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Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
phone: (425) 420.9200 fax: (425) 420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
phone: (509) 924.9200 fax: (509) 924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
phone: (503) 906.9200 fax: (503) 906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
phone: (541) 383.9310 fax: 541.382.7588
Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
phone: (907) 563.9200 fax: (907) 563.9210

Anchor Environmental, L.L.C.-Portland	Project Name: **Brix Maritime**	
6650 SW Redwood Lane - Suite 110	Project Number: 990056-01	Report Created:
Portland, OR 97224	Project Manager: John Renda	04/04/05 15:44

Percent Dry Weight (Solids) per Standard Methods - Laboratory Quality Control Results
North Creek Analytical - Portland

QC Batch: 5020824 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (5020824-DUP1)					QC Source: P5B0620-01				Extracted: 02/21/05 11:09					
% Solids	NCA SOP	76.3	---	1.00	% by Weight	1x	76.6	--	--	--	0.392%	(20)	02/22/05 10:50	
Duplicate (5020824-DUP2)					QC Source: P5B0620-03				Extracted: 02/21/05 11:09					
% Solids	NCA SOP	76.9	---	1.00	% by Weight	1x	77.3	--	--	--	0.519%	(20)	02/22/05 10:50	
Duplicate (5020824-DUP3)					QC Source: P5B0620-05				Extracted: 02/21/05 11:09					
% Solids	NCA SOP	77.3	---	1.00	% by Weight	1x	77.3	--	--	--	0.00%	(20)	02/22/05 10:50	
Duplicate (5020824-DUP4)					QC Source: P5B0756-02				Extracted: 02/22/05 09:07					
% Solids	NCA SOP	76.8	---	1.00	% by Weight	1x	76.4	--	--	--	0.522%	(20)	02/22/05 10:50	

BRIX002948

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phone: (425) 420.9200 fax: (425) 420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
phone: (509) 924.9200 fax: (509) 924.9290
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6650 SW Redwood Lane - Suite 110	Project Number: 990056-01	Report Created:
Portland, OR 97224	Project Manager: John Renda	04/04/05 15:44

Notes and Definitions

Report Specific Notes:

A-01	-	Detected hydrocarbons appear to be due to weathered gas as well as weathered diesel.
A-01a	-	The detected hydrocarbons appear to be due to gas overlap, weathered diesel and biogenic interference.
A-02	-	The spike recovery for this QC sample is below the established control limit. Sample result associated with this batch may be biased low.
A-03	-	Initial batch extraction had contamination on Method Blank. All samples in this batch were re-extracted.
A-04	-	Recovery for the QC (LCS) in this range was below acceptable limits. Results for the samples in this range may be biased low and is an estimate.
O-07	-	This sample was extracted outside the EPA recommended holding time.
Q-01	-	The matrix spike recovery, and/or RPD, for this QC sample is outside of established control limits. Failure of a matrix spike QC sample does not represent an out-of-control condition for the batch.
Q-06	-	RPD is not applicable for analyte concentrations less than 5 times the MRL.
Q-14	-	The matrix spike recovery, and/or RPD, for this QC sample is outside of control limits due to a non-homogeneous sample matrix.
R-03	-	The reporting limit for this analyte was raised due to matrix interference.
R-05	-	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
S-01	-	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-02	-	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present.
S-07	-	Surrogate recovery is out of control limits. QA criteria are met when one surrogate is within control limits.

Laboratory Reporting Conventions:

DET	-	Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
ND	-	Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
NR / NA	-	Not Reported / Not Available
dry	-	Sample results reported on a dry weight basis. Reporting Limits are corrected for %Solids when %Solids are <50%.
wet	-	Sample results and reporting limits reported on a wet weight basis (as received).
RPD	-	Relative Percent Difference. (RPDs calculated using Results, not Percent Recoveries).
MRL	-	METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
MDL*	-	METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated results.

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Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
phone: (509) 924.9200 fax: (509) 924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
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Anchor Environmental, L.L.C.-Portland	Project Name:	**Brix Maritime**	
6650 SW Redwood Lane - Suite 110	Project Number:	990056-01	Report Created:
Portland, OR 97224	Project Manager:	John Renda	04/04/05 15:44

Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

BRIX002950

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11922 E 1st Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
20332 Empire Ave, Ste F1, Bend, OR 97701-5712 541-383-9310 FAX 382-7588
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: 580702

NCA CLIENT:

REPORT TO: JOHN RENDA - Anchor Environmental
ADDRESS: 6650 SW Redwood Lane, Suite 110, Portland, OR 97224
PHONE: 503-670-1108 FAX: 503-670-1128

INVOICE TO:

P.O. NUMBER:

PROJECT NAME: Brix Maritime
PROJECT NUMBER: 990056-01
SAMPLED BY:

TURNAROUND REQUEST
In Business Days *
Organic & Inorganic Analyses: [X] STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: [X] STD. | 4 | 3 | 2 | 1 | <1
OTHER Specify: Rush HCID
* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	DW TPH-HCID	DW TPH-Gx	DW TPH-Dx	Total Lead	PAHs 8270-LL	VOC 8260	VPH	EPH	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	B-32 (5-6)	2/18/05 0940	X								S	2	*	
2	B-32 (11-12)	↓ 0955	X								S	2	*	
3	B-33 (20-22)	↓ 1100		X	X	X	X	X	X	X	S	2		
4														
5														
6														
7														
8														
9														
10														

RELEASED BY: DATE: 2/18/05
PRINT NAME: JOHN J RENDA FIRM: Anchor TIME: 1345

RECEIVED BY: DATE: 02/18/05
PRINT NAME: Doug McKenzie FIRM: NCA TIME: 1345

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: Run highest HCID from B-32 for all analytes.

TEMP: 6.5°C

COC REV 09/04

PAGE OF

BRIX002951

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NORTH CREEK ANALYTICAL COOLER RECEIPT FORM

(Army Corp. compliant)

Client: Anchor

1. **Please sign for receipt and opening of** 1 **cooler or** _____ **other** _____

   By (print) Doug MKKENZIE (sign) [illegible]

2. Date samples received 02/18/05 Date opened: Same X or ___/___/___

3. Delivered by: ___NCA courier ___ FedEx ___UPS ___Courier X Client ___Other_____

   Airbill # if applicable _____ (Put copy of shipping papers in file)

4. There were Ø custody seals present, signed by _____ date ___/___/___.

5. Were the custody seals unbroken and intact at the date and time of arrival? N/A Yes ___No

6. Was ice used? X yes ___no Type of ice: ___ blue ice ___gel ice X real ice

   Temperature (degrees C) _____ Raytek thermometer 6.5 Digi-Therm (probe temperature blank)

7. Are custody papers sealed in a plastic bag and taped inside to lid? ___ Yes X No

8. Were custody papers filled out properly (ink, signed, etc.)? X Yes ___ No

   If "no" please specify: _____

9. Was project identifiable from custody papers? X Yes ___ No

   Name of project Brix Maritime (if applicable)

10. **Initial and date for unpacking:** AVP **(initials)** **date** 2/18/05

11. Packing material: N/A bubble wrap/bag ___styrofoam ___cardboard _____other

12. Were samples in bags? X Yes ___ No

13. Did all containers indicated on the COC arrive? X Yes ___ No

    If "no" please indicate which containers were absent _____

14. Were all containers unbroken and labels in good condition? X Yes ___ No

    If "no" please indicate which containers _____

15. Were all bottle labels complete (ID, date, time, signature, etc.)? X Yes ___ No

    Do the IDs, times, etc. agree with the COC? X Yes ___ No

    If "no" please indicate which containers _____

16. Are containers properly preserved for indicated analysis? X Yes ___ No

17. Is there adequate volume for the test(s) requested? X Yes ___ No

18. If voa vials were submitted, are they free of bubbles? X N/A ___ Yes ___ No

19. **Log-in phase: Date samples were logged in:** 2/18/05 **Elm Project # P** SB0702

20. Logged in by (print) Vanessa Era (sign) Vanessa Era

21. Was the project manager notified of status? (Use back of form as a record) ___ Yes X No

BRIX002952

Appendix C
Data Validation Review

BRIX002953

LABORATORY DATA REVIEW

BRIX Maritime

April 2005

This report presents a review of the samples collected from BRIX Maritime on February 18 and 25, 2005. Columbia Analytical Services, Inc. (CAS), in Kelso, Washington and North Creek Analytical LLC (NCA), in Portland, Oregon, analyzed the samples. Laboratory SDG's K2501428 (CAS) and P5B0702 (NCA) were reviewed.

Data Qualifications

The following comments refer to the laboratory's performance in meeting the quality control (QC) specifications outlined in the analytical procedures and the Quality Assurance Project Plan (QAPP). Analytical results were reviewed using *USEPA National Functional Guidelines for Inorganics Data Review* (USEPA, 2004), and *USEPA National Functional Guidelines for Organics Data Review* (USEPA, 1999), and applying laboratory and method QC criteria.

The CAS laboratory Sample Receipt Form states that the cooler temperatures were at 1.3 and 1.7 °C. The samples were received in good condition and unfrozen.

Unless specifically noted in this report, laboratory results were within QC criteria.

Holding Times

All sample analyses were conducted within recommended holding times. No data were qualified due to these results.

Method Reporting Limits (MRLs)

The MRLs were acceptable. Samples BM-022505-3 and BM-022505-4 had raised reporting limits for the gasoline analysis and two polynuclear aromatic haydrocarbons (naphthalene and 2-methylnaphthalene). The reporting limits were raised to account for the high level of target analyte detected in the samples. All raised reporting limits accurately reflected the appropriate dilutions. The reporting limit for sample B-32 (10-12) has the analyte n-butylbenzene raised due to matrix interference.

BRIX002954

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Method Blanks

Method blanks were analyzed at the required frequency for all analyses. The method blanks were free of contamination. No data were qualified due to these results.

Trip and Field Blanks

One trip blank was submitted with the samples and analyzed for VOCs. The trip blank was free of contamination. No data were qualified due to these results.

No field blanks were collected. No data were qualified due to these results.

Field Duplicates

One water field duplicate was submitted with the samples; MW-1 / MW-1 duplicate. The field duplicate results were comparable.

Surrogate Recoveries

Surrogate recoveries were reported for all organic analyses. Surrogate percent recoveries were within the control limits except where noted below:

- The Diesel and Heavy range hydrocarbon anlysis for sample B-33 (20-22) had no recovery for the surrogate 1-Chlorooctadecane. The surrogate was diluted out with the 100x dilution. The heavy range organic results should be qualified with the "J" flag to indicate the value reported is estimated.

- The Extractable Petroleum hydrocarbon anlaysis for sample B-33 (20-22) had >300% recovery for the surrogate Squalane. The surrogate was diluted out with the 20x dilution. The other surrogate was within the laboratorys acceptance criteria. Qualify affected aromatic hydrocarbon ranges with the "J" qualifier to indicate those ranges are estimated.

- The Extractable Petroleum hydrocarbon anlaysis for the LCS (5030372-BS3) had a high recovery (143%) for the surrogate squalane. As this recovery indicates a high bias no data was qualified based on these results.

- The surrogate recoveries for Fluorene-d10 and pyrene-d10 were outside the laboratory control limits for the matrix spike and matrix spike duplicate samples P5B0414-01in the polynuclear aromatic compound analysis. As these samples are not associated with the samples in this report no qualifiers were applied based on these results.

Laboratory Duplicate Results

The laboratory analyzed duplicates at the required frequency. All lab duplicates were within acceptable RPD limits; no data were qualified due to these results.

BRIX002955

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Matrix Spike/Matrix Spike Duplicate Results

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were conducted at the required frequency. All MS/MSD and RPD results were within permissible levels with the following exceptions:

- The matrix spike for manganese in laboratory data report K2501428 was outside laboratory control limits high. As the detected amount of manganese in the sample was greater than four times the spike amount no data qualification is necessary.

- The matrix spike for sample B-33 (20-22) was outside control limits for the following volatile petroleum hydrocarbon ranges: C5-C-6 aliphatics, C6-C8 aliphatics, C10-C12 aliphatics, C8-C10 aromatics and C10-C12 aromatics. The matrix spike duplicate for sample B33 (20-22) was outside control limits for the following volatile petroleum hydrocarbon ranges: C5-C-6 aliphatics, C6-C8 aliphatics, C10-C12 aliphatics, C8-C10 aromatics and C10-C12 aromatics. Qualifiy all associated detected results with the "J" flag to indicate the values reported are estimates.

- The matrix spike for lead was outside control limits high for sample P5B0415-01. As this sample is not related to the samples in this data package no qualifiers were applied to the associated data.

Laboratory Control Sample Results

Laboratory control sample (LCS) analyses were conducted at the required frequency. All LCS results were within permissible levels except where noted below.

- The LCS for Extractable Petroleum hydrocarbons was low for the C10-C12 aromatics. The associated samples with detectable results will be qualified with the "J" flag to indicate the results reported are estimates.

Completeness

The results reported by the laboratory were checked against chain-of-custody entries to determine if all of the requested analyses were completed. All requested analyses were conducted.

Overall Assessment

The data are judged to be acceptable, as qualified.

BRIX002956

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REFERENCES

USEPA. 1986. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 530/SW-846.

USEPA. 2004. USEPA National Functional Guidelines for Inorganics Data Review. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. EPA 540-R-04-004. October.

USEPA. 1999. USEPA National Functional Guidelines for Organics Data Review. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. EPA 540/R-99/008. October.

BRIX002957

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Data Qualifier Table

Sample ID	Analyte	Original Result	Qualified Result	Reason
B-33 (20-22)	Heavy Range Hydrocarbons	28400	28400 J	Surrogate recovery
B-32 (10-12)	C10-C12 aromatics	18.4	18.4 J	LCS recovery
B-33 (20-22)	C21-C34 aromatics	2220	2220 J	Surrogate recovery
B-32 (10-12)	C10-C12 aliphatic	164	164 J	MS/MSD low recoveries
	C8-C10 aromatic	104	104 J	MS/MSD low recoveries
	C10-C12 aromatics	136	136 J	MS/MSD low recoveries
B-33 (20-22)	C6-C8 aliphatics	11.5	11.5 J	MS/MSD low recoveries
	C10-C12 aliphatics	2.20	2.20 J	MS/MSD low recoveries
	C8-C10 aromatics	1.69	1.69 J	MS/MSD low recoveries
	C10-C12 aromatics	2.26	2.26 J	MS/MSD low recoveries

BRIX002958

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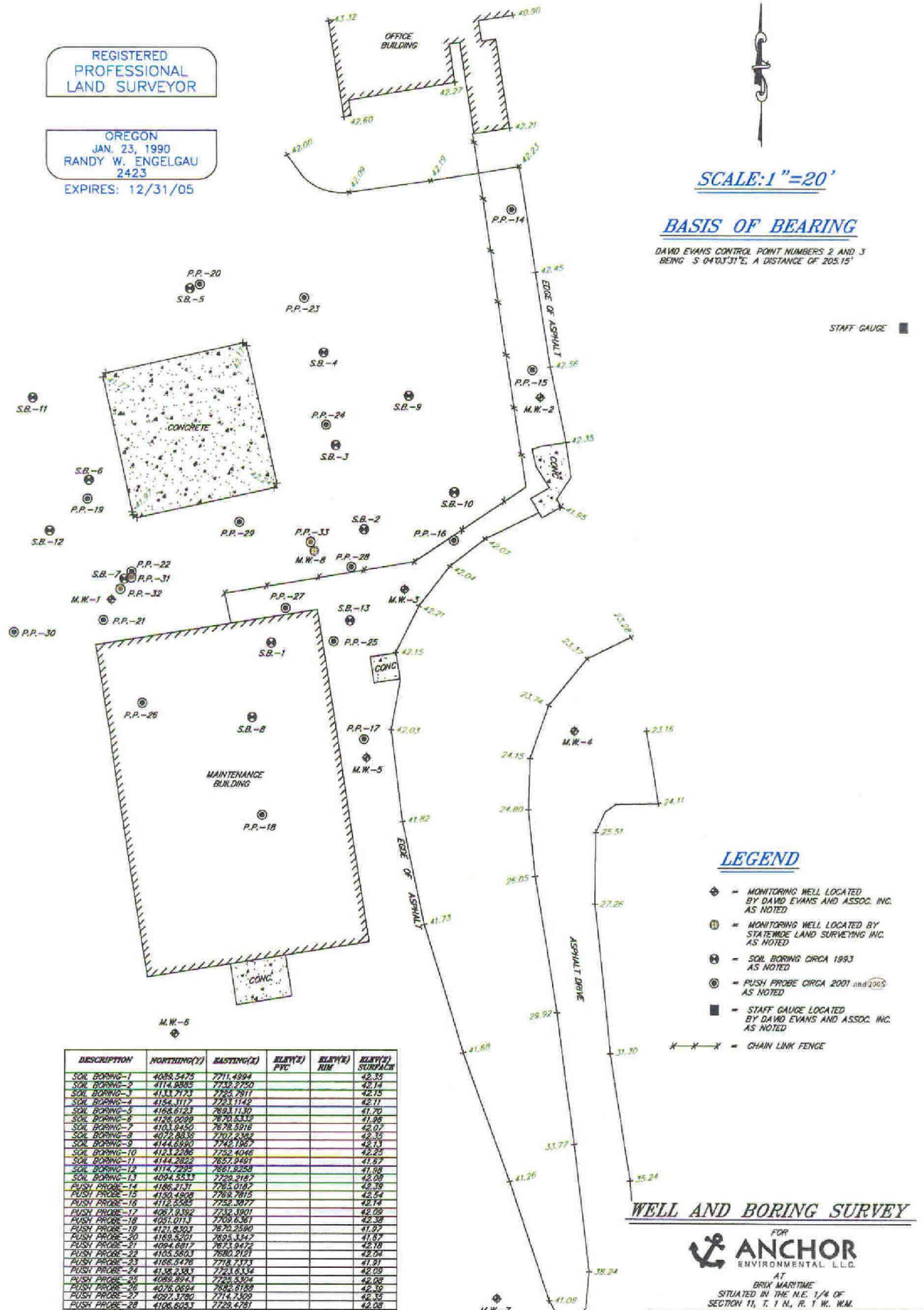
Appendix D
Well and Boring Survey

BRIX002959

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JAN. 23, 1990
RANDY W. ENGELGAU
2423
EXPIRES: 12/31/05



SCALE: 1"=20'

BASIS OF BEARING

DAVID EVANS CONTROL POINT NUMBERS 2 AND 3 BEING S 04°03'31"E, A DISTANCE OF 205.15'

STAFF GAUGE ■

LEGEND

- ⊕ = MONITORING WELL LOCATED BY DAVID EVANS AND ASSOC. INC. AS NOTED
- ⊕ = MONITORING WELL LOCATED BY STATEWIDE LAND SURVEYING INC. AS NOTED
- ⊗ = SOIL BORING CIRCA 1993 AS NOTED
- ◉ = PUSH PROBE CIRCA 2001 and 2005 AS NOTED
- ■ = STAFF GAUGE LOCATED BY DAVID EVANS AND ASSOC. INC. AS NOTED
- X—X—X = CHAIN LINK FENCE

DESCRIPTION	NORTHING(Y)	EASTING(X)	ELEV(Z) PVC	ELEV(Z) RIM	ELEV(Z) SURFACE
SOIL BORING-1	4089.5475	7711.4994			42.35
SOIL BORING-2	4114.9885	7732.2750			42.14
SOIL BORING-3	4133.3173	7755.7911			42.15
SOIL BORING-4	4154.3117	7723.1142			42.11
SOIL BORING-5	4168.6123	7693.1130			41.70
SOIL BORING-6	4126.0099	7670.5332			41.86
SOIL BORING-7	4103.9450	7678.5916			42.07
SOIL BORING-8	4072.8838	7707.3382			42.35
SOIL BORING-9	4144.6990	7742.1062			42.13
SOIL BORING-10	4123.2286	7752.4046			42.25
SOIL BORING-11	4144.2822	7657.9491			41.67
SOIL BORING-12	4114.7299	7661.9258			41.98
SOIL BORING-13	4094.3533	7729.2187			42.08
PUSH PROBE-14	4186.2131	7785.0182			42.39
PUSH PROBE-15	4150.4908	7769.7815			42.54
PUSH PROBE-16	4112.5535	7752.3877			42.14
PUSH PROBE-17	4067.3192	7732.3901			42.09
PUSH PROBE-18	4051.0113	7709.6361			42.38
PUSH PROBE-19	4121.8503	7670.2590			41.97
PUSH PROBE-20	4168.5201	7695.3347			41.87
PUSH PROBE-21	4094.6817	7673.9472			42.18
PUSH PROBE-22	4105.5803	7680.2101			42.04
PUSH PROBE-23	4166.3476	7718.7373			41.91
PUSH PROBE-24	41.38.2383	7723.6134			42.09
PUSH PROBE-25	4089.8943	7729.5304			42.08
PUSH PROBE-26	4076.0694	7682.8188			42.39
PUSH PROBE-27	4093.3780	7714.2309			42.34
PUSH PROBE-28	4106.6053	7729.4781			42.08
PUSH PROBE-29	4116.6208	7704.2696			42.08
PUSH PROBE-30	4091.9556	7654.0302			41.93
PUSH PROBE-31	4104.2618	7680.1735			42.06
PUSH PROBE-32	4101.6659	7677.7412			42.07
PUSH PROBE-33	4112.1493	7720.2884			42.03
M.W.-1	4099.2711	7675.7420	41.81		42.16
M.W.-2	4144.3743	7771.5312	42.13		42.48
M.W.-3 "DEA"	4101.5484	7741.4385	41.93		42.38
M.W.-3 "SWLS"	4101.5484	7741.4385	41.95	42.34	42.31
M.W.-4	4062.8638	7779.4341	23.55		23.80
M.W.-5	4063.7599	7732.9885	41.66		42.01
M.W.-6	4028.3190	7690.2610	41.21		41.49
M.W.-7	3943.1853	7782.4779	40.95		41.29
M.W.-8	4119.1402	7721.1208	41.73	42.03	42.00
STAFF GAUGE	4160.0717	7852.8583	14.33 @ 10' ON STAFF		

WELL AND BORING SURVEY

FOR
ANCHOR ENVIRONMENTAL, L.L.C.
AT
BRIX MARITIME
SITUATED IN THE N.E. 1/4 OF SECTION 11, T. 1 N., R. 1 W., W.M.

39 N.W. 3rd St.
Gresham, Or 97030
(503) 665-7777

STATEWIDE LAND SURVEYING INC.

DRAWN G.W.E.	DATE 03/01/05	
APPROVED	DATE	
SCALE 1" = 20'	SHEET 1 OF 1	PROJECT NO. 2005-7

BRIX002960

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Appendix E
Monitoring Well and Boring Logs

BRIX002961

ANCHOR ENVIRONMENTAL, L.L.C.

LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME: Brix Maritime
BORING #: B-31
PROJECT NUMBER: 990056-01
DATE BEGAN: 2/18/05
GEOLOGIST: J. Renda
DATE COMPLETED: 2/18/05
DRILLING CONTRACTOR: GeoTech Explorations, Inc.
TOTAL DEPTH: 25 feet
DRILLING METHOD: Direct Push - Geoprobe
SHEET: 1 OF 2
HOLE DIAMETER: 2-inch

Field location of boring: Near Former Fuel Pumps

WELL OR PIEZOMETER DETAILS	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
Bentonite							**0.0 to 0.4 feet: ASPHALT**
			2.5		1	GW	**0.4 to 1.0 feet: GRAVEL (GW);** angular to subangular; fine to coarse gravel.
					2, 3, 4	SM	**1.0 to 4.0 feet: SILTY SAND (SM);** brown; 60 to 70 percent fine to medium sand; 20 to 30 percent nonplastic to low plasticity fines; 10 percent fine to medium gravel; subrounded; moist.
					5	ML	**4.0 to 5.0 feet: SILT (ML);** gray; medium to high plasticity fines; moist.
			3.0		6, 7	SP	**5.0 to 7.0 feet: SAND (SP);** dark gray; medium sand; moist.
					8, 9, 10	ML	**7.0 to 10.0 feet: SANDY SILT (ML);** gray; nonplastic to low plasticity fines; fine to medium sand; trace fine to medium, subrounded to well rounded gravel; moist.
			2.0		11, 12, 13, 14, 15	SP	**10.0 to 20.0 feet: SAND (SP);** dark gray; medium sand; gasoline-like odor; moist.
			3.0		16, 17, 18, 19, 20		

Remarks:

BRIX002962

ANCHOR ENVIRONMENTAL, L.L.C.

LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME: Brix Maritime
BORING #: B-31
PROJECT NUMBER: 990056-01
DATE BEGAN: 2/18/05
GEOLOGIST: J. Renda
DATE COMPLETED: 2/18/05
DRILLING CONTRACTOR: GeoTech Explorations, Inc.
TOTAL DEPTH: 25 feet
DRILLING METHOD: Direct Push - Geoprobe
SHEET: 2 OF 2
HOLE DIAMETER: 2-inch

Field location of boring

WELL OR PIEZOMETER DETAILS	SAMPLING DATA: Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
Bentonite			3.5		21, 22, 23, 24	ML	**20.0 to 24.0 feet: SILT (ML)**; brown; low to medium plasticity fines; 5 to 10 percent fine to medium sand; trace medium gravel; woody debris; moist. @ 23.0 feet: 0.75 foot-thick log.
					25	ML	**20.0 to 24.0 feet: SILT (ML)**; light gray; nonplastic fines; moist.
					26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		Boring terminated at 25 feet. Borehole abandoned with bentonite granules.

Remarks:

BRIX002963

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ANCHOR ENVIRONMENTAL, L.L.C.

LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME: Brix Maritime
BORING #: B-32
PROJECT NUMBER: 990056-01
DATE BEGAN: 2/18/05
GEOLOGIST: J. Renda
DATE COMPLETED: 2/18/05
DRILLING CONTRACTOR: GeoTech Explorations, Inc.
TOTAL DEPTH: 15 feet
DRILLING METHOD: Direct Push - Geoprobe
SHEET 1 OF 2
HOLE DIAMETER: 2-inch

Field location of boring: Near Former Fuel Pumps

WELL OR PIEZOMETER DETAILS	SAMPLING DATA: Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
Bentonite							**0.0 to 0.4 feet: ASPHALT**
					1	GW	**0.4 to 1.0 feet: GRAVEL (GW);** angular to subangular; fine to coarse gravel.
			3.0		2, 3, 4	SM	**1.0 to 4.0 feet: SILTY SAND (SM);** brown to rust brown; 60 to 70 percent fine to medium sand; 20 to 30 percent nonplastic to low plasticity fines; 10 percent fine to medium gravel; subrounded; moist.
					5	SM	**4.0 to 5.0 feet: SILTY SAND (SM);** gray; fine to medium sand; medium plasticity fines; moist.
	940	B-32 (5-6)			6	SM	**5.0 to 6.0 feet: SILTY SAND (SM);** mottled brown to gray; fine to medium sand; medium plasticity fines; gasoline-like odor; moist.
					7	ML	**6.0 to 7.0 feet: SILT (ML);** gray; nonplastic to low plasticity fines; trace rust brown sandy layers.
			4.0		8, 9, 10	SP	**7.0 to 15.0 feet: SAND (SP);** dark gray; medium sand; gasoline-like odor; moist.
	955	B-32 (10-12)			11, 12	SP	
			4.0		13, 14, 15	SP	
					16, 17, 18, 19, 20		

Remarks:

BRIX002964

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ANCHOR ENVIRONMENTAL, L.L.C.

LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME: Brix Maritime
PROJECT NUMBER: 990056-01
GEOLOGIST: J. Renda
DRILLING CONTRACTOR: GeoTech Explorations, Inc.
DRILLING METHOD: Direct Push - Geoprobe
HOLE DIAMETER: 2-inch

BORING #: B-33 (MW-8)
DATE BEGAN: 2/18/05
DATE COMPLETED: 2/18/05
TOTAL DEPTH: 25 feet
SHEET 1 OF 2

Field location of boring

Near Source of Lube Oil Release

WELL OR PIEZOMETER DETAILS	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
2-inch Schedule 40 PVC Riser Pipe							**0.0 to 0.3 feet: ASPHALT**
					1	GW	**0.3 to 1.0 feet: GRAVEL (GW);** angular to subangular; fine to coarse gravel.
			2.5		2	SP	**1.0 to 3.0 feet: SAND (SP);** tan; medium sand; trace fine, subrounded to well rounded gravel.
					3		
					4	SM	**3.0 to 6.0 feet: SILTY SAND (SM);** brown; fine to medium sand; medium plasticity fines; trace fine to medium, subrounded gravel; trace wood debris; some gray to rust brown mottling; moist.
					5		
			3.0		6		
					7	SP	**6.0 to 22.0 feet: SAND (SP);** brown; fine to medium sand; trace fines; moist.
					8		
					9		
					10		
			2.0		11		
					12		
					13		@ 13.0 feet: color change to gray
					14		
					15		
			3.0		16		
					17		
					18		
					19		
Prepacked Screen					20		

Remarks:

BRIX002965

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ANCHOR ENVIRONMENTAL, L.L.C.

LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME: Brix Maritime. BORING #: B-33 (MW-8)
PROJECT NUMBER: 990056-01 DATE BEGAN: 2/18/05
GEOLOGIST: J. Renda DATE COMPLETED: 2/18/05
DRILLING CONTRACTOR: GeoTech Explorations, Inc. TOTAL DEPTH: 23 feet
DRILLING METHOD: Direct Push - Geoprobe SHEET: 2 OF: 2
HOLE DIAMETER: 2-inch

Field location of boring

WELL OR PIEZOMETER DETAILS	SAMPLING DATA: Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED	DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	LITHOLOGIC DESCRIPTION
Prepacked Screen	1100	B-33 (20-22)	3.5		21, 22	SP	@ 20.0 to 22.0 feet: Oily.
					23	ML	**22.0 to 23.0 feet: SANDY SILT (ML)**; gray; low to medium plasticity fines; fine to medium sand; trace root hairs; moist.
					24, 25	ML	**23.0 to 25.0 feet: SILT (ML)**; gray; low to medium plasticity fines; fine to medium sand; trace root hairs; moist.
					26		
					27		Boring terminated at 25 feet. Borehole abandoned with bentonite granules.
					28		MW-8 installed adjacent to B-33
					29		**WELL COMPLETION DETAILS**
					30		**0 to 17.2 feet:** 2-inch-diameter, flush threaded , Schedule 40 PVC blank riser pipe.
					31		**17.2 to 22.2 feet:** 2-inch -diameter, flush-threaded, Schedule 40 PVC prepacked well screen with 0.010 machined slots.
					32		**22.2 to 22.7 feet:** 2-inch-diameter threaded end cap.
					33		**0 to 1.0 feet:** Concrete. **1.0 to 16.0 feet:** Bentonite granules.
					34		**16.0 to 22.7 feet:** 10-20 Colorado Silica Sand.
					35		
					36		
					37		
					38		
					39		
					40		

Remarks:

BRIX002966

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6945
TTY (503) 229-5471

April 20, 2005

Mr. John Edwards
Anchor Environmental, Inc.
6650 SW Redwood Lane, Suite 110
Portland, Oregon 97224

RE: Remedial Investigation Workplan (February 2005)
Brix Maritime Company
Portland, Oregon
ECSI No. 2364

Dear John:

The Oregon Department of Environmental Quality (DEQ) has reviewed the *Remedial Investigation Workplan, Brix Maritime Company, Portland, Oregon,* dated February 2005 (the RI Workplan). The RI Workplan was prepared by Anchor Environmental, Inc. (Anchor) on behalf of Brix Maritime Company (BRIX) and submitted to DEQ consistent with the "Voluntary Agreement for Remedial Investigation, Source Control Measures, and Feasibility Study" (DEQ No. LQDVC-NWR-02-03 [the Agreement]). The Agreement became effective May 8, 2002.

DEQ had previously approved a June 2004 version of the workplan with comments. Since that time the scope of work for the BRIX Remedial Investigation (RI) has changed. In addition, information on which other work was dependant is now available. As such, DEQ considers it appropriate to review the RI Workplan in the context of the current scope of work and available information.

DEQ's comments are provided below and have been prepared to : 1) ensure the RI Workplan includes information items agreed to in previous correspondence and/or during meetings, 2) communicate DEQ's understanding of the technical content of certain items included in the RI Workplan, and 3) clarify the information and data collection needs of the RI. DEQ expects that our comments will be incorporated into the RI Workplan and that a final version of the document will be provided for our files within 30 days of your receipt of this letter.

Section 3.2. Consistent with our February 25, 2004 comments letter, and agreements made during a May 25, 2004 meeting, DEQ expects that a survey will be conducted along the facility's waterfront to establish the locations and elevations of 1) groundwater seeps and 2) the contact between the sand unit and the underlying silt unit. This information should be shown on appropriate figure(s) and used when preparing the structural contour map of the top of the silt unit. The survey will also provide a site-specific estimate of the lowest effective shallow groundwater elevation for the site (i.e., when river levels are below the top of silt).

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Section 3.3. Storm water is recognized as a source of contamination to the Willamette River and its sediments. DEQ acknowledges BRIX's ongoing efforts to reduce the potential for site storm water to be a source of impacts to the river. DEQ expects that BRIX will maintain the "best management practices" (BMPs) currently in-place (e.g., use and routine scheduled maintenance and/or replacement of catch basin inserts). DEQ also recommends that BRIX implement the BMPs recommended by the City of Portland, including sweeping paved surfaces to reduce the amount of material entering the catch basins and minimizing outdoor uncovered storage of spare equipment and/or materials. Periodic sweeping of the paved areas could reduce the frequency of maintaining and/or replacing the catch basin filters.

Section 3.5. According to this section and Appendix F of the RI Workplan, PGE owns the two transformers at the BRIX facility having purchased them on January 1, 1979. Additionally, PGE reports that the content of polychlorinated biphenyls (PCBs) in the transformers is unknown. DEQ acknowledges that de-energizing the transformers and interrupting power would negatively impact the BRIX operation. However, DEQ understood from Anchor's April 30, 2004 letter that if information regarding the PCB content of the transformers was unavailable or could not be determined, then shallow soil sampling would be conducted.

DEQ expects that an approach for collecting and analyzing shallow soil samples around the transformers will be developed and incorporated into the RI Workplan. Lacking information regarding the PCB content of the transformers, this information will be used to confirm whether releases from the transformers have occurred and whether additional work is warranted.

Section 4.1. Our February 25 letter stipulated that if groundwater seeps (as opposed to petroleum hydrocarbon seeps or sheens) are"...interpreted to be downgradient of the known groundwater plume or contaminant source areas..." representative samples should be collected. Section 3.2 of the RI Workplan indicates that groundwater seeps have been observed downgradient of monitoring well MW-2. Furthermore, polycyclic aromatic hydrocarbons have been detected in groundwater at MW-2. Based on this information, DEQ concludes that the criterion for sampling groundwater seeps has been met and that an approach for collecting and analyzing samples should be developed and included in the RI Workplan.

That said, the RI Workplan suggests it may be infeasible, due to access and safety considerations, to collect samples where groundwater seeps have been observed (i.e., along the northern portion of the facility's waterfront). Although not specifically mentioned, this comment appears to include the groundwater seeps observed near MW-2.

DEQ considers sampling groundwater seeps an important element of the RI. Given the configuration of the BRIX site and its access limitations, groundwater seeps may represent the only sampling locations between waterfront monitoring wells (e.g., MW-2) and the river. The data is needed to further assess the lateral extent of groundwater contamination and would support both the RI and the source control evaluation. As such, DEQ expects that BRIX will make every effort to develop an approach for conducting this work.

The third set of bullets in this section (see Page 14 of the RI Workplan) lists specific items that will be included in the RI Report to facilitate DEQ's review of BRIX site investigation information. During the May 25, 2004 meeting DEQ understood that an evaluation of the influence of precipitation on shallow groundwater fluctuations would be added to the list of items. This information will be used to further evaluate the hydrogeologic conceptual site model for the BRIX facility.

Section 4.4. DEQ expects that the "shoreline monitoring wells" referenced in the first paragraph of this section will include MW-2, MW-3, MW-4, MW-5, and MW-8.

For the purpose of screening site data for the source control evaluation of the BRIX facility, Anchor proposes using DEQ Level 2 Screening Benchmark Values for potential ecological exposure pathway(s) and the US Environmental Protection Agency (EPA) 2002 National Recommended Water Quality Criteria to evaluate potential human health exposure pathways.

EPA and DEQ are currently developing screening criteria for Portland Harbor Joint Source Control Strategy. Agency agreement on screening criteria is expected within the next few weeks and therefore may coincide with the BRIX source control evaluation. DEQ recommends that prior to initiating the source control evaluation, Anchor obtain from DEQ the appropriate screening criteria to reduce the potential for duplication of work efforts.

In addition to EPA/DEQ development of screening criteria, be advised that EPA may be requiring that federal drinking water maximum contaminant levels (MCLs) and drinking water preliminary remediation goals (PRGs) be included as screening criteria for the groundwater pathway.

Section 5.2. DEQ understands that in addition to the quarterly reports referenced in this section, an interim submittal will be prepared that compiles the site investigation information listed in Section 4.1 and includes descriptions and interpretations of the data. The interim submittal will form the basis for determining whether the site investigation work completed to date supports the source control evaluation. Subsequent to review and approval of the interim submittal, DEQ understands the source control evaluation will be prepared. Both the interim data compilation document and the source control evaluation will be incorporated into the RI Report.

DEQ requests that the schedule for completing the interim data compilation document be included in this section of the RI Workplan. The submittal dates for the source control evaluation and the RI Report will be established as the document review and approval process proceeds.

Table 3. Table 3 compiles monthly observations made regarding 1) the presence of light non-aqueous phase liquids and 2) water level measurements made at each monitoring well. In our February 25th letter, and as Anchor agreed to in their April 30, 2004 response letter, additional information should be provided on the table and assessed when preparing equipotential maps for the site. Given the interpretations of the site geology and hydrogeology, during seasonal declines

in the water table there is the potential for groundwater and/or LNAPL to be retained in the monitoring well end-cap, or trapped in the borehole due to the fine-grained nature of the material surrounding the sand pack. In either case misleading data and interpretations could result.

DEQ requests that Table 3 be revised for future submittals to include the elevations of the top of the silt and the top of the monitoring well end-cap for information purposes. Interpretations and descriptions of historic and future groundwater elevation data should take this information into consideration.

Table 4. The "Z" data qualifier shown in the table should be explained in the notes.

Figures 3, 4, and 5. The spatial relationships between the locations of monitoring wells MW-2, MW-3, MW-4, and MW-5 shown on figures 3 and 4 do not appear to correspond to those shown on Figure 5. DEQ requests that these figures be reviewed and reconciled in future submittals if appropriate.

Appendix A, Sampling and Analysis Plan. The Sampling and Analysis Plan (SAP) provided in Appendix A of the RI Workplan is limited to quarterly groundwater monitoring. The RI Workplan should include a SAP and a Quality Assurance Project Plan that reflects the current scope of work for the BRIX RI, including work that has been completed (e.g., push-probe drilling and soil sampling, monitoring well installation, collecting groundwater samples for analysis of total and dissolved metals) and that will be performed (e.g., shallow soil sampling around electrical transformers, collecting samples from groundwater seeps for analysis of contaminants of interest).

DEQ appreciates the work BRIX is conducting to further investigate environmental conditions at their facility. If you have any questions regarding this letter, please don't hesitate to call me at (503) 229-5543 or email me at bayuk.dana@deq.state.or.us.

Sincerely,

Mr. Dana Bayuk, R.G.
Project Manager
Voluntary Cleanup Program
Lower Willamette Section

Cc: Kim Johannessen, Johannessen & Associates
David Templeton, Anchor Environmental, Inc., Seattle
Frank Williamson, Foss
Rod Struck, DEQ – VCP/LWS
ECSI File No. 2364

DEQ-DC1

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SUBSURFACE INVESTIGATION

Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

August 12, 1993

Prepared for:

Brix Maritime Company
Portland, Oregon

Prepared by:

Hahn and Associates, Inc.
Portland, Oregon

Project #2289

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B Soil Boring Logs
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D Soil Cleanup Standard Matrix Worksheet

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BRIX003112

SUBSURFACE INVESTIGATION

Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

August 12, 1993

EXECUTIVE SUMMARY

The Brix Maritime Company retained the environmental management firm of Hahn and Associates, Inc., to perform a subsurface investigation relating to previously detected petroleum products in the subsurface soils at their facility located at 9030 NW St. Helens Road in Portland, Oregon. The subsurface investigation was designed to determine the lateral and vertical extent of oil petroleum contamination previously detected at the subject site and to determine the potential for a diesel release.

Soil samples were obtained from thirteen subsurface soil borings that were installed in the vicinity of previously detected petroleum contamination at the subject site in April 1993. Groundwater was encountered at approximately 26 feet below ground surface in all borings that were drilled to that depth. Based on local topography, it is estimated that the flow direction for the local shallow groundwater beneath the site is to the north towards the Willamette River.

Two areas of petroleum contaminated soils were identified during the investigative activities. Gasoline contamination was detected in excess of the Oregon Department of Environmental Quality Level 2 cleanup standard south of the underground storage tanks in boring B-7. In addition, oil and diesel contamination of soils was previously identified along the oil and fuel lines adjacent to the Maintenance Building. The oil detected in boring B-13 in this area did not exceed the Level 2 cleanup standard for diesel or oil petroleum contaminants. Petroleum hydrocarbons were neither detected nor observed at the water table at the subject site.

Recommendations for additional activities at the site are presented in the report.

HAHN AND ASSOCIATES, INC.

1.0 INTRODUCTION

The Brix Maritime Company ("Brix") has retained the environmental management firm of Hahn and Associates, Inc., (HAI) to perform a subsurface investigation relating to the presence of petroleum hydrocarbons in the subsurface soils at their facility located at 9030 NW St. Helens Road in Portland, Oregon (Figure 1). Oil contamination of soil was previously detected in the vicinity of an underground oil line that is used to service Brix's maintenance barge. In addition, diesel petroleum hydrocarbons were detected in several soil samples that were previously collected near the oil line. The subsurface investigation was designed to determine the lateral and vertical extent of the detected oil contamination of soils and to determine potential sources for the detected diesel release.

Soil samples were obtained by HAI from 13 subsurface soil borings that were installed in April 1993. Selected soil samples were analyzed for the presence of total petroleum hydrocarbons (TPH).

2.0 SCOPE OF WORK

The scope of work for the subsurface investigative activities included the following tasks:

1) Drilling, field screening, and soil sampling of thirteen subsurface soil borings in the vicinity of the oil pipeline and underground storage tank (UST) areas

2) Laboratory analysis of selected soil samples for the presence of petroleum hydrocarbons

3) Data synthesis and report preparation.

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3.0 BACKGROUND

3.1 Site Description

The subject property is the location of the Brix main headquarters and a tug boat service and fueling facility (Figure 2). The site is situated between St. Helens Road to the south and borders the Willamette River immediately to the north (Figure 1). Topographically, the site dips gently to the north and lies at an elevation of approximately 25 feet above mean sea level (MSL). A 20-foot high embankment separates the northern property boundary and the Willamette River. The subject site is covered with either buildings or asphalt (Figure 2).

Currently there are five USTs located in one nested area at the subject site including two 20,000-gallon diesel fuel USTs, two 6,000-gallon lubrication oil USTs, and one 2,000-gallon gasoline UST. The UST area lies adjacent to the Maintenance Building to the west. The diesel and oil USTs are connected via three underground product transfer lines to the maintenance barge adjoining the property to the north in the Willamette River.

3.2 Discovery of Oil Release

On January 13, 1993, lubrication oil was observed to be coming up through a seam between asphalt and concrete paved areas near the UST nest. Subsequently, dispensing operations from the lubrication oil USTs were ceased, and the release was reported by Brix to the Oregon Department of Environmental Quality (DEQ). The reported release was given file number 26-93-009 by the agency. Following the discovery of the release, the oil line was repaired in January 1993 and is currently in service.

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3.3 Previous HAI Activities

In January 1993, HAI was retained by Brix to conduct an investigation of the observed oil release, the results of which are detailed in the HAI report entitled *Underground Storage Tank System Investigation, Brix Maritime Company, 9030 NW St. Helens Road, Portland, Oregon,* (HAI project #2279) dated February 26, 1993. The investigative activities included the excavation of accessible oil-contaminated soil in the vicinity of the oil pipeline to a depth of approximately 3 feet below ground surface (bgs). Following the excavation of approximately 45 cubic yards of petroleum contaminated soil, one test pit was excavated to a depth of 12 feet bgs in an attempt to determine the vertical extent of the contamination. Although soil contamination was observed in the floor of the test-pit, excavation was discontinued due to instability of the native soils adjacent to the Maintenance Building. Soil samples collected from the excavation detected diesel and oil at concentrations ranging from 49 to 53,000 parts per million (ppm)(Table 1; Figure 3). The report concludes that petroleum hydrocarbons remain in-place in the vicinity of the oil pipeline. It was speculated that a possible source of the detected diesel petroleum hydrocarbons was the two 20,000-gallon diesel fuel USTs.

3.4 Tracer Research Corporation Activities

In May 1993, Tracer Research Corporation ("Tracer") conducted a soil-tracer survey of the subsurface soils in the vicinity of the two 20,000-gallon diesel USTs. The results of the investigations are detailed in the Tracer report entitled *Tracer Tight Test of 2 Underground Storage Tanks at the Brix Maritime, 9030 NW St. Helens Road, Portland, Oregon*, dated March 15, 1993. Based on the results of the Tracer investigations, no tracer was detected at any of the areas sampled, indicating that the two diesel USTs and their pipelines were within tolerance.

Subsequent to the Tracer investigations, HAI was retained by Brix to conduct a subsurface investigation in the vicinity of the oil release and the UST nest area. The results of the HAI subsurface investigatory activities are the subject of this report.

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4.0 FIELD ACTIVITIES

Thirteen soil borings were installed by HAI on April 15 and 16, 1993, the locations of which are shown on Figure 4. The soil borings ranged in depths from 5 to 26.5 feet bgs. In total, 50 soil samples were collected, 18 of which were selected for laboratory analyses.

Details of the field methods employed to install the soil borings and details of the soil sampling are included in Appendix A. Boring logs for each of the subsurface soil borings, which describe the soils encountered, are included in Appendix B.

5.0 ANALYTICAL TESTS

The soil samples were shipped with chain-of-custody documentation in sealed and chilled containers to Oregon Analytical Laboratory of Beaverton, Oregon.

The soil samples collected during the April 1993 investigation were analyzed for a hydrocarbon identification (HCID) of total petroleum hydrocarbons (TPH) by DEQ Method TPH-HCID. Soil samples from the soil borings were selected for laboratory analyses based on the field-screening (visual, olfactory and vapor headspace) results and the reported depth of contamination based on the previous HAI investigations. In cases where gasoline was detected, the sample was analyzed by DEQ Method TPH-G. If oil was detected, then the sample was analyzed by DEQ Method TPH 418.1M.

The results of the analytical testing for soils are summarized on Table 2. The laboratory reports and chain-of-custody documentation for the soil sampling and analyses are included in Appendix C.

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6.0 RESULTS AND DISCUSSION

6.1 Subsurface Conditions

The shallow soils encountered in all of the borings during drilling were composed of a silty gravel with some sand (Gravel Unit) from the surface to approximately 4 feet bgs, the depth varying depending on boring location. Underlying the Gravel Unit, a sand (Sand Unit) was observed to a depth of 20 to 25 feet bgs where a silty clay (Clay Unit) was encountered to the maximum depth of this investigation at approximately 26.5 feet bgs. Concrete and gravel fill material was observed in boring B-1 and B-8, both of which were attempted to be installed inside the Maintenance Building. The fill material precluded drilling to greater depths below the a Maintenance Building foundation.

Groundwater was encountered at approximately 25 feet bgs in all borings that were drilled to that depth. Based on local topography, it is estimated that the flow direction for the local shallow groundwater beneath the site is to the north towards the Willamette River.

6.2 Soil Cleanup Standard

The cleanup standards for soils contaminated with petroleum hydrocarbons from UST systems are determined by use of a matrix evaluation as defined in Oregon Administrative Rules (OAR) 340-122-305 to 340-122-360 and administered by the DEQ. If soil contamination extends to the level of groundwater, the DEQ is not required to use the matrix cleanup standards but may determine cleanup standards on a case-by-case basis.

For comparison purposes, a calculation of the matrix parameters suggests that the subject property may be considered a Level 2 site. Therefore, an 80 ppm cleanup standard may apply to any gasoline contamination, and a 500 ppm cleanup standard may apply to any diesel or oil contamination at the subject site (Appendix D).

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6.3 Soil Impacts

Based on the results of the laboratory analyses, petroleum hydrocarbons were detected only in two soil borings, B-7 and B-13 (Figures 5, 6, and 7). Oil contamination was detected in boring B-13 at a concentration of 200 ppm at a depth of 10.5 feet bgs. Since B-13 was installed by hand auger, deeper samples could not be collected. Although soil samples from boring B-2 displayed oil contaminant characteristics based on field indicators, laboratory analyses did not detect any contamination. Gasoline petroleum hydrocarbons were detected in B-7 at concentrations of 270 ppm at 10.5 feet bgs, 2,000 ppm at 15.5 feet bgs, and 13 ppm at 20.5 feet bgs. A petroleum-like odor was observed in B-6 at the depths of 10.5, 15.5, and 20.5 feet, although contaminants were not detected.

The gasoline contamination detected in B-7 at concentrations of 270 and 2,000 ppm (15.5 and 20.5 feet bgs, respectively) exceeds the DEQ Level 2 cleanup standard of 80 ppm for gasoline. The oil detected in boring B-13 at a concentration of 200 ppm (10.5 feet bgs), did not exceed the DEQ Level 2 cleanup standard of 500 ppm for diesel or oil petroleum contaminants.

The results of the soil sampling and analytical testing from this investigation and the previous investigation indicate that there are probably two areas of subsurface petroleum contamination at the subject site. One area of subsurface contamination is present along the oil and fuel pipelines adjacent to the Maintenance Building. This area of soil contamination is likely the result of the lubrication oil pipeline release and possibly other sources that have not been determined at this time. Due to fill material that precluded hollow stem auger advancement inside the Maintenance Building, the presence of the detected oil contamination under the structure could not be determined. In addition, the vertical extent of the oil contamination could not be determined at the point of release since drilling in the pipeline trench was not possible. Further characterization of the subsurface soils in the vicinity of the oil release could not be conducted based on the presence of underground utilities, the location of UST piping, and the nearby structure. Based on the previous investigatory activities, the oil and diesel contamination was determined to be at least 12 feet directly below the pipeline leak.

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A second area of soil contamination was detected south of the UST nest and consists of gasoline petroleum hydrocarbons. The lateral extent of the gasoline contamination appears to have been defined to the north, west, and south, but could not be defined to the east due to the neighboring structure. The vertical extent of the gasoline contamination appears to have been defined, extending no deeper than approximately 20.5 feet bgs. The source of the gasoline contamination may be the 2,000-gallon gasoline UST, associated piping and/or dispenser.

In no case were petroleum hydrocarbons detected by analytical testing or observed by field screening at the depth of the observed water table at the subject site.

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7.0 CONCLUSIONS AND RECOMMENDATIONS

Soil samples were obtained from thirteen subsurface soil borings that were installed in the vicinity of previously detected petroleum contamination at the subject site in April 1993. The shallow soils encountered in all of the borings during drilling were composed of gravels and sands to a depth of 20 to 25 feet bgs where a clay was encountered to the maximum depth of this investigation at approximately 26.5 feet bgs.

Groundwater was encountered at approximately 26 feet bgs in all borings that were drilled to that depth. Based on local topography, it is estimated that the flow direction for the local shallow groundwater beneath the site is to the north towards the Willamette River.

Two areas of petroleum contaminated soils were identified during the investigative activities. Gasoline contamination was detected in excess of the DEQ Level 2 cleanup standard south of the USTs in boring B-7. In addition, oil and diesel contamination of soils was previously identified along the oil and fuel lines adjacent to the Maintenance Building. The oil detected in boring B-13 in this area did not exceed the DEQ Level 2 cleanup standard for diesel or oil petroleum contaminants. Further characterization by traditional methods of the subsurface soils in the vicinity of the oil release could not be conducted based on the presence of underground utilities, the location of UST piping, and the nearby structure. Petroleum hydrocarbons were neither detected nor observed at the water table at the subject site.

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Based on the data gathered during this subsurface investigation, it is recommended that the 2,000-gallon capacity gasoline UST and associated ancillary piping be tested for integrity. It is further recommended that the remaining oil and detected gasoline contaminated soils be removed subsequent to future UST removal and upgrading at the subject site. Since UST removal is not currently scheduled, it is recommended that an UST maintenance plan be developed regarding the USTs present at the subject site. Current removal of contaminated soils does not appear practicable or warranted for the following reasons:

1) Removal operations would be prohibitively expensive at this time due to the presence of underground utilities, tanks, and nearby structures

2) The two contaminated soil zones appear to have been generally characterized

3) The soil contamination does not appear to extend to the depth of the water table

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BRIX003122

Any questions regarding the information presented in this report are welcome and should be referred to the undersigned. Thank you for the opportunity to be of service to Brix Maritime Company.

Hahn and Associates, Inc.

Prepared by:

Guy H. Tanz
Project Manager/
Hydrogeologist

Date August 12, 1993

Reviewed by:

Roger E. Brown, Jr.
Associate

8.0 LIMITATIONS

Analytical results presented in this report document only the concentrations of the target analytes in the particular sample and not the property as a whole. We have taken samples from those areas we have identified as having the greatest risk of contamination. Unless a comprehensive statistical sampling program is conducted, however, one cannot conclude with confidence that contaminants may not be found in significantly higher or lower concentrations in other parts of the property. The scope of this investigation was dictated by the client's determination of an appropriate balance between cost and the increased certainty that flows from comprehensive investigation.

(HAI 10/90)

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BRIX003124

GLOSSARY OF ABBREVIATIONS

B-1	soil boring
bgs	below existing ground surface
Brix	Brix Maritime Company
DEQ	Oregon Department of Environmental Quality
HAI	Hahn and Associates, Inc.
HCID	hydrocarbon identificaiton
ID	inside diameter
MSL	mean sea level
OAR	Oregon Administrative Rules
OD	outside diameter
ppm	parts per million
SPT	Standard Penetration Test
TPH	total petroleum hydrocarbons
USCS	Unified Soil Classification System
UST	Underground Storage Tank

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TABLE 1
Summary of Analytical Results for Soil Samples - Previous Investigation

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

Project #2289

Sample Number	Date Sampled	Sample Location	Depth	Analytical Results in mg/kg (ppm)			
				Oregon DEQ Methods			
				TPH-HCID			TPH-418.1M
				Gasoline	Diesel	Oil	Diesel/Oil
2279-01	26-Jan-93	Test Pit (east wall)	6.0	ND>20	Detected	Detected	451
2279-02	26-Jan-93	Test Pit (floor)	12.0	ND>20	Detected	Detected	39,700
2279-03	27-Jan-93	Test Pit (north wall)	6.0	-	-	-	10,800
2279-04	27-Jan-93	Test Pit (west wall)	6.0	-	-	-	161
2279-05	27-Jan-93	Test Pit (south wall)	6.0	ND>20	Detected	Detected	58
2279-06	27-Jan-93	Trench (at dispenser)	3.0	ND>20	Detected	Detected	6,290
2279-07	27-Jan-93	Trench (20 feet north of dispenser)	3.0	ND>20	Detected	Detected	26,100
2279-08	27-Jan-93	Trench (40 feet north of dispenser)	3.0	ND>20	ND>50	Detected	53,400
2279-09	27-Jan-93	Trench (60 feet north of dispenser)	3.0	ND>20	ND>50	Detected	49

NOTE: -- not analyzed
DEQ - Oregon Department of Environmental Quality
mg/kg - milligrams per kilogram
ND - not detected above detection limit indicated
ppm - parts per million
TPH - total petroleum hydrocarbons

Confidential Business Information

BRIX003126

TABLE 2
Summary of Analytical Results for Soil Samples

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

Project #2289

Soil Boring Number	Sample Number*	Date Sampled	Depth (feet)	Analytical Results in mg/kg (ppm)				
				Oregon DEQ Methods				
				TPH-HCID			TPH-G	TPH-418.1 M
				Gasoline	Diesel	Oil	Gasoline	Oil
B-2	15-003	15-Apr-93	10.5	ND>20	ND>50	ND>100	-	-
B-2	15-005	15-Apr-93	20.5	ND>20	ND>50	ND>100	-	-
B-2	15-006	15-Apr-93	25.5	ND>20	ND>50	ND>100	-	-
B-3	15-010	15-Apr-93	20.5	ND>20	ND>50	ND>100	-	-
B-3	15-011	15-Apr-93	25.5	ND>20	ND>50	ND>100	-	-
B-4	15-015	15-Apr-93	20.5	ND>20	ND>50	ND>100	-	-
B-5	15-018	15-Apr-93	10.5	ND>20	ND>50	ND>100	-	-
B-5	15-020	15-Apr-93	20.5	ND>20	ND>50	ND>100	-	-
B-6	15-022	15-Apr-93	10.5	ND>20	ND>50	ND>100	-	-
B-6	15-023	15-Apr-93	15.5	ND>20	ND>50	ND>100	-	-
B-7	15-027	15-Apr-93	10.5	Detected	ND>50	ND>100	270	-
B-7	15-028	15-Apr-93	15.5	Detected	ND>50	ND>100	2,000	-
B-7	15-029	15-Apr-93	20.5	-	-	-	13	-
B-9	16-004	16-Apr-93	20.5	ND>20	ND>50	ND>100	-	-
B-10	16-008	16-Apr-93	20.5	ND>20	ND>50	ND>100	-	-
B-11	16-011	16-Apr-93	15.5	ND>20	ND>50	ND>100	-	-
B-12	16-016	16-Apr-93	15.5	ND>20	ND>50	ND>100	-	-
B-13	16-020	16-Apr-93	10.5	ND>20	ND>50	Detected	-	200

NOTE: - - not analyzed
DEQ - Oregon Department of Environmental Quality
mg/kg - milligrams per kilogram
ND - not detected above detection limit indicated
ppm - parts per million
TPH - total petroleum hydrocarbons
* - sample number prefix 2289-9304

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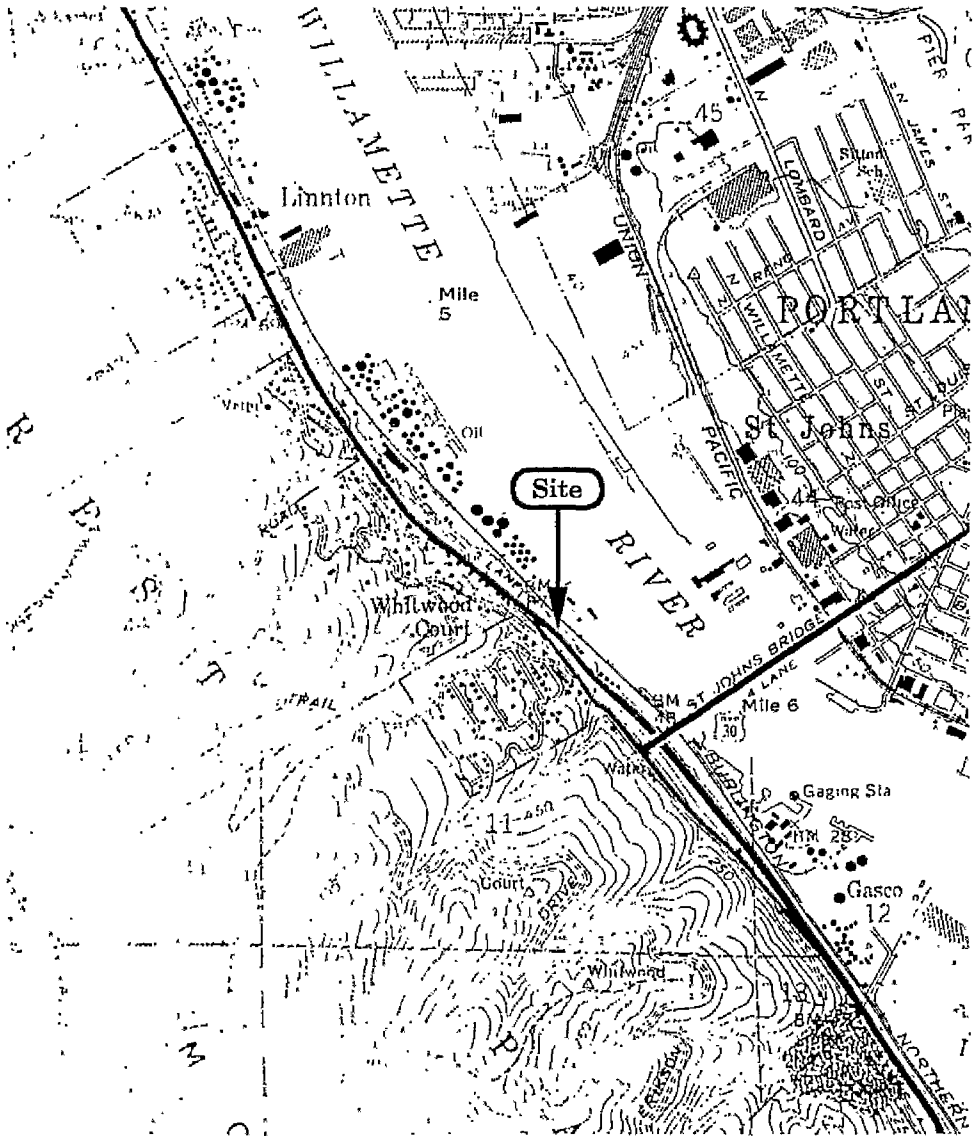
BRIX003127



0 2000 4000

Scale in Feet

N

Source: Linton, Oregon USG.S 7.5 Minute Quadrangle Map

HAI Project #2289	**HAHN & ASSOCIATES** INCORPORATED	**Location Map**	**FIGURE**
May 1993	ENVIRONMENTAL MANAGEMENT 434 NW SIXTH AVENUE, SUITE 203 PORTLAND, OREGON 97209 503/796-0717	Subsurface Investigation Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	1

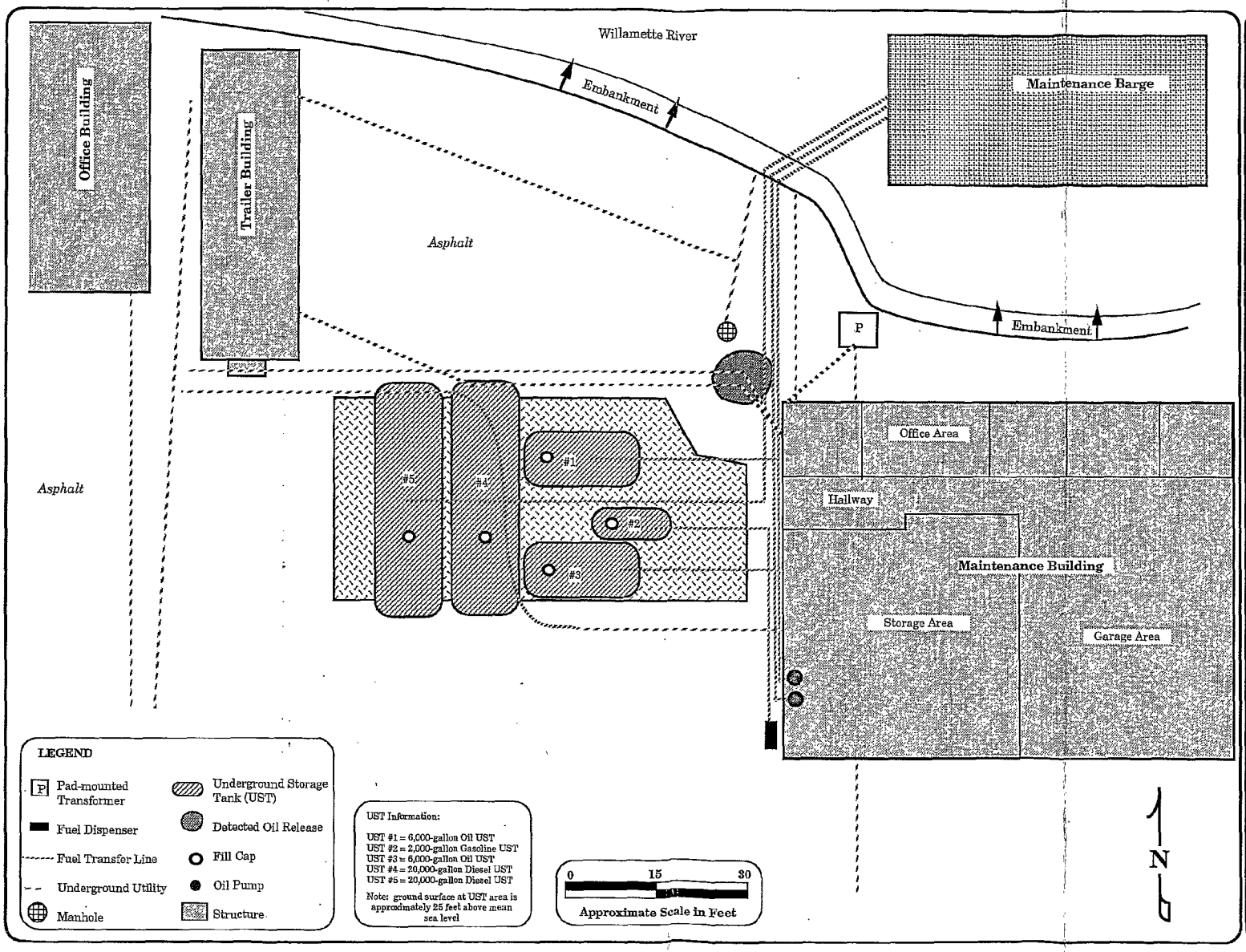


Figure 2

Facility Map

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

HAHN & ASSOCIATES
INCORPORATED
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

May 1993

Project #2289

BRIX003129

Confidential Business Information

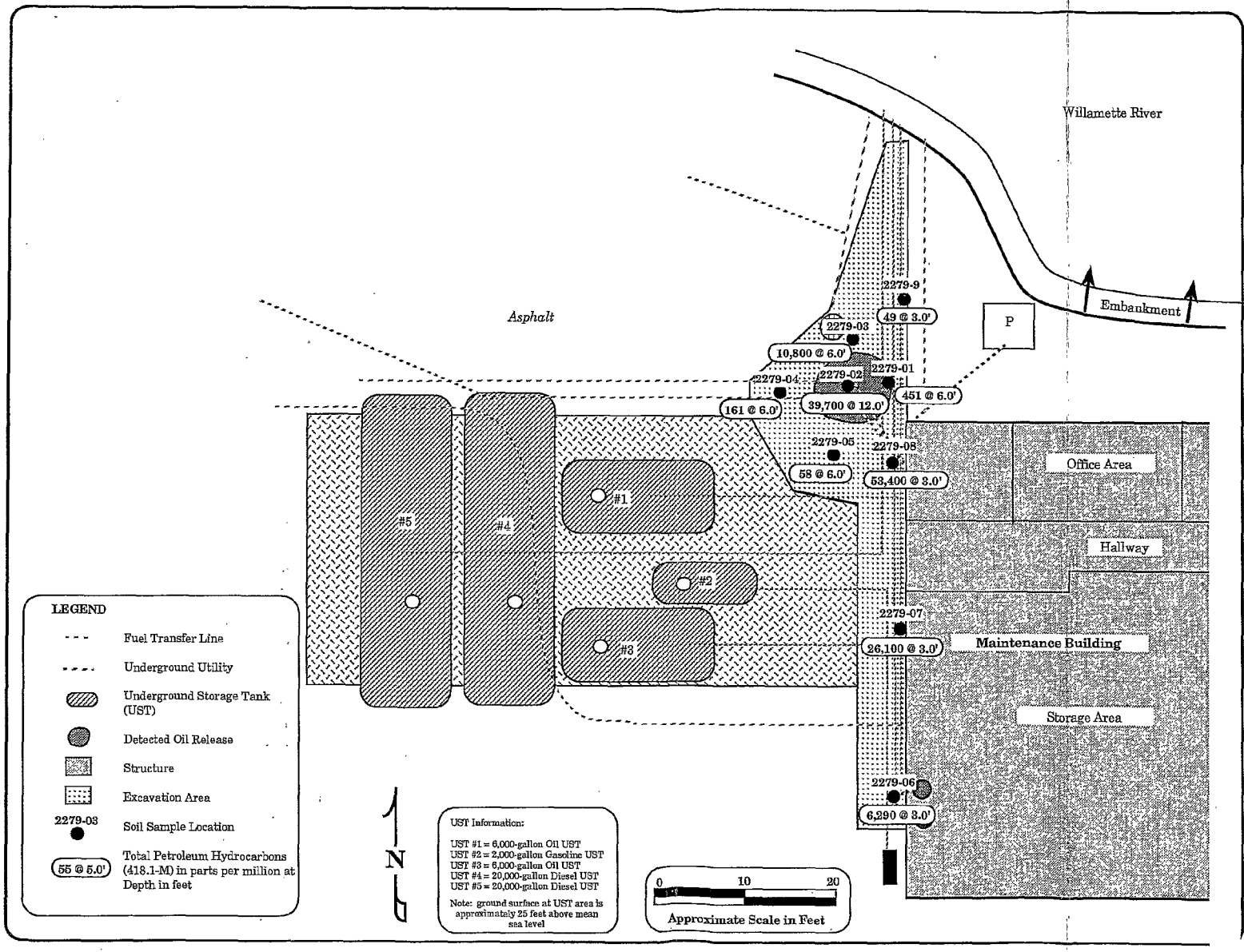


Figure 3

Analytical Results for Soil Samples - Excavation Samples

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

HAHN & ASSOCIATES
INCORPORATED
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

June 1993

Project #2289

Confidential Business Information

BRIX003130

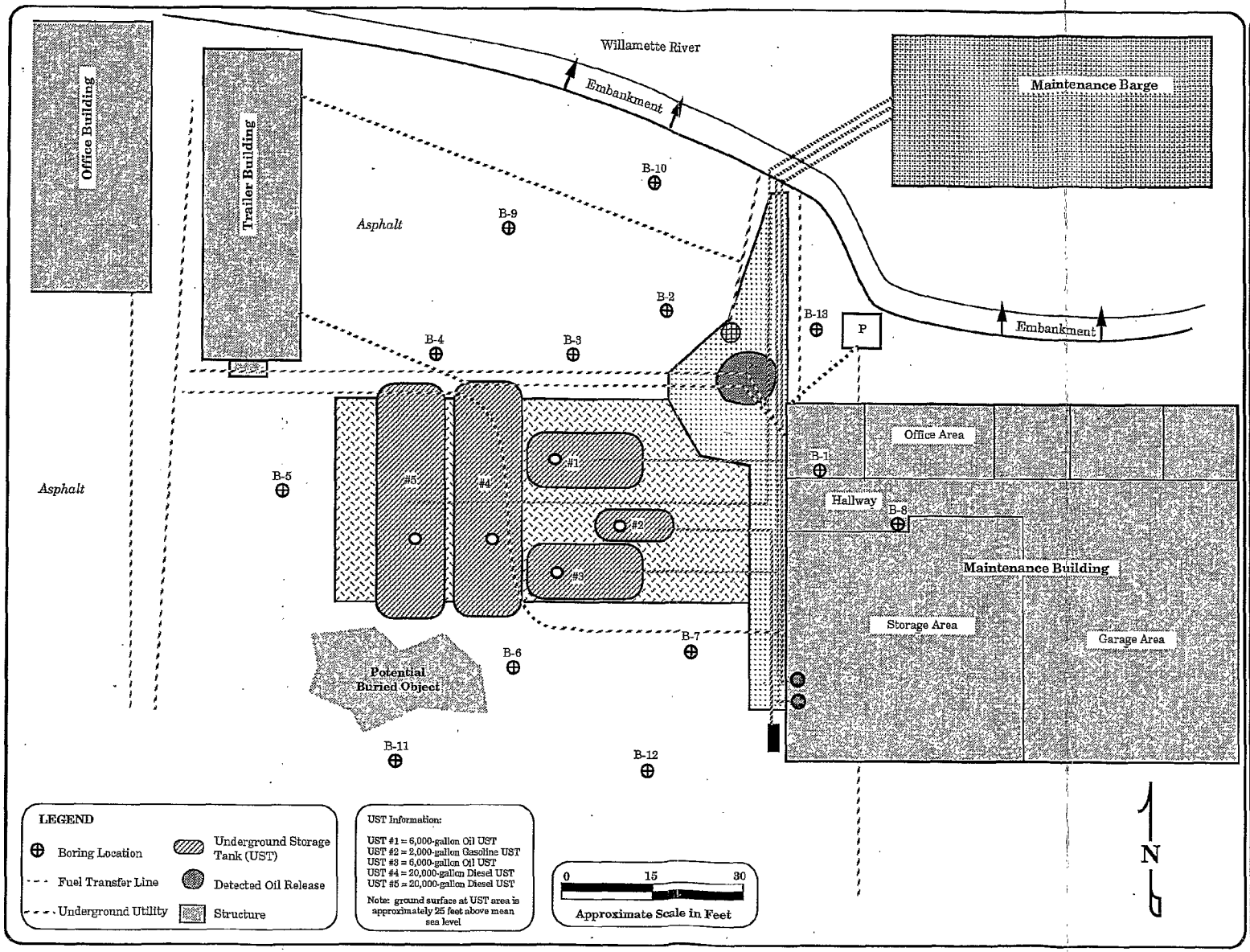


Figure 4

Soil Boring Location Map

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

HAHN & ASSOCIATES
INCORPORATED
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

May 1993

Project #2289

Confidential Business Information

BRIX003131

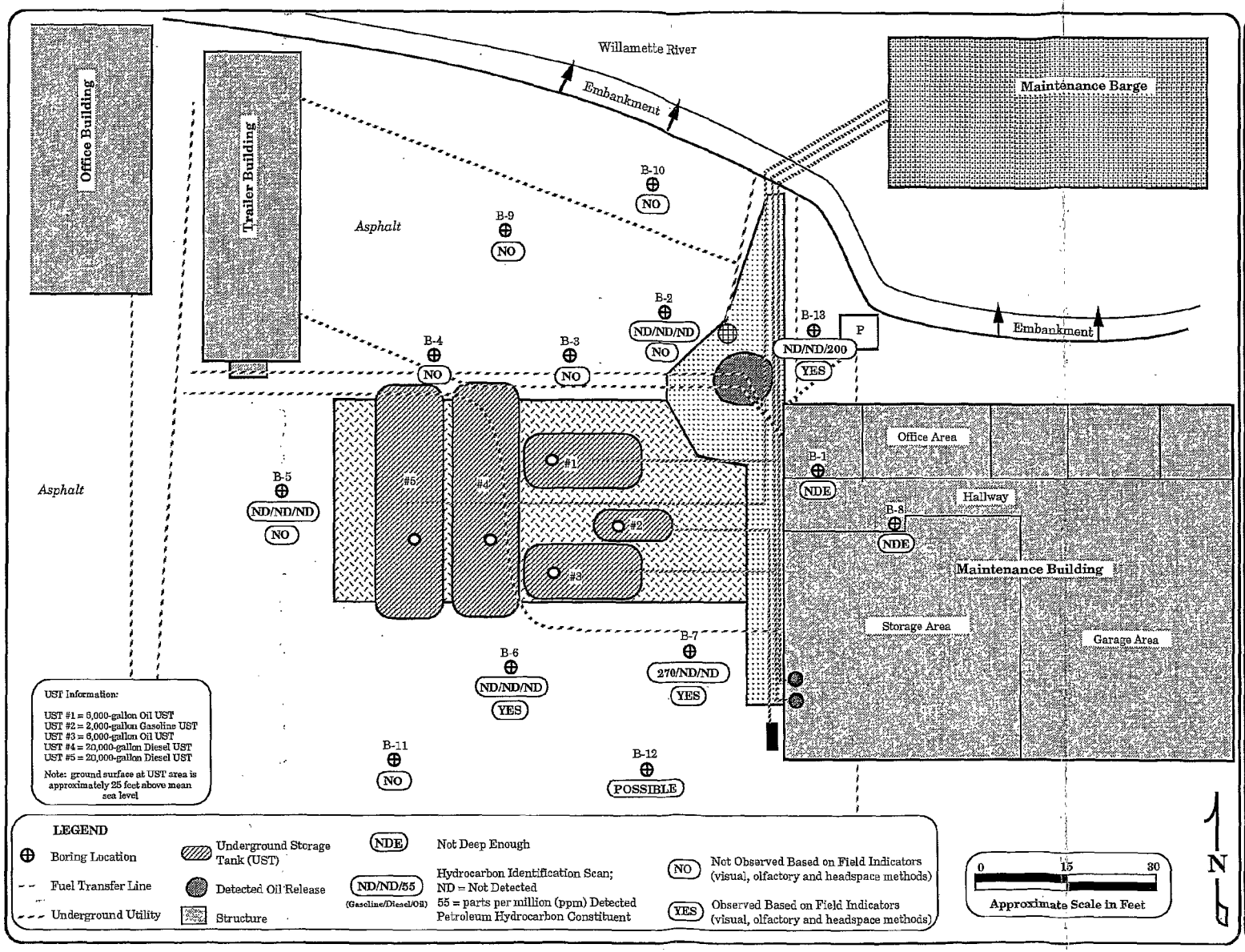


Figure 5

Soil Analytical Results Map
10.5 Feet bgs

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

HAHN & ASSOCIATES
INCORPORATED
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

April 1993

Project
#2289

BRIX003132

Confidential Business Information

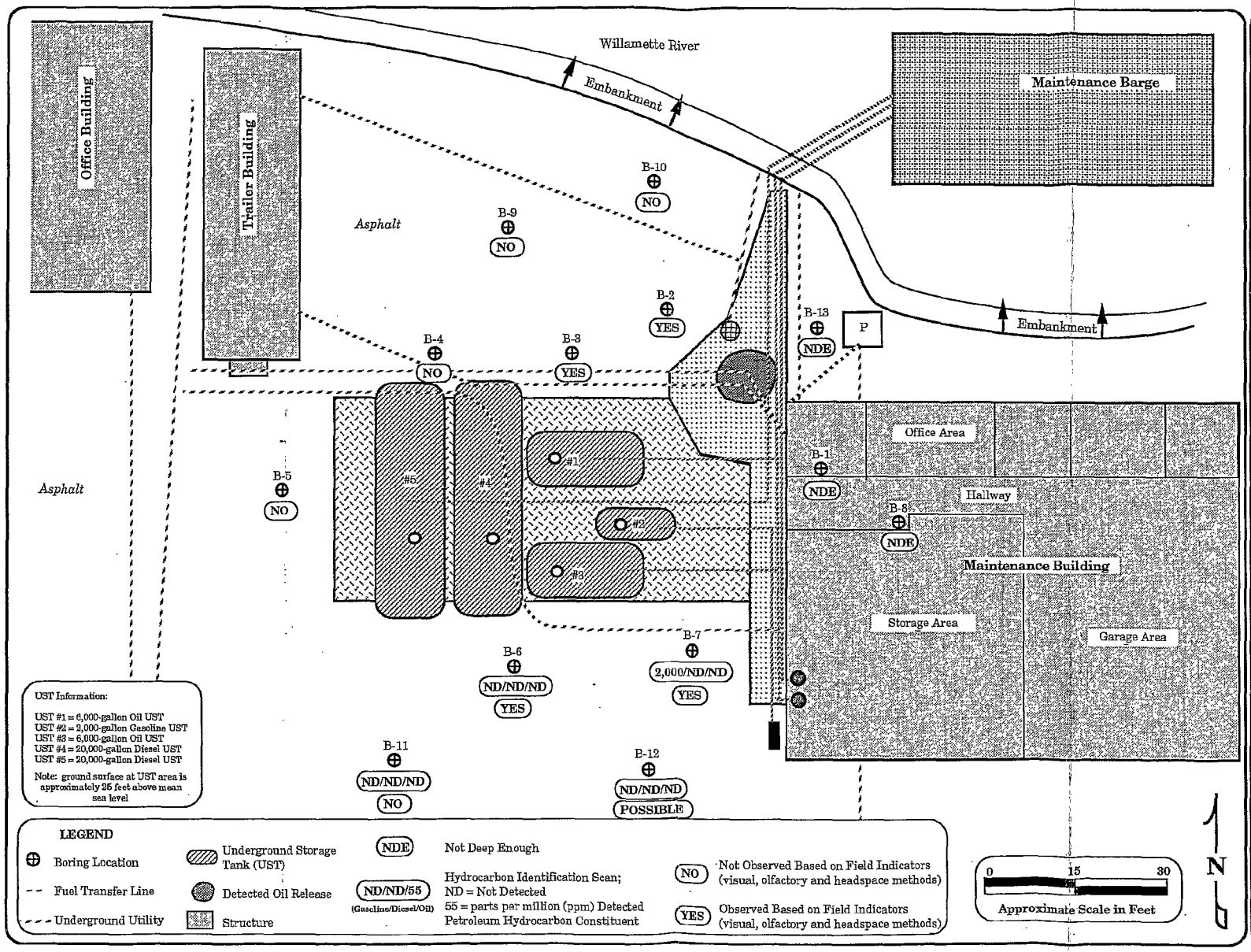


Figure 6

Soil Analytical Results Map
15.5 Feet bgs.

