Benzo(k)fluoranthene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Benzoic acid	10 U	na	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	na
Benzyl alcohol	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
bis(2-chloroethoxy)methane	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
bis(2-chloroethyl)ether	2.0 U	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na
bis(2-chloroisopropyl)ether	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Bis(2-ethylhexyl)phthalate	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	3.9 U	2.2 BU	3.0 BU	1.0 U	1.0 BU	2600 R	3.1 BU	1.0 BU	na
Butyl benzyl phthalate	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Carbazole	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Chrysene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Dibenzo(a,h)anthracene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Dibenzofuran	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Diethyl phthalate	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.6 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Dimethyl phthalate	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Di-n-butyl phthalate	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.8 U	1.0 U	1.0 U	na
Di-n-octyl phthalate	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Fluoranthene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Fluorene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Hexachlorobenzene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Hexachlorobutadiene	2.0 U	5.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 UJ
Hexachlorocyclopentadiene	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
Hexachloroethane	2.0 U	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na
Indeno(1,2,3-cd)pyrene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Isophorone	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Naphthalene	1.0 U	5.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 UJ
Nitrobenzene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
N-Nitroso-di-n-propylamine	2.0 U	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na
N-Nitrosodiphenylamine	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Pentachlorophenol	5.0 U	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na
Phenanthrene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na
Phenol	2.0 U	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na
Pyrene	1.0 U	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na

ANALYTE (µg/L)	LDW-SP-64-C-F	LDW-SP-64-C-U	LDW-SP-69-C-F	LDW-SP-69-C-U	LDW-SP-71-C-F	LDW-SP-71-C-U	LDW-SP-75-C-F	LDW-SP-75-C-U	LDW-SP-76-C-F	LDW-SP-76-C-U	LDW-SP-80-C-F	LDW-SP-80-C-FD-F	LDW-SP-80-C-FD-U	LDW-SP-80-C-U	LDW-SP-82-C-F	LDW-SP-82-C-FD-F	LDW-SP-82-C-FD-U	LDW-SP-82-C-U
1,2,4-Trichlorobenzene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2,4,5-Trichlorophenol	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4,6-Trichlorophenol	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,4-Dichlorophenol	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	na	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
2,4-Dimethylphenol	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	na	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
2,4-Dinitrophenol	na	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	na	na	25 U	25 U	25 U	25 U	25 U
2,4-Dinitrotoluene	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2,6-Dinitrotoluene	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Chloronaphthalene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorophenol	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylnaphthalene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Methylphenol	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Nitroaniline	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Nitrophenol	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
3,3'-Dichlorobenzidine	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
3-Nitroaniline	na	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	na	na	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
4,6-Dinitro-o-cresol	na	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	na	na	15 U	15 U	15 U	15 U	15 U
4-Bromophenyl phenyl ether	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chloro-3-methylphenol	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chloroaniline	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	na	na	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
4-Chlorophenyl phenyl ether	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methylphenol	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Nitroaniline	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Nitrophenol	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acenaphthene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)anthracene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(k)fluoranthene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

ANALYTE (µg/L)	LDW-SP-64-C-F	LDW-SP-64-C-U	LDW-SP-69-C-F	LDW-SP-69-C-U	LDW-SP-71-C-F	LDW-SP-71-C-U	LDW-SP-75-C-F	LDW-SP-75-C-U	LDW-SP-76-C-F	LDW-SP-76-C-U	LDW-SP-80-C-F	LDW-SP-80-C-FD-F	LDW-SP-80-C-FD-U	LDW-SP-80-C-U	LDW-SP-82-C-F	LDW-SP-82-C-FD-F	LDW-SP-82-C-FD-U	LDW-SP-82-C-U
Benzoic acid	na	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	na	na	10 U	10 U	10 U	10 U	10 U
Benzyl alcohol	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
bis(2-chloroethoxy)methane	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
bis(2-chloroethyl)ether	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
bis(2-chloroisopropyl)ether	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bis(2-ethylhexyl)phthalate	na	1.7 BU	1.0 U	1.0 U	1.0 U	1.2 U	1.7 BU	1.8 BU	3.8 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	4.4 BU	1.0 U	1.0 U
Butyl benzyl phthalate	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbazole	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chrysene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzo(a,h)anthracene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Diethyl phthalate	na	1.0 U	5.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dimethyl phthalate	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Di-n-butyl phthalate	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	3.0 U	1.0 U	1.0 U
Di-n-octyl phthalate	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoranthene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluorene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobenzene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexachloroethane	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Indeno(1,2,3-cd)pyrene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isophorone	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Nitrobenzene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Nitroso-di-n-propylamine	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Nitrosodiphenylamine	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	na	na	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Phenol	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	na	na	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Pyrene	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	na	na	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Note: detected concentrations are shown in **BOLD.**

na – not analyzed

Data qualifiers: U = not detected at reporting limit shown; J = estimated concentration; UJ = not detected at estimated reporting limit shown; BU = not detected due to blank contamination; R = rejected concentration

Table F-6. Chemistry results for LDW seep water samples: volatile organic compounds

ANALYTE (µg/L)	LDW-SP-10-C-F	LDW-SP-10-C-U	LDW-SP-12-C-F	LDW-SP-12-C-U	LDW-SP-20-C-F	LDW-SP-20-C-U	LDW-SP-39-C-F	LDW-SP-39-C-U	LDW-SP-41-C-F	LDW-SP-41-C-U	LDW-SP-48-C-F	LDW-SP-48-C-U	LDW-SP-54-C-F	LDW-SP-54-C-U	LDW-SP-61-C-F	LDW-SP-61-C-U	LDW-SP-62-C-F	LDW-SP-62-C-U
1,1,1,2-Tetrachloroethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,1,1-Trichloroethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,1,2,2-Tetrachloroethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,1,2-Trichloroethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,1,2-Trichlorotrifluoroethane	na	2.0 UJ	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 UJ
1,1-Dichloroethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,1-Dichloroethene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,1-Dichloropropene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,2,3-Trichlorobenzene	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ
1,2,3-Trichloropropane	na	3.0 UJ	na	3.0 U	na	3.0 U	na	3.0 U	na	3.0 U	na	3.0 U	na	3.0 U	na	3.0 U	na	3.0 UJ
1,2,4-Trimethylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ	na	1.0 U	na	1.0 UJ
1,2-Dibromo-3-chloropropane	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ
1,2-Dibromoethane (EDB)	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,2-Dichloroethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,2-Dichloropropane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
1,3,5-Trimethylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ	na	1.0 U	na	1.0 UJ
1,3-Dichloropropane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
2,2-Dichloropropane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
2-Chlorotoluene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
2-Hexanone	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ
4-Chlorotoluene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Acetone	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ
Acrolein	na	50 UJ	na	50 U	na	50 U	na	50 U	na	50 U	na	50 U	na	50 UJ	na	50 U	na	50 UJ
Acrylonitrile	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Benzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Bromobenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Bromochloromethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Bromodichloromethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Bromoethane	na	2.0 UJ	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 UJ
Bromoform	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Bromomethane	na	1.0 UJ	na	1.0 UJ	na	1.0 UJ	na	1.0 UJ	na	1.0 UJ	na	1.0 U	na	1.0 UJ	na	1.0 UJ	na	1.0 UJ
Carbon disulfide	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	**2.4**	na	1.0 U	na	1.0 UJ
Carbon tetrachloride	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Chlorobenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	**6.5**	na	1.0 U	na	1.0 UJ

ANALYTE (µg/L)	LDW-SP-10-C-F	LDW-SP-10-C-U	LDW-SP-12-C-F	LDW-SP-12-C-U	LDW-SP-20-C-F	LDW-SP-20-C-U	LDW-SP-39-C-F	LDW-SP-39-C-U	LDW-SP-41-C-F	LDW-SP-41-C-U	LDW-SP-48-C-F	LDW-SP-48-C-U	LDW-SP-54-C-F	LDW-SP-54-C-U	LDW-SP-61-C-F	LDW-SP-61-C-U	LDW-SP-62-C-F	LDW-SP-62-C-U
Chloroethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Chloroform	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Chloromethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
cis-1,2-Dichloroethene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
cis-1,3-Dichloropropene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Cymene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ	na	1.0 U	na	1.0 UJ
Dibromochloromethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Dibromomethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Dichloromethane	na	2.0 UJ	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 UJ
Ethylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Iodomethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Isopropylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Methyl ethyl ketone	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ
Methyl isobutyl ketone	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ	na	5.0 U	na	5.0 UJ
n-Butylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
n-Propylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ	na	1.0 U	na	1.0 UJ
sec-Butylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Styrene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ	na	1.0 U	na	1.0 UJ	na	1.0 U	na	1.0 UJ
tert-Butylbenzene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Tetrachloroethene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Toluene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
trans-1,2-Dichloroethene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
trans-1,3-Dichloropropene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
trans-1,4-Dichloro-2-butene	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ
Trichloroethene	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Trichlorofluoromethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Vinyl acetate	na	5.0 UJ	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 UJ
Vinyl chloride	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Xylene (meta & para)	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ
Xylene (ortho)	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 UJ

ANALYTE (µg/L)	LDW-SP-64-C-F	LDW-SP-64-C-U	LDW-SP-69-C-F	LDW-SP-69-C-U	LDW-SP-71-C-F	LDW-SP-71-C-U	LDW-SP-75-C-F	LDW-SP-75-C-U	LDW-SP-76-C-F	LDW-SP-76-C-U	LDW-SP-80-C-F	LDW-SP-80-C-FD-F	LDW-SP-80-C-FD-U	LDW-SP-80-C-U	LDW-SP-82-C-F	LDW-SP-82-C-FD-F	LDW-SP-82-C-FD-U	LDW-SP-82-C-U
1,1,1,2-Tetrachloroethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,1,1-Trichloroethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,1,2-Trichloroethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	na	na	2.0 U	na	na	2.0 U	2.0 U
1,1-Dichloroethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,1-Dichloroethene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,1-Dichloropropene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,2,3-Trichlorobenzene	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
1,2,3-Trichloropropane	na	3.0 U	na	3.0 U	na	3.0 U	na	3.0 U	na	3.0 U	na	na	na	3.0 U	na	na	3.0 U	3.0 U
1,2,4-Trimethylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
1,2-Dibromoethane (EDB)	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,2-Dichloroethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,2-Dichloropropane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,3,5-Trimethylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
1,3-Dichloropropane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
2,2-Dichloropropane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
2-Chlorotoluene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
2-Hexanone	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
4-Chlorotoluene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Acetone	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
Acrolein	na	50 U	na	50 U	na	50 U	na	50 U	na	50 U	na	na	na	50 U	na	na	50 U	50 U
Acrylonitrile	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Benzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Bromobenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Bromochloromethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Bromodichloromethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Bromoethane	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	na	na	2.0 U	na	na	2.0 U	2.0 U
Bromoform	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Bromomethane	na	1.0 UJ	na	1.0 U	na	1.0 U	na	1.0 UJ	na	1.0 U	na	na	na	1.0 UJ	na	na	1.0 U	1.0 U
Carbon disulfide	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	**1.1**	na	na	1.0 U	1.0 U
Carbon tetrachloride	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Chlorobenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U

ANALYTE (µg/L)	LDW-SP-64-C-F	LDW-SP-64-C-U	LDW-SP-69-C-F	LDW-SP-69-C-U	LDW-SP-71-C-F	LDW-SP-71-C-U	LDW-SP-75-C-F	LDW-SP-75-C-U	LDW-SP-76-C-F	LDW-SP-76-C-U	LDW-SP-80-C-F	LDW-SP-80-C-FD-F	LDW-SP-80-C-FD-U	LDW-SP-80-C-U	LDW-SP-82-C-F	LDW-SP-82-C-FD-F	LDW-SP-82-C-FD-U	LDW-SP-82-C-U
Chloroethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Chloroform	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Chloromethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
cis-1,2-Dichloroethene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
cis-1,3-Dichloropropene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Cymene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Dibromochloromethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Dibromomethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Dichloromethane	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	2.0 U	na	na	na	2.0 U	na	na	2.0 U	2.0 U
Ethylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Iodomethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Isopropylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Methyl ethyl ketone	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
Methyl isobutyl ketone	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
n-Butylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
n-Propylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
sec-Butylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Styrene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
tert-Butylbenzene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Tetrachloroethene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Toluene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
trans-1,2-Dichloroethene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
trans-1,3-Dichloropropene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
trans-1,4-Dichloro-2-butene	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
Trichloroethene	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Trichlorofluoromethane	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Vinyl acetate	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	5.0 U	na	na	na	5.0 U	na	na	5.0 U	5.0 U
Vinyl chloride	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Xylene (meta & para)	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U
Xylene (ortho)	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	1.0 U	na	na	na	1.0 U	na	na	1.0 U	1.0 U

Note: detected concentrations are shown in **BOLD.**

na – not analyzed

Data qualifiers: U = not detected at reporting limit shown; UJ = not detected at estimated reporting limit shown

APPENDIX G: RAW ANALYTICAL LABORATORY DATA

Data Summary Package

Prepared
for

Windward Environmental

04-08-06-20
LDW-SEEP SAMPLING

ARI Job Nos. GX14

Prepared
By

Analytical Resources, Inc.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-10-C-U**
 SAMPLE

Lab Sample ID: GX14A
LIMS ID: 04-12015
Matrix: Water
Data Release Authorized:
Reported: 08/11/04

QC Report No: GX14-Windward Environmental
Project: LDW-Seep Sampling

Date Sampled: 07/30/04
Date Received: 07/30/04

Instrument/Analyst: FINN5/PAB
Date Analyzed: 08/05/04 19:00

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-10-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GX14A QC Report No: GX14-Windward Environmental
LIMS ID: 04-12015 Project: LDW-Seep Sampling
Matrix: Water
Date Analyzed: 08/05/04 19:00

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	94.8%
d8-Toluene	96.2%
Bromofluorobenzene	95.0%
d4-1,2-Dichlorobenzene	98.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-62-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GX14B
LIMS ID: 04-12016
Matrix: Water
Data Release Authorized:
Reported: 08/11/04

QC Report No: GX14-Windward Environmental
Project: LDW-Seep Sampling

Date Sampled: 07/30/04
Date Received: 07/30/04

Instrument/Analyst: FINN5/PAB
Date Analyzed: 08/05/04 19:28

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-62-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GX14B QC Report No: GX14-Windward Environmental
LIMS ID: 04-12016 Project: LDW-Seep Sampling
Matrix: Water
Date Analyzed: 08/05/04 19:28

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	95.5%
d8-Toluene	95.8%
Bromofluorobenzene	93.0%
d4-1,2-Dichlorobenzene	97.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: TRIP BLANK SAMPLE**

Lab Sample ID: GX14C
LIMS ID: 04-12017
Matrix: Water
Data Release Authorized:
Reported: 08/11/04

QC Report No: GX14-Windward Environmental
Project: LDW-Seep Sampling
Date Sampled:
Date Received: 07/30/04

Instrument/Analyst: FINN5/PAB
Date Analyzed: 08/05/04 19:57

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: TRIP BLANK SAMPLE**

Lab Sample ID: GX14C
LIMS ID: 04-12017
Matrix: Water
Date Analyzed: 08/05/04 19:57

QC Report No: GX14-Windward Environmental
Project: LDW-Seep Sampling

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	92.6%
d8-Toluene	95.6%
Bromofluorobenzene	93.0%
d4-1,2-Dichlorobenzene	99.5%

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL QC Report No: GX14

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
080504MB	Method Blank	86.3%	94.0%	92.1%	97.4%	0
GX14LCS	Lab Cntrl Sample	86.7%	94.2%	93.5%	101%	0
GX14LCSD	Lab Cntrl Sample Dp	88.1%	96.1%	94.7%	101%	0
GX14A	LDW-SP-10-C-U	94.8%	96.2%	95.0%	98.3%	0
GX14B	LDW-SP-62-C-U	95.5%	95.8%	93.0%	97.6%	0
GX14C	TRIP BLANK	92.6%	95.6%	93.0%	99.5%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(74-133)	(74-142)
(TOL) = Toluene-d8	(77-131)	(84-129)
(BFB) = Bromofluorobenzene	(79-127)	(77-122)
(DCB) = 1,2-Dichlorobenzene-d4	(84-132)	(85-135)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-080504**
 LCS/LCSD

Lab Sample ID: LCS-080504 QC Report No: GX14-Windward Environmental
LIMS ID: 04-12015 Project: LDW-Seep Sampling
Matrix: Water
Data Release Authorized:
Reported: 08/11/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB Sample Amount LCS: 5.00 mL
LCSD: FINN5/PAB LCSD: 5.00 mL
Date Analyzed LCS: 08/05/04 11:49 Purge Volume LCS: 5.0 mL
LCSD: 08/05/04 12:31 LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	48.5	50.0	97.0%	47.0	50.0	94.0%	3.1%
Bromomethane	41.8	50.0	83.6%	41.9	50.0	83.8%	0.2%
Vinyl Chloride	40.9	50.0	81.8%	40.1	50.0	80.2%	2.0%
Chloroethane	44.9	50.0	89.8%	44.5	50.0	89.0%	0.9%
Methylene Chloride	49.7	50.0	99.4%	51.5	50.0	103%	3.6%
Acetone	188	250	75.2%	189	250	75.6%	0.5%
Carbon Disulfide	48.7	50.0	97.4%	49.8	50.0	99.6%	2.2%
1,1-Dichloroethene	44.7	50.0	89.4%	45.7	50.0	91.4%	2.2%
1,1-Dichloroethane	49.6	50.0	99.2%	51.0	50.0	102%	2.8%
trans-1,2-Dichloroethene	50.4	50.0	101%	51.5	50.0	103%	2.2%
cis-1,2-Dichloroethene	49.0	50.0	98.0%	52.6	50.0	105%	7.1%
Chloroform	46.9	50.0	93.8%	48.4	50.0	96.8%	3.1%
1,2-Dichloroethane	48.2	50.0	96.4%	49.5	50.0	99.0%	2.7%
2-Butanone	247	250	98.8%	261	250	104%	5.5%
1,1,1-Trichloroethane	48.3	50.0	96.6%	49.5	50.0	99.0%	2.5%
Carbon Tetrachloride	50.1	50.0	100%	50.5	50.0	101%	0.8%
Vinyl Acetate	49.4	50.0	98.8%	51.5	50.0	103%	4.2%
Bromodichloromethane	52.0	50.0	104%	53.3	50.0	107%	2.5%
1,2-Dichloropropane	51.8	50.0	104%	53.7	50.0	107%	3.6%
cis-1,3-Dichloropropene	51.6	50.0	103%	53.3	50.0	107%	3.2%
Trichloroethene	51.8	50.0	104%	52.8	50.0	106%	1.9%
Dibromochloromethane	52.1	50.0	104%	53.8	50.0	108%	3.2%
1,1,2-Trichloroethane	48.5	50.0	97.0%	50.9	50.0	102%	4.8%
Benzene	49.9	50.0	99.8%	51.2	50.0	102%	2.6%
trans-1,3-Dichloropropene	51.9	50.0	104%	53.1	50.0	106%	2.3%
2-Chloroethylvinylether	42.6	50.0	85.2%	44.5	50.0	89.0%	4.4%
Bromoform	56.9	50.0	114%	56.9	50.0	114%	0.0%
4-Methyl-2-Pentanone (MIBK)	266	250	106%	278	250	111%	4.4%
2-Hexanone	262	250	105%	268	250	107%	2.3%
Tetrachloroethene	56.0	50.0	112%	54.2	50.0	108%	3.3%
1,1,2,2-Tetrachloroethane	54.2	50.0	108%	54.3	50.0	109%	0.2%
Toluene	51.7	50.0	103%	52.1	50.0	104%	0.8%
Chlorobenzene	52.0	50.0	104%	52.0	50.0	104%	0.0%
Ethylbenzene	51.5	50.0	103%	51.2	50.0	102%	0.6%
Styrene	54.6	50.0	109%	54.4	50.0	109%	0.4%
Trichlorofluoromethane	46.0	50.0	92.0%	44.8	50.0	89.6%	2.6%
1,1,2-Trichloro-1,2,2-trifl	46.1	50.0	92.2%	45.5	50.0	91.0%	1.3%
m,p-Xylene	102	100	102%	103	100	103%	1.0%
o-Xylene	52.8	50.0	106%	55.1	50.0	110%	4.3%
1,2-Dichlorobenzene	55.3	50.0	111%	55.7	50.0	111%	0.7%
1,3-Dichlorobenzene	57.1	50.0	114%	56.6	50.0	113%	0.9%
1,4-Dichlorobenzene	56.5	50.0	113%	56.3	50.0	113%	0.4%
Acrolein	216	250	86.4%	218	250	87.2%	0.9%
Methyl Iodide	58.1	50.0	116%	60.4	50.0	121%	3.9%
Bromoethane	50.7	50.0	101%	53.6	50.0	107%	5.6%
Acrylonitrile	49.8	50.0	99.6%	52.6	50.0	105%	5.5%
1,1-Dichloropropene	54.5	50.0	109%	55.7	50.0	111%	2.2%
Dibromomethane	50.0	50.0	100%	52.7	50.0	105%	5.3%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-080504**
 LCS/LCSD

Lab Sample ID: LCS-080504 QC Report No: GX14-Windward Environmental
LIMS ID: 04-12015 Project: LDW-Seep Sampling
Matrix: Water
Date Analyzed: 08/05/04 11:49 Purge Volume: 5.0 mL
LCSD: 08/05/04 12:31 LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1,1,2-Tetrachloroethane	50.6	50.0	101%	49.9	50.0	99.8%	1.4%
1,2-Dibromo-3-chloropropane	51.5	50.0	103%	51.4	50.0	103%	0.2%
1,2,3-Trichloropropane	53.7	50.0	107%	54.6	50.0	109%	1.7%
trans-1,4-Dichloro-2-butene	52.0	50.0	104%	51.0	50.0	102%	1.9%
1,3,5-Trimethylbenzene	57.9	50.0	116%	58.0	50.0	116%	0.2%
1,2,4-Trimethylbenzene	58.5	50.0	117%	57.5	50.0	115%	1.7%
Hexachlorobutadiene	59.2	50.0	118%	58.1	50.0	116%	1.9%
Ethylene Dibromide	51.1	50.0	102%	53.0	50.0	106%	3.7%
Bromochloromethane	48.7	50.0	97.4%	50.6	50.0	101%	3.8%
2,2-Dichloropropane	51.0	50.0	102%	51.8	50.0	104%	1.6%
1,3-Dichloropropane	50.7	50.0	101%	51.9	50.0	104%	2.3%
Isopropylbenzene	59.6	50.0	119%	60.9	50.0	122%	2.2%
n-Propylbenzene	57.1	50.0	114%	57.7	50.0	115%	1.0%
Bromobenzene	56.3	50.0	113%	56.8	50.0	114%	0.9%
2-Chlorotoluene	57.8	50.0	116%	61.8	50.0	124%	6.7%
4-Chlorotoluene	52.4	50.0	105%	52.1	50.0	104%	0.6%
tert-Butylbenzene	57.5	50.0	115%	57.6	50.0	115%	0.2%
sec-Butylbenzene	57.4	50.0	115%	57.6	50.0	115%	0.3%
4-Isopropyltoluene	59.4	50.0	119%	60.3	50.0	121%	1.5%
n-Butylbenzene	62.7	50.0	125%	62.7	50.0	125%	0.0%
1,2,4-Trichlorobenzene	65.0	50.0	130%	62.8	50.0	126%	3.4%
Naphthalene	56.1	50.0	112%	59.4	50.0	119%	5.7%
1,2,3-Trichlorobenzene	59.6	50.0	119%	59.2	50.0	118%	0.7%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.
LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	86.7%	88.1%
d8-Toluene	94.2%	96.1%
Bromofluorobenzene	93.5%	94.7%
d4-1,2-Dichlorobenzene	101%	101%

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

MB0805

Lab Name: ANALYTICAL RESOURCES, INC Contract: WINDWARD ENVIRONMENTAL

Lab Code: ARI Case No.: LDW-SEEP SAMPLING SDG No.: GX14

Lab File ID: MB0805 Lab Sample ID: MB0805

Date Analyzed: 08/05/04 Time Analyzed: 1259

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: FINN5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0805	LCS0805	LCS0805	1149
02	LCS0805	LCS0805	LCS0805A	1231
03	SP-10	GX14A	GX14A	1900
04	SP-62	GX14B	GX14B	1928
05	TRIP BLANK	GX14C	GX14C	1957
06				
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08				
09				
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COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: MB-080504**
 METHOD BLANK

Lab Sample ID: MB-080504 QC Report No: GX14-Windward Environmental
LIMS ID: 04-12015 Project: LDW-Seep Sampling
Matrix: Water
Data Release Authorized:
Reported: 08/11/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB Sample Amount: 5.00 mL
Date Analyzed: 08/05/04 12:59 Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

Lab Sample ID: MB-080504 QC Report No: GX14-Windward Environmental
LIMS ID: 04-12015 Project: LDW-Seep Sampling
Matrix: Water
Date Analyzed: 08/05/04 12:59

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	86.3%
d8-Toluene	94.0%
Bromofluorobenzene	92.1%
d4-1,2-Dichlorobenzene	97.4%

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Contract: WINDWARD ENVIRONMENTAL

Lab Code: ARI Case No.: LDW-SEEP SAMPLING SDG No.: GX14

Lab File ID (Standard): 0500805A Date Analyzed: 08/05/04

Instrument ID: FINN5 Time Analyzed: 1101

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	IS1 RT #	IS2(DFB) AREA #	IS2(DFB) RT #	IS3 AREA #	IS3 RT #
	12 HOUR STD	98673	6.30	147136	7.31	144104	10.46
	UPPER LIMIT	197346	6.80	294272	7.81	288208	10.96
	LOWER LIMIT	49336	5.80	73568	6.81	72052	9.96
	EPA SAMPLE NO.						
01	LCS0805	102097	6.29	149085	7.30	147213	10.45
02	LCS0805	102639	6.30	150679	7.31	151762	10.46
03	MB0805	109510	6.31	150621	7.34	145800	10.47
04	SP-10	106626	6.30	156004	7.31	154602	10.46
05	SP-62	105906	6.31	157879	7.32	160911	10.47
06	TRIP BLANK	101281	6.31	149167	7.34	145470	10.47
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES, INC Contract: WINDWARD ENVIRONMENTAL

Lab Code: ARI Case No.: LDW-SEEP SAMPLING SDG No.: GX14

Lab File ID (Standard): 0500805A Date Analyzed: 08/05/04

Instrument ID: FINN5 Time Analyzed: 1101

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) Y

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	69030	13.14				
	UPPER LIMIT	138060	13.64				
	LOWER LIMIT	34515	12.64				
	EPA SAMPLE NO.						
01	LCS0805	68275	13.14				
02	LCS0805	70933	13.15				
03	MB0805	68524	13.16				
04	SP-10	73230	13.15				
05	SP-62	74170	13.16				
06	TRIP BLANK	68349	13.16				
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data Summary Package

Prepared
for

Windward Environmental

Project: LDW-SEEP SAMPLING

ARI Job No. GU26

Prepared
By

Analytical Resources, Inc.

Volatiles

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL QC Report No: GU26

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
GU26G	TRIP BLANK	111%	115%	109%	113%	0
GU26B	LDW-SP-71-C-U	107%	109%	102%	110%	0
071004MB	Method Blank	109%	114%	107%	112%	0
GU26LCS	Lab Cntrl Sample	102%	115%	109%	108%	0
GU26LCSD	Lab Cntrl Sample Dp	90.3%	105%	99.0%	99.7%	0
GU26D	LDW-SP-76-C-U	112%	115%	107%	112%	0
GU26F	LDW-SP-69-C-U	114%	112%	106%	112%	0

** PROJECT SPECIFIED LIMITS **	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(-)	(-)
(TOL) = Toluene-d8	(-)	(-)
(BFB) = Bromofluorobenzene	(-)	(-)
(DCB) = 1,2-Dichlorobenzene-d4	(-)	(-)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-71-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU26B
LIMS ID: 04-10121
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 06/29/04
Date Received: 06/29/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 15:28

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-71-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26B QC Report No: GU26-Windward Environmental
LIMS ID: 04-10121 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/10/04 15:28

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	109%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	110%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-76-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU26D
LIMS ID: 04-10123
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 15:56

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-76-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26D QC Report No: GU26-Windward Environmental
LIMS ID: 04-10123 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/10/04 15:56

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	115%
Bromofluorobenzene	107%
d4-1,2-Dichlorobenzene	112%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-69-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU26F
LIMS ID: 04-10125
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 06/29/04
Date Received: 06/29/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 16:25

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-69-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26F QC Report No: GU26-Windward Environmental
LIMS ID: 04-10125 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/10/04 16:25

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	114%
d8-Toluene	112%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	112%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: TRIP BLANK**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU26G
LIMS ID: 04-10071
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled:
Date Received: 06/29/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 16:53

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: TRIP BLANK**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26G QC Report No: GU26-Windward Environmental
LIMS ID: 04-10071 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/10/04 16:53

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	115%
Bromofluorobenzene	109%
d4-1,2-Dichlorobenzene	113%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-071004**
Page 1 of 2 **LCS/LCSD**

Lab Sample ID: LCS-071004 QC Report No: GU26-Windward Environmental
LIMS ID: 04-10123 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized:
Reported: 07/15/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN3/LJR Sample Amount LCS: 5.00 mL
LCSD: FINN3/LJR LCSD: 5.00 mL
Date Analyzed LCS: 07/10/04 13:59 Purge Volume LCS: 5.0 mL
LCSD: 07/10/04 14:31 LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	45.9	50.0	91.8%	44.8	50.0	89.6%	2.4%
Bromomethane	49.0	50.0	98.0%	48.3	50.0	96.6%	1.4%
Vinyl Chloride	46.4	50.0	92.8%	46.2	50.0	92.4%	0.4%
Chloroethane	46.8	50.0	93.6%	46.7	50.0	93.4%	0.2%
Methylene Chloride	45.5	50.0	91.0%	46.2	50.0	92.4%	1.5%
Acetone	202	250	80.8%	240	250	96.0%	17.2%
Carbon Disulfide	54.0	50.0	108%	48.6	50.0	97.2%	10.5%
1,1-Dichloroethene	47.5	50.0	95.0%	47.6	50.0	95.2%	0.2%
1,1-Dichloroethane	47.5	50.0	95.0%	47.9	50.0	95.8%	0.8%
trans-1,2-Dichloroethene	46.0	50.0	92.0%	46.8	50.0	93.6%	1.7%
cis-1,2-Dichloroethene	50.3	50.0	101%	51.2	50.0	102%	1.8%
Chloroform	49.3	50.0	98.6%	49.8	50.0	99.6%	1.0%
1,2-Dichloroethane	47.5	50.0	95.0%	49.0	50.0	98.0%	3.1%
2-Butanone	215	250	86.0%	252	250	101%	15.8%
1,1,1-Trichloroethane	52.1	50.0	104%	53.0	50.0	106%	1.7%
Carbon Tetrachloride	50.8	50.0	102%	51.8	50.0	104%	1.9%
Vinyl Acetate	51.6	50.0	103%	52.2	50.0	104%	1.2%
Bromodichloromethane	50.6	50.0	101%	51.4	50.0	103%	1.6%
1,2-Dichloropropane	50.7	50.0	101%	52.0	50.0	104%	2.5%
cis-1,3-Dichloropropene	44.6	50.0	89.2%	45.4	50.0	90.8%	1.8%
Trichloroethene	49.4	50.0	98.8%	50.9	50.0	102%	3.0%
Dibromochloromethane	42.4	50.0	84.8%	45.0	50.0	90.0%	5.9%
1,1,2-Trichloroethane	49.1	50.0	98.2%	51.5	50.0	103%	4.8%
Benzene	52.9	50.0	106%	53.5	50.0	107%	1.1%
trans-1,3-Dichloropropene	43.0	50.0	86.0%	44.9	50.0	89.8%	4.3%
2-Chloroethylvinylether	44.9	50.0	89.8%	45.5	50.0	91.0%	1.3%
Bromoform	37.8	50.0	75.6%	42.3	50.0	84.6%	11.2%
4-Methyl-2-Pentanone (MIBK)	243	250	97.2%	272	250	109%	11.3%
2-Hexanone	168	250	67.2%	219	250	87.6%	26.4%
Tetrachloroethene	49.8	50.0	99.6%	51.9	50.0	104%	4.1%
1,1,2,2-Tetrachloroethane	46.5	50.0	93.0%	51.8	50.0	104%	10.8%
Toluene	52.8	50.0	106%	54.0	50.0	108%	2.2%
Chlorobenzene	50.2	50.0	100%	50.9	50.0	102%	1.4%
Ethylbenzene	51.3	50.0	103%	53.9	50.0	108%	4.9%
Styrene	44.6	50.0	89.2%	45.2	50.0	90.4%	1.3%
Trichlorofluoromethane	47.1	50.0	94.2%	46.7	50.0	93.4%	0.9%
1,1,2-Trichloro-1,2,2-trifl	52.6	50.0	105%	47.8	50.0	95.6%	9.6%
m,p-Xylene	106	100	106%	110	100	110%	3.7%
o-Xylene	47.2	50.0	94.4%	49.9	50.0	99.8%	5.6%
1,2-Dichlorobenzene	50.5	50.0	101%	53.3	50.0	107%	5.4%
1,3-Dichlorobenzene	51.3	50.0	103%	54.0	50.0	108%	5.1%
1,4-Dichlorobenzene	49.1	50.0	98.2%	51.7	50.0	103%	5.2%
Acrolein	225	250	90.0%	260	250	104%	14.4%
Methyl Iodide	50.9	50.0	102%	48.2	50.0	96.4%	5.4%
Bromoethane	51.4	50.0	103%	48.1	50.0	96.2%	6.6%
Acrylonitrile	42.5	50.0	85.0%	46.5	50.0	93.0%	9.0%
1,1-Dichloropropene	50.7	50.0	101%	51.7	50.0	103%	2.0%
Dibromomethane	47.6	50.0	95.2%	50.7	50.0	101%	6.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-071004**
Page 2 of 2 **LCS/LCSD**

Lab Sample ID: LCS-071004 QC Report No: GU26-Windward Environmental
LIMS ID: 04-10123 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/10/04 13:59 Purge Volume: 5.0 mL
LCSD: 07/10/04 14:31 LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1,1,2-Tetrachloroethane	47.7	50.0	95.4%	49.1	50.0	98.2%	2.9%
1,2-Dibromo-3-chloropropane	34.2	50.0	68.4%	41.4	50.0	82.8%	19.0%
1,2,3-Trichloropropane	45.5	50.0	91.0%	53.2	50.0	106%	15.6%
trans-1,4-Dichloro-2-butene	51.3	50.0	103%	54.6	50.0	109%	6.2%
1,3,5-Trimethylbenzene	40.9	50.0	81.8%	43.7	50.0	87.4%	6.6%
1,2,4-Trimethylbenzene	40.7	50.0	81.4%	43.4	50.0	86.8%	6.4%
Hexachlorobutadiene	48.3	50.0	96.6%	52.6	50.0	105%	8.5%
Ethylene Dibromide	43.5	50.0	87.0%	46.4	50.0	92.8%	6.5%
Bromochloromethane	49.3	50.0	98.6%	50.6	50.0	101%	2.6%
2,2-Dichloropropane	52.5	50.0	105%	53.1	50.0	106%	1.1%
1,3-Dichloropropane	48.1	50.0	96.2%	52.1	50.0	104%	8.0%
Isopropylbenzene	57.3	50.0	115%	60.0	50.0	120%	4.6%
n-Propylbenzene	42.6	50.0	85.2%	44.6	50.0	89.2%	4.6%
Bromobenzene	51.3	50.0	103%	52.8	50.0	106%	2.9%
2-Chlorotoluene	53.9	50.0	108%	54.2	50.0	108%	0.6%
4-Chlorotoluene	52.7	50.0	105%	55.1	50.0	110%	4.5%
tert-Butylbenzene	55.2	50.0	110%	58.1	50.0	116%	5.1%
sec-Butylbenzene	56.4	50.0	113%	60.4	50.0	121%	6.8%
4-Isopropyltoluene	41.7	50.0	83.4%	45.3	50.0	90.6%	8.3%
n-Butylbenzene	56.1	50.0	112%	59.4	50.0	119%	5.7%
1,2,4-Trichlorobenzene	43.5	50.0	87.0%	46.1	50.0	92.2%	5.8%
Naphthalene	36.5	50.0	73.0%	43.0	50.0	86.0%	16.4%
1,2,3-Trichlorobenzene	49.7	50.0	99.4%	54.1	50.0	108%	8.5%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.
LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	102%	90.3%
d8-Toluene	115%	105%
Bromofluorobenzene	109%	99.0%
d4-1,2-Dichlorobenzene	108%	99.7%

4A

VOLATILE METHOD BLANK SUMMARY

BLANK NO.

