TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

DATA DELIVERABLES PACKAGE
** Level III **

CH2M-Hill
Pat Heins
2020 SW 4th, Suite 300
Portland, OR 97201

Client Project: NW Pipe Project
Client Project Number: 358932.RI.06
Laboratory Work Order #: PSK0253
Project Manager: Darrell Auvil

The total number of pages contained in this data package is:

336

November 30, 2009

Prepared by: Doug McKenzie
TestAmerica, Inc.
9405 S. W. Nimbus Avenue
Beaverton, Oregon 97008
(503) 906-9200
(503) 906-9210

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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PSK0253

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THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

Client:	CH2M-Hill	**Date Sampled:**	11/7/2009
Project:	NW Pipe Project 358932.RI.06	**Date Received:**	11/9/2009
Lab:	PSK0253		

SAMPLE RECEIPT: Samples were received intact, on ice, with custody seals and chain of custody documentation. The sample temperature was measured at 5.5, 4.7, and 4.2 °C upon receipt at the laboratory.

HOLDING TIMES: All samples were analyzed within holding times.

PROBLEMS ENCOUNTERED: No problems were encountered.

QA/QC CRITERIA: The 1,1,1,2-Tetrachloroethane, 1,3-Dichlorobenzene, cis-1,3-Dichloropropene, o-Xylene, and trans-1,3-Dichloropropene recoveries for EPA 8260B sample 9110497-MS1 were below the acceptance limits. See Blank Spike (LCS).

The cis-1,3-Dichloropropene and trans-1,3-Dichloropropene recoveries for EPA 8260B sample 9110497-MSD1 were below the acceptance limits. See Blank Spike (LCS).

OBSERVATIONS: Results that fall between the Method Detection Limit (MDL) and Method Reporting Limit (MRL) are estimated values, and are qualified "J". The user should be aware that this data is of limited reliability.

Insufficient sample volume was provided to perform the requested MS/MSD analysis on EPA 8082 sample PSK0253-02.

EPA 8270m SIM (PAH) and EPA 8082 (PCB) analysis was requested on the COC for sample PSK0253-08; however, insufficient sample volume was provided for the specified analyses.
The client was notified, and the PAH and PCB analysis were not performed on sample PSK0253-08 due to the lack of adequate volume.

SUBCONTRACTED: No analyses were subcontracted.

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CASE NARRATIVE

Client:	CH2M-Hill	**Date Sampled:**	11/7/2009
Project:	NW Pipe Project 358932.RI.06	**Date Received:**	11/9/2009
Lab:	PSK0253		

"I certify that this data package is in compliance with the contract both technically and for completeness, for all conditions other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

TestAmerica Portland

Darrell Auvil
Project Manager

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Sample Receipt Documentation

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THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First 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 ☒
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PSK0253

CLIENT:

REPORT TO: CH2M Hill Pat Heins
ADDRESS: 2020 SW 4th Ave Suite 300
PHONE: 503 235 5000 FAX:

INVOICE TO:

P.O. NUMBER:

PROJECT NAME: NW Pipe
PROJECT NUMBER: 358932.RI.06
SAMPLED BY: Pat Heins

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ☒ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: ☒ STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: 6010 * metals	8270 SIM PAH	8082 PCB	8260 VOC	7470A mercury	8270 SIM phthalates	160.2 TSS	6010 zinc only	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 DS005-110709	11/7/09 12:30		X	X	X	X	X	X	X		W	11		
2 DS012-110709	11/7/09 13:00		X	X	X	X	X	X	X		W	16	MS/MSD	
3 DS017-110709	11/7/09 13:30									X	W	1		
4 DS006-110709	11/7/09 13:40									X	W	1		
5 DS224-110709	11/7/09 13:50									X	W	1		
6 DS225-110709	11/7/09 14:10									X	W	1		
7 DS120-110709	11/7/09 14:45		X	X	X	X	X	X	X		W	11		
8 DS120-110709-1	11/7/09 ~~15:00~~ 14:45		X	X	X	X	X	X	X		W	5		
9 DS117-110709	11/7/09 15:00									X	W	1		
10 DS223-110709	11/7/09 15:30		X	X	X	X	X	X	X		W	11		

RELEASED BY:		DATE: 11/9/09	RECEIVED BY:		DATE: 11/9/09
PRINT NAME: Pat Heins	FIRM: CH2M Hill	TIME: 10:00	PRINT NAME:	FIRM: TAP	TIME: 1330
RELEASED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: * metals: aluminum, antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc
⊕ Joint Source Control – Low Detection Levels.

TEMP: 5.5 9.7 4.2

TAL-1000(0408)

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THE LEADER IN ENVIRONMENTAL TESTING

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2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PS160253

CLIENT:

INVOICE TO:

REPORT TO: CH2M Hill Pat Heins
ADDRESS: 2020 SW 4th Ave Suite 300
PHONE: 503 235 5000 FAX:

P.O. NUMBER:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ☒ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: ☒ STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

PROJECT NAME: NW Pipe

PROJECT NUMBER: 358932.RI.06

SAMPLED BY: Pat Heins

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	6010 * Metals	8270 SIM PAH	335.4 ⊕ 8082 PCB	8260 VOC	7470A Mercury	8270 SIM Phthalates	160.2 TSS						MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 DS 221-110709	11/7/09 16:00		X	X	X	X	X	X	X						Water	11		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

REQUESTED ANALYSES

RELEASED BY:		DATE: 11/9/09	RECEIVED BY:		DATE: 11/9/09
PRINT NAME: Pat Heins	FIRM: CH2M Hill	TIME: 10:00	PRINT NAME:	FIRM: TAP	TIME: 1330
RELEASED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: * metals: aluminum, antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc
⊕ Joint Source Control – Low Detection Levels

TEMP:

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TAL-1000(0408)

WORK ORDER

PSK0253

TestAmerica Portland **Printed: 11/27/2009 3:45:28PM**

CH2M-Hill

Project: NW Pipe Project

Project Manager: Darrell Auvil
Project Number: 358932.RI.06

Report To:
CH2M-Hill
Pat Heins
2020 SW 4th Suite 300
Portland, OR 97201
Phone: (503) 235-5000
Fax: (503) 235-2445

Invoice To:
CH2MHill-Denver A/P
CH2MHill-Denver A/P
PO Box 241329
Denver, CO 80224
Phone: (907) 278-2551
Fax: (907) 257-2000

Sample Receipt

Work Order Due Date: **12/04/09 18:00 (18 day TAT)**

Samples Received:	By:	Samples Logged In:	By:
11/09/09 13:30	Jessica Morgan	11/09/09 15:56	kirstin hoffman

Number of Coolers:	**3**		
Receipt Temp:	**5.5°C**	Submitted by:	**N/A**
ples received on ice?:	**Yes**	Shipped Via:	**TA Courier**
tody Seals Present?:	**Yes**	SDG:	**PSK0253**
All Containers Intact?:	**Yes**		
e labels/COC agree?:	**Yes**		
Samples Preserved Proj?:	**Yes**		

COMMENTS: No EMF; 10%off CPl or Element pricing; revised bid 10-12-09 cmw; Level III DP required for soil and water.

Analysis	Due	TAT	Expires	Comments
PSK0253-01 Water DS005-110709 (Sampled: 11/07/09 12:30)				
Data Package - Level III	12/04/09 08:00	18	12/07/09 12:30	
8260B Portland Harbor Full QC	11/23/09 08:00	10	11/21/09 12:30	level 3 dp.. MDL
Ag Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Al Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
As Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Cd Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Cr Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Cu Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Hg Total 7470A	11/23/09 08:00	10	12/05/09 12:30	level 3 dp.
Ni Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Pb Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Sb Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Se Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 12:30	level 3 dp.
8270 SIM PAH	11/23/09 08:00	10	11/14/09 12:30	level 3 dp. MDL
8270SIM Phthalates	12/01/09 08:00	15	11/14/09 12:30	level 3 dp. MDL
JSC 8082 PCB	12/01/09 08:00	15	11/14/09 12:30	level 3 dp. MDL
Solids, TSS - SM 2540D	11/23/09 08:00	10	11/14/09 12:30	level 3 dp.

WORK ORDER

PSK0253

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CH2M-Hill

Project: NW Pipe Project

Project Manager: Darrell Auvil
Project Number: 358932.RI.06

Analysis	Due	TAT	Expires	Comments
PSK0253-02 Water DS012-110709 (Sampled: 11/07/09 13:00)				**MS/MSD**
8260B Portland Harbor Full QC	11/23/09 08:00	10	11/21/09 13:00	level 3 dp.. MDL MS/MSD
Ag Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Al Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
As Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Cd Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Cr Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Cu Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Hg Total 7470A	11/23/09 08:00	10	12/05/09 13:00	level 3 dp.:MS/MSD
Ni Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Pb Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Sb Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Se Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:00	level 3 dp.:MS/MSD
8270 SIM PAH	11/23/09 08:00	10	11/14/09 13:00	level 3 dp. MDL MS/MSD
8270SIM Phthalates	12/01/09 08:00	15	11/14/09 13:00	level 3 dp. MDL MS/MSD
JSC 8082 PCB	12/01/09 08:00	15	11/14/09 13:00	level 3 dp. MDL no ms/msd insuff vol.
Solids, TSS - SM 2540D	11/23/09 08:00	10	11/14/09 13:00	level 3 dp
PSK0253-03 Water DS017--110709 (Sampled: 11/07/09 13:30)				
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:30	level 3 dp.
PSK0253-04 Water DS006--110709 (Sampled: 11/07/09 13:40)				
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:40	level 3 dp.
PSK0253-05 Water DS224--110709 (Sampled: 11/07/09 13:50)				
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 13:50	level 3 dp.
PSK0253-06 Water DS225--110709 (Sampled: 11/07/09 14:10)				
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:10	level 3 dp.

WORK ORDER

PSK0253

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CH2M-Hill

Project: NW Pipe Project

Project Manager: Darrell Auvil
Project Number: 358932.RI.06

Analysis	Due	TAT	Expires	Comments
PSK0253-07 Water DS120-110709 (Sampled: 11/07/09 14:45)				
8260B Portland Harbor Full QC	11/23/09 08:00	10	11/21/09 14:45	level 3 dp.. MDL
Ag Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Al Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
As Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Cd Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Cr Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Cu Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Hg Total 7470A	11/23/09 08:00	10	12/05/09 14:45	level 3 dp.
Ni Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Pb Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Sb Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Se Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
8270 SIM PAH	11/23/09 08:00	10	11/14/09 14:45	level 3 dp. MDL
8270SIM Phthalates	12/01/09 08:00	15	11/14/09 14:45	level 3 dp. MDL
JSC 8082 PCB	12/01/09 08:00	15	11/14/09 14:45	level 3 dp. MDL
Solids, TSS - SM 2540D	11/23/09 08:00	10	11/14/09 14:45	level 3 dp.
PSK0253-08 Water DS120-110709-1 (Sampled: 11/07/09 14:45)				
8260B Portland Harbor Full QC	11/23/09 08:00	10	11/21/09 14:45	level 3 dp.. MDL
Ag Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Al Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
As Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Cd Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Cr Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Cu Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Hg Total 7470A	11/23/09 08:00	10	12/05/09 14:45	level 3 dp.
Ni Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Pb Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Sb Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Se Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 14:45	level 3 dp.
Solids, TSS - SM 2540D	11/23/09 08:00	10	11/14/09 14:45	level 3 dp.
PSK0253-09 Water DS117--110709 (Sampled: 11/07/09 15:00)				
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:00	level 3 dp.

WORK ORDER

PSK0253

TestAmerica Portland **Printed: 11/27/2009 3:45:28PM**

CH2M-Hill

Project: NW Pipe Project

Project Manager: Darrell Auvil
Project Number: 358932.RI.06

Analysis	Due	TAT	Expires	Comments
PSK0253-10 Water DS223-110709 (Sampled: 11/07/09 15:30)				
8260B Portland Harbor Full QC	11/23/09 08:00	10	11/21/09 15:30	level 3 dp.. MDL
Ag Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Al Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
As Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Cd Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Cr Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Cu Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Hg Total 7470A	11/23/09 08:00	10	12/05/09 15:30	level 3 dp.
Ni Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Pb Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Sb Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Se Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 15:30	level 3 dp.
8270 SIM PAH	11/23/09 08:00	10	11/14/09 15:30	level 3 dp. MDL
8270SIM Phthalates	12/01/09 08:00	15	11/14/09 15:30	level 3 dp. MDL
JSC 8082 PCB	12/01/09 08:00	15	11/14/09 15:30	level 3 dp. MDL
Solids, TSS - SM 2540D	11/23/09 08:00	10	11/14/09 15:30	level 3 dp.
PSK0253-11 Water DS221-110709 (Sampled: 11/07/09 16:00)				
8260B Portland Harbor Full QC	11/23/09 08:00	10	11/21/09 16:00	level 3 dp.. MDL
Ag Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Al Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
As Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Cd Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Cr Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Cu Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Hg Total 7470A	11/23/09 08:00	10	12/05/09 16:00	level 3 dp.
Ni Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Pb Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Sb Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Se Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
Zn Total ICP 6010B	11/23/09 08:00	10	05/06/10 16:00	level 3 dp.
8270 SIM PAH	11/23/09 08:00	10	11/14/09 16:00	level 3 dp. MDL
8270SIM Phthalates	12/01/09 08:00	15	11/14/09 16:00	level 3 dp. MDL
JSC 8082 PCB	12/01/09 08:00	15	11/14/09 16:00	level 3 dp. MDL
Solids, TSS - SM 2540D	11/23/09 08:00	10	11/14/09 16:00	level 3 dp.
PSK0253-12 Water Trip Blank (Sampled: 11/07/09 00:00)				
8260B Portland Harbor Full QC	11/23/09 08:00	10	11/21/09 00:00	level 3 dp.. MDL

Reviewed By Date

WORK ORDER

PSK0253

TestAmerica Portland **Printed: 11/27/2009 3:45:28PM**

CH2M-Hill

Project: **NW Pipe Project**

Project Manager: **Darrell Auvil**

Project Number: **358932.RI.06**

Analysis groups included in this work order

Data Package - Level III

Data Package - Wet Chem	Data Package - Semivols	Data Package - Metals	Data Package - Mercury
Data Package - GCMS Vol	Data Package		

Reviewed By

Date

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PSK0253 Date/Time Received: 11/9/09 1330

Client Name and Project: CH2M Hill

Time Zone:
☐EDT/EST ☐CDT/CST ☐MDT/MST ☑PDT/PST ☐AK ☐OTHER

Unpacking Checks:

Cooler #(s): 1 1 1 ____ ____

Temperatures: 5.5 4.7 4.2 ____ ____

Digi #1 ☐ Digi #2 ☐ IR Gun ☑ (☑Plastic ☐Glass)

Temperature out of Range:

__Not enough or No Ice
__Ice Melted
__W/in 4 Hrs of collection
__Other:____

Initials: JM

N/A	Yes	No	
☑	☐	☐	1. If ESI client, were temp blanks received? If no, document on NOD.
☐	☑	☐	2. Cooler Seals intact? (N/A if hand delivered) if no, document on NOD.
	☑	☐	3. Chain of Custody present? If no, document on NOD.
	☑	☐	4. Bottles received intact? If no, document on NOD.
	☑	☐	5. Sample is not multiphasic? If no, document on NOD.
	☑	☐	6. Proper Container and preservatives used? If no, document on NOD.
☐	☑	☐	7. pH of all samples checked and meet requirements? If no, document on NOD.
☑	☐	☐	8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
☑	☐	☐	9. HF Dilution required?
	☑	☐	10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding.
	☑	☐	11. Did chain of custody agree with samples received? If no, document on NOD.
	☑	☐	12. Is the "Sampled by" section of the COC completed?
☐	☐	☐	13. Were VOA/Oil Syringe samples without headspace?
☐	☐	☐	14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
	☐	☑	15. Did samples require preservation with sodium thiosulfate?
☑	☐	☐	16. If yes to #14, was the residual chlorine test negative? If no, document on NOD.
☑	☐	☐	17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
☑	☐	☐	18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding.
☑	☐	☐	19. Are analyses with short holding times received in hold?
	☑	☐	20. Was Standard Turn Around (TAT) requested?
	☑	☐	21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

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Sample Receiving Checklist

Work Order #: PSK0253

Login Checks:

Initials: [signature]

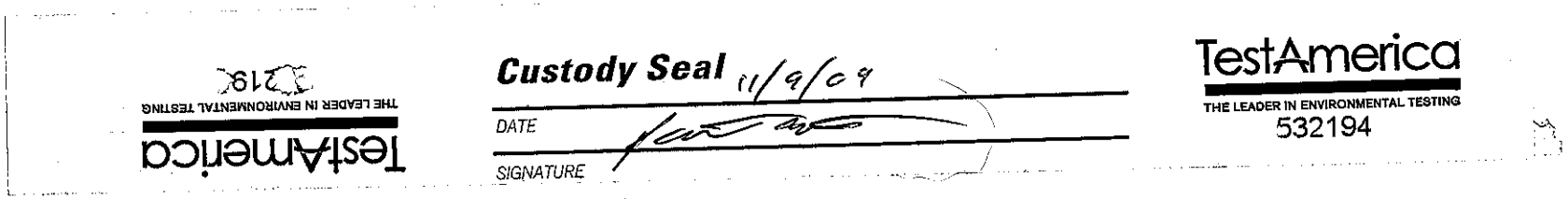
N/A	Yes	No	
	☒	☐	22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
☒	☐	☐	23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM.
	☒	☐	24. Did the chain of custody include "received by" and "relinquished by" signatures, dates and times?
☒	☐	☐	25. Were special log in instructions read and followed?
	☒	☐	26. Were tests logged checked against the COC?
☒	☐	☐	27. Were rush notices printed and delivered?
☒	☐	☐	28. Were short hold notices printed and delivered?
☒	☐	☐	29. Were subcontract COCs printed?
☒	☐	☐	30. Was HF dilution logged?

Labeling and Storage Checks:

Initials: [signature]

N/A	Yes	No	
☒	☐	☐	31. Were the subcontracted samples/containers put in Sx fridge?
☒	☐	☐	32. Were sample bottles and COC double checked for dissolved/filtered metals?
	☒	☐	33. Did the sample ID, Date, and Time from label match what was logged?
☒	☐	☐	34. Were Foreign sample stickers affixed to each container and containers stored in foreign fridge?
☒	☐	☐	35. Were HF stickers affixed to each container, and containers stored in Sx fridge?
☒	☐	☐	36. Was an NOD for created for noted discrepancies and placed in folder?

Document any problems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy form (NOD).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THE LEADER IN ENVIRONMENTAL TESTING
Custody Seal 11/9/09
DATE
SIGNATURE
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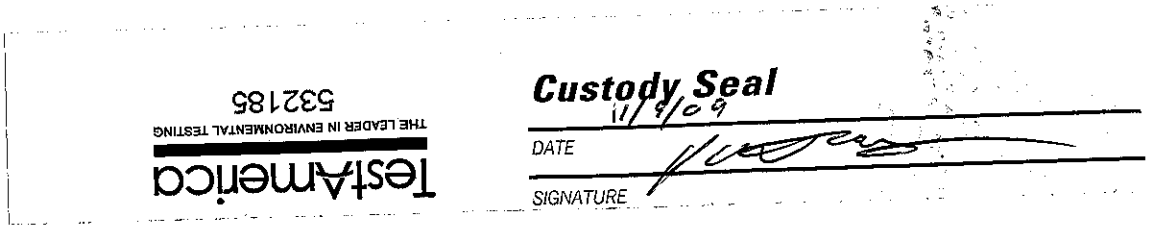
532194


TestAmerica
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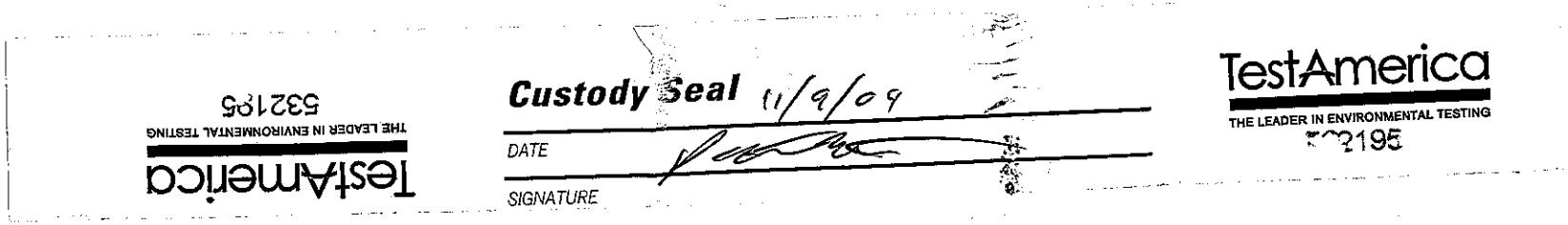
532185
Custody Seal 11/9/09
DATE
SIGNATURE


TestAmerica
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532195
Custody Seal 11/9/09
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TestAmerica
ANALYTICAL TESTING CORPORATION

17461 Derian Ave., Suite 100, Irvine, CA 92614-5817 Ph (949) 261-1022 Fax (949) 260-5817
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851

NOTIFICATION OF DISCREPANCY ON CHAIN OF CUSTODY FORM

CLIENT: CH2M-Hill DATE: 11/09/09

PROJECT NAME/NO: NW Pipe Project / NW Pipe Project WORK ORDER: PSK0253

CLIENT CONTACT: Pat Heins PHONE: #: (503) 235-5000

PROJECT MANAGER: Darrell Auvil

RUSH TAT?: [ ] YES [X] NO SHORT HOLDING TIME?: [ ] YES [X] NO

____ Clarification of Analysis	____ Project Not Set Up in Element
____ Turnaround Status	____ Improper Preservation
____ Sample Received Broken	____ Analysis Requested on COC not in Element Project
____ 8015B for Gas or Diesel	____ Analysis Added - PM to Confirm
____ Did not receive sample(s) listed on Chain-of-Custody Form	____ PM Needs to Add Analysis
____ Received extra sample(s) not listed on Chain-of-Custody Form	____ Volatile Analyses Requested - No Trip Blank Received
____ Not enough sample volume to perform analysis	
____ Sample Holding Time Expired upon receipt	
____ No Project Name/Number on Chain-of-Custody Form	
____ No Purchase Order Number	
____ Sample description(s) on Chain-of-Custody Form does not match description(s) on sample label(s)	
√ Other	

Further Explanation:

Sample 8 did not have all the bottles for all the tests requested. Sample 8 put on hold to confirm COC; Two trip blank not on COC. KH

Resolution: Client does want L-3 D.P.
11/10 Called client - OK with no MS/MSD on JSC PCB's for -02
Would like us to run Trip Blank - 1 TB (2 vials)
Sample -08 is a FDup of -07 Do not compromise -07

Approval by: HZ Date/Time: 11/10/09 PM Initials: ____

Analytical Report

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

ORELAP#: OR100021

November 23, 2009

Pat Heins
CH2M-Hill
2020 SW 4th Suite 300
Portland, OR 97201

RE: NW Pipe Project

Enclosed are the results of analyses for samples received by the laboratory on 11/09/09 13:30. The following list is a summary of the Work Orders contained in this report, generated on 11/23/09 16:51.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
PSK0253	NW Pipe Project	358932.RI.06

TestAmerica Portland

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DS005-110709	PSK0253-01	Water	11/07/09 12:30	11/09/09 13:30
DS012-110709	PSK0253-02	Water	11/07/09 13:00	11/09/09 13:30
DS017--110709	PSK0253-03	Water	11/07/09 13:30	11/09/09 13:30
DS006--110709	PSK0253-04	Water	11/07/09 13:40	11/09/09 13:30
DS224--110709	PSK0253-05	Water	11/07/09 13:50	11/09/09 13:30
DS225--110709	PSK0253-06	Water	11/07/09 14:10	11/09/09 13:30
DS120-110709	PSK0253-07	Water	11/07/09 14:45	11/09/09 13:30
DS120-110709-1	PSK0253-08	Water	11/07/09 14:45	11/09/09 13:30
DS117--110709	PSK0253-09	Water	11/07/09 15:00	11/09/09 13:30
DS223-110709	PSK0253-10	Water	11/07/09 15:30	11/09/09 13:30
DS221-110709	PSK0253-11	Water	11/07/09 16:00	11/09/09 13:30
Trip Blank	PSK0253-12	Water	11/07/09 00:00	11/09/09 13:30

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Darrell W. Auvil

Darrell Auvil, Project Manager

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Total Metals per EPA 6000/7000 Series Methods

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**			**Sampled: 11/07/09 12:30**				
Aluminum	EPA 6010B	ND	*0.0150*	0.100	mg/l	1x	9110349	11/11/09 08:13	11/11/09 13:48	
Antimony	"	ND	*0.00600*	0.100	"	"	"	"	"	
Arsenic	"	**0.00347**	*0.00300*	0.0500	"	"	"	"	"	**J**
Cadmium	"	ND	*0.000300*	0.0100	"	"	"	"	"	
Chromium	"	ND	*0.00100*	0.0100	"	"	"	"	"	
Copper	"	ND	*0.00200*	0.0100	"	"	"	"	"	
Lead	"	ND	*0.00700*	0.0500	"	"	"	"	"	
Nickel	"	ND	*0.00100*	0.0500	"	"	"	"	"	
Selenium	"	ND	*0.00800*	0.0500	"	"	"	"	"	
Silver	"	ND	*0.00300*	0.0200	"	"	"	"	"	
Zinc	"	**0.0782**	*0.00200*	0.0200	"	"	"	"	"	
PSK0253-02 (DS012-110709)			**Water**			**Sampled: 11/07/09 13:00**				
Aluminum	EPA 6010B	ND	*0.0150*	0.100	mg/l	1x	9110349	11/11/09 08:13	11/11/09 13:54	
Antimony	"	ND	*0.00600*	0.100	"	"	"	"	"	
Arsenic	"	ND	*0.00300*	0.0500	"	"	"	"	"	
Cadmium	"	ND	*0.000300*	0.0100	"	"	"	"	"	
Chromium	"	ND	*0.00100*	0.0100	"	"	"	"	"	
Copper	"	ND	*0.00200*	0.0100	"	"	"	"	"	
Lead	"	ND	*0.00700*	0.0500	"	"	"	"	"	
Nickel	"	ND	*0.00100*	0.0500	"	"	"	"	"	
Selenium	"	ND	*0.00800*	0.0500	"	"	"	"	"	
Silver	"	ND	*0.00300*	0.0200	"	"	"	"	"	
Zinc	"	**0.0617**	*0.00200*	0.0200	"	"	"	"	"	
PSK0253-03 (DS017--110709)			**Water**			**Sampled: 11/07/09 13:30**				
Zinc	EPA 6010B	**0.0198**	*0.00200*	0.0200	mg/l	1x	9110349	11/11/09 08:13	11/11/09 14:13	**J**
PSK0253-04 (DS006--110709)			**Water**			**Sampled: 11/07/09 13:40**				
Zinc	EPA 6010B	**0.0908**	*0.00200*	0.0200	mg/l	1x	9110349	11/11/09 08:13	11/11/09 14:19	

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Total Metals per EPA 6000/7000 Series Methods

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-05 (DS224--110709)			**Water**			**Sampled: 11/07/09 13:50**				
Zinc	EPA 6010B	**0.382**	*0.00200*	0.0200	mg/l	1x	9110349	11/11/09 08:13	11/11/09 14:38	
PSK0253-06 (DS225--110709)			**Water**			**Sampled: 11/07/09 14:10**				
Zinc	EPA 6010B	**0.870**	*0.00200*	0.0200	mg/l	1x	9110349	11/11/09 08:13	11/11/09 14:44	
PSK0253-07 (DS120-110709)			**Water**			**Sampled: 11/07/09 14:45**				
Aluminum	EPA 6010B	ND	*0.0150*	0.100	mg/l	1x	9110349	11/11/09 08:13	11/11/09 14:50	
Antimony	"	ND	*0.00600*	0.100	"	"	"	"	"	
Arsenic	"	ND	*0.00300*	0.0500	"	"	"	"	"	
Cadmium	"	ND	*0.000300*	0.0100	"	"	"	"	"	
Chromium	"	ND	*0.00100*	0.0100	"	"	"	"	"	
Copper	"	ND	*0.00200*	0.0100	"	"	"	"	"	
Lead	"	ND	*0.00700*	0.0500	"	"	"	"	"	
Nickel	"	ND	*0.00100*	0.0500	"	"	"	"	"	
Selenium	"	ND	*0.00800*	0.0500	"	"	"	"	"	
Silver	"	ND	*0.00300*	0.0200	"	"	"	"	"	
Zinc	"	**0.0542**	*0.00200*	0.0200	"	"	"	"	"	
PSK0253-08 (DS120-110709-1)			**Water**			**Sampled: 11/07/09 14:45**				
Aluminum	EPA 6010B	ND	*0.0150*	0.100	mg/l	1x	9110349	11/11/09 08:13	11/11/09 14:57	
Antimony	"	ND	*0.00600*	0.100	"	"	"	"	"	
Arsenic	"	**0.00491**	*0.00300*	0.0500	"	"	"	"	"	**J**
Cadmium	"	ND	*0.000300*	0.0100	"	"	"	"	"	
Chromium	"	ND	*0.00100*	0.0100	"	"	"	"	"	
Copper	"	ND	*0.00200*	0.0100	"	"	"	"	"	
Lead	"	ND	*0.00700*	0.0500	"	"	"	"	"	
Nickel	"	ND	*0.00100*	0.0500	"	"	"	"	"	
Selenium	"	ND	*0.00800*	0.0500	"	"	"	"	"	
Silver	"	ND	*0.00300*	0.0200	"	"	"	"	"	
Zinc	"	**0.0557**	*0.00200*	0.0200	"	"	"	"	"	

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Total Metals per EPA 6000/7000 Series Methods

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-09 (DS117--110709)			**Water**			**Sampled: 11/07/09 15:00**				
Zinc	EPA 6010B	**0.818**	*0.00200*	0.0200	mg/l	1x	9110349	11/11/09 08:13	11/11/09 15:03	
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Aluminum	EPA 6010B	ND	*0.0150*	0.100	mg/l	1x	9110349	11/11/09 08:13	11/11/09 15:15	
Antimony	"	ND	*0.00600*	0.100	"	"	"	"	"	
Arsenic	"	**0.00604**	*0.00300*	0.0500	"	"	"	"	"	**J**
Cadmium	"	ND	*0.000300*	0.0100	"	"	"	"	"	
Chromium	"	**0.00107**	*0.00100*	0.0100	"	"	"	"	"	**J**
Copper	"	ND	*0.00200*	0.0100	"	"	"	"	"	
Lead	"	ND	*0.00700*	0.0500	"	"	"	"	"	
Nickel	"	ND	*0.00100*	0.0500	"	"	"	"	"	
Selenium	"	ND	*0.00800*	0.0500	"	"	"	"	"	
Silver	"	ND	*0.00300*	0.0200	"	"	"	"	"	
Zinc	"	**0.983**	*0.00200*	0.0200	"	"	"	"	"	
PSK0253-11 (DS221-110709)			**Water**			**Sampled: 11/07/09 16:00**				
Aluminum	EPA 6010B	**0.0209**	*0.0150*	0.100	mg/l	1x	9110349	11/11/09 08:13	11/11/09 15:22	**J**
Antimony	"	ND	*0.00600*	0.100	"	"	"	"	"	
Arsenic	"	ND	*0.00300*	0.0500	"	"	"	"	"	
Cadmium	"	ND	*0.000300*	0.0100	"	"	"	"	"	
Chromium	"	ND	*0.00100*	0.0100	"	"	"	"	"	
Copper	"	**0.00211**	*0.00200*	0.0100	"	"	"	"	"	**J**
Lead	"	ND	*0.00700*	0.0500	"	"	"	"	"	
Nickel	"	ND	*0.00100*	0.0500	"	"	"	"	"	
Selenium	"	ND	*0.00800*	0.0500	"	"	"	"	"	
Silver	"	ND	*0.00300*	0.0200	"	"	"	"	"	
Zinc	"	**0.0171**	*0.00200*	0.0200	"	"	"	"	"	**J**

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Total Mercury per EPA Method 7470A

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**			**Sampled: 11/07/09 12:30**				
Mercury	EPA 7470A	ND	*0.0000590*	0.000200	mg/l	1x	9110417	11/12/09 13:07	11/13/09 09:14	
PSK0253-02 (DS012-110709)			**Water**			**Sampled: 11/07/09 13:00**				
Mercury	EPA 7470A	ND	*0.0000590*	0.000200	mg/l	1x	9110417	11/12/09 13:07	11/13/09 09:16	
PSK0253-07 (DS120-110709)			**Water**			**Sampled: 11/07/09 14:45**				
Mercury	EPA 7470A	ND	*0.0000590*	0.000200	mg/l	1x	9110417	11/12/09 13:07	11/13/09 09:19	
PSK0253-08 (DS120-110709-1)			**Water**			**Sampled: 11/07/09 14:45**				
Mercury	EPA 7470A	ND	*0.0000590*	0.000200	mg/l	1x	9110417	11/12/09 13:07	11/13/09 09:21	
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Mercury	EPA 7470A	ND	*0.0000590*	0.000200	mg/l	1x	9110417	11/12/09 13:07	11/13/09 10:04	
PSK0253-11 (DS221-110709)			**Water**			**Sampled: 11/07/09 16:00**				
Mercury	EPA 7470A	ND	*0.0000590*	0.000200	mg/l	1x	9110417	11/12/09 13:07	11/13/09 10:06	

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CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polychlorinated Biphenyls per EPA Method 8082