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

HAHN & ASSOCIATES
INCORPORATED
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

April 1993

Project #2289

Confidential Business Information

BRIX003133

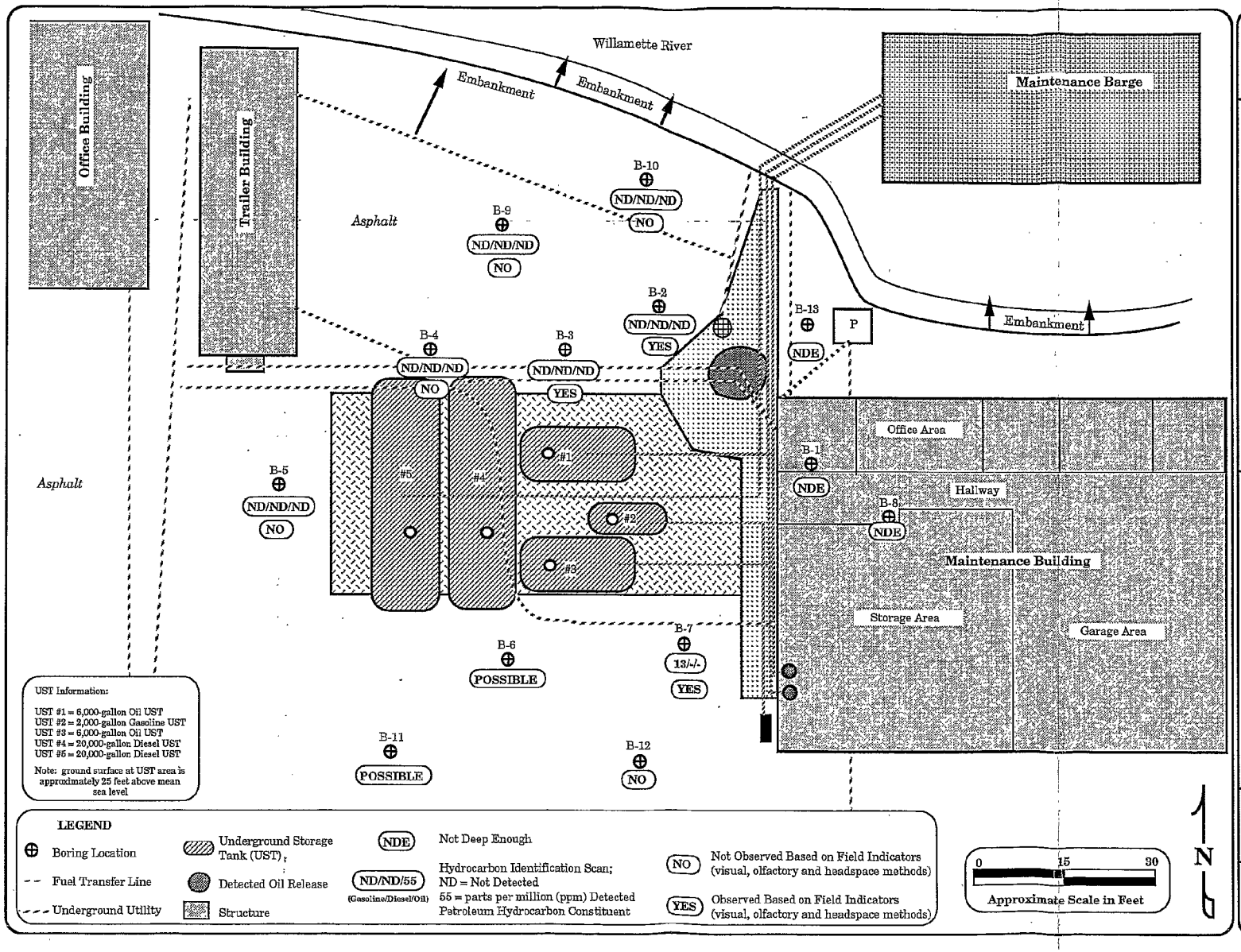


Figure 7

Soil Analytical Results Map
20.5 feet bgs

Subsurface Investigation
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon

HAHN & ASSOCIATES
INCORPORATED
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

April 1993

Project
#2289

Confidential Business Information

BRIX003134

APPENDICES

APPENDIX A

Field Methods

APPENDIX A

FIELD METHODS

SUBSURFACE INVESTIGATION
Brix Maritime Company
9030 St. Helens Road
Portland, Oregon

August 12, 1993

Drilling Procedures

Thirteen subsurface soil borings were drilled with either a hollow stem auger drilling rig, a portable Minuteman drilling rig, or a hand auger at the subject site on April 15 and 16, 1993. Ten of the borings, B-2 through B-7, and B-9 through B-12, were installed outside the Maintenance Building at the site with a Canterra Model CT-250 drilling rig on April 15 and 16, 1993. The drilling rig was equipped with 3 3/4-inch inside diameter (ID) hollow stem augers. Geo-Tech Explorations, Inc., of Tualatin, Oregon, was the drilling contractor for the soil borings installed with hollow stem auger.

Two additional soil borings (B-1 and B-8) were attempted inside the Maintenance Building with a portable Minuteman drilling rig equipped with 2-inch ID hollow stem augers. Crisman Drilling of Oregon City, Oregon, was the drilling contractor for the soil borings attempted inside the Maintenance Building. The last boring, B-13, was installed by HAI with a hand auger equipped with a 2 1/4-inch ID stainless steel drum bit.

The soil borings were drilled and sampled to the depths of between 5.0 and 26.5 feet below ground surface (bgs). The soil borings were abandoned by filling with bentonite chips to within two feet of the ground surface and then filling the borehole to grade with concrete. The soil cuttings generated during drilling were placed on and covered by plastic sheeting for appropriate disposal at a later date.

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Soil Sampling Procedures – Soil Borings

Generally, soil sampling was attempted for descriptive purposes at 2.5 or 5-foot intervals in the soil borings. The soil samples were collected with a 2-inch outside diameter (OD) split spoon sampling device. The split spoon was driven into the undisturbed soils 1.5 feet ahead of the augering bit using the Standard Penetration Test (SPT).

Upon being brought to the surface, a portion of the soil sample was immediately placed in a pre-cleaned, 9-ounce sample jar and capped with a teflon-lined lid. The sample jars were then labeled and transferred to a chilled container for shipment to the analytical laboratory. A portion of the soil sample was also transferred to a one-quart, plastic bag for a headspace analysis for the presence of petroleum hydrocarbon vapors. Standard sampling protocols, including the use of chain-of-custody documentation, were followed for all sampling procedures.

The properties of each soil sample were noted by an HAI geologist in the field. Boring logs, which describe the soils encountered, are included in Appendix B for each of the subsurface soil borings. An estimate of the Unified Soil Classification System (USCS) soil type designation is also shown on the boring logs. The USCS designation was a field estimate only and was not confirmed by laboratory analyses. Visual or olfactory evidence of petroleum hydrocarbon occurrence in the samples, if present, was also noted on the boring logs.

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BRIX003138

Most of the soil samples were field-screened for the presence of hydrocarbon vapors by the headspace method using a portable gas analyzer. The gas analyzer used was a MicroTIP Model MP-1000 equipped with a photoionization detector (PID) and a 10.6 electron volt (eV) lamp. Immediately following the collection of the sample, approximately 8 ounces of soil was placed in a one-quart, plastic bag and sealed. The sample was then set aside for a 20-minute stabilization period, whereupon the instrument probe was inserted through the seal into the bag. The results of the headspace hydrocarbon screening are recorded on the boring logs in parts per million (ppm). The headspace method results should be considered qualitative and should be used for comparison purposes only.

Decontamination Procedures

All drilling and sampling equipment was steam-cleaned between drilling locations to prevent cross-contamination between borings. In addition, sampling equipment was decontaminated after each sample by using a pre-rinse of potable water, a detergent (Alconox) solution wash, and two potable water rinses.

Investigative Derived Wastes

Soil cuttings produced during drilling operations were placed with the soil stockpile generated during the January 1993 pipeline investigation activities. All stockpiled soils from the HAI investigations were treated and disposed at Oregon Hydrocarbon, Inc., on May 26, 1993.

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BRIX003139

APPENDIX B

Soil Boring Logs

KEY TO BORING LOGS

Soil classification in this report is based upon visual and manual field observations which include moisture, consistency, plasticity and grading estimates and should not be construed to imply field or laboratory testing unless presented herein. Soils are classified in accordance with the Unified Soil Classification System. Stratigraphic boundaries are approximate representations only. No warranty is provided as to the continuity of soil strata between borings

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS (MORE THAN HALF IS LARGER THAN # 200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIZE SIEVE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN HALF IS < #200 SIEVE)	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50%		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

LEGENDS

- BLANK CASING
- SCREENED CASING
- CEMENT GROUT
- CONCRETE
- BENTONITE
- SAND PACK
- FILL MATERIAL

ABBREVIATIONS

NS	Not Sampled
NA	Not Analyzed
N/A	Not Applicable
NR	No Recovery
ND	Not Detected above the detection limit parts per million
TPH	Total Petroleum Hydrocarbons as per EPA Method 418.1
SPT	Standard Penetration Test
USCS	Unified Soil Classification System

▽ Measured water level in well

▼ Estimated water level during drilling

Confidential Business Information BRIX003141

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER B-1			
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
	SAMPLING METHOD:	1 5/8-inch Split Spoon		
	DRILLING METHOD:	2-inch ID Hollow Stem Auger	Time: 1730	Time: 1830
	EQUIPMENT TYPE	2-inch ID Minuteman		
	DRILLER:	R. Crisman	Date: 14-Apr-93	Date: 15-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Crisman Drilling		

BORING DIAMETER:	5-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Surveyed

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS (ppm)	SPT (blows/0.5 feet)	SAMPLE INTERVAL	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Concrete	Concrete
Bentonite Chips							1		GP	Silty GRAVEL - Brown, moist, loose, non-plastic, poorly graded, no petroleum odor or stain
							2			
							3			
							4		SP	SAND - brown, moist, moderately dense, non-plastic, poorly graded, no petroleum odor or stain (concrete fill)
							5			
							6			
							7			Boring abandoned due to auger refusal - concrete fill was observed in sand to 5.0 feet bgs
							8			Boring terminated at 5.0 feet - 4/14/93 Boring abandoned with 3/4-inch Bentonite Chips - 4/15/93
							9			Materials: 3/4 bags 3/4-inch Bentonite Chips
							10			
							11			
							12			
							13			
							14			
							15			
							16			
							17			
							18			
							19			
							20			

Confidential Business Information BRIX003142

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 2		
PROJECT:	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
Brix Maritime Company	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
9030 NW St. Helens Road	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
Portland, Oregon	EQUIPMENT TYPE	Canterra CT-250	930	1030
	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	15-Apr-93	15-Apr-93

BORING DIAMETER:	10-inch-OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2			
							3		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							4			
							5			
					4	100				
	15-001	945	3.7	NA	9	100	6		SP	SAND - brown, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
					19	100				
							7			
					9	80	8			SAND - as above, no petroleum odor or stain
	15-002	950	3.8	NA	12	100				
Bentonite Chips					12	100	9			
							10			
					7	80			SP	SAND - as above, no petroleum odor or stain
	15-003	1005	3.9	ND	7	100	11			
					5	100				
							12			
							13			
							14			
							15			
					3	100			SP	SAND - as above, strong petroleum odor and black stain
	15-004	1010	4.1	NA	4	100	16			
					6	100				
							17			
							18			
							19			
							20			

Confidential Business Information

BRIX003143

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 2		
	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
PROJECT:	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
Brix Maritime Company	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
9030 NW St. Helens Road	EQUIPMENT TYPE	Canterra CT-250	930	1030
Portland, Oregon	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	15-Apr-93	15-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
					8	100				
	15-005	1020	4.1	ND	13	100	21		SP	SAND - brown, moist, medium dense, non-plastic, slightly graded, strong petroleum odor and black stain
					11	100				
							22			
							23			
Bentonite Chips							24	4/15/93		
							25			
					4	100			CL	
	15-006	1030	4.2	ND	5	100	26			Silty CLAY - gray, wet, stiff, medium plastic, poorly graded, no petroleum odor or stain
					8	100				
							27			
							28			
							29			
							30			Boring terminated at 25.0 feet - 4/15/93 Sampled to 26.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/15/93
							31			
							32			Materials: 12 bags 3/4-inch Bentonite Chips
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information BRIX003144

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 3		
	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
PROJECT:	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
Brix Maritime Company	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
9030 NW St. Helens Road	EQUIPMENT TYPE	Canterra CT-250	1030	1115
Portland, Oregon	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	15-Apr-93	15-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2			
							3		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							4			
							5			
					4	80			SP	SAND - brown, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
	15-007	1030	4.3	NA	8	100	6			
					20	100				
							7			
							8			
							9			
Bentonite Chips							10			
					4	100			SP	SAND - as above, no petroleum odor or stain
	15-008	1035	3.4	NA	5	100	11			
					5	100				
							12			
							13			
							14			
							15			
					4	20			SP	SAND - as above, strong petroleum odor and black stain
	15-009	1040	4.5	NA	4	100	16			
					8	100				
							17			
							18			
							19			
							20			

Confidential Business Information BRIX003145

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER B - 3			
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon PROJECT #: 2289	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon	Time: 1030	Time: 1115
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger		
	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 15-Apr-93	Date: 15-Apr-93
	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Bentonite Chips					10	100			SP	SAND - brown, moist, medium dense, non-plastic, poorly graded, strong petroleum odor and black stain
	15-010	1050	4.2	ND	10	100	21			
					5	100				
							22			
							23			
							24			
							25	4/15/93		
					2	100			CL	Silty CLAY - gray, wet, stiff, medium plastic, poorly graded, no petroleum odor or stain
	15-011	1100	4.1	ND	3	100	26			
					5	100				
							27			
							28			
							29			
							30			Boring terminated at 25.0 feet - 4/15/93 Sampled to 26.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/15/93
							31			
							32			Materials: 12 bags 3/4-inch Bentonite Chips
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information BRIX003146

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 4		
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon	Time: 1130	Time: 1220
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger		
	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 15-Apr-93	Date: 15-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
					4	20			SP	SAND - brown, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
	15-012	1130	3.7	NA	10	100	6			
					10	100				
							7			
							8			
							9			
Bentonite Chips							10			
					8	100			SP	SAND - as above, no petroleum odor or stain
	15-013	1140	3.5	NA	9	100	11			
					9	100				
							12			
							13			
							14			
							15			
					12	100			SP	SAND - as above, no petroleum odor or stain
	15-014	1150	3.9	NA	13	100	16			
					12	100				
							17			
							18			
							19			
							20			

Confidential Business Information

BRIX003147

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER B - 4			
PROJECT:	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
Brix Maritime Company	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
9030 NW St. Helens Road	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time: 1130	Time: 1220
Portland, Oregon	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 15-Apr-93	Date: 15-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Bentonite Chips					10	20		4/15/93	SP	SAND - brown/gray, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
	15-015	1158	4.4	ND	11	100	21			
					9	100				
							22			
							23			
							24			
							25			
					0	100			CL	Silty CLAY - gray, wet, soft, medium plastic, poorly graded, no petroleum odor or stain
	15-016	1205	3.7	NA	1	100	26			
					1	100				
							27			
							28			
							29			
							30			Boring terminated at 25.0 feet - 4/15/93 Sampled to 26.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/15/93
							31			Materials: 12 bags 3/4-inch Bentonite Chips
							32			
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information BRIX003148

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 5		
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon	Time: 1315	Time: 1405
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger		
	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 15-Apr-93	Date: 15-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
					4	0			SP	SAND - brown, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
	15-017	1327	2	NA	6	80	6			
					6	100				
							7			
							8			
							9			
							10			
Bentonite Chips					6	0			SP	SAND - as above, no petroleum odor or stain
	15-018	1333	1.8	ND	11	100	11			
					14	100				
							12			
							13			
							14			
							15			
					6	0			SP	SAND - as above, no petroleum odor or stain
	15-019	1339	2.2	NA	8	100	16			
					12	100				
							17			
							18			
							19			
							20			

Confidential Business Information

BRIX003149

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 5		
PROJECT:	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
Brix Maritime Company	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
9030 NW St. Helens Road	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time: 1315	Time: 1405
Portland, Oregon	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 15-Apr-93	Date: 15-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
					4	20				
	15-020	1345	2.1	ND	6	100	21		SP	SAND - brown/gray, medium dense, non-plastic, slightly graded, no petroleum odor or stain
					7	100				
							22			
							23			
							24			
							25			
							26			Boring terminated at 20.0 feet - 4/15/93 Sampled to 21.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/15/93
							27			
							28			Materials: 10 bags 3/4-inch Bentonite Chips
							29			
							30			
							31			
							32			
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information BRIX003150

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 6		
PROJECT:	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
Brix Maritime Company	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
9030 NW St. Helens Road	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
Portland, Oregon	EQUIPMENT TYPE	Canterra CT-250	1420	1515
	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	15-Apr-93	15-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
					2	0			SP	SAND - brown, moist, very loose, non-plastic, poorly graded, no petroleum odor or stain
	15-021	1425	2.7	NA	1	20	6			
					1	100				
							7			
							8			
							9			
Bentonite Chips							10			
					2	0			SP	SAND - as above, gray, petroleum odor and stain
	15-022	1431	2.4	ND	1	100	11			
					2	100				
							12			
							13			
							14			
							15			
					9	0			SP	SAND - as above, medium dense, petroleum odor and stain
	15-023	1437	2.5	ND	11	20	16			
					15	100				
							17			
							18			
							19			
							20			

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BRIX003151

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 6		
	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
PROJECT:	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
Brix Maritime Company	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
9030 NW St. Helens Road	EQUIPMENT TYPE	Canterra CT-250	1420	1515
Portland, Oregon	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	15-Apr-93	15-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Bentonite Chips					3	0				
	15-024	1445	2.3	NA	3	100	21		SP	SAND - gray, moist. loose, non-plastic, poorly graded, slight petroleum odor and stain
					4	100				
							22			
							23	4/15/93		
							24			
							25			
					3	0				
	15-025	1456	2.2	NA	4	100	26		CL	Silty CLAY - gray, wet, firm, medium plastic, poorly graded, possible petroleum odor and stain
					4	100				
							27			
							28			
							29			
							30			Boring terminated at 25.0 feet - 4/15/93 Sampled to 26.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/15/93
							31			Materials: 12 bags 3/4-inch Bentonite Chips
							32			
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information BRIX003152

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER B - 7			
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time: 1530	Time: 900
	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 15-Apr-93	Date: 16-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS TPH-G (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete							1		Asphalt	Asphalt
							2		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
					5	0			SP	SAND - gray, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
	15-026	1535	7.9	NA	6	100	6			
					5	100	7			
							8			
							9			
Bentonite Chips							10			
					12	0			SP	SAND - as above, dense, petroleum odor and stain
	15-027	1543	53	270	20	80	11			
					18	100	12			
							13			
							14			
							15			
					7	0			SP	SAND - as above, petroleum odor and stain
	15-028	1550	755	2,000	8	100	16			
					11	100	17			
							18			
							19			
							20			

Confidential Business Information BRIX003153

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 7		
	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
PROJECT:	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
Brix Maritime Company	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
9030 NW St. Helens Road	EQUIPMENT TYPE	Canterra CT-250	1530	900
Portland, Oregon	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	15-Apr-93	16-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS TPH-G (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
					3	80				
	15-029	1555	183	13	3	100	21		SP	SAND - gray, moist, medium dense, non-plastic, poorly graded, slight petroleum odor and stain
					5	100				
							22	4/15/93	CL	Silty CLAY - gray, wet, stiff, medium plastic, poorly graded, possible petroleum odor and stain
							23			
Bentonite Chips							24			
							25			
					3	0			CL	Silty CLAY - as above, no petroleum odor and stain
	15-030	1605	NS	NA	5	0	26			
					6	100				
							27			
							28			
							29			
							30			Boring terminated at 25.0 feet - 4/15/93 Sampled to 26.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/16/93
							31			Materials: 15 bags 3/4-inch Bentonite Chips
							32			
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information

BRIX003154

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER B-8			
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon PROJECT #: 2289	HAI LOGGER:	Guy H. Tanz	DRILL START	DRILL FINISH
	SAMPLING METHOD:	1 5/8-inch Split Spoon		
	DRILLING METHOD:	2-inch ID Hollow Stem Auger	Time: 1830	Time: 1930
	EQUIPMENT TYPE	2-inch ID Minuteman		
	DRILLER:	R. Crisman	Date: 15-Apr-93	Date: 15-Apr-93
	DRILLING CONTRACTOR:	Crisman Drilling		

BORING DIAMETER:	5-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Surveyed

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS (ppm)	SPT (blows/0.5 feet)	SAMPLE INTERVAL	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Concrete	Concrete
							1			
Bentonite Chips							2		GP	Silty GRAVEL with some Sand - Brown, moist, loose, non-plastic, poorly graded, no petroleum odor or stain (concrete fill)
							3			
							4			
							5			
							6			Boring abandoned due to auger refusal - concrete fill was observed in sand to 4.5 feet bgs
							7			Boring terminated at 4.5 feet - 4/15/93 Boring abandoned with 3/4-inch Bentonite Chips - 4/15/93
							8			
							9			Materials: 3/4 bags 3/4-inch Bentonite Chips
							10			
							11			
							12			
							13			
							14			
							15			
							16			
							17			
							18			
							19			
							20			

Confidential Business Information BRIX003155

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 9		
PROJECT:	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
Brix Maritime Company	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
9030 NW St. Helens Road	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
Portland, Oregon	EQUIPMENT TYPE	Canterra CT-250	942	1035
PROJECT #: 2289	DRILLER:	M. Reniker	Date:	Date:
	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	16-Apr-93	16-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT. (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete							1		Asphalt	Asphalt
							2		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
Bentonite Chips					8	0			SP	SAND - brown, moist, dense, non-plastic, poorly graded, no petroleum odor or stain
	16-001	954	6.2	NA	14	40	6			
					19	100	7			
							8			
							9			
							10			
					13	20			SP	SAND - as above, no petroleum odor or stain
	16-002	1004	4.8	NA	17	100	11			
					20	100	12			
							13			
							14			
							15			
					12	100			SP	SAND - as above, no petroleum odor or stain
	16-003	1012	6.7	NA	12	100	16			
					13	100	17			
							18			
							19			
Bentonite Chips							20			

Confidential Business Information

BRIX003156

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER B - 9			
	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
PROJECT:	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
Brix Maritime Company	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
9030 NW St. Helens Road	EQUIPMENT TYPE	Canterra CT-250	942	1035
Portland, Oregon	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	16-Apr-93	16-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
					9	20				
	16-004	1022	4.7	ND	8	100	21		SP	SAND - brown, moist to wet, dense, non-plastic, poorly graded, no petrloeum odor or stain
					8	100				
							22			
							23			
							24			Boring terminated at 20.0 feet - 4/16/93 Sampled to 21.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/16/93
							25			
							26			Materials: 10 bags 3/4-inch Bentonite Chips
							27			
							28			
							29			
							30			
							31			
							32			
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information BRIX003157

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 10		
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon	Time: 1048	Time: 1138
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger		
	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 16-Apr-93	Date: 16-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete							1		Asphalt	Asphalt
							2		GP	Silty GRAVEL with some Sand - brown/gray, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
					11	0			SP	SAND - brown/gray, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
	16-005	1055	NS	NA	9	0	6			
					9	50				
							7			
							8			
Bentonite Chips							9			
							10			
					10	20			SP	SAND - as above, brown, no petroleum odor or stain
	16-006	1102	4.5	NA	13	100	11			
					14	100				
							12			
							13			
							14			
							15			
					11	20			SP	SAND - as above, no petroleum odor or stain
	16-007	1110	4.9	NA	13	100	16			
					14	100				
							17			
							18			
Bentonite Chips							19			
							20			

Confidential Business Information

BRIX003158

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 10		
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon	Time: 1048	Time: 1138
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger		
	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 16-Apr-93	Date: 16-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
					10	50				
	16-008	1118	5.1	ND	13	100	21		SP	SAND - brown/gray, moist to wet, medium dense, non-plastic, slightly graded, no petroleum odor or stain
					11	100				
							22			
							23			
							24			
							25			Boring terminated at 20.0 feet - 4/16/93 Sampled to 21.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/16/93
							26			
							27			Materials: 11 bags 3/4-inch Bentonite Chips
							28			
							29			
							30			
							31			
							32			
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

Confidential Business Information

BRIX003159

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 11		
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon	Time: 1150	Time: 1245
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger		
	EQUIPMENT TYPE	Canterra CT-250		
	DRILLER:	M. Reniker	Date: 16-Apr-93	Date: 16-Apr-93
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.		

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2		GP	Silty GRAVEL with some Sand - brown/gray, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
					1	100			SP	SAND - gray, moist, medium dense, non-plastic, poorly graded, no petroleum odor or stain
	16-009	1200	5.1	NA	2	0	6			
					9	20				
							7			
							8			
							9			
							10			
Bentonite Chips					8	100			SP	SAND - as above, gray, no petroleum odor or stain
	16-010	1207	6.2	NA	10	100	11			
					10	100				
							12			
							13			
							14			
							15			
					8	0			SP	SAND - as above, possible petroleum odor and stain
	16-011	1213	5.7	ND	8	20	16			
					7	100				
							17			
							18			
							19			
							20			

Confidential Business Information

BRIX003160

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 11		
PROJECT:	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
Brix Maritime Company	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
9030 NW St. Helens Road	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
Portland, Oregon	EQUIPMENT TYPE	Canterra CT-250	1150	1245
	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	16-Apr-93	16-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Bentonite Chips					6	100				
	16-012	1219	4.4	NA	4	100	21		SP	SAND - gray, moist, medium dense, non-plastic, poorly graded, slight petroleum odor and stain
					5	100				
							22		CL	Silty CLAY - gray, moist, stiff, medium plastic, poorly graded, no petroleum odor or stain
							23			
							24	4/16/93		
							25			
					3	0			CL	Silty CLAY - as above, wet, no petroleum odor or stain
	16-013	1227	4.8	NA	4	100	26			
					4	100				
							27			
							28			
							29			
							30			Boring terminated at 25.0 feet - 4/16/93 Sampled to 26.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/16/93
							31			
							32			Materials: 12 bags 3/4-inch Bentonite Chips
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

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BRIX003161

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 12		
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
	EQUIPMENT TYPE	Canterra CT-250	1304	1345
	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	16-Apr-93	16-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2		GP	Silty GRAVEL with some Sand - brown, moist, medium dense, non-plastic, slightly graded, no petroleum odor or stain
							3			
							4			
							5			
					4	20			SP	SAND - gray, moist, loose, non-plastic, poorly graded, no petroleum odor or stain
	16-014	1310	4.8	NA	5	100	6			
					5	100				
							7			
							8			
							9			
Bentonite Chips							10			
					10	0			SP	SAND - as above, medium dense, possible petroleum odor and stain
	16-015	1317	7	NA	13	100	11			
					12	100				
							12			
							13			
							14			
							15			
					8	100			SP	SAND - as above, slight petroleum odor and stain
	16-016	1325	7.1	ND	11	100	16			
					13	100				
							17			
							18			
Bentonite Chips							19			
							20			

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BRIX003162

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B - 12		
PROJECT: Brix Maritime Company 9030 NW St. Helens Road Portland, Oregon	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
	SAMPLING METHOD:	2 5/8-inch OD Split Spoon		
	DRILLING METHOD:	4 1/4-inch ID Hollow Stem Auger	Time:	Time:
	EQUIPMENT TYPE	Canterra CT-250	1304	1345
	DRILLER:	M. Reniker	Date:	Date:
PROJECT #: 2289	DRILLING CONTRACTOR:	Geo-Tech Explorations, Inc.	16-Apr-93	16-Apr-93

BORING DIAMETER:	10-inch OD
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Applicable

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS HCID (ppm)	SPT (blows/0.5 feet)	RECOVERY (%)	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
					1	100				
	16-017	1333	5.3	NA	4	100	21		CL	Silty CLAY - gray/brown, moist to wet, stiff, non-plastic, poorly graded, no hydrocarbon odor or stain
					8	100				
							22			
							23			
							24			
							25			Boring terminated at 20.0 feet - 4/16/93 Sampled to 21.5 feet Boring abandoned with 3/4-inch Bentonite Chips - 4/16/93
							26			
							27			Materials: 11 bags 3/4-inch Bentonite Chips
							28			
							29			
							30			
							31			
							32			
							33			
							34			
							35			
							36			
							37			
							38			
							39			
							40			

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BRIX003163

HAHN & ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon (503) 796-0717	SOIL BORING NUMBER	B-13		
PROJECT:	HAI LOGGER:	Jeff W. Doss	DRILL START	DRILL FINISH
Brix Maritime Company	SAMPLING METHOD:	2 1/4-Inch OD Hand Auger	Time:	Time:
9030 NW St. Helens Road	DRILLING METHOD:	2 1/4-Inch OD Hand Auger	1345	1440
Portland, Oregon	EQUIPMENT TYPE	2 1/4-Inch OD Hand Auger	Date:	Date:
PROJECT #: 2289	DRILLER:	Jeff W. Doss	16-Apr-93	16-Apr-93
	DRILLING CONTRACTOR:	Not Applicable		

BORING DIAMETER:	2 1/4 Inches
CASING DIAMETER:	Not Applicable
SURFACE ELEVATION:	Not Surveyed
TOP OF CASING ELEVATION:	Not Surveyed

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB ANALYSIS 418.1M (ppm)	SPT (blows/0.5 feet)	SAMPLE INTERVAL	DEPTH (feet)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION
Concrete									Asphalt	Asphalt
							1			
							2		GP	Silty GRAVELS - Brown, moist, loose, non-plastic, moderately graded, possible fill
							3			
							4			
Bentonite Chips							5			
	16-018	1402	4.5	NA			6		CL	Silty CLAY - gray, moist to wet, stiff, non-plastic, poorly graded, no petroleum odor or stain, sheen noticed on auger bit
							7			
	16-019	1415	6	NA			8			
							9		SM	Silty SAND - gray, moist, loose, non-plastic, poorly graded, no petroleum odor or stain, sheen still exists on auger bit
							10			
	16-020	1435	10.3	200			11			
							12			Boring terminated at 11.0 feet - 4/16/93 Sampled to 11.0 feet Boring abandoned with 3/4-inch Bentonite Chips- 4/16/93
							13			
							14			Materials: 3/4 bags 3/4-inch Bentonite Chips
							15			
							16			
							17			
							18			
							19			
							20			

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BRIX003164

APPENDIX C

Laboratory Results and Chain-of-Custody Documentation

OAL

HAHN & ASSOCIATES, INC.
434 N.W. 6TH AVE.
SUITE 203
PORTLAND, ORE. 97209-3600
GUY TANZ
796-0717 FAX 227-2209
JOB#2289

REVIEWED BY: RJ
REVIEW DATE: 4.23.93

HYDROCARBON IDENTIFICATION (HCID)
BY OREGON DEQ TPH-HCID

SAMPLE ID:	2289-930415-003
OAL ID: 25-0127-	10934
SAMPLE DATE:	4/15/93
MATRIX:	SOIL
EXTRACTION DATE:	4/22/93
ANALYSIS DATE:	4/22/93
HCID:	ND
.	.
SURR.RECOVERY %	85.
ANALYST:	RJ

ORTHO-TERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
GASOLINE REGION (C6 THRU C10)
DIESEL REGION (C10 THRU C28)
OIL AND BUNKER C REGION (BEYOND C28)
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY

OREGON ANALYTICAL LABORATORY
A Division of Portland General Electric
14855 S.W. Old Scholls Ferry Road
Beaverton, OR 97007
Phone 503-644-5300 • Fax 503-671-1404

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434 N.W. 6TH AVE.
SUITE 203
PORTLAND, ORE. 97209-3600
GUY TANZ
796-0717 FAX 227-2209
JOB#2289

REVIEWED BY: RJ
REVIEW DATE: 4.23-93

HYDROCARBON IDENTIFICATION (HCID)
BY OREGON DEQ TPH-HCID

SAMPLE ID:	2289-930415-005	2289-930415-006	2289-930415-010
OAL ID: 25-0127-	10856	10857	10858
SAMPLE DATE:	4/15/93	4/15/93	4/15/93
MATRIX:	SOIL	SOIL	SOIL
EXTRACTION DATE:	4/21/93	4/21/93	4/21/93
ANALYSIS DATE:	4/21/93	4/21/93	4/21/93
HCID:	ND	ND	ND
.	.	.	.
SURR.RECOVERY %	82.	85.	80.
ANALYST:	RJ	RJ	RJ

ORTHO-TERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
GASOLINE REGION (C6 THRU C10)
DIESEL REGION (C10 THRU C28)
OIL AND BUNKER C REGION (BEYOND C28)
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY

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A Division of Portland General Electric
14855 S.W. Old Scholls Ferry Road
Beaverton, OR 97007
Phone 503-644-5800 • Fax 503-671-1404

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SUITE 203
PORTLAND, ORE. 97209-3600
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JOB#2289

REVIEWED BY: RJ
REVIEW DATE: 4.23.93

HYDROCARBON IDENTIFICATION (HCID)
BY OREGON DEQ TPH-HCID

SAMPLE ID:	2289-930415-011	2289-930415-015	2289-930415-018	2289-930415-020
OAL ID: 25-0127-	10859	10860	10861	10862
SAMPLE DATE:	4/15/93	4/15/93	4/15/93	4/15/93
MATRIX:	SOIL	SOIL	SOIL	SOIL
EXTRACTION DATE:	4/21/93	4/21/93	4/21/93	4/21/93
ANALYSIS DATE:	4/21/93	4/21/93	4/21/93	4/21/93
HCID:	ND	ND	ND	ND
.	.	.	.	.
SURR.RECOVERY %	89.	68.	89.	88.
ANALYST:	RJ	RJ	RJ	RJ

ORTHO-TERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
GASOLINE REGION (C6 THRU C10)
DIESEL REGION (C10 THRU C28)
OIL AND BUNKER C REGION (BEYOND C28)
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY

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JOB#2289

REVIEWED BY: SMT
REVIEW DATE: 4/26/93

HYDROCARBON IDENTIFICATION (HCID)
BY OREGON DEQ TPH-HCID

SAMPLE ID:	2289-930415-022	2289-930415-023	2289-930415-027	2289-930415-028
OAL ID: 25-0127-	10863	10864	10865	10866
SAMPLE DATE:	4/15/93	4/15/93	4/15/93	4/15/93
MATRIX:	SOIL	SOIL	SOIL	SOIL
EXTRACTION DATE:	4/21/93	4/21/93	4/21/93	4/21/93
ANALYSIS DATE:	4/21/93	4/21/93	4/21/93	4/21/93
HCID:	ND	ND	GASOLINE	GASOLINE
.	.	.	.	.
SURR.RECOVERY %	89.	89.	90.	90.
ANALYST:	RJ	RJ	RJ	RJ

ORTHO-TERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
GASOLINE REGION (C6 THRU C10)
DIESEL REGION (C10 THRU C28)
OIL AND BUNKER C REGION (BEYOND C28)
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY

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Beaverton, OR 97007
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SUITE 203
PORTLAND, ORE. 97209-3600
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JOB#2289

REVIEWED BY: SPM
REVIEW DATE: 4/26/93

TOTAL PETROLEUM HYDROCARBONS - GASOLINE
BY OREGON DEQ TPH-G

SAMPLE ID:	2289-930415-022	2289-930415-023	2289-930415-027	2289-930415-028
OAL ID: 25-0127-	10863	10864	10865	10866
SAMPLE DATE:	4/15/93	4/15/93	4/15/93	4/15/93
MATRIX:	NA	NA	SOIL	SOIL
EXTRACTION DATE:	.	.	4/22/93	4/22/93
ANALYSIS DATE:	.	.	4/26/93	4/26/93
GASOLINE MG/KG	.	.	270.	2000.
SURR.RECOVERY %	.	.	109.	130.
ANALYST:	.	.	RJ	RJ

BROMOFLUOROBENZENE WAS USED AS THE SURROGATE
MG/KG = PPM
ND = NONE DETECTED (REPORTING LIMIT IS 10 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY
NA = NOT ANALYZED

OREGON ANALYTICAL LABORATORY
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Beaverton, OR 97007
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796-0717 FAX 227-2209
JOB#2289

REVIEWED BY: SMM
REVIEW DATE: 4/26/93

TOTAL PETROLEUM HYDROCARBONS - GASOLINE
BY OREGON DEQ TPH-G

SAMPLE ID:	2289-930415-029
OAL ID: 25-0127-	10933
SAMPLE DATE:	4/15/93
MATRIX:	SOIL
EXTRACTION DATE:	4/22/93
ANALYSIS DATE:	4/26/93
GASOLINE MG/KG	13.
SURR.RECOVERY %	83.
ANALYST:	RJ

BROMOFLUOROBENZENE WAS USED AS THE SURROGATE
MG/KG = PPM
ND = NONE DETECTED (REPORTING LIMIT IS 10 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY
NA = NOT ANALYZED

OREGON ANALYTICAL LABORATORY
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SUITE 203
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796-0717 FAX 227-2209
JOB#2289

REVIEWED BY: RJ

REVIEW DATE: 4.23.93

HYDROCARBON IDENTIFICATION (HCID)
BY OREGON DEQ TPH-HCID

SAMPLE ID:	2289-930416-004	2289-930416-008
OAL ID: 25-0127-	10867	10868
SAMPLE DATE:	4/16/93	4/16/93
MATRIX:	SOIL	SOIL
EXTRACTION DATE:	4/21/93	4/21/93
ANALYSIS DATE:	4/21/93	4/21/93
HCID:	ND	ND
.	.	.
SURR.RECOVERY %	92.	77.
ANALYST:	RJ	RJ

ORTHO-TERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
GASOLINE REGION (C6 THRU C10)
DIESEL REGION (C10 THRU C28)
OIL AND BUNKER C REGION (BEYOND C28)
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY

OREGON ANALYTICAL LABORATORY
A Division of Portland General Electric
14855 S.W. Old Scholls Ferry Road
Beaverton, OR 97007
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434 N.W. 6TH AVE.
SUITE 203
PORTLAND, ORE. 97209-3600
GUY TANZ
796-0717 FAX 227-2209
JOB#2289

REVIEWED BY: SM
REVIEW DATE: 4/23/93

HYDROCARBON IDENTIFICATION (HCID)
BY OREGON DEQ TPH-HCID

SAMPLE ID:	2289-930416-011	2289-930416-016	2289-930416-020
OAL ID: 25-0127-	10869	10870	10871
SAMPLE DATE:	4/16/93	4/16/93	4/16/93
MATRIX:	SOIL	SOIL	SOIL
EXTRACTION DATE:	4/21/93	4/21/93	4/21/93
ANALYSIS DATE:	4/21/93	4/21/93	4/21/93
HCID:	ND	ND	OIL
.	.	.	.
SURR.RECOVERY %	90.	90.	85.
ANALYST:	RJ	RJ	RJ

ORTHO-TERPHENYL WAS USED AS THE SURROGATE
NA = NOT ANALYZED
GASOLINE REGION (C6 THRU C10)
DIESEL REGION (C10 THRU C28)
OIL AND BUNKER C REGION (BEYOND C28)
ND = NONE DETECTED (GASOLINE < 20 MG/KG, DIESEL < 50 MG/KG)
MI = MATRIX INTERFERENCE WITH SURROGATE RECOVERY

OREGON ANALYTICAL LABORATORY
A Division of Portland General Electric
14855 S.W. Old Scholls Ferry Road
Beaverton, OR 97007
Phone 503-644-5300 • Fax 503-671-1404

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OAL

HAHN & ASSOCIATES, INC.
434 N.W. 6TH AVE.
SUITE 203
PORTLAND, ORE. 97209-3600
GUY TANZ
796-0717 FAX 227-2209
JOB#2289

REVIEWED BY: CN

REVIEW DATE: 4-23-93

TOTAL PETROLEUM HYDROCARBONS (TPH)
BY OREGON DEQ TPH-418.1 MODIFIED

SAMPLE ID:	2289-930416-011	2289-930416-016	2289-930416-020
OAL ID: 25-0127-	10869	10870	10871
SAMPLE DATE:	4/16/93	4/16/93	4/16/93
EXTRACTION DATE:	NA	NA	4/22/93
ANALYSIS DATE:	.	.	4/23/93
TPH . IN MG/KG	.	.	200.
ANALYST:	.	.	CN

NA = NOT ANALYZED
ND = NONE DETECTED (<3 MG/KG)

OREGON ANALYTICAL LABORATORY
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ENVIRONMENTAL MANAGEMENT

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503/796-0717 Office • 503/227-2209 FAX

LABORATORY: OREGON ANALYTICAL LAB

Lab Project No.

CHAIN OF CUSTODY

☐ Please bill the Port of Portland
☒ Please bill Hahn and Associates, Inc.

Project Manager: GUY H. TANZ
Project No.: 8829
Project Name: BRXSVB
Collected by: JWD

LIQUID WITH SEDIMENT SAMPLE
___ Test Filtrate ___ Test Sediment ___ Test Both
MULTI-PHASE SAMPLE (_____)
___ Test one (which) ___ Test Separately ___ Shake

Samples Received at 4°C ☒ YES ☐ NO
Appropriate Containers Used ☒ YES ☐ NO
Provide Verbal Results ☐ YES ☒ NO
Provide Preliminary FAX Results ☒ YES ☐ NO

COMMENTS

LAB I.D.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: Soil	MATRIX: Water	MATRIX: Other	Number of Containers	TPH-HCID (OAR/DEQ)	Quantify HCID (if detected)	TPH-G (OAR/DEQ)	TPH-D (OAR/DEQ)	TPH-418.1 Mod. (OAR/DEQ)	TPH (EPA 418.1)	BTEX (EPA 8020)	PAHs (EPA 8310-OAR/DEQ)	PAHs (GC/MS SIM Mode)	Halo.-Volatiles (EPA 8010)	Volatiles (EPA 8240)	Semivolatiles (EPA 8270)	TCLP (3) Metals	TCLP (8) Metals	Pesticides (EPA 8080)	PCBs (EPA 8080)				RUSH	REMARKS
	2289-930415-001	4/15/93	945	5'-B2	X			1																					
	2289-930415-002	"	950	7.5'-B2	X			1																					
0934	2289-930415-003	"	1005	10'-B2	X			1	⊗ + quant																				
	2289-930415-004	"	1010	15'-B2	X			1																					
0127 856	2289-930415-005	"	1020	20'-B2	X			1	X																				
857	2289-930415-006	"	1030	25'-B2	X			1	X																				
	2289-930415-007	"	1030	5'-B3	X			1																					
	2289-930415-008	"	1035	10'-B3	X			1																					
	2289-930415-009	"	1040	15'-B3	X			1																					
858	2289-930415-010	"	1050	20'-B3	X			1	X																				

Relinquished by	Company	Date	Time	Received by	Company
[signature]	HAHN & ASSOCIATES	130Ph	4-20-93	[signature]	ANDYS
[signature]		4-20-93	4:15	D. Ward	OAL

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LABORATORY OREGON ANALYTICAL LABORATORY

Lab Project No.

CHAIN OF CUSTODY

☐ Please bill the Port of Portland
☒ Please bill Hahn and Associates, Inc.

Project Manager GUY H. TANZ
Project No. 2289
Project Name BRXSVB
Collected by JWD

LIQUID WITH SEDIMENT SAMPLE
___ Test Filtrate ___ Test Sediment ___ Test Both
MULTI-PHASE SAMPLE (_____)
___ Test one (which) ___ Test Separately ___ Shake

Samples Received at 4°C ☒ YES ☐ NO
Appropriate Containers Used ☒ YES ☐ NO
Provide Verbal Results ☐ YES ☒ NO
Provide Preliminary FAX Results ☒ YES ☐ NO

COMMENTS
If 2289-930415-015 Detects HCID, then run 2289-930415-016.

LAB I.D.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: Soil	MATRIX: Water	MATRIX: Other	Number of Containers	TPH-HCID (OAR/DEQ)	Quantify HCID (if detected)	TPH-G (OAR/DEQ)	TPH-D (OAR/DEQ)	TPH-416.1 Mod. (OAR/DEQ)	TPH (EPA 418.1)	BTEX (EPA 8020)	PAHs (EPA 8310-OAR/DEQ)	PAHs (GC/MS SIM Mode)	Halo.-Volatiles (EPA 8010)	Volatiles (EPA 8240)	Semivolatiles (EPA 8270)	TCLP (3) Metals	TCLP (8) Metals	Pesticides (EPA 8080)	PCBs (EPA 8080)				RUSH	REMARKS
859	2289-930415-011	4/15/93	1100	25'-B3	X			1	X																				
	2289-930415-012	"	1130	5'-B4	X			1																					
	2289-930415-013	"	1140	10'-B4	X			1																					
	2289-930415-014	"	1150	15'-B4	X			1																					
860	2289-930415-015	"	1158	20'-B4	X			1	X																				
	2289-930415-016	"	1205	25'-B4	X			1																					
	2289-930415-017	"	1327	5'-B5	X			1																					
861	2289-930415-018	"	1333	10'-B5	X			1	X																				
	2289-930415-019	"	1339	15'-B5	X			1																					
862	2289-930415-020	"	1345	20'-B5	X			1	X																				

Relinquished by	Company	Date	Time	Received by	Company
[signature]	HAHN & ASSOCIATES	13 Apr	4-20-93	[signature]	ANDYS
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LABORATORY OREGON ANALYTICAL LABORATORY

Lab Project No.

CHAIN OF CUSTODY

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☒ Please bill Hahn and Associates, Inc.

Project Manager GUY H. TANZ.
Project No. 2289
Project Name BRISVB
Collected by JWO

LIQUID WITH SEDIMENT SAMPLE
___ Test Filtrate ___ Test Sediment ___ Test Both
MULTI-PHASE SAMPLE (_____)
___ Test one (which) ___ Test Separately ___ Shake

Samples Received at 4°C ☒ YES ☐ NO
Appropriate Containers Used ☒ YES ☐ NO
Provide Verbal Results ☐ YES ☒ NO
Provide Preliminary FAX Results ☒ YES ☐ NO

COMMENTS

LAB I.D.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: Soil	Water	Other	Number of Containers	TPH-HCID (OAR/DEQ)	Quantify HCID (if detected) 15-2	TPH-G (OAR/DEQ)	TPH-D (OAR/DEQ)	TPH-418.1 Mod. (OAR/DEQ)	TPH (EPA 418.1)	BTEX (EPA 8020)	PAHs (EPA 8310-OAR/DEQ)	PAHs (GC/MS SIM Mode)	Halo.-Volatiles (EPA 8010)	Volatiles (EPA 8240)	Semivolatiles (EPA 8270)	TCLP (3) Metals	TCLP (8) Metals	Pesticides (EPA 8080)	PCBs (EPA 8080)				RUSH	REMARKS
	2289-930415-021	4/15/93	1425	5' - B6	X			1																					
863	2289-930415-022	"	1431	10' - B6	X			1	X																				
864	2289-930415-023	"	1437	15' - B6	X			1	X																				
	2289-930415-024	"	1445	20' - B6	X			1																					
	2289-930415-025	"	1456	25' - B6	X			1																					
	2289-930415-026	"	1535	5' - B7	X			1																					
865	2289-930415-027	"	1543	10' - B7	X			1	X		⊗																		
866	2289-930415-028	"	1550	15' - B7	X			1	X		⊗		log in																
933	2289-930415-029	"	1555	20' - B7	X			1			⊗																		
	2289-930415-030	"	1605	25' - B7	X			1																					

Relinquished by	Company	Date	Time	Received by	Company
[signature]	HAHN & ASSOCIATES	4-20-93	1:30 PM	[signature]	ANDY'S
[signature]		4-20-93	4:15	D. Wand	OAL

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LABORATORY OREGON ANALYTICAL LAB.

Lab Project No.

CHAIN OF CUSTODY

☐ Please bill the Port of Portland
☒ Please bill Hahn and Associates, Inc.

Project Manager GUY H. TANZ
Project No. 2289
Project Name BRX3UB
Collected by JWD

LIQUID WITH SEDIMENT SAMPLE
___ Test Filtrate ___ Test Sediment ___ Test Both
MULTI-PHASE SAMPLE (_____)
___ Test one (which) ___ Test Separately ___ Shake

Samples Received at 4°C ☒ YES ☐ NO
Appropriate Containers Used ☒ YES ☐ NO
Provide Verbal Results ☐ YES ☒ NO
Provide Preliminary FAX Results ☒ YES ☐ NO

COMMENTS

LAB I.D.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: Soil	Water	Other	Number of Containers	TPH-HCID (OAR/DEQ)	Quantify HCID (if detected)	TPH-G (OAR/DEQ)	TPH-D (OAR/DEQ)	TPH-418.1 Mod. (OAR/DEQ)	TPH (EPA 418.1)	BTEX (EPA 8020)	PAHs (EPA 8310-OAR/DEQ)	PAHs (GC/MS SIM Mode)	Halo.-Volatiles (EPA 8010)	Volatiles (EPA 8240)	Semivolatiles (EPA 8270)	TCLP (3) Metals	TCLP (8) Metals	Pesticides (EPA 8080)	PCBs (EPA 8080)				RUSH	REMARKS
	2289-930416-001	4/16/93	954	5'-B9	X			1																					
	2289-930416-002	"	1004	10'-B9	X			1																					
	2289-930416-003	"	1012	15'-B9	X			1																					
867	2289-930416-004	"	1022	20'-B9	X			1	X																				
	2289-930416-005	"	1055	5'-B10	X			1																					
	2289-930416-006	"	1102	10'-B10	X			1																					
	2289-930416-007	"	1110	15'-B10	X			1																					
868	2289-930416-008	"	1118	20'-B10	X			1	X																				
	2289-930416-009	"	1200	5'-B11	X			1																					
	2289-930416-010	"	1207	10'-B11	X			1																					

Relinquished by	Company	Date	Time	Received by	Company
[signature]	HAHN & ASSOCIATES	4-20-93	130PM	[signature] #15	ANDY'S
[signature]		4-20-93	4.15	D. Ward	OAL

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LABORATORY OREGON ANALYTICAL LABORATORY

Lab Project No.

CHAIN OF CUSTODY

☐ Please bill the Port of Portland
☒ Please bill Hahn and Associates, Inc.

Project Manager GUY H. TANZ
Project No. 2289
Project Name BRXSUB
Collected by JWD

LIQUID WITH SEDIMENT SAMPLE
___ Test Filtrate ___ Test Sediment ___ Test Both
MULTI-PHASE SAMPLE (_____)
___ Test one (which) ___ Test Separately ___ Shake

Samples Received at 4°C ☒ YES ☐ NO
Appropriate Containers Used ☒ YES ☐ NO
Provide Verbal Results ☐ YES ☒ NO
Provide Preliminary FAX Results ☒ YES ☐ NO

COMMENTS
IF 2289-930416-011 DETECTS HCID, THEN RUN 2289-930416-012
IF 2289-930416-016 DETECTS HCID, THEN RUN 2289-930416-017

LAB I.D.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: Soil	Water	Other	Number of Containers	TPH-HCID (OAR/DEQ)	Quantify HCID (if detected)	TPH-G (OAR/DEQ)	TPH-D (OAR/DEQ)	TPH-418.1 Mod. (OAR/DEQ)	TPH (EPA 418.1)	BTEX (EPA 8020)	PAHs (EPA 8310-OAR/DEQ)	PAHs (GC/MS SIM Mode)	Halo.-Volatiles (EPA 8010)	Volatiles (EPA 8240)	Semivolatiles (EPA 8270)	TCLP (3) Metals	TCLP (8) Metals	Pesticides (EPA 8080)	PCBs (EPA 8080)				RUSH	REMARKS
369	2289-930416-011	9/16/93	1213	15'-B11	X			1	X																				
	2289-930416-012	"	1219	20'-B11	X			1																					
	2289-930416-013	"	1227	25'-B11	X			1																					
	2289-930416-014	"	1310	5'-B12	X			1																					
	2289-930416-015	"	1317	10'-B12	X			1																					
370	2289-930416-016	"	1325	15'-B12	X			1	X																				
	2289-930416-017	"	1333	20'-B12	X			1																					
	2289-930416-018	"	1402	5'-B13	X			1																					
	2289-930416-019	"	1415	7.5'-B13	X			1																					
371	2289-930416-020	"	1435	10'-B13	X			1	X				⊗																

Relinquished by	Company	Date	Time	Received by	Company
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[signature]		4-20-	4:45	[signature]	

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APPENDIX D

Soil Cleanup Standard Matrix Worksheet

SOIL CLEANUP STANDARD MATRIX WORKSHEET

INTRODUCTION: This worksheet is intended to be used to determine the soil cleanup standard for the remediation of motor fuel and heating oil releases from underground storage tanks (USTs). OAR 340-122-301 to 340-122-360

EVALUATION PARAMETERS:

1. DEPTH TO GROUNDWATER: Vertical distance (to nearest foot) from the surface of the ground to the highest seasonal elevation of the saturated zone.

Depth:	>100'	51-100'	25-50'	**<25'**	POINTS: **10**
Points:	1	4	7	**10**	

Source: Field Observation

2. MEAN ANNUAL PRECIPITATION: From nearest appropriate weather station.

Inches:	<20"	**20-45"**	>45"	POINTS: **5**
Points:	1	**5**	10	

Source: National Weather Service

3.NATIVE SOIL OR ROCK TYPE:

Permeability:	Low	Moderate	**High**	POINTS: **10**
Points:	1	**5**	**10**	

Source: Field Observation

4. SENSITIVITY TO THE UPPERMOST AQUIFER:

Sensitivity:	Unusable	**Potable not used**	Potable	Sole Source	POINTS: **4**
Points:	1	**4**	7	10	

Source: Estimate

5. POTENTIAL RECEPTORS: Distance to nearest well that draws water from aquifer of concern and the number of people at risk.

Nearest Well:	**<1/2 mile**	1/2 - 2 miles	>2 mile
Description:	**Near**	Medium	Far

POINTS: **10**

Number of People:	>3,000	**100-3,000**	<100
Description:	Many	**Medium**	Few

Sources: Worst Case Estimate

TOTAL POINTS: 39

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SOIL CLEANUP STANDARD MATRIX WORKSHEET

TOTAL POINTS: 39
Level 2 Cleanup Standard

If the Matrix Score evaluated is

A) Greater than 40, the site must be cleaned up to at least the Level 1 standard

B) From 25 to 40, inclusive, the site must be cleaned up to at least Level 2 standards

C) Less than 25, the site must be cleaned up to at least the Level 3 standard

NUMERIC SOIL CLEANUP STANDARDS

	Level 1	Level 2	Level 3
TPH (Gasoline)	40 ppm	**80 ppm**	130 ppm
TPH (Diesel)	100 ppm	**500 ppm**	1,000 ppm

NUMERIC SOIL CLEANUP STANDARDS FOR THIS SITE

Level 2 Cleanup Standard

Total Petroleum Hydrocarbons (TPH):
< 80 parts per million (ppm) for gasoline
< 500 ppm for diesel fuel and heavier petroleum hydrocarbons

(12/91)

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ADDENDUM 1
REMEDIAL INVESTIGATION WORK PLAN

BRIX MARITIME COMPANY
PORTLAND, OREGON
ECSI NO. 2364

Prepared for

Brix Maritime Company
9030 NW St. Helens Road
Portland, OR 97231

Prepared by

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224

August 2005

ANCHOR ENVIRONMENTAL L.L.C.

BRIX003288

ADDENDUM 1
REMEDIAL INVESTIGATION WORK PLAN

BRIX MARITIME COMPANY
PORTLAND, OREGON
ECSI NO. 2364

Prepared for

Brix Maritime Company
9030 NW St. Helens Road
Portland, OR 97231

Prepared by

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224

August 2005

RECEIVED
AUG 22 2005
GARVEY SCHUBERT
BARER

BRIX003289

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ANCHOR
ENVIRONMENTAL, L.L.C.

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Phone 503.670.1108
Fax 503.670.1128

August 16, 2005
990056-01

Dana Bayuk, R.G.
Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, OR 97201

Re: Addendum 1
Remedial Investigation Workplan (February 2005), Brix Maritime Company
Portland, Oregon, ECSI No. 2364

Dear Dana:

This letter is Addendum 1 to the February 2005 Remedial Investigation Workplan (Workplan) prepared by Anchor Environmental L.L.C. (Anchor) on behalf of Brix Maritime (Brix). This addendum incorporates Anchor's May 25, 2005 Response to DEQ's April 20, 2005 comments on the Workplan as discussed in a June 15, 2005 meeting between Anchor and DEQ.

Section 5.2. In addition to the quarterly reports referenced in this section, a technical memorandum will be prepared that compiles the site investigation information listed in Section 4.1 and includes descriptions and interpretations of the data. The memorandum will form the basis for determining whether the site investigation work completed to date adequately supports the source control evaluation. Following review and approval of the memorandum, the source control evaluation will be prepared. Both the technical memorandum and the source control evaluation will be incorporated into the RI Report.

Table 3. Table 3 compiles monthly observations made regarding 1) the presence of light non-aqueous phase liquids and 2) water level measurements made at each monitoring well. In DEQ's February 25th letter, and as Anchor agreed in the April 30, 2004 response letter, additional information will be provided on the table and assessed when preparing equipotential maps for the site.

DEQ requested that Table 3 be revised for future submittals to include the elevations of the top of the silt and the top of the monitoring well end-cap for information purposes. Interpretations and descriptions of historic and future groundwater elevation data will take this information into consideration. Table 3 has been revised to include data through May 2005, and is attached to this memorandum. Columns were added to show the ground surface elevation, the elevation of the top of the perching layer, and the thickness of the water column above the base of the screen.

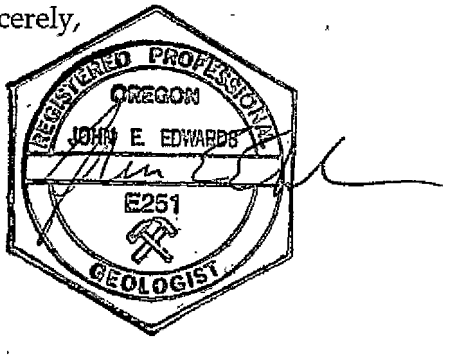
Table 4. DEQ requested that the "Z" data qualifier shown in Table 4 be explained in the notes. A revised Table 4, updated through May 2005 is attached.

Figures 3, 4, and 5. The spatial relationships between the locations of monitoring wells MW-2, MW-3, MW-4, and MW-5 shown on figures 3 and 4 do not correspond to those shown on Figure 5. DEQ requested that these figures be reviewed and reconciled in future submittals, if appropriate. All boring and monitoring well locations were surveyed on March 1, 2005. The attached figure A-1 shows the surveyed locations of the wells and borings.

Appendix A, Sampling and Analysis Plan. DEQ commented that the Sampling and Analysis Plan (SAP) provided in Appendix A of the RI Workplan is limited to quarterly groundwater monitoring and that the RI Work plan should include a SAP and a Quality Assurance Project Plan (QAPP). DEQ wants the SAP and QAPP to reflect the current scope of work for the BRIX RI, including work that has been completed (e.g., push-probe drilling and soil sampling, monitoring well installation, collecting groundwater samples for analysis of total and dissolved metals) and work that will be performed (e.g., shallow soil sampling around electrical transformers, collecting samples from groundwater seeps for analysis of contaminants of interest). The updated SAP and QAPP are attached to this addendum. The only remaining field task requested by DEQ that has not been completed is the seep sampling along the riverbank. Anchor will provide DEQ with a summary of our planned sampling method for review, prior to attempting to collect the seep samples.

Please call if you have any questions or additional comments.

Sincerely,



John E. Edwards, R.G., C.E.G.
Anchor Environmental, L.L.C.

John J. Renda, R.G.
Anchor Environmental, L.L.C.