MB 0710

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

Lab Code: GU45 Project: LDW-SEEP SAMPLING SDG No.: GU45

Lab File ID: MB0710 Lab Sample ID: MB 0710

Date Analyzed: 07/10/04 Time Analyzed: 1500

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS 0710	LCS 0710	LCS0710	1359
02	LCSD 0710	LCSD 0710	LCD0710	1431
03	LDW-SP-71-C-	GU26B	GU26B	1528
04	LDW-SP-76-C-	GU26D	GU26D	1556
05	LDW-SP-69-C-	GU26F	GU26F	1625
06	TRIP BLANK	GU26G	GU26G	1653
07	LDW-SP-48-C-	GU45A	GU45A	1721
08	LDW-SP-54-C-	GU45C	GU45C	1750
09	LDW-SP-54-C-	GU45CMS	GU45CMS	1818
10	LDW-SP-54-C-	GU45CMSD	GU45CMD	1847
11	LDW-SP-82-C-	GU45E	GU45E	1915
12	LDW-SP-82-C-	GU45G	GU45G	1943
13	TRIP BLANK	GU45I	GU45I	2012
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COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: MB-071004**
Page 1 of 2 **METHOD BLANK**

Lab Sample ID: MB-071004 QC Report No: GU26-Windward Environmental
LIMS ID: 04-10123 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized:
Reported: 07/15/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN3/LJR Sample Amount: 5.00 mL
Date Analyzed: 07/10/04 15:00 Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

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ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: MB-071004**
 METHOD BLANK

Lab Sample ID: MB-071004 QC Report No: GU26-Windward Environmental
LIMS ID: 04-10123 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/10/04 15:00

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	114%
Bromofluorobenzene	107%
d4-1,2-Dichlorobenzene	112%

Semivolatiles

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	DXN	TOT OUT
MB-070204	80.0%	71.6%	88.0%	58.4%	75.1%	75.5%	79.7%	79.1%	62.8%	0
LCS-070204	73.5%	70.7%	88.5%	60.3%	74.6%	71.5%	81.5%	75.9%	61.8%	0
LDW-SP-71-C-F	69.6%	65.0%	83.8%	51.2%	62.9%	62.2%	85.4%	67.8%	53.2%	0
LDW-SP-71-C-U	61.6%	58.4%	85.3%	45.5%	56.0%	54.5%	81.3%	59.7%	49.0%	0
LDW-SP-76-C-F	69.2%	67.0%	84.5%	50.1%	62.2%	58.7%	91.7%	66.6%	47.7%	0
LDW-SP-76-C-U	74.5%	73.2%	85.6%	56.6%	69.5%	67.3%	92.7%	74.0%	60.0%	0
LDW-SP-69-C-F	78.5%	72.3%	82.9%	61.6%	70.3%	69.5%	87.0%	76.1%	59.9%	0
LDW-SP-69-C-U	57.6%	55.8%	81.8%	43.8%	52.6%	49.4%	82.7%	54.9%	42.7%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(44-107)	(38-111)
(FBP) = 2-Fluorobiphenyl	(43-99)	(30-109)
(TPH) = d14-p-Terphenyl	(44-123)	(37-113)
(DCB) = d4-1,2-Dichlorobenzene	(36-88)	(35-88)
(PHL) = d5-Phenol	(47-101)	(42-98)
(2FP) = 2-Fluorophenol	(44-102)	(40-99)
(TBP) = 2,4,6-Tribromophenol	(38-116)	(27-136)
(2CP) = d4-2-Chlorophenol	(50-102)	(47-101)
(DXN) = d8-1,4-Dioxane	(30-160)	(30-160)

Prep Method: SW3520C
Log Number Range: 04-10120 to 04-10125

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-71-C-F
SAMPLE

Lab Sample ID: GU26A
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/14/04 08:03
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-71-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26A QC Report No: GU26-Windward Environmental
LIMS ID: 04-10120 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 08:03

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.6%	2-Fluorobiphenyl	65.0%
d14-p-Terphenyl	83.8%	d4-1,2-Dichlorobenzene	51.2%
d5-Phenol	62.9%	2-Fluorophenol	62.2%
2,4,6-Tribromophenol	85.4%	d4-2-Chlorophenol	67.8%
d8-1,4-Dioxane	53.2%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-71-C-U
SAMPLE

Lab Sample ID: GU26B
LIMS ID: 04-10121
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/14/04 08:34
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-71-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26B QC Report No: GU26-Windward Environmental
LIMS ID: 04-10121 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 08:34

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.2**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	61.6%	2-Fluorobiphenyl	58.4%
d14-p-Terphenyl	85.3%	d4-1,2-Dichlorobenzene	45.5%
d5-Phenol	56.0%	2-Fluorophenol	54.5%
2,4,6-Tribromophenol	81.3%	d4-2-Chlorophenol	59.7%
d8-1,4-Dioxane	49.0%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-76-C-F
SAMPLE

Lab Sample ID: GU26C
LIMS ID: 04-10122
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/14/04 09:06
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	**Diethylphthalate**	**1.0**	**1.0**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-76-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26C QC Report No: GU26-Windward Environmental
LIMS ID: 04-10122 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 09:06

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**3.8**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.2%	2-Fluorobiphenyl	67.0%
d14-p-Terphenyl	84.5%	d4-1,2-Dichlorobenzene	50.1%
d5-Phenol	62.2%	2-Fluorophenol	58.7%
2,4,6-Tribromophenol	91.7%	d4-2-Chlorophenol	66.6%
d8-1,4-Dioxane	47.7%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS

Sample ID: LDW-SP-76-C-U
SAMPLE

Lab Sample ID: GU26D
LIMS ID: 04-10123
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/14/04 09:37
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-76-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26D QC Report No: GU26-Windward Environmental
LIMS ID: 04-10123 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 09:37

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	74.5%	2-Fluorobiphenyl	73.2%
d14-p-Terphenyl	85.6%	d4-1,2-Dichlorobenzene	56.6%
d5-Phenol	69.5%	2-Fluorophenol	67.3%
2,4,6-Tribromophenol	92.7%	d4-2-Chlorophenol	74.0%
d8-1,4-Dioxane	60.0%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-69-C-F
SAMPLE

Lab Sample ID: GU26E
LIMS ID: 04-10124
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/14/04 10:09
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	**Diethylphthalate**	**1.0**	**5.5**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-69-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU26E QC Report No: GU26-Windward Environmental
LIMS ID: 04-10124 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 10:09

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	78.5%	2-Fluorobiphenyl	72.3%
d14-p-Terphenyl	82.9%	d4-1,2-Dichlorobenzene	61.6%
d5-Phenol	70.3%	2-Fluorophenol	69.5%
2,4,6-Tribromophenol	87.0%	d4-2-Chlorophenol	76.1%
d8-1,4-Dioxane	59.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
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Sample ID: LDW-SP-69-C-U
SAMPLE

Lab Sample ID: GU26F
LIMS ID: 04-10125
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/14/04 10:41
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

Lab Sample ID: GU26F QC Report No: GU26-Windward Environmental
LIMS ID: 04-10125 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 10:41

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	57.6%	2-Fluorobiphenyl	55.8%
d14-p-Terphenyl	81.8%	d4-1,2-Dichlorobenzene	43.8%
d5-Phenol	52.6%	2-Fluorophenol	49.4%
2,4,6-Tribromophenol	82.7%	d4-2-Chlorophenol	54.9%
d8-1,4-Dioxane	42.7%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
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Sample ID: LCS-070204
LAB CONTROL

Lab Sample ID: LCS-070204
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 14:28
Instrument/Analyst: NT6/Van
GPC Cleanup: NO

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

Analyte	Lab Control	Spike Added	Recovery
Phenol	22.0	37.5	58.7%
2-Chlorophenol	21.3	37.5	56.8%
1,4-Dichlorobenzene	10.5	25.0	42.0%
N-Nitroso-Di-N-Propylamine	15.1	25.0	60.4%
1,2,4-Trichlorobenzene	10.9	25.0	43.6%
4-Chloro-3-methylphenol	23.3	37.5	62.1%
Acenaphthene	14.9	25.0	59.6%
4-Nitrophenol	25.6	37.5	68.3%
2,4-Dinitrotoluene	15.4	25.0	61.6%
Pentachlorophenol	26.7	37.5	71.2%
Pyrene	17.9	25.0	71.6%
1,4-Dioxane	12.1	25.0	48.4%

Semivolatile Surrogate Recovery	
d5-Nitrobenzene	73.5%
2-Fluorobiphenyl	70.7%
d14-p-Terphenyl	88.5%
d4-1,2-Dichlorobenzene	60.3%
d5-Phenol	74.6%
2-Fluorophenol	71.5%
2,4,6-Tribromophenol	81.5%
d4-2-Chlorophenol	75.9%
d8-1,4-Dioxane	61.8%

Results reported in µg/L

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO. GU59MBW1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

Lab Code: GU26 Project: LDW-SEEP SAMPLING SDG No.: GU26

Lab File ID: GU59MB Lab Sample ID: GU59MBW1

Instrument ID: NT6 Date Extracted: 07/02/04

Matrix: (soil/water) WATER Date Analyzed: 07/13/04

Level:(low/med) LOW Time Analyzed: 1356

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	GU59LCSW1	GU59LCSW1	GU59SB	07/13/04
02	LDW-SP-10-C-F	GU59A	GU59A	07/13/04
03	LDW-SP-12-C-F	GU59B	GU59B	07/13/04
04	LDW-SP-20-C-F	GU59C	GU59C	07/13/04
05	LDW-SP-41-C-F	GU59D	GU59D	07/13/04
06	LDW-SP-41-C-F MS	GU59DMS	GU59DMS	07/13/04
07	LDW-SP-41-C-F MS	GU59DMSD	GU59DMSD	07/13/04
08	LDW-SP-12-C-U	GU59E	GU59E	07/13/04
09	LDW-SP-20-C-U	GU59F	GU59F	07/13/04
10	LDW-SP-41-C-U	GU59G	GU59G	07/13/04
11	LDW-SP-41-C-U MS	GU59GMS	GU59GMS	07/13/04
12	LDW-SP-41-C-U MS	GU59GMSD	GU59GMSD	07/13/04
13	LDW-SP-39-C-F	GU59H	GU59H	07/13/04
14	LDW-SP-80-C-F	GU59I	GU59I	07/13/04
15	LDW-SP-39-C-U	GU59J	GU59J	07/13/04
16	LDW-SP-80-C-U	GU59K	GU59K	07/13/04
17	LDW-SP-71-C-F	GU26A	GU26A	07/14/04
18	LDW-SP-71-C-U	GU26B	GU26B	07/14/04
19	LDW-SP-76-C-F	GU26C	GU26C	07/14/04
20	LDW-SP-76-C-U	GU26D	GU26D	07/14/04
21	LDW-SP-69-C-F	GU26E	GU26E	07/14/04
22	LDW-SP-69-C-U	GU26F	GU26F	07/14/04
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: MB-070204**
Page 1 of 2 **METHOD BLANK**

Lab Sample ID: MB-070204 QC Report No: GU26-Windward Environmental
LIMS ID: 04-10120 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized:
Reported: 07/15/04 Date Sampled: NA
Date Received: NA

Date Extracted: 07/02/04 Sample Amount: 500 mL
Date Analyzed: 07/13/04 13:56 Final Extract Volume: 0.50 mL
Instrument/Analyst: NT6/Van Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: MB-070204**
 METHOD BLANK

Lab Sample ID: MB-070204 QC Report No: GU26-Windward Environmental
LIMS ID: 04-10120 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 13:56

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	80.0%	2-Fluorobiphenyl	71.6%
d14-p-Terphenyl	88.0%	d4-1,2-Dichlorobenzene	58.4%
d5-Phenol	75.1%	2-Fluorophenol	75.5%
2,4,6-Tribromophenol	79.7%	d4-2-Chlorophenol	79.1%
d8-1,4-Dioxane	62.8%		

Manchester Pesticides

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070204	75.8%	32.0%	0
LCS-070204	74.0%	31.8%	0
LDW-SP-71-C-F	56.8%	33.8%	0
LDW-SP-71-C-U	59.0%	38.2%	0
LDW-SP-76-C-F	63.8%	31.8%	0
LDW-SP-76-C-U	74.5%	34.0%	0
LDW-SP-69-C-F	49.8%	38.2%	0
LDW-SP-69-C-U	33.8%	39.5%	0

** PROJECT SPECIFIED LIMITS **	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(30-160)	(30-160)
(TCMX) = Tetrachlorometaxylene	(30-160)	(30-160)

Prep Method: Manchester
Log Number Range: 04-10120 to 04-10125

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-71-C-F
SAMPLE

Lab Sample ID: GU26A
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 15:21
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.7
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	56.8%
Tetrachlorometaxylene	33.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-71-C-U
SAMPLE

Lab Sample ID: GU26B
LIMS ID: 04-10121
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 15:55
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.3
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	59.0%
Tetrachlorometaxylene	38.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-76-C-F
SAMPLE

Lab Sample ID: GU26C
LIMS ID: 04-10122
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 16:29
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.1
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	63.8%
Tetrachlorometaxylene	31.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-76-C-U
SAMPLE

Lab Sample ID: GU26D
LIMS ID: 04-10123
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 17:03
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.9
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.0032	< 0.0032 Y
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	74.5%
Tetrachlorometaxylene	34.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-69-C-F
SAMPLE

Lab Sample ID: GU26E
LIMS ID: 04-10124
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 17:37
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.4
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	49.8%
Tetrachlorometaxylene	38.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-69-C-U
SAMPLE

Lab Sample ID: GU26F
LIMS ID: 04-10125
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 18:11
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.4
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	33.8%
Tetrachlorometaxylene	39.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LCS-070204
LAB CONTROL

Lab Sample ID: LCS-070204
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 14:13
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Sulfur Cleanup: Yes
Silica Gel: Yes

Analyte	Lab Control	Spike Added	Recovery
alpha-BHC	0.00200	0.00333	60.1%
beta-BHC	0.00233	0.00333	70.0%
delta-BHC	0.00267	0.00333	80.2%
gamma-BHC (Lindane)	0.00218	0.00333	65.5%
Heptachlor	0.00198	0.00333	59.5%
Aldrin	0.00177	0.00333	53.2%
Heptachlor Epoxide	0.00287	0.00333	86.2%
Endosulfan I	0.00258	0.00333	77.5%
Dieldrin	0.00543	0.00667	81.4%
4,4'-DDE	0.00575	0.00667	86.2%
Endrin	0.00607	0.00667	91.0%
Endosulfan II	0.00568	0.00667	85.2%
4,4'-DDD	0.00603	0.00667	90.4%
Endosulfan Sulfate	0.00560	0.00667	84.0%
4,4'-DDT	0.00663	0.00667	99.4%
Methoxychlor	0.0322	0.0333	96.7%
Endrin Ketone	0.00548	0.00667	82.2%
Endrin Aldehyde	0.00080	0.00667	12.0%
gamma Chlordane	0.00243	0.00333	73.0%
alpha Chlordane	0.00242	0.00333	72.7%

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	74.0%
Tetrachlorometaxylene	31.8%

Results reported in µg/L (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: MB-070204
METHOD BLANK

Lab Sample ID: MB-070204
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: NA
Date Received: NA

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 13:39
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: NA
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	32.0%

FORM 4
PCB METHOD BLANK SUMMARY

SAMPLE NO.

GUMBW7/2

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

ARI Job No.: GU26 Project: LDW-SEEP SAMPLING

Lab Sample ID: GU26MBW7/2 Lab File ID: 0709-08R

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) OTHER

Sulfur Cleanup (Y/N) Y Date Extracted: 07/02/04

Date Analyzed (1): 07/09/04 Date Analyzed (2): 07/09/04

Time Analyzed (1): 1339 Time Analyzed (2): 1339

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): RTX-CLP1 ID: 0.53(mm) GC Column (2): RTX-CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GUSBW7/2	GU26SBW1	07/09/04	07/09/04
02	LDW-SP-71-C-	GU26A	07/09/04	07/09/04
03	LDW-SP-71-C-	GU26B	07/09/04	07/09/04
04	LDW-SP-76-C-	GU26C	07/09/04	07/09/04
05	LDW-SP-76-C-	GU26D	07/09/04	07/09/04
06	LDW-SP-69-C-	GU26E	07/09/04	07/09/04
07	LDW-SP-69-C-	GU26F	07/09/04	07/09/04

PCB

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070204	72.5%	32.0%	0
LCS-070204	63.2%	35.8%	0
LDW-SP-71-C-F	49.0%	33.8%	0
LDW-SP-71-C-U	40.8%	38.2%	0
LDW-SP-76-C-F	40.8%	31.8%	0
LDW-SP-76-C-U	44.8%	34.0%	0
LDW-SP-69-C-F	37.8%	38.2%	0
LDW-SP-69-C-U	28.2%	39.5%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(42-138)	(25-134)
(TCMX) = Tetrachlorometaxylene	(32-117)	(25-118)

Prep Method: Manchester
Log Number Range: 04-10120 to 04-10125

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-71-C-F
SAMPLE

Lab Sample ID: GU26A
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/13/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 15:21
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	49.0%
Tetrachlorometaxylene	33.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-71-C-U
SAMPLE

Lab Sample ID: GU26B
LIMS ID: 04-10121
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 15:55
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	**Aroclor 1254**	**0.017**	**0.020**
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	40.8%
Tetrachlorometaxylene	38.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-76-C-F
SAMPLE

Lab Sample ID: GU26C
LIMS ID: 04-10122
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 16:29
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	40.8%
Tetrachlorometaxylene	31.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-76-C-U
SAMPLE

Lab Sample ID: GU26D
LIMS ID: 04-10123
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 17:03
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	44.8%
Tetrachlorometaxylene	34.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-69-C-F
SAMPLE

Lab Sample ID: GU26E
LIMS ID: 04-10124
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 17:37
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	37.8%
Tetrachlorometaxylene	38.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-69-C-U
SAMPLE

Lab Sample ID: GU26F
LIMS ID: 04-10125
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 18:11
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	28.2%
Tetrachlorometaxylene	39.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LCS-070204
LAB CONTROL

Lab Sample ID: LCS-070204
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/13/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 06/29/04
Date Received: 06/29/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 14:47
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	0.104	0.168	61.9%
Aroclor 1260	0.130	0.168	77.4%

PCB Surrogate Recovery

Decachlorobiphenyl	63.2%
Tetrachlorometaxylene	35.8%

Results reported in µg/L

4

PCB METHOD BLANK SUMMARY

BLANK NO. GUMBW7/2

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

ARI Job No.: GU26 Project: LDW-SEEP SAMPLING

Lab Sample ID: GU26MBW7/2 Lab File ID: 0709-08R

Matrix (soil/water) WATER Date Extracted: 07/02/04

Date Analyzed (1): 07/09/04 Date Analyzed (2): 07/09/04

Time Analyzed (1): 1339 Time Analyzed (2): 1339

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): RTX-CLP1 ID: 0.53(mm) GC Column (2): RTX-CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	Client SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GUSBW7/2	GU26SBW2	07/09/04	07/09/04
02	LDW-SP-71-C-F	GU26A	07/09/04	07/09/04
03	LDW-SP-71-C-U	GU26B	07/09/04	07/09/04
04	LDW-SP-76-C-F	GU26C	07/09/04	07/09/04
05	LDW-SP-76-C-U	GU26D	07/09/04	07/09/04
06	LDW-SP-69-C-F	GU26E	07/09/04	07/09/04
07	LDW-SP-69-C-U	GU26F	07/09/04	07/09/04

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: MB-070204
METHOD BLANK

Lab Sample ID: MB-070204
LIMS ID: 04-10120
Matrix: Water
Data Release Authorized:
Reported: 07/13/04

QC Report No: GU26-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: NA
Date Received: NA

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 13:39
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.5%
Tetrachlorometaxylene	32.0%

General Chemistry

SAMPLE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QA
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Client ID: LDW-SP-71-C-F
ARI ID: 04-10120 GU26A

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: dlp
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Client ID: LDW-SP-71-C-U
ARI ID: 04-10121 GU26B

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	06/30/04 063004#1	EPA 160.2	mg/L	1.0	11.3
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	2.16

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: GJ
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Client ID: LDW-SP-76-C-F
ARI ID: 04-10122 GU26C

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	6.57

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QA
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Client ID: LDW-SP-76-C-U
ARI ID: 04-10123 GU26D

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	06/30/04 063004#1	EPA 160.2	mg/L	1.0	5.2
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	7.78

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: AR
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Client ID: LDW-SP-69-C-F
ARI ID: 04-10124 GU26E

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	5.81

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ah
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Client ID: LDW-SP-69-C-U
ARI ID: 04-10125 GU26F

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	06/30/04 063004#1	EPA 160.2	mg/L	2.5	25.5
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	8.55

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QA
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	06/30/04	mg/L	< 1.0 U
Total Organic Carbon	07/01/04	mg/L	< 1.50 U
Dissolved Organic Carbon	07/09/04	mg/L	< 1.50 U

LAB CONTROL RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: arp
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	06/30/04	mg/L	49.2	50.0	98.4%

STANDARD REFERENCE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ajp
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon SPEX #25-161AS	07/01/04	mg/L	19.6	20.0	98.0%
Dissolved Organic Carbon ERA #0206-02-02	07/09/04	mg/L	21.6	20.0	108.0%

REPLICATE RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: dap
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: GU26B Client ID: LDW-SP-71-C-U					
Total Organic Carbon	07/01/04	mg/L	2.16	1.99	8.2%
ARI ID: GU26F Client ID: LDW-SP-69-C-U					
Total Suspended Solids	06/30/04	mg/L	25.5	24.5	4.0%

MS/MSD RESULTS-CONVENTIONALS
GU26-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ah
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 06/29/04
Date Received: 06/29/04

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: GU26B Client ID: LDW-SP-71-C-U						
Total Organic Carbon	07/01/04	mg/L	2.16	23.7	20.0	107.7%

Data Summary Package

Prepared
for

Windward Environmental

Project: LDW-SEEP SAMPLING

ARI Job Nos. GU45, GU59, GU76 and GU83

Prepared
By

Analytical Resources, Inc.

Volatiles

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL QC Report No: GU45

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
GU45A	LDW-SP-48-C-U	106%	104%	97.4%	104%	0
071004MB	Method Blank	109%	114%	107%	112%	0
GU45LCS	Lab Cntrl Sample	102%	115%	109%	108%	0
GU45C	LDW-SP-54-C-U	115%	116%	107%	106%	0
GU45C-MS	LDW-SP-54-C-U	99.1%	107%	103%	97.0%	0
GU45C-MSD	LDW-SP-54-C-U	102%	113%	107%	106%	0
GU45E	LDW-SP-82-C-U	103%	107%	98.7%	100%	0
GU45G	LDW-SP-82-C-FD-U	110%	113%	103%	105%	0
GU45I	Trip Blank	112%	115%	109%	112%	0

SW8260B		LCS/MB LIMITS	QC LIMITS
(DCE)	= 1,2-Dichloroethane-d4	(74-133)	(74-142)
(TOL)	= Toluene-d8	(77-131)	(84-129)
(BFB)	= Bromofluorobenzene	(79-127)	(77-122)
(DCB)	= 1,2-Dichlorobenzene-d4	(84-132)	(85-135)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-48-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45A
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 17:21

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-48-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45A QC Report No: GU45-Windward Environmental
LIMS ID: 04-10230 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/10/04 17:21

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	104%
Bromofluorobenzene	97.4%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-54-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 17:50

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	**Carbon Disulfide**	**1.0**	**2.4**
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	**Chlorobenzene**	**1.0**	**6.5**
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	**1,2-Dichlorobenzene**	**1.0**	**2.9**
541-73-1	**1,3-Dichlorobenzene**	**1.0**	**58**
106-46-7	**1,4-Dichlorobenzene**	**1.0**	**40**
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-54-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45C QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/10/04 17:50

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	115%
d8-Toluene	116%
Bromofluorobenzene	107%
d4-1,2-Dichlorobenzene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-54-C-U**
Page 1 of 2 **MATRIX SPIKE**

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 18:18

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	---
74-83-9	Bromomethane	1.0	---
75-01-4	Vinyl Chloride	1.0	---
75-00-3	Chloroethane	1.0	---
75-09-2	Methylene Chloride	2.0	---
67-64-1	Acetone	5.0	---
75-15-0	Carbon Disulfide	1.0	---
75-35-4	1,1-Dichloroethene	1.0	---
75-34-3	1,1-Dichloroethane	1.0	---
156-60-5	trans-1,2-Dichloroethene	1.0	---
156-59-2	cis-1,2-Dichloroethene	1.0	---
67-66-3	Chloroform	1.0	---
107-06-2	1,2-Dichloroethane	1.0	---
78-93-3	2-Butanone	5.0	---
71-55-6	1,1,1-Trichloroethane	1.0	---
56-23-5	Carbon Tetrachloride	1.0	---
108-05-4	Vinyl Acetate	5.0	---
75-27-4	Bromodichloromethane	1.0	---
78-87-5	1,2-Dichloropropane	1.0	---
10061-01-5	cis-1,3-Dichloropropene	1.0	---
79-01-6	Trichloroethene	1.0	---
124-48-1	Dibromochloromethane	1.0	---
79-00-5	1,1,2-Trichloroethane	1.0	---
71-43-2	Benzene	1.0	---
10061-02-6	trans-1,3-Dichloropropene	1.0	---
110-75-8	2-Chloroethylvinylether	5.0	---
75-25-2	Bromoform	1.0	---
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	---
591-78-6	2-Hexanone	5.0	---
127-18-4	Tetrachloroethene	1.0	---
79-34-5	1,1,2,2-Tetrachloroethane	1.0	---
108-88-3	Toluene	1.0	---
108-90-7	Chlorobenzene	1.0	---
100-41-4	Ethylbenzene	1.0	---
100-42-5	Styrene	1.0	---
75-69-4	Trichlorofluoromethane	1.0	---
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	---
1330-20-7	m,p-Xylene	1.0	---
95-47-6	o-Xylene	1.0	---
95-50-1	1,2-Dichlorobenzene	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	---
106-46-7	1,4-Dichlorobenzene	1.0	---
107-02-8	Acrolein	50	---
74-88-4	Methyl Iodide	1.0	---
74-96-4	Bromoethane	2.0	---
107-13-1	Acrylonitrile	1.0	---
563-58-6	1,1-Dichloropropene	1.0	---
74-95-3	Dibromomethane	1.0	---
630-20-6	1,1,1,2-Tetrachloroethane	1.0	---
96-12-8	1,2-Dibromo-3-chloropropane	5.0	---

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-54-C-U**
Page 2 of 2 **MATRIX SPIKE**

Lab Sample ID: GU45C QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/10/04 18:18

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	---
110-57-6	trans-1,4-Dichloro-2-butene	5.0	---
108-67-8	1,3,5-Trimethylbenzene	1.0	---
95-63-6	1,2,4-Trimethylbenzene	1.0	---
87-68-3	Hexachlorobutadiene	5.0	---
106-93-4	Ethylene Dibromide	1.0	---
74-97-5	Bromochloromethane	1.0	---
594-20-7	2,2-Dichloropropane	1.0	---
142-28-9	1,3-Dichloropropane	1.0	---
98-82-8	Isopropylbenzene	1.0	---
103-65-1	n-Propylbenzene	1.0	---
108-86-1	Bromobenzene	1.0	---
95-49-8	2-Chlorotoluene	1.0	---
106-43-4	4-Chlorotoluene	1.0	---
98-06-6	tert-Butylbenzene	1.0	---
135-98-8	sec-Butylbenzene	1.0	---
99-87-6	4-Isopropyltoluene	1.0	---
104-51-8	n-Butylbenzene	1.0	---
120-82-1	1,2,4-Trichlorobenzene	5.0	---
91-20-3	Naphthalene	5.0	---
87-61-6	1,2,3-Trichlorobenzene	5.0	---

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.1%
d8-Toluene	107%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	97.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-54-C-U**
Page 1 of 2 **MATRIX SPIKE DUPLICATE**

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 18:47

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	---
74-83-9	Bromomethane	1.0	---
75-01-4	Vinyl Chloride	1.0	---
75-00-3	Chloroethane	1.0	---
75-09-2	Methylene Chloride	2.0	---
67-64-1	Acetone	5.0	---
75-15-0	Carbon Disulfide	1.0	---
75-35-4	1,1-Dichloroethene	1.0	---
75-34-3	1,1-Dichloroethane	1.0	---
156-60-5	trans-1,2-Dichloroethene	1.0	---
156-59-2	cis-1,2-Dichloroethene	1.0	---
67-66-3	Chloroform	1.0	---
107-06-2	1,2-Dichloroethane	1.0	---
78-93-3	2-Butanone	5.0	---
71-55-6	1,1,1-Trichloroethane	1.0	---
56-23-5	Carbon Tetrachloride	1.0	---
108-05-4	Vinyl Acetate	5.0	---
75-27-4	Bromodichloromethane	1.0	---
78-87-5	1,2-Dichloropropane	1.0	---
10061-01-5	cis-1,3-Dichloropropene	1.0	---
79-01-6	Trichloroethene	1.0	---
124-48-1	Dibromochloromethane	1.0	---
79-00-5	1,1,2-Trichloroethane	1.0	---
71-43-2	Benzene	1.0	---
10061-02-6	trans-1,3-Dichloropropene	1.0	---
110-75-8	2-Chloroethylvinylether	5.0	---
75-25-2	Bromoform	1.0	---
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	---
591-78-6	2-Hexanone	5.0	---
127-18-4	Tetrachloroethene	1.0	---
79-34-5	1,1,2,2-Tetrachloroethane	1.0	---
108-88-3	Toluene	1.0	---
108-90-7	Chlorobenzene	1.0	---
100-41-4	Ethylbenzene	1.0	---
100-42-5	Styrene	1.0	---
75-69-4	Trichlorofluoromethane	1.0	---
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	---
1330-20-7	m,p-Xylene	1.0	---
95-47-6	o-Xylene	1.0	---
95-50-1	1,2-Dichlorobenzene	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	---
106-46-7	1,4-Dichlorobenzene	1.0	---
107-02-8	Acrolein	50	---
74-88-4	Methyl Iodide	1.0	---
74-96-4	Bromoethane	2.0	---
107-13-1	Acrylonitrile	1.0	---
563-58-6	1,1-Dichloropropene	1.0	---
74-95-3	Dibromomethane	1.0	---
630-20-6	1,1,1,2-Tetrachloroethane	1.0	---
96-12-8	1,2-Dibromo-3-chloropropane	5.0	---

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Date Analyzed: 07/10/04 18:47

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	---
110-57-6	trans-1,4-Dichloro-2-butene	5.0	---
108-67-8	1,3,5-Trimethylbenzene	1.0	---
95-63-6	1,2,4-Trimethylbenzene	1.0	---
87-68-3	Hexachlorobutadiene	5.0	---
106-93-4	Ethylene Dibromide	1.0	---
74-97-5	Bromochloromethane	1.0	---
594-20-7	2,2-Dichloropropane	1.0	---
142-28-9	1,3-Dichloropropane	1.0	---
98-82-8	Isopropylbenzene	1.0	---
103-65-1	n-Propylbenzene	1.0	---
108-86-1	Bromobenzene	1.0	---
95-49-8	2-Chlorotoluene	1.0	---
106-43-4	4-Chlorotoluene	1.0	---
98-06-6	tert-Butylbenzene	1.0	---
135-98-8	sec-Butylbenzene	1.0	---
99-87-6	4-Isopropyltoluene	1.0	---
104-51-8	n-Butylbenzene	1.0	---
120-82-1	1,2,4-Trichlorobenzene	5.0	---
91-20-3	Naphthalene	5.0	---
87-61-6	1,2,3-Trichlorobenzene	5.0	---

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	102%
d8-Toluene	113%
Bromofluorobenzene	107%
d4-1,2-Dichlorobenzene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-82-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45E
LIMS ID: 04-10234
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 19:15

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

Lab Sample ID: GU45E
LIMS ID: 04-10234
Matrix: Water
Date Analyzed: 07/10/04 19:15

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	103%
d8-Toluene	107%
Bromofluorobenzene	98.7%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-82-C-FD-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45G
LIMS ID: 04-10236
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 19:43

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

Lab Sample ID: GU45G
LIMS ID: 04-10236
Matrix: Water
Date Analyzed: 07/10/04 19:43

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	113%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	105%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: Trip Blank**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45I
LIMS ID: 04-10238
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled:
Date Received: 06/30/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/10/04 20:12

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: Trip Blank**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45I QC Report No: GU45-Windward Environmental
LIMS ID: 04-10238 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/10/04 20:12

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	115%
Bromofluorobenzene	109%
d4-1,2-Dichlorobenzene	112%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-54-C-U**
Page 1 of 2 **MS/MSD**

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Instrument/Analyst MS: FINN3/LJR
MSD: FINN3/LJR
Date Analyzed MS: 07/10/04 18:18
MSD: 07/10/04 18:47

Sample Amount MS: 5.00 mL
MSD: 5.00 mL
Purge Volume MS: 5.0 mL
MSD: 5.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Chloromethane	< 1.0	39.8	50.0	79.6%	38.3	50.0	76.6%	3.8%
Bromomethane	< 1.0	37.0	50.0	74.0%	36.5	50.0	73.0%	1.4%
Vinyl Chloride	< 1.0	44.8	50.0	89.6%	43.1	50.0	86.2%	3.9%
Chloroethane	< 1.0	46.4	50.0	92.8%	45.8	50.0	91.6%	1.3%
Methylene Chloride	< 2.0	47.3	50.0	94.6%	45.7	50.0	91.4%	3.4%
Acetone	< 5.0	275	250	110%	288	250	115%	4.6%
Carbon Disulfide	2.4	58.6	50.0	112%	58.7	50.0	113%	0.2%
1,1-Dichloroethene	< 1.0	45.8	50.0	91.6%	45.9	50.0	91.8%	0.2%
1,1-Dichloroethane	< 1.0	51.2	50.0	102%	49.3	50.0	98.6%	3.8%
trans-1,2-Dichloroethene	< 1.0	48.0	50.0	96.0%	46.6	50.0	93.2%	3.0%
cis-1,2-Dichloroethene	< 1.0	51.8	50.0	104%	50.7	50.0	101%	2.1%
Chloroform	< 1.0	51.3	50.0	103%	51.3	50.0	103%	0.0%
1,2-Dichloroethane	< 1.0	49.7	50.0	99.4%	49.9	50.0	99.8%	0.4%
2-Butanone	< 5.0	285	250	114%	305	250	122%	6.8%
1,1,1-Trichloroethane	< 1.0	55.9	50.0	112%	56.6	50.0	113%	1.2%
Carbon Tetrachloride	< 1.0	49.2	50.0	98.4%	51.0	50.0	102%	3.6%
Vinyl Acetate	< 5.0	57.6	50.0	115%	60.4	50.0	121%	4.7%
Bromodichloromethane	< 1.0	54.5	50.0	109%	54.8	50.0	110%	0.5%
1,2-Dichloropropane	< 1.0	53.6	50.0	107%	54.9	50.0	110%	2.4%
cis-1,3-Dichloropropene	< 1.0	48.5	50.0	97.0%	49.7	50.0	99.4%	2.4%
Trichloroethene	< 1.0	49.7	50.0	99.4%	50.6	50.0	101%	1.8%
Dibromochloromethane	< 1.0	45.7	50.0	91.4%	47.3	50.0	94.6%	3.4%
1,1,2-Trichloroethane	< 1.0	53.3	50.0	107%	53.2	50.0	106%	0.2%
Benzene	< 1.0	54.0	50.0	108%	55.0	50.0	110%	1.8%
trans-1,3-Dichloropropene	< 1.0	45.5	50.0	91.0%	48.2	50.0	96.4%	5.8%
2-Chloroethylvinylether	< 5.0	< 5.0	50.0	NA	< 5.0	50.0	NA	NA
Bromoform	< 1.0	44.5	50.0	89.0%	46.8	50.0	93.6%	5.0%
4-Methyl-2-Pentanone (MIBK)	< 5.0	297	250	119%	321	250	128%	7.8%
2-Hexanone	< 5.0	264	250	106%	297	250	119%	11.8%
Tetrachloroethene	< 1.0	46.6	50.0	93.2%	49.5	50.0	99.0%	6.0%
1,1,2,2-Tetrachloroethane	< 1.0	56.7	50.0	113%	58.5	50.0	117%	3.1%
Toluene	< 1.0	53.5	50.0	107%	53.7	50.0	107%	0.4%
Chlorobenzene	6.5	57.9	50.0	103%	57.8	50.0	103%	0.2%
Ethylbenzene	< 1.0	50.9	50.0	102%	53.8	50.0	108%	5.5%
Styrene	< 1.0	24.3	50.0	48.6%	30.0	50.0	60.0%	21.0%
Trichlorofluoromethane	< 1.0	44.7	50.0	89.4%	44.4	50.0	88.8%	0.7%
1,1,2-Trichloro-1,2,2-trifl	< 2.0	41.6	50.0	83.2%	45.5	50.0	91.0%	9.0%
m,p-Xylene	< 1.0	102	100	102%	107	100	107%	4.8%
o-Xylene	< 1.0	46.6	50.0	93.2%	49.3	50.0	98.6%	5.6%
1,2-Dichlorobenzene	2.9	52.1	50.0	98.4%	55.0	50.0	104%	5.4%
1,3-Dichlorobenzene	58.3	119	50.0	121%	113	50.0	109%	5.2%
1,4-Dichlorobenzene	40.2	94.2	50.0	108%	90.2	50.0	100%	4.3%
Acrolein	< 50.0	166	250	66.4%	196	250	78.4%	16.6%
Methyl Iodide	< 1.0	50.7	50.0	101%	51.5	50.0	103%	1.6%
Bromoethane	< 2.0	46.8	50.0	93.6%	48.1	50.0	96.2%	2.7%
Acrylonitrile	< 1.0	45.0	50.0	90.0%	47.5	50.0	95.0%	5.4%
1,1-Dichloropropene	< 1.0	50.7	50.0	101%	52.8	50.0	106%	4.1%
Dibromomethane	< 1.0	51.9	50.0	104%	53.4	50.0	107%	2.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-54-C-U**
Page 2 of 2 **MS/MSD**