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**			**Sampled: 11/07/09 12:30**				
Aroclor 1016	EPA 8082	ND	*0.0476*	0.0952	ug/l	1x	9110339	11/11/09 11:10	11/18/09 13:23	
Aroclor 1221	"	ND	*0.0952*	0.190	"	"	"	"	"	
Aroclor 1232	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1242	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1248	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1254	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1260	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1262	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1268	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): Decachlorobiphenyl			*41.6%*			*12 - 130 %*				"
PSK0253-02 (DS012-110709)			**Water**			**Sampled: 11/07/09 13:00**				
Aroclor 1016	EPA 8082	ND	*0.0476*	0.0952	ug/l	1x	9110339	11/11/09 11:10	11/18/09 13:45	
Aroclor 1221	"	ND	*0.0952*	0.190	"	"	"	"	"	
Aroclor 1232	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1242	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1248	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1254	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1260	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1262	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1268	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): Decachlorobiphenyl			*42.8%*			*12 - 130 %*				"
PSK0253-07 (DS120-110709)			**Water**			**Sampled: 11/07/09 14:45**				
Aroclor 1016	EPA 8082	ND	*0.0476*	0.0952	ug/l	1x	9110339	11/11/09 11:10	11/18/09 14:07	
Aroclor 1221	"	ND	*0.0952*	0.190	"	"	"	"	"	
Aroclor 1232	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1242	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1248	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1254	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1260	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1262	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1268	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): Decachlorobiphenyl			*53.8%*			*12 - 130 %*				"

TestAmerica Portland

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polychlorinated Biphenyls per EPA Method 8082

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Aroclor 1016	EPA 8082	ND	*0.0476*	0.0952	ug/l	1x	9110339	11/11/09 11:10	11/18/09 14:29	
Aroclor 1221	"	ND	*0.0952*	0.190	"	"	"	"	"	
Aroclor 1232	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1242	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1248	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1254	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1260	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1262	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1268	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): Decachlorobiphenyl			*61.6%*			*12 - 130 %*				"
PSK0253-11 (DS221-110709)			**Water**			**Sampled: 11/07/09 16:00**				
Aroclor 1016	EPA 8082	ND	*0.0476*	0.0952	ug/l	1x	9110339	11/11/09 11:10	11/18/09 14:51	
Aroclor 1221	"	ND	*0.0952*	0.190	"	"	"	"	"	
Aroclor 1232	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1242	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1248	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1254	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1260	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1262	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Aroclor 1268	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): Decachlorobiphenyl			*57.3%*			*12 - 130 %*				"

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**			**Sampled: 11/07/09 12:30**				
Acetone	EPA 8260B	**10.0**	*7.76*	25.0	ug/l	1x	9110497	11/15/09 15:30	11/15/09 21:00	**J**
Benzene	"	ND	*0.0900*	0.200	"	"	"	"	"	
Bromobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromochloromethane	"	ND	*0.180*	1.00	"	"	"	"	"	
Bromodichloromethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Bromoform	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromomethane	"	ND	*0.170*	5.00	"	"	"	"	"	
2-Butanone (MEK)	"	**3.56**	*3.50*	10.0	"	"	"	"	"	**J**
n-Butylbenzene	"	ND	*0.0600*	5.00	"	"	"	"	"	
sec-Butylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
tert-Butylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Carbon disulfide	"	ND	*0.140*	10.0	"	"	"	"	"	
Carbon tetrachloride	"	ND	*0.0600*	1.00	"	"	"	"	"	
Chlorobenzene	"	ND	*0.0500*	1.00	"	"	"	"	"	
Chloroethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Chloroform	"	ND	*0.0900*	0.200	"	"	"	"	"	
Chloromethane	"	ND	*0.0800*	5.00	"	"	"	"	"	
2-Chlorotoluene	"	ND	*0.0700*	1.00	"	"	"	"	"	
4-Chlorotoluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	"	ND	*2.35*	5.00	"	"	"	"	"	
Dibromochloromethane	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,2-Dibromoethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Dibromomethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichlorobenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,3-Dichlorobenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,4-Dichlorobenzene	"	ND	*0.120*	1.00	"	"	"	"	"	
Dichlorodifluoromethane	"	ND	*0.110*	5.00	"	"	"	"	"	
1,1-Dichloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,2-Dichloroethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,1-Dichloroethene	"	ND	*0.120*	1.00	"	"	"	"	"	
cis-1,2-Dichloroethene	"	ND	*0.0900*	1.00	"	"	"	"	"	
trans-1,2-Dichloroethene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichloropropane	"	ND	*0.110*	1.00	"	"	"	"	"	
1,3-Dichloropropane	"	ND	*0.140*	1.00	"	"	"	"	"	
2,2-Dichloropropane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1-Dichloropropene	"	ND	*0.0800*	1.00	"	"	"	"	"	

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**				**Sampled: 11/07/09 12:30**			
cis-1,3-Dichloropropene	EPA 8260B	ND	*0.0900*	1.00	ug/l	1x	9110497	11/15/09 15:30	11/15/09 21:00	
trans-1,3-Dichloropropene	"	ND	*0.100*	1.00	"	"	"	"	"	
Ethylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Hexachlorobutadiene	"	ND	*0.210*	4.00	"	"	"	"	"	
2-Hexanone	"	ND	*3.62*	10.0	"	"	"	"	"	
Isopropylbenzene	"	ND	*0.0700*	2.00	"	"	"	"	"	
p-Isopropyltoluene	"	ND	*0.0600*	2.00	"	"	"	"	"	
4-Methyl-2-pentanone	"	ND	*0.290*	5.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	*0.0900*	1.00	"	"	"	"	"	
Methylene chloride	"	ND	*0.160*	5.00	"	"	"	"	"	
Naphthalene	"	ND	*0.0900*	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Styrene	"	ND	*0.0400*	1.00	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
Tetrachloroethene	"	ND	*0.110*	1.00	"	"	"	"	"	
Toluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2,3-Trichlorobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2,4-Trichlorobenzene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,1,1-Trichloroethane	"	ND	*0.120*	1.00	"	"	"	"	"	
1,1,2-Trichloroethane	"	ND	*0.130*	1.00	"	"	"	"	"	
Trichloroethene	"	ND	*0.0800*	1.00	"	"	"	"	"	
Trichlorofluoromethane	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,2,3-Trichloropropane	"	ND	*0.130*	1.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
Vinyl chloride	"	ND	*0.100*	1.00	"	"	"	"	"	
o-Xylene	"	ND	*0.0700*	1.00	"	"	"	"	"	
m,p-Xylene	"	ND	*0.210*	2.00	"	"	"	"	"	

Surrogate(s):	*Dibromofluoromethane*	*101%*	*80 - 120 %*	"
	1,2-DCA-d4	*104%*	*80 - 120 %*	"
	Toluene-d8	*99.8%*	*80 - 120 %*	"
	4-BFB	*107%*	*80 - 120 %*	"

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Darrell Auvil, Project Manager

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-02 (DS012-110709)			Water			Sampled: 11/07/09 13:00				
Acetone	EPA 8260B	**10.6**	*7.76*	25.0	ug/l	1x	9110497	11/15/09 15:30	11/15/09 22:58	**J**
Benzene	"	ND	*0.0900*	0.200	"	"	"	"	"	
Bromobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromochloromethane	"	ND	*0.180*	1.00	"	"	"	"	"	
Bromodichloromethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Bromoform	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromomethane	"	ND	*0.170*	5.00	"	"	"	"	"	
2-Butanone (MEK)	"	**19.7**	*3.50*	10.0	"	"	"	"	"	
n-Butylbenzene	"	ND	*0.0600*	5.00	"	"	"	"	"	
sec-Butylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
tert-Butylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Carbon disulfide	"	ND	*0.140*	10.0	"	"	"	"	"	
Carbon tetrachloride	"	ND	*0.0600*	1.00	"	"	"	"	"	
Chlorobenzene	"	ND	*0.0500*	1.00	"	"	"	"	"	
Chloroethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Chloroform	"	ND	*0.0900*	0.200	"	"	"	"	"	
Chloromethane	"	ND	*0.0800*	5.00	"	"	"	"	"	
2-Chlorotoluene	"	ND	*0.0700*	1.00	"	"	"	"	"	
4-Chlorotoluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	"	ND	*2.35*	5.00	"	"	"	"	"	
Dibromochloromethane	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,2-Dibromoethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Dibromomethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichlorobenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,3-Dichlorobenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,4-Dichlorobenzene	"	ND	*0.120*	1.00	"	"	"	"	"	
Dichlorodifluoromethane	"	ND	*0.110*	5.00	"	"	"	"	"	
1,1-Dichloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,2-Dichloroethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,1-Dichloroethene	"	ND	*0.120*	1.00	"	"	"	"	"	
cis-1,2-Dichloroethene	"	ND	*0.0900*	1.00	"	"	"	"	"	
trans-1,2-Dichloroethene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichloropropane	"	ND	*0.110*	1.00	"	"	"	"	"	
1,3-Dichloropropane	"	ND	*0.140*	1.00	"	"	"	"	"	
2,2-Dichloropropane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1-Dichloropropene	"	ND	*0.0800*	1.00	"	"	"	"	"	

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-02 (DS012-110709)			**Water**			**Sampled: 11/07/09 13:00**				
cis-1,3-Dichloropropene	EPA 8260B	ND	*0.0900*	1.00	ug/l	1x	9110497	11/15/09 15:30	11/15/09 22:58	
trans-1,3-Dichloropropene	"	ND	*0.100*	1.00	"	"	"	"	"	
Ethylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Hexachlorobutadiene	"	ND	*0.210*	4.00	"	"	"	"	"	
2-Hexanone	"	ND	*3.62*	10.0	"	"	"	"	"	
Isopropylbenzene	"	ND	*0.0700*	2.00	"	"	"	"	"	
p-Isopropyltoluene	"	ND	*0.0600*	2.00	"	"	"	"	"	
4-Methyl-2-pentanone	"	ND	*0.290*	5.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	*0.0900*	1.00	"	"	"	"	"	
Methylene chloride	"	ND	*0.160*	5.00	"	"	"	"	"	
Naphthalene	"	ND	*0.0900*	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Styrene	"	ND	*0.0400*	1.00	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
Tetrachloroethene	"	ND	*0.110*	1.00	"	"	"	"	"	
Toluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2,3-Trichlorobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2,4-Trichlorobenzene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,1,1-Trichloroethane	"	ND	*0.120*	1.00	"	"	"	"	"	
1,1,2-Trichloroethane	"	ND	*0.130*	1.00	"	"	"	"	"	
Trichloroethene	"	ND	*0.0800*	1.00	"	"	"	"	"	
Trichlorofluoromethane	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,2,3-Trichloropropane	"	ND	*0.130*	1.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
Vinyl chloride	"	ND	*0.100*	1.00	"	"	"	"	"	
o-Xylene	"	ND	*0.0700*	1.00	"	"	"	"	"	
m,p-Xylene	"	ND	*0.210*	2.00	"	"	"	"	"	

Surrogate(s):	*Dibromofluoromethane*	*99.8%*	*80 - 120 %*	"
	1,2-DCA-d4	*102%*	*80 - 120 %*	"
	Toluene-d8	*97.8%*	*80 - 120 %*	"
	4-BFB	*107%*	*80 - 120 %*	"

TestAmerica Portland

Darrell Auvil, Project Manager

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-07 (DS120-110709)			**Water**			**Sampled: 11/07/09 14:45**				
Acetone	EPA 8260B	**16.2**	*7.76*	25.0	ug/l	1x	9110497	11/15/09 15:30	11/15/09 21:24	**J**
Benzene	"	ND	*0.0900*	0.200	"	"	"	"	"	
Bromobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromochloromethane	"	ND	*0.180*	1.00	"	"	"	"	"	
Bromodichloromethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Bromoform	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromomethane	"	ND	*0.170*	5.00	"	"	"	"	"	
2-Butanone (MEK)	"	**27.1**	*3.50*	10.0	"	"	"	"	"	
n-Butylbenzene	"	ND	*0.0600*	5.00	"	"	"	"	"	
sec-Butylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
tert-Butylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Carbon disulfide	"	ND	*0.140*	10.0	"	"	"	"	"	
Carbon tetrachloride	"	ND	*0.0600*	1.00	"	"	"	"	"	
Chlorobenzene	"	ND	*0.0500*	1.00	"	"	"	"	"	
Chloroethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Chloroform	"	ND	*0.0900*	0.200	"	"	"	"	"	
Chloromethane	"	ND	*0.0800*	5.00	"	"	"	"	"	
2-Chlorotoluene	"	ND	*0.0700*	1.00	"	"	"	"	"	
4-Chlorotoluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	"	ND	*2.35*	5.00	"	"	"	"	"	
Dibromochloromethane	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,2-Dibromoethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Dibromomethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichlorobenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,3-Dichlorobenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,4-Dichlorobenzene	"	ND	*0.120*	1.00	"	"	"	"	"	
Dichlorodifluoromethane	"	ND	*0.110*	5.00	"	"	"	"	"	
1,1-Dichloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,2-Dichloroethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,1-Dichloroethene	"	ND	*0.120*	1.00	"	"	"	"	"	
cis-1,2-Dichloroethene	"	ND	*0.0900*	1.00	"	"	"	"	"	
trans-1,2-Dichloroethene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichloropropane	"	ND	*0.110*	1.00	"	"	"	"	"	
1,3-Dichloropropane	"	ND	*0.140*	1.00	"	"	"	"	"	
2,2-Dichloropropane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1-Dichloropropene	"	ND	*0.0800*	1.00	"	"	"	"	"	

TestAmerica Portland

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-07 (DS120-110709)			**Water**				**Sampled: 11/07/09 14:45**			
cis-1,3-Dichloropropene	EPA 8260B	ND	*0.0900*	1.00	ug/l	1x	9110497	11/15/09 15:30	11/15/09 21:24	
trans-1,3-Dichloropropene	"	ND	*0.100*	1.00	"	"	"	"	"	
Ethylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Hexachlorobutadiene	"	ND	*0.210*	4.00	"	"	"	"	"	
2-Hexanone	"	ND	*3.62*	10.0	"	"	"	"	"	
Isopropylbenzene	"	ND	*0.0700*	2.00	"	"	"	"	"	
p-Isopropyltoluene	"	ND	*0.0600*	2.00	"	"	"	"	"	
4-Methyl-2-pentanone	"	ND	*0.290*	5.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	*0.0900*	1.00	"	"	"	"	"	
Methylene chloride	"	ND	*0.160*	5.00	"	"	"	"	"	
Naphthalene	"	ND	*0.0900*	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Styrene	"	ND	*0.0400*	1.00	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
Tetrachloroethene	"	ND	*0.110*	1.00	"	"	"	"	"	
Toluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2,3-Trichlorobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2,4-Trichlorobenzene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,1,1-Trichloroethane	"	ND	*0.120*	1.00	"	"	"	"	"	
1,1,2-Trichloroethane	"	ND	*0.130*	1.00	"	"	"	"	"	
Trichloroethene	"	ND	*0.0800*	1.00	"	"	"	"	"	
Trichlorofluoromethane	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,2,3-Trichloropropane	"	ND	*0.130*	1.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
Vinyl chloride	"	ND	*0.100*	1.00	"	"	"	"	"	
o-Xylene	"	ND	*0.0700*	1.00	"	"	"	"	"	
m,p-Xylene	"	ND	*0.210*	2.00	"	"	"	"	"	

Surrogate(s):	*Dibromofluoromethane*	*101%*	*80 - 120 %*	"
	1,2-DCA-d4	*103%*	*80 - 120 %*	"
	Toluene-d8	*99.6%*	*80 - 120 %*	"
	4-BFB	*110%*	*80 - 120 %*	"

TestAmerica Portland

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-08 (DS120-110709-1)			**Water**			**Sampled: 11/07/09 14:45**				
Acetone	EPA 8260B	**15.9**	*7.76*	25.0	ug/l	1x	9110497	11/15/09 15:30	11/15/09 21:47	**J**
Benzene	"	ND	*0.0900*	0.200	"	"	"	"	"	
Bromobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromochloromethane	"	ND	*0.180*	1.00	"	"	"	"	"	
Bromodichloromethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Bromoform	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromomethane	"	ND	*0.170*	5.00	"	"	"	"	"	
2-Butanone (MEK)	"	**52.0**	*3.50*	10.0	"	"	"	"	"	
n-Butylbenzene	"	ND	*0.0600*	5.00	"	"	"	"	"	
sec-Butylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
tert-Butylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Carbon disulfide	"	ND	*0.140*	10.0	"	"	"	"	"	
Carbon tetrachloride	"	ND	*0.0600*	1.00	"	"	"	"	"	
Chlorobenzene	"	ND	*0.0500*	1.00	"	"	"	"	"	
Chloroethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Chloroform	"	ND	*0.0900*	0.200	"	"	"	"	"	
Chloromethane	"	ND	*0.0800*	5.00	"	"	"	"	"	
2-Chlorotoluene	"	ND	*0.0700*	1.00	"	"	"	"	"	
4-Chlorotoluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	"	ND	*2.35*	5.00	"	"	"	"	"	
Dibromochloromethane	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,2-Dibromoethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Dibromomethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichlorobenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,3-Dichlorobenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,4-Dichlorobenzene	"	ND	*0.120*	1.00	"	"	"	"	"	
Dichlorodifluoromethane	"	ND	*0.110*	5.00	"	"	"	"	"	
1,1-Dichloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,2-Dichloroethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,1-Dichloroethene	"	ND	*0.120*	1.00	"	"	"	"	"	
cis-1,2-Dichloroethene	"	ND	*0.0900*	1.00	"	"	"	"	"	
trans-1,2-Dichloroethene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichloropropane	"	ND	*0.110*	1.00	"	"	"	"	"	
1,3-Dichloropropane	"	ND	*0.140*	1.00	"	"	"	"	"	
2,2-Dichloropropane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1-Dichloropropene	"	ND	*0.0800*	1.00	"	"	"	"	"	

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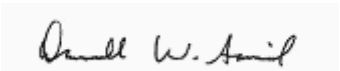

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-08 (DS120-110709-1)			**Water**			**Sampled: 11/07/09 14:45**				
cis-1,3-Dichloropropene	EPA 8260B	ND	*0.0900*	1.00	ug/l	1x	9110497	11/15/09 15:30	11/15/09 21:47	
trans-1,3-Dichloropropene	"	ND	*0.100*	1.00	"	"	"	"	"	
Ethylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Hexachlorobutadiene	"	ND	*0.210*	4.00	"	"	"	"	"	
2-Hexanone	"	ND	*3.62*	10.0	"	"	"	"	"	
Isopropylbenzene	"	ND	*0.0700*	2.00	"	"	"	"	"	
p-Isopropyltoluene	"	ND	*0.0600*	2.00	"	"	"	"	"	
4-Methyl-2-pentanone	"	ND	*0.290*	5.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	*0.0900*	1.00	"	"	"	"	"	
Methylene chloride	"	ND	*0.160*	5.00	"	"	"	"	"	
Naphthalene	"	ND	*0.0900*	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Styrene	"	ND	*0.0400*	1.00	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
Tetrachloroethene	"	ND	*0.110*	1.00	"	"	"	"	"	
Toluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2,3-Trichlorobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2,4-Trichlorobenzene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,1,1-Trichloroethane	"	ND	*0.120*	1.00	"	"	"	"	"	
1,1,2-Trichloroethane	"	ND	*0.130*	1.00	"	"	"	"	"	
Trichloroethene	"	ND	*0.0800*	1.00	"	"	"	"	"	
Trichlorofluoromethane	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,2,3-Trichloropropane	"	ND	*0.130*	1.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
Vinyl chloride	"	ND	*0.100*	1.00	"	"	"	"	"	
o-Xylene	"	ND	*0.0700*	1.00	"	"	"	"	"	
m,p-Xylene	"	ND	*0.210*	2.00	"	"	"	"	"	

Surrogate(s):	*Dibromofluoromethane*	*101%*	*80 - 120 %*	"
	1,2-DCA-d4	*102%*	*80 - 120 %*	"
	Toluene-d8	*98.6%*	*80 - 120 %*	"
	4-BFB	*106%*	*80 - 120 %*	"

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Acetone	EPA 8260B	**9.74**	*7.76*	25.0	ug/l	1x	9110497	11/15/09 15:30	11/15/09 22:11	**J**
Benzene	"	ND	*0.0900*	0.200	"	"	"	"	"	
Bromobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromochloromethane	"	ND	*0.180*	1.00	"	"	"	"	"	
Bromodichloromethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Bromoform	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromomethane	"	ND	*0.170*	5.00	"	"	"	"	"	
2-Butanone (MEK)	"	**5.72**	*3.50*	10.0	"	"	"	"	"	**J**
n-Butylbenzene	"	ND	*0.0600*	5.00	"	"	"	"	"	
sec-Butylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
tert-Butylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Carbon disulfide	"	ND	*0.140*	10.0	"	"	"	"	"	
Carbon tetrachloride	"	ND	*0.0600*	1.00	"	"	"	"	"	
Chlorobenzene	"	ND	*0.0500*	1.00	"	"	"	"	"	
Chloroethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Chloroform	"	ND	*0.0900*	0.200	"	"	"	"	"	
Chloromethane	"	ND	*0.0800*	5.00	"	"	"	"	"	
2-Chlorotoluene	"	ND	*0.0700*	1.00	"	"	"	"	"	
4-Chlorotoluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	"	ND	*2.35*	5.00	"	"	"	"	"	
Dibromochloromethane	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,2-Dibromoethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Dibromomethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichlorobenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,3-Dichlorobenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,4-Dichlorobenzene	"	ND	*0.120*	1.00	"	"	"	"	"	
Dichlorodifluoromethane	"	ND	*0.110*	5.00	"	"	"	"	"	
1,1-Dichloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,2-Dichloroethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,1-Dichloroethene	"	ND	*0.120*	1.00	"	"	"	"	"	
cis-1,2-Dichloroethene	"	ND	*0.0900*	1.00	"	"	"	"	"	
trans-1,2-Dichloroethene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichloropropane	"	ND	*0.110*	1.00	"	"	"	"	"	
1,3-Dichloropropane	"	ND	*0.140*	1.00	"	"	"	"	"	
2,2-Dichloropropane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1-Dichloropropene	"	ND	*0.0800*	1.00	"	"	"	"	"	

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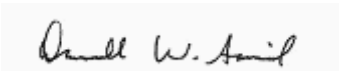

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-10 (DS223-110709)			**Water**				**Sampled: 11/07/09 15:30**			
cis-1,3-Dichloropropene	EPA 8260B	ND	*0.0900*	1.00	ug/l	1x	9110497	11/15/09 15:30	11/15/09 22:11	
trans-1,3-Dichloropropene	"	ND	*0.100*	1.00	"	"	"	"	"	
Ethylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Hexachlorobutadiene	"	ND	*0.210*	4.00	"	"	"	"	"	
2-Hexanone	"	ND	*3.62*	10.0	"	"	"	"	"	
Isopropylbenzene	"	ND	*0.0700*	2.00	"	"	"	"	"	
p-Isopropyltoluene	"	ND	*0.0600*	2.00	"	"	"	"	"	
4-Methyl-2-pentanone	"	ND	*0.290*	5.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	*0.0900*	1.00	"	"	"	"	"	
Methylene chloride	"	ND	*0.160*	5.00	"	"	"	"	"	
Naphthalene	"	ND	*0.0900*	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Styrene	"	ND	*0.0400*	1.00	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
Tetrachloroethene	"	ND	*0.110*	1.00	"	"	"	"	"	
Toluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2,3-Trichlorobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2,4-Trichlorobenzene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,1,1-Trichloroethane	"	ND	*0.120*	1.00	"	"	"	"	"	
1,1,2-Trichloroethane	"	ND	*0.130*	1.00	"	"	"	"	"	
Trichloroethene	"	ND	*0.0800*	1.00	"	"	"	"	"	
Trichlorofluoromethane	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,2,3-Trichloropropane	"	ND	*0.130*	1.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
Vinyl chloride	"	ND	*0.100*	1.00	"	"	"	"	"	
o-Xylene	"	ND	*0.0700*	1.00	"	"	"	"	"	
m,p-Xylene	"	ND	*0.210*	2.00	"	"	"	"	"	
Surrogate(s):	*Dibromofluoromethane*		*99.7%*		*80 - 120 %*					*"*
	1,2-DCA-d4		*103%*		*80 - 120 %*					*"*
	Toluene-d8		*98.2%*		*80 - 120 %*					*"*
	4-BFB		*106%*		*80 - 120 %*					*"*

TestAmerica Portland

Darrell Auvil, Project Manager

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-11 (DS221-110709)			**Water**			**Sampled: 11/07/09 16:00**				
Acetone	EPA 8260B	**10.6**	*7.76*	25.0	ug/l	1x	9110497	11/15/09 15:30	11/15/09 22:34	**J**
Benzene	"	ND	*0.0900*	0.200	"	"	"	"	"	
Bromobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromochloromethane	"	ND	*0.180*	1.00	"	"	"	"	"	
Bromodichloromethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Bromoform	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromomethane	"	ND	*0.170*	5.00	"	"	"	"	"	
2-Butanone (MEK)	"	ND	*3.50*	10.0	"	"	"	"	"	
n-Butylbenzene	"	ND	*0.0600*	5.00	"	"	"	"	"	
sec-Butylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
tert-Butylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Carbon disulfide	"	ND	*0.140*	10.0	"	"	"	"	"	
Carbon tetrachloride	"	ND	*0.0600*	1.00	"	"	"	"	"	
Chlorobenzene	"	ND	*0.0500*	1.00	"	"	"	"	"	
Chloroethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Chloroform	"	ND	*0.0900*	0.200	"	"	"	"	"	
Chloromethane	"	ND	*0.0800*	5.00	"	"	"	"	"	
2-Chlorotoluene	"	ND	*0.0700*	1.00	"	"	"	"	"	
4-Chlorotoluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	"	ND	*2.35*	5.00	"	"	"	"	"	
Dibromochloromethane	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,2-Dibromoethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Dibromomethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichlorobenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,3-Dichlorobenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,4-Dichlorobenzene	"	ND	*0.120*	1.00	"	"	"	"	"	
Dichlorodifluoromethane	"	ND	*0.110*	5.00	"	"	"	"	"	
1,1-Dichloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,2-Dichloroethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,1-Dichloroethene	"	ND	*0.120*	1.00	"	"	"	"	"	
cis-1,2-Dichloroethene	"	ND	*0.0900*	1.00	"	"	"	"	"	
trans-1,2-Dichloroethene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichloropropane	"	ND	*0.110*	1.00	"	"	"	"	"	
1,3-Dichloropropane	"	ND	*0.140*	1.00	"	"	"	"	"	
2,2-Dichloropropane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1-Dichloropropene	"	ND	*0.0800*	1.00	"	"	"	"	"	

TestAmerica Portland

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-11 (DS221-110709)			**Water**			**Sampled: 11/07/09 16:00**				
cis-1,3-Dichloropropene	EPA 8260B	ND	*0.0900*	1.00	ug/l	1x	9110497	11/15/09 15:30	11/15/09 22:34	
trans-1,3-Dichloropropene	"	ND	*0.100*	1.00	"	"	"	"	"	
Ethylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Hexachlorobutadiene	"	ND	*0.210*	4.00	"	"	"	"	"	
2-Hexanone	"	ND	*3.62*	10.0	"	"	"	"	"	
Isopropylbenzene	"	ND	*0.0700*	2.00	"	"	"	"	"	
p-Isopropyltoluene	"	ND	*0.0600*	2.00	"	"	"	"	"	
4-Methyl-2-pentanone	"	ND	*0.290*	5.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	*0.0900*	1.00	"	"	"	"	"	
Methylene chloride	"	ND	*0.160*	5.00	"	"	"	"	"	
Naphthalene	"	ND	*0.0900*	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Styrene	"	ND	*0.0400*	1.00	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
Tetrachloroethene	"	ND	*0.110*	1.00	"	"	"	"	"	
Toluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2,3-Trichlorobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2,4-Trichlorobenzene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,1,1-Trichloroethane	"	ND	*0.120*	1.00	"	"	"	"	"	
1,1,2-Trichloroethane	"	ND	*0.130*	1.00	"	"	"	"	"	
Trichloroethene	"	ND	*0.0800*	1.00	"	"	"	"	"	
Trichlorofluoromethane	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,2,3-Trichloropropane	"	ND	*0.130*	1.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
Vinyl chloride	"	ND	*0.100*	1.00	"	"	"	"	"	
o-Xylene	"	ND	*0.0700*	1.00	"	"	"	"	"	
m,p-Xylene	"	ND	*0.210*	2.00	"	"	"	"	"	

Surrogate(s):	*Dibromofluoromethane*	*100%*	*80 - 120 %*	"
	1,2-DCA-d4	*103%*	*80 - 120 %*	"
	Toluene-d8	*101%*	*80 - 120 %*	"
	4-BFB	*106%*	*80 - 120 %*	"

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Darrell Auvil, Project Manager

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-12 (Trip Blank)			**Water**				**Sampled: 11/07/09 00:00**			
Acetone	EPA 8260B	ND	*7.76*	25.0	ug/l	1x	9110484	11/13/09 19:00	11/13/09 21:27	
Benzene	"	ND	*0.0900*	0.200	"	"	"	"	"	
Bromobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromochloromethane	"	ND	*0.180*	1.00	"	"	"	"	"	
Bromodichloromethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Bromoform	"	ND	*0.100*	1.00	"	"	"	"	"	
Bromomethane	"	ND	*0.170*	5.00	"	"	"	"	"	
2-Butanone (MEK)	"	ND	*3.50*	10.0	"	"	"	"	"	
n-Butylbenzene	"	ND	*0.0600*	5.00	"	"	"	"	"	
sec-Butylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
tert-Butylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Carbon disulfide	"	ND	*0.140*	10.0	"	"	"	"	"	
Carbon tetrachloride	"	ND	*0.0600*	1.00	"	"	"	"	"	
Chlorobenzene	"	ND	*0.0500*	1.00	"	"	"	"	"	
Chloroethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Chloroform	"	ND	*0.0900*	0.200	"	"	"	"	"	
Chloromethane	"	ND	*0.0800*	5.00	"	"	"	"	"	
2-Chlorotoluene	"	ND	*0.0700*	1.00	"	"	"	"	"	
4-Chlorotoluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	"	ND	*2.35*	5.00	"	"	"	"	"	
Dibromochloromethane	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,2-Dibromoethane	"	ND	*0.110*	1.00	"	"	"	"	"	
Dibromomethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichlorobenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
1,3-Dichlorobenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,4-Dichlorobenzene	"	ND	*0.120*	1.00	"	"	"	"	"	
Dichlorodifluoromethane	"	ND	*0.110*	5.00	"	"	"	"	"	
1,1-Dichloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,2-Dichloroethane	"	ND	*0.100*	1.00	"	"	"	"	"	
1,1-Dichloroethene	"	ND	*0.120*	1.00	"	"	"	"	"	
cis-1,2-Dichloroethene	"	ND	*0.0900*	1.00	"	"	"	"	"	
trans-1,2-Dichloroethene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2-Dichloropropane	"	ND	*0.110*	1.00	"	"	"	"	"	
1,3-Dichloropropane	"	ND	*0.140*	1.00	"	"	"	"	"	
2,2-Dichloropropane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1-Dichloropropene	"	ND	*0.0800*	1.00	"	"	"	"	"	

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CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-12 (Trip Blank)			**Water**			**Sampled: 11/07/09 00:00**				
cis-1,3-Dichloropropene	EPA 8260B	ND	*0.0900*	1.00	ug/l	1x	9110484	11/13/09 19:00	11/13/09 21:27	
trans-1,3-Dichloropropene	"	ND	*0.100*	1.00	"	"	"	"	"	
Ethylbenzene	"	ND	*0.0600*	1.00	"	"	"	"	"	
Hexachlorobutadiene	"	ND	*0.210*	4.00	"	"	"	"	"	
2-Hexanone	"	ND	*3.62*	10.0	"	"	"	"	"	
Isopropylbenzene	"	ND	*0.0700*	2.00	"	"	"	"	"	
p-Isopropyltoluene	"	ND	*0.0600*	2.00	"	"	"	"	"	
4-Methyl-2-pentanone	"	ND	*0.290*	5.00	"	"	"	"	"	
Methyl tert-butyl ether	"	ND	*0.0900*	1.00	"	"	"	"	"	
Methylene chloride	"	ND	*0.160*	5.00	"	"	"	"	"	
Naphthalene	"	ND	*0.0900*	2.00	"	"	"	"	"	
n-Propylbenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
Styrene	"	ND	*0.0400*	1.00	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	"	ND	*0.0900*	1.00	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	"	ND	*0.0800*	1.00	"	"	"	"	"	
Tetrachloroethene	"	ND	*0.110*	1.00	"	"	"	"	"	
Toluene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,2,3-Trichlorobenzene	"	ND	*0.100*	1.00	"	"	"	"	"	
1,2,4-Trichlorobenzene	"	ND	*0.110*	1.00	"	"	"	"	"	
1,1,1-Trichloroethane	"	ND	*0.120*	1.00	"	"	"	"	"	
1,1,2-Trichloroethane	"	ND	*0.130*	1.00	"	"	"	"	"	
Trichloroethene	"	ND	*0.0800*	1.00	"	"	"	"	"	
Trichlorofluoromethane	"	ND	*0.0600*	1.00	"	"	"	"	"	
1,2,3-Trichloropropane	"	ND	*0.130*	1.00	"	"	"	"	"	
1,2,4-Trimethylbenzene	"	ND	*0.0800*	1.00	"	"	"	"	"	
1,3,5-Trimethylbenzene	"	ND	*0.0700*	1.00	"	"	"	"	"	
Vinyl chloride	"	ND	*0.100*	1.00	"	"	"	"	"	
o-Xylene	"	ND	*0.0700*	1.00	"	"	"	"	"	
m,p-Xylene	"	ND	*0.210*	2.00	"	"	"	"	"	

Surrogate(s):	*Dibromofluoromethane*	*100%*	*80 - 120 %*	"
	1,2-DCA-d4	*104%*	*80 - 120 %*	"
	Toluene-d8	*100%*	*80 - 120 %*	"
	4-BFB	*108%*	*80 - 120 %*	"