Cc: David Templeton, Anchor
Leslie Schenck; GSBLAW
Frank Williamson, Foss Maritime

Table 3
Hydrology Data
Brix Maritime
Portland, Oregon

Well	Reference Elevation (Feet NAVD88)	Ground Surface Elevation (Feet NAVD88)	Screen Interval Feet NAVD88	Elevation Top of Perching Layer[2] (Feet NAVD88)	Date (MM/DD/YY)	DTW (feet)	Water above base of screen (Feet)	Water Elevation (Feet NAVD88)	Comments
Monitoring Wells									
MW-1	41.81	42.16	35.1 - 20.1	21.16	02/28/03	18.89	2.86	22.92	
MW-1	41.81	42.16	35.1 - 20.1	21.16	03/31/03	19.43	2.32	22.38	
MW-1	41.81	42.16	35.1 - 20.1	21.16	04/29/03	19.69	2.06	22.12	
MW-1	41.81	42.16	35.1 - 20.1	21.16	05/22/03	20.22	1.53	21.59	
MW-1	41.81	42.16	35.1 - 20.1	21.16	07/07/03	21.08	0.67	20.73	
MW-1	41.81	42.16	35.1 - 20.1	21.16	07/30/03	21.13	0.62	20.68	
MW-1	41.81	42.16	35.1 - 20.1	21.16	08/28/03	21.24	0.51	20.57	
MW-1	41.81	42.16	35.1 - 20.1	21.16	09/30/03	21.15	0.60	20.66	
MW-1	41.81	42.16	35.1 - 20.1	21.16	10/16/03	21.10	0.65	20.71	
MW-1	41.81	42.16	35.1 - 20.1	21.16	12/03/03	21.06	0.69	20.75	
MW-1	41.81	42.16	35.1 - 20.1	21.16	12/26/03	20.46	1.29	21.35	
MW-1	41.81	42.16	35.1 - 20.1	21.16	01/30/04	19.01	2.74	22.80	
MW-1	41.81	42.16	35.1 - 20.1	21.16	03/04/04	19.60	2.15	22.21	
MW-1	41.81	42.16	35.1 - 20.1	21.16	04/29/04	20.91	0.84	20.90	
MW-1	41.81	42.16	35.1 - 20.1	21.16	05/27/04	21.13	0.62	20.68	
MW-1	41.81	42.16	35.1 - 20.1	21.16	07/06/04	21.22	0.53	20.59	
MW-1	41.81	42.16	35.1 - 20.1	21.16	07/26/04	21.28	0.47	20.53	
MW-1	41.81	42.16	35.1 - 20.1	21.16	10/29/04	21.25	0.50	20.56	
MW-1	41.81	42.16	35.1 - 20.1	21.16	02/25/05	20.81	0.94	21.00	
MW-1	41.81	42.16	35.1 - 20.1	21.16	05/05/05	20.63	1.12	21.18	
MW-2	42.13	42.48	32.9 - 17.9	18.98	02/28/03	19.88	4.37	22.25	
MW-2	42.13	42.48	32.9 - 17.9	18.98	03/31/03	20.36	3.89	21.77	
MW-2	42.13	42.48	32.9 - 17.9	18.98	04/29/03	20.64	3.61	21.49	
MW-2	42.13	42.48	32.9 - 17.9	18.98	05/22/03	21.06	3.19	21.07	
MW-2	42.13	42.48	32.9 - 17.9	18.98	07/07/03	22.17	2.08	19.96	
MW-2	42.13	42.48	32.9 - 17.9	18.98	07/30/03	22.50	1.75	19.63	
MW-2	42.13	42.48	32.9 - 17.9	18.98	08/28/03	22.84	1.41	19.29	
MW-2	42.13	42.48	32.9 - 17.9	18.98	09/30/03	23.07	1.18	19.06	
MW-2	42.13	42.48	32.9 - 17.9	18.98	10/16/03	23.06	1.19	19.07	
MW-2	42.13	42.48	32.9 - 17.9	18.98	12/03/03	22.54	1.71	19.59	
MW-2	42.13	42.48	32.9 - 17.9	18.98	12/26/03	21.58	2.67	20.55	
MW-2	42.13	42.48	32.9 - 17.9	18.98	01/30/04	20.05	4.20	22.08	
MW-2	42.13	42.48	32.9 - 17.9	18.98	03/04/04	20.57	3.68	21.56	
MW-2	42.13	42.48	32.9 - 17.9	18.98	04/29/04	21.89	2.36	20.24	
MW-2	42.13	42.48	32.9 - 17.9	18.98	05/27/04	22.29	1.96	19.84	
MW-2	42.13	42.48	32.9 - 17.9	18.98	07/06/04	22.70	1.55	19.43	
MW-2	42.13	42.48	32.9 - 17.9	18.98	07/26/04	22.85	1.40	19.28	
MW-2	42.13	42.48	32.9 - 17.9	18.98	10/29/04	22.90	1.35	19.23	
MW-2	42.13	42.48	32.9 - 17.9	18.98	02/25/05	22.20	2.05	19.93	
MW-2	42.13	42.48	32.9 - 17.9	18.98	05/05/05	21.73	2.52	20.40	
MW-3	41.93	42.21	32.9 - 17.9	19.71	07/29/02	22.91	1.11	19.02	
MW-3	41.93	42.21	32.9 - 17.9	19.71	08/22/02	23.50	0.52	18.43	Oil detected in well, thickness estimated at 0.02 foot
MW-3	41.93	42.21	32.9 - 17.9	19.71	09/30/02	23.37	0.65	18.56	Oil detected in well, thickness estimated at 0.02 foot
MW-3	41.93	42.21	32.9 - 17.9	19.71	10/30/02	23.68	0.34	18.25	DTP = 23.49 (0.19 foot thick)
MW-3	41.93	42.21	32.9 - 17.9	19.71	11/27/02	23.30	0.72	18.63	DTP = 23.16 (0.14 foot thick)
MW-3	41.93	42.21	32.9 - 17.9	19.71	12/30/02	21.99	2.03	19.94	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	02/28/03	19.75	4.27	22.18	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	03/31/03	20.24	3.78	21.69	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	04/29/03	20.50	3.52	21.43	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	05/22/03	20.94	3.08	20.99	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	07/07/03	22.21	1.81	19.72	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	07/30/03	22.62	1.40	19.31	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	08/28/03	22.95	1.07	18.98	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	09/30/03	23.15	0.87	18.78	DTP = 23.04 (0.11 foot thick)
MW-3	41.93	42.21	32.9 - 17.9	19.71	10/16/03	22.40	1.62	19.53	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	12/03/03	22.21	1.81	19.72	Sheen, product too thin to measure
MW-3	41.93	42.21	32.9 - 17.9	19.71	12/26/03	21.44	2.58	20.49	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	01/30/04	19.80	4.22	22.13	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	03/04/04	20.41	3.61	21.52	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	04/29/04	21.82	2.20	20.11	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	05/27/04	22.25	1.77	19.68	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	07/06/04	22.66	1.36	19.27	No oil noted on probe
MW-3	41.93	42.21	32.9 - 17.9	19.71	07/26/04	22.91	1.11	19.02	DTP = 22.89 (0.02 foot thick)
MW-3	41.93	42.21	32.9 - 17.9	19.71	10/29/04	22.29	1.73	19.64	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.95	42.21	32.9 - 17.9	19.71	02/25/05	22.03	2.01	19.92	No oil noted on probe
MW-3	41.95	42.21	32.9 - 17.9	19.71	05/05/05	21.55	2.49	20.40	No oil noted on probe
MW-4	23.55	23.90	19.4 - 9.4	10.90	07/29/02	11.62	2.53	11.93	
MW-4	23.55	23.90	19.4 - 9.4	10.90	08/22/02	11.77	2.38	11.78	
MW-4	23.55	23.90	19.4 - 9.4	10.90	09/30/02	11.94	2.21	11.61	
MW-4	23.55	23.90	19.4 - 9.4	10.90	10/30/02	12.06	2.09	11.49	
MW-4	23.55	23.90	19.4 - 9.4	10.90	11/27/02	11.85	2.30	11.70	
MW-4	23.55	23.90	19.4 - 9.4	10.90	12/30/02	10.24	3.91	13.31	
MW-4	23.55	23.90	19.4 - 9.4	10.90	02/28/03	4.34	9.81	19.21	
MW-4	23.55	23.90	19.4 - 9.4	10.90	03/31/03	4.59	9.56	18.96	
MW-4	23.55	23.90	19.4 - 9.4	10.90	04/29/03	5.46	8.69	18.09	
MW-4	23.55	23.90	19.4 - 9.4	10.90	05/22/03	8.59	5.56	14.96	
MW-4	23.55	23.90	19.4 - 9.4	10.90	07/07/03	10.69	3.46	12.86	
MW-4	23.55	23.90	19.4 - 9.4	10.90	07/30/03	11.03	3.12	12.52	
MW-4	23.55	23.90	19.4 - 9.4	10.90	08/28/03	11.40	2.75	12.15	
MW-4	23.55	23.90	19.4 - 9.4	10.90	09/30/03	11.74	2.41	11.81	
MW-4	23.55	23.90	19.4 - 9.4	10.90	10/16/03	11.40	2.75	12.15	
MW-4	23.55	23.90	19.4 - 9.4	10.90	12/03/03	10.59	3.56	12.96	
MW-4	23.55	23.90	19.4 - 9.4	10.90	12/26/03	9.50	4.65	14.05	
MW-4	23.55	23.90	19.4 - 9.4	10.90	01/30/04	5.41	8.74	18.14	
MW-4	23.55	23.90	19.4 - 9.4	10.90	03/04/04	9.05	5.10	14.50	
MW-4	23.55	23.90	19.4 - 9.4	10.90	04/29/04	11.00	3.15	12.55	
MW-4	23.55	23.90	19.4 - 9.4	10.90	05/27/04	10.89	3.26	12.66	
MW-4	23.55	23.90	19.4 - 9.4	10.90	07/06/04	11.26	2.89	12.29	

Table 3
Hydrology Data
Brix Maritime
Portland, Oregon

Well	Reference Elevation (Feet NAVD88)	Ground Surface Elevation (Feet NAVD88)	Screen Interval Feet NAVD88	Elevation Top of Perching Layer[2] (Feet NAVD88)	Date (MM/DD/YY)	DTW (feet)	Water above base of screen (Feet)	Water Elevation (Feet NAVD88)	Comments
MW-4	23.55	23.90	19.4 - 9.4	10.90	07/26/04	11.56	2.59	11.99	
MW-4	23.55	23.90	19.4 - 9.4	10.90	10/29/04	11.06	3.09	12.49	
MW-4	23.55	23.90	19.4 - 9.4	10.90	02/25/05	10.60	3.55	12.95	
MW-4	23.55	23.90	19.4 - 9.4	10.90	05/05/05	9.55	4.60	14.00	
MW-5	41.66	42.01	34.9 - 19.9	19.31	02/28/03	19.45	2.30	22.21	
MW-5	41.66	42.01	34.9 - 19.9	19.31	03/31/03	19.99	1.76	21.67	
MW-5	41.66	42.01	34.9 - 19.9	19.31	04/29/03	20.25	1.50	21.41	
MW-5	41.66	42.01	34.9 - 19.9	19.31	05/22/03	20.75	1.00	20.91	
MW-5	41.66	42.01	34.9 - 19.9	19.31	07/07/03	21.93	-0.18	19.73	Insufficient water to collect sample
MW-5	41.66	42.01	34.9 - 19.9	19.31	07/30/03	22.08	-0.33	19.58	dry
MW-5	41.66	42.01	34.9 - 19.9	19.31	08/28/03	22.08	-0.33	19.58	dry
MW-5	41.66	42.01	34.9 - 19.9	19.31	09/30/03	22.13	-0.38	19.53	dry
MW-5	41.66	42.01	34.9 - 19.9	19.31	10/16/03	22.10	-0.35	19.56	Insufficient water to collect sample
MW-5	41.66	42.01	34.9 - 19.9	19.31	12/03/03	22.13	-0.38	19.53	dry
MW-5	41.66	42.01	34.9 - 19.9	19.31	12/26/03	21.35	0.40	20.31	
MW-5	41.66	42.01	34.9 - 19.9	19.31	01/30/04	19.59	2.16	22.07	
MW-5	41.66	42.01	34.9 - 19.9	19.31	03/04/04	20.16	1.59	21.50	
MW-5	41.66	42.01	34.9 - 19.9	19.31	04/29/04	21.67	0.08	19.99	Insufficient water to collect sample
MW-5	41.66	42.01	34.9 - 19.9	19.31	05/27/04	21.99	-0.24	19.67	water level below bottom of screen (dry)
MW-5	41.66	42.01	34.9 - 19.9	19.31	07/06/04	21.98	-0.23	19.68	water level below bottom of screen (dry)
MW-5	41.66	42.01	34.9 - 19.9	19.31	07/26/04	dry	dry		dry
MW-5	41.66	42.01	34.9 - 19.9	19.31	10/29/04	22.00	-0.25	19.66	water level below bottom of screen (dry)
MW-5	41.66	42.01	34.9 - 19.9	19.31	02/25/05	21.85	-0.10	19.81	water level below bottom of screen (dry)
MW-5	41.66	42.01	34.9 - 19.9	19.31	05/05/05	21.41	0.34	20.25	
MW-6	41.21	41.49	31.4 - 16.4	20.49	07/07/03	20.26	4.56	20.95	
MW-6	41.21	41.49	31.4 - 16.4	20.49	07/30/03	20.57	4.25	20.64	
MW-6	41.21	41.49	31.4 - 16.4	20.49	08/28/03	21.02	3.80	20.19	
MW-6	41.21	41.49	31.4 - 16.4	20.49	09/30/03	21.02	3.80	20.19	
MW-6	41.21	41.49	31.4 - 16.4	20.49	10/16/03	20.93	3.89	20.28	
MW-6	41.21	41.49	31.4 - 16.4	20.49	12/03/03	21.53	3.29	19.68	
MW-6	41.21	41.49	31.4 - 16.4	20.49	12/26/03	19.24	5.58	21.97	
MW-6	41.21	41.49	31.4 - 16.4	20.49	01/30/04	17.70	7.12	23.51	
MW-6	41.21	41.49	31.4 - 16.4	20.49	03/04/04	18.16	6.66	23.05	
MW-6	41.21	41.49	31.4 - 16.4	20.49	04/29/04	19.66	5.16	21.55	
MW-6	41.21	41.49	31.4 - 16.4	20.49	05/27/04	20.17	4.65	21.04	
MW-6	41.21	41.49	31.4 - 16.4	20.49	07/06/04	20.71	4.11	20.50	
MW-6	41.21	41.49	31.4 - 16.4	20.49	07/26/04	21.23	3.59	19.98	
MW-6	41.21	41.49	31.4 - 16.4	20.49	10/29/04	21.48	3.34	19.73	
MW-6	41.21	41.49	31.4 - 16.4	20.49	02/25/05	19.78	5.04	21.43	
MW-6	41.21	41.49	31.4 - 16.4	20.49	05/05/05	19.19	5.63	22.02	
MW-7	40.95	41.29	31.5 - 16.5	15.79	07/07/03	21.21	3.25	19.74	
MW-7	40.95	41.29	31.5 - 16.5	15.79	07/30/03	21.76	2.70	19.19	
MW-7	40.95	41.29	31.5 - 16.5	15.79	08/28/03	22.32	2.14	18.63	
MW-7	40.95	41.29	31.5 - 16.5	15.79	09/30/03	22.67	1.79	18.28	
MW-7	40.95	41.29	31.5 - 16.5	15.79	10/16/03	22.72	1.74	18.23	
MW-7	40.95	41.29	31.5 - 16.5	15.79	12/03/03	22.90	1.56	18.05	
MW-7	40.95	41.29	31.5 - 16.5	15.79	12/26/03	20.32	4.14	20.63	
MW-7	40.95	41.29	31.5 - 16.5	15.79	01/30/04	18.26	6.20	22.69	
MW-7	40.95	41.29	31.5 - 16.5	15.79	03/04/04	18.96	5.50	21.99	
MW-7	40.95	41.29	31.5 - 16.5	15.79	04/29/04	20.49	3.97	20.46	
MW-7	40.95	41.29	31.5 - 16.5	15.79	05/27/04	21.10	3.36	19.85	
MW-7	40.95	41.29	31.5 - 16.5	15.79	07/06/04	21.98	2.48	18.97	
MW-7	40.95	41.29	31.5 - 16.5	15.79	07/26/04	22.40	2.06	18.55	
MW-7	40.95	41.29	31.5 - 16.5	15.79	10/29/04	22.99	1.47	17.96	
MW-7	40.95	41.29	31.5 - 16.5	15.79	02/25/05	20.80	3.66	20.15	
MW-7	40.95	41.29	31.5 - 16.5	15.79	05/05/05	20.20	4.26	20.75	
MW-8	41.73	42.00	24.8 - 19.8	20.00	02/25/05	21.15	0.78	20.58	
MW-8	41.73	42.00	24.8 - 19.8	20.00	05/05/05	21.81	0.12	19.92	
River Gauge[1]									
River	4.33	NA	NA	NA	10/30/02	2.75		7.08	
River	4.33	NA	NA	NA	11/27/02	3.1		7.43	
River	4.33	NA	NA	NA	12/30/02	7.5		11.83	
River	4.33	NA	NA	NA	02/28/03	6.1		10.43	
River	4.33	NA	NA	NA	03/31/03	8.0		12.33	
River	4.33	NA	NA	NA	04/29/03	8.0		12.33	
River	4.33	NA	NA	NA	05/22/03	6.5		10.83	
River	4.33	NA	NA	NA	07/07/03	4.0		8.33	
River	4.33	NA	NA	NA	07/30/03	3.5		7.83	
River	4.33	NA	NA	NA	08/28/03	3.3		7.63	
River	4.33	NA	NA	NA	09/30/03	2.1		6.43	
River	4.33	NA	NA	NA	10/16/03	2.2		6.53	
River	4.33	NA	NA	NA	12/03/03	3.5		7.83	
River	4.33	NA	NA	NA	12/26/03	6.7		11.03	
River	4.33	NA	NA	NA	01/30/04	11.0		15.33	
River	4.33	NA	NA	NA	03/04/04	5.0		9.33	
River	4.33	NA	NA	NA	04/29/04	4.0		8.33	
River	4.33	NA	NA	NA	05/27/04	6.6		10.93	
River	4.33	NA	NA	NA	07/06/04	5.5		9.83	
River	4.33	NA	NA	NA	07/26/04	2.75		7.08	
River	4.33	NA	NA	NA	10/29/04	3.75		8.08	
River	4.33	NA	NA	NA	02/25/05	4.00		8.33	
River	4.33	NA	NA	NA	05/05/05	5.00		9.33	

Note: DTW = Depth to Water; DTP = Depth to Product; NA = Not Applicable
1 - The river gauge is marked in 1-foot increments, field measurements are estimated to the closest 0.1 foot.
2 - Perching unit identified as Silty Sand in MW-1, MW-2, MW-3, and MW-6; Sandy Silt in MW-8; and Silt in MW-4, MW-5, and MW-7.

Table 4
Total Petroleum Hydrocarbons
Brix Maritime
Portland, Oregon

Location (sample depth in ft bgs)	Matrix	Date Sampled	Diesel Range Organics		Residual Range Organics		Gasoline Range Organics	
MW-1	Water	07/07/03	0.27	L	0.5	U	1.3	H
MW-1	Water	10/16/03	0.73	L	0.5	U	8.1	H
MW-1	Water	01/30/04	0.60	L	0.5	U	4.0	H
MW-1	Water	04/29/04	0.71	L	0.5	U	5.8	H
MW-1 Duplicate	Water	04/29/04	0.79	L	0.5	U	5.7	H
MW-1	Water	07/26/04	0.92	L	0.5	U	9.3	Y
MW-1 Duplicate	Water	07/26/04	0.93	L	0.5	U	9.3	Y
MW-1	Water	10/29/04	1.10	L	0.5	U	8.8	Y
MW-1	Water	02/25/05	1.40	L	0.5	U	12.0	DY
MW-1 Duplicate	Water	02/25/05	1.30	L	0.5	U	11.0	DY
MW-1	Water	05/05/05	0.88	L	0.54	U	12.0	DY
MW-1 Duplicate	Water	05/05/05	0.85	L	0.52	U	12.0	DY
MW-2	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-2	Water	10/16/03	0.27	U	0.53	U	0.05	U
MW-2	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-2	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-2	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-2	Water	10/29/04	0.25	U	0.5	U	0.25	U
MW-2	Water	05/05/05	0.27	U	0.53	U	0.25	U
MW-3	Water	07/30/02	3.4	Y	1.6	O		
MW-3	Water	07/07/03	1.9	Y	8.5	O	0.05	U
MW-3	Water	10/16/03	0.92	Y	1.8	O	0.059	Y
MW-3	Water	01/30/04	0.79	Y	0.6	O	0.05	U
MW-3	Water	04/29/04	0.7	Y	0.77	O	0.05	U
MW-3	Water	07/26/04	2.5	Y	8.3	O	0.25	U
MW-3	Water	10/29/04	1.2	Y	3.1	O	0.25	U
MW-3	Water	02/25/05	1.2	Y	1.8	O	0.25	U
MW-3	Water	05/05/05	1.0	Z	1.2	Z	0.25	U
MW-4	Water	07/29/02	0.26	U	0.52	U		
MW-4	Water	07/07/03	0.25	U	0.52	O	0.05	U
MW-4 Duplicate	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-4	Water	10/16/03	0.25	U	0.5	U	0.65	Y
MW-4 Duplicate	Water	10/16/03	0.25	U	0.5	U	0.66	Y
MW-4	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-4	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-4	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-4	Water	10/29/04	0.73	Z	1.0	Z	0.25	U
MW-4 Duplicate	Water	10/29/04	0.63	Z	0.96	Z	0.25	U
MW-4	Water	02/25/05	0.25	U	0.50	U	0.25	U
MW-4	Water	05/05/05	0.26	U	0.51	U	0.25	U
MW-5	Water	01/30/04	0.62	L	0.5	U	1.4	H
MW-5 Duplicate	Water	01/30/04	0.63	L	0.5	U	1.5	H
MW-5	Water	05/05/05	1.3	L	0.55	U	5.2	Y
MW-6	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-6	Water	10/16/03	0.27	U	0.53	U	0.05	U
MW-6	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-6	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-6	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-6	Water	10/29/04	0.25	U	0.5	U	0.25	U
MW-6	Water	05/05/05	0.28	U	0.55	U	0.25	U
MW-7	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-7	Water	10/16/03	0.27	U	0.53	U	0.05	U
MW-7	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-7	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-7	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-7	Water	10/29/04	0.25	U	0.5	U	0.25	U
MW-7	Water	05/05/05	0.27	U	0.54	U	0.25	U
MW-8	Water	02/25/05	1.0	Y	1.3	O	0.25	U

Notes: Water concentrations are in mg/L. Soil concentrations are in mg/kg.
ft bgs = feet below ground surface.
D = The reported result is from a dilution.
U = Not detected at method reporting limit.
O = The fingerprint resembles oil, but does not match the calibration standard.
L = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of lighter weight constituents than the calibration standard.
H = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of heavier weight constituents than the calibration standard.
Y = The fingerprint resembles a petroleum product in the correct carbon range, but the elution pattern does not match the calibration standard.
Z = The chromatic fingerprint does not resemble a petroleum product.

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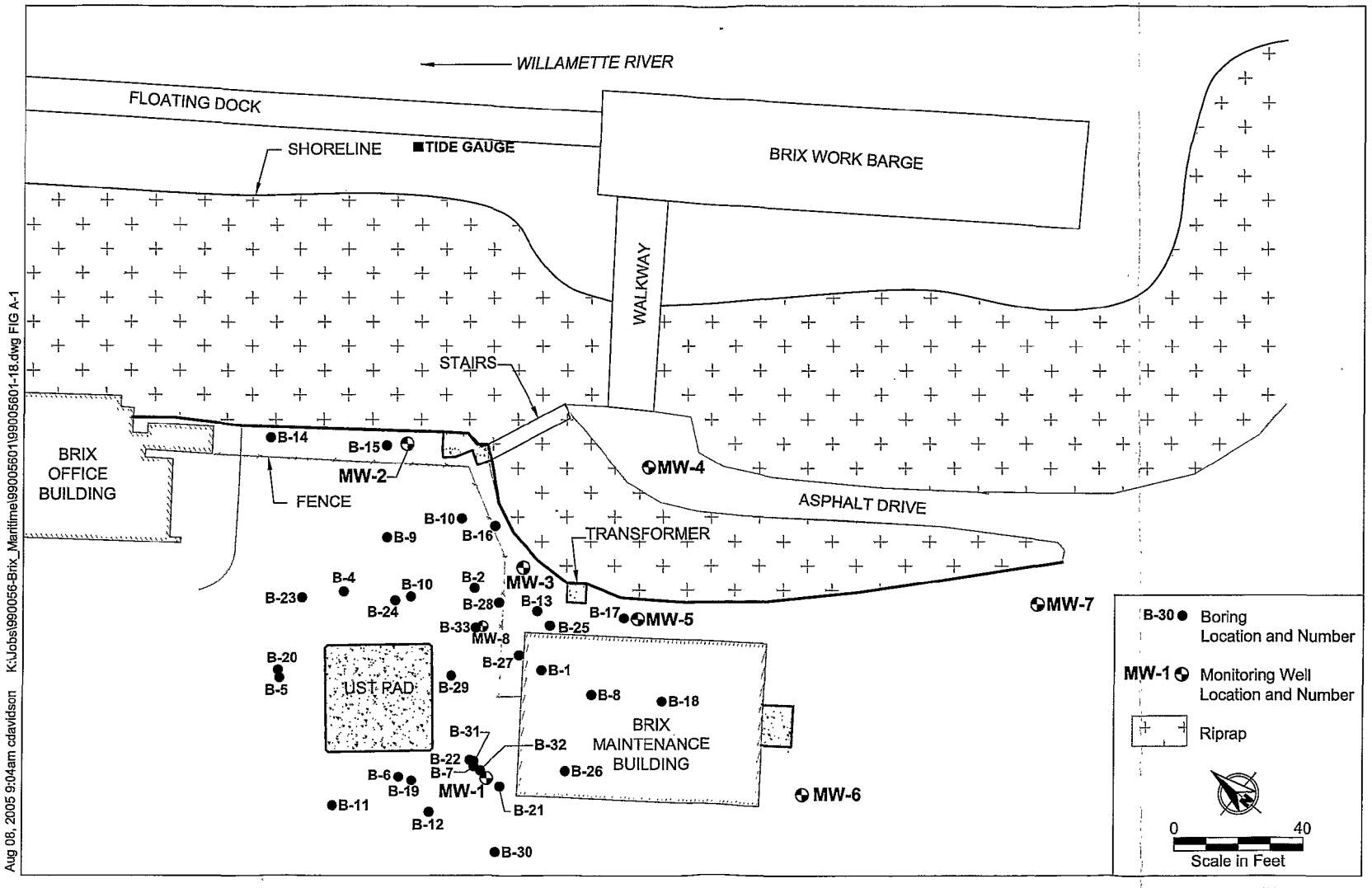

Aug 08, 2005 9:04am cdavidson K:\Jobs\990056-Brix_Maritime\99005601\99005601-18.dwg FIG A-1

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Figure A-1
Boring Location Map
Brix Maritime
Portland, Oregon

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SAMPLING AND ANALYSIS PLAN

BRIX MARITIME COMPANY
PORTLAND, OREGON
ECSI NO. 2364

Prepared for

Brix Maritime Company
9030 NW St. Helens Road
Portland, OR 97231

Prepared by

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, #110
Portland, OR 97224

August 2005

ANCHOR

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1 INTRODUCTION

This Sampling and Analysis Plan (SAP) is part of Addendum 1 to the Remedial Investigation Work Plan (Work Plan) and describes standard field operating procedures for conducting fieldwork at the Brix Maritime Company (site) in Portland, Oregon. The site is located at 9030 NW St. Helens Road, and has been assigned ECSI No. 2364 in the State's Environmental Cleanup Site Information database.

The SAP includes methods and procedures for conducting field work at the site. The Work Plan identifies specific media to be sampled and the locations and types of field or laboratory analyses that are conducted. Sample locations are in Figure A-1 Work Plan Addendum 1 and analytical parameters are in Tables 4 through 7.

The fieldwork will consist primarily of groundwater sampling and testing, hydrology monitoring, and soil sampling and testing.

This SAP describes methods that are used for sampling environmental media. This SAP is supported by a quality assurance project plan (QAPP), which is also part of Addendum 1 to the Work Plan. Laboratory analytical methods are not included in this SAP. For specific analytical methods, refer to the QAPP and Work Plan.

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2 ACCESS AND SITE PREPARATION

2.1 Site Access

Anchor personnel will notify the Brix site coordinator before beginning each phase of work at the site, and upon arrival will sign a visitor's registration log at the main office. Reasonable efforts are made to provide facility access to the employees, agents, and contractors of the Oregon Department of Environmental Quality (DEQ). Upon arrival at the site, agency representatives must sign the visitors log at the facility office and describe their visit. Access to work areas may be temporarily restricted because of safety concerns related to facility operations or field investigations.

2.2 Site Preparation and Coordination

Before field sampling programs begin at the Brix facility, public and private utility-locating services and other information sources (such as facility-specific plans) are used to check for underground utilities or pipelines near each boring. Anchor will coordinate fieldwork with the Brix site coordinator, both to define the locations of possible on-site utilities and piping and to avoid interrupting site operations.

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3 DRILLING AND SOIL SAMPLING

This section describes the techniques for drilling test borings, collecting soil samples, and reconnaissance groundwater sampling from these borings. Tasks related to drilling (borehole logging and soil classification) are also described. The methods outlined in this section conform to requirements in Oregon Water Resources Department (WRD) administrative rules Chapter 690, division 240.

3.1 Drilling Test Borings

The borings are advanced by a truck-mounted Hollow-stem Auger or Geoprobe™ rig. Decontamination of drilling and sampling equipment is performed as described Section 5.

When borings are advanced by Hollow-stem Auger, coring begins at the ground surface with 5-foot-long sections of 6 1/4-inch inside-diameter (ID) hollow stem augers. Soil samples are collected at a minimum of 5-foot intervals by advancing a split spoon sampler through the hollow stem of the auger and delivering blows to drive the sampler into the soil. After the sampler has been advanced 1.5 feet, it is withdrawn and opened to remove the sample. The sampler is then decontaminated as described in Section 5 before reuse in obtaining the next sample. An additional 5-foot-long section of auger is attached and this process repeated until refusal is met or sufficient water is encountered. Groundwater is encountered at the site within 25 feet of the ground surface.

When borings are advanced by Geoprobe, continuous soil samples are obtained. Coring starts at the ground surface with a 4-foot or 5-foot-long, 1.5-inch inside-diameter (ID) core sampler. The piston tip is loosened and the sampler advanced into the ground, thereby coring the soil inside the sampler's disposable, single-use plastic liner. The sampler is then withdrawn to retrieve the liner and the soil sample. The liner is cut to remove the soil sample.

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A new liner is placed inside the core sampler, and the core sampler with the piston tip locked is advanced to the top of the next sample interval. The piston tip is then released and the core sampler advanced to obtain the next sample. This process is repeated until refusal is met or sufficient water is encountered. Groundwater is encountered at the site within 25 feet of the ground surface. Between samples, the core sampler, including the piston tip and attached rod, is decontaminated, stored, and handled consistent with the procedures specified in this SAP.

The core samples are examined to develop a lithologic boring log. The samples are described in the field as to their color, structure, texture, mineral composition, moisture, and percent recovery, according to ASTM Method D 2488. Samples are also examined for evidence of possible contamination, including presence of anthropogenic material, chemical odor, staining, etc., and such observations are noted. These procedures are applied to all soils sampled in each borehole.

3.2 Soil Sampling.

3.2.1 Soil Borings.

After the sampler is withdrawn from the borehole to retrieve the liner and the soil sample, the liner is cut to remove the soil sample.

Soil samples are collected at a minimum of 5 foot intervals. These sampling intervals are adjusted in the field to better conform to geologic contacts, stratigraphic intervals, evidence of fill debris, etc.
Soil analytical parameters are summarized in Tables 2 through 7 of the Work Plan.

3.2.2 Sample Nomenclature.

Samples are labeled with the boring location and sampling depth below surface. For example, a soil sample collected at boring MW-1 at the 0-2.5 foot interval has the following label: MW-1 (0-2.5).

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3.2.3 *Transformer Soil Sampling.*

Shallow soil samples were collected from around the two pad-mounted transformers at the Brix site. The first transformer (TF-1) is on a concrete slab near the northern corner of the maintenance building. TF-1 is surrounded on three sides by asphalt and on one side by gravel. A soil sample (TF-1-N) was collected from the northeast side of the transformer, immediately below the gravel to a depth of less than four inches below the top of soil with a decontaminated stainless steel spoon. This sample was submitted for analysis of total petroleum hydrocarbons (TPH) by method NWTPH-Dx and polychlorinated biphenyls (PCBs) by EPA method 8081.

The second transformer (TF-2) is on a raised concrete slab near the southern corner of the office building. TF-2 is bordered on the northeast side by concrete, on the southeast and southwest sides by bark dust, and on the northwest side by gravel. Soil samples were collected with decontaminated stainless steel spoons from the southeast (TF-2-E), southwest (TF-2-S), and northwest (TF-2-W) sides from immediately below the gravel or bark dust to depths of less than four inches below the top of soil. Additionally, a composite sample (TF-2-COM) of the three soil samples was collected using a decontaminated stainless steel spoon and homogenized in a stainless steel bowl before being transferred into the sample jar. The composite sample was submitted for analysis of TPH and PCBs. The individual samples (TF-2-E, TF-2-S, and TF-2-W) were to be analyzed only if TPH and/or PCBs are detected in the composite sample.

3.3 Well Installation

Monitoring wells have been installed at 8 locations as shown on Figure A-1 in Addendum 1 of the RI Workplan. The wells were installed using either a hollow stem auger or Geoprobe drill rig. The boring logs in Appendix C of the RI Workplan indicate the drilling method used for each well. Both methods of well installation are described below.

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Hollow Stem Auger

After advancing a borehole for the purpose of collecting soil samples, describing lithology, and observing groundwater depth, the monitoring well is constructed of 5-foot-long, 2-inch-diameter sections of well screen attached to 5-foot-long blank sections. Well materials are inserted into the cased borehole. The filter pack is constructed by pouring silica sand into the annular space to approximately 1 to 2 feet above the top of the prepacked screen. The depth of the filter pack is carefully monitored during well installation to assure that no bridging occurs. The remainder of the annular space is backfilled with bentonite chips to approximately 1 foot below ground surface. The wells are completed with locked, watertight caps inside flush-mounted well monuments with a concrete surface seal.

Geoprobe

After advancing a borehole for the purpose of collecting soil samples, describing lithology, and observing groundwater depth, a second borehole is advanced within 5 feet of the first borehole for well installation purposes. The second borehole is advanced with a closed tip to the terminal depth to minimize the potential of cross contamination from upper soil units. The monitoring wells are constructed of 5-foot-long, 2-inch-diameter sections of pre-packed well screen attached to 5-foot-long blank sections. Well materials are inserted into the cased borehole, using push rods as temporary casing. Approximately 1 to 2 feet of silica sand is placed above the top of the pre-packed screen and the remainder of the annular space is backfilled with bentonite chips to approximately 1 foot below ground surface. The wells are completed with locked, watertight caps inside flush-mounted well monuments with a concrete surface seal.

3.4 Well Development

The monitoring wells are developed by appropriate combinations of surging, bailing, and/or pumping with a peristaltic pump. Development continues until the removed groundwater becomes clear and colorless or until the groundwater pH,

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conductivity, and temperature stabilize to within 5 percent of the previous measurement or until the well is dry.

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4 GROUNDWATER MONITORING AND SAMPLING

4.1 Water Level Monitoring

Depth-to-water (groundwater elevation) is measured quarterly in monitoring wells using the procedures in this section. The water level elevation of the Willamette River is measured using the staff gage on site. The data is used to estimate the horizontal groundwater flow direction and gradient at the site.

Measurements are taken with an electronic water-level indicator. Levels are measured to the nearest 0.01 foot from a surveyed notch or mark at the top of the PVC casing or other reference point. Anchor converts the measurements to an elevation relative to the surveyed datum. Measurements are recorded immediately on field sheets with the date, time (on a 24-hour clock), reference point, and initials of the person who made the measurements. Water-level measurements taken for a single data set are obtained for as short a period as practical, to reduce the potential for external factors (e.g., rainfall, barometric pressure, and river tidal changes) to affect water levels nonuniformly within the study area. The water-level indicator is decontaminated as specified in Section 6.

4.2 Groundwater Sample Collection

Groundwater sampling methods used at the Brix facility are designed to obtain samples as representative of in situ groundwater quality as possible.

4.2.1 Procedure

Sample collection and handling is consistent with procedures described below and in Section 4 of the QAPP. The monitoring wells are sampled as follows:

- The depth to water and depth to bottom in each well is measured with an electric water-level indicator. The results are noted on the field sampling data sheet.
- Before a well is sampled, at least three casing volumes are purged with a peristaltic pump fitted with silicon, Pharmed, and/or polyethylene tubing, or with a disposable bailer.
- After each well casing volume is removed, temperature, pH, and specific conductance are with portable meters calibrated according to manufacturer's

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directions. The data is immediately recorded on the field sampling data sheet. Specific conductance and pH must stabilize to within 10 percent of the previous reading before a sample is collected. A minimum of three parameters measurements are recorded.

- If any well purges dry during pore volume removal, the well is allowed to recover for no more than 24 hours before a sample is collected. At least one pore volume must be removed from each well before a sample is collected.
- Groundwater samples are collected directly from the peristaltic pump discharge line or with a disposable bailer, as appropriate. Samples are collected in containers with preservatives specific to the analysis being performed.
- Samples collected for dissolved metals analysis are filtered during collection, using disposable QED Sample Pro™ or similar 0.45-micron, in-line filters. The filters are attached directly to the peristaltic pump discharge line. Each in-line filter is used only once.
- Disposable bailers are used for only one well and will then be properly disposed of.
- Other equipment used for water sample collection is decontaminated both before its use at the facility and after each sample is collected (see Section 5).
- Field activities and sampling data (well purging data, type of container used for each sample, and preservatives used) are recorded on the field sampling data sheet. Any deviations from the general procedures are noted on field records and are brought to the attention of the project manager.
- Samples are labeled, preserved, and shipped to the analytical laboratory.

4.2.2 Sample Nomenclature

Groundwater samples from facility monitoring wells are blind-labeled (an additional laboratory quality control procedure). Each blind-labeled sample is designated by the abbreviation "BM-," followed by the date of collection, then by "-" and a unique identification number. Numbers are assigned in sequence, starting with 1, during a single monitoring period, regardless of the collection date. For example, a sample labeled BM-041405-3 indicates that it was obtained at the Brix site on April 14, 2005, and that it was the third sample obtained for that sampling event.

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Reconnaissance test boring samples are not blind-labeled, because they are not reproducible. Instead, test-boring groundwater samples are labeled to clearly identify the source of the sample.

4.3 Laboratory Analysis

Groundwater samples and associated quality control samples are analyzed for the parameters specified in the Work Plan.

4.4 Borehole Logging and Soil Classification

A log of soil samples from each boring is prepared in the field by a geologist registered in Oregon, or by a geologist working under the supervision of a registered Oregon geologist. Boring logs include the project name and location, the name of the drilling contractor, the drilling method, the sampling method, the soil and groundwater sample depths, and a description of soils encountered. Soil samples are described using ASTM designation D2488, "Standard Practice for Description and Identification of Soils (Visual-Manual Procedures)." The standard involves describing color, grain size, moisture content, density, organic matter, and other observed characteristics.

4.5 Laboratory Chemical Analysis

Soil samples have been analyzed for the parameters specified in Tables 4 through 7 of the Work Plan.

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5 EQUIPMENT CLEANING AND DECONTAMINATION PROCEDURES

Decontamination procedures are specified for the various types of fieldwork conducted. The objective for decontamination is to reduce the chance of cross-contaminating samples. All waters generated by cleaning and decontamination are contained and disposed of as described in Section 6 of this SAP.

5.1 Drilling, Soil Sampling, Groundwater Sampling

5.1.1 Drilling Equipment

The working area of the drill rig and all downhole drilling equipment is steam-cleaned or hot-water pressure-washed on a wash rack both after arrival on site and after use in each borehole or monitoring well. The drilling equipment is thoroughly cleaned before it leaves the site at the end of drilling.

5.1.2 Soil Sampling Equipment

All sampling equipment and reusable materials that contact the soil is decontaminated on site and between sampling locations. Decontamination follows this sequence:

- Tap-water rinse (may consist of high-pressure, hot-water rinse)
- Nonphosphatic detergent wash, consisting of a dilute mixture of Liquinox and tap water (visible soil to be removed by scrubbing)
- Tap-water rinse
- Distilled-water rinse
- Final distilled-water rinse

5.1.3 Groundwater Sampling Equipment

Groundwater sampling equipment includes items used during reconnaissance groundwater sampling and during routine groundwater monitoring. All equipment that contacts sampled groundwater is decontaminated before its first use and between sampling locations. Decontamination proceeds as follows:

- Distilled-water rinse
- Nonphosphatic detergent (e.g., Liquinox) and water wash
- Distilled-water rinse
- Final distilled-water rinse

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6 WASTE MANAGEMENT

Residual soils, groundwater, and decontamination fluids (commonly referred to as investigation-derived waste [IDW]) is handled as specified in this section. Generally, material generated during this scope of work is contained, identified, and characterized. Holding containers are labeled with their contents, the date of collection, and the origin of the material. The drums are sealed, secured, and transferred to a designated area on the site at the end of each workday. The IDW is stored in the designated holding area until it has been characterized.

After the work is complete and analytical results are received, residual soils and liquids are evaluated for disposal method. Brix is responsible for disposing of the IDW, consistent with DEQ regulations.

6.1 Soil Cuttings

Soil cuttings originating from the soil borings are contained in a 55-gallon drum or 5-gallon buckets, which are stored in the designated area. Each drum or bucket is labeled to include the source of the soil.

6.2 Groundwater

Water generated during well development and sampling is contained in a 55-gallon drum or 5-gallon buckets in a designated area on site, pending analytical results. The drum is properly secured and labeled. The label will include the source of the water.

6.3 Decontamination Water

Water generated by equipment decontamination is properly contained during decontamination activities. Decontamination water is transferred to 55-gallon drums or 5-gallon buckets with sealable lids. Each drum is labeled to indicate where the decontaminated equipment was used.

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QUALITY ASSURANCE PROJECT PLAN

BRIX MARITIME COMPANY
PORTLAND, OREGON
ECSI NO. 2364

Prepared for

Brix Maritime Company
9030 NW St. Helens Road
Portland, OR 97231

Prepared by

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, #110
Portland, OR 97224

August 2005

ANCHOR

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1 INTRODUCTION

This quality assurance project plan (QAPP) includes information for characterization activities at the Brix Maritime Company Site (site) in Portland, Oregon. The site is located at 9030 NW St. Helens Road, and has been assigned ECSI No. 2364 in the State's Environmental Cleanup Site Information database. Work implemented under the Work Plan and sampling and analysis plan (SAP) is consistent with the QAPP.

The purpose of the QAPP is to describe the procedures that are used during the investigation process to satisfy the following items:

- Data collected are high-quality, representative, and verifiable.
- Use of resources is cost-effective.
- Data are usable by Brix and the regulatory agency to support objectives stated in the Work Plan.

This QAPP includes quality assurance (QA) procedures for field activities, sampling quality assurance/quality control (QA/QC) procedures, and data validation and data entry QA/QC for laboratory data. Functionally, the QAPP provides a consistent set of QA/QC procedures that are used throughout the work phases identified in the Work Plan. The QAPP supports other documents (e.g. Work Plan or SAP) by forming the basis for data acquisition and analysis. Through Work Plans or other documents, the scope of work for the various activities reference relevant parts of the QAPP for specifics. By referring to the QAPP, the reviewer is able to determine which constituent(s) are analyzed by the analytical method specified in the Work Plan, the quantitation limit goals, and the objectives for measurements. He or she is also able to check for other related information, such as the type of bottle used for sample collection, preservative, etc. Routine tasks such as data validation and reporting are also described in the QAPP.

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2 PROJECT ORGANIZATION AND RESPONSIBILITIES

The Anchor project manager is responsible for seeing that the procedures and guidelines described in the QAPP are followed. Project-related communication between Brix and Anchor is through the Brix project director or designated staff. Communications from Anchor to third parties are made only with the knowledge and consent of the project coordinators. Brix and Anchor regularly review project status.

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3 QA OBJECTIVES FOR MEASUREMENT

The overall QA objective is to collect an acceptable amount of data of known and usable quality. This objective is achieved and documented using the procedures and criteria set forth in the QAPP. For each measurement made to obtain quantitative data, a set of quality objectives is used to aid in collecting usable data.

Typically, quality objectives are categorized under precision, accuracy, representativeness, completeness, and comparability (PARCC) parameters. Routine analytical procedures to be used for measuring precision and accuracy include use of replicate analyses, standard reference materials (SRMs), surrogate spikes, matrix spikes, and method blanks. Surrogate spikes, matrix spikes, replicate matrix spikes, and method blanks are analyzed by the selected laboratory at the minimum frequencies specified below. Additional spikes and replicate analyses may be performed. For the purposes of laboratory analysis, a sample "batch" is considered to be 20 or fewer samples of a single matrix that are extracted or prepared together or are received in the same shipment.

- Surrogate spikes: every sample analyzed for organic compounds are spiked with selected non-target analytes and analyzed to evaluate laboratory performance on individual samples.
- Matrix spikes and matrix spike duplicates: one of every 20 samples is spiked with selected target analytes and analyzed. Matrix spikes are analyzed for inorganic analytes, and both matrix spikes and matrix spike duplicates are analyzed for organic analytes. If fewer than 20 samples are analyzed, at least 1 sample per batch is spiked.
- Method blank: a method blank is analyzed at a frequency of 5 percent of the total number of samples (i.e., 1 of every 20 samples), 1 per batch of samples, or 1 per day, whichever is greater.

PARCC parameters can be applied to both field measurements and laboratory analytical measurements in soil, water, air, and other media. The precision, accuracy, and

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completeness criteria to be used for analytical data are summarized in Table B-1. Method reporting limit (MRL) goals are listed in Table B-2.

PARCC parameters used for field measurements are not generally well defined in the guidelines and literature. These parameters have been defined using the best available guidelines to establish field measurement QA objectives, and are followed as closely as possible.

3.1 Precision

Precision is the degree of agreement between replicate measurements of the same source or sample. Replicate measurements can be made on the same sample or on two samples from the same source. Precision is generally assessed by duplicate measurements of a subset of samples (laboratory or field duplicate samples). The chemical analysis methods define the proportion of the samples being analyzed for which precision must be assessed. This proportion is defined in the laboratory quality assurance manual (QAM). The precision of physical measurements, such as water level measurements, and of field measurements, such as pH and specific conductance, are based on the general body of data for the instruments and methods, but not calculated specifically.

When detected concentrations in either a sample or a duplicate are less than five times the MRL or method detection limit (MDL), data quality objectives for precision suggest that sample and duplicate results should be within plus or minus the MRL of each other. When detected concentrations in the sample and duplicate are both greater than five times the MRL, data quality objectives for precision suggest that the relative percent differences (RPD) between the results should be less than or equal to 20 percent.

The RPD can be calculated as follows:

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$$RPD = \frac{(c_1 - c_2) \times 100}{c}$$

where

c_1 = concentration for replicate 1.

c_2 = concentration for replicate 2.

c = mean concentration.

Acceptable precision limits are based on historical databases, as defined by the USEPA. Laboratory duplicate measurements are obtained for each set of samples submitted, and tested for inorganic analytes only. Field duplicates are evaluated similarly.

3.2 Accuracy

Accuracy measures the level of bias exhibited by an analytical method or measurement. To measure accuracy, a substance with a known value is analyzed or measured, and the result is compared with the known value.

The accuracy of laboratory analysis is assessed by measuring standard reference materials (instrument calibration) and spiked samples (surrogate recoveries and matrix spikes). Standard reference materials are used to calibrate laboratory instruments. The analytical method specifies the frequency and accuracy required for a spiked sample analysis.

Spike recovery is determined by splitting a sample into two portions, spiking one portion with a known quantity of a constituent of interest, and analyzing both portions. Spike recovery is expressed as percent recovery:

$$\text{Percent recovery} = \frac{\Delta c \times 100}{\Delta c_s}$$

where

Δc = measured concentration increase.

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Δc_s= known concentration increase.

Acceptable matrix spike recovery limits are based on historical data sets, as defined by the USEPA. Acceptable surrogate recoveries for organic analyses are based on limits calculated by the laboratory, as described in the analytical method. The accuracy of field measurements is inherent in the instrument and procedure used. Instrumentation and procedures are described in the laboratory's Quality Assurance Manual (QAM) and meet or exceed current industry standards.

3.3 Representativeness

Representativeness is the degree to which data accurately and precisely represent a characteristic of the population, the natural variation at a sampling point, or an environmental condition. There is no standard method or formula to evaluate representativeness. Specific SAPs are designed to allow collection of representative samples. Representativeness is achieved by selecting sampling locations that are appropriate for the objective of the specific sampling task, and by collecting an adequate number of samples. The representativeness of the data is evaluated and used to identify data gaps that can be addressed during or following completion of the specific investigation.

3.4 Completeness

Completeness is commonly expressed as a percentage of measurements that are valid and usable relative to the total number of related measurements. Completeness criteria between 80 to 85 percent are identified in the guidance (USEPA, 1987) and used to determine the adequacy of the results. The percent completeness is defined as the number of samples analyzed that meet the data quality goals, divided by the total number of samples analyzed and multiplied by 100.

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4 SAMPLING PROCEDURES

This section describes how samples are documented, handled, preserved, and shipped, and how field equipment is decontaminated. Any alterations to the sampling procedures described below are described on the soil and water field sampling data sheets (FSDSs) and in field sampling memoranda written to the project file.

For each phase of work, the following are specified in a Work Plan or SAP: the number of samples to be collected and analyzed, the frequency of sampling, the target compounds to be analyzed, and the analytical methods to be used. The current SAP (an addendum to the Remedial Investigation Work Plan) describes standard operating procedures for sampling the media of interest for a particular phase of work. If deviations from the SAP are necessary, they are discussed ahead of time in the appropriate Work Plan, or in the case of a field modification, are documented in field notes. Reference to the QAPP provides field personnel and data reviewers with quantitation goals or other relevant parameters needed for data evaluation.

4.1 Sample Preservation and Handling

Sample containers and methods of preservation for constituents to be tested are listed in each laboratory's QAM. A summary is provided in Table B-3. Sample bottles supplied by the laboratory for each sampling event include the appropriate preservatives. Samples are preserved and shipped in chilled shipping containers, as required by the analytical method preservation standards. The laboratory retains documentation on bottle preparation and handling. Bottle storage, preservation, and handling in the field are documented on FSDSs.

4.2 Sampling Documentation

The documentation needed during soil or water sampling is described below. The following information is recorded on a FSDS for each sample collected:

- Facility name
- Sample number
- Sampler's name
- Sample location (well, boring, or sample number)

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- Sampling depth
- Sampling date and time
- Sampling method
- Composite or discrete sample
- Sample container size and material
- Sample preservative
- Climatic or other noteworthy conditions (e.g., nearby activities)
- Problems encountered with equipment or methods
- Number of sample bottles filled

The sampler records the following information on the FSDS for each water sample collected:

- Facility name
- Sampler's name
- Blind sample number
- Well/boring/surface site number and location
- Well/boring condition, well depth, depth to water, and date and time of measurement
- Well/boring purging method, volume, depth, date, and time
- Sampling method, depth, date, and time
- Type of sample container and preservative
- Climatic or other noteworthy conditions (e.g., nearby activities)
- Problems encountered with equipment or methods
- Field measurements (pH, specific conductance, temperature, etc.)
- Number of sample bottles filled

Sample-bottle Labels. To prevent bias and tampering, samples are given a blind sample number. Each sample label contains the following information:

- Blind sample number
- Sampler identification (person's initials)
- Date and time of sampling
- Place of collection

Blind sample numbers and actual sample locations are recorded on the FSDSs. The FSDSs are not sent to the laboratory.

4.3 Decontamination Procedures

All downhole drilling and sampling equipment and related tools, including the back of the drilling machine, are hot-water, high-pressure washed between

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boreholes. Hot-water, high-pressure equipment washing is done at a pre-approved decontamination area so that rinsate can be contained as appropriate. If severe contamination is present, equipment may require a solvent rinse followed by a second hot-water, high-pressure wash.

All non-dedicated groundwater sampling equipment, including water-level and interface probes, are thoroughly decontaminated before sample collection at each test boring, monitoring well, or surface water site. Treatment washes are used in the following sequence for decontamination:

- Nonphosphatic detergent and distilled-water wash
- Double distilled-water rinse

All soil sampling equipment is decontaminated before sample collection, using the same washing sequence. Soil adhering to samplers is removed with a brush.

4.4 Field QA Sample Collection

QA samples are collected in the field, as specified in the specific SAPs. Samples include field equipment blanks, trip blanks, or field duplicates. QA samples are blind-labeled and preserved as if they were typical samples. QA samples are clearly identified on the FSDSs. Analytical results from the blanks and duplicates facilitate cross-checking of the data. Blank results may indicate possible contamination introduced by field or laboratory procedures, and field duplicates indicate overall precision in both field and laboratory procedures. Results are evaluated by applying PARCC criteria, and the evaluation are discussed in the data validation report.

4.4.1 Trip Blanks

Trip blanks are water quality control (QC) samples prepared by the laboratory by filling a water sample container with laboratory-grade, distilled, organic-free, deionized water in the laboratory. Trip blanks are prepared at the same time and location as the sample containers for a particular sampling event. Trip blanks accompany the sample containers to and from the event, but at no time are

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opened or exposed to the atmosphere. One trip blank for volatile organic compounds (VOCs) is generally included per sampling event.

4.4.2 Field Blanks

Field blanks are prepared in the same manner as trip blanks, but they are exposed to the ambient atmosphere at a specified monitoring point during sample collection. This is to determine the influence of external field conditions on sample integrity. One field blank for VOCs is generally included per day of sampling.

Equipment rinsate blanks are another type of field blank. They are obtained after non-dedicated sampling equipment is decontaminated, and involve passing deionized organic-free water through the sampling equipment and transferring the water into an appropriate sample container. Rinsate blanks are not collected if single-use or dedicated equipment (e.g., bailers or tubing) is used for sampling. Rinsate blanks are analyzed to determine whether decontamination of sampling equipment is adequate. One equipment rinsate blank is collected for every 10 samples collected with non-dedicated equipment.

4.4.3 Field Duplicates

A duplicate water sample is collected to check the precision of groundwater sampling and analytical procedures. During each sampling event, at least one blind duplicate sample is taken from one sampling point at the same time as the regular sample. Duplicate samples are obtained by alternately filling like sample bottles for the two sample sets (original and duplicate). One field duplicate sample is collected for every 10 samples collected. Field duplicates for soil samples are not collected because the natural heterogeneity of soil samples precludes consistent analytical replication.

4.5 Sample Custody

Sample custody is tracked from point of origin through final analysis and disposal using chain-of-custody (COC) forms (Appendix A), which is filled out with the

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appropriate sample/analytical information as soon as possible after samples are collected. The following items are recorded on the COC form:

- Project name
- Project number
- Anchor project manager
- Sampler's name
- Sample number, date and time collected, media, number of bottles submitted
- Requested analyses for each sample
- Shipment method
- Type of data package required (Tier II½ in most cases)
- Turnaround requirements
- Signature, printed name, organization name, date, and time of transfer of all persons having custody of samples
- Additional instructions or considerations that would affect analysis (non-aqueous layers, archiving, etc.)

Persons in possession of the samples are required to sign and date the COC form whenever samples are transferred between individuals or organizations. When custody transfers to laboratory personnel, the laboratory implements its in-house custody procedures.

If samples are shipped via air or ground transportation (by a third party), the following custody procedures are followed. Samples are packed in shipping containers, and a custody seal is placed on the container to reduce the potential for tampering. Proper shipping insurance is requested and the top two copies of the COC form accompany the samples. The person shipping the samples retains the third copy of the COC and shipping forms to allow sample tracking. The COC form accompanies the samples from point of origin in the field to the laboratory.

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5 FIELD CALIBRATION PROCEDURES

5.1 Field Instrumentation

Several field instruments are used during investigations. Field instrument calibration follows the manufacturers' guidelines, and deviations from the established guidelines are documented. Generally, field instruments are calibrated daily before work begins. Field personnel may decide to calibrate more than once daily if inconsistent or unusual readings occur, or if conditions warrant more frequent calibration.

5.1.1 Calibration Procedures and Frequency

Calibration procedures, calibration frequency, and standards for measuring variables and systems are according to method requirements. To assure that field instruments are properly calibrated and remain operable, the following procedures are used, at a minimum:

- Operation, maintenance, and calibration are performed in accordance with the instrument manufacturers' specifications.
- All standards used to calibrate field instruments meet the minimum requirements for source and purity recommended in the equipment operation manual.
- Acceptable criteria for calibration are based on the limits set in the operations manual.
- All users of the equipment are trained in the proper calibration and operation of the instrument.
- Operation and maintenance manuals for each instrument are brought to the site.
- Field instruments are inspected before they are taken to the site.
- If used, PID and FID field instruments are calibrated at the start and end of each work period. Meters are recalibrated, as necessary, during the work period.

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- Specific conductivity and pH meters are calibrated at the start of each work period. Meters are recalibrated, as necessary, during the work period.
- Calibration procedures (including time, standards used, and calibration results) are recorded in a field log book or on FSDSs. Although not reviewed during routine QA/QC, the data are available if problems are encountered.

5.1.2 Preventive Maintenance

A schedule of preventive maintenance activities are followed to minimize downtime and ensure the accuracy of measurement systems and the availability of critical spare parts and backup systems and equipment. The preventive maintenance approach for specific pieces of equipment used in sampling, monitoring, and documentation follows the manufacturers' specifications and good field practices. Maintenance is documented in the field logbook or on FSDSs.

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6 ANALYTICAL PROCEDURES

Samples are analyzed by Columbia Analytical Services in Kelso, Washington or North Creek Analytical in Beaverton, Oregon. Both laboratories are qualified to perform the analyses using standard, documented laboratory procedures. The laboratories' QA/QC plans and standard operation procedures provide data quality procedures according to the protocols for the analytical method and cleanup steps. The data quality procedures are at a level sufficient to meet the sampling program's data quality objectives. Brix determines that any other laboratory used to analyze samples from the site have a QA program, facilities, equipment, and trained staff that meet the data quality objectives specified in the Work Plan and the QAPP. Columbia Analytical Services and North Creek Analytical perform, document, and report laboratory procedures as described in their QAM. Laboratory QA/QC plans and standard operating procedures are provided on request.

The analytical methods and references for analyses to be used during project implementation are summarized in Table B-1. Procedural details not specified in this QAPP should follow the protocols described in SW-846 (USEPA, 1986a).

6.1 Internal QA/QC Checks

The laboratory demonstrates its ability to produce acceptable results using the recommended methods, or their equivalent. The following criteria are used internally by the laboratory to evaluate the data (as appropriate for inorganic or organic chemical analyses):

- Performance on method tests
  - Matrix spike
  - Gas chromatograph (tailing factors)
  - Blanks
  - Precision of calibration and samples
- Percentage recovery of surrogates (organics)
- Adequacy of detection limits

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- Precision of replicate sample analyses
- Comparison of percentage of missing or undetected substances between replicate samples

Laboratory records of standard calibration curves and all other pertinent data are held for possible inspection at the laboratory, and are made available on request.

6.2 Preventive Maintenance

Preventive maintenance of equipment is essential if project resources are to be used cost-effectively. Preventive maintenance consists of a schedule of preventive maintenance activities to minimize downtime and ensure the accuracy of measurement systems and the availability of critical spare parts, backup systems, and equipment. The preventive maintenance approach for specific pieces of equipment follows the manufacturers' specifications and good laboratory practices.

6.3 Laboratory Instrumentation

Specific laboratory instrument calibration procedures, frequency of calibration, and preparation of calibration standards are according to the method requirements as developed by the USEPA, following procedures recorded in SW-846 (USEPA, 1986a). Copies of QA/QC plans and standard operating procedures for the laboratories are available on request.

6.4 Data Deliverables

Laboratory data deliverables required for inorganic compound analyses are listed in Table B-4. Data is recorded on standard data sheets or in an electronic data deliverable (EDD) format for importing into the site database.

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7 DATA REDUCTION, VALIDATION, AND REPORTING

The laboratories are required to submit analytical data supported by sufficient QA information to permit independent and conclusive determination of data quality. Data quality is determined using the data validation procedures described here. The results of the data validation are used to determine if the data quality objectives are met for the Brix project.

7.1 Data Reduction

Following validation and assignment of qualifiers, the analytical data are tabulated in a spreadsheet or database. The tabulation of analytical and field data, with the appropriate data qualifiers, is stored on computer disk for archival purposes. Data may be further reduced and managed using the following computer software applications:

- Excel (spreadsheet)
- Access (database)
- Word (word processing)
- Surfer (geostatistical contouring)
- Environmental Insite (cross sectional and 3-dimensional analysis of sub-surface layers)

As an extension of the data evaluation program, data is reduced to summarize particular data sets. In addition, statistical techniques may be applied to analytical results. These techniques help determine the representativeness, comparability, precision, and completeness of the data sets. Reduced data sets are used in reporting the overall accuracy of the assessment.

7.2 Data Validation

Anchor examines all laboratory data for precision, completeness, accuracy, and adherence to standard operating procedures. The laboratory performs internal QC checks and Anchor validates laboratory analytical data, as described in the following sections. QC checks are performed on laboratory information using the sample log-in reports faxed to Anchor after samples are entered into the laboratory information management system. The reports are checked early in

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the process, which allow QC checks to begin before sample holding times have expired or before errors are incorporated in the laboratory reports.

7.2.1 Data Validation Procedures

Laboratory analytical data is reported in a Tier II modified format to facilitate data validation. Anchor reviews data and assign data qualifiers to sample results, following portions of the USEPA procedures for inorganic (USEPA, 1994a) and organic data (USEPA, 1994b). QC criteria not defined in the guidelines for evaluating analytical data are adopted, where appropriate, from the analytical method.

For inorganic and organic analyses, the following information is reviewed during data validation:

- Sampling locations and blind sample numbers
- Sampling dates
- Requested analysis
- Laboratory service request number(s)
- COC documentation
- Sample preservation
- Holding times
- Method blanks
- Surrogate recoveries (organic analyses only)
- Matrix spike results (inorganic analyses only)
- Matrix spikes/duplicate matrix spike (MS/DMS) analyses (organic analyses only)
- Laboratory duplicates (inorganic analyses only)
- Field duplicates (if submitted)
- Laboratory control samples (organic analyses only)
- MRLs above requested levels
- Any additional comments or difficulties reported by the laboratory
- Overall assessment

The results of the data validation review are summarized for each batch of samples. Data qualifiers are assigned to sample results on the basis of USEPA guidelines. The data validation reports summarize the precision and accuracy

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for the samples. The quality of the analytical data, as defined by precision and accuracy, is assessed and compared to data quality objectives for the Brix project.

The laboratories routinely archive raw laboratory data, including initial and continuing calibration data, chromatograms, quantitation reports, blank sheets, and sampling logs, and provide these data in addition to the deliverables listed above, if requested.

7.3 Reporting

After completion of data collection, validation, and reduction, the data is included in quarterly reports. Copies of the reports are kept in the main project file, submitted to Brix for review, and then submitted to DEQ as part of reporting requirements specified in the Work Plan. The original copy of any document that Anchor produces remains in the main project file.

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8 INTERNAL QUALITY CONTROL

8.1 Laboratory Checks

The laboratory documents the completion and evaluation of internal QC checks and any corrective actions or re-analyses that result.

8.2 Field Checks

Internal QC checks on field activities are performed to determine whether specified measurements, calibrations, and procedures are being performed correctly. Checks consist of the review of documentation such as field notes and field activity memoranda. The need for and nature of any corrective action are determined on an ongoing basis by the project manager.

8.3 Data Reduction Checks

Data reduction QC checks are performed on all entered, calculated, and graphic data produced by Anchor. Data entry is compared with data generated during field activities and recorded in notebooks or on field data forms. Analytical data entry is checked against laboratory reports.

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9 PERFORMANCE SYSTEM AUDITS

Proper communication between field staff, project management, and the laboratories is maintained so that consistent and appropriate methods and techniques are used throughout the project. The laboratories audit in-house performance and systems under their in-house QA/QC guidelines. Such audits are made available for review on request. Any irregularities found in the performance and systems audits are dealt with appropriately, as soon as practical.

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10 PREVENTIVE MAINTENANCE

Equipment used in the field is periodically checked to detect any abnormalities. Steps are taken to repair or replace any piece of equipment that appears unreliable. Repairs are made according to the manufacturers' guidelines, or by qualified repair technicians. Equipment is also periodically serviced, according to the manufacturers' recommendations. Preventive maintenance of analytical equipment is outlined in the laboratory QAM.

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11 DATA ASSESSMENT PROCEDURES

Procedures to assess data precision, accuracy, and completeness are completed routinely, through data validation reports. Precision and accuracy are based on laboratory documentation. Completeness is based on the usability of the data collected, relative to the data needs of an investigative task or the amount of data scheduled for collection. Completeness is quantified when appropriate, but qualitatively evaluated with respect to the representativeness of the data when detection, or lack thereof, is the objective. The criteria to be used for analytical data are summarized in Tables B-1 and B-2.

The QAM outlines the precision and accuracy limits for each laboratory analytical method and parameter. The laboratory is responsible for assuring that these precision limits are consistently met or exceeded.

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12 CORRECTIVE ACTION

The need for corrective action is evaluated on an ongoing basis, depending on the results of internal and laboratory QC checks.

Corrective action measures generally result from either instrument failure or nonconformance or noncompliance with QA requirements by laboratories or field personnel. The Anchor project manager is notified as soon as practical if a field or laboratory QA problem arises that could jeopardize the use of collected data. All project personnel are responsible for reporting lapses in QA procedures.

During field operation and sampling procedures, field personnel are responsible for reporting any changes to specified sampling procedures. A description of any such change is entered in the daily field logbook, or on FSDSs.

Corrective action is taken by the Anchor project manager when analytical data are found to be outside the predetermined limits of acceptability. Corrective actions could include a procedural change, additional performance and system audits, meeting with laboratory personnel, re-sampling, or in extreme cases, obtaining a new subcontractor. The regulatory agencies are notified if a substantive deviation from the Work Plan results in a corrective action.

All fixed laboratories are required to meet USEPA data validation guidelines and to provide full documentation and annotation of data submitted. Raw data is made available on request for data-proofing procedures.

After review and evaluation of each analytical data package, data validation problems and corrective actions are listed and summarized, with a determination of their impact on the data. It is impractical to specify specific responses in this plan, since data errors are indeterminate. If data do not conform to the guidelines and cannot be validated, they are either annotated or discarded before the overall project is evaluated.

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13 QA REPORTS TO MANAGEMENT

Reporting on the quality of data gathering includes the regular communication of field and laboratory documentation to the project manager. This information is in reports that consist of field activity memoranda or reports, summarized data, and data validation reports. These reports provide a means for management to evaluate the accomplishment of the established QA/QC objectives. The reports are maintained in the project files and include results of performance and system audits; periodic assessment of measurement data accuracy, precision, and completeness; significant QA/QC problems and recommended solutions; and resolutions of previously identified problems.

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TABLES

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Table B-1
Analytical Quality Control Objectives
Brix Maritime Site

Analysis	Matrix	Units	Method Reporting Limit[a]	Accuracy (%REC)	Precision (RPD)	Completeness	Method[b]	Reference[c]	Maximum Holding Time
Metals (Method 200.8)									
Arsenic	Water	µg/L	0.5	85-115	20	85%	Digestion – ICP/MS	SW-846	6 months
Barium			0.05						
Cadmium			0.05						
Chromium			0.2						
Copper			0.1						
Lead			0.02						
Manganese			0.05						
Zinc			0.5						
Metals (Method 6020)									
Lead	Soils	mg/kg[e]	0.05	70-130	30	85%	Digestion - ICP/MS	SW-846	6 months
TPH									
NWTPH-Gx	Water	µg/L	50	60-138	30	85%	GC-FID		14 days
	Soil	mg/kg[e]	5	60-155	40	85%	GC-FID		14 days
NWTPH-Dx	Water	µg/L	50 - 250	39-125	20	85%	GC-FID		7 days
	Soil	mg/kg[e]	10 - 25	19-145	2-3	85%	GC-FID		7 days
VOCs									
Method 8260B	Water	µg/L	0.5 – 20	--[d]	30	85%	Purge+Trap GC/MS	SW-846	14 days
	Soil	µg /kg	5 - 50	--[d]	40	85%	Purge+Trap GC/MS	SW-846	14 days
PAHs									
Method 8270-SIM	Water	µg/L	0.02	--[d]	30	85%	Extraction GC/MS-SIM	SW-846	7 days until extraction, 40 days after extraction
	Soil	µg /kg	5	--[d]	40	85%	Extraction GC/MS-SIM	SW-846	7 days until extraction, 40 days after extraction

Notes:
[a] Reporting limits will be elevated if sample requires dilution or matrix interferences are a problem.
[b] GC = gas chromatograph; MS = mass spectrometer; ICP = inductively coupled plasma (ICPAES = ICP atomic emission spectrometry).
[c] SW-846 (USEPA, 1986a) provides routine analyses for these substances (updates: I [1992], II[1994]).
[d] QA/QC limits for accuracy (%REC) vary for each organic analyte and are specified in SW-846 for each analytical method (i.e., 8260B, 8270B).
[e] Dry weight basis.

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Table B-2
Method Reporting Limit Goals
Brix Maritime Company Site

Analysis (Method) Analyte	Quantitation Limits[a,b] Soil (units)	 Water (units)
Metals	(mg/kg)	(µg/L)
Arsenic (method 200.8/ICP/MS)	NA	0.5
Barium (method 200.8/ICP/MS)	NA	0.05
Cadmium (method 200.8/ICP/MS)	NA	0.05
Chromium (method 200.8/ICP/MS)	NA	0.2
Copper (method 200.8/ICP/MS)	NA	0.1
Lead (method 6020/ICP/MS soil; 200.8/ICP/MS water)	0.05	0.02
Manganese (method 200.8/ICP/MS)	NA	0.05
Zinc (method 200.8/ICP/MS)	NA	0.5
Volatile Organic Compounds	(µg/kg)	(µg/L)
Method 8260B/GC-MS	5 - 50	0.5 - 20
PAHs	(µg/kg)	(µg/L)
Method 8270C SIM	5	0.02
Total Petroleum Hydrocarbons	(mg/kg)	(µg/L)
NWTPH-Dx	10 - 25	50 - 250
NWTPH-Gx	5	50

NOTE:
[a] Quantitation limits derived from "Test Methods for Evaluating Solid Waste," SW-846 (USEPA, 1986a).
[b] Specific quantitation limits are matrix-dependent. Quantitation limits listed are provided for guidance and may not always be achievable.
NA = Not Applicable

Table B-3
Sample Storage and Preservation Requirements
Brix Maritime Company Site

Matrix	Parameter	Container Type	Preservation and Handling.
Soil	Total Metals, PAH, NWTPH-Dx and Gx	8-oz glass	Cool to 4°C
	VOCs	4-oz glass jar	Fill, minimum air space; store in dark; cool to 4°C
	PCBs	8-oz glass	Fill, minimum air space; store in dark; cool to 4°C
Water	Dissolved or Total Metals	500 ml poly	Field filter (for dissolved); HNO_3 to pH<2; cool to 4°C
	VOCs	3 x 40-ml glass vials; PTFE-lined silicon septum caps	Cool to 4°C, HCl to pH<2
	PAHs	1-liter amber glass; PTFE-lined cap	Cool to 4°C
	NWTPH-Gx	3 x 40-ml glass vials; PTFE-lined silicon septum caps	Cool to 4°C, HCl to pH<2
	NWTPH-Dx	1-liter amber glass; PTFE-lined cap	Cool to 4°C, HCl to pH<2

[a] Polytetrafluoroethylene (Teflon).

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Table B-4
Documentation Requirements for Independent QA/QC Review of Inorganic Constituents
Brix Maritime Company Site

Analysis of the requested inorganic analytes should be reported as follows:

- Dates samples were collected, received by the laboratory, and analyzed.
- On each laboratory sample data sheet: method of detection (e.g., AA, ICP).
- On each laboratory sample data sheet: a tabulation of method detection limits (MDLs) or method reporting limits (MRLs), or a master sheet of MDLs or MRLs with detection limit multiplication factors (due to dilutions or dry weights) specified.
- Constituent concentrations reported in µg/L or mg/kg for water and µg/kg or mg/kg for soil (dry-weight basis) for each sample analyzed.
- Volumes analyzed and dilution factors, if any.
- Ancillary information, including percent moisture in soil samples.
- Method blank data associated with each sample.
- Results for matrix spike analyses, concentrations added, and percent recovery from samples.
- Results of laboratory duplicate or laboratory control sample analyses for each constituent, as applicable to the method.
- A statement in the cover letter describing how standard calibration curves were generated and applied to the samples for quantitation (and access to laboratory records of standard calibration curves and all other pertinent data for possible inspection), if this varies from the method specified in SW-846 (USEPA, 1986a).
- A statement in the cover letter describing any significant problems in any aspect of sample analysis, deviation from prescribed QA/QC criteria, or other relevant information. A statement in the cover letter describing any changes or deviations from the required methods, the reason for the change(s), and a description of the deviations that were used for sample analysis.
- A copy of the chain-of-custody form for each sample reported.

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Northwest Region Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
(503) 229-5263
FAX (503) 229-6945
TTY (503) 229-5471

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September 6, 2005

Mr. John Edwards, R.G., C.E.G.
Anchor Environmental, LLC
6650 SW Redwood Lane, Suite 110
Portland, OR 97224

Re: Remedial Investigation Work Plan
Brix Maritime Company
Portland, Oregon
ECSI No. 2364

Dear John:

The Oregon Department of Environmental Quality (DEQ) has reviewed "Addendum 1 – Remedial Investigation Work Plan, Brix Maritime Company, Portland, Oregon, ECSI No. 2364", dated August 15, 2005 (Addendum 1). Anchor Environmental, LLC (Anchor) prepared Addendum 1 on behalf of the Brix Maritime Company (BRIX). DEQ received Addendum 1 on August 19, 2005.

DEQ had previously approved a June 2004 version of the BRIX remedial investigation (RI) work plan with comments. However, expansion of the RI scope of work between then and submittal of the RI workplan[1] in February 2005 (February 2005 RI Work Plan) prompted DEQ to provide additional comments and request information via a letter dated April 20, 2005. Anchor responded to DEQ's comments and request for information in a letter dated May 25, 2005. DEQ's April 20th letter and Anchor's May 25th response were discussed in detail during a meeting on June 15, 2005. Addendum 1 was prepared based on agreements reached during the meeting.

Based on our review of Addendum 1, DEQ determines that Addendum 1:

- Addresses our comments regarding the February 2005 RI Work Plan; and
- Provides sampling and analysis and quality assurance/quality control plans that reflect the current scope of work of the RI for the BRIX facility.

DEQ approves the February 2005 RI Work Plan, as supplemented by Addendum 1, and recognizes these documents collectively as the Final RI Work Plan for the BRIX facility.

[1] Anchor Environmental, Inc., 2005, "Remedial Investigation Workplan, Brix Maritime Company, Portland, Oregon", February, a work plan prepared on behalf of Brix Maritime Company.

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DEQ appreciates BRIX's consideration and response to our comments and information request, and acknowledges the ongoing work being conducted to investigate environmental conditions at the facility. Please don't hesitate to contact me if you have any questions regarding this letter.

Sincerely,

Dana Bayuk, R.G.
Project Manager
Lower Willamette Section

Cc: Frank Williamson, Foss Maritime
Leslie Schenck; GSBLAW
David Templeton, Anchor
John Renda, Anchor
Rod Struck, NWR/LWS
ECSI File No. 2364

DEQ-DC1

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PROGRESS REPORT – FOURTH QUARTER 2005

BRIX MARITIME COMPANY
PORTLAND, OREGON

Prepared for

Brix Maritime Company

Prepared by

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224

RECEIVED
JAN 23 2006
GARVEY, SCHUBERT & BARER

January 13, 2005

ANCHOR ENVIRONMENTAL, L.L.C.

BRIX003555

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PROGRESS REPORT – FOURTH QUARTER 2005

BRIX MARITIME COMPANY
PORTLAND, OREGON

Prepared for

Brix Maritime Company

Prepared by

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224

January 13, 2005

Confidential Business Information

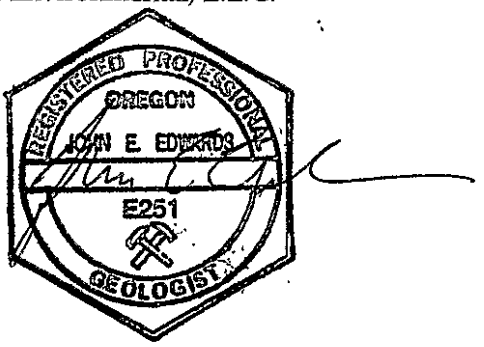
Progress Report – Fourth Quarter 2005

Brix Maritime Company

Portland, Oregon

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

John J. Renda, R.G.
Anchor Environmental, L.L.C.



John Edwards, R.G. C.E.G.
Anchor Environmental, L.L.C.

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1 INTRODUCTION

This Progress Report was prepared in accordance with Section II(H) of the Oregon Department of Environmental Quality (DEQ) Voluntary Agreement for Remedial Investigation and Source Control Measures (ECSI 2464 No. LQDVC-NWR-02-03). This report covers the work completed during the quarter ending December 31, 2005 for the Brix Maritime site in Portland, Oregon (Figure 1) and is divided into the following subject areas:

- Actions Taken During the Fourth Quarter
- Actions Scheduled for the First Quarter
- Data Generated in the Fourth Quarter
- Summaries of Problems and Actions Taken To Resolve Problems

2 ACTIONS TAKEN DURING THE FOURTH QUARTER

- Anchor submitted the Third Quarter 2005 progress report to DEQ on October 14, 2005.
- Water levels were measured in monitoring wells MW-1 through MW-8 and at the river staff gauge on November 22, 2005.
- Monitoring wells MW-1, -2, -3, -4, -6, and -7 were sampled on November 22, 2005.
- Conducted preliminary review of seep sampling data

3 ACTIONS SCHEDULED FOR THE FIRST QUARTER

- In February 2006, water levels will be measured in monitoring wells MW-1 through MW-8 and at the river staff gage.
- Monitoring wells MW-1, MW-3, MW-4, and MW-5 (if sufficient water is present) will be sampled in February 2006.
- Prepare and submit the Fourth Quarter Progress Report (this report) to DEQ.

4 DATA GENERATED IN THE FOURTH QUARTER

4.1 Hydrology Data and Potentiometric Surface Map

Water levels were measured in all onsite monitoring wells and at the river staff gauge on November 22, 2005. Water levels and groundwater elevations based on the 1988 North American Vertical Datum (NAVD 88) are presented in Table 1. No free-phase petroleum hydrocarbons were detected in any of the monitoring wells.

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During the water level measurements, the river bank was examined for petroleum hydrocarbon seeps or sheens. No petroleum hydrocarbon seeps or sheens were observed.

A groundwater potentiometric surface map, using the November 22, 2005 water level measurements, is shown on Figure 2. Consistent with all past monitoring events, the contour pattern indicates that shallow groundwater flows west to east from the upland portion of the site to the river.

4.2 Groundwater Sampling

Monitoring wells MW-1, -2, -3, -4, -6, and -7 were sampled on November 22, 2005. Monitoring well MW-5 had insufficient water for sample collection. MW-8 was installed for the purpose of monitoring for free product and it is not part of the sampling plan. Field sampling procedures, field parameters, field sampling data sheets, and chain of custody documentation are in Appendix A.

4.3 Groundwater Analytical Testing

The groundwater samples, including one duplicate sample, were analyzed for total petroleum hydrocarbons (TPH) as gasoline by NWTPH-Gx; TPH as diesel and heavy oils by NWTPH-Dx; Polycyclic Aromatic Hydrocarbons (PAHs) by U.S. Environmental Protection Agency (USEPA) Method 8270-SIM; Volatile Organic Compounds (VOCs) by USEPA Method 8260. The analytical results are presented in Tables 2 through 4. A copy of the laboratory report is in Appendix B.