Lab Sample ID: GU45C QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed MS: 07/10/04 18:18 Purge Volume MS: 5.0 mL
MSD: 07/10/04 18:47 MSD: 5.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
1,1,1,2-Tetrachloroethane	< 1.0	48.5	50.0	97.0%	50.0	50.0	100%	3.0%
1,2-Dibromo-3-chloropropane	< 5.0	53.1	50.0	106%	58.0	50.0	116%	8.8%
1,2,3-Trichloropropane	< 3.0	56.3	50.0	113%	59.1	50.0	118%	4.9%
trans-1,4-Dichloro-2-butene	< 5.0	43.0	50.0	86.0%	45.6	50.0	91.2%	5.9%
1,3,5-Trimethylbenzene	< 1.0	33.9	50.0	67.8%	39.6	50.0	79.2%	15.5%
1,2,4-Trimethylbenzene	< 1.0	33.9	50.0	67.8%	39.2	50.0	78.4%	14.5%
Hexachlorobutadiene	< 5.0	24.8	50.0	49.6%	36.1	50.0	72.2%	37.1%
Ethylene Dibromide	< 1.0	49.1	50.0	98.2%	50.0	50.0	100%	1.8%
Bromochloromethane	< 1.0	51.0	50.0	102%	52.4	50.0	105%	2.7%
2,2-Dichloropropane	< 1.0	57.6	50.0	115%	58.7	50.0	117%	1.9%
1,3-Dichloropropane	< 1.0	53.1	50.0	106%	53.5	50.0	107%	0.8%
Isopropylbenzene	< 1.0	52.2	50.0	104%	57.8	50.0	116%	10.2%
n-Propylbenzene	< 1.0	33.0	50.0	66.0%	40.5	50.0	81.0%	20.4%
Bromobenzene	< 1.0	51.9	50.0	104%	53.8	50.0	108%	3.6%
2-Chlorotoluene	< 1.0	48.3	50.0	96.6%	52.3	50.0	105%	8.0%
4-Chlorotoluene	< 1.0	52.5	50.0	105%	54.8	50.0	110%	4.3%
tert-Butylbenzene	< 1.0	43.6	50.0	87.2%	51.6	50.0	103%	16.8%
sec-Butylbenzene	< 1.0	43.2	50.0	86.4%	52.1	50.0	104%	18.7%
4-Isopropyltoluene	< 1.0	29.6	50.0	59.2%	37.1	50.0	74.2%	22.5%
n-Butylbenzene	< 1.0	39.6	50.0	79.2%	49.2	50.0	98.4%	21.6%
1,2,4-Trichlorobenzene	< 5.0	35.9	50.0	71.8%	43.2	50.0	86.4%	18.5%
Naphthalene	< 5.0	43.8	50.0	87.6%	51.7	50.0	103%	16.5%
1,2,3-Trichlorobenzene	< 5.0	41.0	50.0	82.0%	50.2	50.0	100%	20.2%

Results reported in µg/L
NA-No recovery due to high concentration of analyte in original sample, or calculated negative recovery, or undetected spike.
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-071004**
Page 1 of 2 **LAB CONTROL**

Lab Sample ID: LCS-071004 QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Data Release Authorized: Date Sampled: NA
Reported: 07/15/04 Date Received: NA

Instrument/Analyst: FINN3/LJR Sample Amount: 5.00 mL
Date Analyzed: 07/10/04 13:59 Purge Volume: 5.0 mL

Analyte	Lab Control	Spike Added	Recovery
Chloromethane	45.9	50.0	91.8%
Bromomethane	49.0	50.0	98.0%
Vinyl Chloride	46.4	50.0	92.8%
Chloroethane	46.8	50.0	93.6%
Methylene Chloride	45.5	50.0	91.0%
Acetone	202	250	80.8%
Carbon Disulfide	54.0	50.0	108%
1,1-Dichloroethene	47.5	50.0	95.0%
1,1-Dichloroethane	47.5	50.0	95.0%
trans-1,2-Dichloroethene	46.0	50.0	92.0%
cis-1,2-Dichloroethene	50.3	50.0	101%
Chloroform	49.3	50.0	98.6%
1,2-Dichloroethane	47.5	50.0	95.0%
2-Butanone	215	250	86.0%
1,1,1-Trichloroethane	52.1	50.0	104%
Carbon Tetrachloride	50.8	50.0	102%
Vinyl Acetate	51.6	50.0	103%
Bromodichloromethane	50.6	50.0	101%
1,2-Dichloropropane	50.7	50.0	101%
cis-1,3-Dichloropropene	44.6	50.0	89.2%
Trichloroethene	49.4	50.0	98.8%
Dibromochloromethane	42.4	50.0	84.8%
1,1,2-Trichloroethane	49.1	50.0	98.2%
Benzene	52.9	50.0	106%
trans-1,3-Dichloropropene	43.0	50.0	86.0%
2-Chloroethylvinylether	44.9	50.0	89.8%
Bromoform	37.8	50.0	75.6%
4-Methyl-2-Pentanone (MIBK)	243	250	97.2%
2-Hexanone	168	250	67.2%
Tetrachloroethene	49.8	50.0	99.6%
1,1,2,2-Tetrachloroethane	46.5	50.0	93.0%
Toluene	52.8	50.0	106%
Chlorobenzene	50.2	50.0	100%
Ethylbenzene	51.3	50.0	103%
Styrene	44.6	50.0	89.2%
Trichlorofluoromethane	47.1	50.0	94.2%
1,1,2-Trichloro-1,2,2-trifluoroethane	52.6	50.0	105%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-071004**
Page 2 of 2 **LAB CONTROL**

Lab Sample ID: LCS-071004 QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/10/04 13:59 Purge Volume: 5.0 mL

Analyte	Lab Control	Spike Added	Recovery
m,p-Xylene	106	100	106%
o-Xylene	47.2	50.0	94.4%
1,2-Dichlorobenzene	50.5	50.0	101%
1,3-Dichlorobenzene	51.3	50.0	103%
1,4-Dichlorobenzene	49.1	50.0	98.2%
Acrolein	225	250	90.0%
Methyl Iodide	50.9	50.0	102%
Bromoethane	51.4	50.0	103%
Acrylonitrile	42.5	50.0	85.0%
1,1-Dichloropropene	50.7	50.0	101%
Dibromomethane	47.6	50.0	95.2%
1,1,1,2-Tetrachloroethane	47.7	50.0	95.4%
1,2-Dibromo-3-chloropropane	34.2	50.0	68.4%
1,2,3-Trichloropropane	45.5	50.0	91.0%
trans-1,4-Dichloro-2-butene	51.3	50.0	103%
1,3,5-Trimethylbenzene	40.9	50.0	81.8%
1,2,4-Trimethylbenzene	40.7	50.0	81.4%
Hexachlorobutadiene	48.3	50.0	96.6%
Ethylene Dibromide	43.5	50.0	87.0%
Bromochloromethane	49.3	50.0	98.6%
2,2-Dichloropropane	52.5	50.0	105%
1,3-Dichloropropane	48.1	50.0	96.2%
Isopropylbenzene	57.3	50.0	115%
n-Propylbenzene	42.6	50.0	85.2%
Bromobenzene	51.3	50.0	103%
2-Chlorotoluene	53.9	50.0	108%
4-Chlorotoluene	52.7	50.0	105%
tert-Butylbenzene	55.2	50.0	110%
sec-Butylbenzene	56.4	50.0	113%
4-Isopropyltoluene	41.7	50.0	83.4%
n-Butylbenzene	56.1	50.0	112%
1,2,4-Trichlorobenzene	43.5	50.0	87.0%
Naphthalene	36.5	50.0	73.0%
1,2,3-Trichlorobenzene	49.7	50.0	99.4%

Results reported in µg/L
LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	115%
Bromofluorobenzene	109%
d4-1,2-Dichlorobenzene	108%

4A

VOLATILE METHOD BLANK SUMMARY

BLANK NO.

MB 0710

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

Lab Code: GU45 Project: LDW-SEEP SAMPLING SDG No.: GU45

Lab File ID: MB0710 Lab Sample ID: MB 0710

Date Analyzed: 07/10/04 Time Analyzed: 1500

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS 0710	LCS 0710	LCS0710	1359
02	LCSD 0710	LCSD 0710	LCD0710	1431
03	LDW-SP-71-C-	GU26B	GU26B	1528
04	LDW-SP-76-C-	GU26D	GU26D	1556
05	LDW-SP-69-C-	GU26F	GU26F	1625
06	TRIP BLANK	GU26G	GU26G	1653
07	LDW-SP-48-C-	GU45A	GU45A	1721
08	LDW-SP-54-C-	GU45C	GU45C	1750
09	LDW-SP-54-C-	GU45CMS	GU45CMS	1818
10	LDW-SP-54-C-	GU45CMSD	GU45CMD	1847
11	LDW-SP-82-C-	GU45E	GU45E	1915
12	LDW-SP-82-C-	GU45G	GU45G	1943
13	TRIP BLANK	GU45I	GU45I	2012
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COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: MB-071004**
 METHOD BLANK

Lab Sample ID: MB-071004 QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Data Release Authorized: Date Sampled: NA
Reported: 07/15/04 Date Received: NA

Instrument/Analyst: FINN3/LJR Sample Amount: 5.00 mL
Date Analyzed: 07/10/04 15:00 Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

Lab Sample ID: MB-071004 QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/10/04 15:00

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	109%
d8-Toluene	114%
Bromofluorobenzene	107%
d4-1,2-Dichlorobenzene	112%

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL QC Report No: GU59

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
GU59E	LDW-SP-12-C-U	119%	122%	112%	117%	0
GU59F	LDW-SP-20-C-U	120%	123%	113%	116%	0
071404MB	Method Blank	111%	119%	111%	113%	0
GU59LCS	Lab Cntrl Sample	110%	122%	121%	114%	0
GU59LCSD	Lab Cntrl Sample Dp	109%	121%	120%	114%	0
GU59G	LDW-SP-41-C-U	120%	122%	114%	116%	0
GU59G-MS	LDW-SP-41-C-U	114%	123%	122%	113%	0
GU59G-MSD	LDW-SP-41-C-U	109%	121%	120%	114%	0
GU59J	LDW-SP-39-C-U	110%	119%	112%	115%	0
GU59K	LDW-SP-80-C-U	115%	121%	113%	115%	0
GU59L	TRIP BLANK	118%	119%	113%	114%	0

SW8260B		LCS/MB LIMITS	QC LIMITS
(DCE)	= 1,2-Dichloroethane-d4	(74-133)	(74-142)
(TOL)	= Toluene-d8	(77-131)	(84-129)
(BFB)	= Bromofluorobenzene	(79-127)	(77-122)
(DCB)	= 1,2-Dichlorobenzene-d4	(84-132)	(85-135)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL QC Report No: GU76

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
071404MB	Method Blank	111%	119%	111%	113%	0
GU76LCS	Lab Cntrl Sample	110%	122%	121%	114%	0
GU76LCSD	Lab Cntrl Sample Dp	109%	121%	120%	114%	0
GU76B	LDW-SP-61-C-U	116%	121%	112%	116%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(74-133)	(74-142)
(TOL) = Toluene-d8	(77-131)	(84-129)
(BFB) = Bromofluorobenzene	(79-127)	(77-122)
(DCB) = 1,2-Dichlorobenzene-d4	(84-132)	(85-135)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL QC Report No: GU83

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
071404MB	Method Blank	111%	119%	111%	113%	0
GU83LCS	Lab Cntrl Sample	110%	122%	121%	114%	0
GU83LCSD	Lab Cntrl Sample Dp	109%	121%	120%	114%	0
GU83A	LDW-SP-75-C-U	118%	121%	114%	117%	0
GU83E	LDW-SP-64-C-U	116%	122%	113%	116%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(74-133)	(74-142)
(TOL) = Toluene-d8	(77-131)	(84-129)
(BFB) = Bromofluorobenzene	(79-127)	(77-122)
(DCB) = 1,2-Dichlorobenzene-d4	(84-132)	(85-135)

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-12-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU59E
LIMS ID: 04-10341
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 15:35

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

Lab Sample ID: GU59E
LIMS ID: 04-10341
Matrix: Water
Date Analyzed: 07/14/04 15:35

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	119%
d8-Toluene	122%
Bromofluorobenzene	112%
d4-1,2-Dichlorobenzene	117%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-20-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU59F
LIMS ID: 04-10342
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 16:03

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-20-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59F QC Report No: GU59-Windward Environmental
LIMS ID: 04-10342 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 16:03

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	123%
Bromofluorobenzene	113%
d4-1,2-Dichlorobenzene	116%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-41-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 16:32

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-41-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Date Analyzed: 07/14/04 16:32

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	120%
d8-Toluene	122%
Bromofluorobenzene	114%
d4-1,2-Dichlorobenzene	116%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-41-C-U**
Page 1 of 2 **MATRIX SPIKE**

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 17:00

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	---
74-83-9	Bromomethane	1.0	---
75-01-4	Vinyl Chloride	1.0	---
75-00-3	Chloroethane	1.0	---
75-09-2	Methylene Chloride	2.0	---
67-64-1	Acetone	5.0	---
75-15-0	Carbon Disulfide	1.0	---
75-35-4	1,1-Dichloroethene	1.0	---
75-34-3	1,1-Dichloroethane	1.0	---
156-60-5	trans-1,2-Dichloroethene	1.0	---
156-59-2	cis-1,2-Dichloroethene	1.0	---
67-66-3	Chloroform	1.0	---
107-06-2	1,2-Dichloroethane	1.0	---
78-93-3	2-Butanone	5.0	---
71-55-6	1,1,1-Trichloroethane	1.0	---
56-23-5	Carbon Tetrachloride	1.0	---
108-05-4	Vinyl Acetate	5.0	---
75-27-4	Bromodichloromethane	1.0	---
78-87-5	1,2-Dichloropropane	1.0	---
10061-01-5	cis-1,3-Dichloropropene	1.0	---
79-01-6	Trichloroethene	1.0	---
124-48-1	Dibromochloromethane	1.0	---
79-00-5	1,1,2-Trichloroethane	1.0	---
71-43-2	Benzene	1.0	---
10061-02-6	trans-1,3-Dichloropropene	1.0	---
110-75-8	2-Chloroethylvinylether	5.0	---
75-25-2	Bromoform	1.0	---
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	---
591-78-6	2-Hexanone	5.0	---
127-18-4	Tetrachloroethene	1.0	---
79-34-5	1,1,2,2-Tetrachloroethane	1.0	---
108-88-3	Toluene	1.0	---
108-90-7	Chlorobenzene	1.0	---
100-41-4	Ethylbenzene	1.0	---
100-42-5	Styrene	1.0	---
75-69-4	Trichlorofluoromethane	1.0	---
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	---
1330-20-7	m,p-Xylene	1.0	---
95-47-6	o-Xylene	1.0	---
95-50-1	1,2-Dichlorobenzene	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	---
106-46-7	1,4-Dichlorobenzene	1.0	---
107-02-8	Acrolein	50	---
74-88-4	Methyl Iodide	1.0	---
74-96-4	Bromoethane	2.0	---
107-13-1	Acrylonitrile	1.0	---
563-58-6	1,1-Dichloropropene	1.0	---
74-95-3	Dibromomethane	1.0	---
630-20-6	1,1,1,2-Tetrachloroethane	1.0	---
96-12-8	1,2-Dibromo-3-chloropropane	5.0	---

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-41-C-U**
Page 2 of 2 **MATRIX SPIKE**

Lab Sample ID: GU59G QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 17:00

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	---
110-57-6	trans-1,4-Dichloro-2-butene	5.0	---
108-67-8	1,3,5-Trimethylbenzene	1.0	---
95-63-6	1,2,4-Trimethylbenzene	1.0	---
87-68-3	Hexachlorobutadiene	5.0	---
106-93-4	Ethylene Dibromide	1.0	---
74-97-5	Bromochloromethane	1.0	---
594-20-7	2,2-Dichloropropane	1.0	---
142-28-9	1,3-Dichloropropane	1.0	---
98-82-8	Isopropylbenzene	1.0	---
103-65-1	n-Propylbenzene	1.0	---
108-86-1	Bromobenzene	1.0	---
95-49-8	2-Chlorotoluene	1.0	---
106-43-4	4-Chlorotoluene	1.0	---
98-06-6	tert-Butylbenzene	1.0	---
135-98-8	sec-Butylbenzene	1.0	---
99-87-6	4-Isopropyltoluene	1.0	---
104-51-8	n-Butylbenzene	1.0	---
120-82-1	1,2,4-Trichlorobenzene	5.0	---
91-20-3	Naphthalene	5.0	---
87-61-6	1,2,3-Trichlorobenzene	5.0	---

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	123%
Bromofluorobenzene	122%
d4-1,2-Dichlorobenzene	113%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-41-C-U**
Page 1 of 2 **MATRIX SPIKE DUPLICATE**

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 17:29

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	---
74-83-9	Bromomethane	1.0	---
75-01-4	Vinyl Chloride	1.0	---
75-00-3	Chloroethane	1.0	---
75-09-2	Methylene Chloride	2.0	---
67-64-1	Acetone	5.0	---
75-15-0	Carbon Disulfide	1.0	---
75-35-4	1,1-Dichloroethene	1.0	---
75-34-3	1,1-Dichloroethane	1.0	---
156-60-5	trans-1,2-Dichloroethene	1.0	---
156-59-2	cis-1,2-Dichloroethene	1.0	---
67-66-3	Chloroform	1.0	---
107-06-2	1,2-Dichloroethane	1.0	---
78-93-3	2-Butanone	5.0	---
71-55-6	1,1,1-Trichloroethane	1.0	---
56-23-5	Carbon Tetrachloride	1.0	---
108-05-4	Vinyl Acetate	5.0	---
75-27-4	Bromodichloromethane	1.0	---
78-87-5	1,2-Dichloropropane	1.0	---
10061-01-5	cis-1,3-Dichloropropene	1.0	---
79-01-6	Trichloroethene	1.0	---
124-48-1	Dibromochloromethane	1.0	---
79-00-5	1,1,2-Trichloroethane	1.0	---
71-43-2	Benzene	1.0	---
10061-02-6	trans-1,3-Dichloropropene	1.0	---
110-75-8	2-Chloroethylvinylether	5.0	---
75-25-2	Bromoform	1.0	---
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	---
591-78-6	2-Hexanone	5.0	---
127-18-4	Tetrachloroethene	1.0	---
79-34-5	1,1,2,2-Tetrachloroethane	1.0	---
108-88-3	Toluene	1.0	---
108-90-7	Chlorobenzene	1.0	---
100-41-4	Ethylbenzene	1.0	---
100-42-5	Styrene	1.0	---
75-69-4	Trichlorofluoromethane	1.0	---
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	---
1330-20-7	m,p-Xylene	1.0	---
95-47-6	o-Xylene	1.0	---
95-50-1	1,2-Dichlorobenzene	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	---
106-46-7	1,4-Dichlorobenzene	1.0	---
107-02-8	Acrolein	50	---
74-88-4	Methyl Iodide	1.0	---
74-96-4	Bromoethane	2.0	---
107-13-1	Acrylonitrile	1.0	---
563-58-6	1,1-Dichloropropene	1.0	---
74-95-3	Dibromomethane	1.0	---
630-20-6	1,1,1,2-Tetrachloroethane	1.0	---
96-12-8	1,2-Dibromo-3-chloropropane	5.0	---

Lab Sample ID: GU59G QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 17:29

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	---
110-57-6	trans-1,4-Dichloro-2-butene	5.0	---
108-67-8	1,3,5-Trimethylbenzene	1.0	---
95-63-6	1,2,4-Trimethylbenzene	1.0	---
87-68-3	Hexachlorobutadiene	5.0	---
106-93-4	Ethylene Dibromide	1.0	---
74-97-5	Bromochloromethane	1.0	---
594-20-7	2,2-Dichloropropane	1.0	---
142-28-9	1,3-Dichloropropane	1.0	---
98-82-8	Isopropylbenzene	1.0	---
103-65-1	n-Propylbenzene	1.0	---
108-86-1	Bromobenzene	1.0	---
95-49-8	2-Chlorotoluene	1.0	---
106-43-4	4-Chlorotoluene	1.0	---
98-06-6	tert-Butylbenzene	1.0	---
135-98-8	sec-Butylbenzene	1.0	---
99-87-6	4-Isopropyltoluene	1.0	---
104-51-8	n-Butylbenzene	1.0	---
120-82-1	1,2,4-Trichlorobenzene	5.0	---
91-20-3	Naphthalene	5.0	---
87-61-6	1,2,3-Trichlorobenzene	5.0	---

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	121%
Bromofluorobenzene	120%
d4-1,2-Dichlorobenzene	114%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-39-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU59J
LIMS ID: 04-10346
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 17:57

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-39-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59J QC Report No: GU59-Windward Environmental
LIMS ID: 04-10346 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 17:57

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	119%
Bromofluorobenzene	112%
d4-1,2-Dichlorobenzene	115%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-80-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU59K
LIMS ID: 04-10347
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 18:25

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	**Carbon Disulfide**	**1.0**	**1.1**
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-80-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59K QC Report No: GU59-Windward Environmental
LIMS ID: 04-10347 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 18:25

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	121%
Bromofluorobenzene	113%
d4-1,2-Dichlorobenzene	115%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: TRIP BLANK SAMPLE**
Page 1 of 2

Lab Sample ID: GU59L
LIMS ID: 04-10348
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled:
Date Received: 07/01/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 18:53

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: TRIP BLANK SAMPLE**

Lab Sample ID: GU59L
LIMS ID: 04-10348
Matrix: Water
Date Analyzed: 07/14/04 18:53

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	118%
d8-Toluene	119%
Bromofluorobenzene	113%
d4-1,2-Dichlorobenzene	114%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-61-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU76B
LIMS ID: 04-10431
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/02/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 19:22

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-61-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU76B QC Report No: GU76-Windward Environmental
LIMS ID: 04-10431 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 19:22

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	121%
Bromofluorobenzene	112%
d4-1,2-Dichlorobenzene	116%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-75-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 19:50

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-75-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Date Analyzed: 07/14/04 19:50

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	118%
d8-Toluene	121%
Bromofluorobenzene	114%
d4-1,2-Dichlorobenzene	117%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-64-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU83E
LIMS ID: 04-10465
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/03/04

Instrument/Analyst: FINN3/LJR
Date Analyzed: 07/14/04 20:19

Sample Amount: 5.00 mL
Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-64-C-U**
 SAMPLE

Lab Sample ID: GU83E
LIMS ID: 04-10465
Matrix: Water
Date Analyzed: 07/14/04 20:19

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	122%
Bromofluorobenzene	113%
d4-1,2-Dichlorobenzene	116%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-41-C-U**
Page 1 of 2 **MS/MSD**

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/19/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst MS: FINN3/LJR
MSD: FINN3/LJR
Date Analyzed MS: 07/14/04 17:00
MSD: 07/14/04 17:29

Sample Amount MS: 5.00 mL
MSD: 5.00 mL
Purge Volume MS: 5.0 mL
MSD: 5.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Chloromethane	< 1.0	44.4	50.0	88.8%	43.7	50.0	87.4%	1.6%
Bromomethane	< 1.0	29.8	50.0	59.6%	35.3	50.0	70.6%	16.9%
Vinyl Chloride	< 1.0	48.9	50.0	97.8%	47.3	50.0	94.6%	3.3%
Chloroethane	< 1.0	50.2	50.0	100%	49.1	50.0	98.2%	2.2%
Methylene Chloride	< 2.0	50.9	50.0	102%	49.9	50.0	99.8%	2.0%
Acetone	< 5.0	313	250	125%	287	250	115%	8.7%
Carbon Disulfide	< 1.0	41.4	50.0	82.8%	43.7	50.0	87.4%	5.4%
1,1-Dichloroethene	< 1.0	50.1	50.0	100%	48.6	50.0	97.2%	3.0%
1,1-Dichloroethane	< 1.0	52.3	50.0	105%	50.2	50.0	100%	4.1%
trans-1,2-Dichloroethene	< 1.0	50.9	50.0	102%	49.6	50.0	99.2%	2.6%
cis-1,2-Dichloroethene	< 1.0	51.7	50.0	103%	51.4	50.0	103%	0.6%
Chloroform	< 1.0	52.3	50.0	105%	51.3	50.0	103%	1.9%
1,2-Dichloroethane	< 1.0	52.3	50.0	105%	51.8	50.0	104%	1.0%
2-Butanone	< 5.0	302	250	121%	278	250	111%	8.3%
1,1,1-Trichloroethane	< 1.0	52.3	50.0	105%	52.6	50.0	105%	0.6%
Carbon Tetrachloride	< 1.0	52.9	50.0	106%	52.9	50.0	106%	0.0%
Vinyl Acetate	< 5.0	49.6	50.0	99.2%	52.0	50.0	104%	4.7%
Bromodichloromethane	< 1.0	55.1	50.0	110%	54.6	50.0	109%	0.9%
1,2-Dichloropropane	< 1.0	52.2	50.0	104%	53.0	50.0	106%	1.5%
cis-1,3-Dichloropropene	< 1.0	47.1	50.0	94.2%	47.1	50.0	94.2%	0.0%
Trichloroethene	< 1.0	51.6	50.0	103%	52.1	50.0	104%	1.0%
Dibromochloromethane	< 1.0	48.4	50.0	96.8%	48.0	50.0	96.0%	0.8%
1,1,2-Trichloroethane	< 1.0	55.0	50.0	110%	55.0	50.0	110%	0.0%
Benzene	< 1.0	54.4	50.0	109%	54.8	50.0	110%	0.7%
trans-1,3-Dichloropropene	< 1.0	45.2	50.0	90.4%	44.0	50.0	88.0%	2.7%
2-Chloroethylvinylether	< 5.0	< 5.0	50.0	NA	< 5.0	50.0	NA	NA
Bromoform	< 1.0	45.6	50.0	91.2%	46.3	50.0	92.6%	1.5%
4-Methyl-2-Pentanone (MIBK)	< 5.0	297	250	119%	280	250	112%	5.9%
2-Hexanone	< 5.0	285	250	114%	268	250	107%	6.1%
Tetrachloroethene	< 1.0	51.4	50.0	103%	53.3	50.0	107%	3.6%
1,1,2,2-Tetrachloroethane	< 1.0	53.7	50.0	107%	56.9	50.0	114%	5.8%
Toluene	< 1.0	55.0	50.0	110%	55.4	50.0	111%	0.7%
Chlorobenzene	< 1.0	53.5	50.0	107%	53.1	50.0	106%	0.8%
Ethylbenzene	< 1.0	56.4	50.0	113%	57.2	50.0	114%	1.4%
Styrene	< 1.0	45.8	50.0	91.6%	32.7	50.0	65.4%	33.4%
Trichlorofluoromethane	< 1.0	51.2	50.0	102%	49.3	50.0	98.6%	3.8%
1,1,2-Trichloro-1,2,2-trifl	< 2.0	40.0	50.0	80.0%	46.1	50.0	92.2%	14.2%
m,p-Xylene	< 1.0	109	100	109%	110	100	110%	0.9%
o-Xylene	< 1.0	55.3	50.0	111%	55.8	50.0	112%	0.9%
1,2-Dichlorobenzene	< 1.0	50.2	50.0	100%	51.9	50.0	104%	3.3%
1,3-Dichlorobenzene	< 1.0	49.8	50.0	99.6%	51.2	50.0	102%	2.8%
1,4-Dichlorobenzene	< 1.0	47.9	50.0	95.8%	49.0	50.0	98.0%	2.3%
Acrolein	< 50.0	278	250	111%	257	250	103%	7.9%
Methyl Iodide	< 1.0	35.4	50.0	70.8%	44.1	50.0	88.2%	21.9%
Bromoethane	< 2.0	41.2	50.0	82.4%	46.8	50.0	93.6%	12.7%
Acrylonitrile	< 1.0	53.3	50.0	107%	54.2	50.0	108%	1.7%
1,1-Dichloropropene	< 1.0	51.4	50.0	103%	51.7	50.0	103%	0.6%
Dibromomethane	< 1.0	55.0	50.0	110%	54.2	50.0	108%	1.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LDW-SP-41-C-U**
Page 2 of 2 **MS/MSD**

Lab Sample ID: GU59G QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed MS: 07/14/04 17:00 Purge Volume MS: 5.0 mL
MSD: 07/14/04 17:29 MSD: 5.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
1,1,1,2-Tetrachloroethane	< 1.0	56.3	50.0	113%	56.5	50.0	113%	0.4%
1,2-Dibromo-3-chloropropane	< 5.0	45.7	50.0	91.4%	48.6	50.0	97.2%	6.2%
1,2,3-Trichloropropane	< 3.0	55.6	50.0	111%	56.9	50.0	114%	2.3%
trans-1,4-Dichloro-2-butene	< 5.0	46.3	50.0	92.6%	49.9	50.0	99.8%	7.5%
1,3,5-Trimethylbenzene	< 1.0	54.5	50.0	109%	56.1	50.0	112%	2.9%
1,2,4-Trimethylbenzene	< 1.0	50.8	50.0	102%	48.1	50.0	96.2%	5.5%
Hexachlorobutadiene	< 5.0	48.7	50.0	97.4%	51.0	50.0	102%	4.6%
Ethylene Dibromide	< 1.0	49.3	50.0	98.6%	49.8	50.0	99.6%	1.0%
Bromochloromethane	< 1.0	50.8	50.0	102%	52.0	50.0	104%	2.3%
2,2-Dichloropropane	< 1.0	50.0	50.0	100%	49.2	50.0	98.4%	1.6%
1,3-Dichloropropane	< 1.0	55.1	50.0	110%	55.3	50.0	111%	0.4%
Isopropylbenzene	< 1.0	55.5	50.0	111%	58.3	50.0	117%	4.9%
n-Propylbenzene	< 1.0	52.8	50.0	106%	55.4	50.0	111%	4.8%
Bromobenzene	< 1.0	51.0	50.0	102%	54.1	50.0	108%	5.9%
2-Chlorotoluene	< 1.0	53.7	50.0	107%	53.1	50.0	106%	1.1%
4-Chlorotoluene	< 1.0	52.4	50.0	105%	55.3	50.0	111%	5.4%
tert-Butylbenzene	< 1.0	53.7	50.0	107%	54.6	50.0	109%	1.7%
sec-Butylbenzene	< 1.0	54.2	50.0	108%	56.4	50.0	113%	4.0%
4-Isopropyltoluene	< 1.0	53.1	50.0	106%	55.4	50.0	111%	4.2%
n-Butylbenzene	< 1.0	50.4	50.0	101%	54.0	50.0	108%	6.9%
1,2,4-Trichlorobenzene	< 5.0	48.1	50.0	96.2%	51.2	50.0	102%	6.2%
Naphthalene	< 5.0	44.9	50.0	89.8%	47.6	50.0	95.2%	5.8%
1,2,3-Trichlorobenzene	< 5.0	49.3	50.0	98.6%	52.3	50.0	105%	5.9%

Results reported in µg/L
NA-No recovery due to high concentration of analyte in original sample, or calculated negative recovery, or undetected spike.
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-071404**
Page 1 of 2 **LCS/LCSD**

Lab Sample ID: LCS-071404 QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized: Date Sampled: NA
Reported: 07/19/04 Date Received: NA

Instrument/Analyst LCS: FINN3/LJR Sample Amount LCS: 5.00 mL
LCSD: FINN3/LJR LCSD: 5.00 mL
Date Analyzed LCS: 07/14/04 10:46 Purge Volume LCS: 5.0 mL
LCSD: 07/14/04 11:14 LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	43.9	50.0	87.8%	43.2	50.0	86.4%	1.6%
Bromomethane	32.6	50.0	65.2%	34.2	50.0	68.4%	4.8%
Vinyl Chloride	46.4	50.0	92.8%	46.2	50.0	92.4%	0.4%
Chloroethane	48.0	50.0	96.0%	48.5	50.0	97.0%	1.0%
Methylene Chloride	47.1	50.0	94.2%	48.2	50.0	96.4%	2.3%
Acetone	284	250	114%	274	250	110%	3.6%
Carbon Disulfide	49.7	50.0	99.4%	47.2	50.0	94.4%	5.2%
1,1-Dichloroethene	47.9	50.0	95.8%	48.1	50.0	96.2%	0.4%
1,1-Dichloroethane	48.6	50.0	97.2%	50.0	50.0	100%	2.8%
trans-1,2-Dichloroethene	48.2	50.0	96.4%	48.5	50.0	97.0%	0.6%
cis-1,2-Dichloroethene	50.1	50.0	100%	52.7	50.0	105%	5.1%
Chloroform	50.5	50.0	101%	52.4	50.0	105%	3.7%
1,2-Dichloroethane	50.3	50.0	101%	52.0	50.0	104%	3.3%
2-Butanone	282	250	113%	275	250	110%	2.5%
1,1,1-Trichloroethane	53.3	50.0	107%	55.7	50.0	111%	4.4%
Carbon Tetrachloride	52.2	50.0	104%	53.5	50.0	107%	2.5%
Vinyl Acetate	58.9	50.0	118%	53.8	50.0	108%	9.1%
Bromodichloromethane	53.4	50.0	107%	55.3	50.0	111%	3.5%
1,2-Dichloropropane	51.8	50.0	104%	54.1	50.0	108%	4.3%
cis-1,3-Dichloropropene	46.6	50.0	93.2%	48.3	50.0	96.6%	3.6%
Trichloroethene	50.4	50.0	101%	51.5	50.0	103%	2.2%
Dibromochloromethane	46.7	50.0	93.4%	48.3	50.0	96.6%	3.4%
1,1,2-Trichloroethane	51.4	50.0	103%	53.0	50.0	106%	3.1%
Benzene	52.5	50.0	105%	55.1	50.0	110%	4.8%
trans-1,3-Dichloropropene	45.8	50.0	91.6%	47.3	50.0	94.6%	3.2%
2-Chloroethylvinylether	47.0	50.0	94.0%	44.0	50.0	88.0%	6.6%
Bromoform	44.4	50.0	88.8%	46.0	50.0	92.0%	3.5%
4-Methyl-2-Pentanone (MIBK)	283	250	113%	275	250	110%	2.9%
2-Hexanone	259	250	104%	254	250	102%	1.9%
Tetrachloroethene	50.2	50.0	100%	52.4	50.0	105%	4.3%
1,1,2,2-Tetrachloroethane	53.0	50.0	106%	53.6	50.0	107%	1.1%
Toluene	52.8	50.0	106%	54.5	50.0	109%	3.2%
Chlorobenzene	51.2	50.0	102%	53.1	50.0	106%	3.6%
Ethylbenzene	54.7	50.0	109%	57.1	50.0	114%	4.3%
Styrene	56.3	50.0	113%	58.4	50.0	117%	3.7%
Trichlorofluoromethane	48.1	50.0	96.2%	48.3	50.0	96.6%	0.4%
1,1,2-Trichloro-1,2,2-trifl	49.8	50.0	99.6%	45.9	50.0	91.8%	8.2%
m,p-Xylene	106	100	106%	111	100	111%	4.6%
o-Xylene	54.9	50.0	110%	57.2	50.0	114%	4.1%
1,2-Dichlorobenzene	50.3	50.0	101%	52.5	50.0	105%	4.3%
1,3-Dichlorobenzene	50.8	50.0	102%	52.9	50.0	106%	4.1%
1,4-Dichlorobenzene	48.1	50.0	96.2%	50.7	50.0	101%	5.3%
Acrolein	283	250	113%	266	250	106%	6.2%
Methyl Iodide	43.6	50.0	87.2%	42.3	50.0	84.6%	3.0%
Bromoethane	49.1	50.0	98.2%	45.6	50.0	91.2%	7.4%
Acrylonitrile	52.7	50.0	105%	49.5	50.0	99.0%	6.3%
1,1-Dichloropropene	50.8	50.0	102%	52.5	50.0	105%	3.3%
Dibromomethane	51.4	50.0	103%	53.5	50.0	107%	4.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: LCS-071404**
Page 2 of 2 **LCS/LCSD**

Lab Sample ID: LCS-071404 QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 10:46 Purge Volume: 5.0 mL
LCSD: 07/14/04 11:14 LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,1,1,2-Tetrachloroethane	54.7	50.0	109%	57.2	50.0	114%	4.5%
1,2-Dibromo-3-chloropropane	47.0	50.0	94.0%	46.9	50.0	93.8%	0.2%
1,2,3-Trichloropropane	54.0	50.0	108%	55.9	50.0	112%	3.5%
trans-1,4-Dichloro-2-butene	51.1	50.0	102%	48.2	50.0	96.4%	5.8%
1,3,5-Trimethylbenzene	56.6	50.0	113%	59.1	50.0	118%	4.3%
1,2,4-Trimethylbenzene	56.3	50.0	113%	58.5	50.0	117%	3.8%
Hexachlorobutadiene	50.0	50.0	100%	52.2	50.0	104%	4.3%
Ethylene Dibromide	46.6	50.0	93.2%	48.5	50.0	97.0%	4.0%
Bromochloromethane	50.3	50.0	101%	51.4	50.0	103%	2.2%
2,2-Dichloropropane	55.1	50.0	110%	56.4	50.0	113%	2.3%
1,3-Dichloropropane	52.4	50.0	105%	53.9	50.0	108%	2.8%
Isopropylbenzene	58.0	50.0	116%	60.5	50.0	121%	4.2%
n-Propylbenzene	55.3	50.0	111%	57.0	50.0	114%	3.0%
Bromobenzene	52.1	50.0	104%	53.8	50.0	108%	3.2%
2-Chlorotoluene	51.9	50.0	104%	54.6	50.0	109%	5.1%
4-Chlorotoluene	57.7	50.0	115%	56.8	50.0	114%	1.6%
tert-Butylbenzene	55.9	50.0	112%	57.5	50.0	115%	2.8%
sec-Butylbenzene	57.1	50.0	114%	59.3	50.0	119%	3.8%
4-Isopropyltoluene	56.9	50.0	114%	59.3	50.0	119%	4.1%
n-Butylbenzene	54.8	50.0	110%	58.0	50.0	116%	5.7%
1,2,4-Trichlorobenzene	51.6	50.0	103%	53.9	50.0	108%	4.4%
Naphthalene	45.7	50.0	91.4%	47.9	50.0	95.8%	4.7%
1,2,3-Trichlorobenzene	51.4	50.0	103%	53.6	50.0	107%	4.2%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.
LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	110%	109%
d8-Toluene	122%	121%
Bromofluorobenzene	121%	120%
d4-1,2-Dichlorobenzene	114%	114%