TestAmerica Portland

Darrell Auvil, Project Manager

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**				**Sampled: 11/07/09 12:30**			
Acenaphthene	EPA 8270m	ND	*0.0476*	0.0952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 20:12	
Acenaphthylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (ghi) perylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Chrysene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	*0.0952*	0.190	"	"	"	"	"	
Fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Fluorene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Naphthalene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Phenanthrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): *Fluorene-d10*			*83.1%*			*25 - 125 %*				"
Pyrene-d10			*102%*			*23 - 150 %*				"
Benzo (a) pyrene-d12			*76.9%*			*10 - 125 %*				"
PSK0253-02 (DS012-110709)			**Water**				**Sampled: 11/07/09 13:00**			
Acenaphthene	EPA 8270m	ND	*0.0476*	0.0952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 20:41	
Acenaphthylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (ghi) perylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Chrysene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	*0.0952*	0.190	"	"	"	"	"	
Fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Fluorene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Naphthalene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Phenanthrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	

TestAmerica Portland

Darrell Auvil, Project Manager

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-02 (DS012-110709)			**Water**			**Sampled: 11/07/09 13:00**				
Pyrene	EPA 8270m	ND	*0.0476*	0.0952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 20:41	
Surrogate(s): Fluorene-d10			*99.9%*		*25 - 125 %*					"
Pyrene-d10			*113%*		*23 - 150 %*					"
Benzo (a) pyrene-d12			*88.9%*		*10 - 125 %*					"
PSK0253-07 (DS120-110709)			**Water**			**Sampled: 11/07/09 14:45**				
Acenaphthene	EPA 8270m	ND	*0.0476*	0.0952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 21:10	
Acenaphthylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (ghi) perylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Chrysene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	*0.0952*	0.190	"	"	"	"	"	
Fluoranthene	"	**0.103**	*0.0476*	0.0952	"	"	"	"	"	
Fluorene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Naphthalene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Phenanthrene	"	**0.182**	*0.0476*	0.0952	"	"	"	"	"	
Pyrene	"	**0.0590**	*0.0476*	0.0952	"	"	"	"	"	**J**
Surrogate(s): Fluorene-d10			*91.5%*		*25 - 125 %*					"
Pyrene-d10			*95.8%*		*23 - 150 %*					"
Benzo (a) pyrene-d12			*79.3%*		*10 - 125 %*					"
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Acenaphthene	EPA 8270m	ND	*0.0476*	0.0952	ug/l	1x	9110309	11/10/09 13:30	11/17/09 15:57	
Acenaphthylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (ghi) perylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Chrysene	"	ND	*0.0476*	0.0952	"	"	"	"	"	

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Dibenzo (a,h) anthracene	EPA 8270m	ND	*0.0952*	0.190	ug/l	1x	9110309	11/10/09 13:30	11/17/09 15:57	
Fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Fluorene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Naphthalene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Phenanthrene	"	**0.0561**	*0.0476*	0.0952	"	"	"	"	"	**J**
Pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): *Fluorene-d10*			*76.3%*		*25 - 125 %*				"	
Pyrene-d10			*110%*		*23 - 150 %*				"	
Benzo (a) pyrene-d12			*66.0%*		*10 - 125 %*				"	
PSK0253-11 (DS221-110709)			**Water**			**Sampled: 11/07/09 16:00**				
Acenaphthene	EPA 8270m	ND	*0.0476*	0.0952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 22:08	
Acenaphthylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) anthracene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (a) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (ghi) perylene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Chrysene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND	*0.0952*	0.190	"	"	"	"	"	
Fluoranthene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Fluorene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Naphthalene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Phenanthrene	"	**0.0949**	*0.0476*	0.0952	"	"	"	"	"	**J**
Pyrene	"	ND	*0.0476*	0.0952	"	"	"	"	"	
Surrogate(s): *Fluorene-d10*			*96.7%*		*25 - 125 %*				"	
Pyrene-d10			*105%*		*23 - 150 %*				"	
Benzo (a) pyrene-d12			*86.3%*		*10 - 125 %*				"	

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Phthalates per EPA 8270-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**			**Sampled: 11/07/09 12:30**				
Dimethyl phthalate	EPA 8270m	ND	*0.501*	0.952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 16:16	
Diethyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl			*76.5%*			*10 - 150 %*				"
p-Terphenyl-d14			*88.0%*			*10 - 150 %*				"
PSK0253-02 (DS012-110709)			**Water**			**Sampled: 11/07/09 13:00**				
Dimethyl phthalate	EPA 8270m	ND	*0.501*	0.952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 16:52	
Diethyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl			*74.0%*			*10 - 150 %*				"
p-Terphenyl-d14			*103%*			*10 - 150 %*				"
PSK0253-07 (DS120-110709)			**Water**			**Sampled: 11/07/09 14:45**				
Dimethyl phthalate	EPA 8270m	ND	*0.501*	0.952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 17:28	
Diethyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl			*90.7%*			*10 - 150 %*				"
p-Terphenyl-d14			*99.2%*			*10 - 150 %*				"
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Dimethyl phthalate	EPA 8270m	ND	*0.501*	0.952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 18:03	
Diethyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Phthalates per EPA 8270-SIM

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-10 (DS223-110709)				**Water**			**Sampled: 11/07/09 15:30**			
Surrogate(s): 2-Fluorobiphenyl				*93.2%*		*10 - 150 %*			*11/16/09 18:03*	
p-Terphenyl-d14				*103%*		*10 - 150 %*			*"*	
PSK0253-11 (DS221-110709)				**Water**			**Sampled: 11/07/09 16:00**			
Dimethyl phthalate	EPA 8270m	ND	*0.501*	0.952	ug/l	1x	9110309	11/10/09 13:30	11/16/09 18:39	
Diethyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Di-n-octyl phthalate	"	ND	*0.501*	0.952	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl				*70.8%*		*10 - 150 %*			*"*	
p-Terphenyl-d14				*103%*		*10 - 150 %*			*"*	

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Conventional Chemistry Parameters per Standard Methods

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PSK0253-01 (DS005-110709)			**Water**			**Sampled: 11/07/09 12:30**				
Total Suspended Solids	SM 2540D	ND	*3.50*	10.0	mg/l	1x	9110465	11/13/09 11:27	11/13/09 14:41	
PSK0253-02 (DS012-110709)			**Water**			**Sampled: 11/07/09 13:00**				
Total Suspended Solids	SM 2540D	ND	*3.50*	10.0	mg/l	1x	9110465	11/13/09 11:27	11/13/09 14:41	
PSK0253-07 (DS120-110709)			**Water**			**Sampled: 11/07/09 14:45**				
Total Suspended Solids	SM 2540D	ND	*3.50*	10.0	mg/l	1x	9110465	11/13/09 11:27	11/13/09 14:41	
PSK0253-08 (DS120-110709-1)			**Water**			**Sampled: 11/07/09 14:45**				
Total Suspended Solids	SM 2540D	ND	*3.50*	10.0	mg/l	1x	9110465	11/13/09 11:27	11/13/09 14:41	
PSK0253-10 (DS223-110709)			**Water**			**Sampled: 11/07/09 15:30**				
Total Suspended Solids	SM 2540D	ND	*3.50*	10.0	mg/l	1x	9110465	11/13/09 11:27	11/13/09 14:41	
PSK0253-11 (DS221-110709)			**Water**			**Sampled: 11/07/09 16:00**				
Total Suspended Solids	SM 2540D	ND	*3.50*	10.0	mg/l	1x	9110465	11/13/09 11:27	11/13/09 14:41	

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110349 **Water Preparation Method: EPA 200/3005**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110349-BLK1)								**Extracted: 11/11/09 08:13**						
Aluminum	EPA 6010B	ND	0.0150	0.100	mg/l	1x	--	--	--	--	--	--	11/11/09 13:14	
Antimony	"	ND	0.00600	0.100	"	"	--	--	--	--	--	--	"	
Arsenic	"	ND	0.00300	0.0500	"	"	--	--	--	--	--	--	"	
Cadmium	"	ND	0.000300	0.0100	"	"	--	--	--	--	--	--	"	
Chromium	"	ND	0.00100	0.0100	"	"	--	--	--	--	--	--	"	
Copper	"	ND	0.00200	0.0100	"	"	--	--	--	--	--	--	"	
Lead	"	ND	0.00700	0.0500	"	"	--	--	--	--	--	--	"	
Nickel	"	ND	0.00100	0.0500	"	"	--	--	--	--	--	--	"	
Selenium	"	ND	0.00800	0.0500	"	"	--	--	--	--	--	--	"	
Silver	"	ND	0.00300	0.0200	"	"	--	--	--	--	--	--	"	
Zinc	"	ND	0.00200	0.0200	"	"	--	--	--	--	--	--	"	
LCS (9110349-BS1)								**Extracted: 11/11/09 08:13**						
Aluminum	EPA 6010B	5.27	0.0150	0.100	mg/l	1x	--	5.00	105%	(85-115)	--	--	11/11/09 13:29	
Antimony	"	1.01	0.00600	0.100	"	"	--	1.00	101%	"	--	--	"	
Arsenic	"	0.994	0.00300	0.0500	"	"	--	"	99.4%	"	--	--	"	
Cadmium	"	0.508	0.000300	0.0100	"	"	--	0.500	102%	"	--	--	"	
Chromium	"	1.01	0.00100	0.0100	"	"	--	1.00	101%	"	--	--	"	
Copper	"	1.03	0.00200	0.0100	"	"	--	"	103%	"	--	--	"	
Lead	"	1.02	0.00700	0.0500	"	"	--	"	102%	"	--	--	"	
Nickel	"	1.02	0.00100	0.0500	"	"	--	"	102%	"	--	--	"	
Selenium	"	1.01	0.00800	0.0500	"	"	--	"	101%	"	--	--	"	
Silver	"	0.503	0.00300	0.0200	"	"	--	0.500	101%	"	--	--	"	
Zinc	"	1.02	0.00200	0.0200	"	"	--	1.00	102%	"	--	--	"	
Duplicate (9110349-DUP1)							**QC Source: PSK0253-02**						**Extracted: 11/11/09 08:13**	
Aluminum	EPA 6010B	ND	0.0150	0.100	mg/l	1x	ND	--	--	--	NR	(20)	11/11/09 14:00	
Antimony	"	ND	0.00600	0.100	"	"	ND	--	--	--	NR	"	"	
Arsenic	"	ND	0.00300	0.0500	"	"	ND	--	--	--	NR	"	"	
Cadmium	"	0.000342	0.000300	0.0100	"	"	ND	--	--	--		"	"	J
Chromium	"	ND	0.00100	0.0100	"	"	ND	--	--	--	NR	"	"	
Copper	"	ND	0.00200	0.0100	"	"	ND	--	--	--	NR	"	"	
Lead	"	ND	0.00700	0.0500	"	"	ND	--	--	--	NR	"	"	
Nickel	"	ND	0.00100	0.0500	"	"	ND	--	--	--	NR	"	"	
Selenium	"	ND	0.00800	0.0500	"	"	ND	--	--	--	NR	"	"	
Silver	"	ND	0.00300	0.0200	"	"	ND	--	--	--	NR	"	"	
Zinc	"	0.0633	0.00200	0.0200	"	"	0.0617	--	--	--	2.46%	"	"	

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results

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QC Batch: 9110349 **Water Preparation Method: EPA 200/3005**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (9110349-MS1)				**QC Source: PSK0253-02**				**Extracted: 11/11/09 08:13**						
Aluminum	EPA 6010B	5.34	0.0150	0.100	mg/l	1x	ND	5.00	107%	(75-125)	--	--	11/11/09 14:06	
Antimony	"	1.01	0.00600	0.100	"	"	ND	1.00	101%	"	--	--	"	
Arsenic	"	1.01	0.00300	0.0500	"	"	ND	"	101%	"	--	--	"	
Cadmium	"	0.515	0.000300	0.0100	"	"	ND	0.500	103%	"	--	--	"	
Chromium	"	1.02	0.00100	0.0100	"	"	ND	1.00	102%	"	--	--	"	
Copper	"	1.04	0.00200	0.0100	"	"	ND	"	104%	"	--	--	"	
Lead	"	1.03	0.00700	0.0500	"	"	ND	"	103%	(70-130)	--	--	"	
Nickel	"	1.03	0.00100	0.0500	"	"	ND	"	103%	(75-125)	--	--	"	
Selenium	"	1.01	0.00800	0.0500	"	"	ND	"	101%	"	--	--	"	
Silver	"	0.510	0.00300	0.0200	"	"	ND	0.500	102%	"	--	--	"	
Zinc	"	1.09	0.00200	0.0200	"	"	0.0617	1.00	103%	"	--	--	"	
Matrix Spike (9110349-MS2)				**QC Source: PSK0253-09**				**Extracted: 11/11/09 08:13**						
Aluminum	EPA 6010B	5.17	0.0150	0.100	mg/l	1x	ND	5.00	103%	(75-125)	--	--	11/11/09 15:09	
Antimony	"	0.987	0.00600	0.100	"	"	ND	1.00	98.7%	"	--	--	"	
Arsenic	"	0.969	0.00300	0.0500	"	"	ND	"	96.9%	"	--	--	"	
Cadmium	"	0.496	0.000300	0.0100	"	"	ND	0.500	99.2%	"	--	--	"	
Chromium	"	0.988	0.00100	0.0100	"	"	ND	1.00	98.8%	"	--	--	"	
Copper	"	1.01	0.00200	0.0100	"	"	ND	"	101%	"	--	--	"	
Lead	"	0.999	0.00700	0.0500	"	"	ND	"	99.9%	(70-130)	--	--	"	
Nickel	"	0.994	0.00100	0.0500	"	"	ND	"	99.4%	(75-125)	--	--	"	
Selenium	"	0.977	0.00800	0.0500	"	"	ND	"	97.7%	"	--	--	"	
Silver	"	0.495	0.00300	0.0200	"	"	ND	0.500	99.1%	"	--	--	"	
Zinc	"	1.82	0.00200	0.0200	"	"	0.818	1.00	100%	"	--	--	"	

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Total Mercury per EPA Method 7470A - Laboratory Quality Control Results

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QC Batch: 9110417 **Water Preparation Method: EPA 7470A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110417-BLK1)								**Extracted: 11/12/09 13:07**						
Mercury	EPA 7470A	ND	0.0000590	0.000200	mg/l	1x	--	--	--	--	--	--	11/13/09 08:54	
LCS (9110417-BS1)								**Extracted: 11/12/09 13:07**						
Mercury	EPA 7470A	0.00516	0.0000590	0.000200	mg/l	1x	--	0.00500	103%	(85-115)	--	--	11/13/09 08:57	
LCS Dup (9110417-BSD1)								**Extracted: 11/12/09 13:07**						
Mercury	EPA 7470A	0.00496	0.0000590	0.000200	mg/l	1x	--	0.00500	99.2%	(85-115)	4.00%	(20)	11/13/09 09:00	
Duplicate (9110417-DUP1)				**QC Source: PSK0253-02**				**Extracted: 11/12/09 13:07**						
Mercury	EPA 7470A	0.000130	0.0000590	0.000200	mg/l	1x	ND	--	--	--		(20)	11/13/09 09:03	J
Matrix Spike (9110417-MS1)				**QC Source: PSK0253-02**				**Extracted: 11/12/09 13:07**						
Mercury	EPA 7470A	0.00501	0.0000590	0.000200	mg/l	1x	ND	0.00500	100%	(75-125)	--	--	11/13/09 09:08	
Matrix Spike Dup (9110417-MSD1)				**QC Source: PSK0253-02**				**Extracted: 11/12/09 13:07**						
Mercury	EPA 7470A	0.00466	0.0000590	0.000200	mg/l	1x	ND	0.00500	93.2%	(75-125)	7.21%	(20)	11/13/09 09:11	

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polychlorinated Biphenyls per EPA Method 8082 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110339 **Water Preparation Method: EPA 3510/600 Series**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110339-BLK1)									**Extracted: 11/11/09 11:10**					
Aroclor 1016	EPA 8082	ND	0.0500	0.100	ug/l	1x	--	--	--	--	--	--	11/18/09 15:13	
Aroclor 1221	"	ND	0.100	0.200	"	"	--	--	--	--	--	--	"	
Aroclor 1232	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Aroclor 1242	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Aroclor 1248	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Aroclor 1254	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Aroclor 1260	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Aroclor 1262	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Aroclor 1268	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Surrogate(s): Decachlorobiphenyl		*Recovery: 75.1%*		*Limits: 12-130%*									*11/18/09 15:13*	
LCS (9110339-BS1)									**Extracted: 11/11/09 11:10**					
Aroclor 1016	EPA 8082	0.781	0.0500	0.100	ug/l	1x	--	1.00	78.1%	(50-114)	--	--	11/18/09 15:35	
Aroclor 1260	"	0.883	0.0500	0.100	"	"	--	"	88.3%	(8-127)	--	--	"	
Surrogate(s): Decachlorobiphenyl		*Recovery: 83.5%*		*Limits: 12-130%*									*11/18/09 15:35*	
LCS Dup (9110339-BSD1)									**Extracted: 11/11/09 11:10**					
Aroclor 1016	EPA 8082	0.731	0.0500	0.100	ug/l	1x	--	1.00	73.1%	(50-114)	6.57%	(22)	11/18/09 15:57	
Aroclor 1260	"	0.787	0.0500	0.100	"	"	--	"	78.7%	(8-127)	11.6%	(23)	"	
Surrogate(s): Decachlorobiphenyl		*Recovery: 76.0%*		*Limits: 12-130%*									*11/18/09 15:57*	

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110484 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110484-BLK1)							**Extracted: 11/13/09 16:00**							
Acetone	EPA 8260B	ND	7.76	25.0	ug/l	1x	--	--	--	--	--	--	11/13/09 20:40	
Benzene	"	ND	0.0900	0.200	"	"	--	--	--	--	--	--	"	
Bromobenzene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Bromochloromethane	"	ND	0.180	1.00	"	"	--	--	--	--	--	--	"	
Bromodichloromethane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Bromoform	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Bromomethane	"	ND	0.170	5.00	"	"	--	--	--	--	--	--	"	
2-Butanone (MEK)	"	ND	3.50	10.0	"	"	--	--	--	--	--	--	"	
n-Butylbenzene	"	0.150	0.0600	5.00	"	"	--	--	--	--	--	--	"	J
sec-Butylbenzene	"	0.0900	0.0800	1.00	"	"	--	--	--	--	--	--	"	J
tert-Butylbenzene	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
Carbon disulfide	"	ND	0.140	10.0	"	"	--	--	--	--	--	--	"	
Carbon tetrachloride	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
Chlorobenzene	"	ND	0.0500	1.00	"	"	--	--	--	--	--	--	"	
Chloroethane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Chloroform	"	ND	0.0900	0.200	"	"	--	--	--	--	--	--	"	
Chloromethane	"	ND	0.0800	5.00	"	"	--	--	--	--	--	--	"	
2-Chlorotoluene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
4-Chlorotoluene	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromo-3-chloropropane	"	ND	2.35	5.00	"	"	--	--	--	--	--	--	"	
Dibromochloromethane	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromoethane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Dibromomethane	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichlorobenzene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
1,3-Dichlorobenzene	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
1,4-Dichlorobenzene	"	ND	0.120	1.00	"	"	--	--	--	--	--	--	"	
Dichlorodifluoromethane	"	ND	0.110	5.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethane	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloroethane	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethene	"	ND	0.120	1.00	"	"	--	--	--	--	--	--	"	
cis-1,2-Dichloroethene	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
trans-1,2-Dichloroethene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloropropane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
1,3-Dichloropropane	"	ND	0.140	1.00	"	"	--	--	--	--	--	--	"	
2,2-Dichloropropane	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloropropene	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
cis-1,3-Dichloropropene	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
trans-1,3-Dichloropropene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110484 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110484-BLK1)							**Extracted: 11/13/09 16:00**							
Hexachlorobutadiene	EPA 8260B	0.330	0.210	4.00	ug/l	1x	--	--	--	--	--	--	11/13/09 20:40	J
2-Hexanone	"	ND	3.62	10.0	"	"	--	--	--	--	--	--	"	
Isopropylbenzene	"	ND	0.0700	2.00	"	"	--	--	--	--	--	--	"	
p-Isopropyltoluene	"	0.0700	0.0600	2.00	"	"	--	--	--	--	--	--	"	J
4-Methyl-2-pentanone	"	ND	0.290	5.00	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
Methylene chloride	"	ND	0.160	5.00	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	0.0900	2.00	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Styrene	"	ND	0.0400	1.00	"	"	--	--	--	--	--	--	"	
1,1,1,2-Tetrachloroethane	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
1,1,2,2-Tetrachloroethane	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
Tetrachloroethene	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichlorobenzene	"	0.410	0.100	1.00	"	"	--	--	--	--	--	--	"	J
1,2,4-Trichlorobenzene	"	0.420	0.110	1.00	"	"	--	--	--	--	--	--	"	J
1,1,1-Trichloroethane	"	ND	0.120	1.00	"	"	--	--	--	--	--	--	"	
1,1,2-Trichloroethane	"	ND	0.130	1.00	"	"	--	--	--	--	--	--	"	
Trichloroethene	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
Trichlorofluoromethane	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichloropropane	"	ND	0.130	1.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
Vinyl chloride	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
m,p-Xylene	"	ND	0.210	2.00	"	"	--	--	--	--	--	--	"	

Surrogate(s):	*Recovery:*	*Limits:*	
Dibromofluoromethane	*101%*	*80-120%*	*11/13/09 20:40*
1,2-DCA-d4	*104%*	*80-120%*	*"*
Toluene-d8	*100%*	*80-120%*	*"*
4-BFB	*104%*	*80-120%*	*"*

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Darrell Auvil, Project Manager

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ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110484 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (9110484-BS1)								**Extracted: 11/13/09 16:00**						
Acetone	EPA 8260B	92.4	7.76	25.0	ug/l	1x	--	100	92.4%	(56-141)	--	--	11/13/09 18:38	
Benzene	"	19.8	0.0900	0.200	"	"	--	20.0	98.8%	(80-120)	--	--	"	
Bromobenzene	"	18.9	0.100	1.00	"	"	--	"	94.4%	(78-120)	--	--	"	
Bromochloromethane	"	20.0	0.180	1.00	"	"	--	"	99.8%	(76-121)	--	--	"	
Bromodichloromethane	"	21.3	0.110	1.00	"	"	--	"	106%	(84-127)	--	--	"	
Bromoform	"	20.5	0.100	1.00	"	"	--	"	102%	(55-134)	--	--	"	
Bromomethane	"	22.6	0.170	5.00	"	"	--	"	113%	(38-150)	--	--	"	
2-Butanone (MEK)	"	111	3.50	10.0	"	"	--	100	111%	(71-136)	--	--	"	
n-Butylbenzene	"	20.7	0.0600	5.00	"	"	--	20.0	104%	(76-126)	--	--	"	
sec-Butylbenzene	"	19.5	0.0800	1.00	"	"	--	"	97.4%	(64-129)	--	--	"	
tert-Butylbenzene	"	19.6	0.0600	1.00	"	"	--	"	98.2%	(71-127)	--	--	"	
Carbon disulfide	"	40.3	0.140	10.0	"	"	--	40.0	101%	(58-120)	--	--	"	
Carbon tetrachloride	"	21.5	0.0600	1.00	"	"	--	20.0	108%	(73-134)	--	--	"	
Chlorobenzene	"	19.2	0.0500	1.00	"	"	--	"	95.8%	(80-124)	--	--	"	
Chloroethane	"	23.8	0.110	1.00	"	"	--	"	119%	(79-124)	--	--	"	
Chloroform	"	20.1	0.0900	0.200	"	"	--	"	101%	(80-120)	--	--	"	
Chloromethane	"	21.9	0.0800	5.00	"	"	--	"	110%	(47-146)	--	--	"	
2-Chlorotoluene	"	19.0	0.0700	1.00	"	"	--	"	95.0%	(72-125)	--	--	"	
4-Chlorotoluene	"	19.3	0.110	1.00	"	"	--	"	96.6%	(77-124)	--	--	"	
1,2-Dibromo-3-chloropropane	"	19.1	2.35	5.00	"	"	--	"	95.6%	(73-134)	--	--	"	
Dibromochloromethane	"	21.4	0.0700	1.00	"	"	--	"	107%	(69-138)	--	--	"	
1,2-Dibromoethane	"	19.4	0.110	1.00	"	"	--	"	97.2%	(80-122)	--	--	"	
Dibromomethane	"	20.0	0.100	1.00	"	"	--	"	99.8%	(80-120)	--	--	"	
1,2-Dichlorobenzene	"	20.0	0.0700	1.00	"	"	--	"	100%	(80-113)	--	--	"	
1,3-Dichlorobenzene	"	18.6	0.0600	1.00	"	"	--	"	93.2%	(76-123)	--	--	"	
1,4-Dichlorobenzene	"	18.8	0.120	1.00	"	"	--	"	93.8%	(73-120)	--	--	"	
Dichlorodifluoromethane	"	21.2	0.110	5.00	"	"	--	"	106%	(48-140)	--	--	"	
1,1-Dichloroethane	"	20.2	0.0800	1.00	"	"	--	"	101%	(80-120)	--	--	"	
1,2-Dichloroethane	"	21.4	0.100	1.00	"	"	--	"	107%	(78-123)	--	--	"	
1,1-Dichloroethene	"	19.1	0.120	1.00	"	"	--	"	95.6%	(78-120)	--	--	"	
cis-1,2-Dichloroethene	"	19.2	0.0900	1.00	"	"	--	"	95.9%	(80-120)	--	--	"	
trans-1,2-Dichloroethene	"	19.3	0.100	1.00	"	"	--	"	96.4%	"	--	--	"	
1,2-Dichloropropane	"	20.0	0.110	1.00	"	"	--	"	100%	(80-126)	--	--	"	
1,3-Dichloropropane	"	19.9	0.140	1.00	"	"	--	"	99.3%	(80-120)	--	--	"	
2,2-Dichloropropane	"	20.1	0.0900	1.00	"	"	--	"	101%	(60-144)	--	--	"	
1,1-Dichloropropene	"	19.8	0.0800	1.00	"	"	--	"	99.2%	(80-120)	--	--	"	
cis-1,3-Dichloropropene	"	16.8	0.0900	1.00	"	"	--	"	84.0%	(80-125)	--	--	"	
trans-1,3-Dichloropropene	"	16.6	0.100	1.00	"	"	--	"	83.2%	(80-130)	--	--	"	
Ethylbenzene	"	19.7	0.0600	1.00	"	"	--	"	98.3%	(80-120)	--	--	"	

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CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110484 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (9110484-BS1)							**Extracted: 11/13/09 16:00**							
Hexachlorobutadiene	EPA 8260B	18.5	0.210	4.00	ug/l	1x	--	20.0	92.6%	(64-145)	--	--	11/13/09 18:38	
2-Hexanone	"	114	3.62	10.0	"	"	--	100	114%	(73-139)	--	--	"	
Isopropylbenzene	"	19.5	0.0700	2.00	"	"	--	20.0	97.4%	(77-124)	--	--	"	
p-Isopropyltoluene	"	18.6	0.0600	2.00	"	"	--	"	92.9%	(68-130)	--	--	"	
4-Methyl-2-pentanone	"	109	0.290	5.00	"	"	--	100	109%	(72-134)	--	--	"	
Methyl tert-butyl ether	"	19.1	0.0900	1.00	"	"	--	20.0	95.5%	(80-129)	--	--	"	
Methylene chloride	"	18.8	0.160	5.00	"	"	--	"	94.2%	(80-120)	--	--	"	
Naphthalene	"	17.8	0.0900	2.00	"	"	--	"	88.8%	(72-149)	--	--	"	
n-Propylbenzene	"	20.3	0.100	1.00	"	"	--	"	102%	(76-128)	--	--	"	
Styrene	"	19.4	0.0400	1.00	"	"	--	"	96.8%	(72-127)	--	--	"	
1,1,1,2-Tetrachloroethane	"	19.6	0.0900	1.00	"	"	--	"	98.1%	(69-138)	--	--	"	
1,1,2,2-Tetrachloroethane	"	21.7	0.0800	1.00	"	"	--	"	108%	(77-128)	--	--	"	
Tetrachloroethene	"	19.1	0.110	1.00	"	"	--	"	95.6%	(80-124)	--	--	"	
Toluene	"	19.1	0.110	1.00	"	"	--	"	95.4%	"	--	--	"	
1,2,3-Trichlorobenzene	"	18.2	0.100	1.00	"	"	--	"	91.0%	(69-138)	--	--	"	
1,2,4-Trichlorobenzene	"	18.5	0.110	1.00	"	"	--	"	92.4%	(75-127)	--	--	"	
1,1,1-Trichloroethane	"	20.3	0.120	1.00	"	"	--	"	101%	(76-132)	--	--	"	
1,1,2-Trichloroethane	"	20.2	0.130	1.00	"	"	--	"	101%	(80-123)	--	--	"	
Trichloroethene	"	19.5	0.0800	1.00	"	"	--	"	97.6%	(80-132)	--	--	"	
Trichlorofluoromethane	"	25.7	0.0600	1.00	"	"	--	"	128%	(77-137)	--	--	"	
1,2,3-Trichloropropane	"	19.4	0.130	1.00	"	"	--	"	97.1%	(75-125)	--	--	"	
1,2,4-Trimethylbenzene	"	19.1	0.0800	1.00	"	"	--	"	95.4%	(73-132)	--	--	"	
1,3,5-Trimethylbenzene	"	19.6	0.0700	1.00	"	"	--	"	97.8%	(75-132)	--	--	"	
Vinyl chloride	"	22.5	0.100	1.00	"	"	--	"	113%	(76-133)	--	--	"	
o-Xylene	"	19.5	0.0700	1.00	"	"	--	"	97.4%	(77-123)	--	--	"	
m,p-Xylene	"	39.3	0.210	2.00	"	"	--	40.0	98.2%	(72-127)	--	--	"	

Surrogate(s):	*Dibromofluoromethane*	*Recovery: 113%*	*Limits: 80-120%*	*11/13/09 18:38*
	1,2-DCA-d4	*111%*	*80-120%*	*"*
	Toluene-d8	*112%*	*80-120%*	*"*
	4-BFB	*118%*	*80-120%*	*"*

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110484 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS Dup (9110484-BSD1)								**Extracted: 11/13/09 16:00**						
Acetone	EPA 8260B	97.7	7.76	25.0	ug/l	1x	--	100	97.7%	(56-141)	5.66%	(25)	11/13/09 19:02	
Benzene	"	19.2	0.0900	0.200	"	"	--	20.0	96.2%	(80-120)	2.67%	"	"	
Bromobenzene	"	18.2	0.100	1.00	"	"	--	"	91.0%	(78-120)	3.61%	"	"	
Bromochloromethane	"	19.0	0.180	1.00	"	"	--	"	95.2%	(76-121)	4.72%	"	"	
Bromodichloromethane	"	21.1	0.110	1.00	"	"	--	"	106%	(84-127)	0.801%	"	"	
Bromoform	"	21.3	0.100	1.00	"	"	--	"	107%	(55-134)	4.02%	"	"	
Bromomethane	"	20.9	0.170	5.00	"	"	--	"	104%	(38-150)	8.14%	"	"	
2-Butanone (MEK)	"	119	3.50	10.0	"	"	--	100	119%	(71-136)	7.42%	"	"	
n-Butylbenzene	"	19.9	0.0600	5.00	"	"	--	20.0	99.3%	(76-126)	4.14%	"	"	
sec-Butylbenzene	"	19.2	0.0800	1.00	"	"	--	"	95.8%	(64-129)	1.66%	"	"	
tert-Butylbenzene	"	19.4	0.0600	1.00	"	"	--	"	96.9%	(71-127)	1.28%	"	"	
Carbon disulfide	"	37.3	0.140	10.0	"	"	--	40.0	93.3%	(58-120)	7.68%	"	"	
Carbon tetrachloride	"	20.5	0.0600	1.00	"	"	--	20.0	102%	(73-134)	5.09%	"	"	
Chlorobenzene	"	19.0	0.0500	1.00	"	"	--	"	94.8%	(80-124)	0.997%	"	"	
Chloroethane	"	22.0	0.110	1.00	"	"	--	"	110%	(79-124)	8.13%	"	"	
Chloroform	"	19.5	0.0900	0.200	"	"	--	"	97.5%	(80-120)	3.18%	"	"	
Chloromethane	"	20.5	0.0800	5.00	"	"	--	"	102%	(47-146)	6.83%	"	"	
2-Chlorotoluene	"	18.7	0.0700	1.00	"	"	--	"	93.6%	(72-125)	1.49%	"	"	
4-Chlorotoluene	"	19.0	0.110	1.00	"	"	--	"	95.2%	(77-124)	1.46%	"	"	
1,2-Dibromo-3-chloropropane	"	20.6	2.35	5.00	"	"	--	"	103%	(73-134)	7.64%	"	"	
Dibromochloromethane	"	21.5	0.0700	1.00	"	"	--	"	108%	(69-138)	0.466%	"	"	
1,2-Dibromoethane	"	20.3	0.110	1.00	"	"	--	"	101%	(80-122)	4.33%	"	"	
Dibromomethane	"	20.0	0.100	1.00	"	"	--	"	99.8%	(80-120)	0.0501%	"	"	
1,2-Dichlorobenzene	"	19.4	0.0700	1.00	"	"	--	"	96.8%	(80-113)	3.45%	"	"	
1,3-Dichlorobenzene	"	18.0	0.0600	1.00	"	"	--	"	90.2%	(76-123)	3.27%	"	"	
1,4-Dichlorobenzene	"	18.7	0.120	1.00	"	"	--	"	93.6%	(73-120)	0.213%	"	"	
Dichlorodifluoromethane	"	19.0	0.110	5.00	"	"	--	"	95.2%	(48-140)	10.5%	"	"	
1,1-Dichloroethane	"	19.5	0.0800	1.00	"	"	--	"	97.4%	(80-120)	3.73%	"	"	
1,2-Dichloroethane	"	21.1	0.100	1.00	"	"	--	"	105%	(78-123)	1.41%	"	"	
1,1-Dichloroethene	"	18.0	0.120	1.00	"	"	--	"	89.8%	(78-120)	6.20%	"	"	
cis-1,2-Dichloroethene	"	18.8	0.0900	1.00	"	"	--	"	93.8%	(80-120)	2.16%	"	"	
trans-1,2-Dichloroethene	"	18.8	0.100	1.00	"	"	--	"	94.2%	"	2.31%	"	"	
1,2-Dichloropropane	"	19.9	0.110	1.00	"	"	--	"	99.5%	(80-126)	0.701%	"	"	
1,3-Dichloropropane	"	20.3	0.140	1.00	"	"	--	"	101%	(80-120)	2.04%	"	"	
2,2-Dichloropropane	"	19.0	0.0900	1.00	"	"	--	"	94.8%	(60-144)	5.93%	"	"	
1,1-Dichloropropene	"	19.3	0.0800	1.00	"	"	--	"	96.4%	(80-120)	2.86%	"	"	
cis-1,3-Dichloropropene	"	16.9	0.0900	1.00	"	"	--	"	84.4%	(80-125)	0.594%	"	"	
trans-1,3-Dichloropropene	"	16.9	0.100	1.00	"	"	--	"	84.6%	(80-130)	1.67%	"	"	
Ethylbenzene	"	19.3	0.0600	1.00	"	"	--	"	96.3%	(80-120)	2.06%	"	"	