4.4 Seep Sampling

On September 29, 2005, Anchor collected a seep sample at a sand-silt interface along the rip-rap slope between monitoring well MW-2 and the tide gage (Figure 2). Field sampling data sheets and photo-documentation of the seep sampling procedures were provided in the third quarter 2005 progress report. Laboratory reports and chain of custody documentation are in Appendix B.

The seep sample location was agreed on in an onsite meeting with DEQ on September 6, 2005. In conjunction with the seep sampling, several other samples were collected for

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comparison, including: a surface water sample from the Willamette, a groundwater sample from monitoring well MW-2, and two soil samples from the seep location (one at the ground surface and one approximately 0.5 feet into the slope). The samples were analyzed for PAHs by U.S. Environmental Protection Agency (USEPA) Method 8270-SIM. The PAH testing results are in Table 5. The number of PAH compounds detected and concentrations increase toward the River. The only PAH compound detected in monitoring well MW-2 was a trace level detection of pyrene at 0.029 ug/L. Trace level detections of four PAH compounds were detected in the seep sample, and six PAH compounds were detected in the river sample. A similar relationship was observed in the soil samples collected at the seep. Surface soil at the seep had higher concentrations of PAHs than the soil sample collected at a depth of 0.5 feet into the slope. This relationship suggests that a large fraction of PAH concentrations observed in the Seep sample and the surface soil are sourced from the River rather than the Brix site.

4.5 Data Validation

Review of the sampling and laboratory records showed no apparent discrepancies between samples collected in the field and those analyzed in the laboratory. The data are judged to be acceptable for their intended use as qualified. The data validation review of the laboratory records is summarized in Appendix C.

5 SUMMARIES OF PROBLEMS AND ACTIONS TAKEN TO RESOLVE PROBLEMS

No problems were encountered.

6 PROJECT SCHEDULE

Brix has completed all investigations outlined in the February 2005 Remedial Investigation (RI) Work Plan, the August 2005 Addendum 1 to the RI Work Plan, and subsequent agreements with DEQ. As discussed in section 5.2 of the RI Work Plan and Addendum 1, Anchor will prepare a hydrogeology technical memorandum providing the following items:

- Subsurface cross-sections that graphically depict the subsurface geology
- A contour map showing the elevation of the top of the fine-grained unit while also showing the locations of the monitoring wells
- An isopach map of the fine-grained unit at those borings where the thickness of the fine grained unit was identified

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- Monitoring well hydrographs including the elevation of the top of the fine-grained unit and the river level elevation
- Representative equipotential maps for the "dredge fill sand" water-bearing unit, including the locations of observed groundwater seeps
- Hydrographs and COC time-concentration plots for monitoring wells
- Comparison of seasonal groundwater level fluctuations to "oil" thickness at monitoring well MW-3
- Isoconcentration contour maps for selected COC detected in shallow groundwater
- Diagram of the typical site storm drain catchment construction
- Conceptual site exposure model prepared using DEQ's risk-based decision making guidance for USTs, including consideration of ecological receptors

Anchor will submit the hydrogeology technical memorandum to DEQ by February 28, 2006. Following DEQ's Review and approval of the hydrogeology memorandum, the source control evaluation will be prepared.

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TABLES

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Table 1
Hydrology Data
Brix Maritime
Portland, Oregon

Well	Reference Elevation (Feet NAVD88)	Screen Interval Feet NAVD88	Elevation Top of Perching Layer[2] (Feet NAVD88)	Date (MM/DD/YY)	DTW (feet)	Water above base of screen (Feet)	Water Elevation (Feet NAVD88)	Comments
Monitoring Wells								
MW-1	41.81	35.1 - 20.1	21.16	02/28/03	18.89	2.86	22.92	
MW-1	41.81	35.1 - 20.1	21.16	03/31/03	19.43	2.32	22.38	
MW-1	41.81	35.1 - 20.1	21.16	04/29/03	19.69	2.06	22.12	
MW-1	41.81	35.1 - 20.1	21.16	05/22/03	20.22	1.53	21.59	
MW-1	41.81	35.1 - 20.1	21.16	07/07/03	21.08	0.67	20.73	
MW-1	41.81	35.1 - 20.1	21.16	07/30/03	21.13	0.62	20.68	
MW-1	41.81	35.1 - 20.1	21.16	08/28/03	21.24	0.51	20.57	
MW-1	41.81	35.1 - 20.1	21.16	09/30/03	21.15	0.60	20.66	
MW-1	41.81	35.1 - 20.1	21.16	10/16/03	21.10	0.65	20.71	
MW-1	41.81	35.1 - 20.1	21.16	12/03/03	21.06	0.69	20.75	
MW-1	41.81	35.1 - 20.1	21.16	12/26/03	20.46	1.29	21.35	
MW-1	41.81	35.1 - 20.1	21.16	01/30/04	19.01	2.74	22.80	
MW-1	41.81	35.1 - 20.1	21.16	03/04/04	19.60	2.15	22.21	
MW-1	41.81	35.1 - 20.1	21.16	04/29/04	20.91	0.84	20.90	
MW-1	41.81	35.1 - 20.1	21.16	05/27/04	21.13	0.62	20.68	
MW-1	41.81	35.1 - 20.1	21.16	07/06/04	21.22	0.53	20.59	
MW-1	41.81	35.1 - 20.1	21.16	07/26/04	21.28	0.47	20.53	
MW-1	41.81	35.1 - 20.1	21.16	10/29/04	21.25	0.50	20.56	
MW-1	41.81	35.1 - 20.1	21.16	02/25/05	20.81	0.94	21.00	
MW-1	41.81	35.1 - 20.1	21.16	05/05/05	20.63	1.12	21.18	
MW-1	41.81	35.1 - 20.1	21.16	08/02/05	21.18	0.57	20.63	
MW-1	41.81	35.1 - 20.1	21.16	09/29/05	21.21	0.54	20.60	
MW-1	41.81	35.1 - 20.1	21.16	11/22/05	20.78	0.97	21.03	
MW-2	42.13	32.9 - 17.9	18.98	02/28/03	19.88	4.37	22.25	
MW-2	42.13	32.9 - 17.9	18.98	03/31/03	20.36	3.89	21.77	
MW-2	42.13	32.9 - 17.9	18.98	04/29/03	20.64	3.61	21.49	
MW-2	42.13	32.9 - 17.9	18.98	05/22/03	21.06	3.19	21.07	
MW-2	42.13	32.9 - 17.9	18.98	07/07/03	22.17	2.08	19.96	
MW-2	42.13	32.9 - 17.9	18.98	07/30/03	22.50	1.75	19.63	
MW-2	42.13	32.9 - 17.9	18.98	08/28/03	22.84	1.41	19.29	
MW-2	42.13	32.9 - 17.9	18.98	09/30/03	23.07	1.18	19.06	
MW-2	42.13	32.9 - 17.9	18.98	10/16/03	23.06	1.19	19.07	
MW-2	42.13	32.9 - 17.9	18.98	12/03/03	22.54	1.71	19.59	
MW-2	42.13	32.9 - 17.9	18.98	12/26/03	21.58	2.67	20.55	
MW-2	42.13	32.9 - 17.9	18.98	01/30/04	20.05	4.20	22.08	
MW-2	42.13	32.9 - 17.9	18.98	03/04/04	20.57	3.68	21.56	
MW-2	42.13	32.9 - 17.9	18.98	04/29/04	21.89	2.36	20.24	
MW-2	42.13	32.9 - 17.9	18.98	05/27/04	22.29	1.96	19.84	
MW-2	42.13	32.9 - 17.9	18.98	07/06/04	22.70	1.55	19.43	
MW-2	42.13	32.9 - 17.9	18.98	07/26/04	22.85	1.40	19.28	
MW-2	42.13	32.9 - 17.9	18.98	10/29/04	22.90	1.35	19.23	
MW-2	42.13	32.9 - 17.9	18.98	02/25/05	22.20	2.05	19.93	
MW-2	42.13	32.9 - 17.9	18.98	05/05/05	21.73	2.52	20.40	
MW-2	42.13	32.9 - 17.9	18.98	08/02/05	22.48	1.77	19.65	
MW-2	42.13	32.9 - 17.9	18.98	09/29/05	22.90	1.35	19.23	
MW-2	42.13	32.9 - 17.9	18.98	11/22/05	22.07	2.18	20.06	
MW-3	41.93	32.9 - 17.9	19.71	07/29/02	22.91	1.11	19.02	
MW-3	41.93	32.9 - 17.9	19.71	08/22/02	23.50	0.52	18.43	Oil detected in well, thickness estimated at 0.02 foot
MW-3	41.93	32.9 - 17.9	19.71	09/30/02	23.37	0.65	18.56	Oil detected in well, thickness estimated at 0.02 foot
MW-3	41.93	32.9 - 17.9	19.71	10/30/02	23.68	0.34	18.25	DTP = 23.49 (0.19 foot thick)
MW-3	41.93	32.9 - 17.9	19.71	11/27/02	23.30	0.72	18.63	DTP = 23.16 (0.14 foot thick)
MW-3	41.93	32.9 - 17.9	19.71	12/30/02	21.99	2.03	19.94	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.93	32.9 - 17.9	19.71	02/28/03	19.75	4.27	22.18	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.93	32.9 - 17.9	19.71	03/31/03	20.24	3.78	21.69	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	04/29/03	20.50	3.52	21.43	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	05/22/03	20.94	3.08	20.99	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	07/07/03	22.21	1.81	19.72	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	07/30/03	22.62	1.40	19.31	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	08/28/03	22.95	1.07	18.98	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.93	32.9 - 17.9	19.71	09/30/03	23.15	0.87	18.78	DTP = 23.04 (0.11 foot thick)
MW-3	41.93	32.9 - 17.9	19.71	10/16/03	22.40	1.62	19.53	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	12/03/03	22.21	1.81	19.72	Sheen, product too thin to measure
MW-3	41.93	32.9 - 17.9	19.71	12/26/03	21.44	2.58	20.49	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	01/30/04	19.80	4.22	22.13	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	03/04/04	20.41	3.61	21.52	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	04/29/04	21.82	2.20	20.11	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	05/27/04	22.25	1.77	19.68	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	07/06/04	22.66	1.36	19.27	No oil noted on probe
MW-3	41.93	32.9 - 17.9	19.71	07/26/04	22.91	1.11	19.02	DTP = 22.89 (0.02 foot thick)
MW-3	41.93	32.9 - 17.9	19.71	10/29/04	22.29	1.73	19.64	Oil noted on probe, product too thin to measure with interface probe
MW-3	41.95	32.9 - 17.9	19.71	02/25/05	22.03	2.01	19.92	No oil noted on probe
MW-3	41.95	32.9 - 17.9	19.71	05/05/05	21.55	2.49	20.40	No oil noted on probe
MW-3	41.95	32.9 - 17.9	19.71	08/02/05	22.32	1.72	19.63	DTP = 22.31 (0.01 foot thick)
MW-3	41.95	32.9 - 17.9	19.71	09/29/05	22.37	1.67	19.58	Sheen noted on probe, product too thin to measure with interface probe
MW-3	41.95	32.9 - 17.9	19.71	11/22/05	21.97	2.07	19.98	Sheen noted on probe, product too thin to measure with interface probe

Table 1
Hydrology Data
Brix Maritime
Portland, Oregon

Well	Reference Elevation (Feet NAVD88)	Screen Interval Feet NAVD88	Elevation Top of Perching Layer[2] (Feet NAVD88)	Date (MM/DD/YY)	DTW (feet)	Water above base of screen (Feet)	Water Elevation (Feet NAVD88)	Comments
MW-4	23.55	19.4 - 9.4	10.90	07/29/02	11.62	2.53	11.93	
MW-4	23.55	19.4 - 9.4	10.90	08/22/02	11.77	2.38	11.78	
MW-4	23.55	19.4 - 9.4	10.90	09/30/02	11.94	2.21	11.61	
MW-4	23.55	19.4 - 9.4	10.90	10/30/02	12.06	2.09	11.49	
MW-4	23.55	19.4 - 9.4	10.90	11/27/02	11.85	2.30	11.70	
MW-4	23.55	19.4 - 9.4	10.90	12/30/02	10.24	3.91	13.31	
MW-4	23.55	19.4 - 9.4	10.90	02/28/03	4.34	9.81	19.21	
MW-4	23.55	19.4 - 9.4	10.90	03/31/03	4.59	9.56	18.96	
MW-4	23.55	19.4 - 9.4	10.90	04/29/03	5.46	8.69	18.09	
MW-4	23.55	19.4 - 9.4	10.90	05/22/03	8.59	5.56	14.96	
MW-4	23.55	19.4 - 9.4	10.90	07/07/03	10.69	3.46	12.86	
MW-4	23.55	19.4 - 9.4	10.90	07/30/03	11.03	3.12	12.52	
MW-4	23.55	19.4 - 9.4	10.90	08/28/03	11.40	2.75	12.15	
MW-4	23.55	19.4 - 9.4	10.90	09/30/03	11.74	2.41	11.81	
MW-4	23.55	19.4 - 9.4	10.90	10/16/03	11.40	2.75	12.15	
MW-4	23.55	19.4 - 9.4	10.90	12/03/03	10.59	3.56	12.96	
MW-4	23.55	19.4 - 9.4	10.90	12/26/03	9.50	4.65	14.05	
MW-4	23.55	19.4 - 9.4	10.90	01/30/04	5.41	8.74	18.14	
MW-4	23.55	19.4 - 9.4	10.90	03/04/04	9.05	5.10	14.50	
MW-4	23.55	19.4 - 9.4	10.90	04/29/04	11.00	3.15	12.55	
MW-4	23.55	19.4 - 9.4	10.90	05/27/04	10.89	3.26	12.66	
MW-4	23.55	19.4 - 9.4	10.90	07/06/04	11.26	2.89	12.29	
MW-4	23.55	19.4 - 9.4	10.90	07/26/04	11.56	2.59	11.99	
MW-4	23.55	19.4 - 9.4	10.90	10/29/04	11.06	3.09	12.49	
MW-4	23.55	19.4 - 9.4	10.90	02/25/05	10.60	3.55	12.95	
MW-4	23.55	19.4 - 9.4	10.90	05/05/05	9.55	4.60	14.00	
MW-4	23.55	19.4 - 9.4	10.90	08/02/05	10.95	3.20	12.60	
MW-4	23.55	19.4 - 9.4	10.90	09/29/05	11.19	2.96	12.36	
MW-4	23.55	19.4 - 9.4	10.90	11/22/05	10.85	3.30	12.70	
MW-5	41.66	34.9 - 19.9	19.31	02/28/03	19.45	2.30	22.21	
MW-5	41.66	34.9 - 19.9	19.31	03/31/03	19.99	1.76	21.67	
MW-5	41.66	34.9 - 19.9	19.31	04/29/03	20.25	1.50	21.41	
MW-5	41.66	34.9 - 19.9	19.31	05/22/03	20.75	1.00	20.91	
MW-5	41.66	34.9 - 19.9	19.31	07/07/03	21.93	-0.18	19.73	Insufficient water to collect sample
MW-5	41.66	34.9 - 19.9	19.31	07/30/03	22.08	-0.33	19.58	dry
MW-5	41.66	34.9 - 19.9	19.31	08/28/03	22.08	-0.33	19.58	dry
MW-5	41.66	34.9 - 19.9	19.31	09/30/03	22.13	-0.38	19.53	dry
MW-5	41.66	34.9 - 19.9	19.31	10/16/03	22.10	-0.35	19.56	Insufficient water to collect sample
MW-5	41.66	34.9 - 19.9	19.31	12/03/03	22.13	-0.38	19.53	dry
MW-5	41.66	34.9 - 19.9	19.31	12/26/03	21.35	0.40	20.31	
MW-5	41.66	34.9 - 19.9	19.31	01/30/04	19.59	2.16	22.07	
MW-5	41.66	34.9 - 19.9	19.31	03/04/04	20.16	1.59	21.50	
MW-5	41.66	34.9 - 19.9	19.31	04/29/04	21.67	0.08	19.99	Insufficient water to collect sample
MW-5	41.66	34.9 - 19.9	19.31	05/27/04	21.99	-0.24	19.67	water level below bottom of screen (dry)
MW-5	41.66	34.9 - 19.9	19.31	07/06/04	21.98	-0.23	19.68	water level below bottom of screen (dry)
MW-5	41.66	34.9 - 19.9	19.31	07/26/04	dry	dry		dry
MW-5	41.66	34.9 - 19.9	19.31	10/29/04	22.00	-0.25	19.66	water level below bottom of screen (dry)
MW-5	41.66	34.9 - 19.9	19.31	02/25/05	21.85	-0.10	19.81	water level below bottom of screen (dry)
MW-5	41.66	34.9 - 19.9	19.31	05/05/05	21.41	0.34	20.25	
MW-5	41.66	34.9 - 19.9	19.31	08/02/05	22.01	-0.26	19.65	water level below bottom of screen (dry)
MW-5	41.66	34.9 - 19.9	19.31	09/29/05	22.01	-0.26	19.65	water level below bottom of screen (dry)
MW-5	41.66	34.9 - 19.9	19.31	11/22/05	22.00	-0.25	19.66	water level below bottom of screen (dry)
MW-6	41.21	31.4 - 16.4	20.49	07/07/03	20.26	4.56	20.95	
MW-6	41.21	31.4 - 16.4	20.49	07/30/03	20.57	4.25	20.64	
MW-6	41.21	31.4 - 16.4	20.49	08/28/03	21.02	3.80	20.19	
MW-6	41.21	31.4 - 16.4	20.49	09/30/03	21.02	3.80	20.19	
MW-6	41.21	31.4 - 16.4	20.49	10/16/03	20.93	3.89	20.28	
MW-6	41.21	31.4 - 16.4	20.49	12/03/03	21.53	3.29	19.68	
MW-6	41.21	31.4 - 16.4	20.49	12/26/03	19.24	5.58	21.97	
MW-6	41.21	31.4 - 16.4	20.49	01/30/04	17.70	7.12	23.51	
MW-6	41.21	31.4 - 16.4	20.49	03/04/04	18.16	6.66	23.05	
MW-6	41.21	31.4 - 16.4	20.49	04/29/04	19.66	5.16	21.55	
MW-6	41.21	31.4 - 16.4	20.49	05/27/04	20.17	4.65	21.04	
MW-6	41.21	31.4 - 16.4	20.49	07/06/04	20.71	4.11	20.50	
MW-6	41.21	31.4 - 16.4	20.49	07/26/04	21.23	3.59	19.98	
MW-6	41.21	31.4 - 16.4	20.49	10/29/04	21.48	3.34	19.73	
MW-6	41.21	31.4 - 16.4	20.49	02/25/05	19.78	5.04	21.43	
MW-6	41.21	31.4 - 16.4	20.49	05/05/05	19.19	5.63	22.02	
MW-6	41.21	31.4 - 16.4	20.49	08/02/05	20.57	4.25	20.64	
MW-6	41.21	31.4 - 16.4	20.49	09/29/05	21.25	3.57	19.96	
MW-6	41.21	31.4 - 16.4	20.49	11/22/05	20.58	4.24	20.63	

Table 1
Hydrology Data
Brix Maritime
Portland, Oregon

Well	Reference Elevation (Feet NAVD88)	Screen Interval Feet NAVD88	Elevation Top of Perching Layer[2] (Feet NAVD88)	Date (MM/DD/YY)	DTW (feet)	Water above base of screen (Feet)	Water Elevation (Feet NAVD88)	Comments
MW-7	40.95	31.5 - 16.5	15.79	07/07/03	21.21	3.25	19.74	
MW-7	40.95	31.5 - 16.5	15.79	07/30/03	21.76	2.70	19.19	
MW-7	40.95	31.5 - 16.5	15.79	08/28/03	22.32	2.14	18.63	
MW-7	40.95	31.5 - 16.5	15.79	09/30/03	22.67	1.79	18.28	
MW-7	40.95	31.5 - 16.5	15.79	10/16/03	22.72	1.74	18.23	
MW-7	40.95	31.5 - 16.5	15.79	12/03/03	22.90	1.56	18.05	
MW-7	40.95	31.5 - 16.5	15.79	12/26/03	20.32	4.14	20.63	
MW-7	40.95	31.5 - 16.5	15.79	01/30/04	18.26	6.20	22.69	
MW-7	40.95	31.5 - 16.5	15.79	03/04/04	18.96	5.50	21.99	
MW-7	40.95	31.5 - 16.5	15.79	04/29/04	20.49	3.97	20.46	
MW-7	40.95	31.5 - 16.5	15.79	05/27/04	21.10	3.36	19.85	
MW-7	40.95	31.5 - 16.5	15.79	07/06/04	21.98	2.48	18.97	
MW-7	40.95	31.5 - 16.5	15.79	07/26/04	22.40	2.06	18.55	
MW-7	40.95	31.5 - 16.5	15.79	10/29/04	22.99	1.47	17.96	
MW-7	40.95	31.5 - 16.5	15.79	02/25/05	20.80	3.66	20.15	
MW-7	40.95	31.5 - 16.5	15.79	05/05/05	20.20	4.26	20.75	
MW-7	40.95	31.5 - 16.5	15.79	08/02/05	21.60	2.86	19.35	
MW-7	40.95	31.5 - 16.5	15.79	09/29/05	22.47	1.99	18.48	
MW-7	40.95	31.5 - 16.5	15.79	11/22/05	22.05	2.41	18.90	
MW-8	41.73	24.8 - 19.8	20.00	02/25/05	21.15	0.78	20.58	
MW-8	41.73	24.8 - 19.8	20.00	05/05/05	21.81	0.12	19.92	
MW-8	41.73	24.8 - 19.8	20.00	08/02/05	21.19	0.74	20.54	
MW-8	41.73	24.8 - 19.8	20.00	09/29/05	21.33	0.60	20.40	
MW-8	41.73	24.8 - 19.8	20.00	11/22/05	20.63	1.30	21.10	
River Gauge[1]								
River	4.33	NA	NA	10/30/02	2.75	NA	7.08	
River	4.33	NA	NA	11/27/02	3.1	NA	7.43	
River	4.33	NA	NA	12/30/02	7.5	NA	11.83	
River	4.33	NA	NA	02/28/03	6.1	NA	10.43	
River	4.33	NA	NA	03/31/03	8.0	NA	12.33	
River	4.33	NA	NA	04/29/03	8.0	NA	12.33	
River	4.33	NA	NA	05/22/03	6.5	NA	10.83	
River	4.33	NA	NA	07/07/03	4.0	NA	8.33	
River	4.33	NA	NA	07/30/03	3.5	NA	7.83	
River	4.33	NA	NA	08/28/03	3.3	NA	7.63	
River	4.33	NA	NA	09/30/03	2.1	NA	6.43	
River	4.33	NA	NA	10/16/03	2.2	NA	6.53	
River	4.33	NA	NA	12/03/03	3.5	NA	7.83	
River	4.33	NA	NA	12/26/03	6.7	NA	11.03	
River	4.33	NA	NA	01/30/04	11.0	NA	15.33	
River	4.33	NA	NA	03/04/04	5.0	NA	9.33	
River	4.33	NA	NA	04/29/04	4.0	NA	8.33	
River	4.33	NA	NA	05/27/04	6.6	NA	10.93	
River	4.33	NA	NA	07/06/04	5.5	NA	9.83	
River	4.33	NA	NA	07/26/04	2.75	NA	7.08	
River	4.33	NA	NA	10/29/04	3.75	NA	8.08	
River	4.33	NA	NA	02/25/05	4.0	NA	8.33	
River	4.33	NA	NA	05/05/05	5.0	NA	9.33	
River	4.33	NA	NA	08/02/05	4.4	NA	8.73	
River	4.33	NA	NA	08/25/05	3.6	NA	7.93	
River	4.33	NA	NA	09/29/05	1.0	NA	5.33	
River	4.33	NA	NA	11/22/05	3.4	NA	7.73	

Note: DTW = Depth to Water; DTP = Depth to Product; NA = Not Applicable
1 - The river gauge is marked in 1-foot increments, field measurements are estimated to the closest 0.1 foot.
2 - Perching unit identified as Silty Sand in MW-1, MW-2, MW-3, and MW-6; Sandy Silt in MW-8; and Silt in MW-4, MW-5, and MW-7.

Table 2
Total Petroleum Hydrocarbons
Brix Maritime
Portland, Oregon

Location (sample depth in ft bgs)	Matrix	Date Sampled	Diesel Range Organics		Residual Range Organics		Gasoline Range Organics	
MW-1	Water	07/07/03	0.27	L	0.5	U	1.3	H
MW-1	Water	10/16/03	0.73	L	0.5	U	8.1	H
MW-1	Water	01/30/04	0.60	L	0.5	U	4.0	H
MW-1	Water	04/29/04	0.71	L	0.5	U	5.8	H
MW-1 Duplicate	Water	04/29/04	0.79	L	0.5	U	5.7	H
MW-1	Water	07/26/04	0.92	L	0.5	U	9.3	Y
MW-1 Duplicate	Water	07/26/04	0.93	L	0.5	U	9.3	Y
MW-1	Water	10/29/04	1.10	L	0.5	U	8.8	Y
MW-1	Water	02/25/05	1.40	L	0.5	U	12.0	DY
MW-1 Duplicate	Water	02/25/05	1.30	L	0.5	U	11.0	DY
MW-1	Water	05/05/05	0.88	L	0.54	U	12.0	DY
MW-1 Duplicate	Water	05/05/05	0.85	L	0.52	U	12.0	DY
MW-1	Water	08/02/05	1.00	L	0.52	U	14.0	DY
MW-1	Water	11/22/05	1.30	Z	0.53	U	13.0	D
MW-2	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-2	Water	10/16/03	0.27	U	0.53	U	0.05	U
MW-2	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-2	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-2	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-2	Water	10/29/04	0.25	U	0.5	U	0.25	U
MW-2	Water	05/05/05	0.27	U	0.53	U	0.25	U
MW-2	Water	11/22/05	0.28	U	0.55	U	0.25	U
MW-3	Water	07/30/02	3.4	Y	1.6	O		
MW-3	Water	07/07/03	1.9	Y	8.5	O	0.05	U
MW-3	Water	10/16/03	0.92	Y	1.8	O	0.059	Y
MW-3	Water	01/30/04	0.79	Y	0.6	O	0.05	U
MW-3	Water	04/29/04	0.7	Y	0.77	O	0.05	U
MW-3	Water	07/26/04	2.5	Y	8.3	O	0.25	U
MW-3	Water	10/29/04	1.2	Y	3.1	O	0.25	U
MW-3	Water	02/25/05	1.2	Y	1.8	O	0.25	U
MW-3	Water	05/05/05	1.0	Z	1.2	Z	0.25	U
MW-3	Water	08/02/05	1.2	Y	4.0	OJ	0.25	U
MW-3 Duplicate	Water	08/02/05	1.1	Z	1.7	OJ	0.25	U
MW-3	Water	11/22/05	0.78	Z	0.77	Z	0.25	U
MW-3 Duplicate	Water	11/22/05	0.67	Z	0.71	Z	0.25	U
MW-4	Water	07/29/02	0.26	U	0.52	U		
MW-4	Water	07/07/03	0.25	U	0.52	O	0.05	U
MW-4 Duplicate	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-4	Water	10/16/03	0.25	U	0.5	U	0.65	Y
MW-4 Duplicate	Water	10/16/03	0.25	U	0.5	U	0.66	Y
MW-4	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-4	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-4	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-4	Water	10/29/04	0.73	Z	1.0	Z	0.25	U
MW-4 Duplicate	Water	10/29/04	0.63	Z	0.96	Z	0.25	U
MW-4	Water	02/25/05	0.25	U	0.50	U	0.25	U
MW-4	Water	05/05/05	0.26	U	0.51	U	0.25	U
MW-4	Water	08/02/05	0.28	U	0.55	U	0.25	U
MW-4	Water	11/22/05	0.27	U	0.53	U	0.25	U
MW-5	Water	01/30/04	0.62	L	0.5	U	1.4	H
MW-5 Duplicate	Water	01/30/04	0.63	L	0.5	U	1.5	H
MW-5	Water	05/05/05	1.3	L	0.55	U	5.2	Y
MW-6	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-6	Water	10/16/03	0.27	U	0.53	U	0.05	U
MW-6	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-6	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-6	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-6	Water	10/29/04	0.25	U	0.5	U	0.25	U
MW-6	Water	05/05/05	0.28	U	0.55	U	0.25	U
MW-6	Water	11/22/05	0.28	U	0.65	O	0.25	U
MW-7	Water	07/07/03	0.25	U	0.5	U	0.05	U
MW-7	Water	10/16/03	0.27	U	0.53	U	0.05	U
MW-7	Water	01/30/04	0.25	U	0.5	U	0.05	U
MW-7	Water	04/29/04	0.25	U	0.5	U	0.05	U
MW-7	Water	07/26/04	0.25	U	0.5	U	0.25	U
MW-7	Water	10/29/04	0.25	U	0.5	U	0.25	U
MW-7	Water	05/05/05	0.27	U	0.54	U	0.25	U
MW-7	Water	11/22/05	0.27	U	0.53	U	0.25	U
MW-8	Water	02/25/05	1.0	Y	1.3	O	0.25	U

Notes: Water concentrations are in mg/L. Soil concentrations are in mg/kg.

ft bgs = feet below ground surface

D = The reported result is from a dilution.

U = Not detected at method reporting limit

O = The fingerprint resembles oil, but does not match the calibration standard.

L = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of lighter weight constituents than the calibration standard.

H = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of heavier weight constituents than the calibration standard

Y = The fingerprint resembles a petroleum product in the correct carbon range, but the elution pattern does not match the calibration standard

Z = The chromatic fingerprint does not resemble a petroleum product.

BRIX003567

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TABLE 3
Polycyclic Aromatic Hydrocarbons
Brix Maritime
Portland, Oregon

Sample Designation	MW-1		MW-1		MW-1		MW-1		MW-1		MW-1 Dup		MW-1		MW-1 Dup		MW-1		MW-1		MW-1		MW-1 Dup		MW-1		MW-1 Dup		MW-1		MW-1	
Matrix	Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water	
Units	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Date Sampled	02/28/03		07/07/03		10/16/03		01/30/04		04/29/04		04/29/04		07/26/04		07/26/04		10/29/04		02/25/05		02/25/05		05/05/05		05/05/05		08/02/05		11/22/05		11/22/05	
LPAHs															**LPAHs**																	
Naphthalene	23	D	23	D	160	D	110	D	170	D	150	D	170	D	170	D	160	D	150	D	170	D	210	D	190	D	180	D	200	D	200	D
Acenaphthylene	0.19		0.02	U	0.02	U	0.15	UB	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.10		0.088	Ui	0.083	Ui	0.072	Ui	0.071	Ui	0.087	Ui	0.087	Ui
Acenaphthene	0.43		0.38		0.34		0.17		0.30		0.23		0.34		0.33		0.33		0.33		0.38		0.34		0.31		0.32		0.39		0.39	
Dibenzofuran	0.12		0.067		0.085		0.032		0.062		0.057		0.073		0.074		0.085		0.093		0.10		0.075		0.060		0.084		0.086		0.086	
Fluorene	0.36		0.27		0.24		0.11		0.19		0.14		0.23		0.24		0.23		0.28		0.32		0.25		0.19		0.26		0.29		0.29	
Phenanthrene	1.8		0.56		0.42		0.16		0.34		0.27		0.36		0.36		0.32		0.44		0.53		0.34		0.32		0.35		0.43		0.43	
Anthracene	0.53		0.11		0.065		0.073		0.079		0.057		0.068		0.067		0.070		0.090		0.099		0.061		0.061		0.062		0.056		0.056	
2-Methylnaphthalene	9.0		7.9		42.0	D	40.0	D	46.0	D	40.0	D	51.0	D	49.0	D	42.0	D	46	D	53.0	D	56	D	49	D	46	D	69	D	69	D
Total LPAH	35.43		32.29		203.15		150.55		216.97		190.75		222.07		220.07		203.04		197.33		224.43		267.07		239.94		227.08		270.25		270.25	
HPAHs															**HPAHs**																	
Fluoranthene	4.3		0.5		0.3		0.39		0.33		0.24		0.31		0.33		0.21		0.27		0.31		0.38		0.34		0.26		0.35		0.35	
Pyrene	13	D	1.2		0.9		1.6		0.76		0.57		0.80		0.85		0.60		0.50		0.57		0.69		0.64		0.54		0.65		0.65	
Benz(a)anthracene	2.1		0.22		0.16		0.20		0.12		0.084		0.13		0.130		0.130		0.096		0.11		0.11		0.081		0.079		0.079		0.079	
Chrysene	2.7		0.27		0.24		0.24		0.16		0.11		0.15		0.15		0.15		0.11		0.12		0.14		0.11		0.11		0.11		0.11	
Benzo(b)fluoranthene	1.4		0.088		0.073		0.047		0.049		0.029		0.044		0.041		0.084		0.038		0.038		0.036		0.020	U	0.034		0.020	U	0.020	U
Benzo(k)fluoranthene	1.1		0.098		0.096		0.053		0.061		0.036		0.047		0.043		0.082		0.034		0.044		0.038		0.021		0.021		0.020	U	0.020	U
Benzo(a)pyrene	2.0		0.11		0.097		0.064		0.066		0.038		0.056		0.052		0.110		0.046		0.048		0.042		0.020		0.037		0.020	U	0.020	U
Indeno(1,2,3-cd)pyrene	1.5		0.023		0.036		0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.044		0.020	U	0.020	U	0.020	U	0.020	U	0.020	UJ	0.020	U	0.020	U
Dibenz(a,h)anthracene	0.17		0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	U	0.020	UJ	0.020	U	0.020	U
Benzo(g,h,i)perylene	1.5		0.028		0.043		0.02	U	0.021		0.20	U	0.019	U	0.019	U	0.055		0.020	U	0.020	U	0.020	U	0.020	U	0.020	UJ	0.020	U	0.020	U
Total HPAHs	29.77		2.53		1.98		2.59		1.57		1.11		1.54		1.60		1.47		1.09		1.24		1.44		1.21		1.08		1.19		1.19	

NOTE: µg/L = micrograms per liter or parts per billion.
B = detected in method blank at sigificant concentration.
D = the reported result is from a dilution.
J = estimated concentration.
U = not detected at or above the indicated method reporting limit.
i = the MRL/MDL has been elevated due to a chromatographic interference.

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TABLE 3
Polycyclic Aromatic Hydrocarbons
Brix Maritime
Portland, Oregon

Sample Designation	MW-2		MW-2		MW-2		MW-2		MW-2		MW-2		MW-2		MW-2		MW-2	
Matrix	Water		Water		Water		Water		Water		Water		Water		Water		Water	
Units	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Date Sampled	02/28/03		07/07/03		10/16/03		01/30/04		04/29/04		07/26/04		10/29/04		05/05/05		09/29/05		11/22/05	
LPAHs	**LPAHs**																			
Naphthalene	0.082		0.02	U	0.023		0.037		0.023		0.18		0.026		0.020	U	0.020	U	0.020	U
Acenaphthylene	0.023		0.02	U	0.022	U	0.110	UB	0.020	U	0.13		0.021		0.020	U	0.020	U	0.020	U
Acenaphthene	0.02	U	0.02	U	0.022	U	0.020	U	0.020	U	0.024		0.020	U	0.020	U	0.020	U	0.020	U
Dibenzofurar	0.02	U	0.02	U	0.022	U	0.020	U	0.020	U	0.019	U	0.020	U	0.020	U	0.020	U	0.020	U
Fluorene	0.02	U	0.02	U	0.022	U	0.020	U	0.020	U	0.023		0.020	U	0.020	U	0.020	U	0.020	U
Phenanthrene	0.15		0.02	U	0.031		0.020	U	0.020	U	0.31		0.026		0.020	U	0.020	U	0.020	U
Anthracene	0.032		0.02	U	0.022	U	0.034		0.036		0.11		0.032		0.020	U	0.020	U	0.020	U
2-Methylnaphthalene	0.02	U	0.02	U	0.022	U	0.022		0.020	U	0.03		0.020	U	0.020	U	0.020	U	0.020	U
Total LPAH	0.29				0.05		0.09		0.06		0.81		0.11							
HPAHs	**HPAHs**																			
Fluoranthene	0.29		0.02	U	0.070		0.022		0.02	U	0.62		0.084		0.037		0.020	U	0.020	U
Pyrene	0.42		0.02	U	0.091		0.020		0.02	U	0.87		0.090		0.045		0.029		0.020	U
Benz(a)anthracene	0.11		0.02	U	0.023		0.020		0.02	U	0.31		0.043		0.022		0.020	U	0.020	U
Chrysene	0.17		0.02	U	0.042		0.02	U	0.02	U	0.48		0.060		0.026		0.020	U	0.020	U
Benzo(b)fluoranthene	0.14		0.02	U	0.036		0.020		0.02	U	0.48		0.080		0.030		0.020	U	0.020	U
Benzo(k)fluoranthene	0.13		0.02	U	0.035		0.023		0.02	U	0.42		0.061		0.022		0.020	U	0.020	U
Benzo(a)pyrene	0.19		0.02	U	0.022	U	0.035		0.02	U	0.73		0.10		0.042		0.020	U	0.020	U
Indeno(1,2,3-cd)pyrene	0.20		0.02	U	0.073		0.022		0.02	U	0.88		0.14		0.053		0.020	U	0.020	U
Dibenz(a,h)anthracene	0.02	U	0.02	U	0.022	U	0.020	U	0.02	U	0.10	J	0.02	U	0.020	U	0.020	U	0.020	U
Benzo(g,h,i)perylene	0.22		0.02	U	0.090		0.020		0.02	U	1.10		0.18		0.059		0.020	U	0.020	U
Total HPAHs	1.87				0.46		0.18				5.99		0.84		0.34		0.03			

NOTE: µg/L = micrograms per liter or parts per billion.
B = detected in method blank at sigificant concentration.
D = the reported result is from a dilution.
J = estimated concentration.
U = not detected at or above the indicated method reporting limit.
i = the MRL/MDL has been elevated due to a chromatographic interference.

BRIX003569

ANCHOR ENVIRONMENTAL, L.L.C.

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TABLE 3
Polycyclic Aromatic Hydrocarbons
Brix Maritime
Portland, Oregon

Sample Designation	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3 Dup	MW-3	MW-3 Dup
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Date Sampled	07/30/02	02/28/03	07/07/03	10/16/03	01/30/04	04/29/04	07/26/04	10/29/04	02/25/05	05/05/05	08/02/05	08/02/05	11/22/05	11/22/05
LPAHs														
Naphthalene	0.36	0.75	0.34	0.34	0.11	0.35	0.28 D	0.040	0.17	0.082	0.086	0.088	0.084	0.086
Acenaphthylene	0.02 U	0.22	0.02 U	0.02 U	0.14 UB	0.02 U	0.38 D	0.038	0.022	0.020 U	0.0206	0.025	0.020 U	0.020 U
Acenaphthene	0.26	1.3	0.16	0.21	0.04	0.13	0.89 D	0.088	0.12	0.078	0.110	0.110	0.091	0.10
Dibenzofuran	0.025	0.11	0.02 U	0.021	0.020 U	0.035	0.19 U	0.02	0.022	0.021	0.024	0.024	0.024	0.027
Fluorene	0.09	1.0	0.1	0.11	0.037	0.082	0.84 D	0.039	0.063	0.054	0.071	0.066	0.070	0.072
Phenanthrene	0.11	2.9	0.2	0.14	0.06	0.12	2.3 D	0.02 U	0.072	0.068	0.092 J	0.053 J	0.098	0.11
Anthracene	0.02 U	0.55	0.039	0.022	0.032	0.034	0.96 D	0.02 U	0.029	0.021	0.034 J	0.024 J	0.020	0.025
2-Methylnaphthalene	0.28	1.8	0.34	0.31	0.15	0.34	1.20 D	0.024	0.22	0.22	0.17	0.16	0.34	0.43
Total LPAH	1.13	8.63	1.18	1.13	0.43	1.09	6.85	0.25	0.72	0.54	0.61	0.55	0.73	0.85
HPAHs														
Fluoranthene	0.056	4.9	0.22	0.077	0.075	0.080	5.8 D	0.050	0.060	0.058	0.180 J	0.056 J	0.053	0.065
Pyrene	0.058	7.6 D	0.22	0.082	0.090	0.079	7.2 D	0.057	0.056	0.060	0.210 J	0.064 J	0.055	0.070
Benz(a)anthracene	0.02 U	2.1 D	0.06	0.02 U	0.022	0.02 U	2.3 D	0.020 U	0.020 U	0.020 U	0.051 J	0.020 UJ	0.020 U	0.020 U
Chrysene	0.02 U	2.3 D	0.071	0.02 U	0.023	0.02 U	2.6 D	0.020 U	0.020 U	0.020 U	0.067 J	0.020 UJ	0.020 U	0.020 U
Benzo(b)fluoranthene	0.022	1.8 D	0.038	0.02 U	0.02 U	0.02 U	1.90 U	0.020 U	0.020 U	0.020 U	0.030 J	0.020 UJ	0.020 U	0.020 U
Benzo(k)fluoranthene	0.02 U	1.7 D	0.065	0.02 U	0.02 U	0.02 U	1.90 U	0.020 U	0.020 U	0.020 U	0.066 J	0.020 UJ	0.020 U	0.020 U
Benzo(a)pyrene	0.02 U	2.3 D	0.053	0.02 U	0.036	0.02 U	3.0 D	0.020 U	0.020 U	0.020 U	0.050 J	0.020 UJ	0.020 U	0.020 U
Indeno(1,2,3-cd)pyrene	0.02 U	1.5 D	0.041	0.02 U	0.02	0.02 U	1.90 U	0.020 U	0.020 U	0.020 U	0.057 J	0.020 UJ	0.020 U	0.020 U
Dibenz(a,h)anthracene	0.02 U	0.20 U	0.20 U	0.02 U	0.02 U	0.02 U	1.90 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 UJ	0.020 U	0.020 U
Benzo(g,h,i)perylene	0.02 U	1.9 D	0.039	0.02 U	0.02 U	0.02 U	1.90 D	0.020 U	0.020 U	0.020 U	0.055 J	0.020 UJ	0.020 U	0.020 U
Total HPAHs	0.14	26.10	0.80	0.16	0.27	0.16	22.80	0.11	0.12	0.12	0.77	0.12	0.11	0.14

NOTE: µg/L = micrograms per liter or parts per billion.
B = detected in method blank at significant concentration.
D = the reported result is from a dilution.
J = estimated concentration.
U = not detected at or above the indicated method reporting limit.
i = the MRL/MDL has been elevated due to a chromatographic interference.

BRIX003570

ANCHOR ENVIRONMENTAL, L.L.C.

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TABLE 3
Polycyclic Aromatic Hydrocarbons
Brix Maritime
Portland, Oregon

Sample Designation	MW-4	MW-4	MW-4	MW-4 Dup	MW-4	MW-4 Dup	MW-4	MW-4	MW-4	MW-4	MW-4 Dup	MW-4	MW-4	MW-4	MW-4
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Date Sampled	07/29/02	02/28/03	07/07/03	07/07/03	10/16/03	10/16/03	01/30/04	04/29/04	07/26/04	10/29/04	10/29/04	02/25/05	05/05/05	08/02/05	11/22/05
LPAHs								**LPAHs**							
Naphthalene	0.039	18 D	0.16	0.12	0.11	0.12	0.074	0.093	0.024	0.054	0.047	0.020 U	0.020 U	0.074	0.020 U
Acenaphthylene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.053 UB	0.02 U	0.019 U	0.027	0.023	0.020 U	0.020 U	0.020 U	0.020 U
Acenaphthene	0.51	0.60	0.11	0.11	0.36	0.40	0.16	0.061	0.096	0.860	1.100	0.11	0.046	0.020 U	0.21
Dibenzofuran	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020	0.020 U	0.020 U	0.020 U	0.020 U
Fluorene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Phenanthrene	0.043	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.880 Ui	1.100 Ui	0.020 U	0.020 U	0.020 U	0.020 U
Anthracene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.024	0.030	0.020 U	0.020 U	0.020 U	0.020 U
2-Methylnaphthalene	0.02 U	0.80	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.038	0.020 U
Total LPAH	0.59	19.40	0.27	0.23	0.47	0.52	0.23	0.15	0.12	0.97	1.22	0.11	0.05	0.11	0.21
HPAHs								**HPAHs**							
Fluoranthene	0.033	0.024	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Pyrene	0.046	0.055	0.021	0.02 U	0.02	0.024	0.02 U	0.02 U	0.019 U	0.038	0.029	0.020 U	0.020 U	0.020 U	0.031
Benz(a)anthracene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Chrysene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Benzo(b)fluoranthene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Benzo(k)fluoranthene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Benzo(a)pyrene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Indeno(1,2,3-cd)pyrene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 U
Dibenz(a,h)anthracene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 U
Benzo(g,h,i)perylene	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.019 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 U
Total HPAHs	0.08	0.08	0.021			0.024				0.06	0.03				0.03

NOTE: µg/L = micrograms per liter or parts per billion.
B = detected in method blank at sigificant concentration.
D = the reported result is from a dilution.
J = estimated concentration.
U = not detected at or above the indicated method reporting limit.
i = the MRL/MDL has been elevated due to a chromatographic interference.

BRIX003571

ANCHOR ENVIRONMENTAL, L.L.C.

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TABLE 3
Polycyclic Aromatic Hydrocarbons
Brix Maritime
Portland, Oregon

Sample Designation	MW-5		MW-5 dup		MW-5		MW-5 dup		MW-5		MW-6		MW-6		MW-6		MW-6		MW-6		MW-6		MW-6		MW-6		MW-6	
Matrix	Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water	
Units	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Date Sampled	02/28/03		02/28/03		01/30/04		01/30/04		05/05/05		07/07/03		10/16/03		01/30/04		04/29/04		07/26/04		10/29/04		05/05/05		11/22/05			
LPAHs													**LPAHs**															
Naphthalene	19	D	17	D	2.9		2.1		5.3	D	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.082		0.020	U		
Acenaphthylene	0.10		0.40		0.02	U	0.02	U	0.71	Ui	0.02	U	0.02	U	0.042		0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Acenaphthene	1.3		1.3		0.6		0.5		2.1		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Dibenzofuran	0.2		0.19		0.081		0.057		0.66		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Fluorene	1.2		1.3		0.48		0.32		3.4		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Phenanthrene	2.3		3.1		1.1		0.8		7.3		0.02	U	0.02	U	0.025		0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Anthracene	0.55		0.93		0.34		0.24		1.0		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
2-Methylnaphthalene	31	D	31	D	1.5		1.1		1.8	D	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.027		0.020	U		
Total LPAH	55.64		55.22		7.02		5.02		21.56						0.07								0.11					
HPAHs													**HPAHs**															
Fluoranthene	3.1	J	6.5	J	1.5		1.1		2.2		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Pyrene	4.3	J	9.1	J	1.8		1.4		2.0		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.023		0.020	U	0.020	U		
Benz(a)anthracene	0.72	J	2.80	J	0.18		0.14		0.099		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Chrysene	0.96	J	3.4	J	0.22		0.17		0.15		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Benzo(b)fluoranthene	0.44	J	2.2	J	0.046		0.035		0.021		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Benzo(k)fluoranthene	0.42	J	1.9	J	0.046		0.041		0.021		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Benzo(a)pyrene	0.65	J	3.6	J	0.061		0.050		0.028		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Indeno(1,2,3-cd)pyrene	0.49	J	2.5	J	0.03		0.022		0.022		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Dibenz(a,h)anthracene	0.044	J	0.27	J	0.02	U	0.02	U	0.020	U	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Benzo(g,h,i)perylene	0.52	J	2.7	J	0.029		0.024		0.023		0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U		
Total HPAHs	11.64		34.97		3.91		3.00		4.56												0.02							

NOTE: µg/L = micrograms per liter or parts per billion.
B = detected in method blank at sigificant concentration.
D = the reported result is from a dilution.
J = estimated concentration.
U = not detected at or above the indicated method reporting limit.
i = the MRL/MDL has been elevated due to a chromatographic interference.

BRIX003572

ANCHOR ENVIRONMENTAL, L.L.C.

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TABLE 3
Polycyclic Aromatic Hydrocarbons
Brix Maritime
Portland, Oregon

Sample Designation	MW-7		MW-7		MW-7		MW-7		MW-7		MW-7		MW-7		MW-7		MW-8	
Matrix	Water		Water		Water		Water		Water		Water		Water		Water		Water	
Units	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Date Sampled	07/07/03		10/16/03		01/30/04		04/29/04		07/26/04		10/29/04		05/05/05		11/22/05		02/25/05	
LPAHs									**LPAHs**									
Naphthalene	0.02	U	0.02	U	0.02	U	**0.093**		0.019	U	**0.083**		**0.047**		0.020	U	**0.22**	
Acenaphthylene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.020	U	0.020	U
Acenaphthene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.020	U	**0.029**	
Dibenzofuran	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.020	U	0.020	U
Fluorene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.020	U	**0.029**	
Phenanthrene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.020	U	**0.051**	
Anthracene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.019	U	0.020	U	0.020	U	**0.037**	
2-Methylnaphthalene	0.02	U	0.02	U	0.02	U	**0.04**		0.019	U	0.041		0.020	U	0.020	U	**0.22**	
Total LPAH							**0.13**				**0.08**		**0.05**				**0.59**	
HPAHs									**HPAHs**									
Fluoranthene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	**0.032**	
Pyrene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	**0.036**	
Benz(a)anthracene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	0.020	U
Chrysene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	0.020	U
Benzo(b)fluoranthene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	**0.020**	
Benzo(k)fluoranthene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	0.020	U
Benzo(a)pyrene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	**0.024**	
Indeno(1,2,3-cd)pyrene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	**0.023**	
Dibenz(a,h)anthracene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	0.020	U
Benzo(g,h,i)perylene	0.02	U	0.02	U	0.02	U	0.02	U	0.019	U	0.020	U	0.020	U	0.020	U	**0.029**	
Total HPAHs																	**0.16**	

NOTE: µg/L = micrograms per liter or parts per billion.
B = detected in method blank at significant concentration.
D = the reported result is from a dilution.
J = estimated concentration.
U = not detected at or above the indicated method reporting limit.
i = the MRL/MDL has been elevated due to a chromatographic interference.

Table 4
Volatile Organic Compounds
Brix Maritime
Portland, Oregon

Sample Designation	Matrix	Date Sampled	Dichlorodifluoromethane	Chloromethane	Vinyl Chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	Acetone	1,1-Dichloroethene	Methyl tert-Butyl Ether	Carbon Disulfide	Methylene Chloride	trans-1, 2-dichloroethene	1,1-Dichloroethane	2-Butanone	2,2-Dichloropropane	cis-1, 2-dichloroethene	Chloroform	Bromochloromethane	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride
MW-1	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-1	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-1	Water	10/16/03	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	100 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
MW-1	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-1	Water	04/29/04	1 U	1 U	1 U	1 U	1 U	1 U	40 U	1 U	1 U	1 U	4 U	1 U	1 U	40 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MW-1 Dup	Water	04/29/04	1 U	1 U	1 U	1 U	1 U	1 U	40 U	1 U	1 U	1 U	4 U	1 U	1 U	40 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MW-1	Water	07/26/04	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	5 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
MW-1 Dup	Water	07/26/04	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	5 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
MW-1	Water	10/29/04	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	5 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
MW-1	Water	02/25/05	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	100 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	100 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
MW-1	Water	05/05/05	2 U	2 U	2 U	2 U	2 U	2 U	80 U	2 U	2 U	2 U	8 U	2 U	2 U	80 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
MW-1 Dup	Water	05/05/05	2 U	2 U	2 U	2 U	2 U	2 U	80 U	2 U	2 U	2 U	8 U	2 U	2 U	80 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
MW-1	Water	08/02/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-1	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	07/30/02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	02/25/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	08/02/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3 Dup	Water	08/02/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3 Dup	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	07/29/02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4 Dup	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4 Dup	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4 Dup	Water	02/25/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	08/02/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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Table 4
Volatile Organic Compounds
Brix Maritime
Portland, Oregon

Sample Designation	Matrix	Date Sampled	1,2-Dichloroethane	Benzene	Trichloroethene	1,2-Dichloropropane	Bromodichloromethane	Dibromomethane	2-Hexanone	cis-1,3-Dichloropropene	Toluene	trans 1,3-Dichloropropene	1,1,2-Trichloroethane	4-Methyl-2-pentanone	1,3 Dichloropropane	Tetrachloroethene	Dibromochloromethane	1,2 Dibromoethane	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethylbenzene	m,p-Xylenes	o-Xylene	Styrene	Bromoform
MW-1	Water	02/28/03	0.5 U	5.7	0.5 U	0.5 UJ	0.5 U	0.5 U	20 U	0.5 U	0.71	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	37	50	12	0.5 U	0.5 U
MW-1	Water	07/07/03	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	1.1	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	11	18	2	0.5 U	0.5 U
MW-1	Water	10/16/03	2.5 U	32 D	2.5 U	2.5 U	2.5 U	2.5 U	100 U	2.5 U	13 D	2.5 U	2.5 U	100 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	270 D	360 D	110 D	2.5 U	2.5 U
MW-1	Water	01/30/04	0.5 U	4.1	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.96	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	78 D	120	31	0.5 U	0.5 U
MW-1	Water	04/29/04	1 U	5.3 D	1 U	1 U	1 U	1 U	40 U	1 U	2.1 D	1 U	1 U	40 U	1 U	1 U	1 U	4 U	1 U	1 U	120 D	160 D	46 D	1 U	1 U
MW-1 Dup	Water	04/29/04	1 U	4.7 D	1 U	1 U	1 U	1 U	40 U	1 U	1.9 D	1 U	1 U	40 U	1 U	1 U	1 U	4 U	1 U	1 U	110 D	150 D	42 D	1 U	1 U
MW-1	Water	07/26/04	1.3 U	4.0 D	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	5 U	1.3 U	1.3 U	93 D	120 D	29 D	1.3 U	1.3 U
MW-1 Dup	Water	07/26/04	1.3 U	3.9 D	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	5 U	1.3 U	1.3 U	89 D	110 D	28 D	1.3 U	1.3 U
MW-1	Water	10/29/04	1.3 U	4.0 D	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	1.3 U	50 U	1.3 U	1.3 U	1.3 U	5 U	1.3 U	1.3 U	82 D	100 D	12 D	1.3 U	1.3 U
MW-1	Water	02/25/05	2.5 U	31 D	2.5 U	2.5 U	2.5 U	2.5 U	100 U	2.5 U	2.7	2.5 U	2.5 U	100 U	2.5 U	2.5 U	2.5 U	10 U	2.5 U	2.5 U	210 D	220 D	26 D	2.5 U	2.5 U
MW-1	Water	05/05/05	2 U	16 D	2 U	2 U	2 U	2 U	80 U	2 U	2.2 D	2 U	2 U	80 U	2 U	2 U	2 U	8 U	2 U	2 U	170 D	170 D	19 D	2 U	2 U
MW-1 Dup	Water	05/05/05	2 U	14 D	2 U	2 U	2 U	2 U	80 U	2 U	2.1 D	2 U	2 U	80 U	2 U	2 U	2 U	8 U	2 U	2 U	160 D	160 D	18 D	2 U	2 U
MW-1	Water	08/02/05	0.5 U	17	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	1.9	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	170 D	180 D	20	0.5 U	0.5 U
MW-1	Water	11/22/05	0.5 U	22	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	1.7	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	170 D	170 D	20	0.5 U	0.5 U
MW-2	Water	02/28/03	0.5 U	0.50 U	0.5 U	0.5 UJ	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	07/07/03	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	10/16/03	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.86	0.5 U	0.5 U	0.5 U
MW-2	Water	01/30/04	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	04/29/04	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	07/26/04	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	10/29/04	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	05/05/05	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2	Water	11/22/05	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	Water	07/30/02	0.5 U	0.73	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	14	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.51	3.5	2	0.5 U	0.5 U
MW-3	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	20 U	0.5 U	0.63	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.2	1.2	0.5 U	0.5 U
MW-3	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.8	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.2	1.1	0.5 U	0.5 U
MW-3	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	1.9	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.51	2.5	1.5	0.5 U	0.5 U
MW-3	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.63	0.73	0.5 U	0.5 U
MW-3	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.20	1.1	0.5 U	0.5 U
MW-3	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.98	0.98	0.5 U	0.5 U
MW-3	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.10	1.0	0.5 U	0.5 U
MW-3	Water	02/25/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.30	1.0	0.5 U	0.5 U
MW-3	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.50	1.2	0.5 U	0.5 U
MW-3	Water	08/02/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.30	1.1	0.5 U	0.5 U
MW-3 Dup	Water	08/02/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.30	1.1	0.5 U	0.5 U
MW-3	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.3	0.89	0.5 U	0.5 U
MW-3 Dup	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	1.3	0.83	0.5 U	0.5 U
MW-4	Water	07/29/02	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	02/28/03	0.5 U	0.76	0.5 U	0.5 UJ	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	2.3	1.4	1.2	0.5 U	0.5 U
MW-4	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4 Dup	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.93	0.5 U	0.5 U	0.5 U
MW-4 Dup	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.94	0.5 U	0.5 U	0.5 U
MW-4	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4 Dup	Water	02/25/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	08/02/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

BRIX003575

Table 4
Volatile Organic Compounds
Brix Maritime
Portland, Oregon

Sample Designation	Matrix	Date Sampled	Isopropylbenzene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Bromobenzene	n-Propylbenzene	2-Chlorotoluene	4-Chlorotoluene	1,3,5-Trimethylbenzene	tert-Butylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	1,3-Dichlorobenzene	4-Isopropyltoluene	1,4-Dichlorobenzene	n-Butylbenzene	1,2-Dichlorobenzene	1,2-Dibromo-3-chloropropane	1,2,4-Trichlorobenzene	1,2,3-Trichlorobenzene	Naphthalene	Hexachlorobutadiene
MW-1	Water	02/28/03	19	0.5 U	0.5 U	0.5 U	65 D	2 U	2 U	26	2 U	140 D	10	0.5 U	2 U	0.5 U	21	0.5 U	0.5 U	2 U	2 U	31	2 U
MW-1	Water	07/07/03	31	0.5 U	0.5 U	0.5 U	64 D	2 U	2 U	9.3	2 U	46	8.2	0.5 U	2 U	0.5 U	14	0.5 U	0.5 U	2 U	2 U	22	2 U
MW-1	Water	10/16/03	75 D	2.5 U	2.5 U	10 U	250 D	10 U	10 U	280 D	10 U	1200 D	28 D	2.5 U	10 U	2.5 U	150 Ui	2.5 U	10 U	10 U	10 U	460 D	10 U
MW-1	Water	01/30/04	36	0.5 U	0.5 U	0.5 U	140 D	2 U	2 U	100 D	2 U	510 D	17	0.5 U	2 U	0.5 U	46	0.5 U	0.5 U	2 U	2 U	210 D	2 U
MW-1	Water	04/29/04	54 D	1 U	1 U	1 U	150 D	4 U	4 U	150 D	4 U	590 D	20 D	1 U	4 U	1 U	43 D	1 U	1 U	4 U	4 U	250 D	4 U
MW-1 Dup	Water	04/29/04	52 D	1 U	1 U	1 U	150 D	4 U	4 U	140 D	4 U	570 D	18 D	1 U	4 U	1 U	39 D	1 U	1 U	4 U	4 U	260 D	4 U
MW-1	Water	07/26/04	47 D	1.3 U	1.3 U	1.3 U	160 D	5 U	5 U	130 D	5 U	610 D	18 D	1.3 U	5 U	1.3 U	40 D	1.3 U	1.3 U	5 U	5 U	270 JD	5 U
MW-1 Dup	Water	07/26/04	46 D	1.3 U	1.3 U	1.3 U	160 D	5 U	5 U	120 D	5 U	640 D	18 D	1.3 U	5 U	1.3 U	40 D	1.3 U	1.3 U	5 U	5 U	280 JD	5 U
MW-1	Water	10/29/04	45 D	1.3 U	1.3 U	1.3 U	140 D	5 U	5 U	110 D	5 U	560 D	16 D	1.3 U	5 U	1.3 U	39 D	1.3 U	1.3 U	5 U	5 U	230 D	5 U
MW-1	Water	02/25/05	89 D	2.5 U	2.5 U	2.5 U	350 D	10 U	10 U	160 D	10 U	870 D	39 D	2.5 U	10 U	2.5 U	90 D	2.5 U	2.5 U	10 U	10 U	470 D	10 U
MW-1	Water	05/05/05	87 D	2 U	2 U	8 U	260 D	8 U	8 U	100 D	8 U	530 D	32 D	2 U	8 U	2 U	140 Ui	2 U	8 U	8 U	8 U	280 D	8 U
MW-1 Dup	Water	05/05/05	88 D	2 U	2 U	8 U	250 D	8 U	8 U	96 D	8 U	490 D	31 D	2 U	8 U	2 U	140 Ui	2 U	8 U	8 U	8 U	250 D	8 U
MW-1	Water	08/02/05	69 D	0.5 U	1.1	2 U	220 D	2 U	2 U	140 D	2 U	590 D	28 D	2 U	3.2	0.5 U	62 D	0.5 U	2 U	2 U	2 U	330 D	2 U
MW-1	Water	11/22/05	100 D	0.5 U	0.5 U	2 U	400 D	2 U	2 U	160 D	2.2	780 D	50	0.5 U	4.0	0.5 U	85 D	0.5 U	2 U	2 U	2 U	380 D	2 U
MW-2	Water	02/28/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-2	Water	07/07/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-2	Water	10/16/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-2	Water	01/30/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-2	Water	04/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-2	Water	07/26/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-2	Water	10/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-2	Water	05/05/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-2	Water	11/22/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-3	Water	07/30/02	0.5 U	0.5 U	0.5 U	0.5 U	2.2	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	02/28/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	07/07/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	10/16/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	01/30/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	04/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	07/26/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	10/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	02/25/05	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-3	Water	05/05/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-3	Water	08/02/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-3 Dup	Water	08/02/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-3	Water	11/22/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-3 Dup	Water	11/22/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-4	Water	07/29/02	2 U	0.5 U	0.5 U	0.5 U	2.3	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4	Water	02/28/03	29	0.5 U	0.5 U	0.5 U	35	2 U	2 U	2.2	2 U	3.8	2 U	0.5 U	2 U	0.5 U	3.1	0.5 U	0.5 U	2 U	2 U	45	2 U
MW-4	Water	07/07/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4 Dup	Water	07/07/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4	Water	10/16/03	7.1	0.5 U	0.5 U	0.5 U	5.5	2 U	2 U	2 U	2 U	2 U	4.4	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4 Dup	Water	10/16/03	7.5	0.5 U	0.5 U	0.5 U	6.3	2 U	2 U	2 U	2 U	2 U	4.8	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4	Water	01/30/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4	Water	04/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4	Water	07/26/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4	Water	10/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4 Dup	Water	02/25/05	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-4	Water	05/05/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-4	Water	08/02/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-4	Water	11/22/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U

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Table 4
Volatile Organic Compounds
Brix Maritime
Portland, Oregon

Sample Designation	Matrix	Date Sampled	Dichlorodifluoromethane	Chloromethane	Vinyl Chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	Acetone	1,1-Dichloroethene	Methyl tert-Butyl Ether	Carbon Disulfide	Methylene Chloride	*trans*-1, 2-dichloroethene	1,1-Dichloroethane	2-Butanone	2,2-Dichloropropane	*cis*-1, 2-dichloroethene	Chloroform	Bromochloromethane	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride
MW-5	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-5 Dup	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-5	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-5 Dup	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 UJ	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-5	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-8	Water	02/25/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

NOTE: Water concentrations are in µg/L. Soil concentrations are in µg/kg. U = not detected at or above the indicated method reporting limit. J = estimated concentration.
D = the reported result is from a dilution. i = the MRL/MDL has been elevated due to a chromatographic interference.

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Table 4.
Volatile Organic Compounds
Brix Maritime
Portland, Oregon

Sample Designation	Matrix	Date Sampled	1,2-Dichloroethane	Benzene	Trichloroethene	1,2-Dichloropropane	Bromodichloromethane	Dibromomethane	2-Hexanone	cis-1,3-Dichloropropene	Toluene	trans 1,3-Dichloropropene	1,1,2-Trichloroethane	4-Methyl-2-pentanone	1,3 Dichloropropane	Tetrachloroethene	Dibromochloromethane	1,2 Dibromoethane	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethylbenzene	m,p-Xylenes	o-Xylene	Styrene	Bromoform
MW-5	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	15	12	0.97	0.5 U	0.5 U
MW-5 Dup	Water	02/28/03	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	16	14	1.10	0.5 U	0.5 U
MW-5	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	1.8	0.5 U	0.5 U	0.5 U	0.5 U
MW-5 Dup	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	2.0	0.5 U	0.5 U	0.5 U	0.5 U
MW-5	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	17	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.74	0.5 U	0.5 U	0.5 U
MW-6	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	07/07/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	10/16/03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.82	0.5 U	0.5 U	0.5 U
MW-7	Water	01/30/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	04/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	07/26/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	10/29/04	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	05/05/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	Water	11/22/05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-8	Water	02/25/05	0.5 U	0.54	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	5.8	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.86	0.5 U	0.5 U	0.5 U

NOTE: Water concentrations are in µg/L. Soil concentrations are in µg/kg. U = not detected at or above the indicated method reporting limit. J = estimated concentration.
D = the reported result is from a dilution. i = the MRL/MDL has been elevated due to a chromatographic interference.

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Table 4
Volatile Organic Compounds
Brix Maritime
Portland, Oregon

Sample Designation	Matrix	Date Sampled	Isopropylbenzene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Bromobenzene	n-Propylbenzene	2-Chlorotoluene	4-Chlorotoluene	1,3,5-Trimethylbenzene	tert-Butylbenzene	1,2,4-Trimethylbenzene	sec-Butylbenzene	1,3-Dichlorobenzene	4-Isopropyltoluene	1,4-Dichlorobenzene	n-Butylbenzene	1,2-Dichlorobenzene	1,2-Dibromo-3-chloropropane	1,2,4-Trichlorobenzene	1,2,3-Trichlorobenzene	Naphthalene	Hexachlorobutadiene
MW-5	Water	02/28/03	24	0.5 U	0.5 U	0.5 U	110 D	2 U	2 U	26	2 U	75 D	27	0.5 U	2 U	0.5 U	87 D	0.5 U	0.5 U	2 U	2 U	23	2 U
MW-5 Dup	Water	02/28/03	25	0.5 U	0.5 U	0.5 U	110 D	2 U	2 U	30	2 U	99 D	30	0.5 U	2.3	0.5 U	110 D	0.5 U	0.5 U	2 U	2 U	25	2 U
MW-5	Water	01/30/04	9.7	0.5 U	0.5 U	0.5 U	49	2 U	2 U	2 U	2 U	2 U	38	0.5 U	2 U	0.5 U	82 D	0.5 U	0.5 U	2 U	2 U	2.9	2 U
MW-5 Dup	Water	01/30/04	11	0.5 U	0.5 U	0.5 U	56	2 U	2 U	2 U	2 U	2 U	39	0.5 U	2 U	0.5 U	84 D	0.5 U	0.5 U	2 U	2 U	3.4	2 U
MW-5	Water	05/05/05	50	0.5 U	0.5 U	2 U	140 D	2 U	2 U	2 U	2 U	2 U	41	0.5 U	2 U	0.5 U	120 Ui	0.5 U	2 U	2 U	2 U	8.0	2 U
MW-6	Water	07/07/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-6	Water	10/16/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-6	Water	01/30/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-6	Water	04/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-6	Water	07/26/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-6	Water	10/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-6	Water	05/05/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-6	Water	11/22/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-7	Water	07/07/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-7	Water	10/16/03	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-7	Water	01/30/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-7	Water	04/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-7	Water	07/26/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-7	Water	10/29/04	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U
MW-7	Water	05/05/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	0.5 U	2 U	0.5 U	2 UJ	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-7	Water	11/22/05	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U
MW-8	Water	02/25/05	2 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	0.5 U	2 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U

NOTE: Water concentrations are in µg/L. Soil concentrations are in µg/kg. U = not detected at or above the indicated method reporting limit. J = estimated concentration.
D = the reported result is from a dilution. i = the MRL/MDL has been elevated due to a chromatographic interference.

BRIX003579

TABLE 5
Seep Sampling Study
PAHs
Brix Maritime
Portland, Oregon

Sample Designation	MW-2		Seep		River		Seep (surface)	Seep (0.5 feet)	
Matrix	Water		Water		Water		Soil	Soil	
Units	µg/L		µg/L		µg/L		µg/kg	µg/kg	
Date Sampled	09/29/05		09/29/05		09/29/05		09/29/05	09/29/05	
LPAHs			**LPAHs**				**LPAHs**		
Naphthalene	0.020	U	0.027		0.020	U	72	8.1	
Acenaphthylene	0.020	U	0.020	U	0.020	U	17	5.1	U
Acenaphthene	0.020	U	0.020	U	0.020	U	20	5.1	U
Dibenzofuran	0.020	U	0.020	U	0.020	U	9.5	5.1	U
Fluorene	0.020	U	0.020	U	0.020	U	26	5.1	U
Phenanthrene	0.020	U	0.037		0.029	J	210	46	
Anthracene	0.020	U	0.020	U	0.020	U	56	11	
2-Methylnaphthalene	0.020	U	0.02	U	0.02	U	16	5	U
Total LPAH			0.06		0.03		266	65	
HPAHs			**HPAHs**				**HPAHs**		
Fluoranthene	0.020	U	0.024		0.081	J	220	47	
Pyrene	0.029		0.11		0.095	J	450	81	
Benz(a)anthracene	0.020	U	0.020	U	0.022	J	97	31	
Chrysene	0.020	U	0.020	U	0.037	J	120	37	
Benzo(b)fluoranthene	0.020	U	0.020	U	0.020	U	97	24	
Benzo(k)fluoranthene	0.020	U	0.020	U	0.020	U	79	22	
Benzo(a)pyrene	0.020	U	0.020	U	0.023	J	150	39	
Indeno(1,2,3-cd)pyrene	0.020	U	0.020	U	0.020	U	150	31	
Dibenz(a,h)anthracene	0.020	U	0.020	U	0.020	U	16	5.1	U
Benzo(g,h,i)perylene	0.020	U	0.020	U	0.020	U	180	31	
Total HPAHs	0.03		0.21		0.26		1559	343	

NOTE: µg/L = micrograms per liter or parts per billion.
J = estimated concentration.
U = not detected at or above the indicated method reporting limit.

ANCHOR ENVIRONMENTAL, L.L.C.