4A
VOLATILE METHOD BLANK SUMMARY

BLANK NO. MB0714

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

Lab Code: GU59 Project: LDW-SEEP SAMPLING SDG No.: GU59

Lab File ID: MB0714 Lab Sample ID: MB0714

Date Analyzed: 07/14/04 Time Analyzed: 1143

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0714	LCS0714	LCS0714	1046
02	LCSD0714	LCSD0714	LCD0714	1114
03	LDW-SP-12-C-	GU59E	GU59E	1535
04	LDW-SP-20-C-	GU59F	GU59F	1603
05	LDW-SP-41-C-	GU59G	GU59G	1632
06	LDW-SP-41-C-	GU59G	GU59GMS	1700
07	LDW-SP-41-C-	GU59G	GU59GMD	1729
08	LDW-SP-39-C-	GU59J	GU59J	1757
09	LDW-SP-80-C-	GU59K	GU59K	1825
10	TRIP BLANK	GU59L	GU59L	1853
11	LDW-SP-61-C-	GU76B	GU76B	1922
12	LDW-SP-75-C-	GU83A	GU83A	1950
13	LDW-SP-64-C-	GU83E	GU83E	2019
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COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method 8260B **Sample ID: MB-071404**
Page 1 of 2 **METHOD BLANK**

Lab Sample ID: MB-071404 QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized: Date Sampled: NA
Reported: 07/19/04 Date Received: NA

Instrument/Analyst: FINN3/LJR Sample Amount: 5.00 mL
Date Analyzed: 07/14/04 11:43 Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result
74-87-3	Chloromethane	1.0	< 1.0 U
74-83-9	Bromomethane	1.0	< 1.0 U
75-01-4	Vinyl Chloride	1.0	< 1.0 U
75-00-3	Chloroethane	1.0	< 1.0 U
75-09-2	Methylene Chloride	2.0	< 2.0 U
67-64-1	Acetone	5.0	< 5.0 U
75-15-0	Carbon Disulfide	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0 U
67-66-3	Chloroform	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	1.0	< 1.0 U
78-93-3	2-Butanone	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	1.0	< 1.0 U
108-05-4	Vinyl Acetate	5.0	< 5.0 U
75-27-4	Bromodichloromethane	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0 U
79-01-6	Trichloroethene	1.0	< 1.0 U
124-48-1	Dibromochloromethane	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0 U
71-43-2	Benzene	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0 U
75-25-2	Bromoform	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0 U
591-78-6	2-Hexanone	5.0	< 5.0 U
127-18-4	Tetrachloroethene	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
108-90-7	Chlorobenzene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
100-42-5	Styrene	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	2.0	< 2.0 U
1330-20-7	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
107-02-8	Acrolein	50	< 50 U
74-88-4	Methyl Iodide	1.0	< 1.0 U
74-96-4	Bromoethane	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	1.0	< 1.0 U
74-95-3	Dibromomethane	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0 U

000067

Lab Sample ID: MB-071404 QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 11:43

CAS Number	Analyte	RL	Result
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	1.0	< 1.0 U
74-97-5	Bromochloromethane	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	1.0	< 1.0 U
98-82-8	Isopropylbenzene	1.0	< 1.0 U
103-65-1	n-Propylbenzene	1.0	< 1.0 U
108-86-1	Bromobenzene	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	1.0	< 1.0 U
104-51-8	n-Butylbenzene	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0 U
91-20-3	Naphthalene	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	119%
Bromofluorobenzene	111%
d4-1,2-Dichlorobenzene	113%

Semivolatiles

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	DXN	TOT OUT
MB-070704	74.1%	71.1%	96.9%	52.7%	66.1%	66.7%	90.9%	71.6%	56.1%	0
LCS-070704	74.6%	74.9%	96.1%	59.1%	73.9%	67.9%	91.1%	74.3%	63.6%	0
LDW-SP-48-C-U	68.3%	69.8%	92.8%	54.4%	62.0%	62.5%	87.7%	65.3%	55.2%	0
LDW-SP-48-C-F	72.2%	74.2%	98.3%	61.5%	66.4%	67.3%	94.3%	71.1%	60.0%	0
LDW-SP-54-C-U	68.8%	76.2%	93.5%	54.8%	63.6%	59.8%	103%	67.5%	47.5%	0
LDW-SP-54-C-F	75.6%	76.5%	94.1%	58.1%	67.2%	65.7%	104%	72.7%	52.0%	0
LDW-SP-82-C-U	68.4%	67.6%	95.3%	52.8%	59.8%	60.5%	94.9%	64.3%	51.4%	0
LDW-SP-82-C-F	74.4%	72.4%	95.0%	56.0%	67.2%	66.9%	95.1%	72.1%	60.9%	0
LDW-SP-82-C-FD-U	71.1%	68.8%	93.0%	54.0%	63.0%	64.3%	89.5%	67.5%	55.6%	0
LDW-SP-82-C-FD-F	81.2%	77.6%	93.1%	58.6%	74.4%	73.5%	99.0%	78.7%	64.8%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(44-107)	(38-111)
(FBP) = 2-Fluorobiphenyl	(43-99)	(30-109)
(TPH) = d14-p-Terphenyl	(44-123)	(37-113)
(DCB) = d4-1,2-Dichlorobenzene	(36-88)	(35-88)
(PHL) = d5-Phenol	(47-101)	(42-98)
(2FP) = 2-Fluorophenol	(44-102)	(40-99)
(TBP) = 2,4,6-Tribromophenol	(38-116)	(27-136)
(2CP) = d4-2-Chlorophenol	(50-102)	(47-101)
(DXN) = d8-1,4-Dioxane	(30-160)	(30-160)

Prep Method: SW3520C
Log Number Range: 04-10230 to 04-10237

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	DXN	TOT OUT
MB-070704	74.1%	71.1%	96.9%	52.7%	66.1%	66.7%	90.9%	71.6%	56.1%	0
LCS-070704	74.6%	74.9%	96.1%	59.1%	73.9%	67.9%	91.1%	74.3%	63.6%	0
LDW-SP-62-C-F	81.0%	78.4%	98.0%	62.1%	73.5%	74.2%	99.8%	78.9%	65.2%	0
LDW-SP-61-C-U	75.0%	67.2%	91.8%	48.6%	61.7%	64.6%	92.4%	72.5%	55.8%	0
LDW-SP-61-C-F	72.0%	71.0%	89.6%	50.1%	61.8%	62.8%	94.9%	68.3%	54.0%	0
LDW-SP-61-C-F DL	D	D	D	D	D	D	D	D	D	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(44-107)	(38-111)
(FBP) = 2-Fluorobiphenyl	(43-99)	(30-109)
(TPH) = d14-p-Terphenyl	(44-123)	(37-113)
(DCB) = d4-1,2-Dichlorobenzene	(36-88)	(35-88)
(PHL) = d5-Phenol	(47-101)	(42-98)
(2FP) = 2-Fluorophenol	(44-102)	(40-99)
(TBP) = 2,4,6-Tribromophenol	(38-116)	(27-136)
(2CP) = d4-2-Chlorophenol	(50-102)	(47-101)
(DXN) = d8-1,4-Dioxane	(30-160)	(30-160)

Prep Method: SW3520C
Log Number Range: 04-10430 to 04-10432

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	DXN	TOT OUT
MB-070704	74.1%	71.1%	96.9%	52.7%	66.1%	66.7%	90.9%	71.6%	56.1%	0
LCS-070704	74.6%	74.9%	96.1%	59.1%	73.9%	67.9%	91.1%	74.3%	63.6%	0
LDW-SP-75-C-U	64.8%	58.0%	88.7%	42.0%	57.3%	58.8%	86.5%	63.6%	51.6%	0
LDW-SP-75-C-U MS	79.0%	72.3%	97.3%	57.4%	76.6%	70.9%	91.6%	78.7%	62.3%	0
LDW-SP-75-C-U MSD	68.4%	63.2%	90.5%	46.4%	66.7%	61.8%	84.6%	66.3%	54.6%	0
LDW-SP-75-C-F	72.5%	69.6%	88.5%	52.0%	67.7%	66.7%	88.8%	71.7%	61.3%	0
LDW-SP-75-C-F MS	76.1%	72.2%	95.3%	55.4%	72.2%	68.6%	95.1%	72.8%	55.4%	0
LDW-SP-75-C-F MSD	79.0%	73.3%	88.9%	55.8%	77.0%	73.7%	90.1%	77.8%	63.9%	0
LDW-SP-64-RB-S-U	76.7%	69.9%	94.0%	56.4%	66.5%	68.2%	88.2%	72.0%	58.5%	0
LDW-SP-64-RB-MP-U	79.4%	73.9%	97.9%	60.1%	62.6%	69.4%	93.8%	78.2%	52.8%	0
LDW-SP-64-C-U	73.7%	68.9%	90.0%	50.5%	67.9%	68.9%	92.0%	72.2%	61.7%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(44-107)	(38-111)
(FBP) = 2-Fluorobiphenyl	(43-99)	(30-109)
(TPH) = d14-p-Terphenyl	(44-123)	(37-113)
(DCB) = d4-1,2-Dichlorobenzene	(36-88)	(35-88)
(PHL) = d5-Phenol	(47-101)	(42-98)
(2FP) = 2-Fluorophenol	(44-102)	(40-99)
(TBP) = 2,4,6-Tribromophenol	(38-116)	(27-136)
(2CP) = d4-2-Chlorophenol	(50-102)	(47-101)
(DXN) = d8-1,4-Dioxane	(30-160)	(30-160)

Prep Method: SW3520C
Log Number Range: 04-10461 to 04-10465

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-48-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45A
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 12:16
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-48-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45A QC Report No: GU45-Windward Environmental
LIMS ID: 04-10230 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 12:16

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**3.0 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.3%	2-Fluorobiphenyl	69.8%
d14-p-Terphenyl	92.8%	d4-1,2-Dichlorobenzene	54.4%
d5-Phenol	62.0%	2-Fluorophenol	62.5%
2,4,6-Tribromophenol	87.7%	d4-2-Chlorophenol	65.3%
d8-1,4-Dioxane	55.2%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS

Sample ID: LDW-SP-48-C-F
SAMPLE

Lab Sample ID: GU45B
LIMS ID: 04-10231
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 12:48
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-48-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45B QC Report No: GU45-Windward Environmental
LIMS ID: 04-10231 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 12:48

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**2.2 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.2%	2-Fluorobiphenyl	74.2%
d14-p-Terphenyl	98.3%	d4-1,2-Dichlorobenzene	61.5%
d5-Phenol	66.4%	2-Fluorophenol	67.3%
2,4,6-Tribromophenol	94.3%	d4-2-Chlorophenol	71.1%
d8-1,4-Dioxane	60.0%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-54-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 13:19
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	**1,3-Dichlorobenzene**	**1.0**	**3.7**
106-46-7	**1,4-Dichlorobenzene**	**1.0**	**4.0**
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-54-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45C QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 13:19

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.0 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.8%	2-Fluorobiphenyl	76.2%
d14-p-Terphenyl	93.5%	d4-1,2-Dichlorobenzene	54.8%
d5-Phenol	63.6%	2-Fluorophenol	59.8%
2,4,6-Tribromophenol	103%	d4-2-Chlorophenol	67.5%
d8-1,4-Dioxane	47.5%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-54-C-F**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45D
LIMS ID: 04-10233
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 13:51
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	**1,3-Dichlorobenzene**	**1.0**	**3.6**
106-46-7	**1,4-Dichlorobenzene**	**1.0**	**3.9**
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-54-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45D QC Report No: GU45-Windward Environmental
LIMS ID: 04-10233 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 13:51

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	75.6%	2-Fluorobiphenyl	76.5%
d14-p-Terphenyl	94.1%	d4-1,2-Dichlorobenzene	58.1%
d5-Phenol	67.2%	2-Fluorophenol	65.7%
2,4,6-Tribromophenol	104%	d4-2-Chlorophenol	72.7%
d8-1,4-Dioxane	52.0%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-82-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU45E
LIMS ID: 04-10234
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 14:23
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-82-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45E QC Report No: GU45-Windward Environmental
LIMS ID: 04-10234 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 14:23

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.4%	2-Fluorobiphenyl	67.6%
d14-p-Terphenyl	95.3%	d4-1,2-Dichlorobenzene	52.8%
d5-Phenol	59.8%	2-Fluorophenol	60.5%
2,4,6-Tribromophenol	94.9%	d4-2-Chlorophenol	64.3%
d8-1,4-Dioxane	51.4%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-82-C-F
SAMPLE

Lab Sample ID: GU45F
LIMS ID: 04-10235
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 15:27
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-82-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45F QC Report No: GU45-Windward Environmental
LIMS ID: 04-10235 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 15:27

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	74.4%	2-Fluorobiphenyl	72.4%
d14-p-Terphenyl	95.0%	d4-1,2-Dichlorobenzene	56.0%
d5-Phenol	67.2%	2-Fluorophenol	66.9%
2,4,6-Tribromophenol	95.1%	d4-2-Chlorophenol	72.1%
d8-1,4-Dioxane	60.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS

Sample ID: LDW-SP-82-C-FD-U
SAMPLE

Lab Sample ID: GU45G
LIMS ID: 04-10236
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 15:58
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-82-C-FD-U**
 SAMPLE

Lab Sample ID: GU45G QC Report No: GU45-Windward Environmental
LIMS ID: 04-10236 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 15:58

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	71.1%	2-Fluorobiphenyl	68.8%
d14-p-Terphenyl	93.0%	d4-1,2-Dichlorobenzene	54.0%
d5-Phenol	63.0%	2-Fluorophenol	64.3%
2,4,6-Tribromophenol	89.5%	d4-2-Chlorophenol	67.5%
d8-1,4-Dioxane	55.6%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-82-C-FD-F
SAMPLE

Lab Sample ID: GU45H
LIMS ID: 04-10237
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 16:30
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-82-C-FD-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU45H QC Report No: GU45-Windward Environmental
LIMS ID: 04-10237 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 16:30

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	**Di-n-Butylphthalate**	**1.0**	**3.0**
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**4.4 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	81.2%	2-Fluorobiphenyl	77.6%
d14-p-Terphenyl	93.1%	d4-1,2-Dichlorobenzene	58.6%
d5-Phenol	74.4%	2-Fluorophenol	73.5%
2,4,6-Tribromophenol	99.0%	d4-2-Chlorophenol	78.7%
d8-1,4-Dioxane	64.8%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-62-C-F**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU76A
LIMS ID: 04-10430
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 17:02
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-62-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU76A QC Report No: GU76-Windward Environmental
LIMS ID: 04-10430 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 17:02

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.0 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	81.0%	2-Fluorobiphenyl	78.4%
d14-p-Terphenyl	98.0%	d4-1,2-Dichlorobenzene	62.1%
d5-Phenol	73.5%	2-Fluorophenol	74.2%
2,4,6-Tribromophenol	99.8%	d4-2-Chlorophenol	78.9%
d8-1,4-Dioxane	65.2%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-61-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU76B
LIMS ID: 04-10431
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 17:34
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-61-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU76B QC Report No: GU76-Windward Environmental
LIMS ID: 04-10431 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 17:34

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**3.1 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	75.0%	2-Fluorobiphenyl	67.2%
d14-p-Terphenyl	91.8%	d4-1,2-Dichlorobenzene	48.6%
d5-Phenol	61.7%	2-Fluorophenol	64.6%
2,4,6-Tribromophenol	92.4%	d4-2-Chlorophenol	72.5%
d8-1,4-Dioxane	55.8%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-61-C-F**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU76C
LIMS ID: 04-10432
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 14:55
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-61-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU76C QC Report No: GU76-Windward Environmental
LIMS ID: 04-10432 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 14:55

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	**Di-n-Butylphthalate**	**1.0**	**3.8**
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**2,300 E**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.0%	2-Fluorobiphenyl	71.0%
d14-p-Terphenyl	89.6%	d4-1,2-Dichlorobenzene	50.1%
d5-Phenol	61.8%	2-Fluorophenol	62.8%
2,4,6-Tribromophenol	94.9%	d4-2-Chlorophenol	68.3%
d8-1,4-Dioxane	54.0%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-61-C-F**
Page 1 of 2 **DILUTION**

Lab Sample ID: GU76C
LIMS ID: 04-10432
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 13:19
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 100

CAS Number	Analyte	RL	Result
108-95-2	Phenol	200	< 200 U
111-44-4	Bis-(2-Chloroethyl) Ether	200	< 200 U
95-57-8	2-Chlorophenol	100	< 100 U
541-73-1	1,3-Dichlorobenzene	100	< 100 U
106-46-7	1,4-Dichlorobenzene	100	< 100 U
100-51-6	Benzyl Alcohol	500	< 500 U
95-50-1	1,2-Dichlorobenzene	100	< 100 U
95-48-7	2-Methylphenol	100	< 100 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	100	< 100 U
106-44-5	4-Methylphenol	100	< 100 U
621-64-7	N-Nitroso-Di-N-Propylamine	200	< 200 U
67-72-1	Hexachloroethane	200	< 200 U
98-95-3	Nitrobenzene	100	< 100 U
78-59-1	Isophorone	100	< 100 U
88-75-5	2-Nitrophenol	500	< 500 U
105-67-9	2,4-Dimethylphenol	300	< 300 U
65-85-0	Benzoic Acid	1000	< 1,000 U
111-91-1	bis(2-Chloroethoxy) Methane	100	< 100 U
120-83-2	2,4-Dichlorophenol	300	< 300 U
120-82-1	1,2,4-Trichlorobenzene	100	< 100 U
91-20-3	Naphthalene	100	< 100 U
106-47-8	4-Chloroaniline	300	< 300 U
87-68-3	Hexachlorobutadiene	200	< 200 U
59-50-7	4-Chloro-3-methylphenol	200	< 200 U
91-57-6	2-Methylnaphthalene	100	< 100 U
77-47-4	Hexachlorocyclopentadiene	500	< 500 U
88-06-2	2,4,6-Trichlorophenol	500	< 500 U
95-95-4	2,4,5-Trichlorophenol	500	< 500 U
91-58-7	2-Chloronaphthalene	100	< 100 U
88-74-4	2-Nitroaniline	500	< 500 U
131-11-3	Dimethylphthalate	100	< 100 U
208-96-8	Acenaphthylene	100	< 100 U
99-09-2	3-Nitroaniline	600	< 600 U
83-32-9	Acenaphthene	100	< 100 U
51-28-5	2,4-Dinitrophenol	2500	< 2,500 U
100-02-7	4-Nitrophenol	500	< 500 U
132-64-9	Dibenzofuran	100	< 100 U
606-20-2	2,6-Dinitrotoluene	500	< 500 U
121-14-2	2,4-Dinitrotoluene	500	< 500 U
84-66-2	Diethylphthalate	100	< 100 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-61-C-F**
Page 2 of 2 **DILUTION**

Lab Sample ID: GU76C QC Report No: GU76-Windward Environmental
LIMS ID: 04-10432 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 13:19

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	100	< 100 U
86-73-7	Fluorene	100	< 100 U
100-01-6	4-Nitroaniline	500	< 500 U
534-52-1	4,6-Dinitro-2-Methylphenol	1500	< 1,500 U
86-30-6	N-Nitrosodiphenylamine	100	< 100 U
101-55-3	4-Bromophenyl-phenylether	100	< 100 U
118-74-1	Hexachlorobenzene	100	< 100 U
87-86-5	Pentachlorophenol	500	< 500 U
85-01-8	Phenanthrene	100	< 100 U
86-74-8	Carbazole	100	< 100 U
120-12-7	Anthracene	100	< 100 U
84-74-2	Di-n-Butylphthalate	100	< 100 U
206-44-0	Fluoranthene	100	< 100 U
129-00-0	Pyrene	100	< 100 U
85-68-7	Butylbenzylphthalate	100	< 100 U
91-94-1	3,3'-Dichlorobenzidine	500	< 500 U
56-55-3	Benzo(a)anthracene	100	< 100 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**100**	**2,600 B**
218-01-9	Chrysene	100	< 100 U
117-84-0	Di-n-Octyl phthalate	100	< 100 U
205-99-2	Benzo(b)fluoranthene	100	< 100 U
207-08-9	Benzo(k)fluoranthene	100	< 100 U
50-32-8	Benzo(a)pyrene	100	< 100 U
193-39-5	Indeno(1,2,3-cd)pyrene	100	< 100 U
53-70-3	Dibenz(a,h)anthracene	100	< 100 U
191-24-2	Benzo(g,h,i)perylene	100	< 100 U
123-91-1	1,4-Dioxane	100	< 100 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	D	2-Fluorobiphenyl	D
d14-p-Terphenyl	D	d4-1,2-Dichlorobenzene	D
d5-Phenol	D	2-Fluorophenol	D
2,4,6-Tribromophenol	D	d4-2-Chlorophenol	D
d8-1,4-Dioxane	D		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-U**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 18:06
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU83A QC Report No: GU83-Windward Environmental
LIMS ID: 04-10461 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/14/04 18:06

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.8 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.8%	2-Fluorobiphenyl	58.0%
d14-p-Terphenyl	88.7%	d4-1,2-Dichlorobenzene	42.0%
d5-Phenol	57.3%	2-Fluorophenol	58.8%
2,4,6-Tribromophenol	86.5%	d4-2-Chlorophenol	63.6%
d8-1,4-Dioxane	51.6%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-U**
Page 1 of 2 **MATRIX SPIKE**

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 12:16
Instrument/Analyst: NT6/Van

Sample Amount: 250 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	4.0	---
111-44-4	Bis-(2-Chloroethyl) Ether	4.0	< 4.0 U
95-57-8	2-Chlorophenol	2.0	---
541-73-1	1,3-Dichlorobenzene	2.0	< 2.0 U
106-46-7	1,4-Dichlorobenzene	2.0	---
100-51-6	Benzyl Alcohol	10	< 10 U
95-50-1	1,2-Dichlorobenzene	2.0	< 2.0 U
95-48-7	2-Methylphenol	2.0	< 2.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	2.0	< 2.0 U
106-44-5	4-Methylphenol	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	4.0	---
67-72-1	Hexachloroethane	4.0	< 4.0 U
98-95-3	Nitrobenzene	2.0	< 2.0 U
78-59-1	Isophorone	2.0	< 2.0 U
88-75-5	2-Nitrophenol	10	< 10 U
105-67-9	2,4-Dimethylphenol	6.0	< 6.0 U
65-85-0	Benzoic Acid	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	2.0	< 2.0 U
120-83-2	2,4-Dichlorophenol	6.0	< 6.0 U
120-82-1	1,2,4-Trichlorobenzene	2.0	---
91-20-3	Naphthalene	2.0	< 2.0 U
106-47-8	4-Chloroaniline	6.0	< 6.0 U
87-68-3	Hexachlorobutadiene	4.0	< 4.0 U
59-50-7	4-Chloro-3-methylphenol	4.0	---
91-57-6	2-Methylnaphthalene	2.0	< 2.0 U
77-47-4	Hexachlorocyclopentadiene	10	< 10 U
88-06-2	2,4,6-Trichlorophenol	10	< 10 U
95-95-4	2,4,5-Trichlorophenol	10	< 10 U
91-58-7	2-Chloronaphthalene	2.0	< 2.0 U
88-74-4	2-Nitroaniline	10	< 10 U
131-11-3	Dimethylphthalate	2.0	< 2.0 U
208-96-8	Acenaphthylene	2.0	< 2.0 U
99-09-2	3-Nitroaniline	12	< 12 U
83-32-9	Acenaphthene	2.0	---
51-28-5	2,4-Dinitrophenol	50	< 50 U
100-02-7	4-Nitrophenol	10	---
132-64-9	Dibenzofuran	2.0	< 2.0 U
606-20-2	2,6-Dinitrotoluene	10	< 10 U
121-14-2	2,4-Dinitrotoluene	10	---
84-66-2	Diethylphthalate	2.0	< 2.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-U**
 MATRIX SPIKE

Lab Sample ID: GU83A QC Report No: GU83-Windward Environmental
LIMS ID: 04-10461 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 12:16

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	2.0	< 2.0 U
86-73-7	Fluorene	2.0	< 2.0 U
100-01-6	4-Nitroaniline	10	< 10 U
534-52-1	4,6-Dinitro-2-Methylphenol	30	< 30 U
86-30-6	N-Nitrosodiphenylamine	2.0	< 2.0 U
101-55-3	4-Bromophenyl-phenylether	2.0	< 2.0 U
118-74-1	Hexachlorobenzene	2.0	< 2.0 U
87-86-5	Pentachlorophenol	10	---
85-01-8	Phenanthrene	2.0	< 2.0 U
86-74-8	Carbazole	2.0	< 2.0 U
120-12-7	Anthracene	2.0	< 2.0 U
84-74-2	Di-n-Butylphthalate	2.0	< 2.0 U
206-44-0	Fluoranthene	2.0	< 2.0 U
129-00-0	Pyrene	2.0	---
85-68-7	Butylbenzylphthalate	2.0	< 2.0 U
91-94-1	3,3'-Dichlorobenzidine	10	< 10 U
56-55-3	Benzo(a)anthracene	2.0	< 2.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.0**	**4.6 B**
218-01-9	Chrysene	2.0	< 2.0 U
117-84-0	Di-n-Octyl phthalate	2.0	< 2.0 U
205-99-2	Benzo(b)fluoranthene	2.0	< 2.0 U
207-08-9	Benzo(k)fluoranthene	2.0	< 2.0 U
50-32-8	Benzo(a)pyrene	2.0	< 2.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	< 2.0 U
53-70-3	Dibenz(a,h)anthracene	2.0	< 2.0 U
191-24-2	Benzo(g,h,i)perylene	2.0	< 2.0 U
123-91-1	1,4-Dioxane	2.0	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	79.0%	2-Fluorobiphenyl	72.3%
d14-p-Terphenyl	97.3%	d4-1,2-Dichlorobenzene	57.4%
d5-Phenol	76.6%	2-Fluorophenol	70.9%
2,4,6-Tribromophenol	91.6%	d4-2-Chlorophenol	78.7%
d8-1,4-Dioxane	62.3%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-75-C-U
MATRIX SPIKE DUP

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 12:47
Instrument/Analyst: NT6/Van

Sample Amount: 250 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	4.0	---
111-44-4	Bis-(2-Chloroethyl) Ether	4.0	< 4.0 U
95-57-8	2-Chlorophenol	2.0	---
541-73-1	1,3-Dichlorobenzene	2.0	< 2.0 U
106-46-7	1,4-Dichlorobenzene	2.0	---
100-51-6	Benzyl Alcohol	10	< 10 U
95-50-1	1,2-Dichlorobenzene	2.0	< 2.0 U
95-48-7	2-Methylphenol	2.0	< 2.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	2.0	< 2.0 U
106-44-5	4-Methylphenol	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	4.0	---
67-72-1	Hexachloroethane	4.0	< 4.0 U
98-95-3	Nitrobenzene	2.0	< 2.0 U
78-59-1	Isophorone	2.0	< 2.0 U
88-75-5	2-Nitrophenol	10	< 10 U
105-67-9	2,4-Dimethylphenol	6.0	< 6.0 U
65-85-0	Benzoic Acid	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	2.0	< 2.0 U
120-83-2	2,4-Dichlorophenol	6.0	< 6.0 U
120-82-1	1,2,4-Trichlorobenzene	2.0	---
91-20-3	Naphthalene	2.0	< 2.0 U
106-47-8	4-Chloroaniline	6.0	< 6.0 U
87-68-3	Hexachlorobutadiene	4.0	< 4.0 U
59-50-7	4-Chloro-3-methylphenol	4.0	---
91-57-6	2-Methylnaphthalene	2.0	< 2.0 U
77-47-4	Hexachlorocyclopentadiene	10	< 10 U
88-06-2	2,4,6-Trichlorophenol	10	< 10 U
95-95-4	2,4,5-Trichlorophenol	10	< 10 U
91-58-7	2-Chloronaphthalene	2.0	< 2.0 U
88-74-4	2-Nitroaniline	10	< 10 U
131-11-3	Dimethylphthalate	2.0	< 2.0 U
208-96-8	Acenaphthylene	2.0	< 2.0 U
99-09-2	3-Nitroaniline	12	< 12 U
83-32-9	Acenaphthene	2.0	---
51-28-5	2,4-Dinitrophenol	50	< 50 U
100-02-7	4-Nitrophenol	10	---
132-64-9	Dibenzofuran	2.0	< 2.0 U
606-20-2	2,6-Dinitrotoluene	10	< 10 U
121-14-2	2,4-Dinitrotoluene	10	---
84-66-2	Diethylphthalate	2.0	< 2.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-U**
 MATRIX SPIKE DUP

Lab Sample ID: GU83A QC Report No: GU83-Windward Environmental
LIMS ID: 04-10461 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 12:47

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	2.0	< 2.0 U
86-73-7	Fluorene	2.0	< 2.0 U
100-01-6	4-Nitroaniline	10	< 10 U
534-52-1	4,6-Dinitro-2-Methylphenol	30	< 30 U
86-30-6	N-Nitrosodiphenylamine	2.0	< 2.0 U
101-55-3	4-Bromophenyl-phenylether	2.0	< 2.0 U
118-74-1	Hexachlorobenzene	2.0	< 2.0 U
87-86-5	Pentachlorophenol	10	---
85-01-8	Phenanthrene	2.0	< 2.0 U
86-74-8	Carbazole	2.0	< 2.0 U
120-12-7	Anthracene	2.0	< 2.0 U
84-74-2	Di-n-Butylphthalate	2.0	< 2.0 U
206-44-0	Fluoranthene	2.0	< 2.0 U
129-00-0	Pyrene	2.0	---
85-68-7	Butylbenzylphthalate	2.0	< 2.0 U
91-94-1	3,3'-Dichlorobenzidine	10	< 10 U
56-55-3	Benzo(a)anthracene	2.0	< 2.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.0**	**8.0 B**
218-01-9	Chrysene	2.0	< 2.0 U
117-84-0	Di-n-Octyl phthalate	2.0	< 2.0 U
205-99-2	Benzo(b)fluoranthene	2.0	< 2.0 U
207-08-9	Benzo(k)fluoranthene	2.0	< 2.0 U
50-32-8	Benzo(a)pyrene	2.0	< 2.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	< 2.0 U
53-70-3	Dibenz(a,h)anthracene	2.0	< 2.0 U
191-24-2	Benzo(g,h,i)perylene	2.0	< 2.0 U
123-91-1	1,4-Dioxane	2.0	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.4%	2-Fluorobiphenyl	63.2%
d14-p-Terphenyl	90.5%	d4-1,2-Dichlorobenzene	46.4%
d5-Phenol	66.7%	2-Fluorophenol	61.8%
2,4,6-Tribromophenol	84.6%	d4-2-Chlorophenol	66.3%
d8-1,4-Dioxane	54.6%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-F**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 09:04
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU83B QC Report No: GU83-Windward Environmental
LIMS ID: 04-10462 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 09:04

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.7 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.5%	2-Fluorobiphenyl	69.6%
d14-p-Terphenyl	88.5%	d4-1,2-Dichlorobenzene	52.0%
d5-Phenol	67.7%	2-Fluorophenol	66.7%
2,4,6-Tribromophenol	88.8%	d4-2-Chlorophenol	71.7%
d8-1,4-Dioxane	61.3%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-F**
Page 1 of 2 **MATRIX SPIKE**

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 09:37
Instrument/Analyst: NT6/Van

Sample Amount: 250 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	4.0	---
111-44-4	Bis-(2-Chloroethyl) Ether	4.0	< 4.0 U
95-57-8	2-Chlorophenol	2.0	---
541-73-1	1,3-Dichlorobenzene	2.0	< 2.0 U
106-46-7	1,4-Dichlorobenzene	2.0	---
100-51-6	Benzyl Alcohol	10	< 10 U
95-50-1	1,2-Dichlorobenzene	2.0	< 2.0 U
95-48-7	2-Methylphenol	2.0	< 2.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	2.0	< 2.0 U
106-44-5	4-Methylphenol	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	4.0	---
67-72-1	Hexachloroethane	4.0	< 4.0 U
98-95-3	Nitrobenzene	2.0	< 2.0 U
78-59-1	Isophorone	2.0	< 2.0 U
88-75-5	2-Nitrophenol	10	< 10 U
105-67-9	2,4-Dimethylphenol	6.0	< 6.0 U
65-85-0	Benzoic Acid	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	2.0	< 2.0 U
120-83-2	2,4-Dichlorophenol	6.0	< 6.0 U
120-82-1	1,2,4-Trichlorobenzene	2.0	---
91-20-3	Naphthalene	2.0	< 2.0 U
106-47-8	4-Chloroaniline	6.0	< 6.0 U
87-68-3	Hexachlorobutadiene	4.0	< 4.0 U
59-50-7	4-Chloro-3-methylphenol	4.0	---
91-57-6	2-Methylnaphthalene	2.0	< 2.0 U
77-47-4	Hexachlorocyclopentadiene	10	< 10 U
88-06-2	2,4,6-Trichlorophenol	10	< 10 U
95-95-4	2,4,5-Trichlorophenol	10	< 10 U
91-58-7	2-Chloronaphthalene	2.0	< 2.0 U
88-74-4	2-Nitroaniline	10	< 10 U
131-11-3	Dimethylphthalate	2.0	< 2.0 U
208-96-8	Acenaphthylene	2.0	< 2.0 U
99-09-2	3-Nitroaniline	12	< 12 U
83-32-9	Acenaphthene	2.0	---
51-28-5	2,4-Dinitrophenol	50	< 50 U
100-02-7	4-Nitrophenol	10	---
132-64-9	Dibenzofuran	2.0	< 2.0 U
606-20-2	2,6-Dinitrotoluene	10	< 10 U
121-14-2	2,4-Dinitrotoluene	10	---
84-66-2	Diethylphthalate	2.0	< 2.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-F**
Page 2 of 2 **MATRIX SPIKE**

Lab Sample ID: GU83B QC Report No: GU83-Windward Environmental
LIMS ID: 04-10462 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 09:37

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	2.0	< 2.0 U
86-73-7	Fluorene	2.0	< 2.0 U
100-01-6	4-Nitroaniline	10	< 10 U
534-52-1	4,6-Dinitro-2-Methylphenol	30	< 30 U
86-30-6	N-Nitrosodiphenylamine	2.0	< 2.0 U
101-55-3	4-Bromophenyl-phenylether	2.0	< 2.0 U
118-74-1	Hexachlorobenzene	2.0	< 2.0 U
87-86-5	Pentachlorophenol	10	---
85-01-8	Phenanthrene	2.0	< 2.0 U
86-74-8	Carbazole	2.0	< 2.0 U
120-12-7	Anthracene	2.0	< 2.0 U
84-74-2	Di-n-Butylphthalate	2.0	< 2.0 U
206-44-0	Fluoranthene	2.0	< 2.0 U
129-00-0	Pyrene	2.0	---
85-68-7	Butylbenzylphthalate	2.0	< 2.0 U
91-94-1	3,3'-Dichlorobenzidine	10	< 10 U
56-55-3	Benzo(a)anthracene	2.0	< 2.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.0**	**4.4 B**
218-01-9	Chrysene	2.0	< 2.0 U
117-84-0	Di-n-Octyl phthalate	2.0	< 2.0 U
205-99-2	Benzo(b)fluoranthene	2.0	< 2.0 U
207-08-9	Benzo(k)fluoranthene	2.0	< 2.0 U
50-32-8	Benzo(a)pyrene	2.0	< 2.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	< 2.0 U
53-70-3	Dibenz(a,h)anthracene	2.0	< 2.0 U
191-24-2	Benzo(g,h,i)perylene	2.0	< 2.0 U
123-91-1	1,4-Dioxane	2.0	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	76.1%	2-Fluorobiphenyl	72.2%
d14-p-Terphenyl	95.3%	d4-1,2-Dichlorobenzene	55.4%
d5-Phenol	72.2%	2-Fluorophenol	68.6%
2,4,6-Tribromophenol	95.1%	d4-2-Chlorophenol	72.8%
d8-1,4-Dioxane	55.4%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-75-C-F
MATRIX SPIKE DUP

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 10:09
Instrument/Analyst: NT6/Van

Sample Amount: 225 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	4.4	---
111-44-4	Bis-(2-Chloroethyl) Ether	4.4	< 4.4 U
95-57-8	2-Chlorophenol	2.2	---
541-73-1	1,3-Dichlorobenzene	2.2	< 2.2 U
106-46-7	1,4-Dichlorobenzene	2.2	---
100-51-6	Benzyl Alcohol	11	< 11 U
95-50-1	1,2-Dichlorobenzene	2.2	< 2.2 U
95-48-7	2-Methylphenol	2.2	< 2.2 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	2.2	< 2.2 U
106-44-5	4-Methylphenol	2.2	< 2.2 U
621-64-7	N-Nitroso-Di-N-Propylamine	4.4	---
67-72-1	Hexachloroethane	4.4	< 4.4 U
98-95-3	Nitrobenzene	2.2	< 2.2 U
78-59-1	Isophorone	2.2	< 2.2 U
88-75-5	2-Nitrophenol	11	< 11 U
105-67-9	2,4-Dimethylphenol	6.7	< 6.7 U
65-85-0	Benzoic Acid	22	< 22 U
111-91-1	bis(2-Chloroethoxy) Methane	2.2	< 2.2 U
120-83-2	2,4-Dichlorophenol	6.7	< 6.7 U
120-82-1	1,2,4-Trichlorobenzene	2.2	---
91-20-3	Naphthalene	2.2	< 2.2 U
106-47-8	4-Chloroaniline	6.7	< 6.7 U
87-68-3	Hexachlorobutadiene	4.4	< 4.4 U
59-50-7	4-Chloro-3-methylphenol	4.4	---
91-57-6	2-Methylnaphthalene	2.2	< 2.2 U
77-47-4	Hexachlorocyclopentadiene	11	< 11 U
88-06-2	2,4,6-Trichlorophenol	11	< 11 U
95-95-4	2,4,5-Trichlorophenol	11	< 11 U
91-58-7	2-Chloronaphthalene	2.2	< 2.2 U
88-74-4	2-Nitroaniline	11	< 11 U
131-11-3	Dimethylphthalate	2.2	< 2.2 U
208-96-8	Acenaphthylene	2.2	< 2.2 U
99-09-2	3-Nitroaniline	13	< 13 U
83-32-9	Acenaphthene	2.2	---
51-28-5	2,4-Dinitrophenol	56	< 56 U
100-02-7	4-Nitrophenol	11	---
132-64-9	Dibenzofuran	2.2	< 2.2 U
606-20-2	2,6-Dinitrotoluene	11	< 11 U
121-14-2	2,4-Dinitrotoluene	11	---
84-66-2	Diethylphthalate	2.2	< 2.2 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-75-C-F**
Page 2 of 2 **MATRIX SPIKE DUP**