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110484 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS Dup (9110484-BSD1)							**Extracted: 11/13/09 16:00**							
Hexachlorobutadiene	EPA 8260B	19.0	0.210	4.00	ug/l	1x	--	20.0	95.2%	(64-145)	2.66%	(25)	11/13/09 19:02	
2-Hexanone	"	121	3.62	10.0	"	"	--	100	121%	(73-139)	6.00%	"	"	
Isopropylbenzene	"	19.0	0.0700	2.00	"	"	--	20.0	94.9%	(77-124)	2.65%	"	"	
p-Isopropyltoluene	"	18.5	0.0600	2.00	"	"	--	"	92.3%	(68-130)	0.648%	"	"	
4-Methyl-2-pentanone	"	114	0.290	5.00	"	"	--	100	114%	(72-134)	5.10%	"	"	
Methyl tert-butyl ether	"	19.0	0.0900	1.00	"	"	--	20.0	95.2%	(80-129)	0.315%	"	"	
Methylene chloride	"	18.5	0.160	5.00	"	"	--	"	92.6%	(80-120)	1.82%	"	"	
Naphthalene	"	17.7	0.0900	2.00	"	"	--	"	88.6%	(72-149)	0.225%	"	"	
n-Propylbenzene	"	19.7	0.100	1.00	"	"	--	"	98.4%	(76-128)	3.30%	"	"	
Styrene	"	19.1	0.0400	1.00	"	"	--	"	95.6%	(72-127)	1.20%	"	"	
1,1,1,2-Tetrachloroethane	"	19.5	0.0900	1.00	"	"	--	"	97.6%	(69-138)	0.460%	"	"	
1,1,2,2-Tetrachloroethane	"	22.4	0.0800	1.00	"	"	--	"	112%	(77-128)	2.95%	"	"	
Tetrachloroethene	"	18.6	0.110	1.00	"	"	--	"	93.2%	(80-124)	2.44%	"	"	
Toluene	"	18.8	0.110	1.00	"	"	--	"	94.2%	"	1.27%	"	"	
1,2,3-Trichlorobenzene	"	17.6	0.100	1.00	"	"	--	"	87.8%	(69-138)	3.52%	"	"	
1,2,4-Trichlorobenzene	"	17.9	0.110	1.00	"	"	--	"	89.4%	(75-127)	3.30%	"	"	
1,1,1-Trichloroethane	"	19.4	0.120	1.00	"	"	--	"	97.2%	(76-132)	4.13%	"	"	
1,1,2-Trichloroethane	"	20.4	0.130	1.00	"	"	--	"	102%	(80-123)	1.48%	"	"	
Trichloroethene	"	19.0	0.0800	1.00	"	"	--	"	95.0%	(80-132)	2.70%	"	"	
Trichlorofluoromethane	"	22.9	0.0600	1.00	"	"	--	"	115%	(77-137)	11.3%	"	"	
1,2,3-Trichloropropane	"	20.2	0.130	1.00	"	"	--	"	101%	(75-125)	3.74%	"	"	
1,2,4-Trimethylbenzene	"	18.8	0.0800	1.00	"	"	--	"	94.1%	(73-132)	1.42%	"	"	
1,3,5-Trimethylbenzene	"	19.4	0.0700	1.00	"	"	--	"	97.0%	(75-132)	0.821%	"	"	
Vinyl chloride	"	20.5	0.100	1.00	"	"	--	"	103%	(76-133)	9.33%	"	"	
o-Xylene	"	19.0	0.0700	1.00	"	"	--	"	94.8%	(77-123)	2.71%	"	"	
m,p-Xylene	"	37.9	0.210	2.00	"	"	--	40.0	94.8%	(72-127)	3.63%	"	"	

Surrogate(s):	*Dibromofluoromethane*	*Recovery:*	*110%*	*Limits: 80-120%*	*11/13/09 19:02*
	1,2-DCA-d4		*111%*	*80-120%*	*"*
	Toluene-d8		*111%*	*80-120%*	*"*
	4-BFB		*118%*	*80-120%*	*"*

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110497-BLK1)							**Extracted: 11/15/09 14:00**							
Acetone	EPA 8260B	ND	7.76	25.0	ug/l	1x	--	--	--	--	--	--	11/15/09 16:18	
Benzene	"	ND	0.0900	0.200	"	"	--	--	--	--	--	--	"	
Bromobenzene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Bromochloromethane	"	ND	0.180	1.00	"	"	--	--	--	--	--	--	"	
Bromodichloromethane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Bromoform	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Bromomethane	"	ND	0.170	5.00	"	"	--	--	--	--	--	--	"	
2-Butanone (MEK)	"	ND	3.50	10.0	"	"	--	--	--	--	--	--	"	
n-Butylbenzene	"	0.130	0.0600	5.00	"	"	--	--	--	--	--	--	"	J
sec-Butylbenzene	"	0.0800	0.0800	1.00	"	"	--	--	--	--	--	--	"	J
tert-Butylbenzene	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
Carbon disulfide	"	ND	0.140	10.0	"	"	--	--	--	--	--	--	"	
Carbon tetrachloride	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
Chlorobenzene	"	ND	0.0500	1.00	"	"	--	--	--	--	--	--	"	
Chloroethane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Chloroform	"	ND	0.0900	0.200	"	"	--	--	--	--	--	--	"	
Chloromethane	"	ND	0.0800	5.00	"	"	--	--	--	--	--	--	"	
2-Chlorotoluene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
4-Chlorotoluene	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromo-3-chloropropane	"	ND	2.35	5.00	"	"	--	--	--	--	--	--	"	
Dibromochloromethane	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dibromoethane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Dibromomethane	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichlorobenzene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
1,3-Dichlorobenzene	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
1,4-Dichlorobenzene	"	ND	0.120	1.00	"	"	--	--	--	--	--	--	"	
Dichlorodifluoromethane	"	ND	0.110	5.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethane	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloroethane	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethene	"	ND	0.120	1.00	"	"	--	--	--	--	--	--	"	
cis-1,2-Dichloroethene	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
trans-1,2-Dichloroethene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
1,2-Dichloropropane	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
1,3-Dichloropropane	"	ND	0.140	1.00	"	"	--	--	--	--	--	--	"	
2,2-Dichloropropane	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
1,1-Dichloropropene	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
cis-1,3-Dichloropropene	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
trans-1,3-Dichloropropene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	

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CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110497-BLK1)							**Extracted: 11/15/09 14:00**							
Hexachlorobutadiene	EPA 8260B	0.330	0.210	4.00	ug/l	1x	--	--	--	--	--	--	11/15/09 16:18	J
2-Hexanone	"	ND	3.62	10.0	"	"	--	--	--	--	--	--	"	
Isopropylbenzene	"	ND	0.0700	2.00	"	"	--	--	--	--	--	--	"	
p-Isopropyltoluene	"	ND	0.0600	2.00	"	"	--	--	--	--	--	--	"	
4-Methyl-2-pentanone	"	ND	0.290	5.00	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
Methylene chloride	"	ND	0.160	5.00	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	0.0900	2.00	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
Styrene	"	ND	0.0400	1.00	"	"	--	--	--	--	--	--	"	
1,1,1,2-Tetrachloroethane	"	ND	0.0900	1.00	"	"	--	--	--	--	--	--	"	
1,1,2,2-Tetrachloroethane	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
Tetrachloroethene	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	0.110	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichlorobenzene	"	0.410	0.100	1.00	"	"	--	--	--	--	--	--	"	J
1,2,4-Trichlorobenzene	"	0.430	0.110	1.00	"	"	--	--	--	--	--	--	"	J
1,1,1-Trichloroethane	"	ND	0.120	1.00	"	"	--	--	--	--	--	--	"	
1,1,2-Trichloroethane	"	ND	0.130	1.00	"	"	--	--	--	--	--	--	"	
Trichloroethene	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
Trichlorofluoromethane	"	ND	0.0600	1.00	"	"	--	--	--	--	--	--	"	
1,2,3-Trichloropropane	"	ND	0.130	1.00	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	0.0800	1.00	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
Vinyl chloride	"	ND	0.100	1.00	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	0.0700	1.00	"	"	--	--	--	--	--	--	"	
m,p-Xylene	"	ND	0.210	2.00	"	"	--	--	--	--	--	--	"	

Surrogate(s):	*Dibromofluoromethane*	*Recovery: 96.4%*	*Limits: 80-120%*	*11/15/09 16:18*
	1,2-DCA-d4	*103%*	*80-120%*	*"*
	Toluene-d8	*98.9%*	*80-120%*	*"*
	4-BFB	*106%*	*80-120%*	*"*

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (9110497-BS1)								**Extracted: 11/15/09 14:00**						
Acetone	EPA 8260B	97.9	7.76	25.0	ug/l	1x	--	100	97.9%	(56-141)	--	--	11/15/09 15:08	
Benzene	"	18.5	0.0900	0.200	"	"	--	20.0	92.7%	(80-120)	--	--	"	
Bromobenzene	"	17.8	0.100	1.00	"	"	--	"	89.2%	(78-120)	--	--	"	
Bromochloromethane	"	19.7	0.180	1.00	"	"	--	"	98.3%	(76-121)	--	--	"	
Bromodichloromethane	"	21.5	0.110	1.00	"	"	--	"	107%	(84-127)	--	--	"	
Bromoform	"	21.7	0.100	1.00	"	"	--	"	109%	(55-134)	--	--	"	
Bromomethane	"	19.8	0.170	5.00	"	"	--	"	99.2%	(38-150)	--	--	"	
2-Butanone (MEK)	"	110	3.50	10.0	"	"	--	100	110%	(71-136)	--	--	"	
n-Butylbenzene	"	19.0	0.0600	5.00	"	"	--	20.0	94.8%	(76-126)	--	--	"	
sec-Butylbenzene	"	18.3	0.0800	1.00	"	"	--	"	91.3%	(64-129)	--	--	"	
tert-Butylbenzene	"	18.3	0.0600	1.00	"	"	--	"	91.4%	(71-127)	--	--	"	
Carbon disulfide	"	37.9	0.140	10.0	"	"	--	40.0	94.8%	(58-120)	--	--	"	
Carbon tetrachloride	"	20.8	0.0600	1.00	"	"	--	20.0	104%	(73-134)	--	--	"	
Chlorobenzene	"	18.3	0.0500	1.00	"	"	--	"	91.5%	(80-124)	--	--	"	
Chloroethane	"	20.8	0.110	1.00	"	"	--	"	104%	(79-124)	--	--	"	
Chloroform	"	19.0	0.0900	0.200	"	"	--	"	95.2%	(80-120)	--	--	"	
Chloromethane	"	18.9	0.0800	5.00	"	"	--	"	94.7%	(47-146)	--	--	"	
2-Chlorotoluene	"	18.1	0.0700	1.00	"	"	--	"	90.6%	(72-125)	--	--	"	
4-Chlorotoluene	"	18.7	0.110	1.00	"	"	--	"	93.4%	(77-124)	--	--	"	
1,2-Dibromo-3-chloropropane	"	21.3	2.35	5.00	"	"	--	"	107%	(73-134)	--	--	"	
Dibromochloromethane	"	22.1	0.0700	1.00	"	"	--	"	111%	(69-138)	--	--	"	
1,2-Dibromoethane	"	19.4	0.110	1.00	"	"	--	"	96.8%	(80-122)	--	--	"	
Dibromomethane	"	19.5	0.100	1.00	"	"	--	"	97.6%	(80-120)	--	--	"	
1,2-Dichlorobenzene	"	19.0	0.0700	1.00	"	"	--	"	95.1%	(80-113)	--	--	"	
1,3-Dichlorobenzene	"	17.7	0.0600	1.00	"	"	--	"	88.3%	(76-123)	--	--	"	
1,4-Dichlorobenzene	"	18.2	0.120	1.00	"	"	--	"	90.8%	(73-120)	--	--	"	
Dichlorodifluoromethane	"	17.4	0.110	5.00	"	"	--	"	87.1%	(48-140)	--	--	"	
1,1-Dichloroethane	"	19.2	0.0800	1.00	"	"	--	"	95.8%	(80-120)	--	--	"	
1,2-Dichloroethane	"	20.6	0.100	1.00	"	"	--	"	103%	(78-123)	--	--	"	
1,1-Dichloroethene	"	18.1	0.120	1.00	"	"	--	"	90.5%	(78-120)	--	--	"	
cis-1,2-Dichloroethene	"	18.5	0.0900	1.00	"	"	--	"	92.4%	(80-120)	--	--	"	
trans-1,2-Dichloroethene	"	18.5	0.100	1.00	"	"	--	"	92.6%	"	--	--	"	
1,2-Dichloropropane	"	19.3	0.110	1.00	"	"	--	"	96.6%	(80-126)	--	--	"	
1,3-Dichloropropane	"	19.2	0.140	1.00	"	"	--	"	96.2%	(80-120)	--	--	"	
2,2-Dichloropropane	"	18.9	0.0900	1.00	"	"	--	"	94.6%	(60-144)	--	--	"	
1,1-Dichloropropene	"	18.5	0.0800	1.00	"	"	--	"	92.7%	(80-120)	--	--	"	
cis-1,3-Dichloropropene	"	16.6	0.0900	1.00	"	"	--	"	82.8%	(80-125)	--	--	"	
trans-1,3-Dichloropropene	"	16.4	0.100	1.00	"	"	--	"	82.2%	(80-130)	--	--	"	
Ethylbenzene	"	18.6	0.0600	1.00	"	"	--	"	93.0%	(80-120)	--	--	"	

TestAmerica Portland

Darrell Auvil, Project Manager

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CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (9110497-BS1)							**Extracted: 11/15/09 14:00**							
Hexachlorobutadiene	EPA 8260B	17.5	0.210	4.00	ug/l	1x	--	20.0	87.3%	(64-145)	--	--	11/15/09 15:08	
2-Hexanone	"	110	3.62	10.0	"	"	--	100	110%	(73-139)	--	--	"	
Isopropylbenzene	"	18.3	0.0700	2.00	"	"	--	20.0	91.4%	(77-124)	--	--	"	
p-Isopropyltoluene	"	17.5	0.0600	2.00	"	"	--	"	87.6%	(68-130)	--	--	"	
4-Methyl-2-pentanone	"	107	0.290	5.00	"	"	--	100	107%	(72-134)	--	--	"	
Methyl tert-butyl ether	"	18.7	0.0900	1.00	"	"	--	20.0	93.6%	(80-129)	--	--	"	
Methylene chloride	"	18.5	0.160	5.00	"	"	--	"	92.4%	(80-120)	--	--	"	
Naphthalene	"	17.4	0.0900	2.00	"	"	--	"	86.8%	(72-149)	--	--	"	
n-Propylbenzene	"	19.0	0.100	1.00	"	"	--	"	95.0%	(76-128)	--	--	"	
Styrene	"	18.3	0.0400	1.00	"	"	--	"	91.6%	(72-127)	--	--	"	
1,1,1,2-Tetrachloroethane	"	20.0	0.0900	1.00	"	"	--	"	99.9%	(69-138)	--	--	"	
1,1,2,2-Tetrachloroethane	"	21.3	0.0800	1.00	"	"	--	"	107%	(77-128)	--	--	"	
Tetrachloroethene	"	18.0	0.110	1.00	"	"	--	"	90.1%	(80-124)	--	--	"	
Toluene	"	17.8	0.110	1.00	"	"	--	"	89.0%	"	--	--	"	
1,2,3-Trichlorobenzene	"	17.6	0.100	1.00	"	"	--	"	87.8%	(69-138)	--	--	"	
1,2,4-Trichlorobenzene	"	17.5	0.110	1.00	"	"	--	"	87.6%	(75-127)	--	--	"	
1,1,1-Trichloroethane	"	19.4	0.120	1.00	"	"	--	"	97.2%	(76-132)	--	--	"	
1,1,2-Trichloroethane	"	19.0	0.130	1.00	"	"	--	"	95.2%	(80-123)	--	--	"	
Trichloroethene	"	18.2	0.0800	1.00	"	"	--	"	91.0%	(80-132)	--	--	"	
Trichlorofluoromethane	"	22.2	0.0600	1.00	"	"	--	"	111%	(77-137)	--	--	"	
1,2,3-Trichloropropane	"	19.3	0.130	1.00	"	"	--	"	96.3%	(75-125)	--	--	"	
1,2,4-Trimethylbenzene	"	18.1	0.0800	1.00	"	"	--	"	90.5%	(73-132)	--	--	"	
1,3,5-Trimethylbenzene	"	18.8	0.0700	1.00	"	"	--	"	94.0%	(75-132)	--	--	"	
Vinyl chloride	"	19.2	0.100	1.00	"	"	--	"	96.2%	(76-133)	--	--	"	
o-Xylene	"	18.4	0.0700	1.00	"	"	--	"	91.8%	(77-123)	--	--	"	
m,p-Xylene	"	36.9	0.210	2.00	"	"	--	40.0	92.4%	(72-127)	--	--	"	

Surrogate(s):	*Dibromofluoromethane*	*Recovery:*	*104%*	*Limits: 80-120%*	*11/15/09 15:08*
	1,2-DCA-d4		*101%*	*80-120%*	*"*
	Toluene-d8		*101%*	*80-120%*	*"*
	4-BFB		*110%*	*80-120%*	*"*

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CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (9110497-MS1)				**QC Source: PSK0253-02**				**Extracted: 11/15/09 14:00**						
Acetone	EPA 8260B	89.9	7.76	25.0	ug/l	1x	10.6	100	79.3%	(59.9-143)	--	--	11/15/09 23:21	
Benzene	"	18.2	0.0900	0.200	"	"	ND	20.0	91.0%	(80-124)	--	--	"	
Bromobenzene	"	17.2	0.100	1.00	"	"	ND	"	86.2%	(80-121)	--	--	"	
Bromochloromethane	"	17.6	0.180	1.00	"	"	ND	"	88.0%	(80-129)	--	--	"	
Bromodichloromethane	"	18.5	0.110	1.00	"	"	ND	"	92.4%	(80-135)	--	--	"	
Bromoform	"	15.7	0.100	1.00	"	"	ND	"	78.6%	(69.4-151)	--	--	"	
Bromomethane	"	19.4	0.170	5.00	"	"	ND	"	96.9%	(31-155)	--	--	"	
2-Butanone (MEK)	"	130	3.50	10.0	"	"	19.7	100	110%	(72.3-143)	--	--	"	
n-Butylbenzene	"	17.2	0.0600	5.00	"	"	ND	20.0	86.2%	(70.8-140)	--	--	"	
sec-Butylbenzene	"	16.3	0.0800	1.00	"	"	ND	"	81.5%	(72.5-134)	--	--	"	
tert-Butylbenzene	"	16.9	0.0600	1.00	"	"	ND	"	84.4%	(72.3-132)	--	--	"	
Carbon disulfide	"	36.1	0.140	10.0	"	"	ND	40.0	90.2%	(40-167)	--	--	"	
Carbon tetrachloride	"	17.4	0.0600	1.00	"	"	ND	20.0	86.8%	(78.8-129)	--	--	"	
Chlorobenzene	"	17.8	0.0500	1.00	"	"	ND	"	88.8%	(72.9-134)	--	--	"	
Chloroethane	"	20.9	0.110	1.00	"	"	ND	"	104%	(79-126)	--	--	"	
Chloroform	"	18.2	0.0900	0.200	"	"	ND	"	90.8%	(80-124)	--	--	"	
Chloromethane	"	19.6	0.0800	5.00	"	"	ND	"	98.0%	(40-150)	--	--	"	
2-Chlorotoluene	"	16.6	0.0700	1.00	"	"	ND	"	83.1%	(80-120)	--	--	"	
4-Chlorotoluene	"	17.0	0.110	1.00	"	"	ND	"	85.0%	(80-121)	--	--	"	
1,2-Dibromo-3-chloropropane	"	16.6	2.35	5.00	"	"	ND	"	83.2%	(58.5-143)	--	--	"	
Dibromochloromethane	"	18.1	0.0700	1.00	"	"	ND	"	90.6%	(80-129)	--	--	"	
1,2-Dibromoethane	"	18.2	0.110	1.00	"	"	ND	"	91.1%	(80-128)	--	--	"	
Dibromomethane	"	18.9	0.100	1.00	"	"	ND	"	94.6%	(76.4-131)	--	--	"	
1,2-Dichlorobenzene	"	17.5	0.0700	1.00	"	"	ND	"	87.6%	(80-120)	--	--	"	
1,3-Dichlorobenzene	"	15.8	0.0600	1.00	"	"	ND	"	79.2%	(80-122)	--	--	"	M8
1,4-Dichlorobenzene	"	16.2	0.120	1.00	"	"	ND	"	80.8%	(80-120)	--	--	"	
Dichlorodifluoromethane	"	17.3	0.110	5.00	"	"	ND	"	86.7%	(63.2-134)	--	--	"	
1,1-Dichloroethane	"	18.7	0.0800	1.00	"	"	ND	"	93.6%	(80-123)	--	--	"	
1,2-Dichloroethane	"	19.6	0.100	1.00	"	"	ND	"	98.2%	(80-121)	--	--	"	
1,1-Dichloroethene	"	17.0	0.120	1.00	"	"	ND	"	85.0%	(79.3-127)	--	--	"	
cis-1,2-Dichloroethene	"	17.7	0.0900	1.00	"	"	ND	"	88.6%	(76.6-136)	--	--	"	
trans-1,2-Dichloroethene	"	17.5	0.100	1.00	"	"	ND	"	87.7%	(80-120)	--	--	"	
1,2-Dichloropropane	"	18.7	0.110	1.00	"	"	ND	"	93.6%	"	--	--	"	
1,3-Dichloropropane	"	19.1	0.140	1.00	"	"	ND	"	95.6%	(80-132)	--	--	"	
2,2-Dichloropropane	"	15.1	0.0900	1.00	"	"	ND	"	75.4%	(74.8-143)	--	--	"	
1,1-Dichloropropene	"	17.8	0.0800	1.00	"	"	ND	"	88.8%	(80-123)	--	--	"	
cis-1,3-Dichloropropene	"	14.4	0.0900	1.00	"	"	ND	"	72.2%	(80-130)	--	--	"	M8
trans-1,3-Dichloropropene	"	14.7	0.100	1.00	"	"	ND	"	73.3%	(80-135)	--	--	"	M8
Ethylbenzene	"	17.4	0.0600	1.00	"	"	ND	"	86.8%	(80-124)	--	--	"	

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CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (9110497-MS1)				**QC Source: PSK0253-02**				**Extracted: 11/15/09 14:00**						
Hexachlorobutadiene	EPA 8260B	15.3	0.210	4.00	ug/l	1x	ND	20.0	76.4%	(46.3-157)	--	--	11/15/09 23:21	
2-Hexanone	"	116	3.62	10.0	"	"	ND	100	116%	(62.7-152)	--	--	"	
Isopropylbenzene	"	16.7	0.0700	2.00	"	"	ND	20.0	83.6%	(80-129)	--	--	"	
p-Isopropyltoluene	"	15.4	0.0600	2.00	"	"	ND	"	77.0%	(71.9-138)	--	--	"	
4-Methyl-2-pentanone	"	107	0.290	5.00	"	"	ND	100	107%	(58.7-151)	--	--	"	
Methyl tert-butyl ether	"	17.0	0.0900	1.00	"	"	ND	20.0	85.2%	(80-130)	--	--	"	
Methylene chloride	"	17.2	0.160	5.00	"	"	ND	"	86.2%	(80-120)	--	--	"	
Naphthalene	"	15.7	0.0900	2.00	"	"	ND	"	78.6%	(69-163)	--	--	"	
n-Propylbenzene	"	17.2	0.100	1.00	"	"	ND	"	86.0%	(74.3-133)	--	--	"	
Styrene	"	17.2	0.0400	1.00	"	"	ND	"	85.8%	(47.7-152)	--	--	"	
1,1,1,2-Tetrachloroethane	"	16.0	0.0900	1.00	"	"	ND	"	79.8%	(80-129)	--	--	"	M8
1,1,2,2-Tetrachloroethane	"	19.3	0.0800	1.00	"	"	ND	"	96.4%	(78.9-146)	--	--	"	
Tetrachloroethene	"	17.1	0.110	1.00	"	"	ND	"	85.3%	(80-125)	--	--	"	
Toluene	"	17.5	0.110	1.00	"	"	ND	"	87.7%	(79.7-131)	--	--	"	
1,2,3-Trichlorobenzene	"	15.4	0.100	1.00	"	"	ND	"	77.1%	(70.1-154)	--	--	"	
1,2,4-Trichlorobenzene	"	15.3	0.110	1.00	"	"	ND	"	76.7%	(71.2-148)	--	--	"	
1,1,1-Trichloroethane	"	17.6	0.120	1.00	"	"	ND	"	87.8%	(80-127)	--	--	"	
1,1,2-Trichloroethane	"	18.0	0.130	1.00	"	"	ND	"	90.2%	(80-130)	--	--	"	
Trichloroethene	"	17.9	0.0800	1.00	"	"	ND	"	89.4%	(68.4-130)	--	--	"	
Trichlorofluoromethane	"	20.7	0.0600	1.00	"	"	ND	"	103%	(79.1-129)	--	--	"	
1,2,3-Trichloropropane	"	17.8	0.130	1.00	"	"	ND	"	88.8%	(80-131)	--	--	"	
1,2,4-Trimethylbenzene	"	16.4	0.0800	1.00	"	"	ND	"	82.2%	(80-136)	--	--	"	
1,3,5-Trimethylbenzene	"	16.7	0.0700	1.00	"	"	ND	"	83.6%	(73.4-141)	--	--	"	
Vinyl chloride	"	19.7	0.100	1.00	"	"	ND	"	98.6%	(73.1-132)	--	--	"	
o-Xylene	"	17.1	0.0700	1.00	"	"	ND	"	85.3%	(85.5-124)	--	--	"	M8
m,p-Xylene	"	34.2	0.210	2.00	"	"	ND	40.0	85.4%	(76.2-134)	--	--	"	

Surrogate(s):	*Recovery:*	*Limits:*	
Dibromofluoromethane	*101%*	*80-120%*	*11/15/09 23:21*
1,2-DCA-d4	*101%*	*80-120%*	*"*
Toluene-d8	*101%*	*80-120%*	*"*
4-BFB	*107%*	*80-120%*	*"*

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Darrell Auvil, Project Manager

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Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (9110497-MSD1)				**QC Source: PSK0253-02**				**Extracted: 11/15/09 15:30**						
Acetone	EPA 8260B	99.6	7.76	25.0	ug/l	1x	10.6	100	89.0%	(59.9-143)	10.2%	(25)	11/15/09 23:44	
Benzene	"	19.2	0.0900	0.200	"	"	ND	20.0	96.2%	(80-124)	5.61%	"	"	
Bromobenzene	"	17.8	0.100	1.00	"	"	ND	"	88.9%	(80-121)	3.14%	"	"	
Bromochloromethane	"	19.6	0.180	1.00	"	"	ND	"	97.8%	(80-129)	10.6%	"	"	
Bromodichloromethane	"	20.3	0.110	1.00	"	"	ND	"	101%	(80-135)	9.29%	"	"	
Bromoform	"	17.8	0.100	1.00	"	"	ND	"	88.8%	(69.4-151)	12.2%	"	"	
Bromomethane	"	20.2	0.170	5.00	"	"	ND	"	101%	(31-155)	3.95%	"	"	
2-Butanone (MEK)	"	133	3.50	10.0	"	"	19.7	100	114%	(72.3-143)	2.82%	"	"	
n-Butylbenzene	"	18.5	0.0600	5.00	"	"	ND	20.0	92.4%	(70.8-140)	6.94%	"	"	
sec-Butylbenzene	"	17.8	0.0800	1.00	"	"	ND	"	88.8%	(72.5-134)	8.63%	"	"	
tert-Butylbenzene	"	18.2	0.0600	1.00	"	"	ND	"	91.0%	(72.3-132)	7.58%	"	"	
Carbon disulfide	"	38.4	0.140	10.0	"	"	ND	40.0	96.1%	(40-167)	6.34%	"	"	
Carbon tetrachloride	"	19.5	0.0600	1.00	"	"	ND	20.0	97.7%	(78.8-129)	11.8%	"	"	
Chlorobenzene	"	18.6	0.0500	1.00	"	"	ND	"	92.9%	(72.9-134)	4.46%	"	"	
Chloroethane	"	21.4	0.110	1.00	"	"	ND	"	107%	(79-126)	2.79%	"	"	
Chloroform	"	19.3	0.0900	0.200	"	"	ND	"	96.6%	(80-124)	6.13%	"	"	
Chloromethane	"	20.3	0.0800	5.00	"	"	ND	"	102%	(40-150)	3.56%	"	"	
2-Chlorotoluene	"	18.0	0.0700	1.00	"	"	ND	"	89.9%	(80-120)	7.86%	"	"	
4-Chlorotoluene	"	18.3	0.110	1.00	"	"	ND	"	91.7%	(80-121)	7.58%	"	"	
1,2-Dibromo-3-chloropropane	"	17.6	2.35	5.00	"	"	ND	"	88.0%	(58.5-143)	5.55%	"	"	
Dibromochloromethane	"	19.8	0.0700	1.00	"	"	ND	"	99.2%	(80-129)	9.01%	"	"	
1,2-Dibromoethane	"	19.3	0.110	1.00	"	"	ND	"	96.3%	(80-128)	5.55%	"	"	
Dibromomethane	"	19.8	0.100	1.00	"	"	ND	"	99.2%	(76.4-131)	4.85%	"	"	
1,2-Dichlorobenzene	"	18.9	0.0700	1.00	"	"	ND	"	94.6%	(80-120)	7.69%	"	"	
1,3-Dichlorobenzene	"	17.3	0.0600	1.00	"	"	ND	"	86.6%	(80-122)	8.93%	"	"	
1,4-Dichlorobenzene	"	17.4	0.120	1.00	"	"	ND	"	87.2%	(80-120)	7.56%	"	"	
Dichlorodifluoromethane	"	18.2	0.110	5.00	"	"	ND	"	90.8%	(63.2-134)	4.62%	"	"	
1,1-Dichloroethane	"	19.5	0.0800	1.00	"	"	ND	"	97.5%	(80-123)	4.08%	"	"	
1,2-Dichloroethane	"	20.6	0.100	1.00	"	"	ND	"	103%	(80-121)	4.63%	"	"	
1,1-Dichloroethene	"	18.3	0.120	1.00	"	"	ND	"	91.4%	(79.3-127)	7.26%	"	"	
cis-1,2-Dichloroethene	"	18.8	0.0900	1.00	"	"	ND	"	93.9%	(76.6-136)	5.81%	"	"	
trans-1,2-Dichloroethene	"	18.8	0.100	1.00	"	"	ND	"	94.2%	(80-120)	7.15%	"	"	
1,2-Dichloropropane	"	20.0	0.110	1.00	"	"	ND	"	99.8%	"	6.41%	"	"	
1,3-Dichloropropane	"	19.6	0.140	1.00	"	"	ND	"	97.8%	(80-132)	2.33%	"	"	
2,2-Dichloropropane	"	16.2	0.0900	1.00	"	"	ND	"	80.8%	(74.8-143)	6.98%	"	"	
1,1-Dichloropropene	"	19.2	0.0800	1.00	"	"	ND	"	96.2%	(80-123)	7.89%	"	"	
cis-1,3-Dichloropropene	"	15.7	0.0900	1.00	"	"	ND	"	78.6%	(80-130)	8.42%	"	"	M8
trans-1,3-Dichloropropene	"	15.7	0.100	1.00	"	"	ND	"	78.5%	(80-135)	6.85%	"	"	M8
Ethylbenzene	"	18.7	0.0600	1.00	"	"	ND	"	93.4%	(80-124)	7.33%	"	"	