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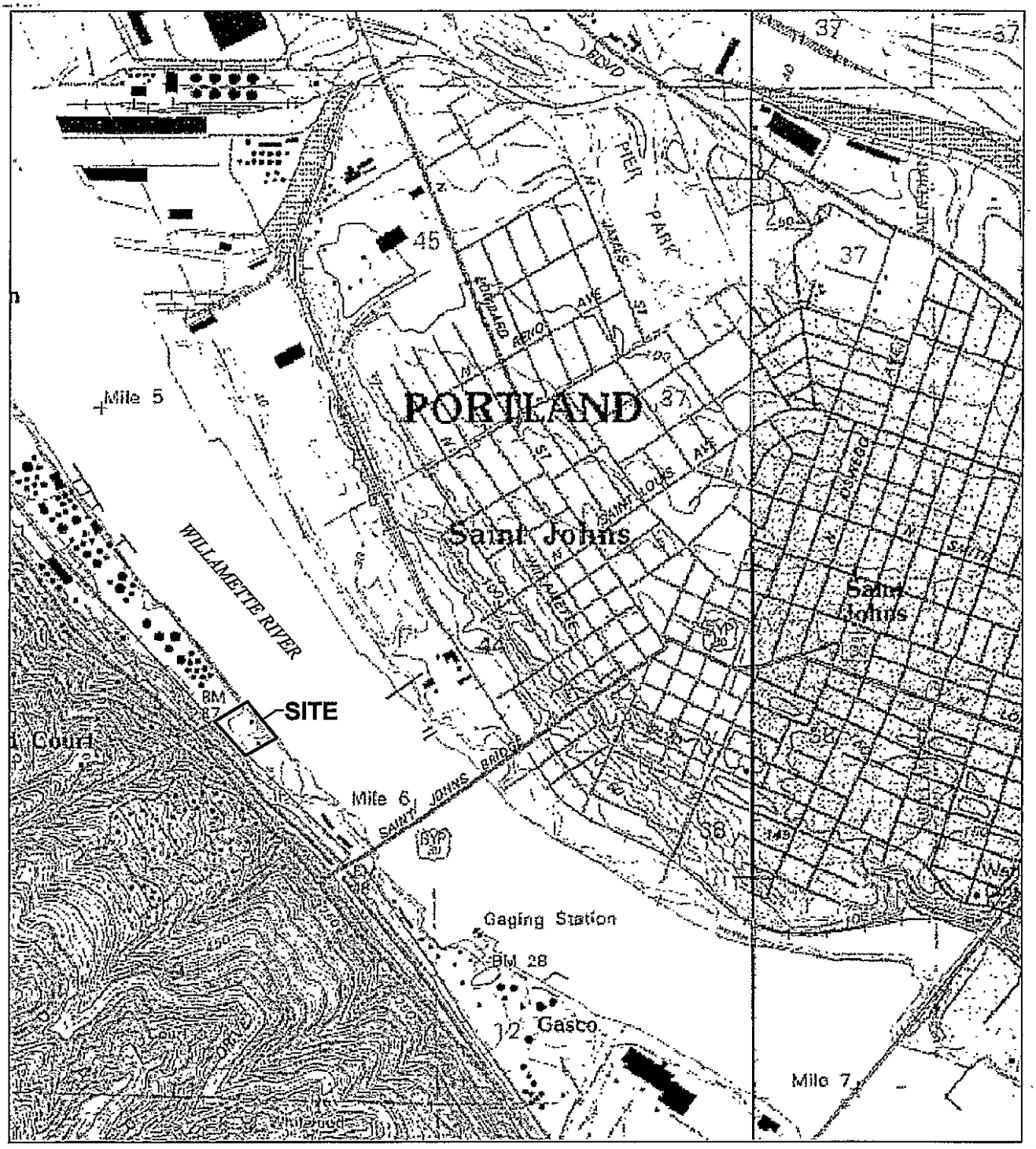
FIGURES

BRIX003581



Apr 01, 2003 4:09pm cdavidson I:\CAD\Jobs\990056-Brix_Maritime\990056011990005601-03.dwg FIG 1

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1
Site Location Map
Brix Maritime
Portland, Oregon

BRIX003582

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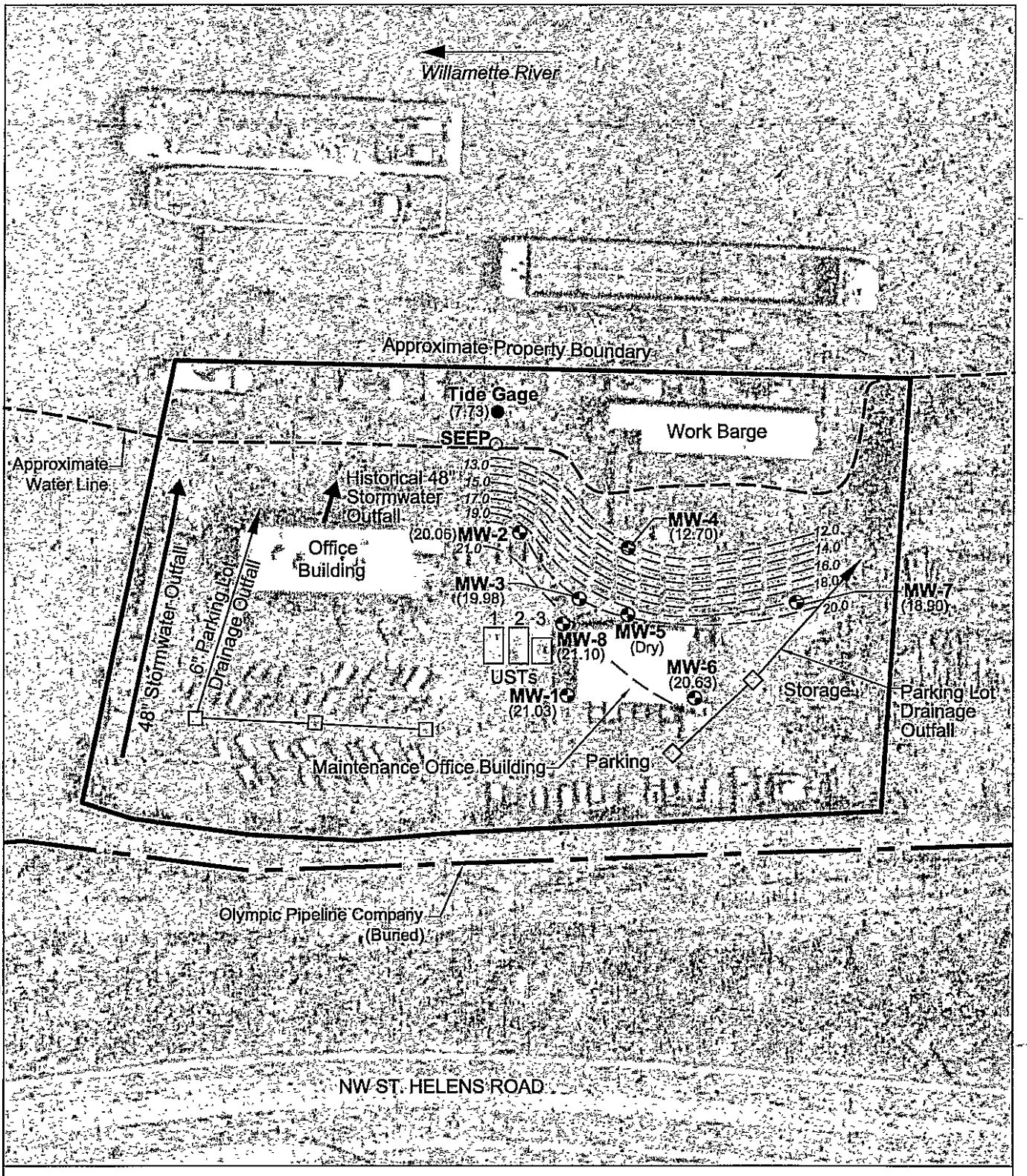

Dec 28, 2005 7:53am cdavidson K:\Jobs\1990056-Brix_Maritime\1990056011990005601-20.dwg FIG 2

Figure 2

Well Location and Potentiometric Surface Map (November 22, 2005)

Brix Maritime

Portland, Oregon

ANCHOR ENVIRONMENTAL, L.L.C.

BRIX003583

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Appendix A
Field Sampling Data Package

BRIX003584

ANCHOR ENVIRONMENTAL, L.L.C.

Anchor Environmental, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Phone 503.670.1108
Fax 503.670.1128

Memorandum

To: File 990056-01

From: Kelly R. Titkemeier

Date: November 28, 2005

Re: November 2005 Groundwater Sample Collection at Brix Maritime, Portland, Oregon

OVERVIEW

On November 22, 2005, Anchor measured groundwater elevations in monitoring wells MW-1 through MW-8 and recorded the elevation of the river from the on-site staff gauge. Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-6, and MW-7 (MW-5 had insufficient water to sample). Seven water samples (including one duplicate sample) were submitted for analysis of VOCs by U.S. Environmental Protection Agency (USEPA) Method 8260; gasoline by NWTPH-Gx; diesel and heavy oils by NWTPH-Dx; and PAHs by USEPA Method 8270-SIM. Trip blanks were submitted for VOC and NWTPH-Gx analyses.

PURGING AND SAMPLING

Before sampling, wells were purged of at least three casing volumes of groundwater until field parameters (temperature, pH, specific conductivity, and dissolved oxygen) stabilized. Temperature, pH, specific conductivity, and dissolved oxygen values were measured and recorded after each casing volume was removed. Field sampling parameters are presented in the attached table.

Each well was purged using a peristaltic pump and pump tubing that was connected to dedicated polyethylene tubing. As purging for each well finished, pumping rates were reduced and samples were collected directly from the pump tubing.

Quality control consisted of collecting and analyzing one duplicate sample from MW-3. Trip blanks were submitted for VOC analysis by USEPA Method 8260 and gasoline by NWTPH-Gx.

SAMPLE HANDLING AND SHIPPING

Seven samples and two trip blanks were placed in iced shipping containers and transported by courier to Columbia Analytical Services (CAS), Kelso, Washington under chain of custody documentation.

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Attachments: Table of Sampling Field Parameters
Water Level Survey
Field Sampling Data Sheets
Chain-of-Custody Documentation

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Table
Sampling Field Parameters
Brix Maritime
November 2005

Well	Blind Code	Date Sampled	Depth to Water (feet)	Pore Volumes Purged	Gallons Removed	pH	Specific Conductance µS	Temperature °C	Dissolved Oxygen mg/L
Monitoring Wells									
MW-1	BM-112205-7	11/22/2005	20.78	4	1.2	6.35	861	16.18	0.24
MW-2	BM-112205-4	11/22/2005	22.07	3	1.2	6.47	635	15.69	1.78
MW-3	BM-112205-5	11/22/2005	21.97	3	1.5	6.28	370	16.88	0.15
MW-4	BM-112205-3	11/22/2005	10.85	3	2.1	6.55	361	15.64	0.32
MW-5	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	BM-112205-2	11/22/2005	20.58	3	2.4	6.40	495	15.12	0.12
MW-7	BM-112205-1	11/22/2005	22.05	3	1.5	6.44	426	15.24	0.46
QA/QC									
MW-3 (DUP)	BM-112205-6	11/22/2005	21.97	3	1.5	6.28	370	16.88	0.15

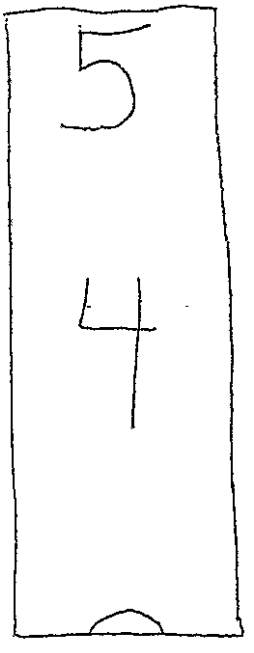
Note: NS = Not Sampled

Depth to Water Measurements
Brix Maritime
Portland, Oregon

Anchor Environmental, L.L.C.				Site: Brix Maritime Project No. : 990056-01
Well	Date (MM/DD/YY)	Time (2400)	DTW (feet)	Comments
MW-1	11/22/05	0801	20.78	hydrocarbon odor
MW-2	11/22/05	0818	22.07	
MW-3	11/22/05	0810	21.97	monument continues to rise
MW-4	11/22/05	0826	10.85	white "bugs" ~1mm x 2mm, rust on probe
MW-5	11/22/05	0847	22.00	hydrocarbon odor, DRY
MW-6	11/22/05	0900	20.58	
MW-7	11/22/05	0906	22.05	rust on probe
MW-8	11/22/05	0752	20.63	
River Gauge	11/22/05	0840	3.4	see sketch below

Note: DTW = Depth to Water; DTP = Depth to Product

no visible sheen along shoreline



BRIX003588

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FIELD SAMPLING DATA SHEET

ANCHOR ENVIRONMENTAL, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Brix Maritime **WELL ID:** MW-1
SITE ADDRESS: Portland, Oregon **BLIND ID:** BM-112205-7
DUP ID: NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY	CLOUDY	RAIN	?	TEMPERATURE:	°F 52 . °C					

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
11/22/05	08:01	22.2		20.78		1.42	X1	0.23
/ /	:	.	.	.	.		X3	0.69

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

Bottle Type	Date	Time	Method §	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used] √
VOA Glass	11/22/05	13:55	B	6	40 ml	HCl	YES	NO		✓
Amber Glass	11/22/05	13:55	B	2	250, 500, 1L	None HCl H_2SO_4	YES	NO		✓
White Poly	/ /	:			250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:			250, 500, 1L	H_2SO_4	YES	NO		
Green Poly	/ /	:			250, 500, 1L	NaOH	YES	NO		
Red Total Poly	/ /	:		~~HRT~~	250, 500, 1L	HNO_3	YES	NO		
Red Diss. Poly	/ /	:		~~HRT~~	250, 500, 1L	HNO_3	YES	YES		
	/ /	:			250, 500, 1L		YES			

Total Bottles (include duplicate count): 8

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-G)
AMBER - Glass	(PAH) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil &Grease)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)
GREEN - Poly	(Cyanide)
RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA

Purge Start Time: 13:30 Pump/Bailer Inlet Depth:

Meas. [Casing]	Method § [Select A-G]	Purged (gal) [Cumulative Totals]	pH	E Cond (µS)	°F Temp (°C) [Circle units]	Other	Diss O_2 (mg/l)	Water Quality [Clarity, Color]
4	B	1.2	6.35	861	16.18	-89.0	0.24	clear, colorless
3	B	0.9	6.36	855	16.18	-88.2	0.26	Clear, colorless
2	B	0.6	6.41	791	16.15	-85.5	0.29	clear, colorless
1	B	0.3	6.42	739	16.02	-81.6	0.49	clear, colorless
0		0.00	.		.		.	

SAMPLER: Kelly R. Tiffkemeier (PRINTED NAME) Kelly R. Tiffkemeier (SIGNATURE)

BRIX003589

FIELD SAMPLING DATA SHEET

ANCHOR ENVIRONMENTAL, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Brix Maritime **WELL ID:** MW-2
SITE ADDRESS: Portland, Oregon **BLIND ID:** BM-112205-4
DUP ID: NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY

WEATHER: SUNNY CLOUDY RAIN ? **TEMPERATURE:** °F 52. °C [Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
11/22/05	08:18	24.4		22.07		2.33	X1	0.38
/ /	:	.	.	.	.		X3	1.14

Gal/ft = (dia./2)^2 x 0.163	1" =	0.041	2" =	0.163	3" =	0.367	4" =	0.653	6" =	1.469	10" =	4.080	12" =	5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

Bottle Type	Date	Time	Method §	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used]
VOA Glass	11/22/05	12:25	B	6	40 ml	HCl	YES	NO		✓
Amber Glass	11/22/05	12:25	B	2	250, 500, 1L	None, HCl, H_2SO_4	YES	NO		✓
White Poly	/ /	:			250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:			250, 500, 1L	H_2SO_4	YES	NO		
Green Poly	/ /	:			250, 500, 1L	NaOH	YES	NO		
Red Total Poly	/ /	:		~~1 Kit~~	250, 500, 1L	HNO_3	YES	NO		
Red Diss. Poly	/ /	:		~~1 Kit~~	250, 500, 1L	HNO_3	YES	YES		
	/ /	:			250, 500, 1L		YES			

Total Bottles (include duplicate count): 8

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-G)
	AMBER - Glass	(PAH) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil &Grease)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA

Purge Start Time: 12:04 Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp °C	Other	Diss O_2 (mg/l)	Water Quality
4		.	.		.		.	
3	B	1.2	6.47	635	15.69	117.5	1.78	clear, colorless
2	B	0.8	6.47	635	15.69	115.9	1.79	clear, colorless
1	B	0.4	6.47	635	15.69	113.7	1.87	clear, colorless
0		0.00	.		.		.	

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

SAMPLER: Kelly R. Tittkemeier (PRINTED NAME) Kelly R. Tittkemeier (SIGNATURE)

BRIX003590

FIELD SAMPLING DATA SHEET

ANCHOR ENVIRONMENTAL, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Brix Maritime **WELL ID:** MW-3
SITE ADDRESS: Portland, Oregon **BLIND ID:** BM-112205-5
DUP ID: BM-112205-6 NA 1305

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY	CLOUDY	RAIN	?					TEMPERATURE:	°F 52.	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
11/22/05	08:10	24.8	.	21.97	.	2.83	X1	0.46
/ /	:	.	.	.	.		X3	1.38

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

Bottle Type	Date	Time	Method §	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	√ [√ if used]
VOA Glass	11/22/05	13:00	B	6	40 ml	HCl	YES	NO		✓
Amber Glass	11/22/05	13:00	B	2	250, 500, 1L	(None) HCl (H_2SO_4)	YES	NO		✓
White Poly	/ /	:			250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:			250, 500, 1L	H_2SO_4	YES	NO		
Green Poly	/ /	:			250, 500, 1L	NaOH	YES	NO		
Red Total Poly	/ /	:		~~1~~ KRT	250, 500, 1L	HNO_3	YES	NO		
Red Diss. Poly	/ /	:		~~1~~ KRT	250, 500, 1L	HNO_3	YES	YES		
	/ /	:			250, 500, 1L		YES			

Total Bottles (include duplicate count): ~~8~~ 16

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-G)
	AMBER - Glass	(PAH) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil &Grease)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA

Purge Start Time: 12:38 Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O_2 (mg/l)	Water Quality
4		.	.		.		.	
3	B	1.5	6.28	370	16.88	79.0	0.15	clear, colorless
2	B	1.0	6.28	372	17.08	76.6	0.26	clear, colorless
1	B	0.5	6.25	382	16.59	62.5	0.89	clear, colorless
0		0.00	.		.		.	

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

SAMPLER: Kelly R. Titkemeier (PRINTED NAME) Kelly R. Titkemeier (SIGNATURE)

BRIX003591

FIELD SAMPLING DATA SHEET

ANCHOR ENVIRONMENTAL, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Brix Maritime WELL ID: MW-4
SITE ADDRESS: Portland, Oregon BLIND ID: Bm-112205-3
DUP ID: NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY	CLOUDY	RAIN	?					TEMPERATURE:	°F 50.	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
11/22/05	08:26	14.8	.	10.85	.	3.95	X1	0.64
/ /	:	.	.	.	.		X3	1.93

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

Bottle Type	Date	Time	Method §	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	√ if used
VOA Glass	11/22/05	11:45	B	6	40 ml	HCl	YES	NO		✓
Amber Glass	11/22/05	11:45	B	2	250, 500, 1L	None HCl H_2SO_4	YES	NO		✓
White Poly	/ /	:			250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:			250, 500, 1L	H_2SO_4	YES	NO		
Green Poly	/ /	:			250, 500, 1L	NaOH	YES	NO		
Red Total Poly	/ /	:		~~1 kit~~	250, 500, 1L	HNO_3	YES	NO		
Red Diss. Poly	/ /	:		~~1 kit~~	250, 500, 1L	HNO_3	YES	YES		
	/ /	:			250, 500, 1L		YES			

Total Bottles (include duplicate count): 8

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-G)
	AMBER - Glass	(PAH) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil &Grease)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA

Purge Start Time: 11 : 15 Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp °C	Other	Diss O_2 (mg/l)	Water Quality
4		.	.		.		.	
3	B	2.1	6.55	361	15.64	-113.3	0.32	clear, colorless
2	B	1.4	6.55	363	15.55	-110.0	0.21	clear, colorless
1	B	0.7	6.56	364	15.43	-107.6	0.37	clear, colorless
0		0.00	.		.		.	

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

SAMPLER: Kelly R. Titkemeier (PRINTED NAME) Kelly R. Titkemeier (SIGNATURE)

BRIX003592

FIELD SAMPLING DATA SHEET

ANCHOR ENVIRONMENTAL, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Brix Maritime
WELL ID: MW-5
SITE ADDRESS: Portland, Oregon
BLIND ID: NO SAMPLE - DRY
DUP ID: NA

WIND FROM:	N	NE	(E)	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	(SUNNY)	CLOUDY		RAIN			?		TEMPERATURE:	(°F) 50 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
11/22/05	08:47	22.45	.	22.00	.	0.45	X1	N/A
/ /	:	.	.	.	.		X3	

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

Bottle Type	Date	Time	Method §	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used] √
VOA Glass	/ /	:		6	40 ml	HCl	YES	NO		
Amber Glass	/ /	:		2	250, 500, 1L	(None) (HCl) (H_2SO_4)	YES	NO		
White Poly	/ /	:			250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:			250, 500, 1L	H_2SO_4	YES	NO		
Green Poly	/ /	:			250, 500, 1L	NaOH	YES	NO		
Red Total Poly	/ /	:		1	250, 500, 1L	HNO_3	YES	NO		
Red Diss. Poly	/ /	:		1	250, 500, 1L	HNO_3	YES	YES		
	/ /	:			250, 500, 1L		YES			

Total Bottles (include duplicate count):

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-G)
AMBER - Glass	(PAH) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil &Grease)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)
GREEN - Poly	(Cyanide)
RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas. [Casing]	Method § [Select A-G]	Purged (gal) [Cumulative Totals]	pH	E Cond (µS)	°F Temp °C [Circle units]	Other	Diss O_2 (mg/l)	Water Quality [Clarity, Color]
4		.	.				.	
3		.	.		.		.	
2		.	.		.		.	
1			.		.		.	
0		0.00	.		.		.	

SAMPLER: Kelly R. Titkemeier (PRINTED NAME) Kelly R. Titkemeier (SIGNATURE)

BRIX003593

FIELD SAMPLING DATA SHEET

ANCHOR ENVIRONMENTAL, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Brix Maritime **WELL ID:** MW-6
SITE ADDRESS: Portland, Oregon **BLIND ID:** BM-112205-2
DUP ID: NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY	CLOUDY	RAIN	?					TEMPERATURE: °F 50 . °C		

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
11/22/05	09:00	25.2	.	20.58	.	4.62	X1	0.75
/ /	:	.	.	.	.		X3	2.26

Gal/ft = (dia./2)^2 x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

Bottle Type	Date	Time	Method §	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used]
VOA Glass	11/22/05	10:50	B	6	40 ml	HCl	YES	NO		√
Amber Glass	11/22/05	10:50	B	2	250, 500, 1L	None, HCl, H_2SO_4	YES	NO		√
White Poly	/ /	:			250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:			250, 500, 1L	H_2SO_4	YES	NO		
Green Poly	/ /	:			250, 500, 1L	NaOH	YES	NO		
Red Total Poly	/ /	:		~~1~~ KRT	250, 500, 1L	HNO_3	YES	NO		
Red Diss. Poly	/ /	:		~~1~~ KRT	250, 500, 1L	HNO_3	YES	YES		
	/ /	:			250, 500, 1L		YES			

Total Bottles (include duplicate count): 8

Analysis Allowed per Bottle Type

BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-G)
AMBER - Glass	(PAH) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil &Grease)
WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)
GREEN - Poly	(Cyanide)
RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA

Purge Start Time: 10:28 Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O_2 (mg/l)	Water Quality
4		.	.		.		.	
3	B	2.4	6.40	495	15.12	-110.0	0.12	clear colorless
2	B	1.6	6.40	493	15.16	-112.6	0.14	clear, colorless
1	B	0.8	6.41	4881	15.21	-110.7	0.19	clear, colorless
0		0.00	.		.		.	

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

SAMPLER: Kelly R. Tittemeier (PRINTED NAME) Kelly R. Tittemeier (SIGNATURE)

BRIX003594

FIELD SAMPLING DATA SHEET

ANCHOR ENVIRONMENTAL, L.L.C.
6650 SW Redwood Lane, Suite 110
Portland, OR 97224
Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Brix Maritime **WELL ID:** MW-7
SITE ADDRESS: Portland, Oregon **BLIND ID:** ~~PAU~~ KRT BM-112205-1
DUP ID: NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY	CLOUDY	RAIN	?					TEMPERATURE: °F 50 . °C		

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
11/22/05	09:06	25.1	.	22.05	.	3.05	X1	0.50
/ /	:	.	.	.	.		X3	1.49

Gal/ft = (dia./2)² x 0.163	1" =	0.041	2" =	0.163	3" =	0.367	4" =	0.653	6" =	1.469	10" =	4.080	12" =	5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample) Sample Depth:

Bottle Type	Date	Time	Method §	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√ if used
VOA Glass	11/22/05	09:55	B	6	40 ml	HCl	YES	NO		✓
Amber Glass	11/22/05	09:55	B	2	250, 500, 1L	None, HCl, H_2SO_4	YES	NO		✓
White Poly	/ /	:			250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:			250, 500, 1L	H_2SO_4	YES	NO		
Green Poly	/ /	:			250, 500, 1L	NaOH	YES	NO		
Red Total Poly	/ /	:		~~1~~ KRT	250, 500, 1L	HNO_3	YES	NO		
Red Diss. Poly	/ /	:		~~1~~ KRT	250, 500, 1L	HNO_3	YES	YES		
	/ /	:			250, 500, 1L		YES			

Total Bottles (include duplicate count): 8

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-G)
	AMBER - Glass	(PAH) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil &Grease)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO_3/CO_3) (Cl) (SO_4) (NO_3) (NO_2) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO_4) (Total Keldahl Nitrogen) (NH_3) (NO_3/NO_2)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)

WATER QUALITY DATA Purge Start Time: 09 : 35 Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp °C	Other	Diss O_2 (mg/l)	Water Quality
4		.	.		.		.	
3	B	1.5	6.44	426	15.24	-96.7	0.46	clear, colorless
2	B	1.0	6.43	433	15.39	-97.1	0.81	clear, colorless
1	B	0.5	6.43	434	15.38	-91.9	0.99	slightly cloudy, v. light tan
0		0.00	.		.		.	

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

SAMPLER: Kelly R. Tiffkemeier (PRINTED NAME) Kelly R. Tiffkemeier (SIGNATURE)

BRIX003595

Confidential Business Information

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: _____

PAGE 1 OF 1 COC # _____

PROJECT NAME: BRIX MARITIME - PORTLAND, OR
PROJECT NUMBER:
PROJECT MANAGER: JOHN RENDA
COMPANY/ADDRESS: ANCHOR ENVIRONMENTAL, LLC
6650 SW REDWOOD LANE, #110
CITY/STATE/ZIP: PORTLAND, OR 97224
E-MAIL ADDRESS: JRENDA@ANCHORENV.COM
PHONE #: 503-670-1108 FAX#: 503-670-1128
SAMPLER'S SIGNATURE: Kelly R. Tikkemeier

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ (8260☒) 8021☐ BTEX☐	Hydrocarbons (See below) Gas☒ Diesel☒ Oil☒ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ (SIM☒)	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	NWTPH-GX					REMARKS
BM-112205-1	11-22-05			H_2O	8			X	X							X										
BM-112205-2								X	X							X										
BM-112205-3								X	X							X										
BM-112205-4								X	X							X										
BM-112205-5								X	X							X										
BM-112205-6								X	X							X										
BM-112205-7								X	X							X										
Trip Blank		NA			2			X																		
Trip Blank		NA			2																X					

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
✓ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. # _____
Bill To: _____

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
✓ Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date _____

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI (NORTHWEST) OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

BRIX003596

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Kelly R. Tikkemeier — Date/Time: 11-23-05/0800	Signature — Date/Time	Signature — Date/Time	Signature — Date/Time
Printed Name: Kelly R. Tikkemeier — Firm: Anchor Env.	Printed Name — Firm	Printed Name — Firm	Printed Name — Firm

RCOC #1 06/03

Appendix B
Laboratory Report

BRIX003597

Confidential Business Information

1317 South 13th Avenue P.O. Box 479 Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia-Analytical Services INC.
An Employee - Owned Company

October 20, 2005 Service Request No: K0504406

John Renda
Anchor Environmental
6650 SW Redwood Lane
Suite 110
Portland, OR 97224

RE: BRIX Maritime/990056-01

Dear John:

Enclosed are the results of the sample(s) submitted to our laboratory on September 30, 2005. For your reference, these analyses have been assigned our service request number K0504406.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3281.

Respectfully submitted,

Columbia Analytical Services, Inc.

Abbie Spielman
Project Chemist

AS/jeb

BRIX003598

NELAP Accredited ACIL Seal of Excellence Award 100% Recycled

Confidential Business Information

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Confidential Business Information

Case Narrative

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Anchor Environmental	**Service Request No.:**	K0504406
Project:	Brix Maritime	**Date Received:**	9/30/05
Sample Matrix:	Water, Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory Control Sample (LCS).

Sample Receipt

Two soil and three water samples were received for analysis at Columbia Analytical Services on 9/30/05.No discrepancies were noted upon initial sample inspection. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Polynuclear Aromatic Hydrocarbons by EPA Method 8270C

Surrogate Exceptions:
The control criteria were exceeded for all surrogates in sample BM-092905-2. The sample appears to have been double spiked with surrogate spike solution during the extraction process. Surrogate recoveries for this sample are at approximately twice expected level. A reanalysis was not performed because insufficient sample was available. All other surrogate recoveries for the associated samples and batch QA/QC results indicate the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____ Date 10/11/05

Confidential Business Information

Chain of Custody Documentation

Confidential Business Information

Columbia Analytical Services INC.
An Employee - Owned Company

CHAIN OF CUSTODY

SR#: K0304400

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE 1 OF 1 COC #

PROJECT NAME: BRIX Maritime
PROJECT NUMBER: 990056-01
PROJECT MANAGER: JOHN RENDA
COMPANY/ADDRESS: Anchor Environmental, 6650 SW Redwood Lane Suite 110
CITY/STATE/ZIP: PORTLAND, OR 97224
E-MAIL ADDRESS: JRENDA@Anchorenv.com
PHONE #: 503-670-1108 X12 FAX#: 503 670-1128
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS: 625☐ 8270☐ 8270LL☒ PAHs	Volatile Organics: 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below): Gas☐ Diesel☐ Oil☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH: 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides: 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M: Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM ☒ 8270	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC; DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐						REMARKS
BM-092905-1	9/29/05	1130		H_2O	1									X												
-2		1145			1									X												
-3		1150			1									X												
-4		1200		Soil	1									X												
-5		1205			1									X												

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

BRIX003604

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 9/30/05 0900	Signature: Amanda Duell Date/Time: 9/30/05 1500	Signature / Date/Time	Signature / Date/Time
Printed Name / Firm	Printed Name / Firm: CAS	Printed Name / Firm	Printed Name / Firm

RCOC #1 06/03

Columbia Analytical Services Inc.
Cooler Receipt and Preservation Form

PC HOBU

Project/Client Anchor Service Request K05 4406

Cooler received on 9-30-05 and opened on 9-30-05 by BW

1. Were custody seals on outside of coolers? (Y) N
   If yes, how many and where? 1 Front
2. Were custody seals intact? (Y) N
3. Were signature and date present on the custody seals? (Y) N
4. Is the shipper's airbill available and filed? If no, record airbill number: CAS courier ~~Y~~ N
5. COC#

Temperature of cooler(s) upon receipt: (°C)	1.0			
Temperature Blank: (°C)	2.8			

Were samples hand delivered on the same day as collection? ~~Y~~ N

6. Were custody papers properly filled out (ink, signed, etc.)? (Y) N
7. Type of packing material present ICE, Water
8. **Did all bottles arrive in good condition (unbroken)?** (Y) N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)? (Y) N
10. Did all bottle labels and tags agree with custody papers? (Y) N
11. **Were the correct types of bottles used for the tests indicated?** (Y) N
12. Were all of the preserved bottles received at the lab with the appropriate pH? (Y) N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y~~ N
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below? ~~Y~~ N
15. Did the bottles originate from CAS/K or a branch laboratory? (Y) N
16. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** ~~Y~~ N
17. Was C12/Res negative? ~~Y~~ N

Explain any discrepancies:

RESOLUTION:

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

00008

BRIX003605

Total Solids

BRIX003606

Confidential Business Information

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime/990056-01
Sample Matrix: Soil

Service Request: K0504406

Total Solids

Prep Method: NONE
Analysis Method: 160.3M
Test Notes:

Units: PERCENT
Basis: Wet

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
BM-092905-4	K0504406-004	09/29/2005	09/30/2005	10/03/2005	65.7	
BM-092905-5	K0504406-005	09/29/2005	09/30/2005	10/03/2005	74.2	

BRIX003607

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Collected:**	09/29/2005
Sample Matrix:	Soil	**Date Received:**	09/30/2005
		Date Analyzed:	10/03/2005

Duplicate Sample Summary
Total Solids

Prep Method:	NONE	**Units:**	PERCENT
Analysis Method:	160.3M	**Basis:**	Wet
Test Notes:			

Sample Name	Lab Code	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
BM-092905-5	K0504406-005	74.2	73.8	74.0	<1	

BRIX003608

00011

Printed: 10/05/2005 14:53
u:\Stealth\Crystal.rpt\Solids rpt

SuperSet Reference: W0517027

Confidential Business Information

Polynuclear Aromatic Hydrocarbons
EPA Method 8270C

BRIX003609

Confidential Business Information

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime/990056-01
Sample Matrix: Water

Service Request: K0504406
Date Collected: 09/29/2005
Date Received: 09/30/2005

Polynuclear Aromatic Hydrocarbons

Sample Name: BM-092905-1
Lab Code: K0504406-001

Units: ug/L
Basis: NA

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
2-Methylnaphthalene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Acenaphthylene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Acenaphthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Dibenzofuran	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Fluorene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Phenanthrene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Fluoranthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Pyrene	**0.029**		0.020	1	10/04/05	10/07/05	KWG0517093	
Benz(a)anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Chrysene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(b)fluoranthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(k)fluoranthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(a)pyrene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Dibenz(a,h)anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(g,h,i)perylene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	70	24-111	10/07/05	Acceptable
Fluoranthene-d10	91	26-123	10/07/05	Acceptable
Terphenyl-d14	103	25-146	10/07/05	Acceptable

BRIX003610

Comments:

Confidential Business Information

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Collected:**	09/29/2005
Sample Matrix:	Water	**Date Received:**	09/30/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-092905-2	**Units:**	ug/L
Lab Code:	K0504406-002	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
2-Methylnaphthalene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Acenaphthylene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Acenaphthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Dibenzofuran	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Fluorene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Phenanthrene	**0.029**		0.020	1	10/04/05	10/07/05	KWG0517093	
Anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Fluoranthene	**0.081**		0.020	1	10/04/05	10/07/05	KWG0517093	
Pyrene	**0.095**		0.020	1	10/04/05	10/07/05	KWG0517093	
Benz(a)anthracene	**0.022**		0.020	1	10/04/05	10/07/05	KWG0517093	
Chrysene	**0.037**		0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(b)fluoranthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(k)fluoranthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(a)pyrene	**0.023**		0.020	1	10/04/05	10/07/05	KWG0517093	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Dibenz(a,h)anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(g,h,i)perylene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	122	24-111	10/07/05	Outside Control Limits
Fluoranthene-d10	142	26-123	10/07/05	Outside Control Limits
Terphenyl-d14	181	25-146	10/07/05	Outside Control Limits

BRIX003611

Comments:

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Confidential Business Information

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Collected:**	09/29/2005
Sample Matrix:	Water	**Date Received:**	09/30/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-092905-3	**Units:**	ug/L
Lab Code:	K0504406-003	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.027**		0.020	1	10/04/05	10/07/05	KWG0517093	
2-Methylnaphthalene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Acenaphthylene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Acenaphthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Dibenzofuran	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Fluorene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Phenanthrene	**0.037**		0.020	1	10/04/05	10/07/05	KWG0517093	
Anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Fluoranthene	**0.024**		0.020	1	10/04/05	10/07/05	KWG0517093	
Pyrene	**0.11**		0.020	1	10/04/05	10/07/05	KWG0517093	
Benz(a)anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Chrysene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(b)fluoranthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(k)fluoranthene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(a)pyrene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Dibenz(a,h)anthracene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	
Benzo(g,h,i)perylene	ND	U	0.020	1	10/04/05	10/07/05	KWG0517093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	74	24-111	10/07/05	Acceptable
Fluoranthene-d10	98	26-123	10/07/05	Acceptable
Terphenyl-d14	117	25-146	10/07/05	Acceptable

BRIX003612

Comments:

00015

Confidential Business Information

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0517093-3	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
2-Methylnaphthalene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Acenaphthylene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Acenaphthene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Dibenzofuran	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Fluorene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Phenanthrene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Anthracene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Fluoranthene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Pyrene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Benz(a)anthracene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Chrysene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Benzo(b)fluoranthene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Benzo(k)fluoranthene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Benzo(a)pyrene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Dibenz(a,h)anthracene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	
Benzo(g,h,i)perylene	ND	U	0.020	1	10/04/05	10/08/05	KWG0517093	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	80	24-111	10/08/05	Acceptable
Fluoranthene-d10	92	26-123	10/08/05	Acceptable
Terphenyl-d14	127	25-146	10/08/05	Acceptable

BRIX003613

Comments:

Confidential Business Information

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Collected:**	09/29/2005
Sample Matrix:	Soil	**Date Received:**	09/30/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-092905-4	**Units:**	ug/Kg
Lab Code:	K0504406-004	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	72		5.0	1	10/06/05	10/07/05	KWG0517137	
2-Methylnaphthalene	16		5.0	1	10/06/05	10/07/05	KWG0517137	
Acenaphthylene	17		5.0	1	10/06/05	10/07/05	KWG0517137	
Acenaphthene	20		5.0	1	10/06/05	10/07/05	KWG0517137	
Fluorene	26		5.0	1	10/06/05	10/07/05	KWG0517137	
Dibenzofuran	9.5		5.0	1	10/06/05	10/07/05	KWG0517137	
Phenanthrene	210		5.0	1	10/06/05	10/07/05	KWG0517137	
Anthracene	56		5.0	1	10/06/05	10/07/05	KWG0517137	
Fluoranthene	220		5.0	1	10/06/05	10/07/05	KWG0517137	
Pyrene	450		5.0	1	10/06/05	10/07/05	KWG0517137	
Benzo(b)fluoranthene	97		5.0	1	10/06/05	10/07/05	KWG0517137	
Benzo(k)fluoranthene	79		5.0	1	10/06/05	10/07/05	KWG0517137	
Benz(a)anthracene	94		5.0	1	10/06/05	10/07/05	KWG0517137	
Chrysene	120		5.0	1	10/06/05	10/07/05	KWG0517137	
Benzo(a)pyrene	150		5.0	1	10/06/05	10/07/05	KWG0517137	
Indeno(1,2,3-cd)pyrene	150		5.0	1	10/06/05	10/07/05	KWG0517137	
Dibenz(a,h)anthracene	16		5.0	1	10/06/05	10/07/05	KWG0517137	
Benzo(g,h,i)perylene	180		5.0	1	10/06/05	10/07/05	KWG0517137	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	44	10-122	10/07/05	Acceptable
Fluoranthene-d10	44	10-129	10/07/05	Acceptable
Terphenyl-d14	48	32-134	10/07/05	Acceptable

BRIX003614

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Collected:**	09/29/2005
Sample Matrix:	Soil	**Date Received:**	09/30/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-092905-5	**Units:**	ug/Kg
Lab Code:	K0504406-005	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**8.1**		5.1	1	10/06/05	10/06/05	KWG0517137	
2-Methylnaphthalene	ND	U	5.1	1	10/06/05	10/06/05	KWG0517137	
Acenaphthylene	ND	U	5.1	1	10/06/05	10/06/05	KWG0517137	
Acenaphthene	ND	U	5.1	1	10/06/05	10/06/05	KWG0517137	
Fluorene	ND	U	5.1	1	10/06/05	10/06/05	KWG0517137	
Dibenzofuran	ND	U	5.1	1	10/06/05	10/06/05	KWG0517137	
Phenanthrene	**46**		5.1	1	10/06/05	10/06/05	KWG0517137	
Anthracene	**11**		5.1	1	10/06/05	10/06/05	KWG0517137	
Fluoranthene	**47**		5.1	1	10/06/05	10/06/05	KWG0517137	
Pyrene	**81**		5.1	1	10/06/05	10/06/05	KWG0517137	
Benzo(b)fluoranthene	**24**		5.1	1	10/06/05	10/06/05	KWG0517137	
Benzo(k)fluoranthene	**22**		5.1	1	10/06/05	10/06/05	KWG0517137	
Benz(a)anthracene	**31**		5.1	1	10/06/05	10/06/05	KWG0517137	
Chrysene	**37**		5.1	1	10/06/05	10/06/05	KWG0517137	
Benzo(a)pyrene	**39**		5.1	1	10/06/05	10/06/05	KWG0517137	
Indeno(1,2,3-cd)pyrene	**31**		5.1	1	10/06/05	10/06/05	KWG0517137	
Dibenz(a,h)anthracene	ND	U	5.1	1	10/06/05	10/06/05	KWG0517137	
Benzo(g,h,i)perylene	**31**		5.1	1	10/06/05	10/06/05	KWG0517137	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	54	10-122	10/06/05	Acceptable
Fluoranthene-d10	70	10-129	10/06/05	Acceptable
Terphenyl-d14	62	32-134	10/06/05	Acceptable

BRIX003615

Comments:

00018

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KWG0517137-5	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
2-Methylnaphthalene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Acenaphthylene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Acenaphthene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Fluorene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Dibenzofuran	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Phenanthrene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Anthracene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Fluoranthene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Pyrene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Benzo(b)fluoranthene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Benzo(k)fluoranthene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Benz(a)anthracene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Chrysene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Benzo(a)pyrene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Indeno(1,2,3-cd)pyrene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Dibenz(a,h)anthracene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	
Benzo(g,h,i)perylene	ND	U	2.5	1	10/06/05	10/06/05	KWG0517137	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	57	10-122	10/06/05	Acceptable
Fluoranthene-d10	62	10-129	10/06/05	Acceptable
Terphenyl-d14	70	32-134	10/06/05	Acceptable

BRIX003616

Comments:

00019

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime/990056-01
Sample Matrix: Water

Service Request: K0504406

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
BM-092905-1	K0504406-001	70	91	103
BM-092905-2	K0504406-002	122 *	142 *	181 *
BM-092905-3	K0504406-003	74	98	117
Method Blank	KWG0517093-3	80	92	127
Lab Control Sample	KWG0517093-1	84	96	122
Duplicate Lab Control Sample	KWG0517093-2	78	92	109

Surrogate Recovery Control Limits (%)

Sur1 =	Fluorene-d10	24-111
Sur2 =	Fluoranthene-d10	26-123
Sur3 =	Terphenyl-d14	25-146

BRIX003617

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

00020

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime/990056-01
Sample Matrix: Soil

Service Request: K0504406

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3541
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
BM-092905-4	K0504406-004	44	44	48
BM-092905-5	K0504406-005	54	70	62
Method Blank	KWG0517137-5	57	62	70
BM-092905-5MS	KWG0517137-1	61	68	62
BM-092905-5DMS	KWG0517137-2	48	55	50
Lab Control Sample	KWG0517137-3	77	80	61
Duplicate Lab Control Sample	KWG0517137-4	72	79	57

Surrogate Recovery Control Limits (%)

Sur1 =	Fluorene-d10	10-122
Sur2 =	Fluoranthene-d10	10-129
Sur3 =	Terphenyl-d14	32-134

BRIX003618

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

00021

Confidential Business Information

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Extracted:**	10/06/2005
Sample Matrix:	Soil	**Date Analyzed:**	10/06/2005

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-092905-5	**Units:**	ug/Kg
Lab Code:	K0504406-005	**Basis:**	Dry
Extraction Method:	EPA 3541	**Level:**	Low
Analysis Method:	8270C SIM	**Extraction Lot:**	KWG0517137

		BM-092905-5MS KWG0517137-1 Matrix Spike			BM-092905-5DMS KWG0517137-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	8.1	386	500	76	324	500	63	15-115	17	40
2-Methylnaphthalene	ND	438	500	88	330	500	66	23-116	28	40
Acenaphthylene	ND	402	500	80	322	500	64	30-117	22	40
Acenaphthene	ND	397	500	79	322	500	64	25-122	21	40
Fluorene	ND	423	500	85	339	500	68	28-125	22	40
Dibenzofuran	ND	412	500	82	331	500	66	27-121	22	40
Phenanthrene	46	415	500	74	345	500	60	20-136	19	40
Anthracene	11	415	500	81	341	500	66	33-129	20	40
Fluoranthene	47	432	500	77	342	500	59	22-145	23	40
Pyrene	81	505	500	85	452	500	74	18-146	11	40
Benzo(b)fluoranthene	24	442	500	84	352	500	66	19-145	23	40
Benzo(k)fluoranthene	22	399	500	76	336	500	63	20-144	17	40
Benz(a)anthracene	31	438	500	81	364	500	67	17-144	18	40
Chrysene	37	445	500	82	368	500	66	26-139	19	40
Benzo(a)pyrene	39	467	500	86	375	500	67	19-147	22	40
Indeno(1,2,3-cd)pyrene	31	511	500	96	425	500	79	15-150	19	40
Dibenz(a,h)anthracene	ND	497	500	100	411	500	82	21-143	19	40
Benzo(g,h,i)perylene	31	452	500	84	386	500	71	15-147	16	40

BRIX003619

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00022

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime/990056-01
Sample Matrix: Water

Service Request: K0504406
Date Extracted: 10/04/2005
Date Analyzed: 10/07/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0517093

	Lab Control Sample KWG0517093-1 Lab Control Spike			Duplicate Lab Control Sample KWG0517093-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	2.13	2.50	85	1.86	2.50	75	32-124	13	30
2-Methylnaphthalene	2.02	2.50	81	1.73	2.50	69	19-133	16	30
Acenaphthylene	2.24	2.50	90	2.08	2.50	83	36-128	8	30
Acenaphthene	2.28	2.50	91	2.07	2.50	83	36-126	9	30
Dibenzofuran	2.42	2.50	97	2.20	2.50	88	10-167	10	30
Fluorene	2.46	2.50	99	2.25	2.50	90	41-130	9	30
Phenanthrene	2.39	2.50	95	2.20	2.50	88	43-129	8	30
Anthracene	2.41	2.50	97	2.19	2.50	88	36-131	10	30
Fluoranthene	2.62	2.50	105	2.47	2.50	99	45-139	6	30
Pyrene	2.85	2.50	114	2.57	2.50	103	38-143	10	30
Benz(a)anthracene	2.46	2.50	98	2.98	2.50	119	45-131	19	30
Chrysene	2.51	2.50	100	2.30	2.50	92	47-132	9	30
Benzo(b)fluoranthene	2.37	2.50	95	2.24	2.50	89	51-135	6	30
Benzo(k)fluoranthene	2.46	2.50	98	2.22	2.50	89	46-139	10	30
Benzo(a)pyrene	2.62	2.50	105	2.34	2.50	94	40-138	11	30
Indeno(1,2,3-cd)pyrene	2.23	2.50	89	2.11	2.50	84	35-148	6	30
Dibenz(a,h)anthracene	2.22	2.50	89	2.07	2.50	83	42-143	7	30
Benzo(g,h,i)perylene	2.05	2.50	82	1.89	2.50	76	42-139	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0504406
Project:	BRIX Maritime/990056-01	**Date Extracted:**	10/06/2005
Sample Matrix:	Soil	**Date Analyzed:**	10/06/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method:	EPA 3541	**Units:**	ug/Kg
Analysis Method:	8270C SIM	**Basis:**	Dry
		Level:	Low
		Extraction Lot:	KWG0517137

	Lab Control Sample KWG0517137-3 Lab Control Spike			Duplicate Lab Control Sample KWG0517137-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	388	500	78	377	500	75	43-108	3	40
2-Methylnaphthalene	461	500	92	442	500	88	40-117	4	40
Acenaphthylene	408	500	82	394	500	79	48-112	3	40
Acenaphthene	411	500	82	399	500	80	48-110	3	40
Fluorene	444	500	89	425	500	85	51-112	4	40
Dibenzofuran	431	500	86	413	500	83	47-113	4	40
Phenanthrene	400	500	80	401	500	80	52-114	0	40
Anthracene	418	500	84	405	500	81	53-118	3	40
Fluoranthene	454	500	91	450	500	90	55-124	1	40
Pyrene	415	500	83	403	500	81	49-131	3	40
Benzo(b)fluoranthene	446	500	89	431	500	86	55-127	4	40
Benzo(k)fluoranthene	410	500	82	428	500	86	57-127	4	40
Benz(a)anthracene	412	500	82	415	500	83	51-122	1	40
Chrysene	410	500	82	423	500	85	57-122	3	40
Benzo(a)pyrene	441	500	88	445	500	89	55-126	1	40
Indeno(1,2,3-cd)pyrene	447	500	89	477	500	95	43-136	7	40
Dibenz(a,h)anthracene	460	500	92	492	500	98	43-133	7	40
Benzo(g,h,i)perylene	370	500	74	400	500	80	50-127	8	40

BRIX003621

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00024

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1317 South 13th Avenue P.O. Box 479 Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia-Analytical Services INC.
An Employee - Owned Company

December 16, 2005 Service Request No: K0506112

John Renda
Anchor Environmental
6650 SW Redwood Lane
Suite 110
Portland, OR 97224

RE: BRIX Maritime-Portland, OR

Dear John:

Enclosed are the results of the sample(s) submitted to our laboratory on November 23, 2005. For your reference, these analyses have been assigned our service request number K0506112.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3281.

Respectfully submitted,

Columbia Analytical Services, Inc.

for
Abbie Spielman
Project Chemist

AS/jeb

BRIX003622

Confidential Business Information

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Case Narrative

BRIX003625

000 4

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Anchor Environmental	**Service Request No.:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Received:**	11/23/05
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS), and Laboratory Control Sample (LCS).

Sample Receipt

Nine water samples were received for analysis at Columbia Analytical Services on 11/23/05 in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by EPA Method 8015B

No anomalies associated with the analysis of this batch were observed.

Gasoline Range Organics by EPA Method 8015B

No anomalies associated with the analysis of this batch were observed.

Volatile Organic Compounds by EPA Method 8260B

Laboratory Control Sample (LCS) Exceptions:
The advisory criterion was exceeded for Acetone in LCS KWG0520856-3. As per the CAS/Kelso Standard Operating Procedure (SOP) for this method, these compounds are not included in the subset of analyte used to control the analysis. The recovery information reported for these analyte is for advisory purposes only (i.e. to provide additional detail related to the performance of each individual compound). No further corrective action was required.

Matrix Spike Recovery Exceptions:
The control criteria for matrix spike recovery of Trichloroethene (TCE) for sample Batch QCMS and Batch QCDMS is not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Initial Calibration (ICAL) Exceptions:
The primary evaluation criterion was exceeded for the following analytes in ICAL ID CAL4953: Vinyl Chloride, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, Dibromochloromethane, and Bromoform. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the mean Relative Standard Deviation (RSD) of all analytes in the calibration. The result of the mean RSD calculation was 9.6%. The calibration meets the alternative evaluation criteria. Note that CAS/Kelso policy does not allow the use of averaging if any analyte in the ICAL exceeds 30% RSD.

BRIX003626

Approved by ll Date 12/19/05

Confidential Business Information

Polynuclear Aromatic Hydrocarbons by EPA Method 8270C

Elevated Method Reporting Limits:
The reporting limit is elevated for Acenaphthylene in sample BM-112205-7. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the reporting limit. The result is flagged to indicate the matrix interference.

The reporting limit is elevated for Naphthalene and 2-Methylnaphthalene in sample BM-112205-7. The sample extract required dilution due to relatively high levels of non-target background components. Clean-up of the extract was performed within the scope of the method, but did not eliminate enough of the background components to prevent dilution.

BRIX003627

Approved by UL **Date** 12/19/05

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Chain of Custody Documentation

BRIX003628

000-7

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CHAIN OF CUSTODY

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SR#: K0506112

PAGE 1 OF 1 COC #

PROJECT NAME: BRIX MARITIME - PORTLAND, OR
PROJECT NUMBER:
PROJECT MANAGER: JOHN RENDA
COMPANY/ADDRESS: ANCHOR ENVIRONMENTAL, LLC
6650 SW REDWOOD LANE, #110
CITY/STATE/ZIP: PORTLAND, OR 97224
E-MAIL ADDRESS: JRENDA@ANCHORENV.COM
PHONE #: 503-670-1108 FAX#: 503-670-1128
SAMPLER'S SIGNATURE: Kelly R. Tittemeier

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ (8260X) 8021☐ BTEX☐	Hydrocarbons (see below) Gas X Diesel X Oil X ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM X	Metals, Total or Dissolved (See list below)	Cyanide☐	Hex-Chrom☐	pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	NWTPH-GX				REMARKS
BM-112205-1	11-22-05			H_2O	8		X	X						X										
BM-112205-2							X	X						X										
BM-112205-3							X	X						X										
BM-112205-4							X	X						X										
BM-112205-5							X	X						X										
BM-112205-6							X	X						X										
BM-112205-7							X	X						X										
Trip Blank		NA			2		X																	
Trip Blank		NA			2													X						

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
✓ II. Report Dup., MS, MSD as required
___ III. Data Validation Report (includes all raw data)
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
✓ Standard (10-15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

BRIX003629

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Kelly R. Tittemeier / 11-23-05/0800 (Signature / Date/Time)	Amanda Jurell 11/23/05 1210 (Signature / Date/Time)	Signature / Date/Time	Signature / Date/Time
Kelly R. Tittemeier / Anchor Env. (Printed Name / Firm)	Printed Name / Firm	Printed Name / Firm	Printed Name / Firm

RCOC #1 06/03

Columbia Analytical Services Inc.
Cooler Receipt and Preservation Form

PC Abble

Project/Client Anchor Service Request K05 6112

Cooler received on 11/23/01 and opened on 11/23/01 by TBlack

1. Were custody seals on outside of coolers? **Y** N
   If yes, how many and where? Front
2. Were custody seals intact? **Y** N
3. Were signature and date present on the custody seals? **Y** N
4. Is the shipper's airbill available and filed? If no, record airbill number: _____ Y **N**
5. COC#

Temperature of cooler(s) upon receipt: (°C)	0.7	1.5	2.8	
Temperature Blank: (°C)	0.5	1.1	1.7	

Were samples hand delivered on the same day as collection? Y **N**

6. Were custody papers properly filled out (ink, signed, etc.)? **Y** N
7. Type of packing material present loose ice - bmap - insert
8. **Did all bottles arrive in good condition (unbroken)?** **Y** N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)? **Y** N
10. Did all bottle labels and tags agree with custody papers? **Y** N
11. **Were the correct types of bottles used for the tests indicated?** **Y** N
12. Were all of the preserved bottles received at the lab with the appropriate pH? **Y** N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? **Y** N
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below? ~~Y~~ N
15. Did the bottles originate from CAS/K or a branch laboratory? **Y** N
16. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** ~~Y~~ N
17. Was C12/Res negative? **Y** N

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

BRIX003630

Confidential Business Information

NWTPH-Dx

BRIX003631

00010

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Diesel and Residual Range Organics

Sample Name:	BM-112205-1 MW-7	**Units:**	ug/L
Lab Code:	K0506112-001	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	270	1	12/05/05	12/05/05	KWG0520769	
Residual Range Organics (RRO)	ND	U	530	1	12/05/05	12/05/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	102	50-150	12/05/05	Acceptable
n-Triacontane	108	50-150	12/05/05	Acceptable

BRIX003632

Comments:

00011

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Diesel and Residual Range Organics

Sample Name:	BM-112205-2 MW-6	**Units:**	ug/L
Lab Code:	K0506112-002	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	280	1	12/05/05	12/06/05	KWG0520769	
Residual Range Organics (RRO)	**650**	O	550	1	12/05/05	12/06/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	90	50-150	12/06/05	Acceptable
n-Triacontane	96	50-150	12/06/05	Acceptable

BRIX003633

Comments:

00012

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Diesel and Residual Range Organics

Sample Name:	BM-112205-3 MW-4	**Units:**	ug/L
Lab Code:	K0506112-003	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	270	1	12/05/05	12/06/05	KWG0520769	
Residual Range Organics (RRO)	ND	U	530	1	12/05/05	12/06/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	89	50-150	12/06/05	Acceptable
n-Triacontane	95	50-150	12/06/05	Acceptable

BRIX003634

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Diesel and Residual Range Organics

Sample Name:	BM-112205-4 MW-2	**Units:**	ug/L
Lab Code:	K0506112-004	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	280	1	12/05/05	12/06/05	KWG0520769	
Residual Range Organics (RRO)	ND	U	550	1	12/05/05	12/06/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	94	50-150	12/06/05	Acceptable
n-Triacontane	97	50-150	12/06/05	Acceptable

BRIX003635

Comments:

00014

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Diesel and Residual Range Organics

Sample Name:	BM-112205-5 MW-3	**Units:**	ug/L
Lab Code:	K0506112-005	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**780**	Z	270	1	12/05/05	12/06/05	KWG0520769	
Residual Range Organics (RRO)	**770**	Z	530	1	12/05/05	12/06/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	93	50-150	12/06/05	Acceptable
n-Triacontane	97	50-150	12/06/05	Acceptable

BRIX003636

Comments:

00015

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Diesel and Residual Range Organics

Sample Name:	BM-112205-6 MW-3 (DUP)	**Units:**	ug/L
Lab Code:	K0506112-006	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**670**	Z	270	1	12/05/05	12/06/05	KWG0520769	
Residual Range Organics (RRO)	**710**	Z	530	1	12/05/05	12/06/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	88	50-150	12/06/05	Acceptable
n-Triacontane	92	50-150	12/06/05	Acceptable

BRIX003637

Comments:

00016

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Diesel and Residual Range Organics

Sample Name:	BM-112205-7 MW-1	**Units:**	ug/L
Lab Code:	K0506112-007	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**1300**	Z	270	1	12/05/05	12/06/05	KWG0520769	
Residual Range Organics (RRO)	ND	U	530	1	12/05/05	12/06/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	86	50-150	12/06/05	Acceptable
n-Triacontane	92	50-150	12/06/05	Acceptable

BRIX003638

Comments:

00017

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Diesel and Residual Range Organics

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0520769-3	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	250	1	12/05/05	12/05/05	KWG0520769	
Residual Range Organics (RRO)	ND	U	500	1	12/05/05	12/05/05	KWG0520769	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	91	50-150	12/05/05	Acceptable
n-Triacontane	94	50-150	12/05/05	Acceptable

BRIX003639

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112

Surrogate Recovery Summary
Diesel and Residual Range Organics

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2
BM-112205-1	K0506112-001	102	108
BM-112205-2	K0506112-002	90	96
BM-112205-3	K0506112-003	89	95
BM-112205-4	K0506112-004	94	97
BM-112205-5	K0506112-005	93	97
BM-112205-6	K0506112-006	88	92
BM-112205-7	K0506112-007	86	92
Method Blank	KWG0520769-3	91	94
Lab Control Sample	KWG0520769-1	93	94
Duplicate Lab Control Sample	KWG0520769-2	92	96

Surrogate Recovery Control Limits (%)

Sur1 =	o-Terphenyl	50-150
Sur2 =	n-Triacontane	50-150

BRIX003640

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

00019

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	12/05/2005
Sample Matrix:	Water	**Date Analyzed:**	12/05/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Diesel and Residual Range Organics

Extraction Method:	EPA 3510C	**Units:**	ug/L
Analysis Method:	NWTPH-Dx	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG0520769

	Lab Control Sample KWG0520769-1 Lab Control Spike			Duplicate Lab Control Sample KWG0520769-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Diesel Range Organics (DRO)	3030	3200	95	2940	3200	92	56-162	3	30
Residual Range Organics (RRO)	1470	1600	92	1450	1600	91	53-143	1	30

BRIX003641

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00020

Confidential Business Information

NWTPH-Gx

BRIX003642

00021

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	BM-112205-1 MW-7	**Units:**	ug/L
Lab Code:	K0506112-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/25/05	11/25/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	92	50-150	11/25/05	Acceptable

BRIX003643

Comments:

00022

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	BM-112205-2 MW-6	**Units:**	ug/L
Lab Code:	K0506112-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/25/05	11/25/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	92	50-150	11/25/05	Acceptable

BRIX003644

Comments:

00023

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	BM-112205-3 MW-4	**Units:**	ug/L
Lab Code:	K0506112-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/25/05	11/25/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	91	50-150	11/25/05	Acceptable

BRIX003645

Comments:

00024

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	BM-112205-4 MW-2	**Units:**	ug/L
Lab Code:	K0506112-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/25/05	11/25/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	91	50-150	11/25/05	Acceptable

BRIX003646

Comments:

00025

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	BM-112205-5 MW-3	**Units:**	ug/L
Lab Code:	K0506112-005	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/25/05	11/25/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	89	50-150	11/25/05	Acceptable

BRIX003647

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	BM-112205-6 MW-3 (DUP)	**Units:**	ug/L
Lab Code:	K0506112-006	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/25/05	11/25/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	89	50-150	11/25/05	Acceptable

BRIX003648

Comments:

00027

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	BM-112205-7 MW-1	**Units:**	ug/L
Lab Code:	K0506112-007	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	13000	D	2500	10	12/02/05	12/02/05	KWG0520988	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	87	50-150	12/02/05	Acceptable

BRIX003649

Comments:

00028

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Gasoline Range Organics

Sample Name:	Trip Blank-GX	**Units:**	ug/L
Lab Code:	K0506112-009	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/24/05	11/24/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	93	50-150	11/24/05	Acceptable

BRIX003650

Comments:

00029

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Gasoline Range Organics

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0520455-4	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	11/24/05	11/24/05	KWG0520455	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	93	50-150	11/24/05	Acceptable

BRIX003651

Comments:

00030

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Gasoline Range Organics

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0520988-5	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	1	12/02/05	12/02/05	KWG0520988	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	87	50-150	12/02/05	Acceptable

BRIX003652

Comments:

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112

Surrogate Recovery Summary
Gasoline Range Organics

Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1
BM-112205-1	K0506112-001	92
BM-112205-2	K0506112-002	92
BM-112205-3	K0506112-003	91
BM-112205-4	K0506112-004	91
BM-112205-5	K0506112-005	89
BM-112205-6	K0506112-006	89
BM-112205-7	K0506112-007	87
Trip Blank-GX	K0506112-009	93
BM-112205-1DUP	KWG0520455-1	92
Method Blank	KWG0520455-4	93
Method Blank	KWG0520988-5	87
Lab Control Sample	KWG0520455-2	98
Duplicate Lab Control Sample	KWG0520455-3	97
Lab Control Sample	KWG0520988-3	93
Duplicate Lab Control Sample	KWG0520988-4	92

Surrogate Recovery Control Limits (%)

Sur1 = 1,4-Difluorobenzene 50-150

BRIX003653

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

00032

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	11/25/2005
Sample Matrix:	Water	**Date Analyzed:**	11/25/2005

Duplicate Sample Summary
Gasoline Range Organics

Sample Name:	BM-112205-1	**Units:**	ug/L
Lab Code:	K0506112-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx	**Extraction Lot:**	KWG0520455

Analyte Name	MRL	Sample Result	BM-112205-1DUP KWG0520455-1 Duplicate Sample Result	Average	Relative Percent Difference	RPD Limit
Gasoline Range Organics-NWTPH	250	ND	ND	ND	-	30

BRIX003654

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00033

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	11/24/2005
Sample Matrix:	Water	**Date Analyzed:**	11/24/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Gasoline Range Organics

Extraction Method:	EPA 5030B	**Units:**	ug/L
Analysis Method:	NWTPH-Gx	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG0520455

	Lab Control Sample KWG0520455-2 Lab Control Spike			Duplicate Lab Control Sample KWG0520455-3 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Gasoline Range Organics-NWTPH	486	500	97	486	500	97	71-128	0	30

BRIX003655

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00034

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	12/02/2005
Sample Matrix:	Water	**Date Analyzed:**	12/02/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Gasoline Range Organics

Extraction Method:	EPA 5030B	**Units:**	ug/L
Analysis Method:	NWTPH-Gx	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG0520988

	Lab Control Sample KWG0520988-3 Lab Control Spike			Duplicate Lab Control Sample KWG0520988-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Gasoline Range Organics-NWTPH	421	500	84	417	500	83	71-128	1	30

BRIX003656

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00035

Confidential Business Information

Volatile Organic Compounds
EPA Method 8260B

BRIX003657

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-1 MW-7
Lab Code: K0506112-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520856	*
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520856	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520856	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520856	

BRIX003658

Comments:

00037

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-1 MW-7	**Units:**	ug/L
Lab Code:	K0506112-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
m,p-Xylenes	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
o-Xylene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	

* See Case Narrative

BRIX003659

Comments:

00038

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-1 MW-7	**Units:**	ug/L
Lab Code:	K0506112-001	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	101	80-119	12/02/05	Acceptable
Toluene-d8	100	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	93	72-114	12/02/05	Acceptable

BRIX003660

Comments:

00039

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-2 MW-6
Lab Code: K0506112-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520856	*
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520856	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520856	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520856	

BRIX003661

Comments:

00040

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-2 MW-6
Lab Code: K0506112-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
m,p-Xylenes	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
o-Xylene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	

* See Case Narrative

BRIX003662

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-2 MW-6	**Units:**	ug/L
Lab Code:	K0506112-002	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	100	80-119	12/02/05	Acceptable
Toluene-d8	101	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	91	72-114	12/02/05	Acceptable

BRIX003663

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-3 MW-4
Lab Code: K0506112-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	

BRIX003664

Comments:

00043

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-3 MW-4
Lab Code: K0506112-003

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
m,p-Xylenes	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
o-Xylene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	

BRIX003665

Comments:

00044

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-3 MW-4	**Units:**	ug/L
Lab Code:	K0506112-003	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	93	80-119	12/02/05	Acceptable
Toluene-d8	100	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	85	72-114	12/02/05	Acceptable

BRIX003666

Comments:

00045

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-4 MW-2	**Units:**	ug/L
Lab Code:	K0506112-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	

BRIX003667

Comments:

00046

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-4 MW-2	**Units:**	ug/L
Lab Code:	K0506112-004	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
m,p-Xylenes	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
o-Xylene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	

BRIX003668

Comments:

00047

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-4 MW-2	**Units:**	ug/L
Lab Code:	K0506112-004	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	100	80-119	12/02/05	Acceptable
Toluene-d8	99	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	85	72-114	12/02/05	Acceptable

BRIX003669

Comments:

00048

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-5 MW-3
Lab Code: K0506112-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	

BRIX003670

Comments:

00049

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-5 MW-3
Lab Code: K0506112-005

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
m,p-Xylenes	**1.3**		0.50	1	12/02/05	12/02/05	KWG0520822	
o-Xylene	**0.89**		0.50	1	12/02/05	12/02/05	KWG0520822	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	

BRIX003671

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-5 MW-3	**Units:**	ug/L
Lab Code:	K0506112-005	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	100	80-119	12/02/05	Acceptable
Toluene-d8	100	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	88	72-114	12/02/05	Acceptable

BRIX003672

Comments:

00051

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-6 MW-3 (DUP)	**Units:**	ug/L
Lab Code:	K0506112-006	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	

BRIX003673

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-6 MW-3(DUP)
Lab Code: K0506112-006

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
m,p-Xylenes	**1.3**		0.50	1	12/02/05	12/02/05	KWG0520822	
o-Xylene	**0.83**		0.50	1	12/02/05	12/02/05	KWG0520822	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	

BRIX003674

Comments:

00053

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-6 MW-3 (DUP)	**Units:**	ug/L
Lab Code:	K0506112-006	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	98	80-119	12/02/05	Acceptable
Toluene-d8	97	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	87	72-114	12/02/05	Acceptable

BRIX003675

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: BM-112205-7 MW-1
Lab Code: K0506112-007

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Chloromethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Vinyl Chloride	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Bromomethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Chloroethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Trichlorofluoromethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Acetone	ND	U	20	1	12/03/05	12/03/05	KWG0520822	
1,1-Dichloroethene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Carbon Disulfide	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Methylene Chloride	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,1-Dichloroethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
2-Butanone (MEK)	ND	U	20	1	12/03/05	12/03/05	KWG0520822	
2,2-Dichloropropane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Chloroform	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Bromochloromethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,1-Dichloropropene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Carbon Tetrachloride	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Benzene	**22**		0.50	1	12/03/05	12/03/05	KWG0520822	
Trichloroethene (TCE)	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,2-Dichloropropane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Bromodichloromethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Dibromomethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
2-Hexanone	ND	U	20	1	12/03/05	12/03/05	KWG0520822	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Toluene	**1.7**		0.50	1	12/03/05	12/03/05	KWG0520822	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,1,2-Trichloroethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/03/05	12/03/05	KWG0520822	

BRIX003676

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-7 MW-1	**Units:**	ug/L
Lab Code:	K0506112-007	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Dibromochloromethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
Chlorobenzene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Ethylbenzene	**170**	D	10	20	12/05/05	12/05/05	KWG0520974	
m,p-Xylenes	**170**	D	10	20	12/05/05	12/05/05	KWG0520974	
o-Xylene	**20**		0.50	1	12/03/05	12/03/05	KWG0520822	
Styrene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Bromoform	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Isopropylbenzene	**100**	D	40	20	12/05/05	12/05/05	KWG0520974	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,2,3-Trichloropropane	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
Bromobenzene	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
n-Propylbenzene	**400**	D	40	20	12/05/05	12/05/05	KWG0520974	
2-Chlorotoluene	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
4-Chlorotoluene	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
1,3,5-Trimethylbenzene	**160**	D	40	20	12/05/05	12/05/05	KWG0520974	
tert-Butylbenzene	**2.2**		2.0	1	12/03/05	12/03/05	KWG0520822	
1,2,4-Trimethylbenzene	**780**	D	40	20	12/05/05	12/05/05	KWG0520974	
sec-Butylbenzene	**50**		2.0	1	12/03/05	12/03/05	KWG0520822	
1,3-Dichlorobenzene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
4-Isopropyltoluene	**4.0**		2.0	1	12/03/05	12/03/05	KWG0520822	
1,4-Dichlorobenzene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
n-Butylbenzene	**85**	D	40	20	12/05/05	12/05/05	KWG0520974	
1,2-Dichlorobenzene	ND	U	0.50	1	12/03/05	12/03/05	KWG0520822	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	
Naphthalene	**380**	D	40	20	12/05/05	12/05/05	KWG0520974	
Hexachlorobutadiene	ND	U	2.0	1	12/03/05	12/03/05	KWG0520822	

BRIX003677

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Volatile Organic Compounds

Sample Name:	BM-112205-7 MW-1	**Units:**	ug/L
Lab Code:	K0506112-007	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	95	80-119	12/03/05	Acceptable
Toluene-d8	103	83-113	12/03/05	Acceptable
4-Bromofluorobenzene	94	72-114	12/03/05	Acceptable

BRIX003678

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: Trip Blank-8260
Lab Code: K0506112-008

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Chloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Vinyl Chloride	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromomethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Chloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Trichlorofluoromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Acetone	ND	U	20	1	12/05/05	12/05/05	KWG0520974	
1,1-Dichloroethene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Carbon Disulfide	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Methylene Chloride	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1-Dichloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
2-Butanone (MEK)	ND	U	20	1	12/05/05	12/05/05	KWG0520974	
2,2-Dichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Chloroform	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromochloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1-Dichloropropene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Carbon Tetrachloride	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Benzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Trichloroethene (TCE)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromodichloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Dibromomethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
2-Hexanone	ND	U	20	1	12/05/05	12/05/05	KWG0520974	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Toluene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1,2-Trichloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/05/05	12/05/05	KWG0520974	

BRIX003679

Comments:

00058

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: Trip Blank-8260
Lab Code: K0506112-008

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Dibromochloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
Chlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Ethylbenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
m,p-Xylenes	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
o-Xylene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Styrene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromoform	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Isopropylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2,3-Trichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromobenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
n-Propylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
2-Chlorotoluene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
4-Chlorotoluene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
tert-Butylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
sec-Butylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,3-Dichlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
4-Isopropyltoluene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,4-Dichlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
n-Butylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2-Dichlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
Naphthalene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
Hexachlorobutadiene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	

BRIX003680

Comments:

00059

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: 11/22/2005
Date Received: 11/23/2005

Volatile Organic Compounds

Sample Name: Trip Blank-8260
Lab Code: K0506112-008

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	104	80-119	12/05/05	Acceptable
Toluene-d8	98	83-113	12/05/05	Acceptable
4-Bromofluorobenzene	83	72-114	12/05/05	Acceptable

BRIX003681

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520822-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520822	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520822	

BRIX003682

Comments:

00061

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520822-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
m,p-Xylenes	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
o-Xylene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520822	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520822	

BRIX003683

Comments:

00062

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0520822-4	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	100	80-119	12/02/05	Acceptable
Toluene-d8	99	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	84	72-114	12/02/05	Acceptable

BRIX003684

Comments:

00063

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520856-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Vinyl Chloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Trichlorofluoromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Acetone	ND	U	20	1	12/02/05	12/02/05	KWG0520856	*
1,1-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Carbon Disulfide	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Methylene Chloride	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1-Dichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
2-Butanone (MEK)	ND	U	20	1	12/02/05	12/02/05	KWG0520856	
2,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Chloroform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Carbon Tetrachloride	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Benzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Trichloroethene (TCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromodichloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Dibromomethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
2-Hexanone	ND	U	20	1	12/02/05	12/02/05	KWG0520856	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Toluene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,2-Trichloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/02/05	12/02/05	KWG0520856	

BRIX003685

Comments:

00064

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520856-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Dibromochloromethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Chlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Ethylbenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
m,p-Xylenes	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
o-Xylene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Styrene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromoform	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Isopropylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2,3-Trichloropropane	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
Bromobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
n-Propylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
2-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
4-Chlorotoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
tert-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
sec-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,3-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
4-Isopropyltoluene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,4-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
n-Butylbenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2-Dichlorobenzene	ND	U	0.50	1	12/02/05	12/02/05	KWG0520856	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Naphthalene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	
Hexachlorobutadiene	ND	U	2.0	1	12/02/05	12/02/05	KWG0520856	

* See Case Narrative

BRIX003686

Comments:

00065

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520856-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	98	80-119	12/02/05	Acceptable
Toluene-d8	101	83-113	12/02/05	Acceptable
4-Bromofluorobenzene	97	72-114	12/02/05	Acceptable

BRIX003687

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520974-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Chloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Vinyl Chloride	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromomethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Chloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Trichlorofluoromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Acetone	ND	U	20	1	12/05/05	12/05/05	KWG0520974	
1,1-Dichloroethene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Methyl tert-Butyl Ether	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Carbon Disulfide	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Methylene Chloride	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
trans-1,2-Dichloroethene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1-Dichloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
2-Butanone (MEK)	ND	U	20	1	12/05/05	12/05/05	KWG0520974	
2,2-Dichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
cis-1,2-Dichloroethene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Chloroform	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromochloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1-Dichloropropene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Carbon Tetrachloride	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dichloroethane (EDC)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Benzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Trichloroethene (TCE)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromodichloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Dibromomethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
2-Hexanone	ND	U	20	1	12/05/05	12/05/05	KWG0520974	
cis-1,3-Dichloropropene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Toluene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
trans-1,3-Dichloropropene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1,2-Trichloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
4-Methyl-2-pentanone (MIBK)	ND	U	20	1	12/05/05	12/05/05	KWG0520974	

BRIX003688

Comments:

00067

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520974-4

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260B

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,3-Dichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Tetrachloroethene (PCE)	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Dibromochloromethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dibromoethane (EDB)	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
Chlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,1,1,2-Tetrachloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Ethylbenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
m,p-Xylenes	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
o-Xylene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Styrene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromoform	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Isopropylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,1,2,2-Tetrachloroethane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2,3-Trichloropropane	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
Bromobenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
n-Propylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
2-Chlorotoluene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
4-Chlorotoluene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,3,5-Trimethylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
tert-Butylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2,4-Trimethylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
sec-Butylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,3-Dichlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
4-Isopropyltoluene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,4-Dichlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
n-Butylbenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2-Dichlorobenzene	ND	U	0.50	1	12/05/05	12/05/05	KWG0520974	
1,2-Dibromo-3-chloropropane	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2,4-Trichlorobenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
1,2,3-Trichlorobenzene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
Naphthalene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	
Hexachlorobutadiene	ND	U	2.0	1	12/05/05	12/05/05	KWG0520974	