Lab Sample ID: GU83B QC Report No: GU83-Windward Environmental
LIMS ID: 04-10462 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 10:09

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	2.2	< 2.2 U
86-73-7	Fluorene	2.2	< 2.2 U
100-01-6	4-Nitroaniline	11	< 11 U
534-52-1	4,6-Dinitro-2-Methylphenol	33	< 33 U
86-30-6	N-Nitrosodiphenylamine	2.2	< 2.2 U
101-55-3	4-Bromophenyl-phenylether	2.2	< 2.2 U
118-74-1	Hexachlorobenzene	2.2	< 2.2 U
87-86-5	Pentachlorophenol	11	---
85-01-8	Phenanthrene	2.2	< 2.2 U
86-74-8	Carbazole	2.2	< 2.2 U
120-12-7	Anthracene	2.2	< 2.2 U
84-74-2	Di-n-Butylphthalate	2.2	< 2.2 U
206-44-0	Fluoranthene	2.2	< 2.2 U
129-00-0	Pyrene	2.2	---
85-68-7	Butylbenzylphthalate	2.2	< 2.2 U
91-94-1	3,3'-Dichlorobenzidine	11	< 11 U
56-55-3	Benzo(a)anthracene	2.2	< 2.2 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.2**	**6.3 B**
218-01-9	Chrysene	2.2	< 2.2 U
117-84-0	Di-n-Octyl phthalate	2.2	< 2.2 U
205-99-2	Benzo(b)fluoranthene	2.2	< 2.2 U
207-08-9	Benzo(k)fluoranthene	2.2	< 2.2 U
50-32-8	Benzo(a)pyrene	2.2	< 2.2 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.2	< 2.2 U
53-70-3	Dibenz(a,h)anthracene	2.2	< 2.2 U
191-24-2	Benzo(g,h,i)perylene	2.2	< 2.2 U
123-91-1	1,4-Dioxane	2.2	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	79.0%	2-Fluorobiphenyl	73.3%
d14-p-Terphenyl	88.9%	d4-1,2-Dichlorobenzene	55.8%
d5-Phenol	77.0%	2-Fluorophenol	73.7%
2,4,6-Tribromophenol	90.1%	d4-2-Chlorophenol	77.8%
d8-1,4-Dioxane	63.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-64-RB-S-U
SAMPLE

Lab Sample ID: GU83C
LIMS ID: 04-10463
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 10:40
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-64-RB-S-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU83C QC Report No: GU83-Windward Environmental
LIMS ID: 04-10463 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 10:40

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.2 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	76.7%	2-Fluorobiphenyl	69.9%
d14-p-Terphenyl	94.0%	d4-1,2-Dichlorobenzene	56.4%
d5-Phenol	66.5%	2-Fluorophenol	68.2%
2,4,6-Tribromophenol	88.2%	d4-2-Chlorophenol	72.0%
d8-1,4-Dioxane	58.5%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-64-RB-MP-U
SAMPLE

Lab Sample ID: GU83D
LIMS ID: 04-10464
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 11:12
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-64-RB-MP-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU83D QC Report No: GU83-Windward Environmental
LIMS ID: 04-10464 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 11:12

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**2.4 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	79.4%	2-Fluorobiphenyl	73.9%
d14-p-Terphenyl	97.9%	d4-1,2-Dichlorobenzene	60.1%
d5-Phenol	62.6%	2-Fluorophenol	69.4%
2,4,6-Tribromophenol	93.8%	d4-2-Chlorophenol	78.2%
d8-1,4-Dioxane	52.8%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-64-C-U
SAMPLE

Lab Sample ID: GU83E
LIMS ID: 04-10465
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/15/04 11:44
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-64-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU83E QC Report No: GU83-Windward Environmental
LIMS ID: 04-10465 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/15/04 11:44

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.7 B**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	73.7%	2-Fluorobiphenyl	68.9%
d14-p-Terphenyl	90.0%	d4-1,2-Dichlorobenzene	50.5%
d5-Phenol	67.9%	2-Fluorophenol	68.9%
2,4,6-Tribromophenol	92.0%	d4-2-Chlorophenol	72.2%
d8-1,4-Dioxane	61.7%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 1

Sample ID: LDW-SP-75-C-F
MS/MSD

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted MS/MSD: 07/07/04

Sample Amount MS: 250 mL
MSD: 225 mL

Date Analyzed MS: 07/15/04 09:37
MSD: 07/15/04 10:09

Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL

Instrument/Analyst MS: NT6/Van
MSD: NT6/Van

Dilution Factor MS: 1.00
MSD: 1.00

GPC Cleanup: NO

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenol	< 2.0	50.2	75.0	66.9%	60.4	83.3	72.5%	18.4%
2-Chlorophenol	< 1.0	49.2	75.0	65.6%	59.0	83.3	70.8%	18.1%
1,4-Dichlorobenzene	< 1.0	25.6	50.0	51.2%	25.1	55.6	45.1%	2.0%
N-Nitroso-Di-N-Propylamine	< 2.0	33.6	50.0	67.2%	38.1	55.6	68.5%	12.6%
1,2,4-Trichlorobenzene	< 1.0	27.8	50.0	55.6%	27.5	55.6	49.5%	1.1%
4-Chloro-3-methylphenol	< 2.0	59.9	75.0	79.9%	67.7	83.3	81.3%	12.2%
Acenaphthene	< 1.0	37.6	50.0	75.2%	41.2	55.6	74.1%	9.1%
4-Nitrophenol	< 5.0	66.5	75.0	88.7%	69.6	83.3	83.6%	4.6%
2,4-Dinitrotoluene	< 5.0	36.3	50.0	72.6%	39.7	55.6	71.4%	8.9%
Pentachlorophenol	< 5.0	77.0	75.0	103%	82.6	83.3	99.2%	7.0%
Pyrene	< 1.0	44.8	50.0	89.6%	48.0	55.6	86.3%	6.9%
1,4-Dioxane	< 1.0	30.9	50.0	61.8%	36.7	55.6	66.0%	17.2%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 1

Sample ID: LDW-SP-75-C-U
MS/MSD

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted MS/MSD: 07/07/04

Sample Amount MS: 250 mL
MSD: 250 mL

Date Analyzed MS: 07/15/04 12:16
MSD: 07/15/04 12:47

Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL

Instrument/Analyst MS: NT6/Van
MSD: NT6/Van

Dilution Factor MS: 1.00
MSD: 1.00

GPC Cleanup: NO

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenol	< 2.0	51.7	75.0	68.9%	44.9	75.0	59.9%	14.1%
2-Chlorophenol	< 1.0	50.2	75.0	66.9%	42.8	75.0	57.1%	15.9%
1,4-Dichlorobenzene	< 1.0	26.3	50.0	52.6%	21.3	50.0	42.6%	21.0%
N-Nitroso-Di-N-Propylamine	< 2.0	33.1	50.0	66.2%	30.3	50.0	60.6%	8.8%
1,2,4-Trichlorobenzene	< 1.0	27.8	50.0	55.6%	23.2	50.0	46.4%	18.0%
4-Chloro-3-methylphenol	< 2.0	57.9	75.0	77.2%	55.0	75.0	73.3%	5.1%
Acenaphthene	< 1.0	36.3	50.0	72.6%	33.6	50.0	67.2%	7.7%
4-Nitrophenol	< 5.0	57.7	75.0	76.9%	58.6	75.0	78.1%	1.5%
2,4-Dinitrotoluene	< 5.0	33.3	50.0	66.6%	33.2	50.0	66.4%	0.3%
Pentachlorophenol	< 5.0	73.5	75.0	98.0%	72.3	75.0	96.4%	1.6%
Pyrene	< 1.0	44.3	50.0	88.6%	42.8	50.0	85.6%	3.4%
1,4-Dioxane	< 1.0	29.4	50.0	58.8%	31.6	50.0	63.2%	7.2%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 1

Sample ID: LCS-070704
LAB CONTROL

Lab Sample ID: LCS-070704
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 11:44
Instrument/Analyst: NT6/Van
GPC Cleanup: NO

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

Analyte	Lab Control	Spike Added	Recovery
Phenol	24.5	37.5	65.3%
2-Chlorophenol	24.2	37.5	64.5%
1,4-Dichlorobenzene	11.0	25.0	44.0%
N-Nitroso-Di-N-Propylamine	15.8	25.0	63.2%
1,2,4-Trichlorobenzene	11.9	25.0	47.6%
4-Chloro-3-methylphenol	28.3	37.5	75.5%
Acenaphthene	18.2	25.0	72.8%
4-Nitrophenol	29.8	37.5	79.5%
2,4-Dinitrotoluene	17.2	25.0	68.8%
Pentachlorophenol	39.2	37.5	105%
Pyrene	22.6	25.0	90.4%
1,4-Dioxane	16.7	25.0	66.8%

Semivolatile Surrogate Recovery	
d5-Nitrobenzene	74.6%
2-Fluorobiphenyl	74.9%
d14-p-Terphenyl	96.1%
d4-1,2-Dichlorobenzene	59.1%
d5-Phenol	73.9%
2-Fluorophenol	67.9%
2,4,6-Tribromophenol	91.1%
d4-2-Chlorophenol	74.3%
d8-1,4-Dioxane	63.6%

Results reported in µg/L

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO. GU45MBW1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

Lab Code: GU83 Project: LDW-SEEP SAMPLING SDG No.: GU83

Lab File ID: GU45MB Lab Sample ID: GU45MBW1

Instrument ID: NT6 Date Extracted: 07/07/04

Matrix: (soil/water) WATER Date Analyzed: 07/14/04

Level:(low/med) LOW Time Analyzed: 1113

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	GU45LCSW1	GU45LCSW1	GU45SB	07/14/04
02	LDW-SP-48-C-U	GU45A	GU45A	07/14/04
03	LDW-SP-48-C-F	GU45B	GU45B	07/14/04
04	LDW-SP-54-C-U	GU45C	GU45C	07/14/04
05	LDW-SP-54-C-F	GU45D	GU45D	07/14/04
06	LDW-SP-82-C-U	GU45E	GU45E	07/14/04
07	LDW-SP-61-C-F	GU76C	GU76C	07/14/04
08	LDW-SP-82-C-F	GU45F	GU45F	07/14/04
09	LDW-SP-82-C-FD-U	GU45G	GU45G	07/14/04
10	LDW-SP-82-C-FD-F	GU45H	GU45H	07/14/04
11	LDW-SP-62-C-F	GU76A	GU76A	07/14/04
12	LDW-SP-61-C-U	GU76B	GU76B	07/14/04
13	LDW-SP-75-C-U	GU83A	GU83A	07/14/04
14	LDW-SP-75-C-F	GU83B	GU83B	07/15/04
15	LDW-SP-75-C-F MS	GU83BMS	GU83BMS	07/15/04
16	LDW-SP-75-C-F MS	GU83BMSD	GU83BMSD	07/15/04
17	LDW-SP-64-RB-S-U	GU83C	GU83C	07/15/04
18	LDW-SP-64-RB-MP-	GU83D	GU83D	07/15/04
19	LDW-SP-64-C-U	GU83E	GU83E	07/15/04
20	LDW-SP-75-C-U MS	GU83AMS	GU83AMS	07/15/04
21	LDW-SP-75-C-U MS	GU83AMSD	GU83AMSD	07/15/04
22	LDW-SP-61-C-F	GU76C	GU76CDL	07/15/04
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: MB-070704**
Page 1 of 2 **METHOD BLANK**

Lab Sample ID: MB-070704 QC Report No: GU45-Windward Environmental
LIMS ID: 04-10230 Project: LDW Seep Sampling
Matrix: Water
Data Release Authorized:
Reported: 07/15/04 Date Sampled: NA
Date Received: NA

Date Extracted: 07/07/04 Sample Amount: 500 mL
Date Analyzed: 07/14/04 11:13 Final Extract Volume: 0.50 mL
Instrument/Analyst: NT6/Van Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: MB-070704**
 METHOD BLANK

Lab Sample ID: MB-070704 QC Report No: GU45-Windward Environmental
LIMS ID: 04-10230 Project: LDW Seep Sampling
Matrix: Water
Date Analyzed: 07/14/04 11:13

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.2**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	74.1%	2-Fluorobiphenyl	71.1%
d14-p-Terphenyl	96.9%	d4-1,2-Dichlorobenzene	52.7%
d5-Phenol	66.1%	2-Fluorophenol	66.7%
2,4,6-Tribromophenol	90.9%	d4-2-Chlorophenol	71.6%
d8-1,4-Dioxane	56.1%		

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	DXN	TOT OUT
MB-070204	80.0%	71.6%	88.0%	58.4%	75.1%	75.5%	79.7%	79.1%	62.8%	0
LCS-070204	73.5%	70.7%	88.5%	60.3%	74.6%	71.5%	81.5%	75.9%	61.8%	0
LDW-SP-10-C-F	74.4%	71.4%	83.0%	59.2%	68.0%	69.8%	80.9%	74.6%	62.5%	0
LDW-SP-12-C-F	65.4%	64.1%	88.2%	53.1%	60.7%	60.3%	74.2%	65.3%	52.8%	0
LDW-SP-20-C-F	64.9%	65.0%	86.0%	47.1%	60.3%	59.2%	80.1%	64.0%	47.7%	0
LDW-SP-41-C-F	68.9%	62.5%	83.8%	53.9%	62.9%	62.6%	74.3%	67.7%	55.9%	0
LDW-SP-41-C-F MS	68.3%	66.8%	90.4%	50.8%	66.2%	61.6%	82.8%	67.7%	51.8%	0
LDW-SP-41-C-F MSD	76.6%	75.5%	100%	59.6%	70.3%	65.2%	90.6%	74.6%	50.9%	0
LDW-SP-12-C-U	54.5%	51.4%	86.1%	40.5%	50.4%	48.2%	66.6%	53.6%	42.2%	0
LDW-SP-20-C-U	59.2%	58.1%	80.6%	48.8%	54.0%	54.0%	71.2%	57.9%	44.9%	0
LDW-SP-41-C-U	61.4%	56.2%	81.4%	45.0%	57.0%	55.7%	73.1%	61.6%	49.2%	0
LDW-SP-41-C-U MS	69.5%	69.8%	90.1%	51.1%	66.7%	60.8%	83.5%	67.9%	49.0%	0
LDW-SP-41-C-U MSD	78.1%	76.3%	103%	59.9%	77.5%	69.1%	90.3%	77.2%	58.3%	0
LDW-SP-39-C-F	65.3%	64.6%	85.6%	50.3%	60.5%	59.7%	78.9%	64.1%	49.5%	0
LDW-SP-80-C-F	62.6%	63.6%	75.4%	47.6%	61.2%	55.7%	82.6%	63.3%	41.0%	0
LDW-SP-39-C-U	72.5%	67.8%	87.1%	54.8%	65.0%	63.1%	84.9%	69.5%	54.9%	0
LDW-SP-80-C-U	68.2%	66.7%	80.3%	50.0%	64.7%	61.7%	89.4%	67.5%	47.9%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(44-107)	(38-111)
(FBP) = 2-Fluorobiphenyl	(43-99)	(30-109)
(TPH) = d14-p-Terphenyl	(44-123)	(37-113)
(DCB) = d4-1,2-Dichlorobenzene	(36-88)	(35-88)
(PHL) = d5-Phenol	(47-101)	(42-98)
(2FP) = 2-Fluorophenol	(44-102)	(40-99)
(TBP) = 2,4,6-Tribromophenol	(38-116)	(27-136)
(2CP) = d4-2-Chlorophenol	(50-102)	(47-101)
(DXN) = d8-1,4-Dioxane	(30-160)	(30-160)

Prep Method: SW3520C
Log Number Range: 04-10337 to 04-10347

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-10-C-F**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU59A
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 15:00
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-10-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59A QC Report No: GU59-Windward Environmental
LIMS ID: 04-10337 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 15:00

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	74.4%	2-Fluorobiphenyl	71.4%
d14-p-Terphenyl	83.0%	d4-1,2-Dichlorobenzene	59.2%
d5-Phenol	68.0%	2-Fluorophenol	69.8%
2,4,6-Tribromophenol	80.9%	d4-2-Chlorophenol	74.6%
d8-1,4-Dioxane	62.5%		

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-12-C-F
SAMPLE

Lab Sample ID: GU59B
LIMS ID: 04-10338
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 15:32
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-12-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59B QC Report No: GU59-Windward Environmental
LIMS ID: 04-10338 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 15:32

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.4%	2-Fluorobiphenyl	64.1%
d14-p-Terphenyl	88.2%	d4-1,2-Dichlorobenzene	53.1%
d5-Phenol	60.7%	2-Fluorophenol	60.3%
2,4,6-Tribromophenol	74.2%	d4-2-Chlorophenol	65.3%
d8-1,4-Dioxane	52.8%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-20-C-F
SAMPLE

Lab Sample ID: GU59C
LIMS ID: 04-10339
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 16:04
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-20-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59C QC Report No: GU59-Windward Environmental
LIMS ID: 04-10339 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 16:04

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.9%	2-Fluorobiphenyl	65.0%
d14-p-Terphenyl	86.0%	d4-1,2-Dichlorobenzene	47.1%
d5-Phenol	60.3%	2-Fluorophenol	59.2%
2,4,6-Tribromophenol	80.1%	d4-2-Chlorophenol	64.0%
d8-1,4-Dioxane	47.7%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-41-C-F
SAMPLE

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 16:35
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	**Diethylphthalate**	**1.0**	**1.6**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-41-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59D QC Report No: GU59-Windward Environmental
LIMS ID: 04-10340 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 16:35

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.9%	2-Fluorobiphenyl	62.5%
d14-p-Terphenyl	83.8%	d4-1,2-Dichlorobenzene	53.9%
d5-Phenol	62.9%	2-Fluorophenol	62.6%
2,4,6-Tribromophenol	74.3%	d4-2-Chlorophenol	67.7%
d8-1,4-Dioxane	55.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-41-C-F**
Page 1 of 2 **MATRIX SPIKE**

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 17:07
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	---
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	---
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	---
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	---
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	---
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	---
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	---
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	---
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-41-C-F**
Page 2 of 2 **MATRIX SPIKE**

Lab Sample ID: GU59D QC Report No: GU59-Windward Environmental
LIMS ID: 04-10340 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 17:07

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	---
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	---
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.3%	2-Fluorobiphenyl	66.8%
d14-p-Terphenyl	90.4%	d4-1,2-Dichlorobenzene	50.8%
d5-Phenol	66.2%	2-Fluorophenol	61.6%
2,4,6-Tribromophenol	82.8%	d4-2-Chlorophenol	67.7%
d8-1,4-Dioxane	51.8%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-41-C-F
MATRIX SPIKE DUP

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 17:39
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	---
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	---
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	---
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	---
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	---
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	---
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	---
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	---
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-41-C-F**
Page 2 of 2 **MATRIX SPIKE DUP**

Lab Sample ID: GU59D QC Report No: GU59-Windward Environmental
LIMS ID: 04-10340 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 17:39

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	---
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	---
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	76.6%	2-Fluorobiphenyl	75.5%
d14-p-Terphenyl	100%	d4-1,2-Dichlorobenzene	59.6%
d5-Phenol	70.3%	2-Fluorophenol	65.2%
2,4,6-Tribromophenol	90.6%	d4-2-Chlorophenol	74.6%
d8-1,4-Dioxane	50.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-12-C-U
SAMPLE

Lab Sample ID: GU59E
LIMS ID: 04-10341
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 18:11
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-12-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59E QC Report No: GU59-Windward Environmental
LIMS ID: 04-10341 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 18:11

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	54.5%	2-Fluorobiphenyl	51.4%
d14-p-Terphenyl	86.1%	d4-1,2-Dichlorobenzene	40.5%
d5-Phenol	50.4%	2-Fluorophenol	48.2%
2,4,6-Tribromophenol	66.6%	d4-2-Chlorophenol	53.6%
d8-1,4-Dioxane	42.2%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-20-C-U
SAMPLE

Lab Sample ID: GU59F
LIMS ID: 04-10342
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 18:42
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-20-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59F QC Report No: GU59-Windward Environmental
LIMS ID: 04-10342 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 18:42

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	59.2%	2-Fluorobiphenyl	58.1%
d14-p-Terphenyl	80.6%	d4-1,2-Dichlorobenzene	48.8%
d5-Phenol	54.0%	2-Fluorophenol	54.0%
2,4,6-Tribromophenol	71.2%	d4-2-Chlorophenol	57.9%
d8-1,4-Dioxane	44.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-41-C-U
SAMPLE

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 19:14
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-41-C-U**
 SAMPLE

Lab Sample ID: GU59G QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 19:14

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**3.9**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	61.4%	2-Fluorobiphenyl	56.2%
d14-p-Terphenyl	81.4%	d4-1,2-Dichlorobenzene	45.0%
d5-Phenol	57.0%	2-Fluorophenol	55.7%
2,4,6-Tribromophenol	73.1%	d4-2-Chlorophenol	61.6%
d8-1,4-Dioxane	49.2%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-41-C-U
MATRIX SPIKE

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 19:45
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	---
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	---
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	---
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	---
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	---
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	---
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	---
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	---
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-41-C-U**
Page 2 of 2 **MATRIX SPIKE**

Lab Sample ID: GU59G QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 19:45

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	---
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	---
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.3**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.5%	2-Fluorobiphenyl	69.8%
d14-p-Terphenyl	90.1%	d4-1,2-Dichlorobenzene	51.1%
d5-Phenol	66.7%	2-Fluorophenol	60.8%
2,4,6-Tribromophenol	83.5%	d4-2-Chlorophenol	67.9%
d8-1,4-Dioxane	49.0%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 2

Sample ID: LDW-SP-41-C-U
MATRIX SPIKE DUP

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 20:17
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	---
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	---
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	---
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	---
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	---
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	---
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	---
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	---
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	---
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-41-C-U**
 MATRIX SPIKE DUP

Lab Sample ID: GU59G QC Report No: GU59-Windward Environmental
LIMS ID: 04-10343 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 20:17

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	---
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	---
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.0**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	---

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	78.1%	2-Fluorobiphenyl	76.3%
d14-p-Terphenyl	103%	d4-1,2-Dichlorobenzene	59.9%
d5-Phenol	77.5%	2-Fluorophenol	69.1%
2,4,6-Tribromophenol	90.3%	d4-2-Chlorophenol	77.2%
d8-1,4-Dioxane	58.3%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-39-C-F**
Page 1 of 2 **SAMPLE**

Lab Sample ID: GU59H
LIMS ID: 04-10344
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 20:49
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-39-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59H QC Report No: GU59-Windward Environmental
LIMS ID: 04-10344 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 20:49

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.3%	2-Fluorobiphenyl	64.6%
d14-p-Terphenyl	85.6%	d4-1,2-Dichlorobenzene	50.3%
d5-Phenol	60.5%	2-Fluorophenol	59.7%
2,4,6-Tribromophenol	78.9%	d4-2-Chlorophenol	64.1%
d8-1,4-Dioxane	49.5%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
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Sample ID: LDW-SP-80-C-F
SAMPLE

Lab Sample ID: GU59I
LIMS ID: 04-10345
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 21:20
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-80-C-F**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59I QC Report No: GU59-Windward Environmental
LIMS ID: 04-10345 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 21:20

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	62.6%	2-Fluorobiphenyl	63.6%
d14-p-Terphenyl	75.4%	d4-1,2-Dichlorobenzene	47.6%
d5-Phenol	61.2%	2-Fluorophenol	55.7%
2,4,6-Tribromophenol	82.6%	d4-2-Chlorophenol	63.3%
d8-1,4-Dioxane	41.0%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
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Sample ID: LDW-SP-39-C-U
SAMPLE

Lab Sample ID: GU59J
LIMS ID: 04-10346
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 21:52
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-39-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59J QC Report No: GU59-Windward Environmental
LIMS ID: 04-10346 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 21:52

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1.0**	**1.1**
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.5%	2-Fluorobiphenyl	67.8%
d14-p-Terphenyl	87.1%	d4-1,2-Dichlorobenzene	54.8%
d5-Phenol	65.0%	2-Fluorophenol	63.1%
2,4,6-Tribromophenol	84.9%	d4-2-Chlorophenol	69.5%
d8-1,4-Dioxane	54.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
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Sample ID: LDW-SP-80-C-U
SAMPLE

Lab Sample ID: GU59K
LIMS ID: 04-10347
Matrix: Water
Data Release Authorized:
Reported: 07/15/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 22:23
Instrument/Analyst: NT6/Van

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: LDW-SP-80-C-U**
Page 2 of 2 **SAMPLE**

Lab Sample ID: GU59K QC Report No: GU59-Windward Environmental
LIMS ID: 04-10347 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 22:23

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.2%	2-Fluorobiphenyl	66.7%
d14-p-Terphenyl	80.3%	d4-1,2-Dichlorobenzene	50.0%
d5-Phenol	64.7%	2-Fluorophenol	61.7%
2,4,6-Tribromophenol	89.4%	d4-2-Chlorophenol	67.5%
d8-1,4-Dioxane	47.9%		

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
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Sample ID: LDW-SP-41-C-F
MS/MSD

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted MS/MSD: 07/02/04

Sample Amount MS: 500 mL
MSD: 500 mL

Date Analyzed MS: 07/13/04 17:07
MSD: 07/13/04 17:39

Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL

Instrument/Analyst MS: NT6/Van
MSD: NT6/Van

Dilution Factor MS: 1.00
MSD: 1.00

GPC Cleanup: NO

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenol	< 2.0	20.0	37.5	53.3%	23.0	37.5	61.3%	14.0%
2-Chlorophenol	< 1.0	19.2	37.5	51.2%	23.2	37.5	61.9%	18.9%
1,4-Dichlorobenzene	< 1.0	10.5	25.0	42.0%	11.9	25.0	47.6%	12.5%
N-Nitroso-Di-N-Propylamine	< 2.0	13.7	25.0	54.8%	17.8	25.0	71.2%	26.0%
1,2,4-Trichlorobenzene	< 1.0	11.1	25.0	44.4%	13.1	25.0	52.4%	16.5%
4-Chloro-3-methylphenol	< 2.0	24.0	37.5	64.0%	29.2	37.5	77.9%	19.5%
Acenaphthene	< 1.0	15.0	25.0	60.0%	18.2	25.0	72.8%	19.3%
4-Nitrophenol	< 5.0	27.6	37.5	73.6%	32.7	37.5	87.2%	16.9%
2,4-Dinitrotoluene	< 5.0	15.9	25.0	63.6%	19.6	25.0	78.4%	20.8%
Pentachlorophenol	< 5.0	30.0	37.5	80.0%	37.2	37.5	99.2%	21.4%
Pyrene	< 1.0	18.8	25.0	75.2%	22.7	25.0	90.8%	18.8%
1,4-Dioxane	< 5.0	11.9	25.0	47.6%	13.9	25.0	55.6%	15.5%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
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Sample ID: LDW-SP-41-C-U
MS/MSD

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted MS/MSD: 07/02/04
Date Analyzed MS: 07/13/04 19:45
MSD: 07/13/04 20:17
Instrument/Analyst MS: NT6/Van
MSD: NT6/Van
GPC Cleanup: NO

Sample Amount MS: 500 mL
MSD: 500 mL
Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenol	< 2.0	20.3	37.5	54.1%	26.3	37.5	70.1%	25.8%
2-Chlorophenol	< 1.0	19.8	37.5	52.8%	25.2	37.5	67.2%	24.0%
1,4-Dichlorobenzene	< 1.0	10.6	25.0	42.4%	13.2	25.0	52.8%	21.8%
N-Nitroso-Di-N-Propylamine	< 2.0	15.4	25.0	61.6%	19.0	25.0	76.0%	20.9%
1,2,4-Trichlorobenzene	< 1.0	11.3	25.0	45.2%	14.1	25.0	56.4%	22.0%
4-Chloro-3-methylphenol	< 2.0	23.4	37.5	62.4%	29.0	37.5	77.3%	21.4%
Acenaphthene	< 1.0	15.7	25.0	62.8%	19.3	25.0	77.2%	20.6%
4-Nitrophenol	< 5.0	29.8	37.5	79.5%	36.7	37.5	97.9%	20.8%
2,4-Dinitrotoluene	< 5.0	16.7	25.0	66.8%	20.9	25.0	83.6%	22.3%
Pentachlorophenol	< 5.0	30.8	37.5	82.1%	39.4	37.5	105%	24.5%
Pyrene	< 1.0	18.8	25.0	75.2%	24.4	25.0	97.6%	25.9%
1,4-Dioxane	< 5.0	11.4	25.0	45.6%	14.9	25.0	59.6%	26.6%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS
Page 1 of 1

Sample ID: LCS-070204
LAB CONTROL

Lab Sample ID: LCS-070204
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/14/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/13/04 14:28
Instrument/Analyst: NT6/Van
GPC Cleanup: NO

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

Analyte	Lab Control	Spike Added	Recovery
Phenol	22.0	37.5	58.7%
2-Chlorophenol	21.3	37.5	56.8%
1,4-Dichlorobenzene	10.5	25.0	42.0%
N-Nitroso-Di-N-Propylamine	15.1	25.0	60.4%
1,2,4-Trichlorobenzene	10.9	25.0	43.6%
4-Chloro-3-methylphenol	23.3	37.5	62.1%
Acenaphthene	14.9	25.0	59.6%
4-Nitrophenol	25.6	37.5	68.3%
2,4-Dinitrotoluene	15.4	25.0	61.6%
Pentachlorophenol	26.7	37.5	71.2%
Pyrene	17.9	25.0	71.6%
1,4-Dioxane	12.1	25.0	48.4%

Semivolatile Surrogate Recovery	
d5-Nitrobenzene	73.5%
2-Fluorobiphenyl	70.7%
d14-p-Terphenyl	88.5%
d4-1,2-Dichlorobenzene	60.3%
d5-Phenol	74.6%
2-Fluorophenol	71.5%
2,4,6-Tribromophenol	81.5%
d4-2-Chlorophenol	75.9%
d8-1,4-Dioxane	61.8%

Results reported in µg/L

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO. GU59MBW1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

Lab Code: GU26 Project: LDW-SEEP SAMPLING SDG No.: GU26

Lab File ID: GU59MB Lab Sample ID: GU59MBW1

Instrument ID: NT6 Date Extracted: 07/02/04

Matrix: (soil/water) WATER Date Analyzed: 07/13/04

Level:(low/med) LOW Time Analyzed: 1356

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	GU59LCSW1	GU59LCSW1	GU59SB	07/13/04
02	LDW-SP-10-C-F	GU59A	GU59A	07/13/04
03	LDW-SP-12-C-F	GU59B	GU59B	07/13/04
04	LDW-SP-20-C-F	GU59C	GU59C	07/13/04
05	LDW-SP-41-C-F	GU59D	GU59D	07/13/04
06	LDW-SP-41-C-F MS	GU59DMS	GU59DMS	07/13/04
07	LDW-SP-41-C-F MS	GU59DMSD	GU59DMSD	07/13/04
08	LDW-SP-12-C-U	GU59E	GU59E	07/13/04
09	LDW-SP-20-C-U	GU59F	GU59F	07/13/04
10	LDW-SP-41-C-U	GU59G	GU59G	07/13/04
11	LDW-SP-41-C-U MS	GU59GMS	GU59GMS	07/13/04
12	LDW-SP-41-C-U MS	GU59GMSD	GU59GMSD	07/13/04
13	LDW-SP-39-C-F	GU59H	GU59H	07/13/04
14	LDW-SP-80-C-F	GU59I	GU59I	07/13/04
15	LDW-SP-39-C-U	GU59J	GU59J	07/13/04
16	LDW-SP-80-C-U	GU59K	GU59K	07/13/04
17	LDW-SP-71-C-F	GU26A	GU26A	07/14/04
18	LDW-SP-71-C-U	GU26B	GU26B	07/14/04
19	LDW-SP-76-C-F	GU26C	GU26C	07/14/04
20	LDW-SP-76-C-U	GU26D	GU26D	07/14/04
21	LDW-SP-69-C-F	GU26E	GU26E	07/14/04
22	LDW-SP-69-C-U	GU26F	GU26F	07/14/04
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: MB-070204**
Page 1 of 2 **METHOD BLANK**

Lab Sample ID: MB-070204 QC Report No: GU59-Windward Environmental
LIMS ID: 04-10337 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized: Date Sampled: NA
Reported: 07/15/04 Date Received: NA

Date Extracted: 07/02/04 Sample Amount: 500 mL
Date Analyzed: 07/13/04 13:56 Final Extract Volume: 0.50 mL
Instrument/Analyst: NT6/Van Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
108-95-2	Phenol	2.0	< 2.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	2.0	< 2.0 U
95-57-8	2-Chlorophenol	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	5.0	< 5.0 U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0 U
95-48-7	2-Methylphenol	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	1.0	< 1.0 U
106-44-5	4-Methylphenol	1.0	< 1.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	2.0	< 2.0 U
67-72-1	Hexachloroethane	2.0	< 2.0 U
98-95-3	Nitrobenzene	1.0	< 1.0 U
78-59-1	Isophorone	1.0	< 1.0 U
88-75-5	2-Nitrophenol	5.0	< 5.0 U
105-67-9	2,4-Dimethylphenol	3.0	< 3.0 U
65-85-0	Benzoic Acid	10	< 10 U
111-91-1	bis(2-Chloroethoxy) Methane	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0 U
91-20-3	Naphthalene	1.0	< 1.0 U
106-47-8	4-Chloroaniline	3.0	< 3.0 U
87-68-3	Hexachlorobutadiene	2.0	< 2.0 U
59-50-7	4-Chloro-3-methylphenol	2.0	< 2.0 U
91-57-6	2-Methylnaphthalene	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	5.0	< 5.0 U
95-95-4	2,4,5-Trichlorophenol	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	1.0	< 1.0 U
88-74-4	2-Nitroaniline	5.0	< 5.0 U
131-11-3	Dimethylphthalate	1.0	< 1.0 U
208-96-8	Acenaphthylene	1.0	< 1.0 U
99-09-2	3-Nitroaniline	6.0	< 6.0 U
83-32-9	Acenaphthene	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	25	< 25 U
100-02-7	4-Nitrophenol	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	5.0	< 5.0 U
121-14-2	2,4-Dinitrotoluene	5.0	< 5.0 U
84-66-2	Diethylphthalate	1.0	< 1.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270C GC/MS **Sample ID: MB-070204**
Page 2 of 2 **METHOD BLANK**

Lab Sample ID: MB-070204 QC Report No: GU59-Windward Environmental
LIMS ID: 04-10337 Project: LDW-SEEP SAMPLING
Matrix: Water
Date Analyzed: 07/13/04 13:56

CAS Number	Analyte	RL	Result
7005-72-3	4-Chlorophenyl-phenylether	1.0	< 1.0 U
86-73-7	Fluorene	1.0	< 1.0 U
100-01-6	4-Nitroaniline	5.0	< 5.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	15	< 15 U
86-30-6	N-Nitrosodiphenylamine	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	1.0	< 1.0 U
87-86-5	Pentachlorophenol	5.0	< 5.0 U
85-01-8	Phenanthrene	1.0	< 1.0 U
86-74-8	Carbazole	1.0	< 1.0 U
120-12-7	Anthracene	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	1.0	< 1.0 U
206-44-0	Fluoranthene	1.0	< 1.0 U
129-00-0	Pyrene	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	1.0	< 1.0 U
218-01-9	Chrysene	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	1.0	< 1.0 U
123-91-1	1,4-Dioxane	1.0	< 1.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	80.0%	2-Fluorobiphenyl	71.6%
d14-p-Terphenyl	88.0%	d4-1,2-Dichlorobenzene	58.4%
d5-Phenol	75.1%	2-Fluorophenol	75.5%
2,4,6-Tribromophenol	79.7%	d4-2-Chlorophenol	79.1%
d8-1,4-Dioxane	62.8%		

Manchester Pesticides

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Client ID	DCBP	TCMX	TOT OUT
MB-070704	80.8%	40.8%	0
LCS-070704	71.5%	42.2%	0
LDW-SP-48-C-U	67.8%	68.0%	0
LDW-SP-48-C-F	86.2%	71.8%	0
LDW-SP-54-C-U	95.0%	85.0%	0
LDW-SP-54-C-F	74.8%	53.0%	0
LDW-SP-82-C-U	58.8%	59.5%	0
LDW-SP-82-C-F	52.0%	57.8%	0
LDW-SP-82-C-FD-U	44.2%	34.5%	0
LDW-SP-82-C-FD-F	57.8%	53.2%	0

** PROJECT SPECIFIED LIMITS **	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(30-160)	(30-160)
(TCMX) = Tetrachlorometaxylene	(30-160)	(30-160)

Prep Method: Manchester
Log Number Range: 04-10230 to 04-10237

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070704	80.8%	40.8%	0
LCS-070704	71.5%	42.2%	0
LDW-SP-62-C-F	52.0%	39.0%	0
LDW-SP-61-C-U	79.0%	44.5%	0
LDW-SP-61-C-F	57.2%	62.8%	0