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110497 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (9110497-MSD1)					**QC Source: PSK0253-02**				**Extracted: 11/15/09 15:30**					
Hexachlorobutadiene	EPA 8260B	16.2	0.210	4.00	ug/l	1x	ND	20.0	81.2%	(46.3-157)	5.96%	(25)	11/15/09 23:44	
2-Hexanone	"	119	3.62	10.0	"	"	ND	100	119%	(62.7-152)	2.89%	"	"	
Isopropylbenzene	"	18.1	0.0700	2.00	"	"	ND	20.0	90.4%	(80-129)	7.70%	"	"	
p-Isopropyltoluene	"	17.2	0.0600	2.00	"	"	ND	"	85.8%	(71.9-138)	10.9%	"	"	
4-Methyl-2-pentanone	"	114	0.290	5.00	"	"	ND	100	114%	(58.7-151)	6.39%	"	"	
Methyl tert-butyl ether	"	18.7	0.0900	1.00	"	"	ND	20.0	93.4%	(80-130)	9.18%	"	"	
Methylene chloride	"	18.7	0.160	5.00	"	"	ND	"	93.6%	(80-120)	8.18%	"	"	
Naphthalene	"	16.8	0.0900	2.00	"	"	ND	"	83.8%	(69-163)	6.47%	"	"	
n-Propylbenzene	"	18.8	0.100	1.00	"	"	ND	"	94.0%	(74.3-133)	8.89%	"	"	
Styrene	"	18.4	0.0400	1.00	"	"	ND	"	91.8%	(47.7-152)	6.81%	"	"	
1,1,1,2-Tetrachloroethane	"	18.4	0.0900	1.00	"	"	ND	"	91.8%	(80-129)	14.0%	"	"	
1,1,2,2-Tetrachloroethane	"	20.8	0.0800	1.00	"	"	ND	"	104%	(78.9-146)	7.64%	"	"	
Tetrachloroethene	"	18.2	0.110	1.00	"	"	ND	"	91.2%	(80-125)	6.63%	"	"	
Toluene	"	18.4	0.110	1.00	"	"	ND	"	92.0%	(79.7-131)	4.79%	"	"	
1,2,3-Trichlorobenzene	"	16.5	0.100	1.00	"	"	ND	"	82.4%	(70.1-154)	6.65%	"	"	
1,2,4-Trichlorobenzene	"	17.2	0.110	1.00	"	"	ND	"	85.8%	(71.2-148)	11.3%	"	"	
1,1,1-Trichloroethane	"	18.7	0.120	1.00	"	"	ND	"	93.6%	(80-127)	6.45%	"	"	
1,1,2-Trichloroethane	"	19.4	0.130	1.00	"	"	ND	"	96.8%	(80-130)	7.01%	"	"	
Trichloroethene	"	18.9	0.0800	1.00	"	"	ND	"	94.3%	(68.4-130)	5.39%	"	"	
Trichlorofluoromethane	"	22.8	0.0600	1.00	"	"	ND	"	114%	(79.1-129)	9.48%	"	"	
1,2,3-Trichloropropane	"	18.8	0.130	1.00	"	"	ND	"	94.2%	(80-131)	5.90%	"	"	
1,2,4-Trimethylbenzene	"	17.9	0.0800	1.00	"	"	ND	"	89.5%	(80-136)	8.56%	"	"	
1,3,5-Trimethylbenzene	"	18.2	0.0700	1.00	"	"	ND	"	91.0%	(73.4-141)	8.53%	"	"	
Vinyl chloride	"	20.6	0.100	1.00	"	"	ND	"	103%	(73.1-132)	4.07%	"	"	
o-Xylene	"	18.4	0.0700	1.00	"	"	ND	"	92.1%	(85.5-124)	7.67%	"	"	
m,p-Xylene	"	36.8	0.210	2.00	"	"	ND	40.0	92.1%	(76.2-134)	7.52%	"	"	

Surrogate(s):	*Dibromofluoromethane*	*Recovery:*	*102%*	*Limits: 80-120%*	*11/15/09 23:44*
	1,2-DCA-d4		*104%*	*80-120%*	*"*
	Toluene-d8		*104%*	*80-120%*	*"*
	4-BFB		*109%*	*80-120%*	*"*

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110309 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110309-BLK2)									**Extracted: 11/10/09 13:30**					
Acenaphthene	EPA 8270m	ND	0.0500	0.100	ug/l	1x	--	--	--	--	--	--	11/13/09 23:34	
Acenaphthylene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	0.100	0.200	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	0.0500	0.100	"	"	--	--	--	--	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 99.4%*			*Limits: 25-125%*								*11/13/09 23:34*	
Pyrene-d10		*114%*			*23-150%*								*"*	
Benzo (a) pyrene-d12		*92.7%*			*10-125%*								*"*	
LCS (9110309-BS2)									**Extracted: 11/10/09 13:30**					
Acenaphthene	EPA 8270m	2.63	0.0500	0.100	ug/l	1x	--	2.50	105%	(26-135)	--	--	11/13/09 23:06	
Benzo (a) pyrene	"	2.54	0.0500	0.100	"	"	--	"	102%	(38-137)	--	--	"	
Pyrene	"	2.67	0.0500	0.100	"	"	--	"	107%	(33-133)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 100%*			*Limits: 25-125%*								*11/13/09 23:06*	
Pyrene-d10		*99.2%*			*23-150%*								*"*	
Benzo (a) pyrene-d12		*98.0%*			*10-125%*								*"*	
Matrix Spike (9110309-MS2)					**QC Source: PSK0253-02**				**Extracted: 11/10/09 13:30**					
Acenaphthene	EPA 8270m	2.47	0.100	0.200	ug/l	2x	ND	2.50	98.9%	(26-135)	--	--	11/14/09 00:04	
Benzo (a) pyrene	"	2.40	0.100	0.200	"	"	ND	"	96.0%	(38-137)	--	--	"	
Pyrene	"	2.68	0.100	0.200	"	"	ND	"	107%	(33-133)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 93.0%*			*Limits: 25-125%*								*11/14/09 00:04*	
Pyrene-d10		*98.3%*			*23-150%*								*"*	
Benzo (a) pyrene-d12		*89.3%*			*10-125%*								*"*	

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Darrell Auvil, Project Manager

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110309 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (9110309-MSD2)					**QC Source: PSK0253-02**				**Extracted: 11/10/09 13:30**					
Acenaphthene	EPA 8270m	2.10	0.100	0.200	ug/l	2x	ND	2.50	84.1%	(26-135)	16.2%	(60)	11/16/09 19:43	
Benzo (a) pyrene	"	2.07	0.100	0.200	"	"	ND	"	82.9%	(38-137)	14.7%	"	"	
Pyrene	"	3.33	0.100	0.200	"	"	ND	"	133%	(33-133)	21.7%	"	"	
Surrogate(s):	*Fluorene-d10*	*Recovery:*	*82.0%*		*Limits:*	*25-125%*							*11/16/09 19:43*	
	Pyrene-d10		*126%*			*23-150%*							*"*	
	Benzo (a) pyrene-d12		*81.1%*			*10-125%*							*"*	

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Phthalates per EPA 8270-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110309 **Water Preparation Method: 3520B Liq-Liq**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110309-BLK1)									Extracted: 11/10/09 13:30					
Dimethyl phthalate	EPA 8270m	ND	0.526	1.00	ug/l	1x	--	--	--	--	--	--	11/16/09 11:30	
Diethyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Di-n-butyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Butyl benzyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Bis(2-ethylhexyl)phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Di-n-octyl phthalate	"	ND	0.526	1.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 68.7%*			*Limits: 10-150%*								*11/16/09 11:30*	
p-Terphenyl-d14		*107%*			*10-150%*								*"*	
LCS (9110309-BS1)									Extracted: 11/10/09 13:30					
Dimethyl phthalate	EPA 8270m	4.14	0.526	1.00	ug/l	1x	--	4.00	103%	(20-150)	--	--	11/16/09 12:42	
Diethyl phthalate	"	4.40	0.526	1.00	"	"	--	"	110%	"	--	--	"	
Di-n-butyl phthalate	"	4.84	0.526	1.00	"	"	--	"	121%	"	--	--	"	
Butyl benzyl phthalate	"	4.83	0.526	1.00	"	"	--	"	121%	"	--	--	"	
Bis(2-ethylhexyl)phthalate	"	2.22	0.526	1.00	"	"	--	"	55.5%	"	--	--	"	
Di-n-octyl phthalate	"	1.57	0.526	1.00	"	"	--	"	39.1%	"	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 68.4%*			*Limits: 10-150%*								*11/16/09 12:42*	
p-Terphenyl-d14		*92.1%*			*10-150%*								*"*	
Matrix Spike (9110309-MS1)							QC Source: PSK0253-02		Extracted: 11/10/09 13:30					
Dimethyl phthalate	EPA 8270m	4.11	1.05	2.00	ug/l	2x	ND	4.00	103%	(10-150)	--	--	11/16/09 13:17	
Diethyl phthalate	"	4.40	1.05	2.00	"	"	ND	"	110%	"	--	--	"	
Di-n-butyl phthalate	"	4.76	1.05	2.00	"	"	ND	"	119%	"	--	--	"	
Butyl benzyl phthalate	"	5.07	1.05	2.00	"	"	ND	"	127%	"	--	--	"	
Bis(2-ethylhexyl)phthalate	"	2.99	1.05	2.00	"	"	ND	"	74.8%	"	--	--	"	
Di-n-octyl phthalate	"	2.28	1.05	2.00	"	"	ND	"	56.9%	"	--	--	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 90.9%*			*Limits: 10-150%*								*11/16/09 13:17*	
p-Terphenyl-d14		*94.4%*			*10-150%*								*"*	
Matrix Spike Dup (9110309-MSD1)							QC Source: PSK0253-02		Extracted: 11/10/09 13:30					
Dimethyl phthalate	EPA 8270m	3.75	1.05	2.00	ug/l	2x	ND	4.00	93.7%	(10-150)	9.20%	(50)	11/16/09 13:53	
Diethyl phthalate	"	4.12	1.05	2.00	"	"	ND	"	103%	"	6.65%	"	"	
Di-n-butyl phthalate	"	4.46	1.05	2.00	"	"	ND	"	112%	"	6.52%	"	"	
Butyl benzyl phthalate	"	4.78	1.05	2.00	"	"	ND	"	119%	"	6.04%	"	"	
Bis(2-ethylhexyl)phthalate	"	2.68	1.05	2.00	"	"	ND	"	67.0%	"	11.0%	"	"	
Di-n-octyl phthalate	"	2.09	1.05	2.00	"	"	ND	"	52.3%	"	8.38%	"	"	
Surrogate(s): 2-Fluorobiphenyl		*Recovery: 62.6%*			*Limits: 10-150%*								*11/16/09 13:53*	
p-Terphenyl-d14		*89.5%*			*10-150%*								*"*	

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Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Conventional Chemistry Parameters per Standard Methods - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9110465 **Water Preparation Method: Wet Chem**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9110465-BLK1)								**Extracted: 11/13/09 11:27**						
Total Suspended Solids	SM 2540D	ND	3.50	10.0	mg/l	1x	--	--	--	--	--	--	11/13/09 14:41	
LCS (9110465-BS1)								**Extracted: 11/13/09 11:27**						
Total Suspended Solids	SM 2540D	60.0	3.50	10.0	mg/l	1x	--	60.0	100%	(80-120)	--	--	11/13/09 14:41	
Duplicate (9110465-DUP1)							**QC Source: PSK0253-02**						**Extracted: 11/13/09 11:27**	
Total Suspended Solids	SM 2540D	ND	3.50	10.0	mg/l	1x	ND	--	--	--	NR	(20)	11/13/09 14:41	

TestAmerica Portland

Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

CH2M-Hill	Project Name:	**NW Pipe Project**	
2020 SW 4th Suite 300	Project Number:	358932.RI.06	Report Created:
Portland, OR 97201	Project Manager:	Pat Heins	11/23/09 16:51

Notes and Definitions

Report Specific Notes:

J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

M8 - The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).

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. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

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.

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.

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

Darrell W. Auvil

Darrell Auvil, Project Manager

GC/MS Volatile Organic Compounds

ANALYSES DATA PACKAGE COVER PAGE

EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project

Client Sample Id:	Lab Sample Id:
DS005-110709	PSK0253-01
DS012-110709	PSK0253-02
DS120-110709	PSK0253-07
DS120-110709-1	PSK0253-08
DS223-110709	PSK0253-10
DS221-110709	PSK0253-11
Trip Blank	PSK0253-12

GC/MS Volatile Organic Compounds

Quality Control Summaries

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9J29012	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (9J29012-SCV2)				Lab File ID: C1029022.D		Analyzed: 10/30/09 09:45		
1,2-DCA-d4	20.0	102	0 - 200	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	103	0 - 200	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	104	0 - 200	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	102	0 - 200	9.45	9.45	0.0000	+/-1.0	

Form 2
SURROGATE STANDARD RECOVERY AND RT SUMMARY
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13014	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K13014-CCV1)			Lab File ID: C1113A03.D		Analyzed: 11/13/09 18:38			
1,2-DCA-d4	20.0	111	70 - 130	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	118	70 - 130	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	113	70 - 130	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	112	70 - 130	9.45	9.45	0.0000	+/-1.0	
Instrument Blank (9K13014-IBL1)			Lab File ID: C1113A07.D		Analyzed: 11/13/09 20:17			
1,2-DCA-d4			80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB			80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane			80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8			80 - 120	9.45	9.45	0.0000	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13014	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Blank (9110484-BLK1)				Lab File ID: C1113A08.D		Analyzed: 11/13/09 20:40		
1,2-DCA-d4	20.0	104	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	104	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	101	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	100	80 - 120	9.45	9.45	0.0000	+/-1.0	
LCS (9110484-BS1)				Lab File ID: C1113A03.D		Analyzed: 11/13/09 18:38		
1,2-DCA-d4	20.0	111	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	118	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	113	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	112	80 - 120	9.45	9.45	0.0000	+/-1.0	
LCS Dup (9110484-BSD1)				Lab File ID: C1113A04.D		Analyzed: 11/13/09 19:02		
1,2-DCA-d4	20.0	111	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	118	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	110	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	111	80 - 120	9.45	9.45	0.0000	+/-1.0	
Trip Blank (PSK0253-12)				Lab File ID: C1113A10.D		Analyzed: 11/13/09 21:27		
1,2-DCA-d4	20.0	104	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	108	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	100	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	100	80 - 120	9.45	9.45	0.0000	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K15001	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K15001-CCV1)			Lab File ID: C1115002.D		Analyzed: 11/15/09 14:33			
1,2-DCA-d4	20.0	105	70 - 130	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	112	70 - 130	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	106	70 - 130	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	107	70 - 130	9.45	9.45	0.0000	+/-1.0	
Instrument Blank (9K15001-IBL1)			Lab File ID: C1115005.D		Analyzed: 11/15/09 15:55			
1,2-DCA-d4			80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB			80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane			80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8			80 - 120	9.45	9.45	0.0000	+/-1.0	
Instrument Blank (9K15001-IBL2)			Lab File ID: C1115026.D		Analyzed: 11/16/09 00:08			
1,2-DCA-d4			80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB			80 - 120	11.83	11.82	0.0100	+/-1.0	
Dibromofluoromethane			80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8			80 - 120	9.46	9.45	0.0100	+/-1.0	

Form 2
SURROGATE STANDARD RECOVERY AND RT SUMMARY
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K15001	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Blank (9110497-BLK1)				Lab File ID: C1115006.D		Analyzed: 11/15/09 16:18		
1,2-DCA-d4	20.0	103	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	106	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	96.4	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	98.9	80 - 120	9.45	9.45	0.0000	+/-1.0	
LCS (9110497-BS1)				Lab File ID: C1115003.D		Analyzed: 11/15/09 15:08		
1,2-DCA-d4	20.0	101	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	110	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	104	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	101	80 - 120	9.45	9.45	0.0000	+/-1.0	
Matrix Spike (9110497-MS1)				Lab File ID: C1115024.D		Analyzed: 11/15/09 23:21		
1,2-DCA-d4	20.0	101	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	107	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	101	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	101	80 - 120	9.45	9.45	0.0000	+/-1.0	
Matrix Spike Dup (9110497-MSD1)				Lab File ID: C1115025.D		Analyzed: 11/15/09 23:44		
1,2-DCA-d4	20.0	104	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	109	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	102	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	104	80 - 120	9.45	9.45	0.0000	+/-1.0	
DS005-110709 (PSK0253-01)				Lab File ID: C1115018.D		Analyzed: 11/15/09 21:00		
1,2-DCA-d4	20.0	104	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	107	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	101	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	99.8	80 - 120	9.45	9.45	0.0000	+/-1.0	
DS012-110709 (PSK0253-02)				Lab File ID: C1115023.D		Analyzed: 11/15/09 22:58		
1,2-DCA-d4	20.0	102	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	107	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	99.8	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	97.8	80 - 120	9.46	9.45	0.0100	+/-1.0	
DS120-110709 (PSK0253-07)				Lab File ID: C1115019.D		Analyzed: 11/15/09 21:24		
1,2-DCA-d4	20.0	103	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	110	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	101	80 - 120	6.1	6.098889	0.0011	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K15001	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
DS120-110709 (PSK0253-07)			Lab File ID: C1115019.D		Analyzed: 11/15/09 21:24			
Toluene-d8	20.0	99.6	80 - 120	9.45	9.45	0.0000	+/-1.0	
DS120-110709-1 (PSK0253-08)			Lab File ID: C1115020.D		Analyzed: 11/15/09 21:47			
1,2-DCA-d4	20.0	102	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	106	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	101	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	98.6	80 - 120	9.45	9.45	0.0000	+/-1.0	
DS223-110709 (PSK0253-10)			Lab File ID: C1115021.D		Analyzed: 11/15/09 22:11			
1,2-DCA-d4	20.0	103	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	106	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	99.7	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	98.2	80 - 120	9.45	9.45	0.0000	+/-1.0	
DS221-110709 (PSK0253-11)			Lab File ID: C1115022.D		Analyzed: 11/15/09 22:34			
1,2-DCA-d4	20.0	103	80 - 120	6.58	6.58	0.0000	+/-1.0	
4-BFB	20.0	106	80 - 120	11.82	11.82	0.0000	+/-1.0	
Dibromofluoromethane	20.0	100	80 - 120	6.1	6.098889	0.0011	+/-1.0	
Toluene-d8	20.0	101	80 - 120	9.46	9.45	0.0100	+/-1.0	

Laboratory Blank Report

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results
TestAmerica Portland

Batch 9110484

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Water	EPA 8260B	9110484-BLK1	Blank	1x	C1113A08.D	11/13/09 20:40	VOA73C
Water	EPA 8260B	9110484-BS1	LCS	1x	C1113A03.D	11/13/09 18:38	VOA73C
Water	EPA 8260B	9110484-BSD1	LCS Dup	1x	C1113A04.D	11/13/09 19:02	VOA73C
Water	EPA 8260B	PSK0253-12	Trip Blank	1x	C1113A10.D	11/13/09 21:27	VOA73C
Water	EPA 8260B	9110497-BLK1	Blank	1x	C1115006.D	11/15/09 16:18	VOA73C
Water	EPA 8260B	9110497-BS1	LCS	1x	C1115003.D	11/15/09 15:08	VOA73C
Water	EPA 8260B	9110497-MS1	Matrix Spike	1x	C1115024.D	11/15/09 23:21	VOA73C
Water	EPA 8260B	9110497-MSD1	Matrix Spike Dup	1x	C1115025.D	11/15/09 23:44	VOA73C
Water	EPA 8260B	PSK0253-01	DS005-110709	1x	C1115018.D	11/15/09 21:00	VOA73C
Water	EPA 8260B	PSK0253-02	DS012-110709	1x	C1115023.D	11/15/09 22:58	VOA73C
Water	EPA 8260B	PSK0253-07	DS120-110709	1x	C1115019.D	11/15/09 21:24	VOA73C
Water	EPA 8260B	PSK0253-08	DS120-110709-1	1x	C1115020.D	11/15/09 21:47	VOA73C
Water	EPA 8260B	PSK0253-10	DS223-110709	1x	C1115021.D	11/15/09 22:11	VOA73C
Water	EPA 8260B	PSK0253-11	DS221-110709	1x	C1115022.D	11/15/09 22:34	VOA73C

Form 1

METHOD BLANK DATA SHEET

EPA 8260B

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	9110484-BLK1	File ID:	C1113A08.D
Prepared:	11/13/09 16:00	Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Analyzed:	11/13/09 20:40	Instrument:	VOA73C		
Batch:	9110484	Sequence:	9K13014	Calibration:	9102901

CAS NO.	COMPOUND	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.00	U
71-55-6	1,1,1-Trichloroethane	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U
79-00-5	1,1,2-Trichloroethane	1.00	U
75-34-3	1,1-Dichloroethane	1.00	U
75-35-4	1,1-Dichloroethene	1.00	U
563-58-6	1,1-Dichloropropene	1.00	U
87-61-6	1,2,3-Trichlorobenzene	0.410	J
96-18-4	1,2,3-Trichloropropane	1.00	U
120-82-1	1,2,4-Trichlorobenzene	0.420	J
95-63-6	1,2,4-Trimethylbenzene	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	5.00	U
106-93-4	1,2-Dibromoethane	1.00	U
95-50-1	1,2-Dichlorobenzene	1.00	U
107-06-2	1,2-Dichloroethane	1.00	U
78-87-5	1,2-Dichloropropane	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1.00	U
541-73-1	1,3-Dichlorobenzene	1.00	U
142-28-9	1,3-Dichloropropane	1.00	U
106-46-7	1,4-Dichlorobenzene	1.00	U
594-20-7	2,2-Dichloropropane	1.00	U
78-93-3	2-Butanone (MEK)	10.0	U
95-49-8	2-Chlorotoluene	1.00	U
591-78-6	2-Hexanone	10.0	U
106-43-4	4-Chlorotoluene	1.00	U
108-10-1	4-Methyl-2-pentanone	5.00	U
67-64-1	Acetone	25.0	U
71-43-2	Benzene	0.200	U
108-86-1	Bromobenzene	1.00	U
74-97-5	Bromochloromethane	1.00	U

Form 1

METHOD BLANK DATA SHEET

EPA 8260B

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	9110484-BLK1	File ID:	C1113A08.D
Prepared:	11/13/09 16:00	Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Analyzed:	11/13/09 20:40	Instrument:	VOA73C		
Batch:	9110484	Sequence:	9K13014	Calibration:	9102901

CAS NO.	COMPOUND	CONC. (ug/l)	Q
75-27-4	Bromodichloromethane	1.00	U
75-25-2	Bromoform	1.00	U
74-83-9	Bromomethane	5.00	U
75-15-0	Carbon disulfide	10.0	U
56-23-5	Carbon tetrachloride	1.00	U
108-90-7	Chlorobenzene	1.00	U
75-00-3	Chloroethane	1.00	U
67-66-3	Chloroform	0.200	U
74-87-3	Chloromethane	5.00	U
156-59-2	cis-1,2-Dichloroethene	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1.00	U
124-48-1	Dibromochloromethane	1.00	U
74-95-3	Dibromomethane	1.00	U
75-71-8	Dichlorodifluoromethane	5.00	U
100-41-4	Ethylbenzene	1.00	U
87-68-3	Hexachlorobutadiene	0.330	J
98-82-8	Isopropylbenzene	2.00	U
1330-20-7mp	m,p-Xylene	2.00	U
1634-04-4	Methyl tert-butyl ether	1.00	U
75-09-2	Methylene chloride	5.00	U
91-20-3	Naphthalene	2.00	U
104-51-8	n-Butylbenzene	0.150	J
103-65-1	n-Propylbenzene	1.00	U
95-47-6	o-Xylene	1.00	U
99-87-6	p-Isopropyltoluene	0.0700	J
135-98-8	sec-Butylbenzene	0.0900	J
100-42-5	Styrene	1.00	U
98-06-6	tert-Butylbenzene	1.00	U
127-18-4	Tetrachloroethene	1.00	U
108-88-3	Toluene	1.00	U

Form 1

METHOD BLANK DATA SHEET

EPA 8260B

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	9110484-BLK1	File ID:	C1113A08.D
Prepared:	11/13/09 16:00	Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Analyzed:	11/13/09 20:40	Instrument:	VOA73C		
Batch:	9110484	Sequence:	9K13014	Calibration:	9102901

CAS NO.	COMPOUND	CONC. (ug/l)	Q
156-60-5	trans-1,2-Dichloroethene	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1.00	U
79-01-6	Trichloroethene	1.00	U
75-69-4	Trichlorofluoromethane	1.00	U
75-01-4	Vinyl chloride	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.7	104	80 - 120	
4-BFB	20.0	20.9	104	80 - 120	
Dibromofluoromethane	20.0	20.3	101	80 - 120	
Toluene-d8	20.0	20.0	100	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	382969	13.09	351022	13.09	
Chlorobenzene-d5	185032	10.77	168246	10.77	
Fluorobenzene	1095357	7.47	1006884	7.46	

Form 1

METHOD BLANK DATA SHEET

EPA 8260B

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	9110497-BLK1	File ID:	C1115006.D
Prepared:	11/15/09 14:00	Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Analyzed:	11/15/09 16:18	Instrument:	VOA73C		
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901

CAS NO.	COMPOUND	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1.00	U
71-55-6	1,1,1-Trichloroethane	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U
79-00-5	1,1,2-Trichloroethane	1.00	U
75-34-3	1,1-Dichloroethane	1.00	U
75-35-4	1,1-Dichloroethene	1.00	U
563-58-6	1,1-Dichloropropene	1.00	U
87-61-6	1,2,3-Trichlorobenzene	0.410	J
96-18-4	1,2,3-Trichloropropane	1.00	U
120-82-1	1,2,4-Trichlorobenzene	0.430	J
95-63-6	1,2,4-Trimethylbenzene	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	5.00	U
106-93-4	1,2-Dibromoethane	1.00	U
95-50-1	1,2-Dichlorobenzene	1.00	U
107-06-2	1,2-Dichloroethane	1.00	U
78-87-5	1,2-Dichloropropane	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1.00	U
541-73-1	1,3-Dichlorobenzene	1.00	U
142-28-9	1,3-Dichloropropane	1.00	U
106-46-7	1,4-Dichlorobenzene	1.00	U
594-20-7	2,2-Dichloropropane	1.00	U
78-93-3	2-Butanone (MEK)	10.0	U
95-49-8	2-Chlorotoluene	1.00	U
591-78-6	2-Hexanone	10.0	U
106-43-4	4-Chlorotoluene	1.00	U
108-10-1	4-Methyl-2-pentanone	5.00	U
67-64-1	Acetone	25.0	U
71-43-2	Benzene	0.200	U
108-86-1	Bromobenzene	1.00	U
74-97-5	Bromochloromethane	1.00	U

Form 1

METHOD BLANK DATA SHEET

EPA 8260B

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	9110497-BLK1	File ID:	C1115006.D
Prepared:	11/15/09 14:00	Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Analyzed:	11/15/09 16:18	Instrument:	VOA73C		
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901

CAS NO.	COMPOUND	CONC. (ug/l)	Q
75-27-4	Bromodichloromethane	1.00	U
75-25-2	Bromoform	1.00	U
74-83-9	Bromomethane	5.00	U
75-15-0	Carbon disulfide	10.0	U
56-23-5	Carbon tetrachloride	1.00	U
108-90-7	Chlorobenzene	1.00	U
75-00-3	Chloroethane	1.00	U
67-66-3	Chloroform	0.200	U
74-87-3	Chloromethane	5.00	U
156-59-2	cis-1,2-Dichloroethene	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1.00	U
124-48-1	Dibromochloromethane	1.00	U
74-95-3	Dibromomethane	1.00	U
75-71-8	Dichlorodifluoromethane	5.00	U
100-41-4	Ethylbenzene	1.00	U
87-68-3	Hexachlorobutadiene	0.330	J
98-82-8	Isopropylbenzene	2.00	U
1330-20-7mp	m,p-Xylene	2.00	U
1634-04-4	Methyl tert-butyl ether	1.00	U
75-09-2	Methylene chloride	5.00	U
91-20-3	Naphthalene	2.00	U
104-51-8	n-Butylbenzene	0.130	J
103-65-1	n-Propylbenzene	1.00	U
95-47-6	o-Xylene	1.00	U
99-87-6	p-Isopropyltoluene	2.00	U
135-98-8	sec-Butylbenzene	0.0800	J
100-42-5	Styrene	1.00	U
98-06-6	tert-Butylbenzene	1.00	U
127-18-4	Tetrachloroethene	1.00	U
108-88-3	Toluene	1.00	U

Form 1

METHOD BLANK DATA SHEET

EPA 8260B

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	9110497-BLK1	File ID:	C1115006.D
Prepared:	11/15/09 14:00	Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Analyzed:	11/15/09 16:18	Instrument:	VOA73C		
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901

CAS NO.	COMPOUND	CONC. (ug/l)	Q
156-60-5	trans-1,2-Dichloroethene	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1.00	U
79-01-6	Trichloroethene	1.00	U
75-69-4	Trichlorofluoromethane	1.00	U
75-01-4	Vinyl chloride	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.6	103	80 - 120	
4-BFB	20.0	21.3	106	80 - 120	
Dibromofluoromethane	20.0	19.3	96.4	80 - 120	
Toluene-d8	20.0	19.8	98.9	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	382449	13.09	402892	13.09	
Chlorobenzene-d5	184431	10.77	186669	10.77	
Fluorobenzene	1112822	7.47	1090019	7.46	

Form 3

LCS / LCS DUPLICATE RECOVERY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110484	Laboratory ID:	9110484-BS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	20.0	19.6	98.1	69 - 138
1,1,1-Trichloroethane	20.0	20.3	101	76 - 132
1,1,2,2-Tetrachloroethane	20.0	21.7	108	77 - 128
1,1,2-Trichloroethane	20.0	20.2	101	80 - 123
1,1-Dichloroethane	20.0	20.2	101	80 - 120
1,1-Dichloroethene	20.0	19.1	95.6	78 - 120
1,1-Dichloropropene	20.0	19.8	99.2	80 - 120
1,2,3-Trichlorobenzene	20.0	18.2	91.0	69 - 138
1,2,3-Trichloropropane	20.0	19.4	97.1	75 - 125
1,2,4-Trichlorobenzene	20.0	18.5	92.4	75 - 127
1,2,4-Trimethylbenzene	20.0	19.1	95.4	73 - 132
1,2-Dibromo-3-chloropropane	20.0	19.1	95.6	73 - 134
1,2-Dibromoethane	20.0	19.4	97.2	80 - 122
1,2-Dichlorobenzene	20.0	20.0	100	80 - 113
1,2-Dichloroethane	20.0	21.4	107	78 - 123
1,2-Dichloropropane	20.0	20.0	100	80 - 126
1,3,5-Trimethylbenzene	20.0	19.6	97.8	75 - 132
1,3-Dichlorobenzene	20.0	18.6	93.2	76 - 123
1,3-Dichloropropane	20.0	19.9	99.3	80 - 120
1,4-Dichlorobenzene	20.0	18.8	93.8	73 - 120
2,2-Dichloropropane	20.0	20.1	101	60 - 144
2-Butanone (MEK)	100	111	111	71 - 136
2-Chlorotoluene	20.0	19.0	95.0	72 - 125
2-Hexanone	100	114	114	73 - 139
4-Chlorotoluene	20.0	19.3	96.6	77 - 124
4-Methyl-2-pentanone	100	109	109	72 - 134
Acetone	100	92.4	92.4	56 - 141
Benzene	20.0	19.8	98.8	80 - 120
Bromobenzene	20.0	18.9	94.4	78 - 120
Bromochloromethane	20.0	20.0	99.8	76 - 121

Form 3
LCS / LCS DUPLICATE RECOVERY
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110484	Laboratory ID:	9110484-BS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
Bromodichloromethane	20.0	21.3	106	84 - 127
Bromoform	20.0	20.5	102	55 - 134
Bromomethane	20.0	22.6	113	38 - 150
Carbon disulfide	40.0	40.3	101	58 - 120
Carbon tetrachloride	20.0	21.5	108	73 - 134
Chlorobenzene	20.0	19.2	95.8	80 - 124
Chloroethane	20.0	23.8	119	79 - 124
Chloroform	20.0	20.1	101	80 - 120
Chloromethane	20.0	21.9	110	47 - 146
cis-1,2-Dichloroethene	20.0	19.2	95.9	80 - 120
cis-1,3-Dichloropropene	20.0	16.8	84.0	80 - 125
Dibromochloromethane	20.0	21.4	107	69 - 138
Dibromomethane	20.0	20.0	99.8	80 - 120
Dichlorodifluoromethane	20.0	21.2	106	48 - 140
Ethylbenzene	20.0	19.7	98.3	80 - 120
Hexachlorobutadiene	20.0	18.5	92.6	64 - 145
Isopropylbenzene	20.0	19.5	97.4	77 - 124
m,p-Xylene	40.0	39.3	98.2	72 - 127
Methyl tert-butyl ether	20.0	19.1	95.5	80 - 129
Methylene chloride	20.0	18.8	94.2	80 - 120
Naphthalene	20.0	17.8	88.8	72 - 149
n-Butylbenzene	20.0	20.7	104	76 - 126
n-Propylbenzene	20.0	20.3	102	76 - 128
o-Xylene	20.0	19.5	97.4	77 - 123
p-Isopropyltoluene	20.0	18.6	92.9	68 - 130
sec-Butylbenzene	20.0	19.5	97.4	64 - 129
Styrene	20.0	19.4	96.8	72 - 127
tert-Butylbenzene	20.0	19.6	98.2	71 - 127
Tetrachloroethene	20.0	19.1	95.6	80 - 124
Toluene	20.0	19.1	95.4	80 - 124

Form 3
LCS / LCS DUPLICATE RECOVERY
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110484	Laboratory ID:	9110484-BS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
trans-1,2-Dichloroethene	20.0	19.3	96.4	80 - 120
trans-1,3-Dichloropropene	20.0	16.6	83.2	80 - 130
Trichloroethene	20.0	19.5	97.6	80 - 132
Trichlorofluoromethane	20.0	25.7	128	77 - 137
Vinyl chloride	20.0	22.5	113	76 - 133