BRIX003689

Comments:

00068

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG0520974-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	105	80-119	12/05/05	Acceptable
Toluene-d8	99	83-113	12/05/05	Acceptable
4-Bromofluorobenzene	82	72-114	12/05/05	Acceptable

BRIX003690

Comments:

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
BM-112205-1	K0506112-001	101	100	93
BM-112205-2	K0506112-002	100	101	91
BM-112205-3	K0506112-003	93	100	85
BM-112205-4	K0506112-004	100	99	85
BM-112205-5	K0506112-005	100	100	88
BM-112205-6	K0506112-006	98	97	87
BM-112205-7	K0506112-007	95	103	94
Trip Blank-8260	K0506112-008	104	98	83
Method Blank	KWG0520822-4	100	99	84
Method Blank	KWG0520856-4	98	101	97
Method Blank	KWG0520974-4	105	99	82
Batch QC	K0506094-006	101	102	96
Batch QCMS	KWG0520856-1	99	105	105
Batch QCDMS	KWG0520856-2	100	106	105
Lab Control Sample	KWG0520822-3	98	107	103
Lab Control Sample	KWG0520856-3	101	106	103
Lab Control Sample	KWG0520974-3	97	104	104

Surrogate Recovery Control Limits (%)

Sur1 =	Dibromofluoromethane	80-119
Sur2 =	Toluene-d8	83-113
Sur3 =	4-Bromofluorobenzene	72-114

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

BRIX003691 00070

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	12/02/2005
Sample Matrix:	Water	**Date Analyzed:**	12/02/2005

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K0506094-006	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260B	**Extraction Lot:**	KWG0520856

		Batch QCMS KWG0520856-1 Matrix Spike			Batch QCDMS KWG0520856-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,1-Dichloroethene	8.2	119	100	111	119	100	111	76-143	0	30
Benzene	27	135	100	108	135	100	107	75-130	0	30
Trichloroethene (TCE)	3800	3630E	100	-175 #	3750E	100	-57 #	69-132	3	30
Toluene	5.4	113	100	108	113	100	108	72-132	0	30
Chlorobenzene	ND	99.4	100	99	99.4	100	99	78-117	0	30
1,2-Dichlorobenzene	ND	91.1	100	91	91.3	100	91	77-117	0	30
Naphthalene	ND	93.8	100	94	106	100	106	56-155	13	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

BRIX003692

00071

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 12/02/2005
Date Analyzed: 12/02/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0520822

	Lab Control Sample KWG0520822-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	10.5	10.0	105	45-171
Chloromethane	9.00	10.0	90	53-135
Vinyl Chloride	9.70	10.0	97	67-130
Bromomethane	11.5	10.0	115	36-158
Chloroethane	9.97	10.0	100	62-125
Trichlorofluoromethane	9.14	10.0	91	66-126
Acetone	49.1	50.0	98	70-127
1,1-Dichloroethene	10.4	10.0	104	76-129
Methyl tert-Butyl Ether	10.1	10.0	101	63-132
Carbon Disulfide	18.2	20.0	91	62-138
Methylene Chloride	10.2	10.0	102	65-127
trans-1,2-Dichloroethene	10.1	10.0	101	81-121
1,1-Dichloroethane	10.4	10.0	104	76-117
2-Butanone (MEK)	52.3	50.0	105	69-132
2,2-Dichloropropane	11.6	10.0	116	63-142
cis-1,2-Dichloroethene	10.2	10.0	102	83-118
Chloroform	9.63	10.0	96	76-121
Bromochloromethane	10.2	10.0	102	80-125
1,1,1-Trichloroethane (TCA)	11.2	10.0	112	72-132
1,1-Dichloropropene	9.21	10.0	92	72-118
Carbon Tetrachloride	12.5	10.0	125	66-146
1,2-Dichloroethane (EDC)	10.5	10.0	105	74-121
Benzene	10.4	10.0	104	78-121
Trichloroethene (TCE)	10.1	10.0	101	79-119
1,2-Dichloropropane	10.2	10.0	102	76-116
Bromodichloromethane	11.3	10.0	113	74-130
Dibromomethane	10.1	10.0	101	76-123
2-Hexanone	46.6	50.0	93	67-127
cis-1,3-Dichloropropene	10.8	10.0	108	79-123
Toluene	10.4	10.0	104	76-122
trans-1,3-Dichloropropene	10.2	10.0	102	70-117
1,1,2-Trichloroethane	10.5	10.0	105	76-120
4-Methyl-2-pentanone (MIBK)	46.4	50.0	93	70-128
1,3-Dichloropropane	10.2	10.0	102	77-121
Tetrachloroethene (PCE)	9.91	10.0	99	72-124

BRIX003693

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00072

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 12/02/2005
Date Analyzed: 12/02/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0520822

Analyte Name	Lab Control Sample KWG0520822-3 Lab Control Spike Result	Expected	%Rec	%Rec Limits
Dibromochloromethane	11.8	10.0	118	72-133
1,2-Dibromoethane (EDB)	9.80	10.0	98	75-120
Chlorobenzene	10.1	10.0	101	79-113
1,1,1,2-Tetrachloroethane	11.7	10.0	117	72-133
Ethylbenzene	10.5	10.0	105	84-122
m,p-Xylenes	20.7	20.0	103	83-125
o-Xylene	9.91	10.0	99	83-122
Styrene	9.52	10.0	95	83-127
Bromoform	12.2	10.0	122	63-149
Isopropylbenzene	8.92	10.0	89	72-114
1,1,2,2-Tetrachloroethane	10.8	10.0	108	70-122
1,2,3-Trichloropropane	10.3	10.0	103	73-125
Bromobenzene	10.9	10.0	109	80-121
n-Propylbenzene	10.2	10.0	102	78-124
2-Chlorotoluene	11.2	10.0	112	82-126
4-Chlorotoluene	10.5	10.0	105	80-122
1,3,5-Trimethylbenzene	10.3	10.0	103	78-132
tert-Butylbenzene	9.62	10.0	96	76-126
1,2,4-Trimethylbenzene	10.2	10.0	102	74-138
sec-Butylbenzene	10.2	10.0	102	72-133
1,3-Dichlorobenzene	9.98	10.0	100	81-116
4-Isopropyltoluene	8.94	10.0	89	62-132
1,4-Dichlorobenzene	9.92	10.0	99	80-113
n-Butylbenzene	8.72	10.0	87	51-138
1,2-Dichlorobenzene	9.76	10.0	98	81-113
1,2-Dibromo-3-chloropropane	10.7	10.0	107	63-124
1,2,4-Trichlorobenzene	9.47	10.0	95	61-135
1,2,3-Trichlorobenzene	9.67	10.0	97	66-131
Naphthalene	11.4	10.0	114	53-157
Hexachlorobutadiene	9.89	10.0	99	66-132

Results flagged with an asterisk (*) indicate values outside control criteria.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

BRIX003694

00073

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	12/02/2005
Sample Matrix:	Water	**Date Analyzed:**	12/02/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	EPA 5030B	**Units:**	ug/L
Analysis Method:	8260B	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG0520856

	Lab Control Sample KWG0520856-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	11.0	10.0	110	45-171
Chloromethane	11.0	10.0	110	53-135
Vinyl Chloride	10.6	10.0	106	67-130
Bromomethane	10.3	10.0	103	36-158
Chloroethane	10.9	10.0	109	62-125
Trichlorofluoromethane	10.4	10.0	104	66-126
Acetone	64.9	50.0	130 *	70-127
1,1-Dichloroethene	12.0	10.0	120	76-129
Methyl tert-Butyl Ether	12.3	10.0	123	63-132
Carbon Disulfide	23.0	20.0	115	62-138
Methylene Chloride	11.7	10.0	117	65-127
trans-1,2-Dichloroethene	11.6	10.0	116	81-121
1,1-Dichloroethane	11.2	10.0	112	76-117
2-Butanone (MEK)	61.9	50.0	124	69-132
2,2-Dichloropropane	12.1	10.0	121	63-142
cis-1,2-Dichloroethene	11.4	10.0	114	83-118
Chloroform	10.8	10.0	108	76-121
Bromochloromethane	11.5	10.0	115	80-125
1,1,1-Trichloroethane (TCA)	11.8	10.0	118	72-132
1,1-Dichloropropene	10.8	10.0	108	72-118
Carbon Tetrachloride	11.5	10.0	115	66-146
1,2-Dichloroethane (EDC)	10.9	10.0	109	74-121
Benzene	11.4	10.0	114	78-121
Trichloroethene (TCE)	11.3	10.0	113	79-119
1,2-Dichloropropane	11.4	10.0	114	76-116
Bromodichloromethane	11.4	10.0	114	74-130
Dibromomethane	11.2	10.0	112	76-123
2-Hexanone	55.5	50.0	111	67-127
cis-1,3-Dichloropropene	11.6	10.0	116	79-123
Toluene	11.4	10.0	114	76-122
trans-1,3-Dichloropropene	9.69	10.0	97	70-117
1,1,2-Trichloroethane	10.8	10.0	108	76-120
4-Methyl-2-pentanone (MIBK)	61.8	50.0	124	70-128
1,3-Dichloropropane	10.8	10.0	108	77-121
Tetrachloroethene (PCE)	10.8	10.0	108	72-124

BRIX003695

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 12/02/2005
Date Analyzed: 12/02/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0520856

Analyte Name	Lab Control Sample KWG0520856-3 Lab Control Spike Result	Expected	%Rec	%Rec Limits
Dibromochloromethane	10.4	10.0	104	72-133
1,2-Dibromoethane (EDB)	10.5	10.0	105	75-120
Chlorobenzene	10.3	10.0	103	79-113
1,1,1,2-Tetrachloroethane	10.3	10.0	103	72-133
Ethylbenzene	11.1	10.0	111	84-122
m,p-Xylenes	21.8	20.0	109	83-125
o-Xylene	10.9	10.0	109	83-122
Styrene	10.9	10.0	109	83-127
Bromoform	10.2	10.0	102	63-149
Isopropylbenzene	9.95	10.0	100	72-114
1,1,2,2-Tetrachloroethane	10.8	10.0	108	70-122
1,2,3-Trichloropropane	9.88	10.0	99	73-125
Bromobenzene	10.1	10.0	101	80-121
n-Propylbenzene	10.6	10.0	106	78-124
2-Chlorotoluene	10.2	10.0	102	82-126
4-Chlorotoluene	10.1	10.0	101	80-122
1,3,5-Trimethylbenzene	10.9	10.0	109	78-132
tert-Butylbenzene	10.7	10.0	107	76-126
1,2,4-Trimethylbenzene	10.8	10.0	108	74-138
sec-Butylbenzene	11.5	10.0	115	72-133
1,3-Dichlorobenzene	10.1	10.0	101	81-116
4-Isopropyltoluene	10.4	10.0	104	62-132
1,4-Dichlorobenzene	10.4	10.0	104	80-113
n-Butylbenzene	10.6	10.0	106	51-138
1,2-Dichlorobenzene	9.78	10.0	98	81-113
1,2-Dibromo-3-chloropropane	10.1	10.0	101	63-124
1,2,4-Trichlorobenzene	10.3	10.0	103	61-135
1,2,3-Trichlorobenzene	10.1	10.0	101	66-131
Naphthalene	11.1	10.0	111	53-157
Hexachlorobutadiene	10.1	10.0	101	66-132

Results flagged with an asterisk (*) indicate values outside control criteria.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

BRIX003696

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	12/05/2005
Sample Matrix:	Water	**Date Analyzed:**	12/05/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	EPA 5030B	**Units:**	ug/L
Analysis Method:	8260B	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG0520974

	Lab Control Sample KWG0520974-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Dichlorodifluoromethane	8.68	10.0	87	45-171
Chloromethane	7.20	10.0	72	53-135
Vinyl Chloride	8.40	10.0	84	67-130
Bromomethane	9.67	10.0	97	36-158
Chloroethane	8.90	10.0	89	62-125
Trichlorofluoromethane	8.54	10.0	85	66-126
Acetone	43.7	50.0	87	70-127
1,1-Dichloroethene	9.55	10.0	96	76-129
Methyl tert-Butyl Ether	9.16	10.0	92	63-132
Carbon Disulfide	16.6	20.0	83	62-138
Methylene Chloride	9.45	10.0	95	65-127
trans-1,2-Dichloroethene	9.39	10.0	94	81-121
1,1-Dichloroethane	9.70	10.0	97	76-117
2-Butanone (MEK)	48.9	50.0	98	69-132
2,2-Dichloropropane	10.6	10.0	106	63-142
cis-1,2-Dichloroethene	9.53	10.0	95	83-118
Chloroform	8.97	10.0	90	76-121
Bromochloromethane	9.44	10.0	94	80-125
1,1,1-Trichloroethane (TCA)	10.5	10.0	105	72-132
1,1-Dichloropropene	8.55	10.0	86	72-118
Carbon Tetrachloride	11.5	10.0	115	66-146
1,2-Dichloroethane (EDC)	9.60	10.0	96	74-121
Benzene	9.48	10.0	95	78-121
Trichloroethene (TCE)	9.58	10.0	96	79-119
1,2-Dichloropropane	9.38	10.0	94	76-116
Bromodichloromethane	10.5	10.0	105	74-130
Dibromomethane	9.30	10.0	93	76-123
2-Hexanone	40.7	50.0	81	67-127
cis-1,3-Dichloropropene	9.93	10.0	99	79-123
Toluene	9.51	10.0	95	76-122
trans-1,3-Dichloropropene	9.35	10.0	94	70-117
1,1,2-Trichloroethane	9.60	10.0	96	76-120
4-Methyl-2-pentanone (MIBK)	42.2	50.0	84	70-128
1,3-Dichloropropane	9.43	10.0	94	77-121
Tetrachloroethene (PCE)	9.12	10.0	91	72-124

BRIX003697

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 12/05/2005
Date Analyzed: 12/05/2005

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0520974

	Lab Control Sample KWG0520974-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Dibromochloromethane	11.0	10.0	110	72-133
1,2-Dibromoethane (EDB)	8.96	10.0	90	75-120
Chlorobenzene	9.25	10.0	93	79-113
1,1,1,2-Tetrachloroethane	11.0	10.0	110	72-133
Ethylbenzene	9.81	10.0	98	84-122
m,p-Xylenes	19.2	20.0	96	83-125
o-Xylene	9.24	10.0	92	83-122
Styrene	8.52	10.0	85	83-127
Bromoform	11.7	10.0	117	63-149
Isopropylbenzene	8.20	10.0	82	72-114
1,1,2,2-Tetrachloroethane	9.88	10.0	99	70-122
1,2,3-Trichloropropane	9.78	10.0	98	73-125
Bromobenzene	10.0	10.0	100	80-121
n-Propylbenzene	9.36	10.0	94	78-124
2-Chlorotoluene	10.5	10.0	105	82-126
4-Chlorotoluene	9.76	10.0	98	80-122
1,3,5-Trimethylbenzene	9.56	10.0	96	78-132
tert-Butylbenzene	8.93	10.0	89	76-126
1,2,4-Trimethylbenzene	9.41	10.0	94	74-138
sec-Butylbenzene	9.27	10.0	93	72-133
1,3-Dichlorobenzene	9.22	10.0	92	81-116
4-Isopropyltoluene	8.13	10.0	81	62-132
1,4-Dichlorobenzene	9.15	10.0	92	80-113
n-Butylbenzene	7.93	10.0	79	51-138
1,2-Dichlorobenzene	9.20	10.0	92	81-113
1,2-Dibromo-3-chloropropane	9.08	10.0	91	63-124
1,2,4-Trichlorobenzene	8.68	10.0	87	61-135
1,2,3-Trichlorobenzene	8.91	10.0	89	66-131
Naphthalene	10.3	10.0	103	53-157
Hexachlorobutadiene	8.99	10.0	90	66-132

BRIX003698

Results flagged with an asterisk (*) indicate values outside control criteria.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Confidential Business Information

Polynuclear Aromatic Hydrocarbons
EPA Method 8270C

BRIX003699

Confidential Business Information

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Summary Package

Sample and QC Results

BRIX003700

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Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
BM-112205-1	K0506112-001	11/22/2005	11/23/2005
BM-112205-2	K0506112-002	11/22/2005	11/23/2005
BM-112205-3	K0506112-003	11/22/2005	11/23/2005
BM-112205-4	K0506112-004	11/22/2005	11/23/2005
BM-112205-5	K0506112-005	11/22/2005	11/23/2005
BM-112205-6	K0506112-006	11/22/2005	11/23/2005
BM-112205-7	K0506112-007	11/22/2005	11/23/2005

BRIX003701

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Carl Degner

Date: 12/14/05 Title: SVM Supervisor

00080

u:\Stealth\Crystal.rpt\FormSSum.rpt SuperSet Reference: RR55074

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-1 MW-7	**Units:**	ug/L
Lab Code:	K0506112-001	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
2-Methylnaphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenzofuran	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluorene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Phenanthrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Chrysene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	86	24-111	12/08/05	Acceptable
Fluoranthene-d10	93	26-123	12/08/05	Acceptable
Terphenyl-d14	111	25-146	12/08/05	Acceptable

BRIX003702

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-2 MW-6	**Units:**	ug/L
Lab Code:	K0506112-002	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
2-Methylnaphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenzofuran	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluorene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Phenanthrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Chrysene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	93	24-111	12/08/05	Acceptable
Fluoranthene-d10	96	26-123	12/08/05	Acceptable
Terphenyl-d14	127	25-146	12/08/05	Acceptable

BRIX003703

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-3 MW-4	**Units:**	ug/L
Lab Code:	K0506112-003	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
2-Methylnaphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthene	**0.21**		0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenzofuran	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluorene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Phenanthrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Pyrene	**0.031**		0.020	1	11/28/05	12/08/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Chrysene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	80	24-111	12/08/05	Acceptable
Fluoranthene-d10	86	26-123	12/08/05	Acceptable
Terphenyl-d14	105	25-146	12/08/05	Acceptable

BRIX003704

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-4 MW-2	**Units:**	ug/L
Lab Code:	K0506112-004	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
2-Methylnaphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenzofuran	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluorene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Phenanthrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Chrysene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	95	24-111	12/08/05	Acceptable
Fluoranthene-d10	103	26-123	12/08/05	Acceptable
Terphenyl-d14	122	25-146	12/08/05	Acceptable

BRIX003705

Comments:

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Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-5 MW-3	**Units:**	ug/L
Lab Code:	K0506112-005	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.084**		0.020	1	11/28/05	12/09/05	KWG0520412	
2-Methylnaphthalene	**0.34**		0 020	1	11/28/05	12/09/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Acenaphthene	**0.091**		0.020	1	11/28/05	12/09/05	KWG0520412	
Dibenzofuran	**0.024**		0.020	1	11/28/05	12/09/05	KWG0520412	
Fluorene	**0.070**		0.020	1	11/28/05	12/09/05	KWG0520412	
Phenanthrene	**0.098**		0.020	1	11/28/05	12/09/05	KWG0520412	
Anthracene	**0.020**		0.020	1	11/28/05	12/09/05	KWG0520412	
Fluoranthene	**0.053**		0.020	1	11/28/05	12/09/05	KWG0520412	
Pyrene	**0.055**		0.020	1	11/28/05	12/09/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Chrysene	ND	U	0 020	1	11/28/05	12/09/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	78	24-111	12/09/05	Acceptable
Fluoranthene-d10	89	26-123	12/09/05	Acceptable
Terphenyl-d14	90	25-146	12/09/05	Acceptable

BRIX003706

Comments:

00085

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-6 MW-3(DUP)	**Units:**	ug/L
Lab Code:	K0506112-006	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**0.086**		0.020	1	11/28/05	12/09/05	KWG0520412	
2-Methylnaphthalene	**0.43**		0.020	1	11/28/05	12/09/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Acenaphthene	**0.10**		0.020	1	11/28/05	12/09/05	KWG0520412	
Dibenzofuran	**0.027**		0.020	1	11/28/05	12/09/05	KWG0520412	
Fluorene	**0.072**		0.020	1	11/28/05	12/09/05	KWG0520412	
Phenanthrene	**0.11**		0.020	1	11/28/05	12/09/05	KWG0520412	
Anthracene	**0.025**		0.020	1	11/28/05	12/09/05	KWG0520412	
Fluoranthene	**0.065**		0.020	1	11/28/05	12/09/05	KWG0520412	
Pyrene	**0.070**		0.020	1	11/28/05	12/09/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Chrysene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/09/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	82	24-111	12/09/05	Acceptable
Fluoranthene-d10	92	26-123	12/09/05	Acceptable
Terphenyl-d14	98	25-146	12/09/05	Acceptable

BRIX003707

Comments:

00086

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-7 MW-1	**Units:**	ug/L
Lab Code:	K0506112-007	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	**200**	D	1.0	50	11/28/05	12/09/05	KWG0520412	
2-Methylnaphthalene	**69**	D	1.0	50	11/28/05	12/09/05	KWG0520412	
Acenaphthylene	ND	Ui	0.087	1	11/28/05	12/08/05	KWG0520412	
Acenaphthene	**0.39**		0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenzofuran	**0.086**		0.020	1	11/28/05	12/08/05	KWG0520412	
Fluorene	**0.29**		0.020	1	11/28/05	12/08/05	KWG0520412	
Phenanthrene	**0.43**		0.020	1	11/28/05	12/08/05	KWG0520412	
Anthracene	**0.056**		0.020	1	11/28/05	12/08/05	KWG0520412	
Fluoranthene	**0.35**		0.020	1	11/28/05	12/08/05	KWG0520412	
Pyrene	**0.65**		0.020	1	11/28/05	12/08/05	KWG0520412	
Benz(a)anthracene	**0.079**		0.020	1	11/28/05	12/08/05	KWG0520412	
Chrysene	**0.11**		0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	88	24-111	12/08/05	Acceptable
Fluoranthene-d10	91	26-123	12/08/05	Acceptable
Terphenyl-d14	108	25-146	12/08/05	Acceptable

BRIX003708

Comments:

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG0520412-3	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
2-Methylnaphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenzofuran	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluorene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Phenanthrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Chrysene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	93	24-111	12/08/05	Acceptable
Fluoranthene-d10	99	26-123	12/08/05	Acceptable
Terphenyl-d14	119	25-146	12/08/05	Acceptable

BRIX003709

Comments:

00088

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
BM-112205-1	K0506112-001	86	93	111
BM-112205-2	K0506112-002	93	96	127
BM-112205-3	K0506112-003	80	86	105
BM-112205-4	K0506112-004	95	103	122
BM-112205-5	K0506112-005	78	89	90
BM-112205-6	K0506112-006	82	92	98
BM-112205-7	K0506112-007	88	91	108
Method Blank	KWG0520412-3	93	99	119
Lab Control Sample	KWG0520412-1	83	92	98
Duplicate Lab Control Sample	KWG0520412-2	81	88	93

Surrogate Recovery Control Limits (%)

Sur1 =	Fluorene-d10	24-111
Sur2 =	Fluoranthene-d10	26-123
Sur3 =	Terphenyl-d14	25-146

BRIX003710

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

00089

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/08/2005
Time Analyzed: 18:18

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120805\1208F028.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521119-2
Analysis Lot: KWG0521119

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	RT	Area	RT	Area	RT
	Results ==>	244,341	4.98	167,837	6.42	321,352	7.64
	Upper Limit ==>	488,682	5.48	335,674	6.92	642,704	8.14
	Lower Limit ==>	122,171	4.48	83,919	5.92	160,676	7.14
	ICAL Result ==>	211,247	5.10	138,000	6.53	260,566	7.75
Associated Analyses							
Method Blank	KWG0520412-3	216,324	4.98	154,684	6.42	286,579	7.64
Lab Control Sample	KWG0520412-1	231,533	4.99	155,765	6.42	287,706	7.64
Duplicate Lab Control Sample	KWG0520412-2	232,510	4.98	157,260	6.42	291,552	7.64
BM-112205-1	K0506112-001	222,495	4.98	149,012	6.42	268,544	7.64
BM-112205-2	K0506112-002	194,334	4.98	141,994	6.42	262,487	7.64
BM-112205-3	K0506112-003	181,888	4.98	144,761	6.42	264,746	7.64
BM-112205-4	K0506112-004	195,998	4.98	148,454	6.42	274,472	7.64
BM-112205-7	K0506112-007	382,212	5.01	146,196	6.42	270,782	7.64

BRIX003711

Results flagged with an asterisk (*) indicate values outside control criteria.

00090

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/08/2005
Time Analyzed: 18:18

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120805\1208F028.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521119-2
Analysis Lot: KWG0521119

		Chrysene-d12		Perylene-d12	
		Area	RT	Area	RT
	Results ==>	338,659	10.49	249,599	14.37
	Upper Limit ==>	677,318	10.99	499,198	14.87
	Lower Limit ==>	169,330	9.99	124,800	13.87
	ICAL Result ==>	283,970	10.71	207,256	14.84
Associated Analyses					
Method Blank	KWG0520412-3	279,548	10.48	188,335	14.36
Lab Control Sample	KWG0520412-1	321,572	10.49	232,411	14.37
Duplicate Lab Control Sample	KWG0520412-2	332,446	10.49	229,803	14.36
BM-112205-1	K0506112-001	263,014	10.48	182,416	14.36
BM-112205-2	K0506112-002	228,577	10.48	158,112	14.36
BM-112205-3	K0506112-003	240,166	10.48	182,784	14.36
BM-112205-4	K0506112-004	270,333	10.48	185,300	14.36
BM-112205-7	K0506112-007	261,553	10.48	200,658	14.37

BRIX003712

Results flagged with an asterisk (*) indicate values outside control criteria.

00091

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/09/2005
Time Analyzed: 08:29

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120905\1209F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521200-2
Analysis Lot: KWG0521200

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	RT	Area	RT	Area	RT
	Results ==>	250,123	4.98	167,547	6.41	319,589	7.64
	Upper Limit ==>	500,246	5.48	335,094	6.91	639,178	8.14
	Lower Limit ==>	125,062	4.48	83,774	5.91	159,795	7.14
	ICAL Result ==>	211,247	5.10	138,000	6.53	260,566	7.75
Associated Analyses							
BM-112205-5	K0506112-005	190,076	4.98	123,686	6.42	218,759	7.64
BM-112205-6	K0506112-006	184,665	4.98	127,405	6.41	223,112	7.64
BM-112205-7DL	K0506112-007	169,874	4.98	130,942	6.41	242,292	7.64

BRIX003713

Results flagged with an asterisk (*) indicate values outside control criteria.

00092

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/09/2005
Time Analyzed: 08:29

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120905\1209F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521200-2
Analysis Lot: KWG0521200

		Chrysene-d12		Perylene-d12	
		Area	RT	Area	RT
	Results ==>	331,416	10.48	246,476	14.37
	Upper Limit ==>	662,832	10.98	492,952	14.87
	Lower Limit ==>	165,708	9.98	123,238	13.87
	ICAL Result ==>	283,970	10.71	207,256	14.84
Associated Analyses					
BM-112205-5	K0506112-005	210,569	10.48	161,275	14.36
BM-112205-6	K0506112-006	204,668	10.48	157,660	14.36
BM-112205-7DL	K0506112-007	199,440	10.48	136,418	14.35

BRIX003714

Results flagged with an asterisk (*) indicate values outside control criteria.

00093

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 11/28/2005
Date Analyzed: 12/08/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0520412

	Lab Control Sample KWG0520412-1 Lab Control Spike			Duplicate Lab Control Sample KWG0520412-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	2.37	2.50	95	2.40	2.50	96	32-124	1	30
2-Methylnaphthalene	2.61	2.50	105	2.64	2.50	105	19-133	1	30
Acenaphthylene	2.59	2.50	104	2.72	2.50	109	36-128	5	30
Acenaphthene	2.57	2.50	103	2.67	2.50	107	36-126	4	30
Dibenzofuran	2.70	2.50	108	2.77	2.50	111	10-167	3	30
Fluorene	2.78	2.50	111	2.83	2.50	113	41-130	2	30
Phenanthrene	2.70	2.50	108	2.73	2.50	109	43-129	1	30
Anthracene	2.67	2.50	107	2.62	2.50	105	36-131	2	30
Fluoranthene	3.02	2.50	121	3.02	2.50	121	45-139	0	30
Pyrene	2.88	2.50	115	2.83	2.50	113	38-143	1	30
Benz(a)anthracene	2.69	2.50	108	2.70	2.50	108	45-131	0	30
Chrysene	2.72	2.50	109	2.77	2.50	111	47-132	2	30
Benzo(b)fluoranthene	3.12	2.50	125	3.19	2.50	128	51-135	2	30
Benzo(k)fluoranthene	2.82	2.50	113	2.97	2.50	119	46-139	5	30
Benzo(a)pyrene	2.61	2.50	104	2.28	2.50	91	40-138	14	30
Indeno(1,2,3-cd)pyrene	2.98	2.50	119	2.95	2.50	118	35-148	1	30
Dibenz(a,h)anthracene	2.81	2.50	113	2.78	2.50	111	42-143	1	30
Benzo(g,h,i)perylene	2.88	2.50	115	2.86	2.50	115	42-139	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

BRIX003715

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 11/28/2005
Date Analyzed: 12/08/2005
Time Analyzed: 18:44

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG0520412-3

File ID: J:\MS11\DATA\120805\1208F029.D
Instrument ID: MS11

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Level: Low
Extraction Lot: KWG0520412

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
BM-112205-7	K0506112-007	J:\MS11\DATA\120805\1208F036.D	12/08/05	21:48
Lab Control Sample	KWG0520412-1	J:\MS11\DATA\120805\1208F030.D	12/08/05	19:11
Duplicate Lab Control Sample	KWG0520412-2	J:\MS11\DATA\120805\1208F031.D	12/08/05	19:37
BM-112205-1	K0506112-001	J:\MS11\DATA\120805\1208F032.D	12/08/05	20:03
BM-112205-2	K0506112-002	J:\MS11\DATA\120805\1208F033.D	12/08/05	20:29
BM-112205-3	K0506112-003	J:\MS11\DATA\120805\1208F034.D	12/08/05	20:55
BM-112205-4	K0506112-004	J:\MS11\DATA\120805\1208F035.D	12/08/05	21:21
BM-112205-5	K0506112-005	J:\MS11\DATA\120905\1209F015.D	12/09/05	14:09
BM-112205-6	K0506112-006	J:\MS11\DATA\120905\1209F016.D	12/09/05	14:35
BM-112205-7	K0506112-007	J:\MS11\DATA\120905\1209F017.D	12/09/05	15:01

BRIX003716

00095

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112

Lab Control Sample/Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	**Sample Name:**	Duplicate Lab Control Sample
Lab Code:	KWG0520412-1	**Lab Code:**	KWG0520412-2
File ID:	J:\MS11\DATA\120805\1208F030.D	**File ID:**	J:\MS11\DATA\120805\1208F031.D
Instrument ID:	MS11	**Instrument ID:**	MS11
Date Extracted:	11/28/2005	**Date Extracted:**	11/28/2005
Date Analyzed:	12/08/2005	**Date Analyzed:**	12/08/2005
Time Analyzed:	19:11	**Time Analyzed:**	19:37

Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM	**Extraction Lot:**	KWG0520412

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0520412-3	J:\MS11\DATA\120805\1208F029.D	12/08/05	18:44
BM-112205-1	K0506112-001	J:\MS11\DATA\120805\1208F032.D	12/08/05	20:03
BM-112205-2	K0506112-002	J:\MS11\DATA\120805\1208F033.D	12/08/05	20:29
BM-112205-3	K0506112-003	J:\MS11\DATA\120805\1208F034.D	12/08/05	20:55
BM-112205-4	K0506112-004	J:\MS11\DATA\120805\1208F035.D	12/08/05	21:21
BM-112205-7	K0506112-007	J:\MS11\DATA\120805\1208F036.D	12/08/05	21:48
BM-112205-5	K0506112-005	J:\MS11\DATA\120905\1209F015.D	12/09/05	14:09
BM-112205-6	K0506112-006	J:\MS11\DATA\120905\1209F016.D	12/09/05	14:35
BM-112205-7	K0506112-007	J:\MS11\DATA\120905\1209F017.D	12/09/05	15:01

Confidential Business Information

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/08/2005
Time Analyzed: 17.52

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120805\1208F027.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0521119

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	59 9	642368	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	48.4	519040	PASS
70	69	0	2	0.0	0	PASS
127	198	10	80	48.3	518208	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	46.0	1072128	PASS
199	198	5	9	6.8	72768	PASS
275	198	10	60	41.8	448000	PASS
365	442	1	50	4.1	94816	PASS
441	443	0	100	73.1	353792	PASS
442	442	100	100	100.0	2329600	PASS
443	442	15	24	20.8	483840	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0521119-2	J:\MS11\DATA\120805\1208F028.D	12/08/2005	18:18	
Method Blank	KWG0520412-3	J:\MS11\DATA\120805\1208F029.D	12/08/2005	18:44	
Lab Control Sample	KWG0520412-1	J:\MS11\DATA\120805\1208F030.D	12/08/2005	19 11	
Duplicate Lab Control Sample	KWG0520412-2	J:\MS11\DATA\120805\1208F031.D	12/08/2005	19.37	
BM-112205-1	K0506112-001	J:\MS11\DATA\120805\1208F032.D	12/08/2005	20:03	
BM-112205-2	K0506112-002	J:\MS11\DATA\120805\1208F033.D	12/08/2005	20:29	
BM-112205-3	K0506112-003	J:\MS11\DATA\120805\1208F034.D	12/08/2005	20:55	
BM-112205-4	K0506112-004	J:\MS11\DATA\120805\1208F035.D	12/08/2005	21.21	
BM-112205-7	K0506112-007	J:\MS11\DATA\120805\1208F036.D	12/08/2005	21:48	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/09/2005
Time Analyzed: 08:10

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120905\1209F001.D
Instrument ID: MS11
Column:

Analysis Method: 8270C SIM
Analysis Lot: KWG0521200

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	70.5	535360	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	54.0	410304	PASS
70	69	0	2	0.6	2314	PASS
127	198	10	80	49.4	375040	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	48.9	759552	PASS
199	198	5	9	7.7	58808	PASS
275	198	10	60	39.8	302208	PASS
365	442	1	50	4.6	71664	PASS
441	443	0	100	71.8	227776	PASS
442	442	100	100	100.0	1552384	PASS
443	442	15	24	20.4	317376	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG0521200-2	J:\MS11\DATA\120905\1209F002.D	12/09/2005	08:29	
BM-112205-5	K0506112-005	J:\MS11\DATA\120905\1209F015.D	12/09/2005	14:09	
BM-112205-6	K0506112-006	J:\MS11\DATA\120905\1209F016.D	12/09/2005	14:35	
BM-112205-7	K0506112-007	J:\MS11\DATA\120905\1209F017.D	12/09/2005	15:01	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

BRIX003719

00098

Confidential Business Information

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Calibration Date: 11/11/2005

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL4938
Instrument ID: MS11

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS11\DATA\111105\1111F004.D	F	J:\MS11\DATA\111105\1111F009.D
B	J:\MS11\DATA\111105\1111F005.D	G	J:\MS11\DATA\111105\1111F010.D
C	J:\MS11\DATA\111105\1111F006.D	H	J:\MS11\DATA\111105\1111F011.D
D	J:\MS11\DATA\111105\1111F007.D	I	J:\MS11\DATA\111105\1111F012.D
E	J:\MS11\DATA\111105\1111F008.D	J	J:\MS11\DATA\111105\1111F013.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Naphthalene	A	2.0	1.30	B	4.0	1.22	C	8.0	1.15	D	20	1.20	E	100	1.13
	F	200	1.13	G	400	1.19	H	1000	1.17	I	1600	1.17	J	2000	1.18
2-Methylnaphthalene	A	2.0	0.826	B	4.0	0.727	C	8.0	0.742	D	20	0.779	E	100	0.770
	F	200	0.790	G	400	0.841	H	1000	0.844	I	1600	0.848	J	2000	0.848
Acenaphthylene	A	2.0	2.16	B	4.0	1.90	C	8.0	1.89	D	20	1.95	E	100	1.97
	F	200	2.00	G	400	2.15	H	1000	2.16	I	1600	2.16	J	2000	2.21
Acenaphthene	A	2.0	1.18	B	4.0	1.18	C	8.0	1.32	D	20	1.29	E	100	1.19
	F	200	1.21	G	400	1.26	H	1000	1.26	I	1600	1.25	J	2000	1.29
Dibenzofuran	A	2.0	2.16	B	4.0	1.91	C	8.0	1.86	D	20	1.93	E	100	1.87
	F	200	1.88	G	400	1.99	H	1000	1.99	I	1600	1.97	J	2000	2.01
Fluorene	A	2.0	1.65	B	4.0	1.40	C	8.0	1.55	D	20	1.46	E	100	1.52
	F	200	1.53	G	400	1.63	H	1000	1.62	I	1600	1.62	J	2000	1.64
Phenanthrene	A	2.0	1.66	B	4.0	1.33	C	8.0	1.35	D	20	1.28	E	100	1.24
	F	200	1.19	G	400	1.31	H	1000	1.42	I	1600	1.33	J	2000	1.35
Anthracene	A	2.0	1.21	B	4.0	1.27	C	8.0	1.00	D	20	1.16	E	100	1.14
	F	200	1.23	G	400	1.30	H	1000	1.19	I	1600	1.27	J	2000	1.30
Fluoranthene	A	2.0	1.34	B	4.0	1.46	C	8.0	1.36	D	20	1.39	E	100	1.36
	F	200	1.38	G	400	1.49	H	1000	1.47	I	1600	1.49	J	2000	1.49
Pyrene	A	2.0	1.42	B	4.0	1.44	C	8.0	1.31	D	20	1.39	E	100	1.31
	F	200	1.32	G	400	1.38	H	1000	1.34	I	1600	1.31	J	2000	1.34
Benz(a)anthracene	A	2.0	1.56	B	4.0	1.37	C	8.0	1.17	D	20	1.19	E	100	1.13
	F	200	1.15	G	400	1.25	H	1000	1.26	I	1600	1.26	J	2000	1.28
Chrysene	A	2.0	1.42	B	4.0	1.32	C	8.0	1.21	D	20	1.19	E	100	1.17
	F	200	1.20	G	400	1.26	H	1000	1.25	I	1600	1.23	J	2000	1.26
Benzo(b)fluoranthene	A	2.0	1.82	B	4.0	1.62	C	8.0	1.55	D	20	1.52	E	100	1.56
	F	200	1.62	G	400	1.83	H	1000	1.86	I	1600	1.84	J	2000	1.89
Benzo(k)fluoranthene	A	2.0	1.80	B	4.0	1.59	C	8.0	1.60	D	20	1.66	E	100	1.79
	F	200	1.80	G	400	1.92	H	1000	1.97	I	1600	1.87	J	2000	1.86

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

BRIX003720 00099

Confidential Business Information

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Calibration Date: 11/11/2005

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL4938
Instrument ID: MS11

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Benzo(a)pyrene	A	2.0	1.63	B	4.0	1.47	C	8.0	1.28	D	20	1.32	E	100	1.34
	F	200	1.41	G	400	1.56	H	1000	1.63	I	1600	1.62	J	2000	1.64
Indeno(1,2,3-cd)pyrene	A	2.0	1.47	B	4.0	1.33	C	8.0	1.27	D	20	1.26	E	100	1.25
	F	200	1.27	G	400	1.49	H	1000	1.54	I	1600	1.53	J	2000	1.52
Dibenz(a,h)anthracene	A	2.0	1.50	B	4.0	1.50	C	8.0	1.49	D	20	1.46	E	100	1.46
	F	200	1.47	G	400	1.63	H	1000	1.68	I	1600	1.66	J	2000	1.69
Benzo(g,h,i)perylene	A	2.0	1.81	B	4.0	1.62	C	8.0	1.61	D	20	1.63	E	100	1.58
	F	200	1.59	G	400	1.65	H	1000	1.67	I	1600	1.64	J	2000	1.66
Fluorene-d10	A	2.0	1.37	B	4.0	1.20	C	8.0	1.26	D	20	1.18	E	100	1.23
	F	200	1.23	G	400	1.31	H	1000	1.32	I	1600	1.31	J	2000	1.34
Fluoranthene-d10	A	2.0	1.40	B	4.0	1.23	C	8.0	1.19	D	20	1.20	E	100	1.19
	F	200	1.18	G	400	1.28	H	1000	1.27	I	1600	1.29	J	2000	1.31
Terphenyl-d14	A	2.0	1.11	B	4.0	1.09	C	8.0	0.978	D	20	1.03	E	100	0.970
	F	200	0.983	G	400	1.05	H	1000	1.03	I	1600	1.02	J	2000	1.05

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

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BRIX003721

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Calibration Date: 11/11/2005

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL4938
Instrument ID: MS11

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	4.3		≤ 15	1.18		0.01
2-Methylnaphthalene	MS	AverageRF	% RSD	5.7		≤ 15	0.802		0.01
Acenaphthylene	MS	AverageRF	% RSD	6.1		≤ 15	2.06		0.01
Acenaphthene	MS	AverageRF	% RSD	4.1		≤ 15	1.24		0.01
Dibenzofuran	MS	AverageRF	% RSD	4.5		≤ 15	1.96		0.01
Fluorene	MS	AverageRF	% RSD	5.4		≤ 15	1.56		0.01
Phenanthrene	MS	AverageRF	% RSD	9.5		≤ 15	1.35		0.01
Anthracene	MS	AverageRF	% RSD	7.6		≤ 15	1.21		0.01
Fluoranthene	MS	AverageRF	% RSD	4.3		≤ 15	1.42		0.01
Pyrene	MS	AverageRF	% RSD	3.6		≤ 15	1.36		0.01
Benz(a)anthracene	MS	AverageRF	% RSD	10.0		≤ 15	1.26		0.01
Chrysene	MS	AverageRF	% RSD	5.8		≤ 15	1.25		0.01
Benzo(b)fluoranthene	MS	AverageRF	% RSD	8.7		≤ 15	1.71		0.01
Benzo(k)fluoranthene	MS	AverageRF	% RSD	7.3		≤ 15	1.79		0.01
Benzo(a)pyrene	MS	AverageRF	% RSD	9.6		≤ 15	1.49		0.01
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	9.1		≤ 15	1.39		0.01
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	6.3		≤ 15	1.56		0.01
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	3.9		≤ 15	1.65		0.01
Fluorene-d10	SURR	AverageRF	% RSD	5.0		≤ 15	1.28		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	5.6		≤ 15	1.25		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	4.4		≤ 15	1.03		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

BRIX003722 00101

Confidential Business Information

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Calibration Date: 11/11/2005
Date Analyzed: 11/11/2005

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration ID: CAL4938
Units: ng/ml

File ID: J:\MS11\DATA\111105\1111F014.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	200	190	1.18	1.10	-7	NA	± 20 %	AverageRF
2-Methylnaphthalene	200	190	0.802	0.755	-6	NA	± 20 %	AverageRF
Acenaphthylene	200	190	2.06	1.93	-6	NA	± 20 %	AverageRF
Acenaphthene	200	190	1.24	1.16	-7	NA	± 20 %	AverageRF
Dibenzofuran	200	190	1.96	1.88	-4	NA	± 20 %	AverageRF
Fluorene	200	190	1.56	1.49	-4	NA	± 20 %	AverageRF
Phenanthrene	200	180	1.35	1.20	-11	NA	± 20 %	AverageRF
Anthracene	200	190	1.21	1.15	-4	NA	± 20 %	AverageRF
Fluoranthene	200	190	1.42	1.37	-4	NA	± 20 %	AverageRF
Pyrene	200	190	1.36	1.26	-7	NA	± 20 %	AverageRF
Benz(a)anthracene	200	170	1.26	1.10	-13	NA	± 20 %	AverageRF
Chrysene	200	180	1.25	1.14	-8	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	200	190	1.71	1.62	-6	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	200	190	1.79	1.68	-6	NA	± 20 %	AverageRF
Benzo(a)pyrene	200	180	1.49	1.36	-9	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	200	180	1.39	1.27	-9	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	200	190	1.56	1.45	-7	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	200	180	1.65	1.50	-9	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

BRIX003723

00102

Confidential Business Information

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/08/2005

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 11/11/2005
Calibration ID: CAL4938
Analysis Lot: KWG0521119
Units: ng/ml

File ID: J:\MS11\DATA\120805\1208F028.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	390	0.01	1.18	1.15	-3	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	430	0.01	0.802	0.867	8	NA	± 20 %	AverageRF
Acenaphthylene	400	410	0.01	2.06	2.12	3	NA	± 20 %	AverageRF
Acenaphthene	400	400	0.01	1.24	1.26	1	NA	± 20 %	AverageRF
Dibenzofuran	400	410	0.01	1.96	2.00	2	NA	± 20 %	AverageRF
Fluorene	400	420	0.01	1.56	1.62	4	NA	± 20 %	AverageRF
Phenanthrene	400	390	0.01	1.35	1.31	-3	NA	± 20 %	AverageRF
Anthracene	400	430	0.01	1.21	1.30	8	NA	± 20 %	AverageRF
Fluoranthene	400	420	0.01	1.42	1.50	5	NA	± 20 %	AverageRF
Pyrene	400	410	0.01	1.36	1.39	3	NA	± 20 %	AverageRF
Benz(a)anthracene	400	390	0.01	1.26	1.23	-2	NA	± 20 %	AverageRF
Chrysene	400	380	0.01	1.25	1.20	-4	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	410	0.01	1.71	1.77	3	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	410	0.01	1.79	1.81	1	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	400	0.01	1.49	1.47	-1	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	360	0.01	1.39	1.27	-9	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	340	0.01	1.56	1.33	-15	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	360	0.01	1.65	1.47	-11	NA	± 20 %	AverageRF
Fluorene-d10	400	440	0.01	1.28	1.39	9	NA	± 20 %	AverageRF
Fluoranthene-d10	400	440	0.01	1.25	1.39	11	NA	± 20 %	AverageRF
Terphenyl-d14	400	450	0.01	1.03	1.15	11	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

BRIX003724

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/09/2005

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270C SIM

Calibration Date: 11/11/2005
Calibration ID: CAL4938
Analysis Lot: KWG0521200
Units: ng/ml

File ID: J:\MS11\DATA\120905\1209F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	390	0.01	1.18	1.14	-4	NA	± 20 %	AverageRF
2-Methylnaphthalene	400	430	0.01	0.802	0.855	7	NA	± 20 %	AverageRF
Acenaphthylene	400	410	0.01	2.06	2.12	3	NA	± 20 %	AverageRF
Acenaphthene	400	400	0.01	1.24	1.24	0	NA	± 20 %	AverageRF
Dibenzofuran	400	400	0.01	1.96	1.98	1	NA	± 20 %	AverageRF
Fluorene	400	410	0.01	1.56	1.60	3	NA	± 20 %	AverageRF
Phenanthrene	400	390	0.01	1.35	1.32	-2	NA	± 20 %	AverageRF
Anthracene	400	430	0.01	1.21	1.29	7	NA	± 20 %	AverageRF
Fluoranthene	400	420	0.01	1.42	1.50	5	NA	± 20 %	AverageRF
Pyrene	400	420	0.01	1.36	1.43	5	NA	± 20 %	AverageRF
Benz(a)anthracene	400	390	0.01	1.26	1.24	-2	NA	± 20 %	AverageRF
Chrysene	400	380	0.01	1.25	1.20	-4	NA	± 20 %	AverageRF
Benzo(b)fluoranthene	400	410	0.01	1.71	1.74	2	NA	± 20 %	AverageRF
Benzo(k)fluoranthene	400	400	0.01	1.79	1.80	1	NA	± 20 %	AverageRF
Benzo(a)pyrene	400	390	0.01	1.49	1.47	-1	NA	± 20 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	350	0.01	1.39	1.21	-13	NA	± 20 %	AverageRF
Dibenz(a,h)anthracene	400	330	0.01	1.56	1.30	-16	NA	± 20 %	AverageRF
Benzo(g,h,i)perylene	400	350	0.01	1.65	1.43	-13	NA	± 20 %	AverageRF
Fluorene-d10	400	430	0.01	1.28	1.37	7	NA	± 20 %	AverageRF
Fluoranthene-d10	400	440	0.01	1.25	1.38	10	NA	± 20 %	AverageRF
Terphenyl-d14	400	450	0.01	1.03	1.17	14	NA	± 20 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270C SIM

Analysis Lot: KWG0521119
Instrument ID: MS11

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1208F027.D	GC/MS Tuning - Decafluorotripheny	KWG0521119-1	12/8/2005	17 52		12/8/2005	18 11
1208F028.D	Continuing Calibration Verification	KWG0521119-2	12/8/2005	18 18		12/8/2005	18:37
1208F029.D	Method Blank	KWG0520412-3	12/8/2005	18:44		12/8/2005	19:03
1208F030.D	Lab Control Sample	KWG0520412-1	12/8/2005	19:11		12/8/2005	19:30
1208F031.D	Duplicate Lab Control Sample	KWG0520412-2	12/8/2005	19:37		12/8/2005	19:56
1208F032.D	BM-112205-1	K0506112-001	12/8/2005	20:03		12/8/2005	20:22
1208F033.D	BM-112205-2	K0506112-002	12/8/2005	20:29		12/8/2005	20:48
1208F034.D	BM-112205-3	K0506112-003	12/8/2005	20:55		12/8/2005	21:14
1208F035.D	BM-112205-4	K0506112-004	12/8/2005	21:21		12/8/2005	21:40
1208F036.D	BM-112205-7	K0506112-007	12/8/2005	21:48		12/8/2005	22.07
1208F037.D	ZZZZZZ	ZZZZZZ	12/8/2005	22:14		12/8/2005	22.33
1208F038.D	ZZZZZZ	ZZZZZZ	12/8/2005	22:40		12/8/2005	22:59
1208F039.D	ZZZZZZ	ZZZZZZ	12/8/2005	23:06		12/8/2005	23:25
1208F040.D	ZZZZZZ	ZZZZZZ	12/8/2005	23:32		12/8/2005	23:51
1208F041.D	ZZZZZZ	ZZZZZZ	12/8/2005	23:58		12/9/2005	00:17
1208F042.D	ZZZZZZ	ZZZZZZ	12/9/2005	00:24		12/9/2005	00:43
1208F043.D	ZZZZZZ	ZZZZZZ	12/9/2005	00:51		12/9/2005	01:10
1208F044.D	ZZZZZZ	ZZZZZZ	12/9/2005	01:17		12/9/2005	01:36
1208F045.D	ZZZZZZ	ZZZZZZ	12/9/2005	01:43		12/9/2005	02:02
1208F046.D	ZZZZZZ	ZZZZZZ	12/9/2005	02:09		12/9/2005	02:28
1208F047.D	ZZZZZZ	ZZZZZZ	12/9/2005	02:35		12/9/2005	02:54
1208F048.D	ZZZZZZ	ZZZZZZ	12/9/2005	03:01		12/9/2005	03.20
1208F049.D	ZZZZZZ	ZZZZZZ	12/9/2005	03:28		12/9/2005	03:47
1208F050.D	ZZZZZZ	ZZZZZZ	12/9/2005	03:54		12/9/2005	04:13
1208F051.D	ZZZZZZ	ZZZZZZ	12/9/2005	04:20		12/9/2005	04:39
1208F052.D	ZZZZZZ	ZZZZZZ	12/9/2005	04:46		12/9/2005	05:05
1208F053.D	ZZZZZZ	ZZZZZZ	12/9/2005	05:12		12/9/2005	05:31
1208F054.D	ZZZZZZ	ZZZZZZ	12/9/2005	05:38		12/9/2005	05:57

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

BRIX003726 001 5

Confidential Business Information

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270C SIM

Analysis Lot: KWG0521200
Instrument ID: MS11

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1209F001.D	GC/MS Tuning - Decafluorotripheny	KWG0521200-1	12/9/2005	08:10		12/9/2005	08:23
1209F002.D	Continuing Calibration Verification	KWG0521200-2	12/9/2005	08:29		12/9/2005	08:48
1209F003.D	ZZZZZZ	ZZZZZZ	12/9/2005	08:55		12/9/2005	09:14
1209F004.D	ZZZZZZ	ZZZZZZ	12/9/2005	09:21		12/9/2005	09:40
1209F005.D	ZZZZZZ	ZZZZZZ	12/9/2005	09:47		12/9/2005	10:06
1209F006.D	ZZZZZZ	ZZZZZZ	12/9/2005	10:13		12/9/2005	10:32
1209F007.D	ZZZZZZ	ZZZZZZ	12/9/2005	10:40		12/9/2005	10:59
1209F008.D	ZZZZZZ	ZZZZZZ	12/9/2005	11:06		12/9/2005	11:25
1209F009.D	ZZZZZZ	ZZZZZZ	12/9/2005	11:32		12/9/2005	11:51
1209F010.D	ZZZZZZ	ZZZZZZ	12/9/2005	11:58		12/9/2005	12:17
1209F011.D	ZZZZZZ	ZZZZZZ	12/9/2005	12:24		12/9/2005	12:43
1209F012.D	ZZZZZZ	ZZZZZZ	12/9/2005	12:50		12/9/2005	13:09
1209F013.D	ZZZZZZ	ZZZZZZ	12/9/2005	13:17		12/9/2005	13:36
1209F014.D	ZZZZZZ	ZZZZZZ	12/9/2005	13:43		12/9/2005	14:02
1209F015.D	BM-112205-5	K0506112-005	12/9/2005	14:09		12/9/2005	14:28
1209F016.D	BM-112205-6	K0506112-006	12/9/2005	14:35		12/9/2005	14:54
1209F017.D	BM-112205-7	K0506112-007	12/9/2005	15:01		12/9/2005	15:20
1209F018.D	ZZZZZZ	ZZZZZZ	12/9/2005	15:27		12/9/2005	15:46
1209F019.D	ZZZZZZ	ZZZZZZ	12/9/2005	15:53		12/9/2005	16:12
1209F020.D	ZZZZZZ	ZZZZZZ	12/9/2005	16:19		12/9/2005	16:38
1209F021.D	ZZZZZZ	ZZZZZZ	12/9/2005	16:46		12/9/2005	17:05
1209F022.D	ZZZZZZ	ZZZZZZ	12/9/2005	17:12		12/9/2005	17:31
1209F023.D	ZZZZZZ	ZZZZZZ	12/9/2005	17:38		12/9/2005	17:57
1209F024.D	ZZZZZZ	ZZZZZZ	12/9/2005	18:04		12/9/2005	18:23
1209F025.D	ZZZZZZ	ZZZZZZ	12/9/2005	18:30		12/9/2005	18:49
1209F026.D	ZZZZZZ	ZZZZZZ	12/9/2005	18:56		12/9/2005	19:15
1209F027.D	ZZZZZZ	ZZZZZZ	12/9/2005	19:22		12/9/2005	19:41
1209F028.D	ZZZZZZ	ZZZZZZ	12/9/2005	19:49		12/9/2005	20:08

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

BRIX003727

00166

Confidential Business Information

QA/QC Results

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 11/28/2005

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Extraction Lot: KWG0520412
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
BM-112205-1	K0506112-001	11/22/05	11/23/05	1010ml	5ml	NA	
BM-112205-2	K0506112-002	11/22/05	11/23/05	1030ml	5ml	NA	
BM-112205-3	K0506112-003	11/22/05	11/23/05	1030ml	5ml	NA	
BM-112205-4	K0506112-004	11/22/05	11/23/05	1020ml	5ml	NA	
BM-112205-5	K0506112-005	11/22/05	11/23/05	1020ml	5ml	NA	
BM-112205-6	K0506112-006	11/22/05	11/23/05	1020ml	5ml	NA	
BM-112205-7DL	K0506112-007	11/22/05	11/23/05	1010ml	5ml	NA	
BM-112205-7	K0506112-007	11/22/05	11/23/05	1010ml	5ml	NA	
Method Blank	KWG0520412-3	NA	NA	1030ml	5ml	NA	
Lab Control Sample	KWG0520412-1	NA	NA	1000ml	5ml	NA	
Duplicate Lab Control Sample	KWG0520412-2	NA	NA	1000ml	5ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

BRIX003728 001 7

Confidential Business Information

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

00108

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BRIX003729

Confidential Business Information

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

QC Reports

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Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
BM-112205-1	K0506112-001	86	93	111
BM-112205-2	K0506112-002	93	96	127
BM-112205-3	K0506112-003	80	86	105
BM-112205-4	K0506112-004	95	103	122
BM-112205-5	K0506112-005	78	89	90
BM-112205-6	K0506112-006	82	92	98
BM-112205-7	K0506112-007	88	91	108
Method Blank	KWG0520412-3	93	99	119
Lab Control Sample	KWG0520412-1	83	92	98
Duplicate Lab Control Sample	KWG0520412-2	81	88	93

Surrogate Recovery Control Limits (%)

Sur1 =	Fluorene-d10	24-111
Sur2 =	Fluoranthene-d10	26-123
Sur3 =	Terphenyl-d14	25-146

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

BRIX003731

00110

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/08/2005
Time Analyzed: 18 18

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120805\1208F028.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521119-2
Analysis Lot: KWG0521119

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	RT	Area	RT	Area	RT
	Results ==>	244,341	4.98	167,837	6.42	321,352	7.64
	Upper Limit ==>	488,682	5.48	335,674	6.92	642,704	8 14
	Lower Limit ==>	122,171	4.48	83,919	5.92	160,676	7.14
	ICAL Result ==>	211,247	5.10	138,000	6.53	260,566	7 75
Associated Analyses							
Method Blank	KWG0520412-3	216,324	4.98	154,684	6.42	286,579	7 64
Lab Control Sample	KWG0520412-1	231,533	4.99	155,765	6.42	287,706	7 64
Duplicate Lab Control Sample	KWG0520412-2	232,510	4.98	157,260	6.42	291,552	7.64
BM-112205-1	K0506112-001	222,495	4.98	149,012	6.42	268,544	7 64
BM-112205-2	K0506112-002	194,334	4.98	141,994	6.42	262,487	7 64
BM-112205-3	K0506112-003	181,888	4.98	144,761	6 42	264,746	7 64
BM-112205-4	K0506112-004	195,998	4.98	148,454	6.42	274,472	7 64
BM-112205-7	K0506112-007	382,212	5.01	146,196	6.42	270,782	7 64

Results flagged with an asterisk (*) indicate values outside control criteria.

BRIX003732

00111

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/08/2005
Time Analyzed: 18:18

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120805\1208F028.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521119-2
Analysis Lot: KWG0521119

		Chrysene-d12		Perylene-d12	
		Area	RT	Area	RT
	Results ==>	338,659	10.49	249,599	14.37
	Upper Limit ==>	677,318	10.99	499,198	14.87
	Lower Limit ==>	169,330	9.99	124,800	13.87
	ICAL Result ==>	283,970	10.71	207,256	14.84
Associated Analyses					
Method Blank	KWG0520412-3	279,548	10.48	188,335	14.36
Lab Control Sample	KWG0520412-1	321,572	10.49	232,411	14.37
Duplicate Lab Control Sample	KWG0520412-2	332,446	10.49	229,803	14.36
BM-112205-1	K0506112-001	263,014	10.48	182,416	14.36
BM-112205-2	K0506112-002	228,577	10.48	158,112	14.36
BM-112205-3	K0506112-003	240,166	10.48	182,784	14.36
BM-112205-4	K0506112-004	270,333	10.48	185,300	14.36
BM-112205-7	K0506112-007	261,553	10.48	200,658	14.37

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/09/2005
Time Analyzed: 08:29

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120905\1209F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521200-2
Analysis Lot: KWG0521200

		Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
		Area	RT	Area	RT	Area	RT
	Results ==>	250,123	4.98	167,547	6.41	319,589	7.64
	Upper Limit ==>	500,246	5.48	335,094	6.91	639,178	8 14
	Lower Limit ==>	125,062	4.48	83,774	5 91	159,795	7 14
	ICAL Result ==>	211,247	5.10	138,000	6 53	260,566	7 75
Associated Analyses							
BM-112205-5	K0506112-005	190,076	4.98	123,686	6.42	218,759	7 64
BM-112205-6	K0506112-006	184,665	4.98	127,405	6.41	223,112	7 64
BM-112205-7DL	K0506112-007	169,874	4.98	130,942	6.41	242,292	7 64

Results flagged with an asterisk (*) indicate values outside control criteria.

BRIX003734 00113

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR

Service Request: K0506112
Date Analyzed: 12/09/2005
Time Analyzed: 08:29

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS11\DATA\120905\1209F002.D
Instrument ID: MS11
Analysis Method: 8270C SIM

Lab Code: KWG0521200-2
Analysis Lot: KWG0521200

		Chrysene-d12		Perylene-d12	
		Area	RT	Area	RT
	Results ==>	331,416	10.48	246,476	14.37
	Upper Limit ==>	662,832	10.98	492,952	14.87
	Lower Limit ==>	165,708	9.98	123,238	13.87
	ICAL Result ==>	283,970	10.71	207,256	14.84
Associated Analyses					
BM-112205-5	K0506112-005	210,569	10.48	161,275	14.36
BM-112205-6	K0506112-006	204,668	10.48	157,660	14.36
BM-112205-7DL	K0506112-007	199,440	10.48	136,418	14.35

Results flagged with an asterisk (*) indicate values outside control criteria.

BRIX003735

00114

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112
Date Extracted: 11/28/2005
Date Analyzed: 12/08/2005

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3520C
Analysis Method: 8270C SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG0520412

	Lab Control Sample KWG0520412-1 Lab Control Spike			Duplicate Lab Control Sample KWG0520412-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Naphthalene	2.37	2.50	95	2.40	2.50	96	32-124	1	30
2-Methylnaphthalene	2.61	2.50	105	2.64	2.50	105	19-133	1	30
Acenaphthylene	2.59	2.50	104	2.72	2.50	109	36-128	5	30
Acenaphthene	2.57	2.50	103	2.67	2.50	107	36-126	4	30
Dibenzofuran	2.70	2.50	108	2.77	2.50	111	10-167	3	30
Fluorene	2.78	2.50	111	2.83	2.50	113	41-130	2	30
Phenanthrene	2.70	2.50	108	2.73	2.50	109	43-129	1	30
Anthracene	2.67	2.50	107	2.62	2.50	105	36-131	2	30
Fluoranthene	3.02	2.50	121	3.02	2.50	121	45-139	0	30
Pyrene	2.88	2.50	115	2.83	2.50	113	38-143	1	30
Benz(a)anthracene	2.69	2.50	108	2.70	2.50	108	45-131	0	30
Chrysene	2.72	2.50	109	2.77	2.50	111	47-132	2	30
Benzo(b)fluoranthene	3.12	2.50	125	3.19	2.50	128	51-135	2	30
Benzo(k)fluoranthene	2.82	2.50	113	2.97	2.50	119	46-139	5	30
Benzo(a)pyrene	2.61	2.50	104	2.28	2.50	91	40-138	14	30
Indeno(1,2,3-cd)pyrene	2.98	2.50	119	2.95	2.50	118	35-148	1	30
Dibenz(a,h)anthracene	2.81	2.50	113	2.78	2.50	111	42-143	1	30
Benzo(g,h,i)perylene	2.88	2.50	115	2.86	2.50	115	42-139	1	30

BRIX003736

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

00115

Confidential Business Information

QA/QC Report

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Extracted:**	11/28/2005
Sample Matrix:	Water	**Date Analyzed:**	12/08/2005
		Time Analyzed:	18:44

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Method Blank	**File ID:**	J:\MS11\DATA\120805\1208F029.D
Lab Code:	KWG0520412-3	**Instrument ID:**	MS11
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM	**Extraction Lot:**	KWG0520412

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG0520412-1	J:\MS11\DATA\120805\1208F030.D	12/08/05	19:11
Duplicate Lab Control Sample	KWG0520412-2	J:\MS11\DATA\120805\1208F031.D	12/08/05	19:37
BM-112205-1	K0506112-001	J:\MS11\DATA\120805\1208F032.D	12/08/05	20:03
BM-112205-2	K0506112-002	J:\MS11\DATA\120805\1208F033.D	12/08/05	20:29
BM-112205-3	K0506112-003	J:\MS11\DATA\120805\1208F034.D	12/08/05	20:55
BM-112205-4	K0506112-004	J:\MS11\DATA\120805\1208F035.D	12/08/05	21:21
BM-112205-7	K0506112-007	J:\MS11\DATA\120805\1208F036.D	12/08/05	21:48
BM-112205-5	K0506112-005	J:\MS11\DATA\120905\1209F015.D	12/09/05	14:09
BM-112205-6	K0506112-006	J:\MS11\DATA\120905\1209F016.D	12/09/05	14:35
BM-112205-7	K0506112-007	J:\MS11\DATA\120905\1209F017.D	12/09/05	15:01

Confidential Business Information

QA/QC Report

Client: Anchor Environmental
Project: BRIX Maritime-Portland, OR
Sample Matrix: Water

Service Request: K0506112

Lab Control Sample/Duplicate Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name:	Lab Control Sample	**Sample Name:**	Duplicate Lab Control Sample
Lab Code:	KWG0520412-1	**Lab Code:**	KWG0520412-2
File ID:	J:\MS11\DATA\120805\1208F030.D	**File ID:**	J:\MS11\DATA\120805\1208F031.D
Instrument ID:	MS11	**Instrument ID:**	MS11
Date Extracted:	11/28/2005	**Date Extracted:**	11/28/2005
Date Analyzed:	12/08/2005	**Date Analyzed:**	12/08/2005
Time Analyzed:	19:11	**Time Analyzed:**	19:37

Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM	**Extraction Lot:**	KWG0520412

These Lab Control Samples apply to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG0520412-3	J:\MS11\DATA\120805\1208F029.D	12/08/05	18:44
BM-112205-1	K0506112-001	J:\MS11\DATA\120805\1208F032.D	12/08/05	20:03
BM-112205-2	K0506112-002	J:\MS11\DATA\120805\1208F033.D	12/08/05	20:29
BM-112205-3	K0506112-003	J:\MS11\DATA\120805\1208F034.D	12/08/05	20:55
BM-112205-4	K0506112-004	J:\MS11\DATA\120805\1208F035.D	12/08/05	21:21
BM-112205-7	K0506112-007	J:\MS11\DATA\120805\1208F036.D	12/08/05	21:48
BM-112205-5	K0506112-005	J:\MS11\DATA\120905\1209F015.D	12/09/05	14:09
BM-112205-6	K0506112-006	J:\MS11\DATA\120905\1209F016.D	12/09/05	14:35
BM-112205-7	K0506112-007	J:\MS11\DATA\120905\1209F017.D	12/09/05	15:01

Confidential Business Information

Organic Analysis:
Polynuclear Aromatic Hydrocarbons

Validation Package

Raw Data

00118

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BRIX003739

Confidential Business Information

Analytical Results

Client:	Anchor Environmental	**Service Request:**	K0506112
Project:	BRIX Maritime-Portland, OR	**Date Collected:**	11/22/2005
Sample Matrix:	Water	**Date Received:**	11/23/2005

Polynuclear Aromatic Hydrocarbons

Sample Name:	BM-112205-1	**Units:**	ug/L
Lab Code:	K0506112-001	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	8270C SIM		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
2-Methylnaphthalene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Acenaphthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenzofuran	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluorene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Phenanthrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benz(a)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Chrysene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(b)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(k)fluoranthene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(a)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Dibenz(a,h)anthracene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	
Benzo(g,h,i)perylene	ND	U	0.020	1	11/28/05	12/08/05	KWG0520412	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	86	24-111	12/08/05	Acceptable
Fluoranthene-d10	93	26-123	12/08/05	Acceptable
Terphenyl-d14	111	25-146	12/08/05	Acceptable

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Comments:

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Appendix C
Data Validation Review

BRIX003741

DATA REVIEW REPORT

BRIX MARITIME

September 2005

This report summarizes the review of analytical results for groundwater and soil samples collected September 29, 2005, at the BRIX Maritime site in Portland, Oregon. Samples were collected by Anchor Environmental and submitted to Columbia Analytical Services, Inc. (CAS) in Kelso, Washington. Samples were analyzed for one or more of the following: volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (USEPA) method 8260B; Polynuclear Aromatic Hydrocarbons (PAHs) by GC/MS-SIM via USEPA method 8270C-SIM, gasoline hydrocarbons and diesel hydrocarbons by NWTPH-Gx and NWTPH-Dx. CAS sample data group number K0504406 was reviewed. A USEPA level II data review was performed.

Sample ID	Location	Lab ID	Matrix	Analysis Requested
BM-092905-1		K0504406-001	water	PAH's
BM-092905-2		K0504406-002	water	PAH's
BM-092905-3		K0504406-003	water	PAH's
BM-092905-4		K0504406-004	soil	PAH's
BM-092905-5		K0504406-005	soil	PAH's

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the data quality objective section of the Quality Assurance Project Plan (QAPP). Laboratory results were reviewed following USEPA guidelines (USEPA, 1999, 2004). Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Laboratory Data Package and Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody was signed by CAS at the time of sample receipt; the samples were received in good condition and within temperature requirements (2.8 °C). No discrepancies were noted.

Holding Times and Sample Preservation

Samples were appropriately preserved and analyses were conducted within holding times. No data were qualified due to these results.

Initial Calibration

No deviations were noted.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. No analytes were detected in the laboratory method blanks.

Field Quality Control

No field duplicates or field blanks were submitted.

Surrogate Recoveries

Surrogate recoveries for organic analyses were performed at the required frequencies. Surrogate recoveries were within the laboratory control limits with the exception of sample BM-092905-2. The laboratory noted that it appears to have been double spiked in their case narrative. As this can't be confirmed, qualify the detected data as estimated with a "J" flag.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

Matrix spike and matrix spike duplicates were performed at the required frequencies on the soil samples. All matrix spike and matrix spike duplicates were within laboratory specified control limits. There was no matrix spikes performed on the water samples due to lack of sample volume. No data have been qualified based on this finding.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

Laboratory control samples were analyzed at the required frequencies. The laboratory control samples were within the laboratories designated control limits.

Method Reporting Limits

Overall, the reporting limits are acceptable.

Overall Assessment

No data were rejected during this review. The data are judged to be acceptable for their intended use as qualified.

Precision, Accuracy, and Completeness

Precision: All precision goals were met, except where noted.

Accuracy: All accuracy goals were met, except where noted.

Completeness: Completeness was 100 percent; all data are useable as qualified.

Qualifier Table

Sample ID	Method	Analyte	Original Result	Qualified Result	Reason
BM-092905-2	8270C (PAH's)	Phenanthrene	0.029	0.029 J	Surrogates outside control limits
		Fluoranthene	0.081	0.081 J	Surrogates outside control limits
		Pyrene	0.095	0.095 J	Surrogates outside control limits
		Benz(a)anthracene	0.022	0.022 J	Surrogates outside control limits
		Chrysene	0.037	0.037 J	Surrogates outside control limits
		Benzo(a)pyrene	0.023	0.023 J	Surrogates outside control limits

REFERENCES

USEPA. 1983. Methods for Chemical Analysis of Water and Wastes. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio. EPA-600/4-79-020.

USEPA. 1986. Test methods for Evaluating Solid Waste: Physical/Chemical Methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 540-R-04-004. October.

USEPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 540/R-99/008. October.

DATA REVIEW REPORT

BRIX MARITIME

November 2005

This report summarizes the review of analytical results for groundwater samples collected November 22, 2005, at the BRIX Maritime site in Portland, Oregon. Samples were collected by Anchor Environmental and submitted to Columbia Analytical Services, Inc. (CAS) in Kelso, Washington. Samples were analyzed for one or more of the following: volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (USEPA) method 8260B; Polynuclear Aromatic Hydrocarbons (PAHs) by GC/MS-SIM via USEPA method 8270C-SIM, gasoline hydrocarbons and diesel hydrocarbons by NWTPH-Gx (GRO) and NWTPH-Dx (DRO & RRO). CAS sample data group number K0506112 was reviewed. A USEPA level II data review was performed.

Sample ID	Location	Lab ID	Matrix	Analysis Requested
BX-112205-1	MW-7	K0506112-001	Water	VOCs, PAH, DRO, RRO, and GRO
BX-112205-2	MW-6	K0506112-002	Water	VOCs, PAH, DRO, RRO, and GRO
BX-112205-3	MW-4	K0506112-003	Water	VOCs, PAH, DRO, RRO, and GRO
BX-112205-4	MW-2	K0506112-004	Water	VOCs, PAH, DRO, RRO, and GRO
BX-112205-5	MW-3	K0506112-005	Water	VOCs, PAH, DRO, RRO, and GRO
BX-112205-6	MW-3 dup	K0506112-006	Water	VOCs, PAH, DRO, RRO, and GRO
BX-112205-7	MW-1	K0506112-007	Water	VOCs, PAH, DRO, RRO, and GRO
Trip Blank		K0506112-008	Water	VOCs, PAH, DRO, RRO, and GRO
Trip Blank		K0506112-009	Water	VOCs, PAH, DRO, RRO, and GRO

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the data quality objective section of the Quality Assurance Project Plan (QAPP). Laboratory results were reviewed following USEPA guidelines (USEPA, 1999, 2004). Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Laboratory Data Package and Field Documentation

Field documentation was checked for completeness and accuracy. The chain-of-custody was signed by CAS at the time of sample receipt; the samples were received in good condition and adequately chilled (2.8, 1.5 and 0.7 °C). No discrepancies were noted.

Holding Times and Sample Preservation

Samples were appropriately preserved and analyses were conducted within holding times. No data were qualified due to these results.

Initial Calibration

Vinyl chloride, cis-1,3-dichloropropene, trans-1,3-dichloropropene, dibromochloromethane and bromoform exceeded the method criteria of 15% RSD. The technical criteria of ± 30% RSD was met for each compound, thus, data was not qualified based on this finding.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. No analytes were detected in the laboratory method blanks.

Field Quality Control

Field Duplicates

One set off field duplicates was submitted for MW-3 (BM-112205-5 and BM-112205-6. All field duplicate RPD's were within acceptable criteria of ± 25%.