** PROJECT SPECIFIED LIMITS **	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(30-160)	(30-160)
(TCMX) = Tetrachlorometaxylene	(30-160)	(30-160)

Prep Method: Manchester
Log Number Range: 04-10430 to 04-10432

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070704	80.8%	40.8%	0
LCS-070704	71.5%	42.2%	0
LDW-SP-75-C-U	48.2%	41.0%	0
LDW-SP-75-C-U MS	55.2%	54.5%	0
LDW-SP-75-C-U MSD	45.5%	44.8%	0
LDW-SP-75-C-F	50.0%	45.2%	0
LDW-SP-64-RB-S-U	62.8%	78.5%	0
LDW-SP-64-RB-MP-U	38.5%	51.5%	0
LDW-SP-64-C-F	49.2%	49.2%	0

** PROJECT SPECIFIED LIMITS **	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(30-160)	(30-160)
(TCMX) = Tetrachlorometaxylene	(30-160)	(30-160)

Prep Method: Manchester
Log Number Range: 04-10461 to 04-10466

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-48-C-U
SAMPLE

Lab Sample ID: GU45A
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 17:24
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.5
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.0021	< 0.0021 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	67.8%
Tetrachlorometaxylene	68.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-48-C-F
SAMPLE

Lab Sample ID: GU45B
LIMS ID: 04-10231
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 17:58
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.8
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.0090	< 0.0090 Y
319-86-8	delta-BHC	0.0029	< 0.0029 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	86.2%
Tetrachlorometaxylene	71.8%

000163

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-54-C-U
SAMPLE

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 10:26
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 10.0
pH: 7.8
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.0083	< 0.0083 U
319-85-7	beta-BHC	0.0083	< 0.0083 U
319-86-8	delta-BHC	0.0083	< 0.0083 U
58-89-9	gamma-BHC (Lindane)	0.0083	< 0.0083 U
76-44-8	Heptachlor	0.0083	< 0.0083 U
309-00-2	Aldrin	0.0083	< 0.0083 U
1024-57-3	Heptachlor Epoxide	0.0083	< 0.0083 U
959-98-8	Endosulfan I	0.0083	< 0.0083 U
60-57-1	Dieldrin	0.11	< 0.11 Y
72-55-9	4,4'-DDE	0.17	< 0.17 Y
72-20-8	Endrin	0.057	< 0.057 Y
33213-65-9	Endosulfan II	0.26	< 0.26 Y
72-54-8	4,4'-DDD	0.18	< 0.18 Y
1031-07-8	Endosulfan Sulfate	0.017	< 0.017 U
50-29-3	4,4'-DDT	0.017	< 0.017 U
72-43-5	Methoxychlor	0.083	< 0.083 U
53494-70-5	Endrin Ketone	0.017	< 0.017 U
7421-93-4	Endrin Aldehyde	0.061	< 0.061 Y
5103-74-2	gamma Chlordane	0.0083	< 0.0083 U
5103-71-9	alpha Chlordane	0.0083	< 0.0083 U
8001-35-2	Toxaphene	0.83	< 0.83 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	95.0%
Tetrachlorometaxylene	85.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-54-C-F
SAMPLE

Lab Sample ID: GU45D
LIMS ID: 04-10233
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 12:06
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 8.5
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.016	< 0.016 Y
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0095	< 0.0095 Y
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.011	< 0.011 Y
72-54-8	4,4'-DDD	0.021	< 0.021 Y
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.0018	< 0.0018 Y
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	74.8%
Tetrachlorometaxylene	53.0%

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-82-C-U
SAMPLE

Lab Sample ID: GU45E
LIMS ID: 04-10234
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 19:40
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.4
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	58.8%
Tetrachlorometaxylene	59.5%

ANALYTICAL RESOURCES INCORPORATED

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-82-C-F
SAMPLE

Lab Sample ID: GU45F
LIMS ID: 04-10235
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 20:14
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.3
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.0039	< 0.0039 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	52.0%
Tetrachlorometaxylene	57.8%

000167

ANALYTICAL RESOURCES INCORPORATED

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-82-C-FD-U
SAMPLE

Lab Sample ID: GU45G
LIMS ID: 04-10236
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 20:48
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.0
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	44.2%
Tetrachlorometaxylene	34.5%

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-82-C-FD-F
SAMPLE

Lab Sample ID: GU45H
LIMS ID: 04-10237
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 21:22
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.1
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	57.8%
Tetrachlorometaxylene	53.2%

ANALYTICAL RESOURCES INCORPORATED

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-62-C-F
SAMPLE

Lab Sample ID: GU76A
LIMS ID: 04-10430
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 00:47
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.4
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.012	< 0.012 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.0017	< 0.0017 Y
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	52.0%
Tetrachlorometaxylene	39.0%

000170

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-61-C-U
SAMPLE

Lab Sample ID: GU76B
LIMS ID: 04-10431
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 01:21
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 2500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.3
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.0010	< 0.0010 U
319-85-7	beta-BHC	0.0010	< 0.0010 U
319-86-8	delta-BHC	0.0010	< 0.0010 U
58-89-9	gamma-BHC (Lindane)	0.0010	< 0.0010 U
76-44-8	Heptachlor	0.0010	< 0.0010 U
309-00-2	Aldrin	0.0010	< 0.0010 U
1024-57-3	Heptachlor Epoxide	0.0010	< 0.0010 U
959-98-8	Endosulfan I	0.0010	< 0.0010 U
60-57-1	Dieldrin	0.027	< 0.027 Y
72-55-9	4,4'-DDE	0.038	< 0.038 Y
72-20-8	Endrin	0.0020	< 0.0020 U
33213-65-9	Endosulfan II	0.0020	< 0.0020 U
72-54-8	4,4'-DDD	0.0020	< 0.0020 U
1031-07-8	Endosulfan Sulfate	0.0020	< 0.0020 U
50-29-3	4,4'-DDT	0.0020	< 0.0020 U
72-43-5	Methoxychlor	0.010	< 0.010 U
53494-70-5	Endrin Ketone	0.0020	< 0.0020 U
7421-93-4	Endrin Aldehyde	0.0020	< 0.0020 U
5103-74-2	gamma Chlordane	0.0010	< 0.0010 U
5103-71-9	alpha Chlordane	0.0010	< 0.0010 U
8001-35-2	Toxaphene	0.10	< 0.10 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	79.0%
Tetrachlorometaxylene	44.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-61-C-F
SAMPLE

Lab Sample ID: GU76C
LIMS ID: 04-10432
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 13:48
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.5
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.0083	< 0.0083 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.058	< 0.058 Y
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0049	< 0.0049 Y
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.038	< 0.038 Y
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	57.2%
Tetrachlorometaxylene	62.8%

000172

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-75-C-U
SAMPLE

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 14:22
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.2
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.0019	< 0.0019 Y
319-86-8	delta-BHC	0.0049	< 0.0049 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	48.2%
Tetrachlorometaxylene	41.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-75-C-U
MATRIX SPIKE

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 03:03
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 1560 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.2
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.0016	< 0.0016 U
319-85-7	beta-BHC	0.0039	< 0.0039 Y
319-86-8	delta-BHC	0.0068	< 0.0068 Y
58-89-9	gamma-BHC (Lindane)	0.0016	---
76-44-8	Heptachlor	0.0016	---
309-00-2	Aldrin	0.0016	---
1024-57-3	Heptachlor Epoxide	0.0016	< 0.0016 U
959-98-8	Endosulfan I	0.0016	< 0.0016 U
60-57-1	Dieldrin	0.0032	---
72-55-9	4,4'-DDE	0.0032	< 0.0032 U
72-20-8	Endrin	0.0032	---
33213-65-9	Endosulfan II	0.0032	< 0.0032 U
72-54-8	4,4'-DDD	0.0032	< 0.0032 U
1031-07-8	Endosulfan Sulfate	0.0032	< 0.0032 U
50-29-3	4,4'-DDT	0.0032	---
72-43-5	Methoxychlor	0.016	< 0.016 U
53494-70-5	Endrin Ketone	0.0032	< 0.0032 U
7421-93-4	Endrin Aldehyde	0.058	< 0.058 Y
5103-74-2	gamma Chlordane	0.0045	< 0.0045 Y
5103-71-9	alpha Chlordane	0.0016	< 0.0016 U
8001-35-2	Toxaphene	0.16	< 0.16 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	55.2%
Tetrachlorometaxylene	54.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-75-C-U
MATRIX SPIKE DUP

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 03:37
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 1560 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.2
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.0016	< 0.0016 U
319-85-7	beta-BHC	0.0089	< 0.0089 Y
319-86-8	delta-BHC	0.0016	< 0.0016 U
58-89-9	gamma-BHC (Lindane)	0.0016	---
76-44-8	Heptachlor	0.0016	---
309-00-2	Aldrin	0.0016	---
1024-57-3	Heptachlor Epoxide	0.0016	< 0.0016 U
959-98-8	Endosulfan I	0.0016	< 0.0016 U
60-57-1	Dieldrin	0.0032	---
72-55-9	4,4'-DDE	0.0032	< 0.0032 U
72-20-8	Endrin	0.0032	---
33213-65-9	Endosulfan II	0.0032	< 0.0032 U
72-54-8	4,4'-DDD	0.0032	< 0.0032 U
1031-07-8	Endosulfan Sulfate	0.0032	< 0.0032 U
50-29-3	4,4'-DDT	0.0032	---
72-43-5	Methoxychlor	0.016	< 0.016 U
53494-70-5	Endrin Ketone	0.0032	< 0.0032 U
7421-93-4	Endrin Aldehyde	0.0032	< 0.0032 U
5103-74-2	gamma Chlordane	0.0043	< 0.0043 Y
5103-71-9	alpha Chlordane	0.0016	< 0.0016 U
8001-35-2	Toxaphene	0.16	< 0.16 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	45.5%
Tetrachlorometaxylene	44.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-75-C-F
SAMPLE

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 14:56
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.3
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.013	< 0.013 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.0018	< 0.0018 Y
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	50.0%
Tetrachlorometaxylene	45.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-64-RB-S-U
SAMPLE

Lab Sample ID: GU83C
LIMS ID: 04-10463
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 04:45
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.9
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.0020	< 0.0020 Y
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	62.8%
Tetrachlorometaxylene	78.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-64-RB-MP-U
SAMPLE

Lab Sample ID: GU83D
LIMS ID: 04-10464
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 05:19
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.1
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	**delta-BHC**	**0.00083**	**0.0035**
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.0026	< 0.0026 Y
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	38.5%
Tetrachlorometaxylene	51.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-64-C-F
SAMPLE

Lab Sample ID: GU83F
LIMS ID: 04-10466
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 05:53
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.3
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	49.2%
Tetrachlorometaxylene	49.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-75-C-U
MS/MSD

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted MS/MSD: 07/07/04
Date Analyzed MS: 07/14/04 03:03
MSD: 07/14/04 03:37
Instrument/Analyst MS: ECD4/YZ
MSD: ECD4/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount MS: 1560 mL
MSD: 1560 mL
Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL
Dilution Factor MS: 1.00
MSD: 1.00
Sulfur Cleanup: Yes
Silica Gel: Yes

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
gamma-BHC (Lindane)	< 0.0008	0.00862	0.0160	53.9%	0.00795	0.0160	49.7%	8.1%
Heptachlor	< 0.0008	0.0118	0.0160	73.8%	0.0113	0.0160	70.6%	4.3%
Aldrin	< 0.0008	0.0127	0.0160	79.4%	0.00878	0.0160	54.9%	36.5%
Dieldrin	< 0.0016	0.0254	0.0321	79.1%	0.0233	0.0321	72.6%	8.6%
Endrin	< 0.0016	0.0349	0.0321	109%	0.0285	0.0321	88.8%	20.2%
4,4'-DDT	< 0.0016	0.0286	0.0321	89.1%	0.0217	0.0321	67.6%	27.4%

Results reported in µg/L (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LCS-070704
LAB CONTROL

Lab Sample ID: LCS-070704
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 16:16
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Sulfur Cleanup: Yes
Silica Gel: Yes

Analyte	Lab Control	Spike Added	Recovery
alpha-BHC	0.00258	0.00333	77.5%
beta-BHC	0.00497	0.00333	149%
delta-BHC	0.00283	0.00333	85.0%
gamma-BHC (Lindane)	0.00253	0.00333	76.0%
Heptachlor	0.00250	0.00333	75.1%
Aldrin	0.00200	0.00333	60.1%
Heptachlor Epoxide	0.00317	0.00333	95.2%
Endosulfan I	0.00292	0.00333	87.7%
Dieldrin	0.00585	0.00667	87.7%
4,4'-DDE	0.00687	0.00667	103%
Endrin	0.00665	0.00667	99.7%
Endosulfan II	0.00598	0.00667	89.7%
4,4'-DDD	0.00670	0.00667	100%
Endosulfan Sulfate	0.00572	0.00667	85.8%
4,4'-DDT	0.00705	0.00667	106%
Methoxychlor	0.0345	0.0333	104%
Endrin Ketone	0.00507	0.00667	76.0%
Endrin Aldehyde	0.00285	0.00667	42.7%
gamma Chlordane	0.00302	0.00333	90.7%
alpha Chlordane	0.00285	0.00333	85.6%

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	71.5%
Tetrachlorometaxylene	42.2%

Results reported in µg/L (ppb)

FORM 4
PCB METHOD BLANK SUMMARY

SAMPLE NO.

GU45MBW7/7

Lab Name: ANALYTICAL RESOURCES, INC
Client: WINDWARD ENVIRONMENTAL

ARI Job No.: GU45/GU76/GU83
Project: LDW-SEEP SAMPLING

Lab Sample ID: GU45MBW7/7
Lab File ID: 0713-06R

Matrix (soil/water) WATER
Extraction:(SepF/Cont/Sonc) OTHER

Sulfur Cleanup (Y/N) Y
Date Extracted: 07/09/04

Date Analyzed (1): 07/13/04
Date Analyzed (2): 07/13/04

Time Analyzed (1): 1542
Time Analyzed (2): 1542

Instrument ID (1): ECD4
Instrument ID (2): ECD4

GC Column (1): RTX-CLP1 ID: 0.53(mm)
GC Column (2): RTX-CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GU45SBW7/7	GU45SBW1	07/13/04	07/13/04
02	LDW-SP-48-CU	GU45A	07/13/04	07/13/04
03	LDW-SP-48-CF	GU45B	07/13/04	07/13/04
04	LDW-SP-82-CU	GU45E	07/13/04	07/13/04
05	LDW-SP-82-CF	GU45F	07/13/04	07/13/04
06	LDW-SP82CFDU	GU45G	07/13/04	07/13/04
07	LDW-SP82CFDF	GU45H	07/13/04	07/13/04
08	LDW-SP-62-CF	GU76A	07/14/04	07/14/04
09	LDW-SP-61-CU	GU76B	07/14/04	07/14/04
10	LDW-SP-75-CU	GU83AMS	07/14/04	07/14/04
11	LDW-SP-75-CU	GU83AMSD	07/14/04	07/14/04
12	LDW-SP64RBSU	GU83C	07/14/04	07/14/04
13	LDW-SP64RBMP	GU83D	07/14/04	07/14/04
14	LDW-SP-64-CF	GU83F	07/14/04	07/14/04
15	LDW-SP-54-CU	GU45C10X	07/14/04	07/14/04
16	LDW-SP-54-CF	GU45D	07/14/04	07/14/04
17	LDW-SP-61-CF	GU76C	07/14/04	07/14/04
18	LDW-SP-75-CU	GU83A	07/14/04	07/14/04
19	LDW-SP-75-CF	GU83B	07/14/04	07/14/04

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: MB-070704
METHOD BLANK

Lab Sample ID: MB-070704
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 07/20/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: NA
Date Received: NA

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 15:42
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: NA
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	80.8%
Tetrachlorometaxylene	40.8%

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070204	75.8%	32.0%	0
LCS-070204	74.0%	31.8%	0
LDW-SP-10-C-F	63.8%	32.5%	0
LDW-SP-12-C-F	63.8%	48.8%	0
LDW-SP-20-C-F	66.0%	44.5%	0
LDW-SP-41-C-F	85.0%	59.5%	0
LDW-SP-41-C-F MS	71.5%	86.2%	0
LDW-SP-41-C-F MSD	68.8%	81.5%	0
LDW-SP-12-C-U	58.0%	42.8%	0
LDW-SP-20-C-U	66.2%	48.5%	0
LDW-SP-41-C-U	72.2%	76.2%	0
LDW-SP-39-C-F	69.2%	75.5%	0
LDW-SP-80-C-F	66.2%	67.5%	0
LDW-SP-39-C-U	59.2%	62.8%	0
LDW-SP-80-C-U	59.5%	35.0%	0

** PROJECT SPECIFIED LIMITS **	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(30-160)	(30-160)
(TCMX) = Tetrachlorometaxylene	(30-160)	(30-160)

Prep Method: Manchester
Log Number Range: 04-10337 to 04-10347

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-10-C-F
SAMPLE

Lab Sample ID: GU59A
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 18:45
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.1
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	63.8%
Tetrachlorometaxylene	32.5%

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Sample ID: LDW-SP-12-C-F
SAMPLE

Lab Sample ID: GU59B
LIMS ID: 04-10338
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 19:19
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.5
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	63.8%
Tetrachlorometaxylene	48.8%

ANALYTICAL RESOURCES INCORPORATED

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-20-C-F
SAMPLE

Lab Sample ID: GU59C
LIMS ID: 04-10339
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 19:53
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 8.4
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.0092	< 0.0092 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.0040	< 0.0040 Y
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	66.0%
Tetrachlorometaxylene	44.5%

000187

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-41-C-F
SAMPLE

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 23:18
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.5
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.0070	< 0.0070 Y
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.0054	< 0.0054 Y
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	85.0%
Tetrachlorometaxylene	59.5%

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-41-C-F
MATRIX SPIKE

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 23:52
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.5
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.0036	< 0.0036 Y
58-89-9	gamma-BHC (Lindane)	0.00083	---
76-44-8	Heptachlor	0.00083	---
309-00-2	Aldrin	0.00083	---
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	---
72-55-9	4,4'-DDE	0.0036	< 0.0036 Y
72-20-8	Endrin	0.0017	---
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	---
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	71.5%
Tetrachlorometaxylene	86.2%

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Sample ID: LDW-SP-41-C-F
MATRIX SPIKE DUP

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 00:26
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.5
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.0032	< 0.0032 Y
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	---
76-44-8	Heptachlor	0.00083	---
309-00-2	Aldrin	0.00083	---
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	---
72-55-9	4,4'-DDE	0.0040	< 0.0040 Y
72-20-8	Endrin	0.0017	---
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	---
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery	
Decachlorobiphenyl	68.8%
Tetrachlorometaxylene	81.5%

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Sample ID: LDW-SP-12-C-U
SAMPLE

Lab Sample ID: GU59E
LIMS ID: 04-10341
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 01:00
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.2
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	58.0%
Tetrachlorometaxylene	42.8%

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Sample ID: LDW-SP-20-C-U
SAMPLE

Lab Sample ID: GU59F
LIMS ID: 04-10342
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 01:34
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.8
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	66.2%
Tetrachlorometaxylene	48.5%

ANALYTICAL RESOURCES INCORPORATED

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Sample ID: LDW-SP-41-C-U
SAMPLE

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 02:08
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.2
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.0039	< 0.0039 Y
319-85-7	beta-BHC	0.0026	< 0.0026 Y
319-86-8	delta-BHC	0.0066	< 0.0066 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	72.2%
Tetrachlorometaxylene	76.2%

000193

ANALYTICAL RESOURCES INCORPORATED

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Pesticides/PCB by GC/ECD
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Sample ID: LDW-SP-39-C-F
SAMPLE

Lab Sample ID: GU59H
LIMS ID: 04-10344
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 03:50
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.8
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.0051	< 0.0051 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	**Heptachlor Epoxide**	**0.00083**	**0.0090**
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	69.2%
Tetrachlorometaxylene	75.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
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Sample ID: LDW-SP-80-C-F
SAMPLE

Lab Sample ID: GU59I
LIMS ID: 04-10345
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/12/04 18:09
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 6.9
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery	
Decachlorobiphenyl	66.2%
Tetrachlorometaxylene	67.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-39-C-U
SAMPLE

Lab Sample ID: GU59J
LIMS ID: 04-10346
Matrix: Water
Data Release Authorized:
Reported: 08/04/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 04:58
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 7.3
Florisil Cleanup: No
Silica Gel: No

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.0031	< 0.0031 Y
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	**Heptachlor Epoxide**	**0.00083**	**0.0076**
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	59.2%
Tetrachlorometaxylene	62.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-80-C-U
SAMPLE

Lab Sample ID: GU59K
LIMS ID: 04-10347
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/12/04 18:43
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: 8.1
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	59.5%
Tetrachlorometaxylene	35.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LDW-SP-41-C-F
MS/MSD

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted MS/MSD: 07/02/04
Date Analyzed MS: 07/09/04 23:52
MSD: 07/10/04 00:26
Instrument/Analyst MS: ECD4/YZ
MSD: ECD4/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount MS: 3000 mL
MSD: 3000 mL
Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL
Dilution Factor MS: 1.00
MSD: 1.00
Sulfur Cleanup: No
Silica Gel: No

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
gamma-BHC (Lindane)	< 0.0008	0.00527	0.0083	63.3%	0.00428	0.0083	51.4%	20.7%
Heptachlor	< 0.0008	0.00762	0.0083	91.5%	0.00690	0.0083	82.8%	9.9%
Aldrin	< 0.0008	0.00832	0.0083	99.9%	0.00693	0.0083	83.2%	18.2%
Dieldrin	< 0.0016	0.0131	0.0167	78.4%	0.0120	0.0167	71.9%	8.8%
Endrin	< 0.0016	0.0168	0.0167	101%	0.0149	0.0167	89.2%	12.0%
4,4'-DDT	< 0.0016	0.0140	0.0167	83.8%	0.0132	0.0167	79.0%	5.9%

Results reported in µg/L (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: LCS-070204
LAB CONTROL

Lab Sample ID: LCS-070204
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 14:13
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Sulfur Cleanup: Yes
Silica Gel: Yes

Analyte	Lab Control	Spike Added	Recovery
alpha-BHC	0.00200	0.00333	60.1%
beta-BHC	0.00233	0.00333	70.0%
delta-BHC	0.00267	0.00333	80.2%
gamma-BHC (Lindane)	0.00218	0.00333	65.5%
Heptachlor	0.00198	0.00333	59.5%
Aldrin	0.00177	0.00333	53.2%
Heptachlor Epoxide	0.00287	0.00333	86.2%
Endosulfan I	0.00258	0.00333	77.5%
Dieldrin	0.00543	0.00667	81.4%
4,4'-DDE	0.00575	0.00667	86.2%
Endrin	0.00607	0.00667	91.0%
Endosulfan II	0.00568	0.00667	85.2%
4,4'-DDD	0.00603	0.00667	90.4%
Endosulfan Sulfate	0.00560	0.00667	84.0%
4,4'-DDT	0.00663	0.00667	99.4%
Methoxychlor	0.0322	0.0333	96.7%
Endrin Ketone	0.00548	0.00667	82.2%
Endrin Aldehyde	0.00080	0.00667	12.0%
gamma Chlordane	0.00243	0.00333	73.0%
alpha Chlordane	0.00242	0.00333	72.7%

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	74.0%
Tetrachlorometaxylene	31.8%

Results reported in µg/L (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD
Page 1 of 1

Sample ID: MB-070204
METHOD BLANK

Lab Sample ID: MB-070204
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: NA
Date Received: NA

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 13:39
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: NA
Florisil Cleanup: No
Silica Gel: Yes

CAS Number	Analyte	RL	Result
319-84-6	alpha-BHC	0.00083	< 0.00083 U
319-85-7	beta-BHC	0.00083	< 0.00083 U
319-86-8	delta-BHC	0.00083	< 0.00083 U
58-89-9	gamma-BHC (Lindane)	0.00083	< 0.00083 U
76-44-8	Heptachlor	0.00083	< 0.00083 U
309-00-2	Aldrin	0.00083	< 0.00083 U
1024-57-3	Heptachlor Epoxide	0.00083	< 0.00083 U
959-98-8	Endosulfan I	0.00083	< 0.00083 U
60-57-1	Dieldrin	0.0017	< 0.0017 U
72-55-9	4,4'-DDE	0.0017	< 0.0017 U
72-20-8	Endrin	0.0017	< 0.0017 U
33213-65-9	Endosulfan II	0.0017	< 0.0017 U
72-54-8	4,4'-DDD	0.0017	< 0.0017 U
1031-07-8	Endosulfan Sulfate	0.0017	< 0.0017 U
50-29-3	4,4'-DDT	0.0017	< 0.0017 U
72-43-5	Methoxychlor	0.0083	< 0.0083 U
53494-70-5	Endrin Ketone	0.0017	< 0.0017 U
7421-93-4	Endrin Aldehyde	0.0017	< 0.0017 U
5103-74-2	gamma Chlordane	0.00083	< 0.00083 U
5103-71-9	alpha Chlordane	0.00083	< 0.00083 U
8001-35-2	Toxaphene	0.083	< 0.083 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	32.0%

FORM 4
PCB METHOD BLANK SUMMARY

SAMPLE NO.

GUMBW7/2

Lab Name: ANALYTICAL RESOURCES, INC
Client: WINDWARD ENVIRONMENTAL

ARI Job No.: GU59
Project: LDW-SEEP SAMPLING

Lab Sample ID: GU26MBW7/2
Lab File ID: 0709-08R

Matrix (soil/water) WATER
Extraction:(SepF/Cont/Sonc) OTHER

Sulfur Cleanup (Y/N) Y
Date Extracted: 07/02/04

Date Analyzed (1): 07/09/04
Date Analyzed (2): 07/09/04

Time Analyzed (1): 1339
Time Analyzed (2): 1339

Instrument ID (1): ECD4
Instrument ID (2): ECD4

GC Column (1): RTX-CLP1 ID: 0.53(mm)
GC Column (2): RTX-CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GUSBW7/2	GU26SBW1	07/09/04	07/09/04
02	LDW-SP-10-CF	GU59A	07/09/04	07/09/04
03	LDW-SP-12-CF	GU59B	07/09/04	07/09/04
04	LDW-SP-20-CF	GU59C	07/09/04	07/09/04
05	LDW-SP-41-CF	GU59D	07/09/04	07/09/04
06	LDW-SP-41-CF	GU59DMS	07/09/04	07/10/04
07	LDW-SP-41-CF	GU59DMSD	07/10/04	07/09/04
08	LDW-SP-12-CU	GU59E	07/10/04	07/10/04
09	LDW-SP-20-CU	GU59F	07/10/04	07/10/04
10	LDW-SP-41-CU	GU59G	07/10/04	07/10/04
12	LDW-SP-39-CF	GU59H	07/10/04	07/10/04
13	LDW-SP-39-CU	GU59J	07/10/04	07/10/04
14	LDW-SP-80-CF	GU59I	07/12/04	07/12/04
15	LDW-SP-80-CU	GU59K	07/12/04	07/12/04

PCB

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Client ID	DCBP	TCMX	TOT OUT
MB-070704	74.5%	40.8%	0
LCS-070704	46.5%	40.0%	0
LDW-SP-48-C-U	67.8%	68.0%	0
LDW-SP-48-C-F	63.8%	71.8%	0
LDW-SP-54-C-U	95.0%	85.0%	0
LDW-SP-54-C-U DL	D	D	0
LDW-SP-54-C-F	43.2%	52.2%	0
LDW-SP-82-C-U	45.5%	59.5%	0
LDW-SP-82-C-F	52.0%	57.8%	0
LDW-SP-82-C-FD-U	43.0%	34.5%	0
LDW-SP-82-C-FD-F	57.8%	53.2%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(42-138)	(25-134)
(TCMX) = Tetrachlorometaxylene	(32-117)	(25-118)

Prep Method: Manchester
Log Number Range: 04-10230 to 04-10237

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070704	74.5%	40.8%	0
LCS-070704	46.5%	40.0%	0
LDW-SP-62-C-F	45.8%	39.0%	0
LDW-SP-61-C-U	79.0%	44.5%	0
LDW-SP-61-C-F	57.2%	62.8%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(42-138)	(25-134)
(TCMX) = Tetrachlorometaxylene	(32-117)	(25-118)

Prep Method: Manchester
Log Number Range: 04-10430 to 04-10432

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070704	74.5%	40.8%	0
LCS-070704	46.5%	40.0%	0
LDW-SP-75-C-U	36.2%	41.0%	0
LDW-SP-75-C-F	50.0%	45.2%	0
LDW-SP-75-C-F MS	49.2%	36.5%	0
LDW-SP-75-C-F MSD	33.8%	36.5%	0
LDW-SP-64-RB-S-U	38.8%	48.8%	0
LDW-SP-64-RB-MP-U	25.5%	51.5%	0
LDW-SP-64-C-F	46.8%	49.2%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(42-138)	(25-134)
(TCMX) = Tetrachlorometaxylene	(32-117)	(25-118)

Prep Method: Manchester
Log Number Range: 04-10461 to 04-10466

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070904	78.8%	70.8%	0
LCS-070904	80.2%	71.8%	0
LDW-SP-64-C-U	61.2%	62.0%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(42-138)	(25-134)
(TCMX) = Tetrachlorometaxylene	(32-117)	(25-118)

Prep Method: SW3510C
Log Number Range: 04-10465 to 04-10465

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-48-C-U
SAMPLE

Lab Sample ID: GU45A
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 17:24
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	67.8%
Tetrachlorometaxylene	68.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-48-C-F
SAMPLE

Lab Sample ID: GU45B
LIMS ID: 04-10231
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 17:58
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	63.8%
Tetrachlorometaxylene	71.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-54-C-U
SAMPLE

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 10:26
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 10.0
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.17	< 0.17 U
53469-21-9	Aroclor 1242	0.17	< 0.17 U
12672-29-6	**Aroclor 1248**	**0.17**	**4.0 E**
11097-69-1	**Aroclor 1254**	**0.17**	**2.3**
11096-82-5	**Aroclor 1260**	**0.17**	**1.9 P**
11104-28-2	Aroclor 1221	0.17	< 0.17 U
11141-16-5	Aroclor 1232	0.17	< 0.17 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	95.0%
Tetrachlorometaxylene	85.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082 **Sample ID: LDW-SP-54-C-U**
Page 1 of 1 **DILUTION**

Lab Sample ID: GU45C
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/19/04 15:33
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 20.0
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.33	< 0.33 U
53469-21-9	Aroclor 1242	0.33	< 0.33 U
12672-29-6	**Aroclor 1248**	**0.33**	**4.7**
11097-69-1	**Aroclor 1254**	**0.33**	**3.0**
11096-82-5	**Aroclor 1260**	**0.33**	**1.9**
11104-28-2	Aroclor 1221	0.33	< 0.33 U
11141-16-5	Aroclor 1232	0.33	< 0.33 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	D
Tetrachlorometaxylene	D

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082 **Sample ID: LDW-SP-54-C-F**
Page 1 of 1 **SAMPLE**

Lab Sample ID: GU45D
LIMS ID: 04-10233
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 12:06
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	**Aroclor 1248**	**0.017**	**0.21**
11097-69-1	Aroclor 1254	0.017	< 0.15 Y
11096-82-5	**Aroclor 1260**	**0.017**	**0.047**
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	43.2%
Tetrachlorometaxylene	52.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082 **Sample ID: LDW-SP-82-C-U**
Page 1 of 1 **SAMPLE**

Lab Sample ID: GU45E
LIMS ID: 04-10234
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 19:40
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	45.5%
Tetrachlorometaxylene	59.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-82-C-F
SAMPLE

Lab Sample ID: GU45F
LIMS ID: 04-10235
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 20:14
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	52.0%
Tetrachlorometaxylene	57.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082 **Sample ID: LDW-SP-82-C-FD-U**
Page 1 of 1 **SAMPLE**

Lab Sample ID: GU45G
LIMS ID: 04-10236
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling
Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 20:48
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	43.0%
Tetrachlorometaxylene	34.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-82-C-FD-F
SAMPLE

Lab Sample ID: GU45H
LIMS ID: 04-10237
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 21:22
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	57.8%
Tetrachlorometaxylene	53.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-62-C-F
SAMPLE

Lab Sample ID: GU76A
LIMS ID: 04-10430
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 00:47
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	45.8%
Tetrachlorometaxylene	39.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082 **Sample ID: LDW-SP-61-C-U**
Page 1 of 1 **SAMPLE**

Lab Sample ID: GU76B
LIMS ID: 04-10431
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 01:21
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 2500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.020	< 0.020 U
53469-21-9	Aroclor 1242	0.020	< 0.020 U
12672-29-6	Aroclor 1248	0.020	< 0.020 U
11097-69-1	Aroclor 1254	0.020	< 0.020 U
11096-82-5	Aroclor 1260	0.020	< 0.020 U
11104-28-2	Aroclor 1221	0.020	< 0.020 U
11141-16-5	Aroclor 1232	0.020	< 0.020 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	79.0%
Tetrachlorometaxylene	44.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-61-C-F
SAMPLE

Lab Sample ID: GU76C
LIMS ID: 04-10432
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 13:48
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	57.2%
Tetrachlorometaxylene	62.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-75-C-U
SAMPLE

Lab Sample ID: GU83A
LIMS ID: 04-10461
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 14:22
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	36.2%
Tetrachlorometaxylene	41.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-75-C-F
SAMPLE

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 14:56
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	50.0%
Tetrachlorometaxylene	45.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082 **Sample ID: LDW-SP-75-C-F**
Page 1 of 1 **MATRIX SPIKE**

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 06:27
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 1600 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.031	---
53469-21-9	Aroclor 1242	0.031	< 0.031 U
12672-29-6	Aroclor 1248	0.031	< 0.031 U
11097-69-1	Aroclor 1254	0.031	< 0.031 U
11096-82-5	Aroclor 1260	0.031	---
11104-28-2	Aroclor 1221	0.031	< 0.031 U
11141-16-5	Aroclor 1232	0.031	< 0.031 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	49.2%
Tetrachlorometaxylene	36.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-75-C-F
MATRIX SPIKE DUP

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 07:01
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 1600 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.031	---
53469-21-9	Aroclor 1242	0.031	< 0.031 U
12672-29-6	Aroclor 1248	0.031	< 0.031 U
11097-69-1	Aroclor 1254	0.031	< 0.031 U
11096-82-5	Aroclor 1260	0.031	---
11104-28-2	Aroclor 1221	0.031	< 0.031 U
11141-16-5	Aroclor 1232	0.031	< 0.031 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	33.8%
Tetrachlorometaxylene	36.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-64-RB-S-U
SAMPLE

Lab Sample ID: GU83C
LIMS ID: 04-10463
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 04:45
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	38.8%
Tetrachlorometaxylene	48.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-64-RB-MP-U
SAMPLE

Lab Sample ID: GU83D
LIMS ID: 04-10464
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 05:19
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	25.5%
Tetrachlorometaxylene	51.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-64-C-U
SAMPLE

Lab Sample ID: GU83E
LIMS ID: 04-10465
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/03/04

Date Extracted: 07/09/04
Date Analyzed: 07/14/04 14:29
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.040	< 0.040 U
53469-21-9	Aroclor 1242	0.040	< 0.040 U
12672-29-6	**Aroclor 1248**	**0.040**	**0.092**
11097-69-1	**Aroclor 1254**	**0.040**	**0.21**
11096-82-5	**Aroclor 1260**	**0.040**	**0.16**
11104-28-2	Aroclor 1221	0.040	< 0.040 U
11141-16-5	Aroclor 1232	0.040	< 0.040 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	61.2%
Tetrachlorometaxylene	62.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-64-C-F
SAMPLE

Lab Sample ID: GU83F
LIMS ID: 04-10466
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/03/04

Date Extracted: 07/07/04
Date Analyzed: 07/14/04 05:53
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	46.8%
Tetrachlorometaxylene	49.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-75-C-F
MS/MSD

Lab Sample ID: GU83B
LIMS ID: 04-10462
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/03/04
Date Received: 07/03/04

Date Extracted MS/MSD: 07/07/04

Sample Amount MS: 1600 mL
MSD: 1600 mL

Date Analyzed MS: 07/14/04 06:27
MSD: 07/14/04 07:01

Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL

Instrument/Analyst MS: ECD4/YZ
MSD: ECD4/YZ

Dilution Factor MS: 1.00
MSD: 1.00

GPC Cleanup: No
Sulfur Cleanup: Yes

Silica Gel: Yes
Acid Cleanup: No

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 0.017	0.165	0.315	52.4%	0.152	0.315	48.3%	8.2%
Aroclor 1260	< 0.017	0.196	0.315	62.2%	0.163	0.315	51.7%	18.4%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LCS-070704
LAB CONTROL

Lab Sample ID: LCS-070704
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 16:50
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	0.081	0.168	48.2%
Aroclor 1260	0.093	0.168	55.4%

PCB Surrogate Recovery

Decachlorobiphenyl	46.5%
Tetrachlorometaxylene	40.0%

Results reported in µg/L

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ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LCS-070904
LAB CONTROL

Lab Sample ID: LCS-070904
LIMS ID: 04-10465
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/02/04
Date Received: 07/03/04

Date Extracted: 07/09/04
Date Analyzed: 07/14/04 12:40
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	1.39	2.00	69.5%
Aroclor 1260	1.48	2.00	74.0%

PCB Surrogate Recovery

Decachlorobiphenyl	80.2%
Tetrachlorometaxylene	71.8%

Results reported in µg/L

FORM 4
PCB METHOD BLANK SUMMARY

SAMPLE NO.