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	20.0	19.5	97.6	0.460	25	69 - 138
1,1,1-Trichloroethane	20.0	19.4	97.2	4.13	25	76 - 132
1,1,2,2-Tetrachloroethane	20.0	22.4	112	2.95	25	77 - 128
1,1,2-Trichloroethane	20.0	20.4	102	1.48	25	80 - 123
1,1-Dichloroethane	20.0	19.5	97.4	3.73	25	80 - 120
1,1-Dichloroethene	20.0	18.0	89.8	6.20	25	78 - 120
1,1-Dichloropropene	20.0	19.3	96.4	2.86	25	80 - 120
1,2,3-Trichlorobenzene	20.0	17.6	87.8	3.52	25	69 - 138
1,2,3-Trichloropropane	20.0	20.2	101	3.74	25	75 - 125
1,2,4-Trichlorobenzene	20.0	17.9	89.4	3.30	25	75 - 127
1,2,4-Trimethylbenzene	20.0	18.8	94.1	1.42	25	73 - 132
1,2-Dibromo-3-chloropropane	20.0	20.6	103	7.64	25	73 - 134
1,2-Dibromoethane	20.0	20.3	101	4.33	25	80 - 122
1,2-Dichlorobenzene	20.0	19.4	96.8	3.45	25	80 - 113
1,2-Dichloroethane	20.0	21.1	105	1.41	25	78 - 123
1,2-Dichloropropane	20.0	19.9	99.5	0.701	25	80 - 126
1,3,5-Trimethylbenzene	20.0	19.4	97.0	0.821	25	75 - 132
1,3-Dichlorobenzene	20.0	18.0	90.2	3.27	25	76 - 123
1,3-Dichloropropane	20.0	20.3	101	2.04	25	80 - 120
1,4-Dichlorobenzene	20.0	18.7	93.6	0.213	25	73 - 120
2,2-Dichloropropane	20.0	19.0	94.8	5.93	25	60 - 144
2-Butanone (MEK)	100	119	119	7.42	25	71 - 136

Form 3
LCS / LCS DUPLICATE RECOVERY
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110484	Laboratory ID:	9110484-BSD1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
2-Chlorotoluene	20.0	18.7	93.6	1.49	25	72 - 125
2-Hexanone	100	121	121	6.00	25	73 - 139
4-Chlorotoluene	20.0	19.0	95.2	1.46	25	77 - 124
4-Methyl-2-pentanone	100	114	114	5.10	25	72 - 134
Acetone	100	97.7	97.7	5.66	25	56 - 141
Benzene	20.0	19.2	96.2	2.67	25	80 - 120
Bromobenzene	20.0	18.2	91.0	3.61	25	78 - 120
Bromochloromethane	20.0	19.0	95.2	4.72	25	76 - 121
Bromodichloromethane	20.0	21.1	106	0.801	25	84 - 127
Bromoform	20.0	21.3	107	4.02	25	55 - 134
Bromomethane	20.0	20.9	104	8.14	25	38 - 150
Carbon disulfide	40.0	37.3	93.3	7.68	25	58 - 120
Carbon tetrachloride	20.0	20.5	102	5.09	25	73 - 134
Chlorobenzene	20.0	19.0	94.8	0.997	25	80 - 124
Chloroethane	20.0	22.0	110	8.13	25	79 - 124
Chloroform	20.0	19.5	97.5	3.18	25	80 - 120
Chloromethane	20.0	20.5	102	6.83	25	47 - 146
cis-1,2-Dichloroethene	20.0	18.8	93.8	2.16	25	80 - 120
cis-1,3-Dichloropropene	20.0	16.9	84.4	0.594	25	80 - 125
Dibromochloromethane	20.0	21.5	108	0.466	25	69 - 138
Dibromomethane	20.0	20.0	99.8	0.0501	25	80 - 120
Dichlorodifluoromethane	20.0	19.0	95.2	10.5	25	48 - 140
Ethylbenzene	20.0	19.3	96.3	2.06	25	80 - 120
Hexachlorobutadiene	20.0	19.0	95.2	2.66	25	64 - 145
Isopropylbenzene	20.0	19.0	94.9	2.65	25	77 - 124
m,p-Xylene	40.0	37.9	94.8	3.63	25	72 - 127
Methyl tert-butyl ether	20.0	19.0	95.2	0.315	25	80 - 129
Methylene chloride	20.0	18.5	92.6	1.82	25	80 - 120
Naphthalene	20.0	17.7	88.6	0.225	25	72 - 149
n-Butylbenzene	20.0	19.9	99.3	4.14	25	76 - 126

Form 3

LCS / LCS DUPLICATE RECOVERY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110484	Laboratory ID:	9110484-BSD1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
n-Propylbenzene	20.0	19.7	98.4	3.30	25	76 - 128
o-Xylene	20.0	19.0	94.8	2.71	25	77 - 123
p-Isopropyltoluene	20.0	18.5	92.3	0.648	25	68 - 130
sec-Butylbenzene	20.0	19.2	95.8	1.66	25	64 - 129
Styrene	20.0	19.1	95.6	1.20	25	72 - 127
tert-Butylbenzene	20.0	19.4	96.9	1.28	25	71 - 127
Tetrachloroethene	20.0	18.6	93.2	2.44	25	80 - 124
Toluene	20.0	18.8	94.2	1.27	25	80 - 124
trans-1,2-Dichloroethene	20.0	18.8	94.2	2.31	25	80 - 120
trans-1,3-Dichloropropene	20.0	16.9	84.6	1.67	25	80 - 130
Trichloroethene	20.0	19.0	95.0	2.70	25	80 - 132
Trichlorofluoromethane	20.0	22.9	115	11.3	25	77 - 137
Vinyl chloride	20.0	20.5	103	9.33	25	76 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Form 3
LCS / LCS DUPLICATE RECOVERY
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110497	Laboratory ID:	9110497-BS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	20.0	20.0	99.9	69 - 138
1,1,1-Trichloroethane	20.0	19.4	97.2	76 - 132
1,1,2,2-Tetrachloroethane	20.0	21.3	107	77 - 128
1,1,2-Trichloroethane	20.0	19.0	95.2	80 - 123
1,1-Dichloroethane	20.0	19.2	95.8	80 - 120
1,1-Dichloroethene	20.0	18.1	90.5	78 - 120
1,1-Dichloropropene	20.0	18.5	92.7	80 - 120
1,2,3-Trichlorobenzene	20.0	17.6	87.8	69 - 138
1,2,3-Trichloropropane	20.0	19.3	96.3	75 - 125
1,2,4-Trichlorobenzene	20.0	17.5	87.6	75 - 127
1,2,4-Trimethylbenzene	20.0	18.1	90.5	73 - 132
1,2-Dibromo-3-chloropropane	20.0	21.3	107	73 - 134
1,2-Dibromoethane	20.0	19.4	96.8	80 - 122
1,2-Dichlorobenzene	20.0	19.0	95.1	80 - 113
1,2-Dichloroethane	20.0	20.6	103	78 - 123
1,2-Dichloropropane	20.0	19.3	96.6	80 - 126
1,3,5-Trimethylbenzene	20.0	18.8	94.0	75 - 132
1,3-Dichlorobenzene	20.0	17.7	88.3	76 - 123
1,3-Dichloropropane	20.0	19.2	96.2	80 - 120
1,4-Dichlorobenzene	20.0	18.2	90.8	73 - 120
2,2-Dichloropropane	20.0	18.9	94.6	60 - 144
2-Butanone (MEK)	100	110	110	71 - 136
2-Chlorotoluene	20.0	18.1	90.6	72 - 125
2-Hexanone	100	110	110	73 - 139
4-Chlorotoluene	20.0	18.7	93.4	77 - 124
4-Methyl-2-pentanone	100	107	107	72 - 134
Acetone	100	97.9	97.9	56 - 141
Benzene	20.0	18.5	92.7	80 - 120
Bromobenzene	20.0	17.8	89.2	78 - 120
Bromochloromethane	20.0	19.7	98.3	76 - 121

Form 3
LCS / LCS DUPLICATE RECOVERY
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110497	Laboratory ID:	9110497-BS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
Bromodichloromethane	20.0	21.5	107	84 - 127
Bromoform	20.0	21.7	109	55 - 134
Bromomethane	20.0	19.8	99.2	38 - 150
Carbon disulfide	40.0	37.9	94.8	58 - 120
Carbon tetrachloride	20.0	20.8	104	73 - 134
Chlorobenzene	20.0	18.3	91.5	80 - 124
Chloroethane	20.0	20.8	104	79 - 124
Chloroform	20.0	19.0	95.2	80 - 120
Chloromethane	20.0	18.9	94.7	47 - 146
cis-1,2-Dichloroethene	20.0	18.5	92.4	80 - 120
cis-1,3-Dichloropropene	20.0	16.6	82.8	80 - 125
Dibromochloromethane	20.0	22.1	111	69 - 138
Dibromomethane	20.0	19.5	97.6	80 - 120
Dichlorodifluoromethane	20.0	17.4	87.1	48 - 140
Ethylbenzene	20.0	18.6	93.0	80 - 120
Hexachlorobutadiene	20.0	17.5	87.3	64 - 145
Isopropylbenzene	20.0	18.3	91.4	77 - 124
m,p-Xylene	40.0	36.9	92.4	72 - 127
Methyl tert-butyl ether	20.0	18.7	93.6	80 - 129
Methylene chloride	20.0	18.5	92.4	80 - 120
Naphthalene	20.0	17.4	86.8	72 - 149
n-Butylbenzene	20.0	19.0	94.8	76 - 126
n-Propylbenzene	20.0	19.0	95.0	76 - 128
o-Xylene	20.0	18.4	91.8	77 - 123
p-Isopropyltoluene	20.0	17.5	87.6	68 - 130
sec-Butylbenzene	20.0	18.3	91.3	64 - 129
Styrene	20.0	18.3	91.6	72 - 127
tert-Butylbenzene	20.0	18.3	91.4	71 - 127
Tetrachloroethene	20.0	18.0	90.1	80 - 124
Toluene	20.0	17.8	89.0	80 - 124

Form 3

LCS / LCS DUPLICATE RECOVERY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110497	Laboratory ID:	9110497-BS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
trans-1,2-Dichloroethene	20.0	18.5	92.6	80 - 120
trans-1,3-Dichloropropene	20.0	16.4	82.2	80 - 130
Trichloroethene	20.0	18.2	91.0	80 - 132
Trichlorofluoromethane	20.0	22.2	111	77 - 137
Vinyl chloride	20.0	19.2	96.2	76 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

DS012-110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110497	Laboratory ID:	9110497-MS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC. #	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	20.0	ND	16.0	79.8 *	80 - 129
1,1,1-Trichloroethane	20.0	ND	17.6	87.8	80 - 127
1,1,2,2-Tetrachloroethane	20.0	ND	19.3	96.4	78.9 - 146
1,1,2-Trichloroethane	20.0	ND	18.0	90.2	80 - 130
1,1-Dichloroethane	20.0	ND	18.7	93.6	80 - 123
1,1-Dichloroethene	20.0	ND	17.0	85.0	79.3 - 127
1,1-Dichloropropene	20.0	ND	17.8	88.8	80 - 123
1,2,3-Trichlorobenzene	20.0	ND	15.4	77.1	70.1 - 154
1,2,3-Trichloropropane	20.0	ND	17.8	88.8	80 - 131
1,2,4-Trichlorobenzene	20.0	ND	15.3	76.7	71.2 - 148
1,2,4-Trimethylbenzene	20.0	ND	16.4	82.2	80 - 136
1,2-Dibromo-3-chloropropane	20.0	ND	16.6	83.2	58.5 - 143
1,2-Dibromoethane	20.0	ND	18.2	91.1	80 - 128
1,2-Dichlorobenzene	20.0	ND	17.5	87.6	80 - 120
1,2-Dichloroethane	20.0	ND	19.6	98.2	80 - 121
1,2-Dichloropropane	20.0	ND	18.7	93.6	80 - 120
1,3,5-Trimethylbenzene	20.0	ND	16.7	83.6	73.4 - 141
1,3-Dichlorobenzene	20.0	ND	15.8	79.2 *	80 - 122
1,3-Dichloropropane	20.0	ND	19.1	95.6	80 - 132
1,4-Dichlorobenzene	20.0	ND	16.2	80.8	80 - 120
2,2-Dichloropropane	20.0	ND	15.1	75.4	74.8 - 143
2-Butanone (MEK)	100	19.7	130	110	72.3 - 143
2-Chlorotoluene	20.0	ND	16.6	83.1	80 - 120
2-Hexanone	100	ND	116	116	62.7 - 152
4-Chlorotoluene	20.0	ND	17.0	85.0	80 - 121
4-Methyl-2-pentanone	100	ND	107	107	58.7 - 151
Acetone	100	10.6	89.9	79.3	59.9 - 143
Benzene	20.0	ND	18.2	91.0	80 - 124
Bromobenzene	20.0	ND	17.2	86.2	80 - 121
Bromochloromethane	20.0	ND	17.6	88.0	80 - 129
Bromodichloromethane	20.0	ND	18.5	92.4	80 - 135

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

DS012-110709

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Matrix: Water
Spike standard: 9110046
Batch: 9110497
Laboratory ID: 9110497-MS1
Preparation: EPA 5030B
Initial/Final: 5 ml / 5 ml
Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC. #	QC LIMITS REC.
Bromoform	20.0	ND	15.7	78.6	69.4 - 151
Bromomethane	20.0	ND	19.4	96.9	31 - 155
Carbon disulfide	40.0	ND	36.1	90.2	40 - 167
Carbon tetrachloride	20.0	ND	17.4	86.8	78.8 - 129
Chlorobenzene	20.0	ND	17.8	88.8	72.9 - 134
Chloroethane	20.0	ND	20.9	104	79 - 126
Chloroform	20.0	ND	18.2	90.8	80 - 124
Chloromethane	20.0	ND	19.6	98.0	40 - 150
cis-1,2-Dichloroethene	20.0	ND	17.7	88.6	76.6 - 136
cis-1,3-Dichloropropene	20.0	ND	14.4	72.2 *	80 - 130
Dibromochloromethane	20.0	ND	18.1	90.6	80 - 129
Dibromomethane	20.0	ND	18.9	94.6	76.4 - 131
Dichlorodifluoromethane	20.0	ND	17.3	86.7	63.2 - 134
Ethylbenzene	20.0	ND	17.4	86.8	80 - 124
Hexachlorobutadiene	20.0	ND	15.3	76.4	46.3 - 157
Isopropylbenzene	20.0	ND	16.7	83.6	80 - 129
m,p-Xylene	40.0	ND	34.2	85.4	76.2 - 134
Methyl tert-butyl ether	20.0	ND	17.0	85.2	80 - 130
Methylene chloride	20.0	ND	17.2	86.2	80 - 120
Naphthalene	20.0	ND	15.7	78.6	69 - 163
n-Butylbenzene	20.0	ND	17.2	86.2	70.8 - 140
n-Propylbenzene	20.0	ND	17.2	86.0	74.3 - 133
o-Xylene	20.0	ND	17.1	85.3 *	85.5 - 124
p-Isopropyltoluene	20.0	ND	15.4	77.0	71.9 - 138
sec-Butylbenzene	20.0	ND	16.3	81.5	72.5 - 134
Styrene	20.0	ND	17.2	85.8	47.7 - 152
tert-Butylbenzene	20.0	ND	16.9	84.4	72.3 - 132
Tetrachloroethene	20.0	ND	17.1	85.3	80 - 125
Toluene	20.0	ND	17.5	87.7	79.7 - 131
trans-1,2-Dichloroethene	20.0	ND	17.5	87.7	80 - 120
trans-1,3-Dichloropropene	20.0	ND	14.7	73.3 *	80 - 135

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

DS012-110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110497	Laboratory ID:	9110497-MS1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC. #	QC LIMITS REC.
Trichloroethene	20.0	ND	17.9	89.4	68.4 - 130
Trichlorofluoromethane	20.0	ND	20.7	103	79.1 - 129
Vinyl chloride	20.0	ND	19.7	98.6	73.1 - 132

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,1,2-Tetrachloroethane	20.0	18.4	91.8	14.0	25	80 - 129
1,1,1-Trichloroethane	20.0	18.7	93.6	6.45	25	80 - 127
1,1,2,2-Tetrachloroethane	20.0	20.8	104	7.64	25	78.9 - 146
1,1,2-Trichloroethane	20.0	19.4	96.8	7.01	25	80 - 130
1,1-Dichloroethane	20.0	19.5	97.5	4.08	25	80 - 123
1,1-Dichloroethene	20.0	18.3	91.4	7.26	25	79.3 - 127
1,1-Dichloropropene	20.0	19.2	96.2	7.89	25	80 - 123
1,2,3-Trichlorobenzene	20.0	16.5	82.4	6.65	25	70.1 - 154
1,2,3-Trichloropropane	20.0	18.8	94.2	5.90	25	80 - 131
1,2,4-Trichlorobenzene	20.0	17.2	85.8	11.3	25	71.2 - 148
1,2,4-Trimethylbenzene	20.0	17.9	89.5	8.56	25	80 - 136
1,2-Dibromo-3-chloropropane	20.0	17.6	88.0	5.55	25	58.5 - 143
1,2-Dibromoethane	20.0	19.3	96.3	5.55	25	80 - 128
1,2-Dichlorobenzene	20.0	18.9	94.6	7.69	25	80 - 120
1,2-Dichloroethane	20.0	20.6	103	4.63	25	80 - 121
1,2-Dichloropropane	20.0	20.0	99.8	6.41	25	80 - 120
1,3,5-Trimethylbenzene	20.0	18.2	91.0	8.53	25	73.4 - 141
1,3-Dichlorobenzene	20.0	17.3	86.6	8.93	25	80 - 122
1,3-Dichloropropane	20.0	19.6	97.8	2.33	25	80 - 132
1,4-Dichlorobenzene	20.0	17.4	87.2	7.56	25	80 - 120
2,2-Dichloropropane	20.0	16.2	80.8	6.98	25	74.8 - 143
2-Butanone (MEK)	100	133	114	2.82	25	72.3 - 143
2-Chlorotoluene	20.0	18.0	89.9	7.86	25	80 - 120
2-Hexanone	100	119	119	2.89	25	62.7 - 152
4-Chlorotoluene	20.0	18.3	91.7	7.58	25	80 - 121

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

DS012-110709

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Matrix: Water
Spike standard: 9110046
Batch: 9110497
Laboratory ID: 9110497-MSD1
Preparation: EPA 5030B
Initial/Final: 5 ml / 5 ml
Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
4-Methyl-2-pentanone	100	114	114	6.39	25	58.7 - 151
Acetone	100	99.6	89.0	10.2	25	59.9 - 143
Benzene	20.0	19.2	96.2	5.61	25	80 - 124
Bromobenzene	20.0	17.8	88.9	3.14	25	80 - 121
Bromochloromethane	20.0	19.6	97.8	10.6	25	80 - 129
Bromodichloromethane	20.0	20.3	101	9.29	25	80 - 135
Bromoform	20.0	17.8	88.8	12.2	25	69.4 - 151
Bromomethane	20.0	20.2	101	3.95	25	31 - 155
Carbon disulfide	40.0	38.4	96.1	6.34	25	40 - 167
Carbon tetrachloride	20.0	19.5	97.7	11.8	25	78.8 - 129
Chlorobenzene	20.0	18.6	92.9	4.46	25	72.9 - 134
Chloroethane	20.0	21.4	107	2.79	25	79 - 126
Chloroform	20.0	19.3	96.6	6.13	25	80 - 124
Chloromethane	20.0	20.3	102	3.56	25	40 - 150
cis-1,2-Dichloroethene	20.0	18.8	93.9	5.81	25	76.6 - 136
cis-1,3-Dichloropropene	20.0	15.7	78.6 *	8.42	25	80 - 130
Dibromochloromethane	20.0	19.8	99.2	9.01	25	80 - 129
Dibromomethane	20.0	19.8	99.2	4.85	25	76.4 - 131
Dichlorodifluoromethane	20.0	18.2	90.8	4.62	25	63.2 - 134
Ethylbenzene	20.0	18.7	93.4	7.33	25	80 - 124
Hexachlorobutadiene	20.0	16.2	81.2	5.96	25	46.3 - 157
Isopropylbenzene	20.0	18.1	90.4	7.70	25	80 - 129
m,p-Xylene	40.0	36.8	92.1	7.52	25	76.2 - 134
Methyl tert-butyl ether	20.0	18.7	93.4	9.18	25	80 - 130
Methylene chloride	20.0	18.7	93.6	8.18	25	80 - 120
Naphthalene	20.0	16.8	83.8	6.47	25	69 - 163
n-Butylbenzene	20.0	18.5	92.4	6.94	25	70.8 - 140
n-Propylbenzene	20.0	18.8	94.0	8.89	25	74.3 - 133
o-Xylene	20.0	18.4	92.1	7.67	25	85.5 - 124
p-Isopropyltoluene	20.0	17.2	85.8	10.9	25	71.9 - 138
sec-Butylbenzene	20.0	17.8	88.8	8.63	25	72.5 - 134
Styrene	20.0	18.4	91.8	6.81	25	47.7 - 152

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

DS012-110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110046
Batch:	9110497	Laboratory ID:	9110497-MSD1
Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml

Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
tert-Butylbenzene	20.0	18.2	91.0	7.58	25	72.3 - 132
Tetrachloroethene	20.0	18.2	91.2	6.63	25	80 - 125
Toluene	20.0	18.4	92.0	4.79	25	79.7 - 131
trans-1,2-Dichloroethene	20.0	18.8	94.2	7.15	25	80 - 120
trans-1,3-Dichloropropene	20.0	15.7	78.5 *	6.85	25	80 - 135
Trichloroethene	20.0	18.9	94.3	5.39	25	68.4 - 130
Trichlorofluoromethane	20.0	22.8	114	9.48	25	79.1 - 129
Vinyl chloride	20.0	20.6	103	4.07	25	73.1 - 132

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

EPA 8260B

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** VOA73C

Analyte	MDL	MRL	Units
1,1,1,2-Tetrachloroethane	0.0900	1.00	ug/l
1,1,1-Trichloroethane	0.120	1.00	ug/l
1,1,2,2-Tetrachloroethane	0.0800	1.00	ug/l
1,1,2-Trichloroethane	0.130	1.00	ug/l
1,1-Dichloroethane	0.0800	1.00	ug/l
1,1-Dichloroethene	0.120	1.00	ug/l
1,1-Dichloropropene	0.0800	1.00	ug/l
1,2,3-Trichlorobenzene	0.100	1.00	ug/l
1,2,3-Trichloropropane	0.130	1.00	ug/l
1,2,4-Trichlorobenzene	0.110	1.00	ug/l
1,2,4-Trimethylbenzene	0.0800	1.00	ug/l
1,2-DCA-d4			ug/l
1,2-Dibromo-3-chloropropane	2.35	5.00	ug/l
1,2-Dibromoethane	0.110	1.00	ug/l
1,2-Dichlorobenzene	0.0700	1.00	ug/l
1,2-Dichloroethane	0.100	1.00	ug/l
1,2-Dichloropropane	0.110	1.00	ug/l
1,3,5-Trimethylbenzene	0.0700	1.00	ug/l
1,3-Dichlorobenzene	0.0600	1.00	ug/l
1,3-Dichloropropane	0.140	1.00	ug/l
1,4-Dichlorobenzene	0.120	1.00	ug/l
1,4-Dichlorobenzene-d4			ug/l
2,2-Dichloropropane	0.0900	1.00	ug/l
2-Butanone (MEK)	3.50	10.0	ug/l
2-Chlorotoluene	0.0700	1.00	ug/l
2-Hexanone	3.62	10.0	ug/l
4-BFB			ug/l
4-Chlorotoluene	0.110	1.00	ug/l
4-Methyl-2-pentanone	0.290	5.00	ug/l
Acetone	7.76	25.0	ug/l
Benzene	0.0900	0.200	ug/l
Bromobenzene	0.100	1.00	ug/l
Bromochloromethane	0.180	1.00	ug/l
Bromodichloromethane	0.110	1.00	ug/l
Bromoform	0.100	1.00	ug/l
Bromomethane	0.170	5.00	ug/l
Carbon disulfide	0.140	10.0	ug/l

METHOD DETECTION AND REPORTING LIMITS

EPA 8260B

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** VOA73C

Analyte	MDL	MRL	Units
Carbon tetrachloride	0.0600	1.00	ug/l
Chlorobenzene	0.0500	1.00	ug/l
Chlorobenzene-d5			ug/l
Chloroethane	0.110	1.00	ug/l
Chloroform	0.0900	0.200	ug/l
Chloromethane	0.0800	5.00	ug/l
cis-1,2-Dichloroethene	0.0900	1.00	ug/l
cis-1,3-Dichloropropene	0.0900	1.00	ug/l
Dibromochloromethane	0.0700	1.00	ug/l
Dibromofluoromethane			ug/l
Dibromomethane	0.100	1.00	ug/l
Dichlorodifluoromethane	0.110	5.00	ug/l
Ethylbenzene	0.0600	1.00	ug/l
Fluorobenzene			ug/l
Hexachlorobutadiene	0.210	4.00	ug/l
Isopropylbenzene	0.0700	2.00	ug/l
m,p-Xylene	0.210	2.00	ug/l
Methyl tert-butyl ether	0.0900	1.00	ug/l
Methylene chloride	0.160	5.00	ug/l
Naphthalene	0.0900	2.00	ug/l
n-Butylbenzene	0.0600	5.00	ug/l
n-Propylbenzene	0.100	1.00	ug/l
o-Xylene	0.0700	1.00	ug/l
p-Isopropyltoluene	0.0600	2.00	ug/l
sec-Butylbenzene	0.0800	1.00	ug/l
Styrene	0.0400	1.00	ug/l
tert-Butylbenzene	0.0600	1.00	ug/l
Tetrachloroethene	0.110	1.00	ug/l
Toluene	0.110	1.00	ug/l
Toluene-d8			ug/l
trans-1,2-Dichloroethene	0.100	1.00	ug/l
trans-1,3-Dichloropropene	0.100	1.00	ug/l
Trichloroethene	0.0800	1.00	ug/l
Trichlorofluoromethane	0.0600	1.00	ug/l
Vinyl chloride	0.100	1.00	ug/l

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	C1029006.D	Injection Date:	10/29/09
Instrument ID:	VOA73C	Injection Time:	16:12
Sequence:	9J29012	Lab Sample ID:	9J29012-TUN2

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50	15 - 40% of m/z 95	19.964	PASS
m/z 75	30 - 60% of m/z 95	49.638	PASS
m/z 95	Base peak, 100% relative abundance	100	PASS
m/z 96	5 - 9% of m/z 95	7.5017	PASS
m/z 173	Less than 2% of m/z 174	0.26018	PASS
m/z 174	50 - 100% of m/z 95	75.17	PASS
m/z 175	5 - 9% of m/z 174	6.8054	PASS
m/z 176	95 - 101% of m/z 174	96.043	PASS
m/z 177	5 - 9% of m/z 176	7.0199	PASS

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	C1029021.D	Injection Date:	10/30/09
Instrument ID:	VOA73C	Injection Time:	09:14
Sequence:	9J29012	Lab Sample ID:	9J29012-TUN3

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50	15 - 40% of m/z 95	19.176	PASS
m/z 75	30 - 60% of m/z 95	49.839	PASS
m/z 95	Base peak, 100% relative abundance	100	PASS
m/z 96	5 - 9% of m/z 95	7.5043	PASS
m/z 173	Less than 2% of m/z 174	0.52255	PASS
m/z 174	50 - 100% of m/z 95	75.238	PASS
m/z 175	5 - 9% of m/z 174	7.3042	PASS
m/z 176	95 - 101% of m/z 174	96.108	PASS
m/z 177	5 - 9% of m/z 176	6.5679	PASS

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	C1113A01.D	Injection Date:	11/13/09
Instrument ID:	VOA73C	Injection Time:	16:42
Sequence:	9K13014	Lab Sample ID:	9K13014-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50	15 - 40% of m/z 95	21.906	PASS
m/z 75	30 - 60% of m/z 95	51.743	PASS
m/z 95	Base peak, 100% relative abundance	100	PASS
m/z 96	5 - 9% of m/z 95	5.7989	PASS
m/z 173	Less than 2% of m/z 174	0.80117	PASS
m/z 174	50 - 100% of m/z 95	72.975	PASS
m/z 175	5 - 9% of m/z 174	7.9014	PASS
m/z 176	95 - 101% of m/z 174	95.715	PASS
m/z 177	5 - 9% of m/z 176	6.2801	PASS

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	C1115001.D	Injection Date:	11/15/09
Instrument ID:	VOA73C	Injection Time:	14:05
Sequence:	9K15001	Lab Sample ID:	9K15001-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 50	15 - 40% of m/z 95	20.263	PASS
m/z 75	30 - 60% of m/z 95	50.753	PASS
m/z 95	Base peak, 100% relative abundance	100	PASS
m/z 96	5 - 9% of m/z 95	6.8862	PASS
m/z 173	Less than 2% of m/z 174	0.56627	PASS
m/z 174	50 - 100% of m/z 95	72.613	PASS
m/z 175	5 - 9% of m/z 174	7.4667	PASS
m/z 176	95 - 101% of m/z 174	98.131	PASS
m/z 177	5 - 9% of m/z 176	6.7959	PASS

Form 6
INITIAL CALIBRATION DATA
EPA 8260B

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9102901

SDG: PSK0253
Project: NW Pipe Project
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
1,1,1,2-Tetrachloroethane	0.2	293.7936	0.4	459.1645	1	465.7908	2	471.3022	5	500.8348	20	624.77
1,1,1-Trichloroethane	0.2	1329.991	0.4	1286.656	1	1376.728	2	1329.2	5	1352.38	20	1409.294
1,1,2,2-Tetrachloroethane	0.2	6261.756	0.4	5150.29	1	5655.307	2	5767.742	5	6092.764	20	6282.614
1,1,2-Trichloroethane	0.2	439.4131	0.4	615.7035	1	652.7234	2	608.9057	5	635.236	20	626.1538
1,1-Dichloroethane	0.2	1856.265	0.4	1992.201	1	1961.662	2	1900.026	5	1951.302	20	1885.5
1,1-Dichloroethene	0.2	898.2421	0.4	1019.868	1	978.8283	2	1009.178	5	1022.53	20	970.4806
1,1-Dichloropropene	0.2	1391.305	0.4	1485.254	1	1332.562	2	1457.581	5	1469.567	20	1429.188
1,2,3-Trichlorobenzene	0.2	2225.237	0.4	2312.54	1	2868.303	2	2779.692	5	2954.926	20	2858.321
1,2,3-Trichloropropane	0.2	5024.403	0.4	5224.646	1	5763.658	2	5911.998	5	6333.08	20	6002.464
1,2,4-Trichlorobenzene	0.2	2774.763	0.4	2886.701	1	2890.371	2	3150.584	5	3228.166	20	3165.746
1,2,4-Trimethylbenzene	0.2	18232.21	0.4	19464.58	1	20053	2	20792.22	5	22489.57	20	23146.25
1,2-DCA-d4	20	1355.768	20	1439.273	20	1359.642	20	1458.027	20	1384.779	20	1324.841
1,2-Dibromo-3-chloropropane	0.2		0.4		1	208.2678	2	324.3066	5	336.2228	20	398.6415
1,2-Dibromoethane	0.2		0.4	737.4007	1	680.0443	2	788.1114	5	763.3189	20	770.7748
1,2-Dichlorobenzene	0.2	5451.832	0.4	5323.08	1	5480.064	2	4959.699	5	5502.155	20	5273.797
1,2-Dichloroethane	0.2	1222.182	0.4	1437.969	1	1428.186	2	1487.216	5	1520.258	20	1445.203
1,2-Dichloropropane	0.2	923.2785	0.4	878.5098	1	856.3978	2	936.8537	5	945.7589	20	914.7362
1,3,5-Trimethylbenzene	0.2	19450.82	0.4	19094.31	1	18880.33	2	20943.97	5	22022.61	20	23025.24
1,3-Dichlorobenzene	0.2	13051.58	0.4	13481.2	1	12484.52	2	12740.43	5	12759.22	20	12908.74
1,3-Dichloropropane	0.2	1472.545	0.4	1324.982	1	1318.696	2	1379.402	5	1444.067	20	1412.17
1,4-Dichlorobenzene	0.2	12707.87	0.4	12554.02	1	13390.96	2	12891.24	5	13345.31	20	12929.67
2,2-Dichloropropane	0.2	1106.708	0.4	1189.846	1	1234.577	2	1260.657	5	1269.768	20	1274.875
2-Butanone (MEK)	1		2		5	312.8142	10	311.8874	25	409.3144	100	442.9348
2-Chlorotoluene	0.2	19394.57	0.4	19851.53	1	19725.47	2	19985.39	5	20208.23	20	19986.48
2-Hexanone	1		2	508.59	5	539.7833	10	616.4594	25	653.395	100	668.7634
4-BFB	20	9905.792	20	10390.08	20	9740.979	20	10603.22	20	9928.129	20	9809.734
4-Chlorotoluene	0.2	18744.65	0.4	21582.96	1	19316.83	2	19938.86	5	20464.01	20	20743.5
4-Methyl-2-pentanone	1	189.5608	2	284.0598	5	319.6958	10	349.1688	25	363.8816	100	383.9634
Acetone	1		2		5	44.24756	10	61.94228	25	74.62909	100	77.91124
Benzene	0.2	4052.819	0.4	4036.665	1	4106.663	2	3996.251	5	4103.854	20	3880.717