Surrogate Recoveries

Surrogate recoveries for organic analyses were performed at the required frequencies. Surrogate recoveries were within the laboratory control limits.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

There was no matrix spikes performed on the diesel range organics, residual range organics, gasoline range organics or the polynuclear aromatic hydrocarbon analyses. The matrix spike and matrix spike duplicate performed on the volatile organic compounds were done as batch QC and not performed on any samples in this data report. No data have been qualified based on this finding.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

Laboratory control samples were analyzed at the required frequencies. The laboratory control samples were within the laboratories designated control limits except for the volatile organic compounds analyzed on 12/2/05. This LCS was above the laboratory control limits for acetone. As acetone was not detected in the associated samples, no data was qualified based on this finding.

Method Reporting Limits

Overall, the reporting limits are acceptable. Sample BM-112205-7 (MW-1) had naphthalene and 2-methyhlnaphthalene reported from 50x dilutions which resulted in raised reporting limits. Acenaphthylene in this sample also has a raised reporting limit due to background matrix interference.

Overall Assessment

No data were rejected during this review. The data are judged to be acceptable for their intended use and no qualifications were made.

Precision, Accuracy, and Completeness

Precision:	All precision goals were met, except where noted.
Accuracy:	All accuracy goals were met, except where noted.
Completeness:	Completeness was 100 percent; all data are useable as qualified.

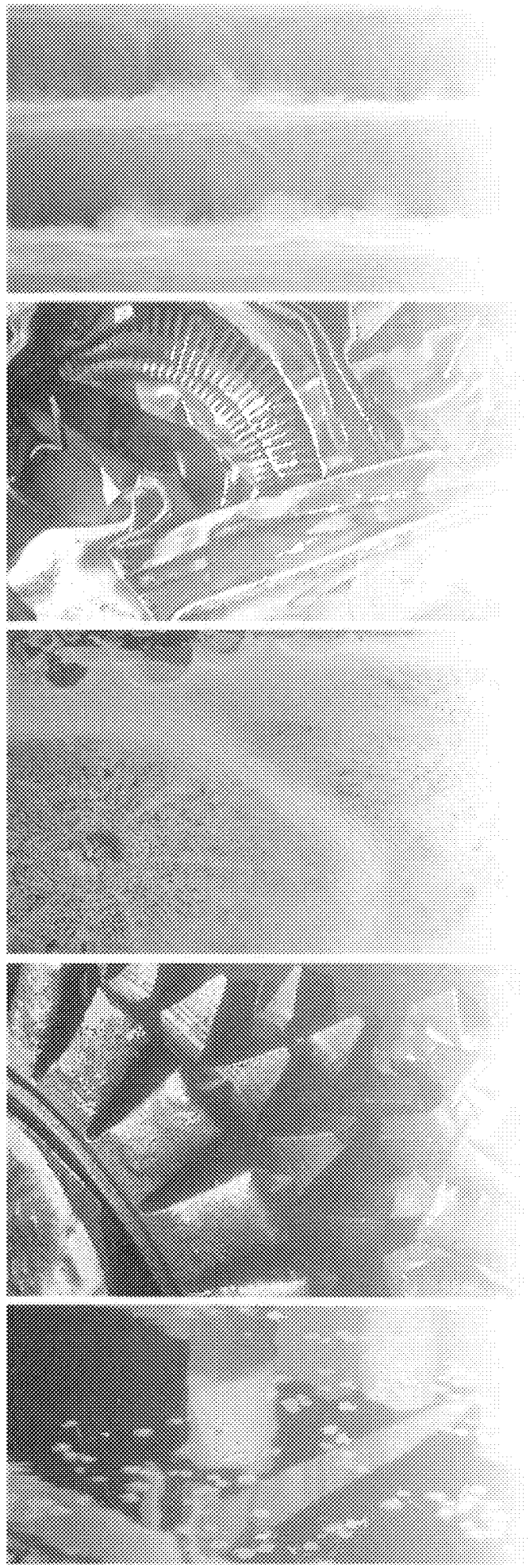
REFERENCES

USEPA. 1983. Methods for Chemical Analysis of Water and Wastes. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio. EPA-600/4-79-020.

USEPA. 1986. Test methods for Evaluating Solid Waste: Physical/Chemical Methods. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA-530/SW-846.

USEPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 540-R-04-004. October.

USEPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA 540/R-99/008. October.



Progress Report – First Quarter 2008
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon
ECSI No. 2364

Prepared for
Brix Maritime Company

April 15, 2008
15634-00/Task 3

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Progress Report – First Quarter 2008
Brix Maritime Company
9030 NW St. Helens Road
Portland, Oregon
ECSI No. 2364

Prepared for
Brix Maritime Company

April 15, 2008
15634-00/Task 3

Prepared by
Hart Crowser, Inc.

REGISTERED PROFESSIONAL
OREGON
LEON LAHIERE
No. G1235
GEOLOGIST

Leon Lahiere, RG
Senior Associate

[illegible]
[illegible]
Fax [illegible]
Tel [illegible]

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FIELD ACTIVITIES DOCUMENTATION

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ANAYTICAL TESTING PROGRAM, QUALITY ASSURANCE REVIEW, AND ANALYTICAL LABORATORY REPORT

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PROGRESS REPORT – FIRST QUARTER 2008
BRIX MARITIME COMPANY
9030 NW ST. HELENS ROAD
PORTLAND, OREGON
ECSI NO. 2364

Tables

1.0 INTRODUCTION

This report documents environmental activities completed from January 1, 2008, through March 31, 2008 (First Quarter 2008) at the Brix Maritime site in Portland, Oregon (Figure 1). The report was prepared in accordance with Section II(H) of the Oregon Department of Environmental Quality (DEQ) Voluntary Agreement for Remedial Investigation and Source Control Measures, No. LQDVC-NWR-02-03. The following items are discussed in this report.

- Actions Taken During the First Quarter 2008;
- Actions Scheduled for Second Quarter 2008;
- Data Generated During First Quarter 2008; and
- Summaries of Problems and Resolutions.

2.0 ACTIONS TAKEN DURING FIRST QUARTER 2008

- The Stormwater System Sampling and Analysis Work Plan was approved by the DEQ on January 7, 2008.
- The Fourth Quarter 2007 progress report was submitted to the DEQ on January 11, 2008.
- Stormwater catch basin sediment sampling was performed on February 19, 2008. The samples were received by Analytical Resources, Inc. and Environmental Science Corp. (ESC) for analyses on February 21, 2008.
- Water levels were measured in monitoring wells MW-1 through MW-7, and the River Staff Gauge on February 28, 2008.
- Groundwater samples were collected from monitoring wells MW-1, MW-3, MW-4, and MW-5 on February 28, 2008. The samples were received by ESC for chemical analyses on February 29, 2008.

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3.0 ACTIONS SCHEDULED FOR SECOND QUARTER 2008

- Water levels will be measured in monitoring wells MW-1 through MW-7 and at the River Staff Gauge.
- Groundwater samples will be collected from monitoring wells MW-1 through MW-7 and submitted for chemical analyses.
- The Progress Report - First Quarter 2008 (this report) will be submitted to the DEQ.
- A technical memorandum documenting the stormwater catch basin sediment sampling activities and results will be submitted to the DEQ.
- On-site stormwater discharge samples will be collected and submitted for chemical analyses.
- A response to EPA's CERCLA Section 104(e) First Request for Information is being prepared and will be submitted to EPA during the Second Quarter 2008.
- Remedial investigation and source control evaluation activities are underway and will continue during the Second Quarter 2008.

4.0 DATA GENERATED DURING FIRST QUARTER 2008

4.1 Groundwater Monitoring

First quarter 2008 groundwater monitoring activities were conducted on February 28, 2008. The results of these activities and analytical results are discussed below.

4.1.1 Hydrology Data and Potentiometric Surface

Table 1 presents depth to groundwater and groundwater elevation data relative to the 1988 North American Vertical Datum (NAVD 88). A petroleum-like odor was observed in monitoring well MW-1. A slight petroleum-like sheen was noted in purge water from wells MW-1 and MW-3. No measureable (i.e., thickness greater than 0.01 foot) non-aqueous phase liquid (NAPL) was in the wells.

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The bank of the Willamette River was examined for petroleum hydrocarbon seeps or sheen. Petroleum hydrocarbon seeps or sheen were not observed along or adjacent to the riverbank.

Figure 2 presents groundwater elevations and potentiometric surface contours from the February 28, 2008 measurement event. The apparent shallow groundwater flow direction is to the east toward the Willamette River, consistent with previous observations.

4.1.2 Groundwater Sampling

Groundwater samples were collected from monitoring wells MW-1, MW-3, MW-4, and MW-5. A description of field sampling procedures, field parameter data, and copies of field sampling data sheets are presented in Appendix A.

4.1.3 Groundwater Analytical Testing

The groundwater samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by Northwest Method NWTPH-Gx, diesel and heavy oil range TPH by Northwest Method NWTPH-Dx, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM, and volatile organic compounds (VOCs) by EPA Method 8260B. The analytical results are presented in Tables 2 through 4. Laboratory documentation is included in Appendix B.

4.1.4 Data Validation

A review of the sampling and laboratory records did not identify any apparent discrepancies between samples collected in the field and those analyzed in the laboratory. The analytical data have been reviewed and the data are of a suitable quality for the purposes of this investigation. Appendix B documents the results of the analytical data quality assurance review and includes a copy of the analytical laboratory report.

4.2 Stormwater Catch Basin Sediment Sampling and Analyses

Sediment samples were collected from the site's stormwater catch basins on February 19, 2008, in general accordance with the procedures presented in the Stormwater System Sampling and Analysis Work Plan, dated December 20, 2007. The sampling activities and analytical results will be documented in a forthcoming technical memorandum.

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5.0 SUMMARY OF PROBLEMS AND RESOLUTIONS

No problems were encountered during this reporting period.

Tables

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Tables

Figures

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Table 1 - Hydrology Data
Brix Maritime
Portland, Oregon

Monitoring Well Number (Elevation)	Measurement Date	Screened Interval In Feet	Depth to Groundwater In Feet	Groundwater Above Base of Screen In Feet	Groundwater Elevation In Feet	Comments
MW-1 (41.81)	28-Feb-03	35.1 - 20.1	18.89	3.21	22.92	
	31-Mar-03	35.1 - 20.1	19.43	2.67	22.38	
	29-Apr-03	35.1 - 20.1	19.69	2.41	22.12	
	22-May-03	35.1 - 20.1	20.22	1.88	21.59	
	7-Jul-03	35.1 - 20.1	21.08	1.02	20.73	
	30-Jul-03	35.1 - 20.1	21.13	0.97	20.68	
	28-Aug-03	35.1 - 20.1	21.24	0.86	20.57	
	30-Sep-03	35.1 - 20.1	21.15	0.95	20.66	
	16-Oct-03	35.1 - 20.1	21.10	1.00	20.71	
	3-Dec-03	35.1 - 20.1	21.06	1.04	20.75	
	26-Dec-03	35.1 - 20.1	20.46	1.64	21.35	
	30-Jan-04	35.1 - 20.1	19.01	3.09	22.80	
	4-Mar-04	35.1 - 20.1	19.60	2.50	22.21	
	29-Apr-04	35.1 - 20.1	20.91	1.19	20.90	
	27-May-04	35.1 - 20.1	21.13	0.97	20.68	
	6-Jul-04	35.1 - 20.1	21.22	0.88	20.59	
	26-Jul-04	35.1 - 20.1	21.28	0.82	20.53	
	29-Oct-04	35.1 - 20.1	21.25	0.85	20.56	
	25-Feb-05	35.1 - 20.1	20.81	1.29	21.00	
	5-May-05	35.1 - 20.1	20.63	1.47	21.18	
	2-Aug-05	35.1 - 20.1	21.18	0.92	20.63	
	29-Sep-05	35.1 - 20.1	21.21	0.89	20.60	
	22-Nov-05	35.1 - 20.1	20.78	1.32	21.03	
	16-Feb-06	35.1 - 20.1	18.10	4.00	23.71	
	9-May-06	35.1 - 20.1	20.71	1.39	21.10	
	31-Aug-06	35.1 - 20.1	21.22	0.88	20.59	
	28-Dec-06	35.1 - 20.1	18.36	3.74	23.45	
	16-Feb-07	35.1 - 20.1	19.70	2.40	22.11	
	30-May-07	35.1 - 20.1	20.92	1.18	20.89	Slight petroleum-like odor
	16-Aug-07	35.1 - 20.1	21.19	0.91	20.62	Strong petroleum-like odor
	12-Nov-07	35.1 - 20.1	20.93	1.17	20.88	Strong petroleum-like odor
	28-Feb-08	35.1 - 20.1	19.06	3.04	22.75	Strong petroleum-like odor
MW-2 (42.13)	28-Feb-03	32.9 - 17.9	19.88	4.72	22.25	
	31-Mar-03	32.9 - 17.9	20.36	4.24	21.77	
	29-Apr-03	32.9 - 17.9	20.64	3.96	21.49	
	22-May-03	32.9 - 17.9	21.06	3.54	21.07	
	7-Jul-03	32.9 - 17.9	22.17	2.43	19.96	
	30-Jul-03	32.9 - 17.9	22.50	2.10	19.63	
	28-Aug-03	32.9 - 17.9	22.84	1.76	19.29	
	30-Sep-03	32.9 - 17.9	23.07	1.53	19.06	
	16-Oct-03	32.9 - 17.9	23.06	1.54	19.07	
	3-Dec-03	32.9 - 17.9	22.54	2.06	19.59	
	26-Dec-03	32.9 - 17.9	21.58	3.02	20.55	
	30-Jan-04	32.9 - 17.9	20.05	4.55	22.08	
	4-Mar-04	32.9 - 17.9	20.57	4.03	21.56	
	29-Apr-04	32.9 - 17.9	21.89	2.71	20.24	
	27-May-04	32.9 - 17.9	22.29	2.31	19.84	
	6-Jul-04	32.9 - 17.9	22.70	1.90	19.43	
	26-Jul-04	32.9 - 17.9	22.85	1.75	19.28	
	29-Oct-04	32.9 - 17.9	22.90	1.70	19.23	
	25-Feb-05	32.9 - 17.9	22.20	2.40	19.93	
	5-May-05	32.9 - 17.9	21.73	2.87	20.40	
	2-Aug-05	32.9 - 17.9	22.48	2.12	19.65	
	29-Sep-05	32.9 - 17.9	22.90	1.70	19.23	

Please refer to notes at end of table.

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Table 1 - Hydrology Data
Brix Maritime
Portland, Oregon

Monitoring Well Number (Elevation)	Measurement Date	Screened Interval In Feet	Depth to Groundwater In Feet	Groundwater Above Base of Screen In Feet	Groundwater Elevation In Feet	Comments
MW-2 cont. (42.13)	22-Nov-05	32.9 - 17.9	22.07	2.53	20.06	
	16-Feb-06	32.9 - 17.9	19.24	5.38	22.89	
	9-May-06	32.9 - 17.9	21.65	2.95	20.48	
	31-Aug-06	32.9 - 17.9	22.88	1.72	19.26	
	28-Dec-06	32.9 - 17.9	19.56	5.04	22.57	
	16-Feb-07	32.9 - 17.9	20.48	4.12	21.65	
	30-May-07	32.9 - 17.9	21.75	2.85	20.38	
	16-Aug-07	32.9 - 17.9	22.63	1.97	19.50	Slight petroleum-like odor
	12-Nov-07	32.9 - 17.9	22.65	1.95	19.48	Slight petroleum-like sheen
	28-Feb-08	32.9 - 17.9	20.56	4.04	21.57	
MW-3 (41.93)	29-Jul-02	32.9 - 17.9	22.91	1.39	19.02	
	22-Aug-02	32.9 - 17.9	23.50	0.80	18.43	Estimated 0.02 feet of product
	30-Sep-02	32.9 - 17.9	23.37	0.93	18.56	Estimated 0.02 feet of product
	30-Oct-02	32.9 - 17.9	23.68	0.62	18.25	DTP = 23.49 (0.19 foot thick)
	27-Nov-02	32.9 - 17.9	23.30	1.00	18.63	DTP = 23.16 (0.14 foot thick)
	30-Dec-02	32.9 - 17.9	21.99	2.31	19.94	Sheen noted on probe
	28-Feb-03	32.9 - 17.9	19.75	4.55	22.18	Sheen noted on probe
	31-Mar-03	32.9 - 17.9	20.24	4.06	21.69	No oil noted on probe
	29-Apr-03	32.9 - 17.9	20.50	3.80	21.43	No oil noted on probe
	22-May-03	32.9 - 17.9	20.94	3.36	20.99	No oil noted on probe
	7-Jul-03	32.9 - 17.9	22.21	2.09	19.72	No oil noted on probe
	30-Jul-03	32.9 - 17.9	22.62	1.68	19.31	No oil noted on probe
	28-Aug-03	32.9 - 17.9	22.95	1.35	18.98	Sheen noted on probe
	30-Sep-03	32.9 - 17.9	23.15	1.15	18.78	DTP = 23.04 (0.11 foot thick)
	16-Oct-03	32.9 - 17.9	22.40	1.90	19.53	No oil noted on probe
	3-Dec-03	32.9 - 17.9	22.21	2.09	19.72	Sheen noted on probe
	26-Dec-03	32.9 - 17.9	21.44	2.86	20.49	No oil noted on probe
	30-Jan-04	32.9 - 17.9	19.80	4.50	22.13	No oil noted on probe
	4-Mar-04	32.9 - 17.9	20.41	3.89	21.52	No oil noted on probe
	29-Apr-04	32.9 - 17.9	21.82	2.48	20.11	No oil noted on probe
	27-May-04	32.9 - 17.9	22.25	2.05	19.68	No oil noted on probe
	6-Jul-04	32.9 - 17.9	22.66	1.64	19.27	No oil noted on probe
	26-Jul-04	32.9 - 17.9	22.91	1.39	19.02	DTP = 22.89 (0.02 foot thick)
	29-Oct-04	32.9 - 17.9	22.29	2.01	19.64	Sheen noted on probe
	25-Feb-05	32.9 - 17.9	22.03	2.27	19.90	No oil noted on probe
(41.95)	5-May-05	32.9 - 17.9	21.55	2.75	20.40	No oil noted on probe
	2-Aug-05	32.9 - 17.9	22.32	1.98	19.63	DTP = 22.31 (0.01 foot thick)
	29-Sep-05	32.9 - 17.9	22.37	1.93	19.58	Sheen noted on probe
	22-Nov-05	32.9 - 17.9	21.97	2.33	19.98	Sheen noted on probe
	16-Feb-06	32.9 - 17.9	19.12	5.18	22.83	No oil noted on probe
	9-May-06	32.9 - 17.9	21.52	2.78	20.43	No oil noted on probe
	31-Aug-06	32.9 - 17.9	Dry	--	--	Product present in end cap
	28-Dec-06	32.9 - 17.9	19.35	4.95	22.60	
	16-Feb-07	32.9 - 17.9	20.38	3.92	21.57	Sheen/strong petroleum-like odor
	30-May-07	32.9 - 17.9	21.75	2.55	20.20	
	16-Aug-07	32.9 - 17.9	22.70	1.60	19.25	Trace of Free Product (<0.01 foot)
	12-Nov-07	32.9 - 17.9	23.35	0.95	18.60	DTP = 23.34 (0.01 foot thick)
	28-Feb-08	32.9 - 17.9	19.93	4.37	22.02	Slight petroleum-like sheen
MW-4 (23.65)	29-Jul-02	19.4 - 9.4	11.62	2.88	11.93	
	22-Aug-02	19.4 - 9.4	11.77	2.73	11.78	
	30-Sep-02	19.4 - 9.4	11.94	2.56	11.61	
	30-Oct-02	19.4 - 9.4	12.06	2.44	11.49	
	27-Nov-02	19.4 - 9.4	11.85	2.65	11.70	
	30-Dec-02	19.4 - 9.4	10.24	4.26	13.31	

Please refer to notes at end of table.

Confidential Business Information

Table 1 - Hydrology Data
Brix Maritime
Portland, Oregon

Monitoring Well Number (Elevation)	Measurement Date	Screened Interval In Feet	Depth to Groundwater In Feet	Groundwater Above Base of Screen In Feet	Groundwater Elevation In Feet	Comments
MW-4 cont. (23.55)	28-Feb-03	19.4 - 9.4	4.34	10.16	19.21	
	31-Mar-03	19.4 - 9.4	4.59	9.91	18.96	
	29-Apr-03	19.4 - 9.4	5.46	9.04	18.09	
	22-May-03	19.4 - 9.4	8.59	5.91	14.96	
	7-Jul-03	19.4 - 9.4	10.69	3.81	12.86	
	30-Jul-03	19.4 - 9.4	11.03	3.47	12.52	
	28-Aug-03	19.4 - 9.4	11.40	3.10	12.15	
	30-Sep-03	19.4 - 9.4	11.74	2.76	11.81	
	16-Oct-03	19.4 - 9.4	11.40	3.10	12.15	
	3-Dec-03	19.4 - 9.4	10.59	3.91	12.96	
	26-Dec-03	19.4 - 9.4	9.50	5.00	14.05	
	30-Jan-04	19.4 - 9.4	5.41	9.09	18.14	
	4-Mar-04	19.4 - 9.4	9.05	5.45	14.50	
	29-Apr-04	19.4 - 9.4	11.00	3.50	12.55	
	27-May-04	19.4 - 9.4	10.89	3.61	12.66	
	6-Jul-04	19.4 - 9.4	11.26	3.24	12.29	
	26-Jul-04	19.4 - 9.4	11.56	2.94	11.99	
	29-Oct-04	19.4 - 9.4	11.06	3.44	12.49	
	25-Feb-05	19.4 - 9.4	10.60	3.90	12.95	
	5-May-05	19.4 - 9.4	9.55	4.95	14.00	
	2-Aug-05	19.4 - 9.4	10.95	3.55	12.60	
	29-Sep-05	19.4 - 9.4	11.19	3.31	12.36	
	22-Nov-05	19.4 - 9.4	10.85	3.65	12.70	
	16-Feb-06	19.4 - 9.4	8.30	6.20	15.25	
	16-Mar-06	19.4 - 9.4	8.45	6.05	15.10	
	9-May-06	19.4 - 9.4	8.13	6.37	15.42	
	31-Aug-06	19.4 - 9.4	11.47	3.03	12.08	
	28-Dec-06	19.4 - 9.4	4.64	9.86	18.91	
	16-Feb-07	19.4 - 9.4	6.71	7.79	16.84	Slight petroluem-like odor
	30-May-07	19.4 - 9.4	10.01	4.49	13.54	
	16-Aug-07	19.4 - 9.4	11.10	3.40	12.45	Petroleum odor
	12-Nov-07	19.4 - 9.4	11.05	3.45	12.50	Slight sheen
	28-Feb-08	19.4 - 9.4	3.61	10.89	19.94	
MW-5 (41.66)	28-Feb-03	34.9 - 19.9	19.45	2.65	22.21	
	31-Mar-03	34.9 - 19.9	19.99	2.11	21.67	
	29-Apr-03	34.9 - 19.9	20.25	1.85	21.41	
	22-May-03	34.9 - 19.9	20.75	1.35	20.91	
	7-Jul-03	34.9 - 19.9	21.93	0.17	19.73	Insufficient water to collect sample
	30-Jul-03	34.9 - 19.9	22.08	0.02	19.58	Dry
	28-Aug-03	34.9 - 19.9	22.08	0.02	19.58	Dry
	30-Sep-03	34.9 - 19.9	22.13	-0.03	19.53	Dry
	16-Oct-03	34.9 - 19.9	22.10	0.00	19.56	Insufficient water to collect sample
	3-Dec-03	34.9 - 19.9	22.13	-0.03	19.53	Dry
	26-Dec-03	34.9 - 19.9	21.35	0.75	20.31	
	30-Jan-04	34.9 - 19.9	19.59	2.51	22.07	
	4-Mar-04	34.9 - 19.9	20.16	1.94	21.50	
	29-Apr-04	34.9 - 19.9	21.67	0.43	19.99	Insufficient water to collect sample
	27-May-04	34.9 - 19.9	21.99	0.11	19.67	Water level below screen (dry)
	6-Jul-04	34.9 - 19.9	21.98	0.12	19.68	Water level below screen (dry)
	26-Jul-04	34.9 - 19.9	Dry	--	--	
	29-Oct-04	34.9 - 19.9	22.00	0.10	19.66	Water level below screen (dry)
	25-Feb-05	34.9 - 19.9	21.85	0.25	19.81	Water level below screen (dry)
	5-May-05	34.9 - 19.9	21.41	0.69	20.25	
	2-Aug-05	34.9 - 19.9	22.01	0.09	19.65	Water level below screen (dry)

Please refer to notes at end of table.

Confidential Business Information

Table 1 - Hydrology Data
Brix Maritime
Portland, Oregon

Monitoring Well Number (Elevation)	Measurement Date	Screened Interval In Feet	Depth to Groundwater In Feet	Groundwater Above Base of Screen In Feet	Groundwater Elevation In Feet	Comments
MW-5 cont. (41.66)	29-Sep-05	34.9 - 19.9	22.01	0.09	19.65	Water level below screen (dry)
	22-Nov-05	34.9 - 19.9	22.00	0.10	19.66	Water level below screen (dry)
	16-Feb-06	34.9 - 19.9	18.91	3.19	22.75	
	9-May-06	34.9 - 19.9	21.35	0.75	20.31	
	31-Aug-06	34.9 - 19.9	Dry	--	--	Water level below screen (dry)
	28-Dec-06	34.9 - 19.9	19.10	3.00	22.56	
	16-Feb-07	34.9 - 19.9	20.30	1.80	21.36	Strong petroleum-like odor
	30-May-07	34.9 - 19.9	21.68	0.42	19.98	
	16-Aug-07	34.9 - 19.9	21.93	0.17	19.73	Water level below screen (dry)
	12-Nov-07	34.9 - 19.9	21.95	0.15	19.71	Water level below screen (dry)
	28-Feb-08	34.9 - 19.9	19.78	2.32	21.88	Slight petroleum-like odor
MW-6 (41.21)	7-Jul-03	31.4 - 16.4	20.26	4.84	21.40	
	30-Jul-03	31.4 - 16.4	20.57	4.53	21.09	Sheen/slight petroleum-like odor
	28-Aug-03	31.4 - 16.4	21.02	4.08	20.64	
	30-Sep-03	31.4 - 16.4	21.02	4.08	20.64	
	16-Oct-03	31.4 - 16.4	20.93	4.17	20.73	
	3-Dec-03	31.4 - 16.4	21.53	3.57	20.13	
	26-Dec-03	31.4 - 16.4	19.24	5.86	22.42	
	30-Jan-04	31.4 - 16.4	17.70	7.40	23.96	
	4-Mar-04	31.4 - 16.4	18.16	6.94	23.50	
	29-Apr-04	31.4 - 16.4	19.66	5.44	22.00	
	27-May-04	31.4 - 16.4	20.17	4.93	21.49	
	6-Jul-04	31.4 - 16.4	20.71	4.39	20.95	
	26-Jul-04	31.4 - 16.4	21.23	3.87	20.43	
	29-Oct-04	31.4 - 16.4	21.48	3.62	20.18	
	25-Feb-05	31.4 - 16.4	19.78	5.32	21.88	
	5-May-05	31.4 - 16.4	19.19	5.91	22.47	
	2-Aug-05	31.4 - 16.4	20.57	4.53	21.09	
	29-Sep-05	31.4 - 16.4	21.25	3.85	20.41	
	22-Nov-05	31.4 - 16.4	20.58	4.52	21.08	
	16-Feb-06	31.4 - 16.4	17.45	7.65	24.21	
	9-May-06	31.4 - 16.4	19.16	5.94	22.50	
	31-Aug-06	31.4 - 16.4	21.25	3.85	20.41	
	28-Dec-06	31.4 - 16.4	17.18	7.92	24.48	
	16-Feb-07	31.4 - 16.4	19.06	6.04	22.60	
	30-May-07	31.4 - 16.4	19.80	5.30	21.86	
	16-Aug-07	31.4 - 16.4	21.28	3.82	20.38	
	12-Nov-07	31.4 - 16.4	21.68	3.42	19.98	
	28-Feb-08	31.4 - 16.4	20.23	4.87	21.43	
MW-7 (40.95)	7-Jul-03	31.5 - 16.5	21.21	3.59	19.74	
	30-Jul-03	31.5 - 16.5	21.76	3.04	19.19	
	28-Aug-03	31.5 - 16.5	22.32	2.48	18.63	
	30-Sep-03	31.5 - 16.5	22.67	2.13	18.28	
	16-Oct-03	31.5 - 16.5	22.72	2.08	18.23	
	3-Dec-03	31.5 - 16.5	22.90	1.90	18.05	
	26-Dec-03	31.5 - 16.5	20.32	4.48	20.63	
	30-Jan-04	31.5 - 16.5	18.26	6.54	22.69	
	4-Mar-04	31.5 - 16.5	18.96	5.84	21.99	
	29-Apr-04	31.5 - 16.5	20.49	4.31	20.46	
	27-May-04	31.5 - 16.5	21.10	3.70	19.85	
	6-Jul-04	31.5 - 16.5	21.98	2.82	18.97	
	26-Jul-04	31.5 - 16.5	22.40	2.40	18.55	
	29-Oct-04	31.5 - 16.5	22.99	1.81	17.96	
	25-Feb-05	31.5 - 16.5	20.80	4.00	20.15	

Please refer to notes at end of table.

Confidential Business Information

Table 1 - Hydrology Data
Brix Maritime
Portland, Oregon

Monitoring Well Number (Elevation)	Measurement Date	Screened Interval In Feet	Depth to Groundwater In Feet	Groundwater Above Base of Screen In Feet	Groundwater Elevation In Feet	Comments
MW-7 cont. (40.95)	5-May-05	31.5 - 16.5	20.20	4.60	20.75	
	2-Aug-05	31.5 - 16.5	21.60	3.20	19.35	
	29-Sep-05	31.5 - 16.5	22.47	2.33	18.48	
	22-Nov-05	31.5 - 16.5	22.05	2.75	18.90	
	16-Feb-06	31.5 - 16.5	18.31	6.49	22.64	
	9-May-06	31.5 - 16.5	20.01	4.79	20.94	
	31-Aug-06	31.5 - 16.5	22.42	2.38	18.53	
	28-Dec-06	31.5 - 16.5	17.93	6.87	23.02	
	16-Feb-07	31.5 - 16.5	20.02	4.78	20.93	
	30-May-07	31.5 - 16.5	20.73	4.07	20.22	
	16-Aug-07	31.5 - 16.5	22.48	2.32	18.47	
	12-Nov-07	31.5 - 16.5	23.47	1.33	17.48	
	28-Feb-08	31.5 - 16.5	21.12	3.68	19.83	
MW-8 (41.73)	25-Feb-05	24.8 - 19.8	21.15	1.05	20.58	
	5-May-05	24.8 - 19.8	21.81	0.39	19.92	
	2-Aug-05	24.8 - 19.8	21.19	1.01	20.54	
	29-Sep-05	24.8 - 19.8	21.33	0.87	20.40	
	22-Nov-05	24.8 - 19.8	20.63	1.57	21.10	
	16-Feb-06	24.8 - 19.8	19.39	2.81	22.34	
	9-May-06	24.8 - 19.8	20.17	2.03	21.56	
	31-Aug-06	24.8 - 19.8	21.34	0.86	20.39	
	28-Dec-06	24.8 - 19.8	18.74	3.46	22.99	
	16-Feb-07	24.8 - 19.8	--	--	--	Not measured - well damaged
	30-May-07	24.8 - 19.8	--	--	--	Not measured - well damaged
	16-Aug-07	24.8 - 19.8	--	--	--	Not measured - well damaged
	12-Nov-07	-- --	--	--	--	Well abandoned

Please refer to notes at end of table.

Confidential Business Information

Table 1 - Hydrology Data
Brix Maritime
Portland, Oregon

River Stage Gauge	Measurement Date	Guage Reading In Feet	Comments
	30-Oct-02	2.8	
	27-Nov-02	3.1	
	30-Dec-02	7.5	
	28-Feb-03	6.1	
	31-Mar-03	8.0	
	29-Apr-03	8.0	
	22-May-03	6.5	
	7-Jul-03	4.0	
	30-Jul-03	3.5	
	28-Aug-03	3.3	
	30-Sep-03	2.1	
	16-Oct-03	2.2	
	3-Dec-03	3.5	
	26-Dec-03	6.7	
	30-Jan-04	11.0	
	4-Mar-04	5.0	
	29-Apr-04	4.0	
	27-May-04	6.6	
	6-Jul-04	3.5	
	26-Jul-04	2.8	
	29-Oct-04	3.8	
	25-Feb-05	4.0	
	5-May-05	5.0	
	2-Aug-05	4.4	
	25-Aug-05	3.6	
	29-Sep-05	1.0	
	22-Nov-05	3.4	
	16-Feb-06	5.9	
	9-May-06	9.0	
	31-Aug-06	2.8	
	28-Dec-06	7.9	
	15-Feb-07	6.0	
	30-May-07	6.5	
	16-Aug-07	5.5	
	12-Nov-07	4.0	
	28-Feb-08	5.1	

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Notes:

1. Monitoring well elevations are top of casing referenced to North American Vertical Daufum 88 (NAVD88).
2. Screened intervals and groundwater elevations are referenced to NAVD88.
3. DTP = Depth to Liquid Phase Petroleum Hydrocarbons.
4. -- = Not measured or not applicable.
5. July 2002 to May 2006 monitoring activities were performed by Anchor Environmental.
6. The river gauge is marked in 1-foot increments, field measurements are estimated to the nearest 0.1 feet.

Figures

Confidential Business Information

Table 2 - Total Petroleum Hydrocarbons in Groundwater
Brix Maritime
Portland, Oregon

Monitoring Well Identification	Sampling Date	Concentrations in Milligrams Per Liter (mg/L)		
		DRO	RRO	GRO
MW-1	7-Jul-03	0.27 L	0.50 U	1.3 H
	16-Oct-03	0.73 L	0.50 U	8.1 H
	30-Jan-04	0.60 L	0.50 U	4.0 H
	29-Apr-04	0.71 L	0.05 U	5.8 H
	26-Jul-04	0.92 L	0.50 U	9.3 Y
	29-Oct-04	1.10 L	0.50 U	8.8 Y
	25-Feb-05	1.40 L	0.50 U	12.0 DY
	5-May-05	0.86 L	0.54 U	12.0 DY
	2-Aug-05	1.00 L	0.52 U	14.0 DY
	22-Nov-05	1.30 Z	0.53 U	13.0 D
	16-Feb-06	0.73 L	0.53 U	12.0 Y
	9-May-06	0.65 Z	0.53 U	14.0 DY
	31-Aug-06	0.25 U	0.50 U	1.1 Y
	28-Dec-06	0.22 J	0.02 U	1.3 Y
	16-Feb-07	0.270 U	0.53 U	0.45 Y
	30-May-07	0.350 L	0.50 U	3.50 Y
	16-Aug-07	0.320 L	0.50 U	2.30 Y
	12-Nov-07	0.54	0.30	1.3
	28-Feb-08	0.10 UJ3	0.25 UJ3	0.13
MW-1 Dup	29-Apr-04	0.79 L	0.50 U	5.7 H
	26-Jul-04	0.93 L	0.50 U	9.3 Y
	25-Feb-05	1.30 L	0.50 U	11.0 DY
	5-May-05	0.85 L	0.52 U	12.0 DY
	31-Aug-06	0.30 L	0.50 U	1.5 Y
	28-Dec-06	0.20 J	0.02 U	1.1 Y
	16-Aug-07	0.410 L	0.50 U	1.6 Y
	12-Nov-07	0.46	0.31	0.86
MW-2	7-Jul-03	0.25 U	0.50 U	0.05 U
	16-Oct-03	0.27 U	0.53 U	0.05 U
	30-Jan-04	0.25 U	0.50 U	0.05 U
	29-Apr-04	0.25 U	0.50 U	0.05 U
	26-Jul-04	0.25 U	0.50 U	0.25 U
	29-Oct-04	0.25 U	0.50 U	0.25 U
	5-May-05	0.27 U	0.53 U	0.25 U
	22-Nov-05	0.28 U	0.55 U	0.25 U
	9-May-06	0.28 U	0.56 U	0.25 U
	28-Dec-06	0.025 J	0.042 J	0.25 U
	16-Aug-07	0.25 U	0.5 U	0.25 U
	12-Nov-07	0.059 J	0.17 J	0.10 U
MW-3	30-Jul-02	3.4 Y	1.6 O	--
	7-Jul-03	1.9 Y	8.5 O	0.05 U
	16-Oct-03	0.92 Y	1.8 O	0.059 Y
	30-Jan-04	0.79 Y	0.6 O	0.05 U
	29-Apr-04	0.7 Y	0.77 O	0.05 U
	26-Jul-04	2.5 Y	8.3 O	0.25 U
	29-Oct-04	1.2 Y	3.1 O	0.25 U
	25-Feb-05	1.2 Y	1.8 O	0.25 U
	5-May-05	1.0 Z	1.2 Z	0.25 U
	2-Aug-05	1.2 Y	4.0 OJ	0.25 U
	22-Nov-05	0.78 Z	0.77 Z	0.25 U
	9-May-06	0.34 Z	0.56 U	0.25 U
	28-Dec-06	0.31 Z	0.53 Z	0.026 J
	16-Feb-06	0.56 Z	0.62 Z	0.25 U

Please refer to notes at end of table

Figures

Confidential Business Information

Table 2 - Total Petroleum Hydrocarbons in Groundwater
Brix Maritime
Portland, Oregon

Monitoring Well Identification	Sampling Date	Concentrations in Milligrams Per Liter (mg/L)		
		DRO	RRO	GRO
MW-3 - cont	16-Feb-07	0.27 U	0.53 U	0.250 U
	30-May-07	0.680 Z	0.930 Z	0.250 U
	12-Nov-07	3.3	4.4	0.56 J
	28-Feb-08	0.49 J3	0.094 UJ3	0.041 J
MW-3-Dup	2-Aug-05	1.1 Z	1.7 OJ	0.25 U
	22-Nov-05	0.67 Z	0.71 Z	0.25 U
	16-Feb-06	0.54 Z	0.55 U	0.25 U
MW-4	29-Jul-02	0.26 U	0.52 U	--
	7-Jul-03	0.25 U	0.52 O	0.05 U
	16-Oct-03	0.25 U	0.50 U	0.65 Y
	30-Jan-04	0.25 U	0.50 U	0.05 U
	29-Apr-04	0.25 U	0.50 U	0.05 U
	26-Jul-04	0.25 U	0.50 U	0.25 U
	29-Oct-04	0.73 Z	1.0 Z	0.25 U
	25-Feb-05	0.25 U	0.50 U	0.25 U
	5-May-05	0.25 U	0.51 U	0.25 U
	2-Aug-05	0.28 U	0.55 U	0.25 U
	22-Nov-05	0.27 U	0.53 U	0.25 U
	16-Feb-06	0.54 Y	0.55 U	1.1 Y
	16-Mar-06	0.28 U	0.56 U	0.25 U
	9-May-06	0.25 U	0.50 U	0.3 U
	31-Aug-06	0.25 U	0.50 U	0.25 U
	28-Dec-06	0.043 J	0.035 J	0.032 J
	16-Feb-07	0.25 U	0.50 U	0.25 U
	30-May-07	0.25 U	0.50 U	0.25 U
	16-Aug-07	0.25 U	0.640 Z	0.31 Y
	12-Nov-07	0.14	0.22 J	0.62
	28-Feb-08	0.20 J3	0.25 UJ3	0.10 U
MW-4-Dup	7-Jul-03	0.25 U	0.50 U	0.05 U
	16-Oct-03	0.25 U	0.50 U	0.66 Y
	16-Oct-03	0.25 U	0.50 U	0.66 Y
	29-Oct-04	0.63 Z	0.96 Z	0.25 U
MW-5	30-Jan-04	0.62 L	0.50 U	1.4 H
	5-May-05	1.3 L	0.55 U	5.2 Y
	16-Feb-06	0.27 U	0.54 U	0.89 H
	9-May-06	0.70 Z	0.59 U	2.8 Y
	28-Dec-06	0.41 Y	0.036 J	2.1 Y
	16-Feb-07	0.44 Z	0.5 U	1.8 Y
	30-May-07	1.20 L	0.5 U	4.8 Y
	28-Feb-08	0.25 J3	0.25 UJ3	0.35
MW-5-Dup	30-Jan-04	0.63 L	0.50 U	1.5 H
	9-May-06	0.68 Z	0.56 U	3.0 Y
MW-6	7-Jul-03	0.25 U	0.50 U	0.05 U
	16-Oct-03	0.27 U	0.53 U	0.05 U
	30-Jan-04	0.25 U	0.50 U	0.05 U
	29-Apr-04	0.25 U	0.50 U	0.05 U
	26-Jul-04	0.25 U	0.50 U	0.25 U
	29-Oct-04	0.25 U	0.50 U	0.25 U
	5-May-05	0.28 U	0.55 U	0.25 U
	22-Nov-05	0.28 U	0.65 O	0.25 U

Please refer to notes at end of table.

Figures

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Table 2 - Total Petroleum Hydrocarbons in Groundwater
Brix Maritime
Portland, Oregon

Monitoring Well Identification	Sampling Date	Concentrations in Milligrams Per Liter (mg/L)		
		DRO	RRO	GRO
MW-6 - cont.	9-May-06	0.27 U	0.53 U	0.25 U
	28-Dec-06	0.036 J	0.034 J	0.25 U
	16-Aug-07	0.250 U	0.500 U	0.25 U
	12-Nov-07	0.100 U	0.250 U	0.10 U
MW-7	7-Jul-03	0.25 U	0.50 U	0.05 U
	16-Oct-03	0.27 U	0.53 U	0.05 U
	30-Jan-04	0.25 U	0.50 U	0.05 U
	29-Apr-04	0.25 U	0.50 U	0.05 U
	26-Jul-04	0.25 U	0.50 U	0.25 U
	29-Oct-04	0.25 U	0.50 U	0.25 U
	5-May-05	0.27 U	0.54 U	0.25 U
	22-Nov-05	0.27 U	0.53 U	0.25 U
	9-May-06	0.27 U	0.53 U	0.25 U
	28-Dec-06	0.019 J	0.036 J	0.25 U
	16-Aug-07	0.25 U	0.5 U	0.25 U
	12-Nov-07	0.10 U	0.25 U	0.10 U
MW-8	25-Feb-05	**1.0** Y	**1.3** O	0.25 U

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Notes:

1. DRO = Diesel range organics.
2. RRO = Residual range organics.
3. GRO = Gasoline range organics.
4. Reportable concentrations are shown in **Bold**.
5. D = The reported result is from a dilution.
6. U = Analyte not detected at or above the indicated reporting limit.
7. O = The fingerprint resembles oil, but does not match the calibration standard.
8. L = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of lighter weight constituents than the calibration standard.
9. H = The fingerprint resembles a petroleum product, but the elution pattern indicates the presence of heavier weight constituents than the calibration standard.
10. Y = The fingerprint resembles a petroleum product in the correct carbon range, but the elution pattern does not match the calibration standard.
11. Z = The chromatic fingerprint does not resemble a petroleum product.
12. J= The result is an estimated concentration that is less than the Method Reporting Limit.
12. J3= The associated QC batch was outside the control range for precision

Figures

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BRIX004412

Table 3 - Polynuclear Aromatic Hydrocarbons in Groundwater
Brix Maritime
Portland, Oregon

Concentrations in Micrograms per Liter (µg/L)

Sample Location and Date	Low Molecular Weight Polynuclear Aromatic Hydrocarbons									High Molecular Weight Polynuclear Aromatic Hydrocarbons										
	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Dibenzofuran	Fluorene	Phenanthrene	Naphthalene	Total LMPAHs	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Pyrene	Total HMPAHs
MW-1																				
26-Feb-03	9.0	0.43	0.19	0.63	0.120	0.36	1.8	23 D	35	2.1	1.4	1.1	2.0	1.5	0.17	2.7	4.3	1.5	13.0	29.8
7-Jul-03	7.9	0.38	0.020 U	0.11	0.067	0.27	0.56	23 D	32	0.22	0.088	0.098	0.11	0.028	0.020 U	0.27	0.5	0.023	1.2	2.5
16-Oct-03	42 D	0.34	0.020 U	0.065	0.085	0.24	0.42	150 D	203	0.16	0.073	0.096	0.097	0.043	0.020 U	0.24	0.3	0.036	0.9	1.9
30-Jan-04	40 D	0.17	0.150 U	0.073	0.032	0.11	0.16	110 D	151	0.20	0.047	0.053	0.064	0.020 U	0.020 U	0.24	0.39	0.020 U	1.6	2.59
29-Apr-04	46 D	0.30	0.020 U	0.079	0.062	0.19	0.34	170 D	217	0.12	0.049	0.061	0.066	0.021	0.020 U	0.16	0.33	0.020 U	0.76	1.57
26-Jul-04	51 D	0.34	0.190 U	0.068	0.073	0.23	0.36	170 D	222	0.13	0.044	0.047	0.056	0.019 U	0.019 U	0.15	0.31	0.019 U	0.80	1.54
29-Oct-04	42 D	0.33	0.020 U	0.070	0.085	0.23	0.32	160 D	203	0.130	0.084	0.082	0.110	0.056	0.020 U	0.15	0.21	0.044	0.60	1.47
25-Feb-05	46 D	0.33	0.10	0.090	0.093	0.28	0.44	150 D	197	0.096	0.038	0.034	0.046	0.020 U	0.020 U	0.11	0.27	0.020 U	0.50	1.09
5-May-05	56 D	0.34	0.083 UI	0.061	0.075	0.25	0.34	210 D	267	0.11	0.036	0.038	0.042	0.020 U	0.020 U	0.14	0.38	0.020 U	0.69	1.44
2-Aug-05	46 D	0.32	0.071 UI	0.062	0.084	0.26	0.35	180 D	227	0.079	0.034	0.021	0.037	0.020 U	0.020 U	0.11	0.26	0.020 UJ	0.54	1.14
22-Nov-05	69 D	0.35	0.087 UI	0.056	0.086	0.29	0.43	200 D	270	0.079	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.11	0.35	0.020 U	0.65	1.19
16-Feb-06	52 D	0.18	0.10 UI	0.150	0.041	0.21	0.61	200 D	253	0.14	0.028	0.022	0.022	0.020 U	0.020 U	0.23	1.00	0.020 U	2.70	4.14
9-May-06	57 D	0.30	0.073 UI	0.036	0.048	0.19	0.43	220 D	278	0.078	0.021	0.022	0.020 U	0.020 U	0.020 U	0.13	0.37	0.020 U	0.79	1.41
31-Aug-06	0.95	0.31	0.043 UI	0.082	0.061	0.25	0.46	2.1	4.2	0.13	0.044	0.043	0.051	0.020 U	0.020 U	0.17	0.38	0.020 U	0.85	1.67
28-Dec-06	1.2	0.098	0.039 UI	0.12	0.020 U	0.061	0.25	1.3	3.0	0.19	0.032	0.029	0.030	0.0061 J	0.020 U	0.25	0.85	0.0063 J	2.5	3.88
16-Feb-07	0.70	0.10	0.020 U	0.030	0.020 U	0.060	0.24	2.4	3.5	0.12	0.050	0.051	0.020 U	0.0200 U	0.020 U	0.16	0.27	0.020 U	0.91	1.56
30-May-07	18 D	0.37	0.041 UI	0.13	0.053	0.21	0.80	13 D	32.8	0.21	0.21	0.079	0.19	0.099	0.020 U	0.27	0.61	0.087	1.3	3.06
16-Aug-07	0.59	0.28	0.037	0.089	0.081	0.24	0.51	0.77	2.60	0.36	0.43	0.12	0.36	0.20	0.028	0.40	0.59	0.21	1.50	4.20
12-Nov-07	5.6	0.30	0.050 U	0.084	0.050 U	0.26	0.39	2.7 J4	9.33	0.069	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.087	0.26	0.050 U	0.63	1.02
26-Feb-08	0.27	0.023 J	0.010 J	0.040 J	--	0.015 J	0.039 J	0.65	0.92	0.080	0.032 J	0.056	0.025 J	0.0074 J	0.0048 J	0.096	0.10	0.0076 J	0.81	1.15
MW-1 Dup																				
29-Apr-04	40 D	0.23	0.020 U	0.057	0.057	0.14	0.27	150 D	191	0.084	0.029	0.036	0.038	0.20 U	0.20 U	0.11	0.24	0.20 U	0.57	1.11
26-Jul-04	49 D	0.33	0.019 UI	0.067	0.074	0.24	0.36	170 D	220	0.13	0.041	0.043	0.052	0.019 U	0.019 U	0.15	0.33	0.019 U	0.85	1.60
25-Feb-05	53 D	0.38	0.088 UI	0.099	0.100	0.32	0.53	170 D	224	0.11	0.038	0.044	0.048	0.020 U	0.020 U	0.12	0.31	0.020 U	0.57	1.24
5-May-05	49 D	0.31	0.072 UI	0.061	0.060	0.19	0.32	190 D	240	0.081	0.020 U	0.021	0.020	0.020 U	0.020 U	0.11	0.34	0.020 U	0.64	1.21
31-Aug-06	1.3	0.32	0.044 UI	0.087	0.065	0.26	0.50	1.7	4.2	0.13	0.037	0.034	0.039	0.020 U	0.020 U	0.16	0.40	0.020 U	0.88	1.68
28-Dec-06	1.2	0.091	0.043 UI	0.12	0.020 U	0.077	0.24	1.3	3.0	0.18	0.031	0.030	0.030	0.0061 J	0.0051 J	0.24	0.83	0.0056 J	2.4	3.74
16-Aug-07	2.4	0.370	0.045	0.12	0.090	0.29	0.67	1.5	5.5	0.57	0.880	0.270	0.740	0.45	0.057	0.60	0.78	0.45	1.8	6.52
12-Nov-07	2.1	0.28	0.050 U	0.084	0.050 U	0.19	0.37	1.5	4.5	0.087	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.075	0.28	0.050 U	0.62	1.06
MW-2																				
26-Feb-03	0.020 U	0.020 U	0.023	0.032	0.020 U	0.020 U	0.16	0.082	0.29	0.11	0.14	0.13	0.19	0.22	0.02 U	0.17	0.29	0.20	0.42	1.87
7-Jul-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.031	0.023	0.05	0.023	0.036	0.035	0.022 U	0.090	0.022 U	0.042	0.070	0.073	0.091	0.46
30-Jan-04	0.022	0.020 U	0.140 UB	0.034	0.020 U	0.020 U	0.020 U	0.037	0.09	0.020	0.020	0.023	0.035	0.020	0.020 U	0.020 U	0.022	0.022	0.020	0.18
29-Apr-04	0.020 U	0.020 U	0.02 U	0.036	0.019 U	0.020 U	0.020 U	0.023	0.06	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.03	0.024	0.13	0.11	0.020 U	0.023	0.31	0.18	0.81	0.31	0.48	0.42	0.73	1.10 J	0.10	0.48	0.62	0.88	0.87	5.99
29-Oct-04	0.020 U	0.020 U	0.021	0.032	0.020 U	0.020 U	0.026	0.026	0.11	0.043	0.080	0.061	0.10	0.18	0.020 U	0.060	0.084	0.14	0.090	0.84
5-May-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.022	0.030	0.022	0.042	0.059	0.020 U	0.026	0.037	0.053	0.045	0.34
29-Sep-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.029	0.03
22-Nov-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
9-May-06	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 D	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
28-Dec-06	0.025	0.020 U	0.0031 J	0.020 U	0.020 U	0.020 U	0.0066 J	0.041	0.066	0.0064 J	0.0051 J	0.020 U	0.0066 J	0.0071 J	0.0055 J	0.0061 J	0.012 J	0.0064 J	0.014 J	0.020 U
16-Aug-07	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.023	0.023	0.0190 U	0.0190 U	0.019 U	0.0190 U	0.0190 U	0.0190 U	0.0190 U	0.019 U	0.0190 U	0.077	0.077
12-Nov-07	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.25	0.250 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.050 U
MW-3																				
30-Jul-02	0.28	0.26	0.020 U	0.020 U	0.025	0.09	0.11	0.36	1.13	0.020 U	0.022	0.022 U	0.022 U	0.022 U	0.022 U	0.020 U	0.056	0.022 U	0.058	0.14
26-Feb-03	1.8	1.3	0.22	0.55	0.11	1	2.9	0.75	8.63	2.1 D	1.8 D	1.7 D	2.3 D	1.9 D	0.20 U	2.3 D	4.9	1.5 D	7.6 D	26.1
7-Jul-03	0.34	0.16	0.020 U	0.039	0.020 U	0.1	0.2	0.34	1.18	0.06	0.038	0.065	0.063	0.039	0.20 U	0.071	0.22	0.041	0.22	0.81

Please refer to notes at end of table.

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BRIX004413

Table 3 - Polynuclear Aromatic Hydrocarbons in Groundwater
Brix Maritime
Portland, Oregon

Sample Location and Date	Concentrations in Micrograms per Liter (µg/L)																				
	Low Molecular Weight Polynuclear Aromatic Hydrocarbons									High Molecular Weight Polynuclear Aromatic Hydrocarbons											
	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Dibenzofuran	Fluorene	Phenanthrene	Naphthalene	Total LMPAHs	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Pyrene	Total HMPAHs
MW-3 cont.																					
16-Oct-03	0.31	0.21	0.020 U	0.022	0.021	0.11	0.14	0.34	1.15	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.077	0.020 U	0.082	0.16
30-Jan-04	0.15	0.04	0.140 UB	0.032	0.020 U	0.037	0.06	0.11	0.43	0.022	0.020 U	0.020 U	0.036	0.020 U	0.020 U	0.023	0.075	0.02	0.09	0.27
29-Apr-04	0.34	0.13	0.020 U	0.034	0.035	0.082	0.12	0.35	1.09	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.08	0.020 U	0.079	0.16
26-Jul-04	1.20 D	0.89 D	0.38 D	0.96 D	0.190 U	0.84 D	2.3 D	0.28 D	6.85	2.3 D	1.90 U	1.90 U	3.0 D	1.90 U	1.90 U	2.6 D	5.8 D	1.90 U	7.2 D	22.8
29-Oct-04	0.024	0.088	0.038	0.020 U	0.02	0.039	0.020 U	0.040	0.25	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.050	0.020 U	0.057	0.11
25-Feb-05	0.22	0.12	0.022	0.029	0.022	0.063	0.072	0.17	0.72	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.06	0.020 U	0.066	0.12
5-May-05	0.22	0.078	0.020 U	0.021	0.021	0.054	0.068	0.082	0.54	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ	0.020 UJ	0.020 U	0.058	0.020 U	0.06	0.12
2-Aug-05	0.17	0.110	0.0206	0.034 J	0.024	0.071	0.092 J	0.086	0.61	0.051 J	0.030 J	0.086 J	0.050 J	0.055 J	0.020 UJ	0.067 J	0.180 J	0.057 J	0.210 J	0.77
22-Nov-05	0.34	0.091	0.020 U	0.020	0.024	0.070	0.098	0.084	0.73	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.053	0.020 U	0.055	0.11
16-Feb-06	0.11	0.038	0.020 U	0.029	0.020 U	0.032	0.10	0.034	0.34	0.021	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.027	0.21	0.020 U	0.35	0.61
9-May-06	0.30	0.070	0.020 U	0.020 U	0.020 U	0.055	0.099	0.048	0.50	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.058	0.020 U	0.061	0.119
28-Dec-06	0.21	0.070	0.016 J	0.024	0.014 J	0.043	0.058	0.047	0.45	0.020 J	0.020 U	0.020 U	0.0048 J	0.020 U	0.0048 J	0.025	0.11	0.020 U	0.31	0.445
16-Feb-07	0.23	0.060	0.020 U	0.020 U	0.020 U	0.042	0.073	0.038	0.44	0.020 U	0.020 U	0.020 U	0.0200 U	0.020 U	0.0200 U	0.020 U	0.083	0.020 U	0.11	0.193
30-May-07	0.39	0.076	0.020 U	0.020 U	0.020 U	0.054	0.12	0.061	0.70	0.020 U	0.020 U	0.020 U	0.0200 U	0.020 U	0.0200 U	0.020 U	0.065	0.020 U	0.070	0.135
12-Nov-07	0.25 J	0.10	0.050 U	0.050 U	--	0.072	0.11	0.25 U	0.28	0.050 U	0.050 U	0.050 U	0.0500 U	0.050 U	0.0500 U	0.050 U	0.078	0.050 U	0.095	0.173
28-Feb-08	0.11 J	0.050 U	0.050 U	0.031 J	--	0.0039 J	0.0031 J	0.17 J	0.32 J	0.050 U	0.059 J	0.043 JJS	0.0028 J	0.0011 J	0.0011 J	0.025 J	0.0099 J	0.0029 J	0.0092 J	0.159 J
MW-3 Dup																					
2-Aug-05	0.16	0.11	0.025	0.024 J	0.024	0.066	0.053 J	0.088	0.55	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.056 J	0.020 UJ	0.064 J	0.12
22-Nov-05	0.43	0.10	0.020 U	0.025	0.027	0.072	0.11	0.086	0.85	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.065	0.020 U	0.07	0.14
16-Feb-06	0.12	0.038	0.020 U	0.03	0.020 U	0.033	0.11	0.035	0.37	0.021	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.028	0.21	0.020 U	0.36	0.62
MW-4																					
29-Jul-02	0.022 U	0.022 U	0.51	0.022 U	0.022 U	0.022 U	0.043	0.039	0.59	0.022 U	0.022 U	0.02 U	0.022 U	0.022 U	0.022 U	0.022 U	0.033	0.022 U	0.046	0.079
28-Feb-03	0.80	0.020 U	0.6	0.020 U	0.020 U	0.020 U	0.020 U	18 D	19.40	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.024	0.020 U	0.055	0.079
7-Jul-03	0.020 U	0.020 U	0.11	0.020 U	0.020 U	0.020 U	0.020 U	0.16	0.27	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.021	0.021
16-Oct-03	0.020 U	0.020 U	0.36	0.020 U	0.020 U	0.020 U	0.020 U	0.11	0.47	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
30-Jan-04	0.020 U	0.053 UB	0.16	0.020 U	0.020 U	0.020 U	0.020 U	0.074	0.23	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
29-Apr-04	0.020 U	0.020 U	0.061	0.020 U	0.020 U	0.020 U	0.020 U	0.093	0.16	0.020 U	0.020 U	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.019 U	0.019 U	0.096	0.019 U	0.019 U	0.019 U	0.019 U	0.024	0.12	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
29-Oct-04	0.020 U	0.027	0.86	0.024	0.020 U	0.020 U	0.880 UJ	0.054	0.97	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020	0.020 U	0.038	0.058
25-Feb-05	0.020 U	0.020 U	0.11	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.11	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
5-May-05	0.020 U	0.020 U	0.046	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
2-Aug-05	0.038	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.074	0.11	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
22-Nov-05	0.020 U	0.020 U	0.21	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.21	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.031 U	0.031
16-Feb-06	12 D	0.032 UJ	0.23	0.020 U	0.020 U	0.064	0.020 U	72 D	84.29	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Mar-06	0.21	0.021 U	0.087	0.021 U	0.021 U	0.021 U	0.021 U	2.8	3.10	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.020 U	0.021 U
9-May-06	0.093	0.020 U	0.076	0.020 U	0.020 U	0.020 U	0.020 U	0.84	1.01	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
31-Aug-06	0.034	0.020 U	0.029	0.020 U	0.020 U	0.020 U	0.020 U	0.10	0.16	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020	0.020
28-Dec-06	0.010 J	0.044	0.020 U	0.020 U	0.020 U	0.0057 J	0.0045 J	0.025	0.07	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.0097 J	0.020 U
16-Feb-07	0.020 U	0.20	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.30	0.5	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.023	0.023
30-May-07	0.020 U	0.061	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.02	0.08	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.021	0.021
16-Aug-07	0.019 U	0.810	0.019 U	0.019 U	0.030	0.019 U	0.019 U	0.049	0.89	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.041	0.041
12-Nov-07	0.050 U	1.0	0.050 U	0.050 U	--	0.050 U	0.050 U	0.25 U	1.0	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
28-Feb-08	0.016 J	0.021 J	0.012 J	0.0045 J	--	0.0047 J	0.0044 J	0.36	0.36	0.050 U	0.0032 J	0.044 J	0.027 J	0.050 U	0.050 U	0.022 J	0.0031 J	0.0013 J	0.0097 J	0.110 J
MW-4 Dup																					
7-Jul-03	0.022 U	0.11	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.12	0.23	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	0.022 U	0.40	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.12	0.52	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.024	0.024
29-Oct-04	0.020 U	1.100	0.023	0.030	0.020	0.020 U	1.100 UJ	0.047	1.22	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.029	0.029

Please refer to notes at end of table.

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BRIX004414

Table 3 - Polynuclear Aromatic Hydrocarbons in Groundwater
Brix Maritime
Portland, Oregon

Sample Location and Date	Concentrations in Micrograms per Liter (µg/L)																			
	Low Molecular Weight Polynuclear Aromatic Hydrocarbons									High Molecular Weight Polynuclear Aromatic Hydrocarbons										
	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Chrysene	Fluorene	Phenanthrene	Naphthalene	Total LMPAHs	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Dibenzo(a,h)anthracene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Pyrene	Total HMPAHs
MW-5																				
26-Feb-03	31 D	1.3	0.10	0.55	0.2	1.2	2.3	19 D	56	0.72 J	0.44 J	0.42 J	0.65 J	0.52 J	0.044 J	0.96 J	3.1 J	0.49 J	4.3 J	11.6
30-Jan-04	1.5	0.6	0.02 U	0.34	0.081	0.48	1.1	2.9	7.0	0.18	0.046	0.046	0.061	0.029	0.020 U	0.22	1.5	0.03	1.8 J	3.9
5-May-05	1.8 D	2.1	0.71 UI	1.0	0.66	3.4	7.3	5.3	22	0.099	0.021	0.021	0.028	0.023	0.020 U	0.15	2.2	0.022	2.0	4.6
16-Feb-06	0.3	0.49	0.77 UI	0.24	0.056	0.28	0.75	0.4	2.5	0.14	0.033	0.032	0.032	0.020 U	0.020 U	0.2	1.3	0.020 U	1.9	3.6
9-May-06	0.42	1.7	0.32 UI	0.66	0.32	1.6	4.9	1.8 UI	9.6	0.086	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.14	2.8	0.021 U	2.7	5.7
28-Dec-06	0.019 J	0.34	0.056 UI	0.16	0.055	0.22	0.61	0.24 UI	1.4	0.077	0.018 J	0.016 J	0.023	0.0088 J	0.0057 J	0.11	0.85	0.0092 J	1.0	2.1
16-Feb-07	0.042	1.0	0.16 UI	0.39	0.24	0.77	1.8	0.38 UI	4.2	0.21	0.058	0.045	0.057	0.023	0.020 U	0.30	2.4	0.020 U	2.8	5.9
30-May-07	0.15	4.4	0.79 UI	1.6	1.0	4.7	8.2	1.4	21	0.33	0.26	0.092	0.25	0.15	0.020 U	0.45	2.8	0.13	2.7	7.2
28-Feb-08	0.023 J	0.46	0.046 J	0.34	-	0.46	0.73	0.025 U	2.0	0.12	0.016 J	0.044 JJ3	0.011 J	0.0037 J	0.0024 J	0.11	1.2	0.0019 J	1.6	3.0
MW-5 Dup																				
26-Feb-03	31 D	1.3	0.40	0.93	0.19	1.3	3.1	17 D	55	2.8 J	2.2 J	1.9 J	3.6 J	2.7 J	0.27 J	3.4 J	6.5 J	2.5 J	9.1 J	35.0
30-Jan-04	1.1	0.5	0.020 U	0.24	0.057	0.32	0.8	2.1	5.1	0.14	0.035	0.041	0.050	0.024	0.020 U	0.17	1.1	0.022	1.4	3.0
9-May-06	0.43	1.7	0.330 UI	0.57	0.32	1.6	4.8	1.7 UI	9.4	0.086	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.15	2.7	0.020 U	2.6	5.5
MW-6																				
7-Jul-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
30-Jan-04	0.020 U	0.020 U	**0.042**	0.020 U	0.020 U	0.020 U	**0.025**	0.020 U	**0.067**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
29-Apr-04	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
29-Oct-04	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.023**	**0.023**
5-May-05	**0.027**	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	**0.082**	**0.109**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
22-Nov-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
9-May-06	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	**0.060**	**0.060**
28-Dec-06	0.016 J	0.020	0.020 U	0.020 U	0.020 U	0.011 J	**0.023**	**0.028**	**0.091**	0.0051 J	0.020 U	0.020 U	0.020 U	0.020 U	0.0045 J	0.0055 J	0.020 U	0.020 U	**0.099**	**0.099**
16-Aug-07	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	**0.020**	**0.020**	0.0190 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
12-Nov-07	0.250 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.25 U	0.250 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
MW-7																				
7-Jul-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Oct-03	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
30-Jan-04	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
29-Apr-04	**0.040**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.093**	**0.133**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
26-Jul-04	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
29-Oct-04	**0.041**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	**0.083**	**0.124**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
5-May-05	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	**0.047**	**0.047**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
22-Nov-05	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
9-May-05	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
28-Dec-06	0.014 J	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.028**	**0.028**	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
16-Aug-07	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	**0.021**	**0.021**	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U
12-Nov-07	0.250 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.25 UJ4	0.250 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
MW-8																				
25-Feb-05	0.22	0.029	0.020 U	0.037	0.020 U	0.029	0.051	0.22	0.686	0.020 U	0.020	0.020 U	0.024	0.029	0.020 U	0.020 U	0.032	0.023	0.036	0.16

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Notes:

1. Reportable concentrations are shown in **Bold**.
2. U = Analyte not detected at or above the indicated reporting limit.
3. I = The reporting limit is elevated due to matrix interference.
4. D = The reported result is from a dilution.
5. J = Associated value is estimated.
6. JJ3/J4 = Associated batch QC outside the establish QC range for precision (J3) or accuracy (J4).

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Table 4 - Dectectable Volatile Organic Compounds in Groundwater
Brix Maritime
Portland, Oregon

Well Number	Sampling Date	Concentrations in Micrograms per Liter (µg/L)												
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Isopropyl-benzene	n-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	n-Butylbenzene	sec-Butylbenzene	4-Isopropyltoluene	tert-Butylbenzene	Naphthalene
MW-1	28-Feb-03	5.7	0.71	37	62	19	65 D	140 D	26	21	10	2.0 U	2.0 U	31
MW-1	7-Jul-03	1.3	1.1	11	20	31	64 D	46	9.3	14	8.2	2.0 U	2.0 U	22
MW-1	16-Oct-03	32 D	13 D	270 D	470 D	75 D	250 D	1,200 D	280 D	150 UI	28 D	10 U	10 U	460 D
MW-1	30-Jan-04	4.1	0.96	78 D	151	36	140 D	510 D	100 D	46	17	2.0 U	2.0 U	210 D
MW-1	29-Apr-04	5.3 D	2.1 D	120 D	206 D	54 D	150 D	590 D	150 D	43 D	20 D	4.0 U	4.0 U	250 D
MW-1	26-Jul-04	4.0 D	1.3 U	93 D	149 D	47 D	160 D	610 D	130 D	40 D	18 D	5.0 U	5.0 U	270 JD
MW-1	29-Oct-04	4.0 D	1.3 U	82 D	112 D	45 D	140 D	560 D	110 D	39 D	16 D	5.0 U	5.0 U	230 D
MW-1	25-Feb-05	31 D	2.7	210 D	246 D	89 D	350 D	870 D	160 D	90 D	39 D	10 U	10 U	470 D
MW-1	5-May-05	16 D	2.2 D	170 D	189 D	87 D	260 D	530 D	100 D	140 UI	32 D	8.0 U	8.0 U	280 D
MW-1	2-Aug-05	17	1.9	170 D	200 D	69 D	220 D	590 D	140 D	62 D	28 D	3.2	2.0 U	330 D
MW-1	22-Nov-05	22	1.7	170 D	190 D	100 D	400 D	780 D	160 D	85 D	50	4.0	2.2	380 D
MW-1	16-Feb-06	15 D	5.0 U	150 D	173 D	38 D	170 D	670 D	150 D	53 D	20 U	20 U	20 U	340 D
MW-1	9-May-06	19 D	2.5 U	220 D	251 D	78 D	280 D	940 D	210 D	82 D	31 D	10 U	10 U	440 D
MW-1	31-Aug-06	0.5 U	0.5 U	2.4	1.7	18	36	5.1	2.0 U	22	11	2.0 U	2.0 U	2.6
MW-1	28-Dec-06	0.41 J	0.12 J	1.7	0.78	5.3	22	1.3 J	0.17 J	14	5.5	2.0 U	0.26 J	2.1
MW-1	16-Feb-07	1.1	0.12 J	4.7	1.6 J	3.6	12	4.8	0.59 J	5.9	1.9 J	2.0 U	2.0 U	2.5
MW-1	30-May-07	0.5 U	0.55	5.0	0.54	39	130 D	2.2	2.0 U	45	20	2.0 U	2.0 U	19
MW-1	16-Aug-07	0.5 U	0.58	2.1	1.0 U	23	64	2.0 U	2.0 U	25	14	2.0 U	2.0 U	2.0 U
MW-1	12-Nov-07	0.39 J	0.49 J	6.4	3.2	27	65	8.9	1.5	22	13	1.0 U	0.68 J	8.0
MW-1	28-Feb-08	0.60 J	5.0 U	2.1	3.0 U	1.5	5.3	2.5	1.2	1.1	0.72 J	1.0 U	1.0 U	2.7 J
MW-1Dup	29-Apr-04	4.7 D	1.9 D	110 D	192 D	52 D	150 D	570 D	140 D	39 D	18 D	4.0 U	4.0 U	260 D
MW-1Dup	26-Jul-04	3.9 D	1.3 U	89 D	138 D	46 D	160 D	640 D	120 D	40 D	18 D	5.0 U	5.0 U	280 JD
MW-1Dup	5-May-05	14 D	2.1 D	160 D	178 D	88 D	250 D	490 D	96 D	140 UI	31 D	8.0 U	8.0 U	250 D
MW-1Dup	31-Aug-06	0.5 U	0.5 U	2.0	1.23	17	37	2.9	2.0 U	17	11	2.0 U	2.0 U	2.0 U
MW-1Dup	28-Dec-06	0.55	0.16 J	2.0	0.8	6.3	26	1.3 J	0.18 J	17	6.7	2.0 U	0.28 J	2.4
MW-1 Dup	16-Aug-07	0.5 U	0.5 U	1.1	1.0 U	17	44	2.0 U	2.0 U	20	11	2.0 U	2.0 U	2.0 U
MW-1 Dup	12-Nov-07	1.0 U	0.35 J	1.7	0.88 J	13	32	3.7	0.65 J	12	7.2	1.0 U	0.45 J	2.8 J
MW-2	28-Feb-03	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	16-Oct-03	0.5 U	0.5 U	0.5 U	0.86	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
MW-2	30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-2	22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	9-May-06	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	28-Dec-06	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 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
MW-2	12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	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 U
MW-3	30-Jul-02	0.73	14	0.51	5.5	0.5 U	2.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
MW-3	28-Feb-03	0.5 U	0.63	0.5 U	2.4	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
MW-3	7-Jul-03	0.5 U	0.60	0.5 U	2.3	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
MW-3	16-Oct-03	0.5 U	1.9	0.51	4.0	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
MW-3	30-Jan-04	0.5 U	0.5 U	0.5 U	1.36	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
MW-3	29-Apr-04	0.5 U	0.5 U	0.5 U	2.3	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
MW-3	26-Jul-04	0.5 U	0.50	0.5 U	2.0	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
MW-3	29-Oct-04	0.5 U	0.5 U	0.5 U	2.1	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

Please refer to notes at end of table

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Table 4 - Dectectable Volatile Organic Compounds in Groundwater
Brix Maritime
Portland, Oregon

Well Number	Sampling Date	Concentrations in Micrograms per Liter (µg/L)												
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Isopropyl-benzene	n-Propylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	n-Butylbenzene	sec-Butylbenzene	4-Isopropyltoluene	tert-Butylbenzene	Naphthalene
MW-3	25-Feb-05	0.5 U	0.5 U	0.5 U	2.3	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
MW-3	5-May-05	0.5 U	0.5 U	0.5 U	2.7	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-3	2-Aug-05	0.5 U	0.5 U	0.5 U	2.4	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-3	22-Nov-05	0.5 U	0.5 U	0.5 U	2.2	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
MW-3	16-Jan-06	0.5 U	0.5 U	0.5 U	1.2	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
MW-3	9-May-06	0.5 U	0.5 U	0.5 U	2.3	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
MW-3	28-Dec-06	0.5 U	0.11 J	0.5 U	1.0 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
MW-3	16-Feb-07	0.5 U	0.5 U	0.5 U	1.5	2.0 U	0.11 J	0.35 J	0.15 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
MW-3	30-May-07	0.5 U	0.5 U	0.5 U	1.6	2.0 U	2.00 U	2.00 U	2.00 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
MW-3	12-Nov-07	1.0 U	5.0 U	1.0 U	1.8 J	1.0 U	1.0 U	0.39 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.35 J
MW-3	28-Feb-08	1.0 U	0.34 J	1.0 U	3.0 U	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 U
MW-3Dup	2-Aug-05	0.5 U	0.5 U	0.5 U	2.4	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-3Dup	22-Nov-05	0.5 U	0.5 U	0.5 U	2.1	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
MW-3Dup	16-Jan-06	0.5 U	0.5 U	0.5 U	1.2	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
MW-4	29-Jul-02	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
MW-4	28-Feb-03	0.76	0.5 U	2.3	2.6	29	35	3.8	2.2	3.1	2.0 U	2.0 U	2.0 U	45
MW-4	7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	16-Oct-03	0.5 U	0.5 U	0.5 U	0.93	7.1	5.5	2.0 U	2.0 U	2.0 U	4.4	2.0 U	2.0 U	2.0 U
MW-4	16-Aug-07	0.5 U	0.5 U	0.5 U	0.94	6.2	8.7	2.0 U	2.0 U	2.0 U	3.9	2.0 U	2.0 U	2.0 U
MW-4	30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-4	2-Aug-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-4	22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	16-Feb-06	4.0	0.5 U	1.4	23	26	34	57	8.4	4.0	4.7	2.0 U	2.0 U	100
MW-4	16-Mar-06	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.9	2.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.7
MW-4	9-May-06	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	31-Aug-06	0.5 U	0.5 U	0.5 U	1.0 U	4.7	2.1	2.0 U	2.0 U	2.0 U	3.8	2.0 U	2.0 U	2.0 U
MW-4	28-Dec-06	0.34 J	0.13 J	0.18 J	4.5	0.15 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
MW-4	16-Feb-07	0.5 U	0.5 U	0.5 U	1.0 U	0.12 J	2.0 U	2.0 U	2.0 U	2.0 U	0.23 J	2.0 U	2.0 U	0.57 J
MW-4	30-May-07	0.5 U	0.5 U	0.5 U	1.0 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
MW-4	16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 U	6.2	8.7	2.0 U	2.0 U	2.0 U	3.9	2.0 U	2.0 U	2.0 U
MW-4	12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	2.5	1.7	0.79 J	0.63 J	0.63 J	1.7	1.0 U	0.33 J	5.0 U
MW-4	28-Feb-08	1.0 U	5.0 U	1.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.65 J
MW-4Dup	7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 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
MW-4Dup	16-Oct-03	0.5 U	0.5 U	0.5 U	0.94	7.5	6.3	2.0 U	2.0 U	2.0 U	4.8	2.0 U	2.0 U	2.0 U
MW-4Dup	25-Feb-05	0.5 U	0.5 U	0.5 U	1.0 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
MW-5	28-Feb-03	0.5 U	0.5 U	15	24	24	110 D	75 D	26	87 D	27	2.0 U	2.0 U	23
MW-5	30-Jan-04	0.5 U	0.5 U	1.8	9.7	9.7	49	2.0 U	2.0 U	82 D	38	2.0 U	2.0 U	2.9
MW-5	5-May-05	0.5 U	0.5 U	17	50	50	140 D	2.0 U	2.0 U	120 UJ	41	2.0 U	2.0 U	8.0
MW-5	16-Feb-06	0.5 U	0.5 U	0.89	3.4	3.4	16	2.0 U	2.0 U	16	5.9	2.0 U	2.0 U	3.0

Please refer to notes at end of table.