GU45MBW7/7

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

ARI Job No.: GU45/GU76/GU83 Project: LDW-SEEP SAMPLING

Lab Sample ID: GU45MBW7/7 Lab File ID: 0713-06R

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) OTHER

Sulfur Cleanup (Y/N) Y Date Extracted: 07/09/04

Date Analyzed (1): 07/13/04 Date Analyzed (2): 07/13/04

Time Analyzed (1): 1542 Time Analyzed (2): 1542

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): RTX-CLP1 ID: 0.53(mm) GC Column (2): RTX-CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GU45SBW7/7	GU45SBW2	07/13/04	07/13/04
02	LDW-SP-48-CU	GU45A	07/13/04	07/13/04
03	LDW-SP-48-CF	GU45B	07/13/04	07/13/04
04	LDW-SP-82-CU	GU45E	07/13/04	07/13/04
05	LDW-SP-82-CF	GU45F	07/13/04	07/13/04
06	LDW-SP82CFDU	GU45G	07/13/04	07/13/04
07	LDW-SP82CFDF	GU45H	07/13/04	07/13/04
08	LDW-SP-62-CF	GU76A	07/14/04	07/14/04
09	LDW-SP-61-CU	GU76B	07/14/04	07/14/04
10	LDW-SP64RBSU	GU83C	07/14/04	07/14/04
11	LDW-SP64RBMP	GU83D	07/14/04	07/14/04
12	LDW-SP-64-CF	GU83F	07/14/04	07/14/04
13	LDW-SP-75-CF	GU83BMS	07/14/04	07/14/04
14	LDW-SP-75-CF	GU83BMSD	07/14/04	07/14/04
15	LDW-SP-54-CU	GU45C10X	07/14/04	07/14/04
16	LDW-SP-54-CF	GU45D	07/14/04	07/14/04
17	LDW-SP-61-CF	GU76C	07/14/04	07/14/04
18	LDW-SP-75-CU	GU83A	07/14/04	07/14/04
19	LDW-SP-75-CF	GU83B	07/14/04	07/14/04
20	LDW-SP-54-CU	GU45C20X	07/19/04	07/19/04

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: MB-070704
METHOD BLANK

Lab Sample ID: MB-070704
LIMS ID: 04-10230
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: NA
Date Received: NA

Date Extracted: 07/07/04
Date Analyzed: 07/13/04 15:42
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	74.5%
Tetrachlorometaxylene	40.8%

4

PCB METHOD BLANK SUMMARY

BLANK NO. GU81MBW1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENV.

ARI Job No.: GU83 Project: LOW-SEEP SAMPLING

Lab Sample ID: GU81MBW1 Lab File ID: 0714B006

Matrix (soil/water) WATER Date Extracted: 07/09/04

Date Analyzed (1): 07/14/04 Date Analyzed (2): 07/14/04

Time Analyzed (1): 1219 Time Analyzed (2): 1219

Instrument ID (1): ECD5 Instrument ID (2): ECD5

GC Column (1): DB5 ID: 0.53(mm) GC Column (2): ZB35 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	Client SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GU81LCSW1	GU81LCSW1	07/14/04	07/14/04
02	LDW-SP-64-C-U	GU83E	07/14/04	07/14/04

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: MB-070904
METHOD BLANK

Lab Sample ID: MB-070904
LIMS ID: 04-10465
Matrix: Water
Data Release Authorized:
Reported: 07/21/04

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: NA
Date Received: NA

Date Extracted: 07/09/04
Date Analyzed: 07/14/04 12:19
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.040	< 0.040 U
53469-21-9	Aroclor 1242	0.040	< 0.040 U
12672-29-6	Aroclor 1248	0.040	< 0.040 U
11097-69-1	Aroclor 1254	0.040	< 0.040 U
11096-82-5	Aroclor 1260	0.040	< 0.040 U
11104-28-2	Aroclor 1221	0.040	< 0.040 U
11141-16-5	Aroclor 1232	0.040	< 0.040 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	78.8%
Tetrachlorometaxylene	70.8%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	DCBP	TCMX	TOT OUT
MB-070204	72.5%	32.0%	0
LCS-070204	63.2%	35.8%	0
LDW-SP-10-C-F	51.0%	32.5%	0
LDW-SP-12-C-F	55.5%	48.8%	0
LDW-SP-20-C-F	66.0%	44.5%	0
LDW-SP-41-C-F	85.0%	59.5%	0
LDW-SP-12-C-U	55.2%	42.8%	0
LDW-SP-20-C-U	53.2%	48.5%	0
LDW-SP-41-C-U	64.5%	76.2%	0
LDW-SP-41-C-U MS	66.8%	88.2%	0
LDW-SP-41-C-U MSD	66.0%	82.2%	0
LDW-SP-39-C-F	57.0%	75.5%	0
LDW-SP-80-C-F	53.0%	67.5%	0
LDW-SP-39-C-U	55.8%	62.8%	0
LDW-SP-80-C-U	55.2%	35.0%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(42-138)	(25-134)
(TCMX) = Tetrachlorometaxylene	(32-117)	(25-118)

Prep Method: Manchester
Log Number Range: 04-10337 to 04-10347

000234

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-10-C-F
SAMPLE

Lab Sample ID: GU59A
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 18:45
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	51.0%
Tetrachlorometaxylene	32.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-12-C-F
SAMPLE

Lab Sample ID: GU59B
LIMS ID: 04-10338
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 19:19
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	55.5%
Tetrachlorometaxylene	48.8%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-20-C-F
SAMPLE

Lab Sample ID: GU59C
LIMS ID: 04-10339
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 19:53
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	66.0%
Tetrachlorometaxylene	44.5%

ANALYTICAL RESOURCES INCORPORATED

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Sample ID: LDW-SP-41-C-F
SAMPLE

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 23:18
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	85.0%
Tetrachlorometaxylene	59.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
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Sample ID: LDW-SP-12-C-U
SAMPLE

Lab Sample ID: GU59E
LIMS ID: 04-10341
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 01:00
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	55.2%
Tetrachlorometaxylene	42.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-20-C-U
SAMPLE

Lab Sample ID: GU59F
LIMS ID: 04-10342
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 01:34
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	53.2%
Tetrachlorometaxylene	48.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-41-C-U
SAMPLE

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 02:08
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	64.5%
Tetrachlorometaxylene	76.2%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-41-C-U
MATRIX SPIKE

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 02:42
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	---
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	---
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	66.8%
Tetrachlorometaxylene	88.2%

ANALYTICAL RESOURCES INCORPORATED

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PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-41-C-U
MATRIX SPIKE DUP

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 03:16
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	---
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	---
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	66.0%
Tetrachlorometaxylene	82.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-39-C-F
SAMPLE

Lab Sample ID: GU59H
LIMS ID: 04-10344
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 03:50
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	57.0%
Tetrachlorometaxylene	75.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
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Sample ID: LDW-SP-80-C-F
SAMPLE

Lab Sample ID: GU59I
LIMS ID: 04-10345
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/12/04 18:09
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	53.0%
Tetrachlorometaxylene	67.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-39-C-U
SAMPLE

Lab Sample ID: GU59J
LIMS ID: 04-10346
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/10/04 04:58
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	55.8%
Tetrachlorometaxylene	62.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082 **Sample ID: LDW-SP-80-C-U**
Page 1 of 1 **SAMPLE**

Lab Sample ID: GU59K
LIMS ID: 04-10347
Matrix: Water
Data Release Authorized:
Reported: 11/02/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/12/04 18:43
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	55.2%
Tetrachlorometaxylene	35.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LDW-SP-41-C-U
MS/MSD

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted MS/MSD: 07/02/04
Date Analyzed MS: 07/10/04 02:42
MSD: 07/10/04 03:16
Instrument/Analyst MS: ECD4/YZ
MSD: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: No

Sample Amount MS: 3000 mL
MSD: 3000 mL
Final Extract Volume MS: 0.5 mL
MSD: 0.5 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: No
Acid Cleanup: No

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 0.017	0.132	0.168	78.6%	0.122	0.168	72.6%	7.9%
Aroclor 1260	< 0.017	0.146	0.168	86.9%	0.127	0.168	75.6%	13.9%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: LCS-070204
LAB CONTROL

Lab Sample ID: LCS-070204
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 14:47
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	0.104	0.168	61.9%
Aroclor 1260	0.130	0.168	77.4%

PCB Surrogate Recovery

Decachlorobiphenyl	63.2%
Tetrachlorometaxylene	35.8%

Results reported in µg/L

FORM 4
PCB METHOD BLANK SUMMARY

SAMPLE NO.

GUMBW7/2

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

ARI Job No.: GU59 Project: LDW-SEEP SAMPLING

Lab Sample ID: GU26MBW7/2 Lab File ID: 0709-08R

Matrix (soil/water) WATER Extraction:(SepF/Cont/Sonc) OTHER

Sulfur Cleanup (Y/N) Y Date Extracted: 07/02/04

Date Analyzed (1): 07/09/04 Date Analyzed (2): 07/09/04

Time Analyzed (1): 1339 Time Analyzed (2): 1339

Instrument ID (1): ECD4 Instrument ID (2): ECD4

GC Column (1): RTX-CLP1 ID: 0.53(mm) GC Column (2): RTX-CLP2 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	GUSBW7/2	GU26SBW2	07/09/04	07/09/04
02	LDW-SP-10-CF	GU59A	07/09/04	07/09/04
03	LDW-SP-12-CF	GU59B	07/09/04	07/09/04
04	LDW-SP-20-CF	GU59C	07/09/04	07/09/04
05	LDW-SP-41-CF	GU59D	07/09/04	07/09/04
06	LDW-SP-12-CU	GU59E	07/10/04	07/10/04
07	LDW-SP-20-CU	GU59F	07/10/04	07/10/04
08	LDW-SP-41-CU	GU59G	07/10/04	07/10/04
09	LDW-SP-41-CU	GU59GMSD	07/10/04	07/10/04
10	LDW-SP-41-CU	GU59GMS	07/10/04	07/10/04
11	LDW-SP-39-CF	GU59H	07/10/04	07/10/04
12	LDW-SP-39-CU	GU59J	07/10/04	07/10/04
13	LDW-SP-80-CF	GU59I	07/12/04	07/12/04
14	LDW-SP-80-CU	GU59K	07/12/04	07/12/04

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082
Page 1 of 1

Sample ID: MB-070204
METHOD BLANK

Lab Sample ID: MB-070204
LIMS ID: 04-10337
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: NA
Date Received: NA

Date Extracted: 07/02/04
Date Analyzed: 07/09/04 13:39
Instrument/Analyst: ECD4/YZ
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 3000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: No

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	0.017	< 0.017 U
53469-21-9	Aroclor 1242	0.017	< 0.017 U
12672-29-6	Aroclor 1248	0.017	< 0.017 U
11097-69-1	Aroclor 1254	0.017	< 0.017 U
11096-82-5	Aroclor 1260	0.017	< 0.017 U
11104-28-2	Aroclor 1221	0.017	< 0.017 U
11141-16-5	Aroclor 1232	0.017	< 0.017 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.5%
Tetrachlorometaxylene	32.0%

NWTPH-g

ANALYTICAL RESOURCES INCORPORATED

WATER TPHg SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water

QC Report No: GU45

LIMS ID	Lab ID	Client ID	TFT	BB	TOT OUT
04-10232MB	070104MB	Method Blank	106%	104%	0
04-10232LC	070104LC	Lab Control	98.5%	95.6%	0
04-10232LCD	070104LCD	Lab Control Dup	100%	95.7%	0
04-10232	GU45C	LDW-SP-54-C-U	101%	105%	0
04-10238	GU45I	Trip Blank	94.6%	97.2%	0

	MB/LCS QC LIMITS	SAMPLE QC LIMITS
(TFT) = Trifluorotoluene	(66-129)	(31-139)
(BB) = Bromobenzene	(72-118)	(38-141)

Limits Updated - 04/26/04

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL GASOLINE RANGE HYDROCARBONS
NWTPHg Toluene to Naphthalene
Page 1 of 1
Matrix: Water

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Data Release Authorized:
Reported: 07/19/04

ARI ID	Client ID	Analysis Date	Range	Result mg/L
MB-070104	Method Blank	07/01/04	Gasoline	< 0.25 U
04-10232		PID2	HC ID	---
			Trifluorotoluene	106%
			Bromobenzene	104%
GU45C	LDW-SP-54-C-U	07/01/04	**Gasoline**	**0.29**
04-10232		PID2	HC ID	GRO
			Trifluorotoluene	101%
			Bromobenzene	105%
GU45I	Trip Blank	07/01/04	Gasoline	< 0.25 U
04-10238		PID2	HC ID	---
			Trifluorotoluene	94.6%
			Bromobenzene	97.2%

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHg - Toluene to Naphthalene **Sample ID: LCS-070104**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-070104 QC Report No: GU45-Windward Environmental
LIMS ID: 04-10232 Project: LDW Seep Sampling
Matrix: Water
Data Release Authorized:
Reported: 07/19/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: PID2/AAR Sample Amount LCS: 5.0 mL
LCSD: PID2/AAR LCSD: 5.0 mL
Date Analyzed LCS: 07/01/04 15:05
LCSD: 07/01/04 15:32

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	2.55	2.50	102%	2.53	2.50	101%	0.8%

Results reported in mg/L (ppm).
RPD calculated using sample concentrations per SW846.

Gasoline Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	98.5%	100%
Bromobenzene	95.6%	95.7%

4

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.: GU45MB0701W1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

SDG No.: GU45 Project No.: LDW-SEEP SAMPLING

Date Analyzed : 07/01/04 Matrix: WATER

Time Analyzed : 1437 Instrument ID : PID2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	GU45LCS0701W1	GU45LCS0701W1	07/01/04
02	GU45LCSD0701W1	GU45LCSD0701W1	07/01/04
03	TRIP BLANK	GU45I	07/01/04
04	LDW-SP-54-C-U	GU45C	07/01/04
05			
06			
07			
08			
09			
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ANALYTICAL RESOURCES INCORPORATED

WATER TPHg SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water

QC Report No: GU59

LIMS ID	Lab ID	Client ID	TFT	BB	TOT OUT
04-10342MB	070604MB	Method Blank	90.5%	90.4%	0
04-10342LC	070604LC	Lab Control	106%	97.0%	0
04-10342LCD	070604LCD	Lab Control Dup	102%	94.8%	0
04-10342	GU59F	LDW-SP-20-C-U	93.6%	92.6%	0
04-10343	GU59G	LDW-SP-41-C-U	95.8%	93.0%	0
04-10343	GU59G-MS	LDW-SP-41-C-U	102%	92.9%	0
04-10343	GU59G-MSD	LDW-SP-41-C-U	101%	95.2%	0
04-10346	GU59J	LDW-SP-39-C-U	95.9%	94.3%	0
04-10347MB	070704MB	Method Blank	95.9%	96.6%	0
04-10347LC	070704LC	Lab Control	106%	96.7%	0
04-10347LCD	070704LCD	Lab Control Dup	103%	92.9%	0
04-10347	GU59K	LDW-SP-80-C-U	96.8%	95.1%	0
04-10348	GU59L	TRIP BLANK	94.3%	95.3%	0

	MB/LCS QC LIMITS	SAMPLE QC LIMITS
(TFT) = Trifluorotoluene	(66-129)	(31-139)
(BB) = Bromobenzene	(72-118)	(38-141)

Limits Updated - 04/26/04

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL GASOLINE RANGE HYDROCARBONS
NWTPHg Toluene to Naphthalene
Page 1 of 1
Matrix: Water

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Data Release Authorized:
Reported: 07/16/04

ARI ID	Client ID	Analysis Date	Range	Result mg/L
MB-070604	Method Blank	07/06/04	Gasoline	< 0.25 U
04-10342		PID1	HC ID	---
			Trifluorotoluene	90.5%
			Bromobenzene	90.4%
GU59F	LDW-SP-20-C-U	07/06/04	Gasoline	< 0.25 U
04-10342		PID1	HC ID	---
			Trifluorotoluene	93.6%
			Bromobenzene	92.6%
GU59G	LDW-SP-41-C-U	07/06/04	Gasoline	< 0.25 U
04-10343		PID1	HC ID	---
			Trifluorotoluene	95.8%
			Bromobenzene	93.0%
GU59J	LDW-SP-39-C-U	07/06/04	Gasoline	< 0.25 U
04-10346		PID1	HC ID	---
			Trifluorotoluene	95.9%
			Bromobenzene	94.3%
MB-070704	Method Blank	07/07/04	Gasoline	< 0.25 U
04-10347		PID1	HC ID	---
			Trifluorotoluene	95.9%
			Bromobenzene	96.6%
GU59K	LDW-SP-80-C-U	07/07/04	Gasoline	< 0.25 U
04-10347		PID1	HC ID	---
			Trifluorotoluene	96.8%
			Bromobenzene	95.1%
GU59L	TRIP BLANK	07/06/04	Gasoline	< 0.25 U
04-10348		PID1	HC ID	---
			Trifluorotoluene	94.3%
			Bromobenzene	95.3%

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHg - Toluene to Naphthalene
Page 1 of 1

Sample ID: LDW-SP-41-C-U
MS/MSD

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Instrument/Analyst MS: PID1/AAR
MSD: PID1/AAR
Date Analyzed MS: 07/06/04 16:29
MSD: 07/06/04 16:57

Sample Amount MS: 5.0 mL
MSD: 5.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Gasoline Range Hydrocarbons	< 0.25 U	1.97	2.50	78.8%	1.97	2.50	78.8%	0.0%

Results reported in mg/L (ppm).
RPD calculated using sample concentrations per SW846.

Gasoline Surrogate Recovery

	MS	MSD
Trifluorotoluene	102%	101%
Bromobenzene	92.9%	95.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHg - Toluene to Naphthalene
Page 1 of 1

Sample ID: LCS-070604
LCS/LCSD

Lab Sample ID: LCS-070604
LIMS ID: 04-10342
Matrix: Water
Data Release Authorized:
Reported: 07/16/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: PID1/AAR
LCSD: PID1/AAR
Date Analyzed LCS: 07/06/04 14:07
LCSD: 07/06/04 14:36

Sample Amount LCS: 5.0 mL
LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	2.13	2.50	85.2%	2.12	2.50	84.8%	0.5%

Results reported in mg/L (ppm).
RPD calculated using sample concentrations per SW846.

Gasoline Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	106%	102%
Bromobenzene	97.0%	94.8%

4

BETX/GAS METHOD BLANK SUMMARY

BLANK NO. GU59MB0706W1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

SDG No.: GU59 Project No.: LDW-SEEP SAMPLING

Date Analyzed : 07/06/04 Matrix: WATER

Time Analyzed : 1339 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	GU59LCS0706W1	GU59LCS0706W1	07/06/04
02	GU59LCSD0706W1	GU59LCSD0706W1	07/06/04
03	TRIP BLANK	GU59L	07/06/04
04	LDW-SP-41-C-U	GU59G MS	07/06/04
05	LDW-SP-41-C-U	GU59G MSD	07/06/04
06	LDW-SP-41-C-U	GU59G	07/06/04
07	LDW-SP-12-C-U	GU59E	07/06/04
08	LDW-SP-20-C-U	GU59F	07/06/04
09	LDW-SP-39-C-U	GU59J	07/06/04
10			
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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHg - Toluene to Naphthalene **Sample ID: LCS-070704**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-070704 QC Report No: GU59-Windward Environmental
LIMS ID: 04-10347 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized:
Reported: 07/16/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: PID1/AAR Sample Amount LCS: 5.0 mL
LCSD: PID1/AAR LCSD: 5.0 mL
Date Analyzed LCS: 07/07/04 13:37
LCSD: 07/07/04 14:06

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	2.21	2.50	88.4%	2.03	2.50	81.2%	8.5%

Results reported in mg/L (ppm).
RPD calculated using sample concentrations per SW846.

Gasoline Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	106%	103%
Bromobenzene	96.7%	92.9%

4

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.: GU59MB0707W1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

SDG No.: GU59 Project No.: LDW-SEEP SAMPLING

Date Analyzed : 07/07/04 Matrix: WATER

Time Analyzed : 1309 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	GU59LCS0707W1	GU59LCS0707W1	07/07/04
02	GU59LCSD0707W1	GU59LCSD0707W1	07/07/04
03	LDW-SP-80-C-U	GU59K	07/07/04
04			
05			
06			
07			
08			
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ANALYTICAL RESOURCES INCORPORATED

WATER TPHg SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water

QC Report No: GU76

LIMS ID	Lab ID	Client ID	TFT	BB	TOT OUT
04-10433MB	070604MB	Method Blank	90.5%	90.4%	0
04-10433LC	070604LC	Lab Control	106%	97.0%	0
04-10433LCD	070604LCD	Lab Control Dup	102%	94.8%	0
04-10433	GU76D	LDW-SP-69-C-U	96.4%	95.0%	0

	MB/LCS QC LIMITS	SAMPLE QC LIMITS
(TFT) = Trifluorotoluene	(66-129)	(31-139)
(BB) = Bromobenzene	(72-118)	(38-141)

Limits Updated - 04/26/04

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL GASOLINE RANGE HYDROCARBONS
NWTPHg Toluene to Naphthalene
Page 1 of 1
Matrix: Water

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Data Release Authorized:
Reported: 07/19/04

ARI ID	Client ID	Analysis Date	Range	Result mg/L
MB-070604	Method Blank	07/06/04	Gasoline	< 0.25 U
04-10433		PID1	HC ID	---
			Trifluorotoluene	90.5%
			Bromobenzène	90.4%
GU76D	LDW-SP-69-C-U	07/06/04	Gasoline	< 0.25 U
04-10433		PID1	HC ID	---
			Trifluorotoluene	96.4%
			Bromobenzene	95.0%

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHg - Toluene to Naphthalene **Sample ID: LCS-070604**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-070604 QC Report No: GU76-Windward Environmental
LIMS ID: 04-10433 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized:
Reported: 07/19/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: PID1/AAR Sample Amount LCS: 5.0 mL
LCSD: PID1/AAR LCSD: 5.0 mL
Date Analyzed LCS: 07/06/04 14:07
LCSD: 07/06/04 14:36

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	2.13	2.50	85.2%	2.09	2.50	83.6%	1.9%

Results reported in mg/L (ppm).
RPD calculated using sample concentrations per SW846.

Gasoline Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	106%	102%
Bromobenzene	97.0%	94.8%

4

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.: GU76MB0706W1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

SDG No.: GU76 Project No.: LDW-SEEP SAMPLING

Date Analyzed : 07/06/04 Matrix: WATER

Time Analyzed : 1339 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	GU76LCS0706W1	GU76LCS0706W1	07/06/04
02	GU76LCSD0706W1	GU76LCSD0706W1	07/06/04
03	LDW-SP-69-C-U	GU76D	07/06/04
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ANALYTICAL RESOURCES INCORPORATED

WATER TPHg SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water QC Report No: GU83

LIMS ID	Lab ID	Client ID	TFT	BB	TOT OUT
04-10465MB	070604MB	Method Blank	90.5%	90.4%	0
04-10465LC	070604LC	Lab Control	106%	97.0%	0
04-10465LCD	070604LCD	Lab Control Dup	102%	94.8%	0
04-10465	GU83E	LDW-SP-64-C-U	93.1%	92.0%	0

	MB/LCS QC LIMITS	SAMPLE QC LIMITS
(TFT) = Trifluorotoluene	(66-129)	(31-139)
(BB) = Bromobenzene	(72-118)	(38-141)

Limits Updated - 04/26/04

\# Column to be used to flag recovery values

* Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL GASOLINE RANGE HYDROCARBONS
NWTPHg Toluene to Naphthalene
Page 1 of 1
Matrix: Water

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Data Release Authorized:
Reported: 07/20/04

ARI ID	Client ID	Analysis Date	Range	Result mg/L
MB-070604	Method Blank	07/06/04	Gasoline	< 0.25 U
04-10465		PID1	HC ID	---
			Trifluorotoluene	90.5%
			Bromobenzène	90.4%
GU83E	LDW-SP-64-C-U	07/06/04	Gasoline	< 0.25 U
04-10465		PID1	HC ID	---
			Trifluorotoluene	93.1%
			Bromobenzene	92.0%

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHg - Toluene to Naphthalene **Sample ID: LCS-070604**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-070604 QC Report No: GU83-Windward Environmental
LIMS ID: 04-10465 Project: LDW-SEEP SAMPLING
Matrix: Water
Data Release Authorized:
Reported: 07/20/04 Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: PID1/AAR Sample Amount LCS: 5.0 mL
LCSD: PID1/AAR LCSD: 5.0 mL
Date Analyzed LCS: 07/06/04 14:07
LCSD: 07/06/04 14:36

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	2.13	2.50	85.2%	2.09	2.50	83.6%	1.9%

Results reported in mg/L (ppm).
RPD calculated using sample concentrations per SW846.

Gasoline Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	106%	102%
Bromobenzene	97.0%	94.8%

4

BETX/GAS METHOD BLANK SUMMARY

BLANK NO.: GU83MB0706W1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

SDG No.: GU83 Project No.: LDW-SEEP SAMPLING

Date Analyzed : 07/06/04 Matrix: WATER

Time Analyzed : 1339 Instrument ID : PID1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	GU83LCS0706W1	GU83LCS0706W1	07/06/04
02	GU83LCSD0706W1	GU83LCSD0706W1	07/06/04
03	LDW-SP-64-C-U	GU83E	07/06/04
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NWTPH-Dx

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Client ID	O-TER	TOT OUT
MB-070204	77.8%	0
LCS-070204	84.2%	0
LDW-SP-54-C-U	55.1%	0
LDW-SP-54-C-F	53.3%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(54-131)	(46-123)

Prep Method: SW3510C
Log Number Range: 04-10232 to 04-10233

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	O-TER	TOT OUT
MB-070204	77.8%	0
LCS-070204	84.2%	0
LDW-SP-10-C-F	58.7%	0
LDW-SP-12-C-F	84.0%	0
LDW-SP-20-C-F	68.4%	0
LDW-SP-41-C-F	83.6%	0
LDW-SP-41-C-F MS	84.9%	0
LDW-SP-41-C-F MSD	86.2%	0
LDW-SP-12-C-U	64.4%	0
LDW-SP-20-C-U	84.9%	0
LDW-SP-41-C-U	84.4%	0
LDW-SP-41-C-U MS	88.0%	0
LDW-SP-41-C-U MSD	84.2%	0
LDW-SP-39-C-F	85.1%	0
LDW-SP-80-C-F	51.6%	0
LDW-SP-39-C-U	82.2%	0
LDW-SP-80-C-U	54.9%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(54-131)	(46-123)

Prep Method: SW3510C
Log Number Range: 04-10337 to 04-10347

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Water

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Data Release Authorized: MW
Reported: 07/09/04

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result mg/L
MB-070204	Method Blank	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10232			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	77.8%
GU45C	LDW-SP-54-C-U	07/02/04	07/07/04	1.0	**Diesel**	**2.2**
04-10232			FID3A		**Motor Oil**	**1.9**
					HC ID	DRO/RRO
					o-Terphenyl	55.1%
GU45D	LDW-SP-54-C-F	07/02/04	07/07/04	1.0	**Diesel**	**1.4**
04-10233			FID3A		Motor Oil	< 0.50 U
					HC ID	DRO
					o-Terphenyl	53.3%

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 2
Matrix: Water

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Data Release Authorized: MW
Reported: 07/09/04

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result mg/L
MB-070204	Method Blank	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10337			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	77.8%
GU59A	LDW-SP-10-C-F	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10337			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	58.7%
GU59B	LDW-SP-12-C-F	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10338			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	84.0%
GU59C	LDW-SP-20-C-F	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10339			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	68.4%
GU59D	LDW-SP-41-C-F	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10340			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	83.6%
GU59E	LDW-SP-12-C-U	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10341			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	64.4%
GU59F	LDW-SP-20-C-U	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10342			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	84.9%
GU59G	LDW-SP-41-C-U	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10343			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	84.4%
GU59H	LDW-SP-39-C-F	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10344			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	85.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 2 of 2
Matrix: Water

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Data Release Authorized:
Reported: 07/09/04

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result mg/L
GU59I	LDW-SP-80-C-F	07/02/04	07/07/04	1.0	**Diesel**	**0.59**
04-10345			FID3A		Motor Oil	< 0.50 U
					HC ID	DRO
					o-Terphenyl	51.6%
GU59J	LDW-SP-39-C-U	07/02/04	07/07/04	1.0	Diesel	< 0.25 U
04-10346			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	82.2%
GU59K	LDW-SP-80-C-U	07/02/04	07/08/04	1.0	**Diesel**	**0.61**
04-10347			FID3A		Motor Oil	< 0.50 U
					HC ID	DRO
					o-Terphenyl	54.9%

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LDW-SP-41-C-F
MS/MSD

Lab Sample ID: GU59D
LIMS ID: 04-10340
Matrix: Water
Data Release Authorized: MW
Reported: 07/09/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted MS/MSD: 07/02/04

Sample Amount MS: 500 mL
MSD: 500 mL

Date Analyzed MS: 07/07/04 19:46
MSD: 07/07/04 20:07

Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL

Instrument/Analyst MS: FID/PKC
MSD: FID/PKC

Dilution Factor MS: 1.00
MSD: 1.00

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	< 0.25 U	2.64	3.00	88.0%	2.63	3.00	87.7%	0.4%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LDW-SP-41-C-U
MS/MSD

Lab Sample ID: GU59G
LIMS ID: 04-10343
Matrix: Water
Data Release Authorized: MW
Reported: 07/09/04

QC Report No: GU59-Windward Environmental
Project: LDW-SEEP SAMPLING

Date Sampled: 07/01/04
Date Received: 07/01/04

Date Extracted MS/MSD: 07/02/04

Date Analyzed MS: 07/07/04 21:31
MSD: 07/07/04 21:52

Instrument/Analyst MS: FID/PKC
MSD: FID/PKC

Sample Amount MS: 500 mL
MSD: 500 mL

Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL

Dilution Factor MS: 1.00
MSD: 1.00

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	< 0.25 U	2.73	3.00	91.0%	2.62	3.00	87.3%	4.1%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-070204
LAB CONTROL

Lab Sample ID: LCS-070204
LIMS ID: 04-10232
Matrix: Water
Data Release Authorized:
Reported: 07/09/04

QC Report No: GU45-Windward Environmental
Project: LDW Seep Sampling

Date Sampled: 06/30/04
Date Received: 06/30/04

Date Extracted: 07/02/04
Date Analyzed: 07/07/04 16:17
Instrument/Analyst: FID/PKC

Sample Amount: 500 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	2.63	3.00	87.7%

TPHD Surrogate Recovery

o-Terphenyl	84.2%

Results reported in mg/L

4

TPH METHOD BLANK SUMMARY

BLANK NO.

GU45MBW1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

SDG No.: GU45 Project No.: LDW SEEP SAMPLING

Date Extracted: 07/02/04 Matrix: LIQUID

Date Analyzed : 07/07/04 Instrument ID : FID3A

Time Analyzed : 1556

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	GU45LCSW1	GU45LCSW1	07/07/04
02	LDW-SP-54-C-	GU45C	07/07/04
03	LDW-SP-54-C-	GU45D	07/07/04
04	LDW-SP-10-C-	GU59A	07/07/04
05	LDW-SP-12-C-	GU59B	07/07/04
06	LDW-SP-20-C-	GU59C	07/07/04
07	LDW-SP-41-C-	GU59D	07/07/04
08	LDW-SP-41-C-	GU59D MS	07/07/04
09	LDW-SP-41-C-	GU59D MSD	07/07/04
10	LDW-SP-12-C-	GU59E	07/07/04
11	LDW-SP-20-C-	GU59F	07/07/04
12	LDW-SP-41-C-	GU59G	07/07/04
13	LDW-SP-41-C-	GU59G MS	07/07/04
14	LDW-SP-41-C-	GU59G MSD	07/07/04
15	LDW-SP-39-C-	GU59H	07/07/04
16	LDW-SP-80-C-	GU59I	07/07/04
17	LDW-SP-39-C-	GU59J	07/07/04
18	LDW-SP-80-C-	GU59K	07/08/04
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ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	O-TER	TOT OUT
MB-070704	89.3%	0
LCS-070704	96.9%	0
LCSD-070704	100%	0
LDW-SP-69-C-U	96.9%	0
LDW-SP-69-C-F	95.1%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(54-131)	(46-123)

Prep Method: SW3510C
Log Number Range: 04-10433 to 04-10434

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Client ID	O-TER	TOT OUT
MB-070704	89.3%	0
LCS-070704	96.9%	0
LCSD-070704	100%	0
LDW-SP-64-RB-S-U	94.9%	0
LDW-SP-64-RB-MP-U	94.9%	0
LDW-SP-64-C-U	94.0%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(54-131)	(46-123)

Prep Method: SW3510C
Log Number Range: 04-10463 to 04-10465

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Water

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING

Data Release Authorized: MW
Reported: 07/12/04

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result mg/L
MB-070704	Method Blank	07/07/04	07/09/04	1.0	Diesel	< 0.25 U
04-10433			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	89.3%
GU76D	LDW-SP-69-C-U	07/07/04	07/09/04	1.0	Diesel	< 0.25 U
04-10433			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	96.9%
GU76E	LDW-SP-69-C-F	07/07/04	07/09/04	1.0	Diesel	< 0.25 U
04-10434			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	95.1%

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Page 1 of 1
Matrix: Water

QC Report No: GU83-Windward Environmental
Project: LDW-SEEP SAMPLING

Data Release Authorized: MW
Reported: 07/12/04

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result mg/L
MB-070704	Method Blank	07/07/04	07/09/04	1.0	Diesel	< 0.25 U
04-10463			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	89.3%
GU83C	LDW-SP-64-RB-S-U	07/07/04	07/09/04	1.0	Diesel	< 0.25 U
04-10463			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	94.9%
GU83D	LDW-SP-64-RB-MP-U	07/07/04	07/09/04	1.0	Diesel	< 0.25 U
04-10464			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	94.9%
GU83E	LDW-SP-64-C-U	07/07/04	07/09/04	1.0	Diesel	< 0.25 U
04-10465			FID3A		Motor Oil	< 0.50 U
					HC ID	---
					o-Terphenyl	94.0%

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-070704
LCS/LCSD

Lab Sample ID: LCS-070704
LIMS ID: 04-10433
Matrix: Water
Data Release Authorized: MW
Reported: 07/12/04

QC Report No: GU76-Windward Environmental
Project: LDW-SEEP SAMPLING
Date Sampled: 07/02/04
Date Received: 07/02/04

Date Extracted LCS/LCSD: 07/07/04
Date Analyzed LCS: 07/09/04 19:14
LCSD: 07/09/04 19:35
Instrument/Analyst LCS: FID/PKC
LCSD: FID/PKC

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.59	3.00	86.3%	2.67	3.00	89.0%	3.0%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	96.9%	100%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

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TPH METHOD BLANK SUMMARY

BLANK NO.: GU76MBW1

Lab Name: ANALYTICAL RESOURCES, INC Client: WINDWARD ENVIRONMENTAL

SDG No.: GU76/GU83 Project No.: LDW-SEEP SAMPLING

Date Extracted: 07/07/04 Matrix: LIQUID

Date Analyzed : 07/09/04 Instrument ID : FID3A

Time Analyzed : 1853

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	GU76LCSW1	GU76LCSW1	07/09/04
02	GU76LCSDW1	GU76LCSDW1	07/09/04
03	LDW-SP-69-C-U	GU76D	07/09/04
04	LDW-SP-69-C-F	GU76E	07/09/04
05	LDW-SP-64-RB-S-U	GU83C	07/09/04
06	LDW-SP-64-RB-MP-U	GU83D	07/09/04
07	LDW-SP-64-C-U	GU83E	07/09/04
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General Chemistry

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: DAP
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-48-C-U
ARI ID: 04-10230 GU45A

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/07/04 070704#2	EPA 160.2	mg/L	2.2	12.4
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ah
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-48-C-F
ARI ID: 04-10231 GU45B

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ark
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-54-C-U
ARI ID: 04-10232 GU45C

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/07/04 070704#2	EPA 160.2	mg/L	1.0	14.3
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	6.42

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: gd
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-54-C-F
ARI ID: 04-10233 GU45D

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070604#1	EPA 415.1	mg/L	1.50	5.00

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ah
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-82-C-U
ARI ID: 04-10234 GU45E

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/07/04 070704#2	EPA 160.2	mg/L	1.0	11.2
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	2.50

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ap
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-82-C-F
ARI ID: 04-10235 GU45F

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: 04
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-82-C-FD-U
ARI ID: 04-10236 GU45G

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/07/04 070704#2	EPA 160.2	mg/L	1.1	5.8
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	1.60

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: DAR
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Client ID: LDW-SP-82-C-FD-F
ARI ID: 04-10237 GU45H

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: 04
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	07/07/04	mg/L	< 1.0 U
Total Organic Carbon	07/01/04	mg/L	< 1.50 U
Dissolved Organic Carbon	07/09/04	mg/L	< 1.50 U

LAB CONTROL RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: AP
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	07/07/04	mg/L	49.5	50.0	99.0%

STANDARD REFERENCE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: alp
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon SPEX #25-161AS	07/01/04	mg/L	19.6	20.0	98.0%
Dissolved Organic Carbon SPEX #25-161AS	07/09/04	mg/L	21.6	20.0	108.0%

REPLICATE RESULTS-CONVENTIONALS
GU45-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: asp
Reported: 07/12/04

Project: LDW Seep Sampling
Event: NA
Date Sampled: 06/30/04
Date Received: 06/30/04

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: GU45A Client ID: LDW-SP-48-C-U					
Total Suspended Solids	07/07/04	mg/L	12.4	13.1	5.5%

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: AMP
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-10-C-F
ARI ID: 04-10337 GU59A

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	2.41

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: [signature]
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-12-C-F
ARI ID: 04-10338 GU59B

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: RH
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-20-C-F
ARI ID: 04-10339 GU59C

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ah
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-41-C-F
ARI ID: 04-10340 GU59D