Form 6
INITIAL CALIBRATION DATA
EPA 8260B

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9102901
SDG: PSK0253
Project: NW Pipe Project
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
Bromobenzene	0.2	5977.415	0.4	6842.268	1	6310.986	2	6686.047	5	7001.234	20	6715.298
Bromochloromethane	0.2	442.9897	0.4	465.1373	1	520.5354	2	510.3659	5	535.8023	20	512.7356
Bromodichloromethane	0.2		0.4	796.3828	1	789.6361	2	720.4494	5	788.0945	20	879.1042
Bromoform	0.2		0.4		1	876.715	2	903.3173	5	1082.698	20	1349.093
Bromomethane	0.2		0.4	745.3646	1	735.5078	2	761.6372	5	716.8751	20	683.4358
Carbon disulfide	0.4	3308.116	0.8	3106.266	2	3031.389	4	3121.697	10	3119.378	40	3025.52
Carbon tetrachloride	0.2		0.4	682.6494	1	722.5664	2	715.2686	5	767.752	20	835.5612
Chlorobenzene	0.2	2580.275	0.4	2741.299	1	2554.095	2	2600.011	5	2593.872	20	2509.922
Chloroethane	0.2		0.4	660.2511	1	760.1583	2	758.4769	5	787.2659	20	727.4103
Chloroform	0.2	1972.25	0.4	1817.495	1	1732.927	2	1791.073	5	1806.896	20	1745.833
Chloromethane	0.2	1731.083	0.4	1393.421	1	1344.785	2	1356.347	5	1343.349	20	1237.477
cis-1,2-Dichloroethene	0.2	1003.497	0.4	1176.904	1	1179.627	2	1183.41	5	1220.134	20	1128.146
cis-1,3-Dichloropropene	0.2	986.1248	0.4	990.9989	1	1006.766	2	1123.623	5	1146.573	20	1213.367
Dibromochloromethane	0.2		0.4	211.7881	1	303.3033	2	316.9646	5	359.5355	20	428.9032
Dibromofluoromethane	20	998.6531	20	1048.04	20	998.6566	20	1094.642	20	1021.064	20	975.2917
Dibromomethane	0.2	344.8882	0.4	557.7169	1	565.2143	2	577.4061	5	626.2248	20	568.5445
Dichlorodifluoromethane	0.2	1065.832	0.4	1073.624	1	1160.523	2	1160.252	5	1208.947	20	1157.578
Ethylbenzene	0.2	26118.77	0.4	26842.51	1	27118.73	2	28011.89	5	28639.98	20	28092.8
Hexachlorobutadiene	0.2	1204.885	0.4	1216.534	1	1133.749	2	1305.772	5	1242.77	20	1285.388
Isopropylbenzene	0.2	27837.32	0.4	26737.81	1	25243.94	2	26601.8	5	27910.6	20	28228.6
m,p-Xylene	0.4	9578.55	0.8	9906.038	2	10563.92	4	10696.49	10	10956.4	40	10828.36
Methyl tert-butyl ether	0.2	3258.299	0.4	3135.011	1	2867.361	2	2671.766	5	2953.759	20	2839.022
Methylene chloride	0.2	1221.671	0.4	990.9989	1	1169.459	2	1099.895	5	1101.808	20	1038.357
Naphthalene	0.2	8097.693	0.4	6974.043	1	7856.8	2	8318.816	5	8903.016	20	9257.455
n-Butylbenzene	0.2	7702.849	0.4	7704.493	1	7758.321	2	8614.316	5	8700.461	20	9238.674
n-Propylbenzene	0.2	30630.74	0.4	31262.9	1	28997.23	2	30793.03	5	32101.42	20	33304.49
o-Xylene	0.2	10754.97	0.4	9317.26	1	9731.785	2	10817.33	5	11090.69	20	10959.54
p-Isopropyltoluene	0.2	18854.01	0.4	20851.54	1	19483.38	2	21846.04	5	23043.7	20	24362.14
sec-Butylbenzene	0.2	21325.59	0.4	22338.66	1	23038.54	2	25081.81	5	26843.75	20	27939.89
Styrene	0.2	13532.77	0.4	14431.13	1	14754.32	2	15982.13	5	17026.35	20	17373.11

Form 6
INITIAL CALIBRATION DATA
EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102901
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
tert-Butylbenzene	0.2	12267.29	0.4	11475.1	1	11323	2	12006.34	5	12540.76	20	13648.47
Tetrachloroethene	0.2	1179.262	0.4	939.7317	1	930.5545	2	1022.079	5	1010.557	20	989.1646
Toluene	0.2	2664.581	0.4	2507.113	1	2505.205	2	2439.457	5	2450.335	20	2394.436
Toluene-d8	20	3942.833	20	4115.886	20	3874.003	20	4211.257	20	3969.785	20	3806.09
trans-1,2-Dichloroethene	0.2	1026.489	0.4	1071.882	1	1130.223	2	1126.577	5	1118.193	20	1087.46
trans-1,3-Dichloropropene	0.2	928.8989	0.4	794.6407	1	886.3892	2	947.7335	5	1023.359	20	1088.442
Trichloroethene	0.2	936.5631	0.4	1004.189	1	1065.31	2	1118.391	5	1082.232	20	1064.382
Trichlorofluoromethane	0.2	1581.887	0.4	1542.494	1	1675.923	2	1612.955	5	1605.025	20	1564.985
Vinyl chloride	0.2	1371.378	0.4	1294.122	1	1235.193	2	1274.645	5	1273.517	20	1177.76

Form 6
INITIAL CALIBRATION DATA (Continued)
EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102901
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
1,1,1,2-Tetrachloroethane	50	762.2057	100	814.5983	200	851.2377						
1,1,1-Trichloroethane	50	1458.378	100	1494.242	200	1578.471						
1,1,2,2-Tetrachloroethane	50	6940.471	100	6380.431	200	6052.256						
1,1,2-Trichloroethane	50	669.1024	100	637.4538	200	649.4303						
1,1-Dichloroethane	50	1954.579	100	1901.823	200	1947.724						
1,1-Dichloroethene	50	999.1139	100	965.4297	200	1010.569						
1,1-Dichloropropene	50	1491.941	100	1450.665	200	1490.134						
1,2,3-Trichlorobenzene	50	3780.879	100	3851.037	200	4451.341						
1,2,3-Trichloropropane	50	6525.426	100	5812.049	200	5376.555						
1,2,4-Trichlorobenzene	50	4065.832	100	4064.081	200	4587.629						
1,2,4-Trimethylbenzene	50	25474.82	100	23189.56	200	22852.04						
1,2-DCA-d4	20	1309.211	20	1272.089	20	1322.676						
1,2-Dibromo-3-chloropropane	50	583.2598	100	604.1864	200	692.9616						
1,2-Dibromoethane	50	833.1071	100	803.1352	200	798.9157						
1,2-Dichlorobenzene	50	5678.299	100	5513.643	200	5772.554						
1,2-Dichloroethane	50	1514.842	100	1455.61	200	1480.797						
1,2-Dichloropropane	50	980.3478	100	962.2687	200	998.3142						
1,3,5-Trimethylbenzene	50	25221.64	100	22952.87	200	22757.79						
1,3-Dichlorobenzene	50	14179.29	100	12700.48	200	12598.7						
1,3-Dichloropropane	50	1492.207	100	1425.576	200	1467.117						
1,4-Dichlorobenzene	50	14688.67	100	12951.25	200	12893.2						
2,2-Dichloropropane	50	1259.609	100	1272.687	200	1300.786						
2-Butanone (MEK)	250	507.6646	500	458.8754	1000	435.3627						
2-Chlorotoluene	50	21415.82	100	19802.08	200	19240.34						
2-Hexanone	250	702.7943	500	618.4332	1000	554.8061						
4-BFB	20	9700.254	20	9056.63	20	9021.854						
4-Chlorotoluene	50	22494.39	100	20324.27	200	19559.92						
4-Methyl-2-pentanone	250	409.7631	500	385.161	1000	359.9012						
Acetone	250	97.65363	500	72.13653	1000	62.70572						
Benzene	50	4132.213	100	3988.813	200	3994.457						

Form 6
INITIAL CALIBRATION DATA (Continued)
EPA 8260B

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9102901
SDG: PSK0253
Project: NW Pipe Project
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
Bromobenzene	50	7239.43	100	6664.091	200	6563.18						
Bromochloromethane	50	545.2338	100	524.4745	200	534.8729						
Bromodichloromethane	50	1068.314	100	1155.136	200	1260.335						
Bromoform	50	2075.431	100	2515.208	200	3037.772						
Bromomethane	50	607.8597	100	654.5168	200	692.7512						
Carbon disulfide	100	2902.123	200	2858.703	400	2713.606						
Carbon tetrachloride	50	980.6881	100	1107.356	200	1264.685						
Chlorobenzene	50	2664.584	100	2522.655	200	2454.174						
Chloroethane	50	693.2839	100	736.6139	200	804.4729						
Chloroform	50	1797.11	100	1748.04	200	1779.525						
Chloromethane	50	1150.525	100	1184.438	200	1239.518						
cis-1,2-Dichloroethene	50	1150.276	100	1113.069	200	1138.324						
cis-1,3-Dichloropropene	50	1408.426	100	1435.115	200	1546.859						
Dibromochloromethane	50	603.8949	100	690.5705	200	788.4814						
Dibromofluoromethane	20	955.3765	20	949.9664	20	1021.6						
Dibromomethane	50	620.8216	100	596.5307	200	609.8642						
Dichlorodifluoromethane	50	1116.107	100	1144.139	200	1237.802						
Ethylbenzene	50	30042.61	100	27642.65	200	26688.58						
Hexachlorobutadiene	50	1428.216	100	1494.036	200	1806.187						
Isopropylbenzene	50	29956.59	100	27781.13	200	26110.27						
m,p-Xylene	100	11435.61	200	10794.83	400	10563.06						
Methyl tert-butyl ether	50	2943.692	100	2805.107	200	2832.055						
Methylene chloride	50	1046.89	100	1013.456	200	1043.521						
Naphthalene	50	12256.83	100	11892.66	200	12453.5						
n-Butylbenzene	50	9688.163	100	9455.42	200	9834.342						
n-Propylbenzene	50	35648.19	100	32283.41	200	29726.61						
o-Xylene	50	11672.36	100	11010.37	200	10890.33						
p-Isopropyltoluene	50	26767.61	100	24270	200	24229.2						
sec-Butylbenzene	50	30262.74	100	28191.38	200	28197.23						
Styrene	50	18953.86	100	17589.53	200	17314						

Form 6
INITIAL CALIBRATION DATA (Continued)
EPA 8260B

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9102901

SDG: PSK0253
Project: NW Pipe Project
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
tert-Butylbenzene	50	14813.97	100	14126.74	200	14064.44						
Tetrachloroethene	50	1033.575	100	1001.366	200	1024.738						
Toluene	50	2548.071	100	2471.81	200	2536.364						
Toluene-d8	20	3883.493	20	3760.294	20	4022.661						
trans-1,2-Dichloroethene	50	1123.712	100	1082.315	200	1111.009						
trans-1,3-Dichloropropene	50	1273.283	100	1294.239	200	1370.809						
Trichloroethene	50	1131.899	100	1086.81	200	1110.414						
Trichlorofluoromethane	50	1699.034	100	1763.286	200	1897.364						
Vinyl chloride	50	841.1527	100	1085.315	200	966.0359						

Form 6
INITIAL CALIBRATION DATA (Continued)
EPA 8260B

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9102901
SDG: PSK0253
Project: NW Pipe Project
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,1,2-Tetrachloroethane	582.6331	32.75639	10.74	3.577513E-03	0.99944		CCC (30)	*
1,1,1-Trichloroethane	1401.704	6.662504	6.77	1.758087E-02	0.99960		CCC (30)	
1,1,2,2-Tetrachloroethane	6064.848	8.338199	11.48444	4.660679E-02	0.99920		CCC (30)	
1,1,2-Trichloroethane	614.9024	11.12572	9.33	5.222158E-02	0.99992		CCC (30)	
1,1-Dichloroethane	1927.898	2.269355	5.121111	6.623704E-02	0.99994		CCC (30)	
1,1-Dichloroethene	986.0266	3.962284	3.97	1.388947E-02	0.99979		CCC (20)	
1,1-Dichloropropene	1444.244	3.665901	6.98	1.859628E-02	0.99992		CCC (30)	
1,2,3-Trichlorobenzene	3120.253	23.95927	15.00222	2.995361E-02	0.99755		CCC (30)	
1,2,3-Trichloropropane	5774.92	8.596534	11.61	2.412076E-02	0.99835		CCC (30)	
1,2,4-Trichlorobenzene	3423.764	18.90176	14.68889	3.865368E-02	0.99830		CCC (30)	
1,2,4-Trimethylbenzene	21743.81	10.4181	12.9	0.0108917	0.99961		CCC (30)	
1,2-DCA-d4	1358.478	4.465652	6.58	1.471319E-02			CCC (30)	
1,2-Dibromo-3-chloropropane	449.6924	39.61108	13.76	1.856063E-02	0.99775		CCC (30)	*
1,2-Dibromoethane	771.851	6.080221	10.02	1.935141E-02	0.99993		CCC (30)	
1,2-Dichlorobenzene	5439.458	4.362094	13.41111	2.364916E-02	0.99978		CCC (30)	
1,2-Dichloroethane	1443.585	6.180371	6.663333	7.457496E-02	0.99994		CCC (30)	
1,2-Dichloropropane	932.9406	4.913015	7.88	6.390016E-02	0.99985		CCC (20)	
1,3,5-Trimethylbenzene	21594.4	9.988683	12.51	8.831079E-03	0.99965		CCC (30)	
1,3-Dichlorobenzene	12989.35	4.104596	13.04667	3.759467E-02	0.99955		CCC (30)	
1,3-Dichloropropane	1415.196	4.440879	9.571111	3.155518E-02	0.99989		CCC (30)	
1,4-Dichlorobenzene	13150.24	4.835945	13.11	1.884712E-02	0.99943		CCC (30)	
2,2-Dichloropropane	1241.057	4.765136	6.05	2.068699E-02	0.99993		CCC (30)	
2-Butanone (MEK)	411.2648	17.95478	5.632857	0.3024552	0.99890		CCC (30)	
2-Chlorotoluene	19956.66	3.125049	12.28	2.355487E-02	0.99960		CCC (30)	
2-Hexanone	607.8781	11.17204	9.775	0.078076	0.99712		CCC (30)	
4-BFB	9795.186	5.344443	11.82	2.142507E-02			CCC (30)	
4-Chlorotoluene	20352.15	5.689071	12.35889	2.749037E-02	0.99930		CCC (30)	
4-Methyl-2-pentanone	338.3506	19.83684	8.891111	3.425884E-02	0.99909		CCC (30)	
Acetone	70.17515	23.51916	3.565714	0.424081	0.98982		CCC (30)	
Benzene	4032.495	1.934339	7.21	6.713784E-03	0.99996		CCC (30)	
Bromobenzene	6666.661	5.526308	11.99222	4.202709E-02	0.99970		CCC (30)	

Form 6
INITIAL CALIBRATION DATA (Continued)
EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102901
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Bromochloromethane	510.2386	6.702524	5.904444	8.835993E-02	0.99993		CCC (30)	
Bromodichloromethane	932.1815	21.57329	7.98875	4.291666E-02	0.99873		CCC (30)	
Bromoform	1691.462	50.6929	11.21857	3.226955E-02	0.99489		CCC (30)	*
Bromomethane	699.7435	7.30451	2.62875	0.1346995	0.99929		CCC (30)	
Carbon disulfide	3020.755	5.788692	4.29	2.134574E-02	0.99963		CCC (30)	
Carbon tetrachloride	884.5658	23.98484	7.15	1.460124E-03	0.99732		CCC (30)	
Chlorobenzene	2580.099	3.313413	10.81	7.256966E-03	0.99975		CCC (30)	
Chloroethane	740.9917	6.420287	2.79875	0.1258851	0.99884		CCC (30)	
Chloroform	1799.017	3.962567	5.978889	5.166485E-02	0.99996		CCC (20)	
Chloromethane	1331.216	12.9053	2.014444	0.2621911	0.99967		CCC (30)	
cis-1,2-Dichloroethene	1143.71	5.418253	5.745555	9.184151E-02	0.99994		CCC (30)	
cis-1,3-Dichloropropene	1206.428	17.44347	8.731111	3.575479E-02	0.99927		CCC (30)	
Dibromochloromethane	462.9302	44.67333	9.795	5.395546E-02	0.99711		CCC (30)	*
Dibromofluoromethane	1007.032	4.555828	6.098889	5.482484E-02			CCC (30)	
Dibromomethane	563.0235	15.18887	7.828889	4.239629E-02	0.99991		CCC (30)	
Dichlorodifluoromethane	1147.2	4.920135	1.85	1.220257E-02	0.99923		CCC (30)	
Ethylbenzene	27688.72	4.277393	11	0	0.99949		CCC (20)	
Hexachlorobutadiene	1346.393	15.26925	14.91667	3.070715E-02	0.99607		CCC (30)	
Isopropylbenzene	27378.67	5.035168	11.81	2.043066E-02	0.99912		CCC (30)	
m,p-Xylene	10591.47	5.226698	11.17	1.825074E-02	0.99978		CCC (30)	
Methyl tert-butyl ether	2922.897	6.0984	5.02	1.352399E-02	0.99994		CCC (30)	
Methylene chloride	1080.673	6.974852	4.147778	0.103998	0.99991		CCC (30)	
Naphthalene	9556.757	21.84798	14.85667	3.524671E-02	0.99958		CCC (30)	
n-Butylbenzene	8744.115	9.892503	13.52222	2.814898E-02	0.99985		CCC (30)	
n-Propylbenzene	31638.67	6.320047	12.21	2.039786E-02	0.99841		CCC (30)	
o-Xylene	10693.85	6.746386	11.49444	4.640957E-02	0.99985		CCC (30)	
p-Isopropyltoluene	22634.18	11.42262	13.19	5.947522E-03	0.99966		CCC (30)	
sec-Butylbenzene	25913.29	11.97831	13	0	0.99983		CCC (30)	
Styrene	16328.58	10.83623	11.44111	5.568246E-02	0.99972		CCC (30)	
tert-Butylbenzene	12918.46	9.839758	12.77	0.0189351	0.99990		CCC (30)	
Tetrachloroethene	1014.559	7.068173	10.2	1.747117E-02	0.99994		CCC (30)	

Form 6

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102901
Instrument: VOA73C
Calibration Date: 10/29/09 13:10

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Toluene	2501.93	3.122806	9.522223	4.608438E-02	0.99992		CCC (20)	
Toluene-d8	3954.034	3.667661	9.45	1.360207E-02			CCC (30)	
trans-1,2-Dichloroethene	1097.54	3.09722	4.864444	0.1085497	0.99992		CCC (30)	
trans-1,3-Dichloropropene	1067.533	18.99492	9.202222	0.0519841	0.99953		CCC (30)	
Trichloroethene	1066.688	5.772372	7.938889	4.440136E-02	0.99993		CCC (30)	
Trichlorofluoromethane	1660.328	6.832692	3.412222	0.195151	0.99925		CCC (30)	
Vinyl chloride	1168.791	14.78319	2.218889	0.2703006	0.99748		CCC (20)	

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102901
Laboratory ID: 9J29012-SCV2
Sequence: 9J29012
Standard ID: 9040190

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
1,1,1,2-Tetrachloroethane	20.0	20.0	0.1	30
1,1,1-Trichloroethane	20.0	20.5	2.6	30
1,1,2,2-Tetrachloroethane	20.0	18.8	-5.9	30
1,1,2-Trichloroethane	20.0	19.6	-2.0	30
1,1-Dichloroethane	20.0	18.8	-6.1	30
1,1-Dichloroethene	20.0	18.0	-9.9	30
1,1-Dichloropropene	20.0	18.5	-7.7	30
1,2,3-Trichlorobenzene	20.0	14.5	-27.4	30
1,2,3-Trichloropropane	20.0	19.0	-4.9	30
1,2,4-Trichlorobenzene	20.0	15.1	-24.6	30
1,2,4-Trimethylbenzene	20.0	18.7	-6.6	30
1,2-DCA-d4	20.0	20.4	2.2	30
1,2-Dibromo-3-chloropropane	20.0	17.6	-11.8	30
1,2-Dibromoethane	20.0	20.2	0.8	30
1,2-Dichlorobenzene	20.0	17.8	-10.8	30
1,2-Dichloroethane	20.0	20.2	0.8	30
1,2-Dichloropropane	20.0	19.4	-2.8	30
1,3,5-Trimethylbenzene	20.0	19.2	-3.9	30
1,3-Dichlorobenzene	20.0	18.0	-10.1	30
1,3-Dichloropropane	20.0	19.6	-2.1	30
1,4-Dichlorobenzene	20.0	17.6	-12.0	30
2,2-Dichloropropane	20.0	20.9	4.3	30
2-Butanone (MEK)	100	110	9.9	30
2-Chlorotoluene	20.0	18.5	-7.6	30
2-Hexanone	100	115	15.1	30
4-BFB	20.0	20.6	3.2	30
4-Chlorotoluene	20.0	18.7	-6.6	30

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102901
Laboratory ID: 9J29012-SCV2
Sequence: 9J29012
Standard ID: 9040190

4-Methyl-2-pentanone	100	112	11.5	30
Acetone	100	93.2	-6.8	30
Benzene	20.0	18.6	-7.0	30
Bromobenzene	20.0	19.0	-4.8	30
Bromochloromethane	20.0	19.7	-1.6	30
Bromodichloromethane	20.0	20.0	0.1	30
Bromoform	20.0	19.1	-4.4	30
Bromomethane	20.0	20.3	1.6	30
Carbon disulfide	40.0	36.3	-9.3	30
Carbon tetrachloride	20.0	21.4	6.8	30
Chlorobenzene	20.0	18.7	-6.5	30
Chloroethane	20.0	20.6	2.8	30
Chloroform	20.0	19.3	-3.5	30
Chloromethane	20.0	18.4	-8.2	30
cis-1,2-Dichloroethene	20.0	18.7	-6.3	30
cis-1,3-Dichloropropene	20.0	17.3	-13.6	30
Dibromochloromethane	20.0	20.4	2.2	30
Dibromofluoromethane	20.0	20.8	4.2	30
Dibromomethane	20.0	19.6	-1.9	30
Dichlorodifluoromethane	20.0	16.7	-16.5	30
Ethylbenzene	20.0	19.4	-2.9	30
Hexachlorobutadiene	20.0	17.0	-14.9	30
Isopropylbenzene	20.0	18.9	-5.6	30
m,p-Xylene	40.0	39.0	-2.5	30
Methyl tert-butyl ether	20.0	20.2	1.0	30
Methylene chloride	20.0	21.3	6.6	30
Naphthalene	20.0	14.5	-27.3	30
n-Butylbenzene	20.0	17.4	-13.2	30
n-Propylbenzene	20.0	19.8	-1.0	30

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102901
Laboratory ID: 9J29012-SCV2
Sequence: 9J29012
Standard ID: 9040190

o-Xylene	20.0	19.4	-2.8	30
p-Isopropyltoluene	20.0	18.0	-10.1	30
sec-Butylbenzene	20.0	17.6	-12.0	30
Styrene	20.0	17.6	-12.1	30
tert-Butylbenzene	20.0	18.6	-6.9	30
Tetrachloroethene	20.0	19.5	-2.3	30
Toluene	20.0	18.7	-6.4	30
Toluene-d8	20.0	20.4	1.8	30
trans-1,2-Dichloroethene	20.0	19.0	-5.2	30
trans-1,3-Dichloropropene	20.0	17.2	-13.9	30
Trichloroethene	20.0	18.9	-5.6	30
Trichlorofluoromethane	20.0	20.7	3.7	30
Vinyl chloride	20.0	19.3	-3.6	30

* Values outside of QC limits

Form 7

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	VOA73C	Calibration:	9102901
Lab File ID:	C1113A03.D	Calibration Date:	10/29/09 13:10
Sequence:	9K13014	Injection Date:	11/13/09
Lab Sample ID:	9K13014-CCV1	Injection Time:	18:38

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,1,1,2-Tetrachloroethane	L	20.0	19.6	582.6331	696.7684		-1.9	30
1,1,1-Trichloroethane	L	20.0	20.3	1401.704	1420.884		1.4	30
1,1,2,2-Tetrachloroethane	L	20.0	21.7	6064.848	6578.968	0.3	8.5	30
1,1,2-Trichloroethane	L	20.0	20.2	614.9024	641.4642		0.8	30
1,1-Dichloroethane	L	20.0	20.2	1927.898	1948.164	0.1	1.0	30
1,1-Dichloroethene	L	20.0	19.1	986.0266	942.2337		-4.4	30
1,1-Dichloropropene	L	20.0	19.8	1444.244	1432.027		-0.8	30
1,2,3-Trichlorobenzene	L	20.0	18.2	3120.253	3018.415		-9.0	30
1,2,3-Trichloropropane	L	20.0	19.4	5774.92	5698.174		-2.9	30
1,2,4-Trichlorobenzene	L	20.0	18.5	3423.764	3342.326		-7.6	30
1,2,4-Trimethylbenzene	L	20.0	19.1	21743.81	21539.92		-4.6	30
1,2-Dibromo-3-chloropropane	L	20.0	19.1	449.6924	473.4319		-4.4	30
1,2-Dibromoethane	L	20.0	19.4	771.851	749.997		-2.8	30
1,2-Dichlorobenzene	L	20.0	20.0	5439.458	5451.126		0.2	30
1,2-Dichloroethane	L	20.0	21.4	1443.585	1543.524		6.9	30
1,2-Dichloropropane	L	20.0	20.0	932.9406	934.636		0.2	30
1,3,5-Trimethylbenzene	L	20.0	19.6	21594.4	21396.53		-2.2	30
1,3-Dichlorobenzene	L	20.0	18.6	12989.35	12105.96		-6.8	30
1,3-Dichloropropane	L	20.0	19.9	1415.196	1405.42		-0.7	30
1,4-Dichlorobenzene	L	20.0	18.8	13150.24	12336.64		-6.2	30
2,2-Dichloropropane	L	20.0	20.1	1241.057	1249.23		0.6	30
2-Butanone (MEK)	L	100	111	411.2648	492.6109		10.8	30
2-Chlorotoluene	L	20.0	19.0	19956.66	18950.55		-5.0	30
2-Hexanone	L	100	114	607.8781	711.6113		14.4	30
4-Chlorotoluene	L	20.0	19.3	20352.15	19669.71		-3.4	30
4-Methyl-2-pentanone	L	100	109	338.3506	399.0162		8.6	30
Acetone	L	100	92.4	70.17515	91.63121		-7.6	30
Benzene	L	20.0	19.8	4032.495	3985.221		-1.2	30

Form 7
CONTINUING CALIBRATION CHECK
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	VOA73C	Calibration:	9102901
Lab File ID:	C1113A03.D	Calibration Date:	10/29/09 13:10
Sequence:	9K13014	Injection Date:	11/13/09
Lab Sample ID:	9K13014-CCV1	Injection Time:	18:38

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bromobenzene	L	20.0	18.9	6666.661	6288.768		-5.6	30
Bromochloromethane	L	20.0	20.0	510.2386	517.9494		-0.2	30
Bromodichloromethane	L	20.0	21.3	932.1815	1057.023		6.5	30
Bromoform	L	20.0	20.5	1691.462	1820.311	0.1	2.4	30
Bromomethane	L	20.0	22.6	699.7435	784.4995		13.2	30
Carbon disulfide	L	40.0	40.3	3020.755	3043.764		0.8	30
Carbon tetrachloride	L	20.0	21.5	884.5658	984.6815		7.7	30
Chlorobenzene	L	20.0	19.2	2580.099	2471.759	0.3	-4.2	30
Chloroethane	L	20.0	23.8	740.9917	882.5793		19.1	30
Chloroform	L	20.0	20.1	1799.017	1810.77		0.6	30
Chloromethane	L	20.0	21.9	1331.216	1405.599	0.1	9.7	30
cis-1,2-Dichloroethene	L	20.0	19.2	1143.71	1096.75		-4.1	30
cis-1,3-Dichloropropene	L	20.0	16.8	1206.428	1220.751		-16.0	30
Dibromochloromethane	L	20.0	21.4	462.9302	574.6988		7.1	30
Dibromomethane	L	20.0	20.0	563.0235	588.8762		-0.2	30
Dichlorodifluoromethane	L	20.0	21.2	1147.2	1214.336		5.8	30
Ethylbenzene	L	20.0	19.7	27688.72	27211.4		-1.7	30
Hexachlorobutadiene	L	20.0	18.5	1346.393	1251.788		-7.4	30
Isopropylbenzene	L	20.0	19.5	27378.67	26682.42		-2.6	30
m,p-Xylene	L	40.0	39.3	10591.47	10407.01		-1.8	30
Methyl tert-butyl ether	L	20.0	19.1	2922.897	2750.947		-4.5	30
Methylene chloride	L	20.0	18.8	1080.673	1018.295		-5.8	30
Naphthalene	L	20.0	17.8	9556.757	9717.653		-11.2	30
n-Butylbenzene	L	20.0	20.7	8744.115	9580.71		3.5	30
n-Propylbenzene	L	20.0	20.3	31638.67	32154.4		1.6	30
o-Xylene	L	20.0	19.5	10693.85	10413.86		-2.6	30
p-Isopropyltoluene	L	20.0	18.6	22634.18	22379.64		-7.1	30
sec-Butylbenzene	L	20.0	19.5	25913.29	25796.22		-2.6	30

Form 7

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	VOA73C	Calibration:	9102901
Lab File ID:	C1113A03.D	Calibration Date:	10/29/09 13:10
Sequence:	9K13014	Injection Date:	11/13/09
Lab Sample ID:	9K13014-CCV1	Injection Time:	18:38

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Styrene	L	20.0	19.4	16328.58	16138.04		-3.2	30
tert-Butylbenzene	L	20.0	19.6	12918.46	12677.42		-1.8	30
Tetrachloroethene	L	20.0	19.1	1014.559	949.5632		-4.4	30
Toluene	L	20.0	19.1	2501.93	2387.45		-4.6	30
trans-1,2-Dichloroethene	L	20.0	19.3	1097.54	1057.431		-3.6	30
trans-1,3-Dichloropropene	L	20.0	16.6	1067.533	1078.585		-16.8	30
Trichloroethene	L	20.0	19.5	1066.688	1041.53		-2.4	30
Trichlorofluoromethane	L	20.0	25.7	1660.328	2131.616		28.4	30
Vinyl chloride	L	20.0	22.5	1168.791	1345.681		12.7	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Form 7
CONTINUING CALIBRATION CHECK
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	VOA73C	Calibration:	9102901
Lab File ID:	C1115002.D	Calibration Date:	10/29/09 13:10
Sequence:	9K15001	Injection Date:	11/15/09
Lab Sample ID:	9K15001-CCV1	Injection Time:	14:33

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,1,1,2-Tetrachloroethane	L	20.0	20.6	582.6331	734.1019		3.2	30
1,1,1-Trichloroethane	L	20.0	20.3	1401.704	1422.512		1.5	30
1,1,2,2-Tetrachloroethane	L	20.0	22.9	6064.848	6946.574	0.3	14.6	30
1,1,2-Trichloroethane	L	20.0	20.5	614.9024	652.5161		2.4	30
1,1-Dichloroethane	L	20.0	20.2	1927.898	1943.232	0.1	0.8	30
1,1-Dichloroethene	L	20.0	18.7	986.0266	922.3417		-6.4	30
1,1-Dichloropropene	L	20.0	20.0	1444.244	1447.296		0.2	30
1,2,3-Trichlorobenzene	L	20.0	18.5	3120.253	3078.542		-7.3	30
1,2,3-Trichloropropane	L	20.0	20.0	5774.92	5879.605		0.2	30
1,2,4-Trichlorobenzene	L	20.0	19.2	3423.764	3476.689		-4.0	30
1,2,4-Trimethylbenzene	L	20.0	19.4	21743.81	21866.97		-3.1	30
1,2-Dibromo-3-chloropropane	L	20.0	23.1	449.6924	581.3841		15.4	30
1,2-Dibromoethane	L	20.0	21.1	771.851	814.9904		5.6	30
1,2-Dichlorobenzene	L	20.0	20.1	5439.458	5466.614		0.5	30
1,2-Dichloroethane	L	20.0	21.7	1443.585	1568.743		8.6	30
1,2-Dichloropropane	L	20.0	21.0	932.9406	980.1159		5.0	30
1,3,5-Trimethylbenzene	L	20.0	19.8	21594.4	21682.18		-0.8	30
1,3-Dichlorobenzene	L	20.0	18.8	12989.35	12191.23		-6.2	30
1,3-Dichloropropane	L	20.0	20.7	1415.196	1467.02		3.6	30
1,4-Dichlorobenzene	L	20.0	19.2	13150.24	12615.99		-4.0	30
2,2-Dichloropropane	L	20.0	19.4	1241.057	1206.277		-2.8	30
2-Butanone (MEK)	L	100	121	411.2648	537.9365		20.8	30
2-Chlorotoluene	L	20.0	19.0	19956.66	18977.6		-4.9	30
2-Hexanone	L	100	122	607.8781	761.4078		22.4	30
4-Chlorotoluene	L	20.0	19.8	20352.15	20132.59		-1.1	30
4-Methyl-2-pentanone	L	100	115	338.3506	422.1165		14.9	30
Acetone	L	100	104	70.17515	103.478		4.1	30
Benzene	L	20.0	20.0	4032.495	4035.489		0.05	30

Form 7
CONTINUING CALIBRATION CHECK
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	VOA73C	Calibration:	9102901
Lab File ID:	C1115002.D	Calibration Date:	10/29/09 13:10
Sequence:	9K15001	Injection Date:	11/15/09
Lab Sample ID:	9K15001-CCV1	Injection Time:	14:33