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Table 4 - Dectectable Volatile Organic Compounds in Groundwater
Brix Maritime
Portland, Oregon

Well Number	Sampling Date	Concentrations in Micrograms per Liter (µg/L)												
		Benzene	Toluene	Ethylbenzene	Total Xylenes	sopropyl-benzene	n-Propylbenzene	1,2,4-Tri methylbenzene	1,3,5-Trimethylbenzene	n-Butylbenzene	sec-Butylbenzene	4-Isopropyltoluene	tert-Butylbenzene	Naphthalene
MW-5	9-May-06	0.5 U	0.5 U	**3.7**	**20**	**20**	**79** D	2.0 U	2.0 U	**67**	**23**	2.0 U	2.0 U	2.0 U
MW-5	28-Dec-06	0.5 U	0.5 U	0.31 J	**9.0**	**9.0**	**34**	2.0 U	2.0 U	**41**	**17**	2.0 U	0.77 J	1.1 J
MW-5	16-Feb-07	0.17 J	0.38 J	**0.61**	**11**	**11**	**37**	2.0 U	2.0 U	**36**	**12**	2.0 U	0.53 J	2.0 U
MW-5	30-May-07	0.5 U	**0.60**	**6.0**	**53**	**53**	**210** D	2.0 U	2.0 U	**95** D	**40**	2.0 U	2.00 U	**2.2**
MW-5	28-Feb-08	1.0 U	0.34 J	1.0 U	3.0 U	**1.1**	**3.8**	1.0 U	1.0 U	**6.0**	**2.3**	1.0 U	1.0 U	0.73 J
MW-5Dup	28-Feb-03	0.5 U	0.5 U	**16**	**25**	**25**	**110** D	**99** D	**30**	**110** D	**30**	2.3	2.0 U	**25**
MW-5Dup	30-Jan-04	0.5 U	0.5 U	**2.0**	**11**	**11**	**56**	2.0 U	2.0 U	**84** D	**39**	2.0 U	2.0 U	**3.4**
MW-5Dup	9-May-06	0.5 U	0.5 U	**3.7**	**20**	**20**	**73** D	2.0 U	2.0 U	**66**	**23**	2.0 U	2.0 U	2.0 U
MW-6	7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	16-Oct-03	0.5 U	0.5 U	0.5 U	**0.74**	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
MW-6	30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-6	22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	9-May-06	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 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
MW-6	12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	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 U
MW-7	7-Jul-03	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	16-Oct-03	0.5 U	0.5 U	0.5 U	**0.82**	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
MW-7	30-Jan-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	29-Apr-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	26-Jul-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	29-Oct-04	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	5-May-05	0.5 U	0.5 U	0.5 U	1.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U
MW-7	22-Nov-05	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	9-May-06	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	28-Dec-06	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	16-Aug-07	0.5 U	0.5 U	0.5 U	1.0 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
MW-7	12-Nov-07	1.0 U	5.0 U	1.0 U	3.0 U	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 U
MW-8	25-Feb-05	**0.54**	**5.8**	0.5 U	**0.86** 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

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Notes:

1. U = Analyte not detected at or above the indicated reporting limit.
2. Reportable concentrations are shown in **Bold**.
3. i = The reporting limit is elevated due to matrix interference.
4. D = The reported result is from a dilution.
5. J = Associated value is estimated.

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Figures

Appendix A

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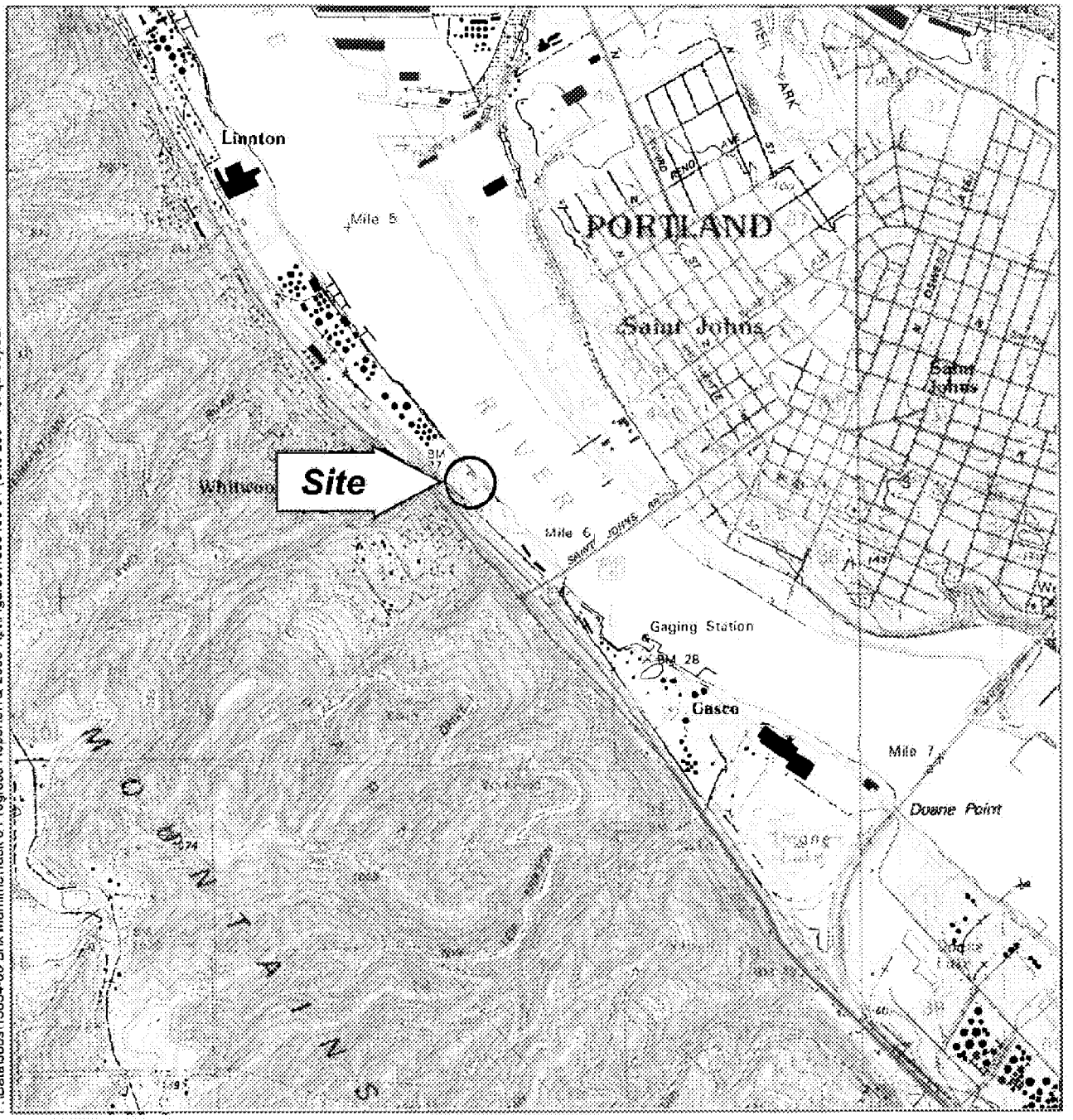
Site Location Map
Brix Maritime Company
9030 NW St. Helens Road, Portland, Oregon



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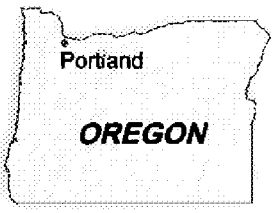
Source: Base map prepared from the USGS 7.5-minute quadrangle of Linnton, Oregon, dated 1990.

0 2,000 4,000

Scale in Feet
Contour Interval 10 Feet

N



HARTCROWSER

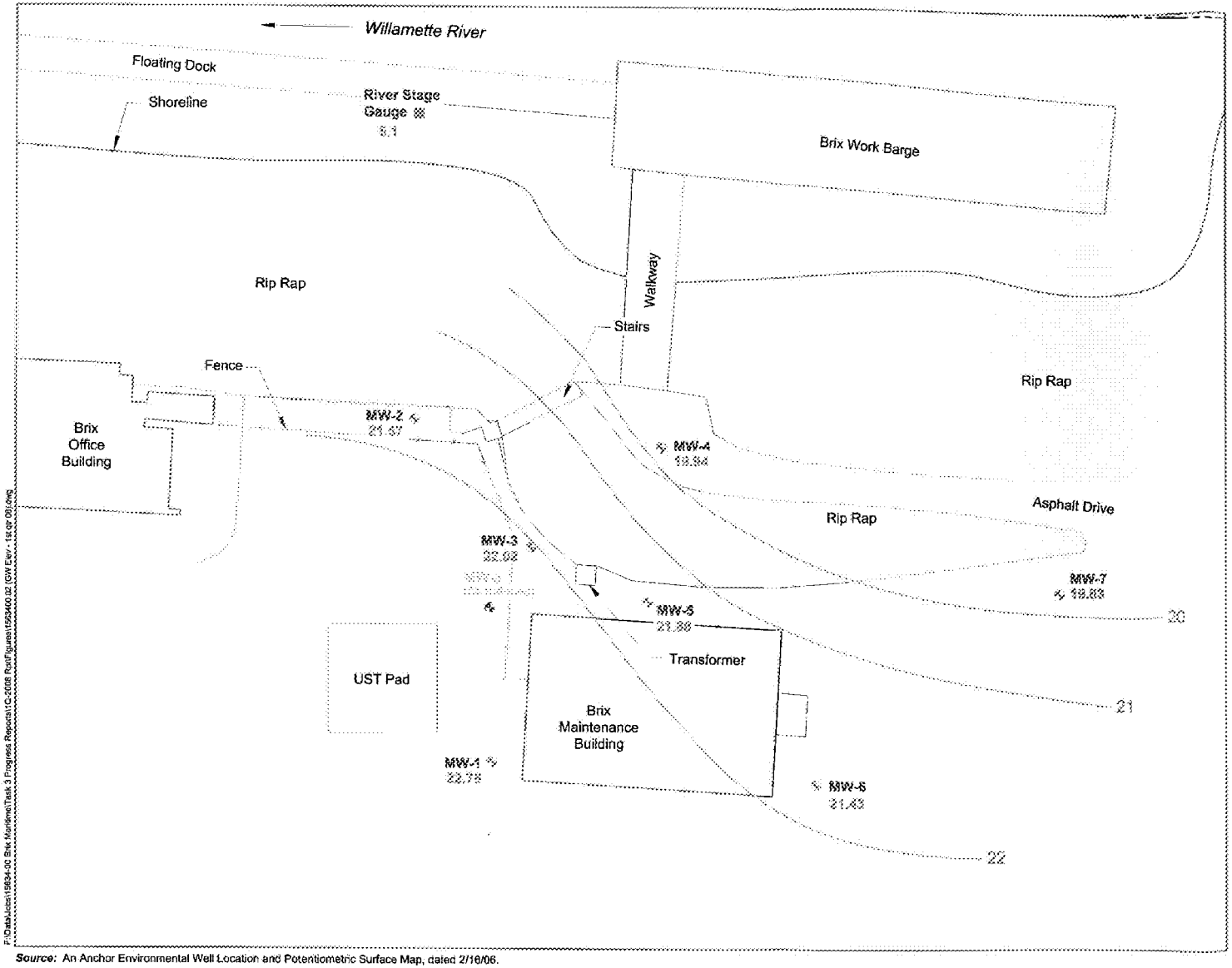
15634-00/Task 3 ***4/08***
Figure 1

Appendix A

Appendix B

BRIX004419

Well Locations and Potentiometric Surface (February 28, 2008)
Brix Maritime Company
9030 NW St. Helens Road, Portland, Oregon



River Stage Gauge — River Stage Gauge Location

MW-1 — Monitoring Well Location and Number
22.75 — Groundwater Elevation in Feet (NAVD 88)

20 — Potentiomnetric Groundwater Surface Contour in Feet

0 30 60
Scale in Feet

HARTCROWSER
15634-00/Task 3 4/08
Figure 2

Source: An Anchor Environmental Well Location and Potentiometric Surface Map, dated 2/16/06.

F:\Data\Jobs\15634-00 Brix Maritime\Task 3 Progress Reports\1Q-2008 Rpt\Figures\15634-00 GW Elev - 1st qtr 08.dwg

BRIX004420

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Appendix A

Appendix B

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APPENDIX A
FIELD ACTIVITIES DOCUMENTATION

Appendix B

BRIX004422

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MEMORANDUM

DATE: March 4, 2008

TO: File 15634-00/Task 05

FROM: Chris Martin, EIT

RE: February 2008 Groundwater Sample Collection
Brix Maritime, Portland, Oregon

On February 28, 2008, Chris Martin and Jennifer Levy of Hart Crowser performed groundwater monitoring activities at the Brix Maritime site. Depth to groundwater was measured in monitoring wells MW-1 through MW-7 using an electronic oil/water interface probe, and the elevation of the river relative to the on-site staff gage was noted. No measurable (i.e., thickness greater than 0.01 foot) free phase product was present in the wells at the time of measurement. Groundwater samples were collected from monitoring wells MW-1, MW-3, MW-4, and MW-5 following the measurement activities. A slight petroleum-like sheen was observed in purge water from wells MW-1 and MW-3.

Prior to sample collection, the monitoring wells were purged until field parameters (temperature, pH, and specific conductivity) stabilized. The stabilized field sampling parameters are presented in Table A-1. Each well was purged using a peristaltic pump and dedicated tubing. As field parameters stabilized and purging for each well was complete, pumping rates were reduced and samples were collected from the tubing and transferred directly into laboratory-supplied sample containers.

The groundwater samples were placed in a cooled ice chest immediately following collection for field storage and transit to Hart Crowser's office. On February 28, 2008, the samples were shipped overnight under chain of custody documentation to Environmental Science Corp. Mt. Juliet, Tennessee, for chemical analyses. The groundwater samples were analyzed for the following compounds: total petroleum hydrocarbons (TPH) as gasoline by Northwest Method NWTHP-Gx, diesel and oil range TPH by Northwest Method NWTHP-Dx, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM, and volatile organic compounds (VOCs) by EPA Method 8260B.

Attachments: Table A-1: Sample Identification and Field Parameters
Groundwater Sampling Data Field Form

Appendix B

BRIX004423

Table A-1 – Sample Identification and Field Parameters
Brix Maritime
Portland, Oregon

Monitoring Well	Blind Code Identification	Sampling Date	Depth to Water (in feet)	pH	Specific Conductance (μs)	Temperature (°C)	Dissolved Oxygen (mg/L)	ORP (m/V)
Monitoring Wells								
MW-1	BM-22808-03	28-Feb-08	19.06	6.2	210	14.9	0.5	10
MW-3	BM-22808-01	28-Feb-08	19.93	6.3	435	15.5	0.8	-80
MW-4	BM-22808-05	28-Feb-08	3.61	6.0	230	14.9	0.4	40
MW-5	BM-22808-02	28-Feb-08	19.78	6.3	340	15.3	0.9	-100

Notes:

1. μs = Microsiemens.
2. °C = Degrees Celsius.
3. mg/L = Milligrams per Liter.
4. ORP = Oxidation Reduction Potential.
5. m/V = millivolts.

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BRIX004424

Groundwater Sampling Data

Project [illegible] Job No. [illegible]

Field Rep. [illegible] Date [illegible]

WELL NUMBER	DATE (TIME)	WELL DEPTH IN FEET	DEPTH TO WATER IN FEET	DEPTH TO PRODUCT IN FEET	PRODUCT THICKNESS IN FEET	METHOD OF SAMPLING	COMMENTS (odor, sheen, sediment, odor, bubbles)	Liters	Temp °C	pH	EC µMHOS	ORP mV	DO mg/L	TIME	CASING VOL GALS	PURGE VOLUME GALS (EST)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Purge and sample with a new 8 peristaltic pump through a VELOCITY flowcell	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	w/a YSI 600 display (probe ordered using new 1/4" poly tubing using a low flow	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	technique of 1500 ml/min	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Hart Crowser, Inc.

Appendix B

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APPENDIX B
ANALYTICAL TESTING PROGRAM, QUALITY ASSURANCE REVIEW, AND ANALYTICAL LABORATORY REPORT

BRIX004427

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APPENDIX B
ANALYTICAL TESTING PROGRAM, QUALITY ASSURANCE REVIEW, AND ANALYTICAL LABORATORY REPORT

1.0 INTRODUCTION

This appendix describes the analytical testing program for this investigation and documents the results of the analytical data quality assurance (QA) review. The groundwater samples were collected by Hart Crowser Inc., on February 28, 2008, and received by Environmental Science Corp. (ESC) in Mt. Juliet, Tennessee, on February 29, 2008, for chemical analyses. A copy of the analytical laboratory report is included with this appendix.

The QA review included examination and validation of the laboratory's summary reports, including:

- Analytical methods;
- Reporting limits;
- Holding times;
- Surrogates, spikes, and blanks;
- Initial and continuing calibration verification;
- Custody records; and
- Laboratory duplicates.

The QA review did not include a review of raw data.

2.0 ANALYTICAL METHODS

Four groundwater samples (MW-1, MW-3, MW-4, and MW-5) were analyzed for the following compounds:

- Total petroleum hydrocarbons (TPH) as gasoline by Northwest Method NWTPH-Gx;
- TPH as diesel and oil by Northwest Method NWTPH-Dx;
- Polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270M-SIM; and
- Volatile organic compounds (VOCs) by EPA Method 8260B.

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3.0 QUALITY ASSURANCE OBJECTIVES AND REVIEW

The general QA objectives for this project are to develop and implement procedures for obtaining and evaluating data of a specified quality that can be used to assess the site conditions and evaluate risk to human health and the environment. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain of custody procedures.

Reporting limits and analytical results are used to assess the quantity of each chemical of concern in media. Precision, accuracy, representatives, completeness, and comparability parameters are used to evaluate data quality. These parameters are defined and discussed below.

3.1 Reporting Limits

Reporting limits are set by the laboratory and are based on instrumentation abilities, sample matrix, and suggested detection limits by the U.S. Environmental Protection Agency (EPA) or the Oregon Department of Environmental Quality (DEQ). Reporting limits may be raised due to high concentrations of analytes in the samples, matrix interferences, or insufficient sample volume. All method reporting limits were met.

3.2 Holding Times

Collection dates for all samples submitted are documented on the chain of custody form. Collection and analysis dates are indicated in the laboratory report. Holding times required by EPA CLP protocols were met for all analyses.

3.3 Accuracy

Accuracy is the measure of error between the reported test results and the true sample concentration. "Perfect" accuracy is 100 percent recovery. True sample concentration is never known due to analytical limitations and error. Consequently, accuracy is inferred from the recovery data from surrogates, matrix spike samples, and laboratory samples.

Surrogates. In a surrogate analysis, a known amount of a compound similar to the constituent of interest is added to a sample and measured. The surrogate analysis assesses the accuracy of a chemical measurement by comparing the measured value to the actual spiked value. Surrogate recoveries were within control limits for all analyzed samples with the exception of 2-fluorobiphenyl in sample MW-3

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(L333845-03) and nitrobenzene-d5 in sample MW-3 (L333845-01). The associated surrogates were within control limits and the data were not flagged.

Matrix Spike Samples. Matrix spike (MS) analyses are performed on samples submitted to the laboratory that are of the same matrix as the actual sample. The MS sample is spiked with known levels of the constituents of interest. These analyses are used to assess the potential for matrix interference with recovery or detection of the constituents of interest and the accuracy of the determination. The spiked sample results are compared to the expected result (i.e., sample concentration plus spike amount) and are reported as percent recovery. All matrix spike analyses were within control limits.

Laboratory Control Samples. The laboratory also analyzes a laboratory control sample (LCS) to assess the accuracy of the analytical equipment. The sample is prepared from the analyte-free matrix, which is then spiked with known levels of the constituents of interest (i.e., a standard). The concentrations are measured, and the results are compared to the known spiked levels. This comparison is expressed as percent recovery. Analyses of LCSs were included with the all the analyses. The percent recoveries of the LCS sample were within control limits except for 2-chloronaphthalene associated with samples MW-1 (L333845-03) and MW-4 (L333845-05). The associated values have been flagged with a "J4" qualifier, but are acceptable for the purposes of this investigation.

3.4 Precision

Precision measures the reproducibility of data under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average values. Analytical precision is measured by preparing and analyzing duplicate samples, and comparing the original and duplicate sample results to assess the precision of the analytical method. This comparison is quantitatively expressed as the relative percent difference (RPD) between the original and duplicate samples. Data quality can be evaluated based on RPDs when the sample concentration is at least five times the reporting limit. RPDs up to 50 percent are considered to be acceptable.

Laboratory Duplicates. A laboratory duplicate is a second laboratory sample taken from a submitted sample. The duplicate is then prepared along with the original. It is analyzed and compared to the first to assess the precision of the analytical method and the potential variability of the sample matrix. This comparison is reported as the RPD. Due to the low number of samples submitted for analyses, no laboratory duplicates were prepared and analyzed.

Matrix Spike Duplicates. A second matrix spike sample (i.e., matrix spike duplicate [MSD]) is prepared as above and analyzed. The MSD is compared to

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the initial matrix spike to assess the precision of the analytical method (i.e., RPD). For this method, both a percent recovery and an RPD are reported. MS/MSD RPDs for the associated QC batches were outside the established control limits for diesel and oil range TPH in all submitted samples (L333845-01 through -04), and for benzo(k)fluoranthene in samples MW-3 (L333845-01) and MW-5 (L333845-02). The associated values have been flagged with a "J3" qualifier, but are acceptable for the purposes of this investigation.

LCS Duplicates. A duplicate is a second analysis of an LCS. The duplicate is then prepared along with the original. It is analyzed and compared to the first to assess the precision of the analytical method and the potential variability of the sample matrix. An LCS duplicate (LCSD) was analyzed for all analyses. For this method, both a percent recovery and an RPD are reported. QC results were within control limits.

3.5 Representativeness

Representativeness is a measure of how closely the results reflect the actual concentration of the parameters in the medium sampled. It is not possible to measure this directly, so representativeness is controlled and ensured by using standard sampling procedures, as well as sample-handling protocols for storage, preservation, and transportation are designed to preserve the representativeness of the samples collected. Field, trip, and laboratory method blanks are run in accordance with established laboratory protocols.

Sample Handling and Custody. Samples were collected in general accordance with industry standards. This included requirements for collection, containers, labeling, packaging, shipping, and storage. Compliance with these procedures is documented on chain of custody forms. Copies of chain of custody forms are included with the laboratory report.

Blanks. Laboratory method blanks were analyzed for all requested analytical tests. No analyzed compounds were detected in the laboratory method blanks.

3.6 Completeness

Completeness is defined as the percentage of measurements made which are judged to be valid measurements. The completeness of the data is the number of acceptable data points divided by the total number of data points multiplied by 100. The completeness goal is essentially that a sufficient amount of valid data be generated to allow for the evaluation of the site investigation. The data completeness for the samples is 100 percent for all requested analyses.

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[illegible]

[illegible]

Report Summary

Monday March 10, 2008

Report Number: L333845
Samples Received: 02/29/08
Client Project: 15634-00/Task 05

Description: Sris Maritime

[illegible]

Laboratory Certification Numbers

[illegible]

BRIX004432

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[illegible]

REPORT OF ANALYSIS

[illegible]

Date Received : February [illegible], 2008
Description : Brine Mixture

Sample ID : [illegible]

Collected By : Steve Martin
Collection Date : [illegible]

[illegible]

Page [illegible] of [illegible]

Parameter	Result	MDL	RL	Units	Dil.	Method	Date	Init.
Gasoline Range Organics-GRO	[illegible]	[illegible]	[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]
Organic Parameters								
Alkalinity,Total(as CaCO3)	[illegible]			[illegible]		[illegible]	[illegible]	[illegible]
Volatile Organics								
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

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Fax (615) 758-5859

Tax I.D. [illegible]

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 10, 2008

ESC Sample # : [illegible]333845-01

Date Received : February 29, 2008
Description : Brix Maritime

Site ID :

Sample ID : BM[illegible]2808-01

Project # : 15634-08/Task 05

Collected By : Chris Martin
Collection Date : 02/28/08 09:15

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzo(a)anthracene	U	0.0000010	0.000050	mg/l		8270C-S	03/06/08	1
Benzo(a)pyrene	0.0000028	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Benzo(b)fluoranthene	0.0000059	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Benzo(g,h,i)perylene	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Benzo(k)fluoranthene	0.000048	0.0000010	0.000050	mg/l	J33	8270C-S	03/06/08	1
Chrysene	0.000025	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Dibenz(a,h)anthracene	0.0000011	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Fluoranthene	0.0000099	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Fluorene	0.000039	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Indeno(1,2,3-cd)pyrene	0.0000029	0.0000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Naphthalene	0.00017	0.000010	0.000050	mg/l	J	8270C-S	03/06/08	1
Phenanthrene	0.000031	0.0000070	0.000050	mg/l	J	8270C-S	03/06/08	1
Pyrene	0.0000090	0.0000080	0.000050	mg/l	J	8270C-S	03/06/08	1
1-Methylnaphthalene	U	0.0000010	0.00020	mg/l		8270C-S	03/06/08	1
2-Methylnaphthalene	0.00011	0.0000020	0.00020	mg/l	J	8270C-S	03/06/08	1
2-Chloronaphthalene	U	0.000080	0.00010	mg/l		8270C-S	03/06/08	1
Surrogate Recovery								
Nitrobenzene-d5	21.2			% Rec.	J2	8270C-S	03/06/08	1
2-Fluorobiphenyl	64.0			% Rec.		8270C-S	03/06/08	1
p-Terphenyl-d14	68.5			% Rec.		8270C-S	03/06/08	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.
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Esc. 5490

REPORT OF ANALYSIS

March 10, 2008

Leon Lahiere
Hart Crowser - Portland, Or
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

ESC Sample # : L333845-02

Date Received : February 29, 2008
Description : Brix Maritime

Site ID :

Sample ID : BM0228-08-02

Project # : 18644-08/Task 05

Collected By : Chris Martin
Collection Date : 02/28/08 09:58

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Di-isopropyl ether	U	0.00025	0.0010	mg/l		8260B	03/03/08	1
Ethylbenzene	U	0.00043	0.0010	mg/l		8260B	03/03/08	1
Hexachlorobutadiene	U	0.00044	0.0010	mg/l		8260B	03/03/08	1
Isopropylbenzene	0.0011	0.00013	0.0010	mg/l		8260B	03/03/08	1
p-Isopropyltoluene	U	0.00021	0.0010	mg/l		8260B	03/03/08	1
2-Butanone (MEK)	U	0.0045	0.010	mg/l		8260B	03/03/08	1
Methylene Chloride	U	0.00030	0.0050	mg/l		8260B	03/03/08	1
4-Methyl-2-pentanone (MIBK)	U	0.0014	0.010	mg/l		8260B	03/03/08	1
Methyl tert-butyl ether	U	0.00019	0.0010	mg/l		8260B	03/03/08	1
Naphthalene	0.00013	0.00017	0.0050	mg/l	J	8260B	03/03/08	1
n-Propylbenzene	0.0038	0.00022	0.0010	mg/l		8260B	03/03/08	1
Styrene	U	0.00038	0.0010	mg/l		8260B	03/03/08	1
1,1,1,2-Tetrachloroethane	U	0.00040	0.0010	mg/l		8260B	03/03/08	1
1,1,2,2-Tetrachloroethane	U	0.00022	0.0010	mg/l		8260B	03/03/08	1
1,1,2-Trichloro-1,2,2-trifluoro	U	0.00022	0.0010	mg/l		8260B	03/03/08	1
Tetrachloroethene	U	0.00029	0.0010	mg/l		8260B	03/03/08	1
Toluene	0.[illegible]	0.00027	0.0050	mg/l	J	8260B	03/03/08	1
1,2,3-Trichlorobenzene	U	0.00024	0.0010	mg/l		8260B	03/03/08	1
1,2,4-Trichlorobenzene	U	0.00026	0.0010	mg/l		8260B	03/03/08	1
1,1,1-Trichloroethane	U	0.00027	0.0010	mg/l		8260B	03/03/08	1
1,1,2-Trichloroethane	U	0.00045	0.0010	mg/l		8260B	03/03/08	1
Trichloroethene	U	0.00037	0.0010	mg/l		8260B	03/03/08	1
Trichlorofluoromethane	U	0.00029	0.0050	mg/l		8260B	03/03/08	1
1,2,3-Trichloropropane	U	0.00038	0.0010	mg/l		8260B	03/03/08	1
1,2,4-Trimethylbenzene	U	0.00020	0.0010	mg/l		8260B	03/03/08	1
1,2,3-Trimethylbenzene	U	0.00022	0.0010	mg/l		8260B	03/03/08	1
1,3,5-Trimethylbenzene	U	0.00020	0.0010	mg/l		8260B	03/03/08	1
Vinyl chloride	U	0.00027	0.0010	mg/l		8260B	03/03/08	1
Xylenes, Total	U	0.00086	0.0030	mg/l		8260B	03/03/08	1
Surrogate Recovery								
Toluene-d8	96.8			% Rec.		8260B	03/03/08	1
Dibromofluoromethane	99.0			% Rec.		8260B	03/03/08	1
4-Bromofluorobenzene	92.8			% Rec.		8260B	03/03/08	1
Diesel Range Organics (DRO)	0.25	0.033	0.10	mg/l	J3	NWTPHDX	03/05/08	1
Residual Range Organics (RRO)	U	0.082	0.25	mg/l	J3	NWTPHDX	03/05/08	1
Surrogate Recovery								
o-Terphenyl	79.[illegible]			% Rec.		NWTPHDX	03/05/08	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.00034	0.0000049	0.000050	mg/l		8270C-S	03/06/08	1
Acenaphthene	0.00046	0.0000018	0.000050	mg/l		8270C-S	03/06/08	1
Acenaphthylene	0.000046	0.0000014	0.000050	mg/l	J	8270C-S	03/06/08	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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[illegible]

Pyrene

[illegible]

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[illegible]

REPORT OF ANALYSIS

[illegible]

March [illegible], 2008

Date Received : February 19, 2008
Description : Brix Maritime

Sample ID : BMC[illegible]

Collected By : Chris Martin
Collection Date : 02/29/08 [illegible]

BSC Sample # : [illegible]

Site ID :

Project # : 15634-[illegible]/Task [illegible]

Parameter	Result	MDL	PQL	Units	%	Method	Date	Dil.
Gasoline Range Organics (NWTPH	0.15	0.03	0.10	mg/l		NWTPHGX	03/05/08	1
Surrogate Recovery								
3,4,5-Trifluorotoluene (FID)	98.4			% Rec.		NWTPHGX	03/05/08	1
Volatile Organics								
Benzene	U	0.0099	0.010	mg/l		8260B	03/03/08	1
Acrylonitrile	U	0.0014	0.010	mg/l		8260B	03/03/08	1
Acetonitrile	U	0.0010	0.010	mg/l		8260B	03/03/08	1
Acetone	0.0060	[illegible]	0.010	mg/l		8260B	03/03/08	1
Bromobenzene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
Bromodichloromethane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
Bromoform	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
Bromomethane	U	0.00051	0.0010	mg/l		8260B	03/03/08	1
n-Butylbenzene	U	0.00089	0.0050	mg/l		8260B	03/03/08	1
sec-Butylbenzene	0.0011	0.00023	0.0010	mg/l		8260B	03/03/08	1
tert-Butylbenzene	0.00072	0.00022	0.0010	mg/l		8260B	03/03/08	1
Carbon tetrachloride	U	0.00020	0.0010	mg/l		8260B	03/03/08	1
Chlorobenzene	U	0.00031	0.0010	mg/l		8260B	03/03/08	1
Chlorodibromomethane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
Chloroethane	U	0.00042	0.0010	mg/l		8260B	03/03/08	1
2-Chloroethyl vinyl ether	U	0.00086	0.0050	mg/l		8260B	03/03/08	1
Chloroform	U	0.0014	0.0010	mg/l		8260B	03/03/08	1
Chloromethane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
2-Chlorotoluene	U	0.00015	0.0010	mg/l		8260B	03/03/08	1
4-Chlorotoluene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,2,3-Trichloropropane	U	0.00010	0.0010	mg/l		8260B	03/03/08	1
1,2-Dibromoethane	U	0.00048	0.0010	mg/l		8260B	03/03/08	1
Dibromomethane	U	0.00046	0.0010	mg/l		8260B	03/03/08	1
1,2-Dichlorobenzene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,3-Dichlorobenzene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,4-Dichlorobenzene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
Dichlorodifluoromethane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,1-Dichloroethane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,2-Dichloroethane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,1-Dichloroethene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
cis-1,2-Dichloroethene	U	0.00050	0.0010	mg/l		8260B	03/03/08	1
trans-1,2-Dichloroethene	U	0.00038	0.0010	mg/l		8260B	03/03/08	1
1,2-Dichloropropane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,1-Dichloropropene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
1,3-Dichloropropane	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
cis-1,3-Dichloropropene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
trans-1,3-Dichloropropene	U	[illegible]	0.0010	mg/l		8260B	03/03/08	1
2,2-Dichloropropane	U	0.00025	0.0010	mg/l		8260B	03/03/08	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = PQL/(Prep)
PQL = Reported Detection Limit = LOQ = PQL = RDL = PQL/(Prep)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: [illegible] Approved: [illegible]

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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 10, 2008

ESC Sample # : 1333843-02

Date Received : February 29, 2008
Description : Brix Maritime

Site ID :

Sample ID : BM022808-03

Project # : 19634-00/Task 05

Collected By : Chris Martin
Collection Date : 02/28/08 10:37

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Benzo(a)anthracene	0.000090	0.0000010	0.000050	mg/L		8270C-S	03/04/08	1
Benzo(a)pyrene	0.000025	0.0000010	0.000050	mg/L	J	8270C-S	03/04/08	1
Benzo(b)fluoranthene	0.000032	0.0000010	0.000050	mg/L	J	8270C-S	03/04/08	1
Benzo(g,h,i)perylene	0.0000074	0.0000011	0.000050	mg/L	J	8270C-S	03/04/08	1
Benzo(k)fluoranthene	0.000056	0.0000021	0.000050	mg/L		8270C-S	03/04/08	1
Chrysene	0.000096	0.00000068	0.000050	mg/L		8270C-S	03/04/08	1
Dibenz(a,h)anthracene	0.0000048	0.00000096	0.000050	mg/L	J	8270C-S	03/04/08	1
Fluoranthene	0.00010	0.00000065	0.000050	mg/L		8270C-S	03/04/08	1
Fluorene	0.000015	0.0000011	0.000050	mg/L	J	8270C-S	03/04/08	1
Indeno(1,2,3-cd)pyrene	0.0000078	0.0000012	0.000050	mg/L	J	8270C-S	03/04/08	1
Naphthalene	0.00065	0.000011	0.00025	mg/L		8270C-S	03/04/08	1
Phenanthrene	0.000039	0.00000073	0.000050	mg/L	J	8270C-S	03/04/08	1
Pyrene	0.00081	0.00000083	0.000050	mg/L		8270C-S	03/04/08	1
1-Methylnaphthalene	0.00018	0.0000019	0.00025	mg/L	J	8270C-S	03/04/08	1
2-Methylnaphthalene	0.00027	0.0000020	0.00025	mg/L		8270C-S	03/04/08	1
2-Chloronaphthalene	U	0.000082	0.00025	mg/L	J4	8270C-S	03/04/08	1
Surrogate Recovery								
Nitrobenzene-d5	34.7			% Rec.		8270C-S	03/04/08	1
2-Fluorobiphenyl	46.1			% Rec.	J2	8270C-S	03/04/08	1
p-Terphenyl-d14	55.3			% Rec.		8270C-S	03/04/08	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
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[illegible]

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Volatile Organics								
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
Acrolein	[illegible]	[illegible]	[illegible]	mg/l		[illegible]	[illegible]	[illegible]
Acrylonitrile	[illegible]	[illegible]	[illegible]	mg/l		[illegible]	[illegible]	[illegible]
Benzene	[illegible]	[illegible]	[illegible]	mg/l		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	mg/l		[illegible]	[illegible]	[illegible]

[illegible]

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13365 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Lab I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Leon Lahiere
Hart Crowser - Portland, OR
Five Centerpointe Dr, Ste 240
Lake Oswego, OR 97035

March 30, 2008

ESC Sample # : L533845-04

Date Received : February 29, 2008
Description : Brix Maritime

Site ID :

Sample ID : BMG228B-05

Project # : 15634-001/task 05

Collected By : Chris Martin
Collection Date : 02/28/08 11:20

Parameter	Result	MDL	RDL	Units	Q	Method	Date	Dil.
Diisopropyl ether	U	0.00025	0.0010	mg/l		8260B	03/03/08	1
Ethylbenzene	U	0.00022	0.0010	mg/l		8260B	03/03/08	1
Hexachlorobutadiene	U	0.00049	0.0010	mg/l		8260B	03/03/08	1
Isopropylbenzene	U	0.00019	0.0010	mg/l		8260B	03/03/08	1
p-Isopropyltoluene	U	0.00021	0.0010	mg/l		8260B	03/03/08	1
2-Butanone (MEK)	U	0.0045	0.010	mg/l		8260B	03/03/08	1
Methylene Chloride	U	0.00030	0.0050	mg/l		8260B	03/03/08	1
4-Methyl-2-pentanone (MIBK)	U	0.0014	0.010	mg/l		8260B	03/03/08	1
Methyl tert-butyl ether	U	0.00019	0.0010	mg/l		8260B	03/03/08	1
Naphthalene	0.00065	0.00017	0.0050	mg/l	J	8260B	03/03/08	1
n-Propylbenzene	U	0.00022	0.0010	mg/l		8260B	03/03/08	1
Styrene	U	0.00038	0.0010	mg/l		8260B	03/03/08	1
1,1,1,2-Tetrachloroethane	U	0.00040	0.0010	mg/l		8260B	03/03/08	1
1,1,2,2-Tetrachloroethane	U	0.00032	0.0010	mg/l		8260B	03/03/08	1
1,1,2-Trichloro-1,2,2-trifluoro	U	0.00028	0.0010	mg/l		8260B	03/03/08	1
Tetrachloroethene	U	0.00028	0.0010	mg/l		8260B	03/03/08	1
Toluene	U	0.00025	0.0050	mg/l		8260B	03/03/08	1
1,2,3-Trichlorobenzene	U	0.00021	0.0010	mg/l		8260B	03/03/08	1
1,2,4-Trichlorobenzene	U	0.00025	0.0010	mg/l		8260B	03/03/08	1
1,3,5-Trichlorobenzene	U	0.00027	0.0010	mg/l		8260B	03/03/08	1
1,1,2-Trichloroethane	U	0.00045	0.0010	mg/l		8260B	03/03/08	1
Trichloroethene	U	0.00037	0.0010	mg/l		8260B	03/03/08	1
Trichlorofluoromethane	U	0.00029	0.0050	mg/l		8260B	03/03/08	1
1,2,3-Trichloropropane	U	0.00030	0.0010	mg/l		8260B	03/03/08	1
1,2,4-Trimethylbenzene	U	0.00020	0.0010	mg/l		8260B	03/03/08	1
1,3,5-Trimethylbenzene	U	0.00022	0.0010	mg/l		8260B	03/03/08	1
2,2,4-Trimethylpentane	U	0.00020	0.0010	mg/l		8260B	03/03/08	1
Vinyl chloride	U	0.00027	0.0010	mg/l		8260B	03/03/08	1
Xylenes, Total	U	0.00086	0.0030	mg/l		8260B	03/03/08	1
Surrogate Recovery								
Toluene-d8	98.1			% Rec.		8260B	03/03/08	1
Bromofluoromethane	100.			% Rec.		8260B	03/03/08	1
4-Bromofluorobenzene	98.0			% Rec.		8260B	03/03/08	1
Diesel Range Organics (DRO)	0.20	0.033	0.10	mg/l	J3	NWTPHDX	03/05/08	1
Residual Range Organics (RRO)	U	0.080	0.35	mg/l	J3	NWTPHDX	03/05/08	1
Surrogate Recovery								
o-Terphenyl	90.6			% Rec.		NWTPHDX	03/05/08	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0000045	0.0000045	0.000050	mg/l	J	8270C-S	03/04/08	1
Acenaphthene	0.000021	0.0000018	0.000050	mg/l	J	8270C-S	03/04/08	1
Acenaphthylene	0.000012	0.0000014	0.000050	mg/l	J	8270C-S	03/04/08	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = SDL(TRRP)
RDL = Reported Detection Limit = LOQ = PQL = EQL = MQL(TRRP)
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
[illegible]	Anthracene	J
	Benzo(a)pyrene	J
	Benzo(b)fluoranthene	J
	Benzo(g,h,i)perylene	J
	Benzo(k)fluoranthene	[illegible]
	Chrysene	J
	Dibenz(a,h)anthracene	J
	Fluoranthene	J
	Fluorene	J
	Indeno(1,2,3-cd)pyrene	J
	Naphthalene	J
	Phenanthrene	J
	Pyrene	J
	2-Methylnaphthalene	J
	Nitrobenzene-[illegible]	[illegible]
	Toluene	J
	Diesel Range Organics (DRO)	[illegible]
	Residual Range Organics (RRO)	[illegible]
	Gasoline Range Organics-NWTPH	J
[illegible]	Acenaphthylene	J
	Benzo(a)pyrene	J
	Benzo(b)fluoranthene	J
	Benzo(g,h,i)perylene	J
	Benzo(k)fluoranthene	[illegible]
	Dibenz(a,h)anthracene	J
	Indeno(1,2,3-cd)pyrene	J
	2-Methylnaphthalene	J
	Naphthalene	J
	Toluene	J
	Diesel Range Organics (DRO)	[illegible]
	Residual Range Organics (RRO)	[illegible]
[illegible]	Anthracene	J
	Acenaphthene	J
	Acenaphthylene	J
	Benzo(a)pyrene	J
	Benzo(b)fluoranthene	J
	Benzo(g,h,i)perylene	J
	Dibenz(a,h)anthracene	J
	Fluorene	J
	Indeno(1,2,3-cd)pyrene	J
	Phenanthrene	J
	1-Methylnaphthalene	J
	2-Chloronaphthalene	[illegible]
	2-Fluorobiphenyl	[illegible]
	Benzene	J
	sec-Butylbenzene	J
	Naphthalene	J
	Diesel Range Organics (DRO)	[illegible]
	Residual Range Organics (RRO)	[illegible]
[illegible]	Anthracene	J
	Acenaphthene	J
	Acenaphthylene	J
	Benzo(a)pyrene	J
	Benzo(b)fluoranthene	J
	Benzo(k)fluoranthene	J
	Chrysene	J
	Fluoranthene	J
	Fluorene	J
	Indeno(1,2,3-cd)pyrene	J
	Phenanthrene	J
	Pyrene	J
	1-Methylnaphthalene	J
	2-Methylnaphthalene	J
	2-Chloronaphthalene	[illegible]
	Naphthalene	J
	Diesel Range Organics (DRO)	[illegible]
	Residual Range Organics (RRO)	[illegible]

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Attachment 8
Explanation of QC Qualifier Codes

Qualifier	Meaning
	[illegible] - Estimated value below the lowest calibration point. Confidence correlated with concentration.
	Surrogate recovery limits have been exceeded; values are outside lower control limits.
	The associated batch QC was outside the established quality control range for precision.
	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

[illegible] analysis and result qualifiers as set forth by the EPA Contract Laboratory Program and required by most certifying bodies (including DMA). In addition to the EPA qualifiers adopted [illegible] we have implemented EPA qualifiers to provide more information pertaining to the analytical [illegible]. Each qualifier is designated in the qualifier explanation as either EPA or EQC. [illegible] qualifiers are intended to provide the EQC client with more detailed information concerning [illegible] potential flaw of reported data. Because of the wide range of constituents and variety of [illegible] incorporated by most EPA methods, it is common for some compounds to fall outside of [illegible] ranges. These exceptions are evaluated and all reported data is valid and useable [illegible] qualified as "P" (Rejected).

Definitions

[illegible] - The relationship of the [illegible] value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as control samples, matrix spike recoveries, surrogate recoveries, etc.

[illegible] - The agreement between a set of samples or between duplicate samples. Relative to how close together the results are and is represented by Relative Percent Differences.

[illegible] - Organic compounds that are similar in chemical composition, extractivity and chemical reactivity or analyses of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analysis.

[illegible] - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Page [illegible] of [illegible]

BRIX004445

Summary of Reports For Samples Printed
03/10/08 at 09:14:12

TCR Signing Reports: [illegible]
RS - Desired TAT

Sample: L333848-01 Account: HARCROPOR Received: 03/29/08 09:00 Due Date: 03/07/08 00:00 RPT Date: 03/10/08 09:12

Sample: L333845-02 Account: HARCROPOR Received: 03/29/08 09:00 Due Date: 03/07/08 00:00 RPT Date: 03/10/08 09:12

Sample: L333848-03 Account: HARCROPOR Received: 03/29/08 09:00 Due Date: 03/07/08 00:00 RPT Date: 03/10/08 09:13

Sample: L333848-04 Account: HARCROPOR Received: 03/29/08 09:00 Due Date: 03/07/08 00:00 RPT Date: 03/10/08 09:13

BRIX004446

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[illegible]

[illegible]

Quality Assurance Report
Level II

[illegible]

[illegible]

Compound	Sample	Qualifier	Spike Amount	Recovery
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

BRIX004447

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[illegible]

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 040

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L333845

March 10, 2008

Chloroform	< .005	mg/l	03/03/08	13:49	WG348001

Laboratory Blank

Analyte	Result	Units	Date Analyzed		Batch
Chloromethane	< .001	mg/l	03/03/08	13:49	WG348001
cis-1,2-Dichloroethene	< .001	mg/l	03/03/08	13:49	WG348001
cis-1,3-Dichloropropene	< .001	mg/l	03/03/08	13:49	WG348001
Di-isopropyl ether	< .001	mg/l	03/03/08	13:49	WG348001
Dibromomethane	< .001	mg/l	03/03/08	13:49	WG348001
Dichlorodifluoromethane	< .005	mg/l	03/03/08	13:49	WG348001
Ethylbenzene	< .001	mg/l	03/03/08	13:49	WG348001
Hexachlorobutadiene	< .001	mg/l	03/03/08	13:49	WG348001
Isopropylbenzene	< .001	mg/l	03/03/08	13:49	WG348001
Methyl tert-butyl ether	< .001	mg/l	03/03/08	13:49	WG348001
Methylene Chloride	< .005	mg/l	03/03/08	13:49	WG348001
n-Butylbenzene	< .001	mg/l	03/03/08	13:49	WG348001
n-Propylbenzene	< .001	mg/l	03/03/08	13:49	WG348001
Naphthalene	< .005	mg/l	03/03/08	13:49	WG348001
p-Isopropyltoluene	< .001	mg/l	03/03/08	13:49	WG348001
sec-Butylbenzene	< .001	mg/l	03/03/08	13:49	WG348001
Styrene	< .001	mg/l	03/03/08	13:49	WG348001
Tert-Butylbenzene	< .001	mg/l	03/03/08	13:49	WG348001
Tetrachloroethene	< .001	mg/l	03/03/08	13:49	WG348001
Toluene	< .005	mg/l	03/03/08	13:49	WG348001
trans-1,2-Dichloroethene	< .001	mg/l	03/03/08	13:49	WG348001
trans-1,3-Dichloropropene	< .001	mg/l	03/03/08	13:49	WG348001
Trichloroethene	< .001	mg/l	03/03/08	13:49	WG348001
Trichlorofluoromethane	< .005	mg/l	03/03/08	13:49	WG348001
Vinyl chloride	< .001	mg/l	03/03/08	13:49	WG348001
Xylenes, Total	< .003	mg/l	03/03/08	13:49	WG348001
Gasoline Range Organics-NWTPH	< .1	mg/l	03/04/08	13:18	WG348159
Diesel Range Organics (DRO)	< .1	ppm	03/05/08	21:39	WG348255
Gasoline Range Organics-NWTPH	< .1	mg/l	03/05/08	01:54	WG348258
1-Methylnaphthalene	< .01	ppm	03/06/08	14:50	WG348533
2-Chloronaphthalene	< .01	ppm	03/06/08	14:50	WG348533
2-Methylnaphthalene	< .01	ppm	03/06/08	14:50	WG348533
Acenaphthene	< .01	ppm	03/06/08	14:50	WG348533
Acenaphthylene	< .01	ppm	03/06/08	14:50	WG348533
Anthracene	< .01	ppm	03/06/08	14:50	WG348533
Benzo(a)anthracene	< .01	ppm	03/06/08	14:50	WG348533
Benzo(a)pyrene	< .01	ppm	03/06/08	14:50	WG348533
Benzo(b)fluoranthene	< .01	ppm	03/06/08	14:50	WG348533
Benzo(ghi)perylene	< .01	ppm	03/06/08	14:50	WG348533
Benzo(k)fluoranthene	< .01	ppm	03/06/08	14:50	WG348533
Chrysene	< .01	ppm	03/06/08	14:50	WG348533
Dibenz(a,h)anthracene	< .01	ppm	03/06/08	14:50	WG348533
Fluoranthene	< .01	ppm	03/06/08	14:50	WG348533
Fluorene	< .01	ppm	03/06/08	14:50	WG348533
Indeno(1,2,3-cd)pyrene	< .01	ppm	03/06/08	14:50	WG348533
Naphthalene	< .01	ppm	03/06/08	14:50	WG348533
Phenanthrene	< .01	ppm	03/06/08	14:50	WG348533
Pyrene	< .01	ppm	03/06/08	14:50	WG348533

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1-Methylnaphthalene	ppm	.001	0.000570	57.0	51-120	WG347750
2-Chloronaphthalene	ppm	.001	0.000570	57.0	60-116	WG347750
2-Methylnaphthalene	ppm	.001	0.000546	54.6	53-115	WG347750

BRIX004448

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ENVIRONMENTAL SCIENCE CORP.

Quality Assurance Report
Level II

March [illegible]

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
Laboratory Control Sample						
[illegible]hylene	ppm	.001	[illegible]	[illegible]	[illegible]	WG?47757
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	8?.5	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	73.1	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]-133	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]thene	ppm	.001	[illegible]	[illegible]	55-136	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]alene	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	ppm	.001	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]chloroethane	mg/l	[illegible]	[illegible]	[illegible]	72-128	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	67-133	[illegible]
[illegible]propane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]methylbenzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propane	mg/l	[illegible]	[illegible]	[illegible]	77-119	[illegible]
[illegible]benzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]one (MEK)	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] vinyl ether	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]oluene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]-pentanone (MIBK)	mg/l	[illegible]	[illegible]	94.6	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]itrile	mg/l	[illegible]	[illegible]	9?.4	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

BRIX004449

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ENVIRONMENTAL
SCIENCE CORP.

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[illegible]

Quality Assurance Report
Level II

[illegible]

March [illegible], [illegible]

[illegible]

Analyte	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Laboratory Control Sample					
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diisopropyl ether	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dibromomethane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dichlorodifluoromethane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ethylbenzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hexachlorobutadiene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Isopropylbenzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Methyl tert.-butyl ether	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Methylene Chloride	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
n-Butylbenzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
n-Propylbenzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Naphthalene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
p-Isopropyltoluene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
sec-Butylbenzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Styrene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
tert-Butylbenzene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tetrachloroethene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Toluene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
trans-1,2-Dichloroethene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
trans-1,4-Dichlorobutene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Trichloroethene	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Trichlorofluoromethane	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vinyl chloride	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Xylenes, total	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gasoline Range Organics-NWTPH	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diesel Range Organics (DRO)	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Residual Range Organics (RRO)	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Gasoline Range Organics-NWTPH	mg/l	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-Methylnaphthalene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2-Methylnaphthalene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2-Methylphenanthrene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Acenaphthene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Acenaphthylene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Anthracene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Benzo(a)anthracene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Benzo(a)pyrene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Benzo(b)fluoranthene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Benzo(g,h,i)perylene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Benzo(k)fluoranthene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chrysene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dibenzo(a,h)anthracene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fluoranthene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indeno(1,2,3-cd)pyrene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Naphthalene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Phenanthrene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pyrene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Analyte	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Laboratory Control Sample Duplicate						
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-Methylnaphthalene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2-Methylnaphthalene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2-Methylphenanthrene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Acenaphthene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Acenaphthylene	ppm	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

BRIX004450

ENVIRONMENTAL
SCIENCE CORP.

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Quality Assurance Report
Level II
[illegible]

March 10, [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		Laboratory Control Sample [illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	15.[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]anthracene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]pyrene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]-[illegible]trichloroethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]chloroethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]chloroethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]chloroethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]-[illegible],2,[illegible]trichloroethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]chloropropene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ethane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]ene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] (DBF)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]phenanthrene (PAH)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]methane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]benzene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]propane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

BRIX004451

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ENVIRONMENTAL
SCIENCE CORP.

[illegible] Kenmore Rd.
Mt. Juliet, TN [illegible]
(615) [illegible]
1-800-[illegible]
Fax (615) [illegible]

Tel (503) [illegible]

Rev. [illegible]

Bart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, [illegible]

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L733445

March 16, [illegible]

Dibromomethane	mg/l	0.0467	0.0449	3.93	20	93	WG348001

Laboratory Control Sample Duplicate

Analyte	Units	LCS Res	LCSD Res	Ref Res	RPD	Limit	%Rec	Batch
Dichlorodifluoromethane	mg/l	0.0449	0.0463	5.04	24	88	WG348001
Ethylbenzene	mg/l	0.0500	0.0502	0.583	20	101	WG348001
Hexachlorobutadiene	mg/l	0.0513	0.0493	3.84	20	103	WG348001
Isopropylbenzene	mg/l	0.0522	0.0518	0.772	20	104	WG348001
Methyl tert-butyl ether	mg/l	0.0474	0.0443	6.76	20	95	WG348001
Methylene Chloride	mg/l	0.0501	0.0424	16.7	20	100	WG348001
n-Butylbenzene	mg/l	0.0529	0.0509	3.78	20	106	WG348001
n-Propylbenzene	mg/l	0.0513	0.0511	0.448	20	103	WG348001
Naphthalene	mg/l	0.0479	0.0451	5.83	20	96	WG348001
p-Isopropyltoluene	mg/l	0.0561	0.0552	1.63	20	112	WG348001
sec-Butylbenzene	mg/l	0.0516	0.0510	1.31	20	103	WG348001
Styrene	mg/l	0.0541	0.0533	1.40	20	109	WG348001
tert-Butylbenzene	mg/l	0.0510	0.0506	0.913	20	102	WG348001
Tetrachloroethene	mg/l	0.0486	0.0471	3.13	20	97	WG348001
Toluene	mg/l	0.0453	0.0446	1.59	20	91	WG348001
trans-1,2-Dichloroethene	mg/l	0.0517	0.0437	16.9	20	103	WG348001
trans-1,3-Dichloropropene	mg/l	0.0523	0.0518	1.02	20	105	WG348001
Trichloroethene	mg/l	0.0481	0.0483	0.368	20	96	WG348001
Trichlorofluoromethane	mg/l	0.0490	0.0492	0.417	20	98	WG348001
Vinyl chloride	mg/l	0.0429	0.0452	5.14	20	86	WG348001
Xylenes, Total	mg/l	0.155	0.153	1.32	20	104	WG348001
Gasoline Range Organics-NWTPH	mg/l	4.81	4.89	1.57	20	87	WG348159
Diesel Range Organics (DRO)	mg/l	0.[illegible]	0.790	21.5	20	42	WG348[illegible]
Residual Range Organics (RRO)	mg/l	0.[illegible]	1.23	36.7	20	95	WG348255
Gasoline Range Organics-NWTPH	mg/l	4.89	5.10	4.17	20	89	WG348186
1-Methylnaphthalene	ppm	0.[illegible]	0.[illegible]6	16.6	31	65	WG348533
2-Chloronaphthalene	ppm	0.0007	0.0006	7.86	31	72	WG348533
2-Methylnaphthalene	ppm	0.0006	0.[illegible]5	11.2	31	64	WG348533
Acenaphthene	ppm	0.0006	0.[illegible]6	11.7	25	68	WG348533
Acenaphthylene	ppm	0.0006	0.0006	13.4	26	70	WG348533
Anthracene	ppm	0.0006	0.0006	6.92	17	68	WG348533
Benzo(a)anthracene	ppm	0.0008	0.0007	8.[illegible]	17	65	WG348533
Benzo(a)pyrene	ppm	0.0008	0.000[illegible]	10.[illegible]	17	80	WG348533
Benzo(b)fluoranthene	ppm	0.0007	0.[illegible]	13.[illegible]	16	74	WG348533
Benzo(g,h,i)perylene	ppm	0.0007	0.0007	6.35	16	80	WG348533
Benzo(k)fluoranthene	ppm	0.0009	0.0006	36.1	30	93	WG348533
Chrysene	ppm	0.0007	0.0006	8.09	17	71	WG348533
Dibenz(a,h)anthracene	ppm	0.0008	0.0007	12.3	20	82	WG348533
Fluoranthene	ppm	0.0007	0.0006	6.82	20	72	WG348533
Fluorene	ppm	0.0007	0.0006	10.3	20	73	WG348533
Indeno(1,2,3-cd)pyrene	ppm	0.0007	0.0006	14.6	20	79	WG348533
Naphthalene	ppm	0.0006	0.0005	13.7	34	63	WG348533
Phenanthrene	ppm	0.0006	0.0006	6.70	17	66	WG348533
Pyrene	ppm	0.0007	0.0006	12.7	17	76	WG348533

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1-Methylnaphthalene	ppm	0.0006	0.0000	.001	67.[illegible]	51-126	L733687-17	WG347750
2-Methylnaphthalene	ppm	0.0006	0.0000	.001	65.[illegible]	51-126	L733836-03	WG347750
2-Chloronaphthalene	ppm	0.0006	0.0000	.001	68.[illegible]	60-119	L733687-17	WG347750
2-Chloronaphthalene	ppm	0.0007	0.00[illegible]	.001	74.3	60-119	L733836-03	WG347750
2-Methylnaphthalene	ppm	0.0006	0.0000	.001	68.[illegible]	52-115	L733687-17	WG347750
2-Methylnaphthalene	ppm	0.0006	0.0000	.001	63.[illegible]	52-115	L733836-03	WG347750
Naphthalene	ppm	0.0006	0.0000	.001	66.[illegible]	53-120	L733687-17	WG347750

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Matrix Spike

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Est. 1970

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Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L333845

March 10, 2008

Acetone	mg/l	1.28	0.00	.25	102.	25-157	L333509-01 WG348001

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Acrolein	mg/l	1.30	0.00	.25	104.	0-179	L333509-01	WG348001
Acrylonitrile	mg/l	1.32	0.00	.25	106.	3-162	L333509-01	WG348001
Benzene	mg/l	0.243	0.00	.05	97.1	16-158	L333509-01	WG348001
Bromobenzene	mg/l	0.247	0.00	.05	98.7	37-147	L333509-01	WG348001
Bromodichloromethane	mg/l	0.250	0.00	.05	99.8	45-147	L333509-01	WG348001
Bromoform	mg/l	0.279	0.00	.05	112.	38-152	L333509-01	WG348001
Bromomethane	mg/l	0.303	0.00	.05	121.	0-191	L333509-01	WG348001
Carbon tetrachloride	mg/l	0.255	0.00	.05	102.	22-168	L333509-01	WG348001
Chlorobenzene	mg/l	0.249	0.00	.05	99.5	33-148	L333509-01	WG348001
Chlorodibromomethane	mg/l	0.271	0.00	.05	108.	48-151	L333509-01	WG348001
Chloroethane	mg/l	0.226	0.00	.05	90.5	4-176	L333509-01	WG348001
Chloroform	mg/l	0.255	0.00	.05	102.	37-147	L333509-01	WG348001
Chloromethane	mg/l	0.198	0.00	.05	79.4	10-174	L333509-01	WG348001
cis-1,2-Dichloroethene	mg/l	0.263	0.0001	.05	103.	29-156	L333509-01	WG348001
cis-1,3-Dichloropropene	mg/l	0.253	0.00	.05	101.	35-148	L333509-01	WG348001
Di-isopropyl ether	mg/l	0.254	0.00	.05	102.	39-160	L333509-01	WG348001
Dibromomethane	mg/l	0.235	0.00	.05	94.1	36-152	L333509-01	WG348001
Dichlorodifluoromethane	mg/l	0.212	0.00	.05	84.7	0-200	L333509-01	WG348001
Ethylbenzene	mg/l	0.252	0.00	.05	101.	29-150	L333509-01	WG348001
Hexachlorobutadiene	mg/l	0.246	0.00	.05	98.3	28-144	L333509-01	WG348001
Isopropylbenzene	mg/l	0.259	0.00	.05	104.	35-147	L333509-01	WG348001
Methyl tert-butyl ether	mg/l	0.242	0.00	.05	96.6	24-167	L333509-01	WG348001
Methylene Chloride	mg/l	0.215	0.00	.05	86.1	23-151	L333509-01	WG348001
n-Butylbenzene	mg/l	0.260	0.00	.05	104.	32-151	L333509-01	WG348001
n-Propylbenzene	mg/l	0.255	0.00	.05	102.	26-150	L333509-01	WG348001
Naphthalene	mg/l	0.240	0.00	.05	95.9	24-160	L333509-01	WG348001
p-Isopropyltoluene	mg/l	0.273	0.00	.05	109.	28-151	L333509-01	WG348001
sec-Butylbenzene	mg/l	0.253	0.00	.05	101.	32-149	L333509-01	WG348001
Styrene	mg/l	0.283	0.00	.05	112.	38-149	L333509-01	WG348001
tert-Butylbenzene	mg/l	0.253	0.00	.05	101.	36-149	L333509-01	WG348001
Tetrachloroethene	mg/l	0.333	0.110	.05	89.3	13-157	L333509-01	WG348001
Toluene	mg/l	0.229	0.00	.05	91.9	22-152	L333509-01	WG348001
trans-1,2-Dichloroethene	mg/l	0.216	0.00	.05	86.3	11-169	L333509-01	WG348001
trans-1,3-Dichloropropene	mg/l	0.261	0.00	.05	104.	33-153	L333509-01	WG348001
Trichloroethene	mg/l	0.252	0.0070	.05	98.0	18-163	L333509-01	WG348001
Trichlorofluoromethane	mg/l	0.242	0.00	.05	96.6	10-177	L333509-01	WG348001
Vinyl chloride	mg/l	0.213	0.00	.05	85.3	0-179	L333509-01	WG348001
Xylenes, Total	mg/l	0.775	0.00	.15	103.	29-151	L333509-01	WG348001
Gasoline Range Organics-NWTPH	mg/l	5.06	0.0325	5.5	91.4	58-122	L333687-17	WG348159
Diesel Range Organics (DRO)	mg/l	1.48	1.19	1.5	25.4	50-150	L333879-01	WG348255
Residual Range Organics (RRO)	mg/l	1.15	0.630	1.5	34.4	50-150	L333879-01	WG348255
Gasoline Range Organics-NWTPH	mg/l	4.96	0.00	5.5	90.2	58-122	L333879-01	WG348286

Analyte	Units	Matrix Spike Duplicate MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
1-Methylnaphthalene	ppm	0.0004	0.0006	53.1	32	40.2	L333687-17	WG347750
1-Methylnaphthalene	ppm	0.0005	0.0006	18.5	32	53.2	L333836-03	WG347750
2-Chloronaphthalene	ppm	0.0004	0.0007	48.2	31	45.3	L333687-17	WG347750
2-Chloronaphthalene	ppm	0.0005	0.0007	22.4	31	59.4	L333836-03	WG347750
2-Methylnaphthalene	ppm	0.0003	0.0006	50.4	32	38.5	L333687-17	WG347750
2-Methylnaphthalene	ppm	0.0004	0.0006	31.0	32	45.2	L333836-03	WG347750
Acenaphthene	ppm	0.0005	0.0007	35.0	25	53.2	L333687-17	WG347750
Acenaphthene	ppm	0.0006	0.0007	13.8	25	58.5	L333836-03	WG347750
Acenaphthylene	ppm	0.0004	0.0007	36.8	26	48.0	L333687-17	WG347750
Acenaphthylene	ppm	0.0006	0.0007	14.4	26	60.6	L333836-03	WG347750

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Quality Assurance Report

Matrix Spike Duplicate

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12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
FAX (615) 758-5859

Web Site: www.envsci.com

Est. 1970

Hart Crowser - Portland, OR
Leon Lahiere
Five Centerpointe Dr, Ste 240

Lake Oswego, OR 97035

Quality Assurance Report
Level II

L333845

March 10, 2008

Benzene	mg/l	0.235	0.243	2.72	21	94.8	L333509-03	WG348001

Matrix Spike Duplicate

Analyte	Units	MSD Res	Ref Res	RPD	Limit	%Rec	Ref Samp	Batch
Bromobenzene	mg/l	0.244	0.247	0.951	23	97.8	L333509-01	WG348001
Bromodichloromethane	mg/l	0.248	0.250	0.560	20	99.4	L333509-01	WG348001
Bromoform	mg/l	0.276	0.279	1.41	20	110.	L333509-01	WG348001
Bromomethane	mg/l	0.266	0.303	12.8	35	107.	L333509-01	WG348001
Carbon tetrachloride	mg/l	0.246	0.255	3.71	24	98.3	L333509-01	WG348001
Chlorobenzene	mg/l	0.247	0.249	0.808	22	98.7	L333509-01	WG348001
Chlorodibromomethane	mg/l	0.263	0.271	2.93	21	105.	L333509-01	WG348001
Chloroethane	mg/l	0.219	0.226	3.10	27	87.7	L333509-01	WG348001
Chloroform	mg/l	0.243	0.255	4.52	21	97.3	L333509-01	WG348001
Chloromethane	mg/l	0.191	0.198	3.97	28	76.3	L333509-01	WG348001
cis-1,2-Dichloroethene	mg/l	0.255	0.263	2.93	22	100.	L333509-01	WG348001
cis-1,3-Dichloropropene	mg/l	0.249	0.253	1.61	21	99.6	L333509-01	WG348001
Di-Isopropyl ether	mg/l	0.251	0.254	1.19	21	101.	L333509-01	WG348001
Dibromomethane	mg/l	0.236	0.235	0.510	20	94.4	L333509-01	WG348001
Dichlorodifluoromethane	mg/l	0.208	0.212	1.81	28	83.2	L333509-01	WG348001
Ethylbenzene	mg/l	0.251	0.252	0.228	24	100.	L333509-01	WG348001
Hexachlorobutadiene	mg/l	0.254	0.246	3.[illegible]	33	102.	L333509-01	WG348001
Isopropylbenzene	mg/l	0.257	0.259	0.718	25	103.	L333509-01	WG348001
Methyl tert-butyl ether	mg/l	0.225	0.242	8.[illegible]	22	90.1	L333509-01	WG348001
Methylene Chloride	mg/l	0.220	0.215	[illegible]	21	88.1	L333509-01	WG348001
n-Butylbenzene	mg/l	0.260	0.260	0.[illegible]	29	104.	L333509-01	WG348001
n-Propylbenzene	mg/l	0.252	0.255	1.[illegible]	25	101.	L333509-01	WG348001
Naphthalene	mg/l	0.242	0.240	0.[illegible]	37	96.7	L333509-01	WG348001
p-Isopropyltoluene	mg/l	0.272	0.273	0.[illegible]	27	109.	L333509-01	WG348001
sec-Butylbenzene	mg/l	0.254	0.253	0.[illegible]	26	102.	L333509-01	WG348001
Styrene	mg/l	0.276	0.280	1.[illegible]	23	110.	L333509-01	WG348001
tert-Butylbenzene	mg/l	0.252	0.253	0.[illegible]	26	101.	L333509-01	WG348001
Tetrachloroethene	mg/l	0.343	0.333	3.00	24	93.4	L333509-01	WG348001
Toluene	mg/l	0.225	0.229	1.[illegible]	22	90.1	L333509-01	WG348001
trans-1,2-Dichloroethene	mg/l	0.216	0.216	0.0000	23	86.3	L333509-01	WG348001
trans-1,3-Dichloropropene	mg/l	0.258	0.261	0.[illegible]	22	103.	L333509-01	WG348001
Trichloroethene	mg/l	0.248	0.252	1.[illegible]	21	95.2	L333509-01	WG348001
Trichlorofluoromethane	mg/l	0.228	0.240	5.[illegible]	24	91.[illegible]	L333509-01	WG348001
Vinyl chloride	mg/l	0.203	0.213	4.9[illegible]	26	81.2	L333509-01	WG348001
Xylenes, Total	mg/l	0.7[illegible]	0.775	1.9[illegible]	23	101.	L333509-01	WG348001
Gasoline Range Organics-NWTPH	mg/l	4.76	5.06	6.03	20	86.0	L333683-17	WG348199
Diesel Range Organics (DRO)	mg/l	1.[illegible]	1.48	3.13	20	28.5	L333879-01	WG348255
Residual Range Organics (RRO)	mg/l	1.[illegible]	1.15	9.75	15	42.3	L333879-01	WG348255
Gasoline Range Organics-NWTPH	mg/l	4.83	4.96	2.75	20	87.8	L333879-01	WG348280

Batch number /Run number / Sample number cross reference

WG347150: R355431: L333845-03 04
WG348001: R355614: L333845-01 02 03 04
WG348159: R355768: L333845-01
WG348280: R355771: L333845-02 03 04
WG349255: R355900: L333845-01 02 03 04
WG348533: R356056: L333845-01 02

* * Calculations are performed prior to rounding of reported values.

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Quality Assurance Report
Level II

[illegible]

March [illegible], 20[illegible]

The data package includes a summary of the analytic results of the quality control samples required by the [illegible] by [illegible]. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analysis report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the matrix control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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☐ 811 Church Hill Rd., # 236, Cherry Hill, NJ 08002

Sample Custody Record

HARTCROWSER

Samples Shipped To: ESC

JOB 15634.00/Task 5 LAB NUMBER

PROJECT NAME Brix Maritime

HART CROWSER CONTACT Leon Lalwere

SAMPLED BY Chris Martin

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	gasoline NWTPH-G	Hexadecanal NWTPH-D	PAHs 8270-SIM	VOCs 8260B	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
BMO22808-01			22808	9:15	W	X	X	X	X	9	L333845-01
BMO22808-02			↓	9:58	↓	X	X	X	X	9	02
BMO22808-03			↓	10:37	↓	X	X	X	X	9	03
BMO22808-04			↓	11:20	↓	X	X	X	X	9	04

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	22808		
SIGNATURE	TIME	SIGNATURE	TIME
Chris Martin			
PRINT NAME		PRINT NAME	
HC	14:00		
COMPANY		COMPANY	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
		[signature]	2-29-08
SIGNATURE	TIME	SIGNATURE	TIME
PRINT NAME		PRINT NAME J. Peatwedge	
COMPANY		COMPANY	

SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS

36+3TB

8615 3287 9524
8615 3287 9557

COOLER NO.:

STORAGE LOCATION: TURNAROUND TIME

See Lab Work Order No. _____
for Other Contract Requirements

TOTAL NUMBER OF CONTAINERS 36

☐ 24 HOURS ☐ 1 WEEK
☐ 48 HOURS ☒ STANDARD
☐ 72 HOURS OTHER _____

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Edmonds, Washington 98020-6411
Fax 425.778.2412
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