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QAP
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-12-C-U
ARI ID: 04-10341 GU59E

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/02/04 070204#1	EPA 160.2	mg/L	1.0	15.6
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: AMP
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-20-C-U
ARI ID: 04-10342 GU59F

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/02/04 070204#1	EPA 160.2	mg/L	1.0	4.3
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: [signature]
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-41-C-U
ARI ID: 04-10343 GU59G

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/02/04 070204#1	EPA 160.2	mg/L	1.0	4.0
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: RSP
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-39-C-F
ARI ID: 04-10344 GU59H

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: RLP
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-80-C-F
ARI ID: 04-10345 GU59I

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070604#1	EPA 415.1	mg/L	1.50	14.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QAR
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-39-C-U
ARI ID: 04-10346 GU59J

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/02/04 070204#1	EPA 160.2	mg/L	1.0	5.8
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: RP
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Client ID: LDW-SP-80-C-U
ARI ID: 04-10347 GU59K

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/02/04 070204#1	EPA 160.2	mg/L	1.1	33.3
Total Organic Carbon	07/01/04 070104#1	EPA 415.1	mg/L	1.50	13.4

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	07/02/04	mg/L	< 1.0 U
Total Organic Carbon	07/01/04	mg/L	< 1.50 U
Dissolved Organic Carbon	07/09/04	mg/L	< 1.50 U

LAB CONTROL RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	07/02/04	mg/L	49.6	50.0	99.2%

STANDARD REFERENCE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QA
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon SPEX #25-161AS	07/01/04	mg/L	19.6	20.0	98.0%
Dissolved Organic Carbon ERA #0206-02-02	07/09/04	mg/L	21.6	20.0	108.0%

REPLICATE RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: GU59A Client ID: LDW-SP-10-C-F					
Dissolved Organic Carbon	07/09/04	mg/L	2.41	< 1.50	NA
ARI ID: GU59G Client ID: LDW-SP-41-C-U					
Total Suspended Solids	07/02/04	mg/L	4.0	10.2	87.3%
Total Organic Carbon	07/01/04	mg/L	< 1.50	< 1.50	NA

MS/MSD RESULTS-CONVENTIONALS
GU59-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/12/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/01/04
Date Received: 07/01/04

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: GU59A Client ID: LDW-SP-10-C-F						
Dissolved Organic Carbon	07/09/04	mg/L	2.41	26.4	20.0	120.0%
ARI ID: GU59G Client ID: LDW-SP-41-C-U						
Total Organic Carbon	07/01/04	mg/L	< 1.50	21.7	20.0	108.5%

SAMPLE RESULTS-CONVENTIONALS
GU76-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/02/04
Date Received: 07/02/04

Client ID: LDW-SP-62-C-F
ARI ID: 04-10430 GU76A

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070904#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU76-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ark
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/02/04
Date Received: 07/02/04

Client ID: LDW-SP-61-C-U
ARI ID: 04-10431 GU76B

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/07/04 070704#1	EPA 160.2	mg/L	2.2	16.2
Total Organic Carbon	07/15/04 071504#1	EPA 415.1	mg/L	1.50	2.57

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU76-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/02/04
Date Received: 07/02/04

Client ID: LDW-SP-61-C-F
ARI ID: 04-10432 GU76C

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070604#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
GU76-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: AR
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	07/07/04	mg/L	< 1.0 U
Total Organic Carbon	07/15/04	mg/L	< 1.50 U
Dissolved Organic Carbon	07/09/04	mg/L	< 1.50 U

LAB CONTROL RESULTS-CONVENTIONALS
GU76-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ASP
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	07/07/04	mg/L	49.9	50.0	99.8%

STANDARD REFERENCE RESULTS-CONVENTIONALS
GU76-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QA-R
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon SPEX #25-161AS	07/15/04	mg/L	20.3	20.0	101.5%
Dissolved Organic Carbon ERA #0206-02-02	07/09/04	mg/L	21.6	20.0	108.0%

REPLICATE RESULTS-CONVENTIONALS
GU76-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QAS
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/02/04
Date Received: 07/02/04

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: GU76B Client ID: LDW-SP-61-C-U					
Total Suspended Solids	07/07/04	mg/L	16.2	15.3	5.7%

SAMPLE RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/03/04
Date Received: 07/03/04

Client ID: LDW-SP-75-C-U
ARI ID: 04-10461 GU83A

Analyte	Date	Method	Units	RL	Sample
Total Suspended Solids	07/07/04 070704#1	EPA 160.2	mg/L	2.3	24.9
Total Organic Carbon	07/15/04 071504#1	EPA 415.1	mg/L	1.50	3.18

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/03/04
Date Received: 07/03/04

Client ID: LDW-SP-75-C-F
ARI ID: 04-10462 GU83B

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070604#1	EPA 415.1	mg/L	1.50	< 1.50 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: DAP
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/02/04
Date Received: 07/03/04

Client ID: LDW-SP-64-C-F
ARI ID: 04-10466 GU83F

Analyte	Date	Method	Units	RL	Sample
Dissolved Organic Carbon	07/09/04 070604#1	EPA 415.1	mg/L	1.50	1.75

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QA
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank
Total Suspended Solids	07/07/04	mg/L	< 1.0 U
Total Organic Carbon	07/15/04	mg/L	< 1.50 U
Dissolved Organic Carbon	07/09/04	mg/L	< 1.50 U

LAB CONTROL RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ap
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
Total Suspended Solids	07/07/04	mg/L	49.9	50.0	99.8%

STANDARD REFERENCE RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: QA
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon SPEX #25-161AS	07/15/04	mg/L	20.3	20.0	101.5%
Dissolved Organic Carbon ERA #0206-02-02	07/09/04	mg/L	21.6	20.0	108.0%

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REPLICATE RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ah
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/03/04
Date Received: 07/03/04

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: GU83A Client ID: LDW-SP-75-C-U					
Total Suspended Solids	07/07/04	mg/L	24.9	23.7	4.9%
Total Organic Carbon	07/15/04	mg/L	3.18	3.11	2.2%

MS/MSD RESULTS-CONVENTIONALS
GU83-Windward Environmental

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/16/04

Project: LDW-SEEP SAMPLING
Event: NA
Date Sampled: 07/03/04
Date Received: 07/03/04

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: GU83A Client ID: LDW-SP-75-C-U						
Total Organic Carbon	07/15/04	mg/L	3.18	23.8	20.0	103.1%

Frontier
GeoSciences Inc.

414 Pontius Ave N
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RE: Lower Duwamish Waterway Seeps Project
Project # 04-08-06-20

November 12, 2004

Susan McGroddy
Windward Environmental
200 West Mercer St., Suite 401
Seattle, WA 98119
Main Line: (206) 378-1364
Fax: (206) 217-0089

SUBJECT: Report for the Samples Collected from June 29 to July 3, 2004.

Dear Ms. McGroddy,

Enclosed please find the revised results for trace metals and mercury in the water samples collected from June 29 to July 3, 2004. The samples were received in good condition by Frontier Geosciences Inc. from July 29 to July 3, 2004.

There were no significant analytical issues and any QC issues experienced are addressed within the following report. Please feel free to contact me if you have any questions regarding this report.

Sincerely,

Frank Colich

Frank Colich
Project Manager
Frankc@Frontiergeosciences.com

Windward Environmental
Report to Susan McGroddy

RE: Lower Duwamish Waterway Seeps Project
Project # 04-08-06-20

November 12, 2004

Frank Colich
Frontier Geosciences Inc.
414 Pontius Ave. N
Seattle, WA 98109
(206) 622-6960

1. Scope of Work

A total of forty samples were submitted for trace metals analysis and total mercury analysis from June 29 to July 3, 2004. The samples were analyzed using high-level QA/QC documentation.

Please note that this is a revised report. There are three revisions that were made to the report and are as follows:

The sample LDW-SP-80-C-F was had an original nickel concentration reported as a non-detect at ND (< 0.07). The report has been changed to reflect nickel's reporting limit of 0.04. The new result is ND (0.04).

The batch identifiers for Cr and Cd were reported as A3 on the matrix duplicate and matrix spike reports. The correct batch ID is A4 and this report has been changed to reflect that identifier.

Samples results were reported as preparation blank corrected. The report has been changed to reflect all results without preparation blank correction. The ICP-MS datasets have been relabeled with a suffix of –nPBW to reflect the correction. The CV-AFS and HG-HFS datasets have maintained their original labels.

2. Sample Receipt

Due to the fact that Frontier is based within a few miles from the sampling site, the samples were hand delivered on the same day that sampling occurred. Samples typically arrived at Frontier between three to four o'clock PM. Upon arrival, samples were immediately received and sent to the lab for preservation and filtration where necessary.

The samples were received and logged in according to FGS protocols on the day of receipt. Sample processing took place using ultra-clean sample handling techniques in clean areas known to be low in atmospheric mercury (and presumably other trace elements as well). Reagents, gases, and DI water are all reagent or ultra-pure grade, and were previously analyzed for trace metals to ensure very low blanks. Samples designated for dissolved analysis were filtered using a 0.45 um-disposable Nalgene filter unit. Immediately after the samples arrived at Frontier Geosciences, the samples were preserved to 1% (v/v) with HNO_3. This only occurred for the first sampling event. After the first event the trace metals bottles were sent to Windward with preservative in the bottles. When these bottles were received, the pH was check upon receipt to ensure proper preservation of the samples. All samples requiring trace metals analyses were oven-digested at 85°C overnight prior to analysis by inductively coupled plasma-mass spectroscopy (ICP-MS) according to EPA Method 200.8.

Original samples for total mercury analysis were preserved and oxidized to 1% to 5% (v/v) with BrCl and digested overnight at room temperature prior to analysis by cold vapor atomic fluorescence spectroscopy (CVAFS) according to EPA Method 1631. Prior to preservation the samples were filtered using 1.0 um PES filter units that were specifically purchased for this project.

The samples identified as LDW-SP-39-F and LDW-SP-39-C-U that were collected on July 1, 2004, were mistakenly delivered to ARI in Seattle. These samples were delivered to Frontier by ARI's courier on July 2, 2004. Since the samples arrived to Frontier within 48 hours, all samples were received within holding times and no further action was required.

3. ICP-MS Analyses

Metals were determined using inductively coupled plasma – mass spectrometry (ICP-MS) with a Perkin-Elmer ELAN 6000. Prepared samples were introduced

into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions were extracted from the plasma through a differentially pumped vacuum interface and separated based on their mass-to-charge ratio (m/z) by a mass spectrometer. A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system. Daily analytical runs were begun with a 6-point standard curve, spanning the entire analytical range of interest, with additional continuing calibration verification (CCV) standards run every 10 samples. The daily standard curves were calculated with the initial standards (calibration blank corrected) of the day, using linear regression, forced through zero (Access Database software). All sample results are reported blank corrected. The ICP-MS software performs most calculations for trace metals determination automatically, and outputs hardcopies with results in µg/L units uncorrected for the preparation blanks and instrument blanks. All samples were corrected for the instrument blanks but were **not** preparation blank corrected according to the following equation.

C is the sample concentration calculated by ICP-MS software in µg/L units
DF is the dilution factor of the sample
IB is the mean concentration of the instrument blanks in µg/L units

$$[\text{Metal}]\ (\mu g/L) = C - (DF * IB)$$

To assist with identifying analytical batches, each ICP-MS dataset was given a specific label. There were four ICP-MS analytical batches and are determined as follows:

ICPMS1-040706-1-nPBW was analyzed on July 6, 2004 and is labeled as Batch ID of A1.
ICPMS1-040713-1-nPBW was analyzed on July 13, 2004 and is labeled as Batch ID of A2.
ICPMS3-040714-1A-nPBW was analyzed on July 14, 2004 and is labeled as Batch ID of A3.
ICPMS3-040715-1-nPBW was analyzed on July 15, 2004 and is labeled as Batch ID of A4.

4. Total Mercury Analysis

Samples were analyzed for total mercury in accordance with EPA Method 1631E on March 24, 2004. Aliquots of the samples were weighed out in Teflon containers, $NH_2OH \cdot HCl$ was added to destroy free halogens, and then each sample was poured into pre-purged bubblers. Then $SnCl_2$ was added to reduce Hg (II) to Hg^o, which was then purged onto gold traps as a preconcentration step. The Hg^o contained on the gold traps was then analyzed by thermal desorption into a CVAFS, using the dual amalgamation technique. Peak areas were assessed by integrators. All samples were corrected for the instrument (bubbler) blanks, but the sample concentrations were **not** corrected for the preparation blanks. Net THg concentrations were calculated according to the following formula, where **PA** is the integrator peak area, **b** is the mean bubbler blank, **V** is the digest volume (in liters), $\mathbf{F_D}$ is the dilution factor associated with preserving the samples, and **S** is the calibration curve slope in units/ng:

$$[THg]\ (ng/L) = \frac{[(PA-b/S)/(V)]}{F_D}$$

To assist with identifying analytical batches, each CV-AFS dataset was given a specific label. There were four CV-AFS analytical batches and are determined as follows:

THg11-040709-1 was analyzed on July 9, 2004 and is labeled as Batch ID B1.
THg12-040709-1 was analyzed on July 9, 2004 and is labeled as Batch ID B2.
Thg12-040714-1 was analyzed on July 14, 2004 and is labeled as Batch ID B3.

5. Arsenic Analysis

Aliquots of the digested samples were analyzed for arsenic content by hydride generation - atomic fluorescence spectroscopy (HG-AFS) according to SM3114-C. Samples were treated with potassium-iodide (KI) to reduce all inorganic arsenic in the sample to As(III). Reaction of the sample with sodium borohydride releases gaseous arsine hydrides that are carried by an argon stream into a hydrogen-fueled flame placed in the path of an atomic fluorescence detector. Blank samples were analyzed undiluted (1.43x) while most samples were analyzed at a 5x dilution. Results were automatically downloaded to an MS Access database, where calculations and blank correction for the mean of the instrument blanks were performed. All samples were corrected for the

instrument blanks but were **not** preparation blank corrected according to the following equation.

$$C_s\ (ng/L) = [(PH_s - Ph_{ib})/m * DF_s]_b$$

Where:
C_s = *sample concentration*
PH_s = *peak height of the sample*
PH_{ib} = *mean peak height of the instrument blanks (IBWs)*
m = *slope of the calibration curve corrected for the IBWs*
DF_s = *dilution factor of the sample*

To assist with identifying analytical batches, each HV-AFS dataset was given a specific label. There were four HV-AFS analytical batches and are determined as follows:

AFS1-040721-1 was analyzed on July 21, 2004 and is labeled as Batch ID C1.
AFS1-040720-1 was analyzed on July 20, 2004 and is labeled as Batch ID C2.

6. Analytical Issues

There were no significant analytical difficulties experienced during the analysis of these samples and all QC parameters were within established control limits with the following exceptions:

As a measure of the accuracy of the methods used, certified reference materials (CRMs) were prepared and analyzed with each analytical batch according to the matrix. Since there is no CRM available for a seep samples, the CRM's analyzed were NIST 1640 and NIST 1641d, which are river water matrices. The control limits for CRM recoveries are 75-125%. All CRM results are within the control limits.

All calibration curves have correlation coefficients of at least 0.995, and all calibration check samples (ICVs and CCVs) were within the control limits of 75-125% recovery, with the following exception. The ICP-MS analysis for silver for batch A1 yielded low CCV recoveries, below the 75% limit. Due to the low recoveries silver is not reported from this analytical run. All samples were re-analyzed for silver and are reported from batch A2.

As a measure of the accuracy of the methods used, and to check for matrix interference, matrix spikes were digested and analyzed. All matrix spikes were

within the control limits of 75-125%, with the following exceptions. The matrix spike recoveries for Ni and Cu in batch A3 yielded recoveries that were below the established control limits. The samples were also analyzed at a 10X dilution. At that dilution there was no suppression of the spike recovery; therefore, all analytes reported from Batch ID A3 are reported from the 10X dilution.

The matrix spikes for chromium and cadmium in batch A3 were mistakenly not spiked by the ICP-MS analyst. These samples were immediately re-analyzed with the proper spiking solution added. These samples are reported from batch ID A4.

A reasonable measure of the precision of the analytical methods is to look at the RPD between matrix duplicates or matrix spike sample concentration and a matrix spike duplicate sample concentration. All RPD's were less than the control limit of 25% with the following exceptions. The recovery for the matrix spike duplicate performed on the samples identified as LDW-SP-61 U for silver and LDW-SP-75-C U for cadmium exceeded the established control limit of 25% at 39.7% and 39.4%, respectively. Since both the native sample and its duplicate were 3 times higher than the reporting limit, variation is expected to increase, therefore, this is not considered significant. Since all other forms of QC are in control for these batches, no further action was taken.

It should be noted that one matrix duplicate RPD for Cr and Ni are reported as not calculated due to native or duplicate concentrations below the reporting limit. At such low concentrations variability is expected to increase; therefore, no corrective action was taken and Frontier maintains confidence in the results reported.

There were a number of samples analyzed for chromium that yielded a dissolved concentration that was significantly higher than the total fraction. All samples were re-analyzed for confirmation purposes. The re-analysis confirmed the fractionation discrepancy, therefore only the original analysis was reported.

Please contact me with any questions or concerns regarding this report.

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Sample Results

Analyte (µg/L)	Batch ID	LDW-SP-69-C-U	LDW-SP-69-C-F	LDW-SP-71-C-U	LDW-SP-71-C-F
Date Collected		**6/29/04**	**6/29/04**	**6/29/04**	**6/29/04**
Cr	A1	2.91	3.10	4.24	2.03
Ni	A1	4.52	3.22	3.44	1.95
Cu	A1	8.06	4.63	12.1	6.07
Zn	A1	45.6	3.95	26.9	10.2
As	C2	1.64	1.47	1.91	1.02
Ag	A2	0.053	0.053	0.068	0.070
Cd	A1	0.112	0.016	0.078	0.023
Pb	A1	0.356	0.066	15.2	0.175
Hg (ng/L)	B1	12.7	3.49	32.2	2.01

Analyte (µg/L)	Batch ID	LDW-SP-76-C-U	LDW-SP-76-C-F	LDW-SP-69-C-AB
Date Collected		**6/29/04**	**6/29/04**	**6/29/04**
Cr	A1	5.67	7.04	-
Ni	A1	3.79	2.37	-
Cu	A1	50.9	3.28	-
Zn	A1	309	138	-
As	C2	287	253	-
Ag	A2	0.077	0.012	-
Cd	A1	0.204	0.091	-
Pb	A1	56.4	3.00	-
Hg (ng/L)	B1	61.6	15.3	ND (< 0.15)

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
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Sample Results

Analyte (µg/L)	Batch ID	LDW-SP-48-C-U	LDW-SP-48-C-F	LDW-SP-54-C-U	LDW-SP-54-C-F
Date Collected		**6/30/04**	**6/30/04**	**6/30/04**	**6/30/04**
Cr	A1	4.72	7.58	74.9	4.02
Ni	A1	2.83	1.56	3.92	0.84
Cu	A1	10.9	10.1	6.47	4.53
Zn	A1	17.7	15.8	322	5.45
As	C2	0.618	0.422	1.30	0.404
Ag	A2	0.051	0.053	ND (< 0.015)	ND (< 0.015)
Cd	A1	0.138	0.101	0.710	0.012
Pb	A1	1.11	0.154	296	0.703
Hg (ng/L)	B1	1.09	1.32	582	13.2

Analyte (µg/L)	Batch ID	LDW-SP-82-C-U	LDW-SP-82-C-F	LDW-SP-82-FD-U	LDW-SP-82-FD-F	LDW-SP-82-C-AB
Date Collected		**6/30/04**	**6/30/04**	**6/30/04**	**6/30/04**	**6/30/04**
Cr	A1	5.65	3.25	5.81	3.51	-
Ni	A1	5.83	3.56	6.12	3.36	-
Cu	A1	10.9	8.22	13.4	8.27	-
Zn	A1	186	164	201	158	-
As	C2	1.55	1.20	2.20	1.14	-
Ag	A2	0.088	0.113	0.126	0.084	-
Cd	A1	0.569	0.513	0.606	0.503	-
Pb	A1	2.31	0.206	8.29	0.201	-
Hg (ng/L)	B1	16.8	3.80	11.7	2.95	ND (<0.15)

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Revised on November 12, 2004

Sample Results

Analyte (µg/L)	Batch ID	LDW-SP-12-C-U	LDW-SP-12-C-F	LDW-SP-20-C-U	LDW-SP-20-C-F
Date Collected		**7/1/04**	**7/1/04**	**7/1/04**	**7/1/04**
Cr	A1	6.34	7.06	11.4	8.80
Ni	A1	8.03	4.24	8.83	5.25
Cu	A1	15.8	12.5	10.2	8.16
Zn	A1	16.1	14.1	10.8	8.08
As	C1	1.13	0.771	1.58	1.35
Ag	A2	0.033	0.053	0.086	0.112
Cd	A1	0.133	0.107	0.114	0.111
Pb	A1	0.823	0.129	1.44	0.096
Hg (ng/L)	B2	5.18	0.74	0.61	0.62

Analyte (µg/L)	Batch ID	LDW-SP-41-C-U	LDW-SP-41-C-F	LDW-SP-80-C-U	LDW-SP-80-C-F
Date Collected		**7/1/04**	**7/1/04**	**7/1/04**	**7/1/04**
Cr	A1	3.68	6.95	4.61	6.70
Ni	A1	4.71	2.23	2.80	ND (< 0.04)
Cu	A1	5.96	5.24	21.4	22.8
Zn	A1	7.14	6.07	14.1	16.8
As	C1	0.239	0.235	0.855	0.590
Ag	A2	0.026	0.036	ND (< 0.015)	ND (< 0.015)
Cd	A1	0.158	0.133	0.037	0.011
Pb	A1	0.080	0.036	0.277	0.078
Hg (ng/L)	B2	1.12	0.62	6.46	8.69

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Sample Results

Analyte (µg/L)	Batch ID	LDW-SP-39-C-U	LDW-SP-39-C-F	LDW-SP-10-C-F
Date Collected		**7/1/04**	**7/1/04**	**7/1/04**
Cr	A1	6.01	4.36	6.31
Ni	A1	6.43	2.78	1.32
Cu	A1	12.2	10.1	8.69
Zn	A1	9.90	8.30	11.97
As	C1	0.058	0.054	0.841
Ag	A2	0.025	0.028	0.021
Cd	A1	0.272	0.206	0.085
Pb	A1	0.161	0.051	0.252
Hg (ng/L)	B2	0.95	0.87	0.92

Analyte (µg/L)	Batch ID	LDW-SP-80-C-AB-U	LDW-SP-20-C-AB-U
Date Collected		**7/1/04**	**7/1/04**
Cr	-	-	-
Ni	-	-	-
Cu	-	-	-
Zn	-	-	-
As	-	-	-
Ag	-	-	-
Cd	-	-	-
Pb	-	-	-
Hg (ng/L)	B2	ND (<0.15)	ND (<0.15)

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Sample Results

Analyte (µg/L)	Batch ID	LDW-SP-62-C-F	LDW-SP-61-C-U	LDW-SP-61-C-F
Date Collected		**7/2/04**	**7/2/04**	**7/2/04**
Cr	A4	7.73	0.12	1.83
Ni	A3	ND (< 0.04)	ND (< 0.04)	ND (< 0.04)
Cu	A3	7.77	4.75	4.72
Zn	A3	12.2	3.53	3.29
As	C1	6.84	67.2	72.4
Ag	A3	0.044	0.039	0.027
Cd	A4	0.109	0.022	0.009
Pb	A3	0.101	0.233	0.088
Hg (ng/L)	B3	2.56	2.16	0.99

Analyte (µg/L)	Batch ID	LDW-SP-64-C-F	LDW-SP-62-C-AB
Date Collected		**7/2/04**	**7/2/04**
Cr	A4	1.51	-
Ni	A3	ND (< 0.04)	-
Cu	A3	6.99	-
Zn	A3	3.86	-
As	C1	1.28	-
Ag	A3	0.049	-
Cd	A4	0.045	-
Pb	A3	0.193	-
Hg (ng/L)	B3	1.26	ND (<0.15)

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Sample Results

Analyte (µg/L)	Batch ID	LDW-SP-75-C-U	LDW-SP-75-C-F	LDW-SP-75-C-RB-U	LDW-SP-75-C-RB-F
Date Collected		**7/3/04**	**7/3/04**	**7/3/04**	**7/3/04**
Cr	A1	5.37	9.74	-	-
Ni	A1	3.31	1.42	-	-
Cu	A1	8.37	6.79	-	-
Zn	A1	8.39	5.35	-	-
As	C1	2.49	2.20	-	-
Ag	A2	0.074	0.081	-	-
Cd	A1	0.037	0.021	-	-
Pb	A1	0.666	0.056	-	-
Hg (ng/L)	B2	1.71	0.77	0.20	ND (<0.15)

Analyte (µg/L)	Batch ID	LDW-SP-64-S-RB-U	LDW-SP-64-C-RB-MP-U	Funnel Blank	Piezometer Blank
Date Collected		**7/3/04**	**7/3/04**	**7/8/04**	**7/8/04**
Cr	A1	5.25	4.05	-	-
Ni	A1	0.17	0.18	-	-
Cu	A1	1.61	1.59	-	-
Zn	A1	0.98	0.75	-	-
As	C1	ND (< 0.050)	ND (< 0.050)	-	-
Ag	A2	ND (< 0.015)	ND (< 0.015)	-	-
Cd	A1	ND (< 0.008)	ND (< 0.008)	-	-
Pb	A1	0.087	0.091	-	-
Hg (ng/L)	B2/B1	ND (<0.15)	0.16	0.13	ND (<0.15)

Trace Metals Results for Windward Environmental

LDW - Seep Sampling Project

Reported November 12, 2004

Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Revised on August 18, 2004

Quality Control Data - Duplicate Report

Analyte (µg/L)	Batch ID	Sample QC'd	Rep. 1	Rep. 2	Mean	RPD
Cr	A1	LDW-SP-75-C U	5.37	5.38	5.37	0.0
	A1	LDW-SP-48-C U	4.72	4.58	4.65	3.0
	A4	LDW-SP-61-C-U	0.12	ND (< 0.07)	N/C	N/C
Ni	A1	LDW-SP-75-C U	3.31	3.65	3.48	9.6
	A1	LDW-SP-48-C U	2.83	3.63	3.23	24.8
	A3	LDW-SP-61-C-U	ND (< 0.04)	ND (< 0.04)	N/C	N/C
Cu	A1	LDW-SP-75-C U	8.37	8.49	8.43	1.5
	A1	LDW-SP-48-C U	10.95	11.28	11.1	2.9
	A3	LDW-SP-61-C-U	4.75	4.80	4.77	1.1
Zn	A1	LDW-SP-75-C U	8.39	8.32	8.35	0.8
	A1	LDW-SP-48-C U	17.65	17.72	17.69	0.4
	A3	LDW-SP-61-C-U	3.53	3.44	3.48	2.5
As	C1	LDW-SP-41-C U	0.239	0.220	0.230	8.3
	C2	LDW-SP-82-C U	1.545	1.360	1.453	12.8
Ag	A2	LDW-SP-75-C U	0.074	0.062	0.068	17.2
	A2	LDW-SP-48-C U	0.051	0.056	0.053	9.2
	A3	LDW-SP-61-C-U	0.039	0.020	0.030	65.9*
Cd	A1	LDW-SP-75-C U	0.037	0.025	0.031	39.9*
	A1	LDW-SP-48-C U	0.138	0.116	0.127	17.8
	A4	LDW-SP-61-C-U	0.020	0.021	0.021	6.1
Pb	A1	LDW-SP-75-C U	0.666	0.633	0.650	5.1
	A1	LDW-SP-48-C U	1.112	1.013	1.063	9.3
	A3	LDW-SP-61-C-U	0.233	0.246	0.239	5.4
Hg (ng/L)	B1	LDW-SP-69-C-U	12.72	12.70	12.7	0.2
	B2	LDW-SP-39-C-U	0.95	0.92	0.93	3.6
	B3	LDW-SP-61-C-U	2.16	2.15	2.15	0.7

N/C = Not calculated, please see case narrative.

*RPD is above established control limits. Please see case narrative.

Trace Metals Results for Windward Environmental

LDW - Seep Sampling Project

Reported November 12, 2004

Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Revised on August 18, 2004

Quality Control Data - Matrix Spike / Matrix Spike Duplicate Report

Analyte (µg/L)	Batch ID	Sample QC'd	Sample Mean	Spike Level	MS	% Rec.	MSD	% Rec.	RPD
Cr	A1	LDW-SP-75-C U	5.37	200.0	192.8	93.7	191.3	93.0	0.7
	A1	LDW-SP-48-C U	4.65	200.0	196.6	96.0	192.9	94.1	1.9
	A4	LDW-SP-61-C-U	0.00	250.0	244.6	97.8	245.4	98.2	0.3
Ni	A1	LDW-SP-75-C U	3.48	250.0	215.5	84.8	208.8	82.1	3.1
	A1	LDW-SP-48-C U	3.23	250.0	228.1	89.9	223.5	88.1	2.0
	A3	LDW-SP-61-C-U	0.00	312.5	309.8	99.1	315.6	101.0	1.9
Cu	A1	LDW-SP-75-C U	8.43	250.0	238.1	91.9	237.8	91.7	0.1
	A1	LDW-SP-48-C U	11.11	250.0	241.0	91.9	242.4	92.5	0.6
	A3	LDW-SP-61-C-U	4.77	312.5	323.1	101.9	325.8	102.7	0.8
Zn	A1	LDW-SP-75-C U	8.35	500.0	489.8	96.3	485.1	95.3	1.0
	A1	LDW-SP-48-C U	17.69	500.0	488.2	94.1	487.7	94.0	0.1
	A3	LDW-SP-61-C-U	3.48	625.0	613.5	97.6	623.5	99.2	1.6

* Recoveries are below established control limits. Please see case narrative.

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Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Quality Control Data - Matrix Spike / Matrix Spike Duplicate Report

Analyte (µg/L)	Batch ID	Sample QC'd	Sample Mean	Spike Level	MS	% Rec.	MSD	% Rec.	RPD
As	C1	LDW-SP-41-C U	0.230	0.715	1.020	110.5	1.013	109.6	0.6
	C2	LDW-SP-82-C U	1.453	2.500	4.044	103.6	3.861	96.3	4.6
Ag	A2	LDW-SP-75-C U	0.068	40.00	36.60	91.3	38.17	95.3	4.2
	A2	LDW-SP-48-C U	0.053	40.00	37.32	93.2	38.28	95.6	2.5
	A3	LDW-SP-61-C-U	0.030	50.00	49.45	98.8	50.27	100.5	1.6
Cd	A1	LDW-SP-75-C U	0.031	20.00	19.28	96.2	19.41	96.9	0.7
	A1	LDW-SP-48-C U	0.127	20.00	19.50	96.9	19.01	94.4	2.6
	A4	LDW-SP-61-C-U	2.500	2.08	82.40	3842.2	2.13	-17.7	189.9
Pb	A1	LDW-SP-75-C U	0.650	50.00	51.86	102.4	51.43	101.6	0.8
	A1	LDW-SP-48-C U	1.063	50.00	51.50	100.9	51.14	100.2	0.7
	A3	LDW-SP-61-C-U	0.239	62.50	68.81	109.7	69.57	110.9	1.1
Hg (ng/L)	B1	LDW-SP-69-C-U	12.71	40.40	51.18	95.2	50.70	94.0	1.0
	B2	LDW-SP-39-C-U	5.18	20.20	24.32	94.8	24.04	93.4	1.1
	B3	LDW-SP-61-C-U	2.15	8.08	9.96	96.7	10.20	99.6	2.3

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Quality Control Data - Certified Reference Material Report

Analyte (µg/L)	Batch ID	CRM Identity	Cert. Value	Obs. Value	% Rec.
Cr	A1	NIST 1640	38.6	35.2	91.1
	A4	NIST 1640	38.6	39.2	101.6
Ni	A1	NIST 1640	27.4	25.6	93.5
	A3	NIST 1640	27.4	27.7	101.1
Cu	A1	NIST 1640	85.2	83.9	98.4
	A3	NIST 1640	85.2	91.1	106.9
Zn	A1	NIST 1640	53.2	52.4	98.5
	A3	NIST 1640	53.2	59.2	111.3
As	C1	NIST 1640	26.67	25.56	95.8
	C2	NIST 1640	26.67	28.77	107.9
Ag	A2	NIST 1640	7.62	7.22	94.8
	A3	NIST 1640	7.62	7.91	103.7
Cd	A1	NIST 1640	22.79	22.51	98.8
	A4	NIST 1640	22.79	24.37	106.9
Pb	A1	NIST 1640	27.89	27.87	99.9
	A3	NIST 1640	27.89	29.33	105.2
Hg (ng/L)	B1	NIST 1641d	1601	1599	99.9
	B2	NIST 1641d	1601	1587	99.2
	B3	NIST 1641d	1601	1591	99.4

CRM Identity = Certified reference material identity

Cert. Value = Certified value

Obs. Value = Experimental result

% Rec. = Percent recovery

Trace Metals Results for Windward Environmental
LDW - Seep Sampling Project
Reported November 12, 2004
Frontier Geosciences Inc., 414 Pontius Ave. N, Seattle WA 98109

Quality Control Data - Preparation Blank Report

Analyte (µg/L)	Batch ID	PBW1	PBW2	PBW3	PBW4	Mean	Std Dev	R.L
Cr	A1	0.01	0.02	0.02	0.01	0.02	0.00	0.07
	A4	-0.03	-0.04	-0.06	-0.09	-0.05	0.03	0.07
Ni	A1	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	A3	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Cu	A1	0.00	0.00	0.00	0.00	0.00	0.00	0.04
	A3	-0.01	0.00	-0.01	0.00	-0.01	0.00	0.04
Zn	A1	0.05	0.00	0.01	-0.01	0.01	0.02	0.10
	A3	0.00	0.00	0.02	0.00	0.00	0.01	0.10
As	C1	-0.005	-0.013	0.003	-0.015	-0.008	0.008	0.050
	C2	0.003	-0.004	-0.005	-0.003	-0.002	0.004	0.050
Ag	A2	-0.001	-0.001	0.000	0.000	-0.001	0.000	0.015
	A3	0.000	0.000	0.000	0.000	0.000	0.000	0.015
Cd	A1	0.000	-0.001	0.000	-0.001	0.000	0.001	0.008
	A4	-0.001	0.000	-0.001	0.000	-0.001	0.000	0.008
Pb	A1	0.000	0.008	0.000	-0.001	0.002	0.005	0.015
	A3	0.000	0.005	0.001	0.003	0.002	0.002	0.015
Hg (ng/L)	B1	0.04	0.04	0.08	-	0.05	0.02	0.15
	B2	0.08	0.05	0.04	-	0.06	0.02	0.15
	B3	0.05	0.02	0.05	-	0.04	0.02	0.15

R.L = Reporting Limit
Std Dev = Standard deviation

APPENDIX H. DATA MANAGEMENT

Appendix H. Data Management

H.1 LABORATORY REPLICATES

Chemical concentrations obtained from the analysis of laboratory duplicates or replicates (two or more analyses on the same sample) were averaged for a closer representation of the "true" concentration compared to the results of a single analysis. Averaging rules were dependent on whether the individual results were "detects" or "non-detects." If all concentrations were detects for a given parameter, the values were simply averaged arithmetically. If all concentrations were undetected for a given parameter, the minimum detection limit was reported. If the concentrations are a mixture of detects and non-detects, any two or more detected concentrations were averaged arithmetically and any detection limits were ignored. If there was a single detected concentration and one or more non-detects, the detected concentration was reported and the detection limit(s) ignored. The latter two rules were applied regardless of whether the detection limit was higher or lower than the detected concentration.

Identical data averaging rules were applied to calculations of mean concentrations for groups of field samples reported in Section 4 of this data report.

H.2 SIGNIFICANT FIGURES AND ROUNDING

The laboratory typically reports results with 1, 2, or 3 significant figures depending on the instrument, parameter, and the concentration relative to the reporting limit. The reported (or assessed) precision of each observation is explicitly stored in the project database by recording the number of significant figures assigned by the laboratory. Tracking of significant figures becomes important when calculating averages and performing other data summaries.

Examples of significant figures are shown in Table H-1.

Table H-1. Examples of different numbers of significant figures

1 SIGNIFICANT FIGURE	2 SIGNIFICANT FIGURES	3 SIGNIFICANT FIGURES
0.04	19	19.1
0.4	120	122
4	3,500	3,550

When a calculation involves addition, such as totaling PCBs or PAHs, the calculation can only be as precise as the least precise number that went into the calculation. Example (assuming 2 significant figures):

> 210+19=229, but this would be reported as 230 because the trailing zero in the number 210 is not significant.

When a calculation involves multiplication or division, such as when carbon normalizing, all significant figures are carried through the calculation and then the total result is rounded at the end of the calculation to reflect the value used in the calculation with the fewest significant figures. Example:

> 59.9 x 1.2 = 71.88, to be reported as 72 because there are 2 significant figures in the number 1.2

When rounding, if the number following the last significant figure is less than 5, the digit is left unchanged. If the number following the last significant figure is equal to or greater than 5, the digit is increased by 1.

H.3 CALCULATING TOTALS

Concentrations for several analyte sums were calculated as follows:

- **Total PCBs** were calculated using only detected values for 7 Aroclor mixtures[1]. For individual samples in which none of the 7 Aroclor mixtures were detected, total PCBs were given a value equal to the highest detection limit of the seven Aroclors and assigned a "U" qualifier indicating the lack of detected concentrations.
- **Total DDTs** were calculated using only detected values for the three DDT isomers: 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT. For individual samples in which none of the isomers were detected, total DDTs were given a value equal to the highest detection limit of the three isomers and assigned a "U" qualifier indicating the lack of detected concentrations.

[1] Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260