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bromobenzene	L	20.0	18.8	6666.661	6276.993		-5.8	30
Bromochloromethane	L	20.0	20.0	510.2386	519.7295		0.2	30
Bromodichloromethane	L	20.0	22.4	932.1815	1114.444		12.0	30
Bromoform	L	20.0	22.5	1691.462	2024.385	0.1	12.6	30
Bromomethane	L	20.0	20.1	699.7435	697.3365		0.6	30
Carbon disulfide	L	40.0	39.6	3020.755	2992.209		-1.0	30
Carbon tetrachloride	L	20.0	21.7	884.5658	991.579		8.4	30
Chlorobenzene	L	20.0	19.9	2580.099	2564.396	0.3	-0.6	30
Chloroethane	L	20.0	21.4	740.9917	792.1055		6.9	30
Chloroform	L	20.0	20.1	1799.017	1811.886		0.7	30
Chloromethane	L	20.0	19.8	1331.216	1266.776	0.1	-1.2	30
cis-1,2-Dichloroethene	L	20.0	19.4	1143.71	1112.407		-2.8	30
cis-1,3-Dichloropropene	L	20.0	18.1	1206.428	1317.514		-9.5	30
Dibromochloromethane	L	20.0	23.7	462.9302	640.6127		18.4	30
Dibromomethane	L	20.0	20.8	563.0235	614.026		4.0	30
Dichlorodifluoromethane	L	20.0	17.9	1147.2	1026.711		-10.5	30
Ethylbenzene	L	20.0	19.7	27688.72	27304.8		-1.4	30
Hexachlorobutadiene	L	20.0	18.4	1346.393	1244.155		-7.9	30
Isopropylbenzene	L	20.0	19.3	27378.67	26445.85		-3.4	30
m,p-Xylene	L	40.0	38.9	10591.47	10292.88		-2.8	30
Methyl tert-butyl ether	L	20.0	19.2	2922.897	2761.012		-4.2	30
Methylene chloride	L	20.0	18.9	1080.673	1022.656		-5.4	30
Naphthalene	L	20.0	18.6	9556.757	10217.43		-6.8	30
n-Butylbenzene	L	20.0	20.0	8744.115	9252.889		-0.05	30
n-Propylbenzene	L	20.0	20.0	31638.67	31623.7		-0.05	30
o-Xylene	L	20.0	19.4	10693.85	10396.61		-2.8	30
p-Isopropyltoluene	L	20.0	18.6	22634.18	22343.4		-7.2	30
sec-Butylbenzene	L	20.0	19.4	25913.29	25699.26		-3.0	30

Form 7

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	VOA73C	Calibration:	9102901
Lab File ID:	C1115002.D	Calibration Date:	10/29/09 13:10
Sequence:	9K15001	Injection Date:	11/15/09
Lab Sample ID:	9K15001-CCV1	Injection Time:	14:33

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Styrene	L	20.0	19.4	16328.58	16151.72		-3.2	30
tert-Butylbenzene	L	20.0	19.6	12918.46	12680.23		-1.8	30
Tetrachloroethene	L	20.0	19.6	1014.559	976.3041		-1.8	30
Toluene	L	20.0	19.6	2501.93	2455.315		-1.8	30
trans-1,2-Dichloroethene	L	20.0	19.6	1097.54	1075.018		-2.0	30
trans-1,3-Dichloropropene	L	20.0	18.3	1067.533	1186.36		-8.7	30
Trichloroethene	L	20.0	20.0	1066.688	1066.908		0.0	30
Trichlorofluoromethane	L	20.0	23.9	1660.328	1987.204		19.7	30
Vinyl chloride	L	20.0	19.9	1168.791	1190.718		-0.3	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13014	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (9110484-BS1)			Lab File ID: C1113A03.D			Analyzed: 11/13/09 18:38			
1,4-Dichlorobenzene-d4	351022	13.09				50 - 200		+/-0.50	
Chlorobenzene-d5	168246	10.77				50 - 200		+/-0.50	
Fluorobenzene	1006884	7.46				50 - 200		+/-0.50	
Calibration Check (9K13014-CCV1)			Lab File ID: C1113A03.D			Analyzed: 11/13/09 18:38			
1,4-Dichlorobenzene-d4	351022	13.09				50 - 200		+/-0.50	
Chlorobenzene-d5	168246	10.77				50 - 200		+/-0.50	
Fluorobenzene	1006884	7.46				50 - 200		+/-0.50	
LCS Dup (9110484-BSD1)			Lab File ID: C1113A04.D			Analyzed: 11/13/09 19:02			
1,4-Dichlorobenzene-d4	377071	13.09	351022	13.09	107	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	174181	10.77	168246	10.77	104	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1042694	7.47	1006884	7.46	104	50 - 200	0.0100	+/-0.50	
Instrument Blank (9K13014-IBL1)			Lab File ID: C1113A07.D			Analyzed: 11/13/09 20:17			
1,4-Dichlorobenzene-d4	367593	13.09	351022	13.09	105	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	171472	10.77	168246	10.77	102	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1035573	7.47	1006884	7.46	103	50 - 200	0.0100	+/-0.50	
Blank (9110484-BLK1)			Lab File ID: C1113A08.D			Analyzed: 11/13/09 20:40			
1,4-Dichlorobenzene-d4	382969	13.09	351022	13.09	109	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	185032	10.77	168246	10.77	110	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1095357	7.47	1006884	7.46	109	50 - 200	0.0100	+/-0.50	
Trip Blank (PSK0253-12)			Lab File ID: C1113A10.D			Analyzed: 11/13/09 21:27			
1,4-Dichlorobenzene-d4	372767	13.09	351022	13.09	106	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	179646	10.77	168246	10.77	107	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1092354	7.47	1006884	7.46	108	50 - 200	0.0100	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K15001	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9K15001-CCV1)			Lab File ID: C1115002.D			Analyzed: 11/15/09 14:33			
1,4-Dichlorobenzene-d4	402892	13.09				50 - 200		+/-0.50	
Chlorobenzene-d5	186669	10.77				50 - 200		+/-0.50	
Fluorobenzene	1090019	7.46				50 - 200		+/-0.50	
LCS (9110497-BS1)			Lab File ID: C1115003.D			Analyzed: 11/15/09 15:08			
1,4-Dichlorobenzene-d4	394291	13.09	402892	13.09	98	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	182977	10.77	186669	10.77	98	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1090942	7.46	1090019	7.46	100	50 - 200	0.0000	+/-0.50	
Instrument Blank (9K15001-IBL1)			Lab File ID: C1115005.D			Analyzed: 11/15/09 15:55			
1,4-Dichlorobenzene-d4	385635	13.09	402892	13.09	96	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	186592	10.77	186669	10.77	100	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1117388	7.47	1090019	7.46	103	50 - 200	0.0100	+/-0.50	
Blank (9110497-BLK1)			Lab File ID: C1115006.D			Analyzed: 11/15/09 16:18			
1,4-Dichlorobenzene-d4	382449	13.09	402892	13.09	95	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	184431	10.77	186669	10.77	99	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1112822	7.47	1090019	7.46	102	50 - 200	0.0100	+/-0.50	
DS005-110709 (PSK0253-01)			Lab File ID: C1115018.D			Analyzed: 11/15/09 21:00			
1,4-Dichlorobenzene-d4	371489	13.09	402892	13.09	92	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	175898	10.77	186669	10.77	94	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1040403	7.47	1090019	7.46	95	50 - 200	0.0100	+/-0.50	
DS120-110709 (PSK0253-07)			Lab File ID: C1115019.D			Analyzed: 11/15/09 21:24			
1,4-Dichlorobenzene-d4	344742	13.09	402892	13.09	86	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	167224	10.77	186669	10.77	90	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1034521	7.47	1090019	7.46	95	50 - 200	0.0100	+/-0.50	
DS120-110709-1 (PSK0253-08)			Lab File ID: C1115020.D			Analyzed: 11/15/09 21:47			
1,4-Dichlorobenzene-d4	368329	13.09	402892	13.09	91	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	177884	10.77	186669	10.77	95	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1079336	7.47	1090019	7.46	99	50 - 200	0.0100	+/-0.50	
DS223-110709 (PSK0253-10)			Lab File ID: C1115021.D			Analyzed: 11/15/09 22:11			
1,4-Dichlorobenzene-d4	371180	13.09	402892	13.09	92	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	178697	10.77	186669	10.77	96	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1086231	7.47	1090019	7.46	100	50 - 200	0.0100	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K15001	Instrument:	VOA73C
Matrix:	Water	Calibration:	9102901

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
DS221-110709 (PSK0253-11)			Lab File ID: C1115022.D			Analyzed: 11/15/09 22:34			
1,4-Dichlorobenzene-d4	369142	13.09	402892	13.09	92	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	178223	10.77	186669	10.77	95	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1054355	7.47	1090019	7.46	97	50 - 200	0.0100	+/-0.50	
DS012-110709 (PSK0253-02)			Lab File ID: C1115023.D			Analyzed: 11/15/09 22:58			
1,4-Dichlorobenzene-d4	361768	13.09	402892	13.09	90	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	170077	10.77	186669	10.77	91	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1039617	7.47	1090019	7.46	95	50 - 200	0.0100	+/-0.50	
Matrix Spike (9110497-MS1)			Lab File ID: C1115024.D			Analyzed: 11/15/09 23:21			
1,4-Dichlorobenzene-d4	381022	13.09	402892	13.09	95	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	184490	10.77	186669	10.77	99	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1085159	7.47	1090019	7.46	100	50 - 200	0.0100	+/-0.50	
Matrix Spike Dup (9110497-MSD1)			Lab File ID: C1115025.D			Analyzed: 11/15/09 23:44			
1,4-Dichlorobenzene-d4	376341	13.09	402892	13.09	93	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	180458	10.77	186669	10.77	97	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1068624	7.47	1090019	7.46	98	50 - 200	0.0100	+/-0.50	
Instrument Blank (9K15001-IBL2)			Lab File ID: C1115026.D			Analyzed: 11/16/09 00:08			
1,4-Dichlorobenzene-d4	363912	13.09	402892	13.09	90	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	177756	10.77	186669	10.77	95	50 - 200	0.0000	+/-0.50	
Fluorobenzene	1065988	7.47	1090019	7.46	98	50 - 200	0.0100	+/-0.50	

INITIAL CALIBRATION STANDARDS
EPA 8260B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9J29012	Instrument:	VOA73C
Calibration:	9102901		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
9040184	CAL 1 MIX 1,2,3,&EG 0.2ppb	9J29012-CAL1	C1029007.D	10/29/09 16:46
9040185	CAL 2 MIX 1,2,3,&EG 0.4ppb	9J29012-CAL2	C1029008.D	10/29/09 17:10
9040187	CAL 3 MIX 1,2,3,&EG 1ppb	9J29012-CAL3	C1029009.D	10/29/09 17:33
9040188	CAL 4 MIX 1,2,3,&EG 2ppb	9J29012-CAL4	C1029010.D	10/29/09 17:57
9040189	CAL 5 MIX 1,2,3,&EG 5ppb	9J29012-CAL5	C1029011.D	10/29/09 18:20
9040190	CAL 6 MIX 1,2,3,&EG 20ppb	9J29012-CAL6	C1029012.D	10/29/09 18:44
9040191	CAL 7 MIX 1,2,3,&EG 50ppb	9J29012-CAL7	C1029013.D	10/29/09 19:07
9040192	CAL 8 MIX 1,2,3,&EG 100ppb	9J29012-CAL8	C1029014.D	10/29/09 19:31
9040193	CAL 9 MIX 1,2,3,&EG 200ppb	9J29012-CAL9	C1029015.D	10/29/09 19:54
9040190	CAL 6 MIX 1,2,3,&EG 20ppb	9J29012-SCV2	C1029022.D	10/30/09 09:45

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Sequence: 9J29012
Instrument: VOA73C
Calibration: 9102901

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9J29012-TUN2	C1029006.D	10/29/09 16:12
Cal Standard	9J29012-CAL1	C1029007.D	10/29/09 16:46
Cal Standard	9J29012-CAL2	C1029008.D	10/29/09 17:10
Cal Standard	9J29012-CAL3	C1029009.D	10/29/09 17:33
Cal Standard	9J29012-CAL4	C1029010.D	10/29/09 17:57
Cal Standard	9J29012-CAL5	C1029011.D	10/29/09 18:20
Cal Standard	9J29012-CAL6	C1029012.D	10/29/09 18:44
Cal Standard	9J29012-CAL7	C1029013.D	10/29/09 19:07
Cal Standard	9J29012-CAL8	C1029014.D	10/29/09 19:31
Cal Standard	9J29012-CAL9	C1029015.D	10/29/09 19:54
MS Tune	9J29012-TUN3	C1029021.D	10/30/09 09:14
Secondary Cal Check	9J29012-SCV2	C1029022.D	10/30/09 09:45

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Sequence: 9K13014

SDG: PSK0253
Project: NW Pipe Project
Instrument: VOA73C
Calibration: 9102901

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9K13014-TUN1	C1113A01.D	11/13/09 16:42
LCS	9110484-BS1	C1113A03.D	11/13/09 18:38
Calibration Check	9K13014-CCV1	C1113A03.D	11/13/09 18:38
LCS Dup	9110484-BSD1	C1113A04.D	11/13/09 19:02
Instrument Blank	9K13014-IBL1	C1113A07.D	11/13/09 20:17
Blank	9110484-BLK1	C1113A08.D	11/13/09 20:40
Trip Blank	PSK0253-12	C1113A10.D	11/13/09 21:27

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS/VOA Analysis QCAR

Sequence 9K13014

Batch(s) 9110484, _____, _____

DATE/INIT ~~11/18/09 PMV~~ 11/18/09 BS 11/18/09

SAMPLE INTEGRITY

BS All work is completed according to work order.

_____ Special instructions are checked.

_____ Hold times checked.

Data Analysis

BS Screening data matches the final data.

_____ Re-analyzed samples or "RE's" match all other analysis.***

_____ Correct calibration method used for quantitation.

_____ Correct dilution factors/multipliers have been used.

_____ Daily calibration and tuning criteria are within acceptance limits.

_____ Internal standard areas (50-200%) and retention times (<0.06) .

_____ Surrogates recoveries are within acceptable limits or properly flagged.

_____ All analysis and prepatation bench sheets have been completed.

_____ Concentration of reported analytes are within the calibration ranges.

_____ Copies of preparation log books are included **(soils)**

REPORTING

BS Method blank is non-detected and reported from the same batch.

_____ File ID's for chemstation sequence match Element file ID's..

_____ Reporting limits or **special** client reporting limits are correct.

_____ Correct units and significant figures have been used.

_____ Dates for extraction, analysis, and TCLP (if applicable) are correct.

_____ Element final report matches analytical results.

_____ Proper QC reports are included and correct.

Comments_____

REVIEWED BY: DATE/INIT 11/18/09 PMV

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Sequence: 9K15001

SDG: PSK0253
Project: NW Pipe Project
Instrument: VOA73C
Calibration: 9102901

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9K15001-TUN1	C1115001.D	11/15/09 14:05
Calibration Check	9K15001-CCV1	C1115002.D	11/15/09 14:33
LCS	9110497-BS1	C1115003.D	11/15/09 15:08
Instrument Blank	9K15001-IBL1	C1115005.D	11/15/09 15:55
Blank	9110497-BLK1	C1115006.D	11/15/09 16:18
DS005-110709	PSK0253-01	C1115018.D	11/15/09 21:00
DS120-110709	PSK0253-07	C1115019.D	11/15/09 21:24
DS120-110709-1	PSK0253-08	C1115020.D	11/15/09 21:47
DS223-110709	PSK0253-10	C1115021.D	11/15/09 22:11
DS221-110709	PSK0253-11	C1115022.D	11/15/09 22:34
DS012-110709	PSK0253-02	C1115023.D	11/15/09 22:58
DS012-110709	9110497-MS1	C1115024.D	11/15/09 23:21
DS012-110709	9110497-MSD1	C1115025.D	11/15/09 23:44
Instrument Blank	9K15001-IBL2	C1115026.D	11/16/09 00:08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS/VOA Analysis QCAR

Sequence 9K15001

Batch(s) 9110497 , _____ ,

SAMPLE INTEGRITY

DATE/INIT BJ 11/18/09

BJ All work is completed according to work order.

Special instructions are checked.

Hold times checked.

Data Analysis

BJ Screening data matches the final data.

Re-analyzed samples or "RE's" match all other analysis.***

Correct calibration method used for quantitation.

Correct dilution factors/multipliers have been used.

Daily calibration and tuning criteria are within acceptance limits.

Internal standard areas (50-200%) and retention times (<0.06) .

Surrogates recoveries are within acceptable limits or properly flagged.

All analysis and prepatation bench sheets have been completed.

Concentration of reported analytes are within the calibration ranges.

Copies of preparation log books are included **(soils)**

REPORTING

BJ Method blank is non-detected and reported from the same batch.

File ID's for chemstation sequence match Element file ID's..

Reporting limits or **special** client reporting limits are correct.

Correct units and significant figures have been used.

Dates for extraction, analysis, and TCLP (if applicable) are correct.

Element final report matches analytical results.

Proper QC reports are included and correct.

Comments _____

REVIEWED BY: DATE/INIT 11/18/09 AMS

GC/MS Volatile Organic Compounds

Target Analyte Results Summaries

9405 SW Nimbus Avenue Beaverton, OR 97008 **tel** 503.906.9200 **fax** 503.906.9210 **www.testamericainc.com**

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS005-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-01	File ID:	C1115018.D
Sampled:	11/07/09 12:30	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 21:00
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U
71-55-6	1,1,1-Trichloroethane	1	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U
79-00-5	1,1,2-Trichloroethane	1	1.00	U
75-34-3	1,1-Dichloroethane	1	1.00	U
75-35-4	1,1-Dichloroethene	1	1.00	U
563-58-6	1,1-Dichloropropene	1	1.00	U
87-61-6	1,2,3-Trichlorobenzene	1	1.00	U
96-18-4	1,2,3-Trichloropropane	1	1.00	U
120-82-1	1,2,4-Trichlorobenzene	1	1.00	U
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U
106-93-4	1,2-Dibromoethane	1	1.00	U
95-50-1	1,2-Dichlorobenzene	1	1.00	U
107-06-2	1,2-Dichloroethane	1	1.00	U
78-87-5	1,2-Dichloropropane	1	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U
541-73-1	1,3-Dichlorobenzene	1	1.00	U
142-28-9	1,3-Dichloropropane	1	1.00	U
106-46-7	1,4-Dichlorobenzene	1	1.00	U
594-20-7	2,2-Dichloropropane	1	1.00	U
78-93-3	2-Butanone (MEK)	1	3.56	J
95-49-8	2-Chlorotoluene	1	1.00	U
591-78-6	2-Hexanone	1	10.0	U
106-43-4	4-Chlorotoluene	1	1.00	U
108-10-1	4-Methyl-2-pentanone	1	5.00	U
67-64-1	Acetone	1	10.0	J
71-43-2	Benzene	1	0.200	U
108-86-1	Bromobenzene	1	1.00	U
74-97-5	Bromochloromethane	1	1.00	U
75-27-4	Bromodichloromethane	1	1.00	U
75-25-2	Bromoform	1	1.00	U
74-83-9	Bromomethane	1	5.00	U
75-15-0	Carbon disulfide	1	10.0	U
56-23-5	Carbon tetrachloride	1	1.00	U
108-90-7	Chlorobenzene	1	1.00	U
75-00-3	Chloroethane	1	1.00	U
67-66-3	Chloroform	1	0.200	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS005-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-01	File ID:	C1115018.D
Sampled:	11/07/09 12:30	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 21:00
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
74-87-3	Chloromethane	1	5.00	U
156-59-2	cis-1,2-Dichloroethene	1	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U
124-48-1	Dibromochloromethane	1	1.00	U
74-95-3	Dibromomethane	1	1.00	U
75-71-8	Dichlorodifluoromethane	1	5.00	U
100-41-4	Ethylbenzene	1	1.00	U
87-68-3	Hexachlorobutadiene	1	4.00	U
98-82-8	Isopropylbenzene	1	2.00	U
1330-20-7mp	m,p-Xylene	1	2.00	U
1634-04-4	Methyl tert-butyl ether	1	1.00	U
75-09-2	Methylene chloride	1	5.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	5.00	U
103-65-1	n-Propylbenzene	1	1.00	U
95-47-6	o-Xylene	1	1.00	U
99-87-6	p-Isopropyltoluene	1	2.00	U
135-98-8	sec-Butylbenzene	1	1.00	U
100-42-5	Styrene	1	1.00	U
98-06-6	tert-Butylbenzene	1	1.00	U
127-18-4	Tetrachloroethene	1	1.00	U
108-88-3	Toluene	1	1.00	U
156-60-5	trans-1,2-Dichloroethene	1	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U
79-01-6	Trichloroethene	1	1.00	U
75-69-4	Trichlorofluoromethane	1	1.00	U
75-01-4	Vinyl chloride	1	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.7	104	80 - 120	
4-BFB	20.0	21.4	107	80 - 120	
Dibromofluoromethane	20.0	20.2	101	80 - 120	
Toluene-d8	20.0	20.0	99.8	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	371489	13.09	402892	13.09	
Chlorobenzene-d5	175898	10.77	186669	10.77	
Fluorobenzene	1040403	7.47	1090019	7.46	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS012-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-02	File ID:	C1115023.D
Sampled:	11/07/09 13:00	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 22:58
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U
71-55-6	1,1,1-Trichloroethane	1	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U
79-00-5	1,1,2-Trichloroethane	1	1.00	U
75-34-3	1,1-Dichloroethane	1	1.00	U
75-35-4	1,1-Dichloroethene	1	1.00	U
563-58-6	1,1-Dichloropropene	1	1.00	U
87-61-6	1,2,3-Trichlorobenzene	1	1.00	U
96-18-4	1,2,3-Trichloropropane	1	1.00	U
120-82-1	1,2,4-Trichlorobenzene	1	1.00	U
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U
106-93-4	1,2-Dibromoethane	1	1.00	U
95-50-1	1,2-Dichlorobenzene	1	1.00	U
107-06-2	1,2-Dichloroethane	1	1.00	U
78-87-5	1,2-Dichloropropane	1	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U
541-73-1	1,3-Dichlorobenzene	1	1.00	U
142-28-9	1,3-Dichloropropane	1	1.00	U
106-46-7	1,4-Dichlorobenzene	1	1.00	U
594-20-7	2,2-Dichloropropane	1	1.00	U
78-93-3	2-Butanone (MEK)	1	19.7	
95-49-8	2-Chlorotoluene	1	1.00	U
591-78-6	2-Hexanone	1	10.0	U
106-43-4	4-Chlorotoluene	1	1.00	U
108-10-1	4-Methyl-2-pentanone	1	5.00	U
67-64-1	Acetone	1	10.6	J
71-43-2	Benzene	1	0.200	U
108-86-1	Bromobenzene	1	1.00	U
74-97-5	Bromochloromethane	1	1.00	U
75-27-4	Bromodichloromethane	1	1.00	U
75-25-2	Bromoform	1	1.00	U
74-83-9	Bromomethane	1	5.00	U
75-15-0	Carbon disulfide	1	10.0	U
56-23-5	Carbon tetrachloride	1	1.00	U
108-90-7	Chlorobenzene	1	1.00	U
75-00-3	Chloroethane	1	1.00	U
67-66-3	Chloroform	1	0.200	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS012-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-02	File ID:	C1115023.D
Sampled:	11/07/09 13:00	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 22:58
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
74-87-3	Chloromethane	1	5.00	U
156-59-2	cis-1,2-Dichloroethene	1	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U
124-48-1	Dibromochloromethane	1	1.00	U
74-95-3	Dibromomethane	1	1.00	U
75-71-8	Dichlorodifluoromethane	1	5.00	U
100-41-4	Ethylbenzene	1	1.00	U
87-68-3	Hexachlorobutadiene	1	4.00	U
98-82-8	Isopropylbenzene	1	2.00	U
1330-20-7mp	m,p-Xylene	1	2.00	U
1634-04-4	Methyl tert-butyl ether	1	1.00	U
75-09-2	Methylene chloride	1	5.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	5.00	U
103-65-1	n-Propylbenzene	1	1.00	U
95-47-6	o-Xylene	1	1.00	U
99-87-6	p-Isopropyltoluene	1	2.00	U
135-98-8	sec-Butylbenzene	1	1.00	U
100-42-5	Styrene	1	1.00	U
98-06-6	tert-Butylbenzene	1	1.00	U
127-18-4	Tetrachloroethene	1	1.00	U
108-88-3	Toluene	1	1.00	U
156-60-5	trans-1,2-Dichloroethene	1	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U
79-01-6	Trichloroethene	1	1.00	U
75-69-4	Trichlorofluoromethane	1	1.00	U
75-01-4	Vinyl chloride	1	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.5	102	80 - 120	
4-BFB	20.0	21.4	107	80 - 120	
Dibromofluoromethane	20.0	20.0	99.8	80 - 120	
Toluene-d8	20.0	19.6	97.8	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	361768	13.09	402892	13.09	
Chlorobenzene-d5	170077	10.77	186669	10.77	
Fluorobenzene	1039617	7.47	1090019	7.46	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS120-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-07	File ID:	C1115019.D
Sampled:	11/07/09 14:45	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 21:24
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U
71-55-6	1,1,1-Trichloroethane	1	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U
79-00-5	1,1,2-Trichloroethane	1	1.00	U
75-34-3	1,1-Dichloroethane	1	1.00	U
75-35-4	1,1-Dichloroethene	1	1.00	U
563-58-6	1,1-Dichloropropene	1	1.00	U
87-61-6	1,2,3-Trichlorobenzene	1	1.00	U
96-18-4	1,2,3-Trichloropropane	1	1.00	U
120-82-1	1,2,4-Trichlorobenzene	1	1.00	U
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U
106-93-4	1,2-Dibromoethane	1	1.00	U
95-50-1	1,2-Dichlorobenzene	1	1.00	U
107-06-2	1,2-Dichloroethane	1	1.00	U
78-87-5	1,2-Dichloropropane	1	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U
541-73-1	1,3-Dichlorobenzene	1	1.00	U
142-28-9	1,3-Dichloropropane	1	1.00	U
106-46-7	1,4-Dichlorobenzene	1	1.00	U
594-20-7	2,2-Dichloropropane	1	1.00	U
78-93-3	2-Butanone (MEK)	1	27.1	
95-49-8	2-Chlorotoluene	1	1.00	U
591-78-6	2-Hexanone	1	10.0	U
106-43-4	4-Chlorotoluene	1	1.00	U
108-10-1	4-Methyl-2-pentanone	1	5.00	U
67-64-1	Acetone	1	16.2	J
71-43-2	Benzene	1	0.200	U
108-86-1	Bromobenzene	1	1.00	U
74-97-5	Bromochloromethane	1	1.00	U
75-27-4	Bromodichloromethane	1	1.00	U
75-25-2	Bromoform	1	1.00	U
74-83-9	Bromomethane	1	5.00	U
75-15-0	Carbon disulfide	1	10.0	U
56-23-5	Carbon tetrachloride	1	1.00	U
108-90-7	Chlorobenzene	1	1.00	U
75-00-3	Chloroethane	1	1.00	U
67-66-3	Chloroform	1	0.200	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS120-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-07	File ID:	C1115019.D
Sampled:	11/07/09 14:45	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 21:24
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
74-87-3	Chloromethane	1	5.00	U
156-59-2	cis-1,2-Dichloroethene	1	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U
124-48-1	Dibromochloromethane	1	1.00	U
74-95-3	Dibromomethane	1	1.00	U
75-71-8	Dichlorodifluoromethane	1	5.00	U
100-41-4	Ethylbenzene	1	1.00	U
87-68-3	Hexachlorobutadiene	1	4.00	U
98-82-8	Isopropylbenzene	1	2.00	U
1330-20-7mp	m,p-Xylene	1	2.00	U
1634-04-4	Methyl tert-butyl ether	1	1.00	U
75-09-2	Methylene chloride	1	5.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	5.00	U
103-65-1	n-Propylbenzene	1	1.00	U
95-47-6	o-Xylene	1	1.00	U
99-87-6	p-Isopropyltoluene	1	2.00	U
135-98-8	sec-Butylbenzene	1	1.00	U
100-42-5	Styrene	1	1.00	U
98-06-6	tert-Butylbenzene	1	1.00	U
127-18-4	Tetrachloroethene	1	1.00	U
108-88-3	Toluene	1	1.00	U
156-60-5	trans-1,2-Dichloroethene	1	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U
79-01-6	Trichloroethene	1	1.00	U
75-69-4	Trichlorofluoromethane	1	1.00	U
75-01-4	Vinyl chloride	1	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.6	103	80 - 120	
4-BFB	20.0	22.1	110	80 - 120	
Dibromofluoromethane	20.0	20.2	101	80 - 120	
Toluene-d8	20.0	19.9	99.6	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	344742	13.09	402892	13.09	
Chlorobenzene-d5	167224	10.77	186669	10.77	
Fluorobenzene	1034521	7.47	1090019	7.46	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS120-110709-1

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-08	File ID:	C1115020.D
Sampled:	11/07/09 14:45	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 21:47
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U
71-55-6	1,1,1-Trichloroethane	1	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U
79-00-5	1,1,2-Trichloroethane	1	1.00	U
75-34-3	1,1-Dichloroethane	1	1.00	U
75-35-4	1,1-Dichloroethene	1	1.00	U
563-58-6	1,1-Dichloropropene	1	1.00	U
87-61-6	1,2,3-Trichlorobenzene	1	1.00	U
96-18-4	1,2,3-Trichloropropane	1	1.00	U
120-82-1	1,2,4-Trichlorobenzene	1	1.00	U
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U
106-93-4	1,2-Dibromoethane	1	1.00	U
95-50-1	1,2-Dichlorobenzene	1	1.00	U
107-06-2	1,2-Dichloroethane	1	1.00	U
78-87-5	1,2-Dichloropropane	1	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U
541-73-1	1,3-Dichlorobenzene	1	1.00	U
142-28-9	1,3-Dichloropropane	1	1.00	U
106-46-7	1,4-Dichlorobenzene	1	1.00	U
594-20-7	2,2-Dichloropropane	1	1.00	U
78-93-3	2-Butanone (MEK)	1	52.0	
95-49-8	2-Chlorotoluene	1	1.00	U
591-78-6	2-Hexanone	1	10.0	U
106-43-4	4-Chlorotoluene	1	1.00	U
108-10-1	4-Methyl-2-pentanone	1	5.00	U
67-64-1	Acetone	1	15.9	J
71-43-2	Benzene	1	0.200	U
108-86-1	Bromobenzene	1	1.00	U
74-97-5	Bromochloromethane	1	1.00	U
75-27-4	Bromodichloromethane	1	1.00	U
75-25-2	Bromoform	1	1.00	U
74-83-9	Bromomethane	1	5.00	U
75-15-0	Carbon disulfide	1	10.0	U
56-23-5	Carbon tetrachloride	1	1.00	U
108-90-7	Chlorobenzene	1	1.00	U
75-00-3	Chloroethane	1	1.00	U
67-66-3	Chloroform	1	0.200	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS120-110709-1

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-08	File ID:	C1115020.D
Sampled:	11/07/09 14:45	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 21:47
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
74-87-3	Chloromethane	1	5.00	U
156-59-2	cis-1,2-Dichloroethene	1	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U
124-48-1	Dibromochloromethane	1	1.00	U
74-95-3	Dibromomethane	1	1.00	U
75-71-8	Dichlorodifluoromethane	1	5.00	U
100-41-4	Ethylbenzene	1	1.00	U
87-68-3	Hexachlorobutadiene	1	4.00	U
98-82-8	Isopropylbenzene	1	2.00	U
1330-20-7mp	m,p-Xylene	1	2.00	U
1634-04-4	Methyl tert-butyl ether	1	1.00	U
75-09-2	Methylene chloride	1	5.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	5.00	U
103-65-1	n-Propylbenzene	1	1.00	U
95-47-6	o-Xylene	1	1.00	U
99-87-6	p-Isopropyltoluene	1	2.00	U
135-98-8	sec-Butylbenzene	1	1.00	U
100-42-5	Styrene	1	1.00	U
98-06-6	tert-Butylbenzene	1	1.00	U
127-18-4	Tetrachloroethene	1	1.00	U
108-88-3	Toluene	1	1.00	U
156-60-5	trans-1,2-Dichloroethene	1	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U
79-01-6	Trichloroethene	1	1.00	U
75-69-4	Trichlorofluoromethane	1	1.00	U
75-01-4	Vinyl chloride	1	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.5	102	80 - 120	
4-BFB	20.0	21.3	106	80 - 120	
Dibromofluoromethane	20.0	20.2	101	80 - 120	
Toluene-d8	20.0	19.7	98.6	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	368329	13.09	402892	13.09	
Chlorobenzene-d5	177884	10.77	186669	10.77	
Fluorobenzene	1079336	7.47	1090019	7.46	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS223-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-10	File ID:	C1115021.D
Sampled:	11/07/09 15:30	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 22:11
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U
71-55-6	1,1,1-Trichloroethane	1	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U
79-00-5	1,1,2-Trichloroethane	1	1.00	U
75-34-3	1,1-Dichloroethane	1	1.00	U
75-35-4	1,1-Dichloroethene	1	1.00	U
563-58-6	1,1-Dichloropropene	1	1.00	U
87-61-6	1,2,3-Trichlorobenzene	1	1.00	U
96-18-4	1,2,3-Trichloropropane	1	1.00	U
120-82-1	1,2,4-Trichlorobenzene	1	1.00	U
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U
106-93-4	1,2-Dibromoethane	1	1.00	U
95-50-1	1,2-Dichlorobenzene	1	1.00	U
107-06-2	1,2-Dichloroethane	1	1.00	U
78-87-5	1,2-Dichloropropane	1	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U
541-73-1	1,3-Dichlorobenzene	1	1.00	U
142-28-9	1,3-Dichloropropane	1	1.00	U
106-46-7	1,4-Dichlorobenzene	1	1.00	U
594-20-7	2,2-Dichloropropane	1	1.00	U
78-93-3	2-Butanone (MEK)	1	5.72	J
95-49-8	2-Chlorotoluene	1	1.00	U
591-78-6	2-Hexanone	1	10.0	U
106-43-4	4-Chlorotoluene	1	1.00	U
108-10-1	4-Methyl-2-pentanone	1	5.00	U
67-64-1	Acetone	1	9.74	J
71-43-2	Benzene	1	0.200	U
108-86-1	Bromobenzene	1	1.00	U
74-97-5	Bromochloromethane	1	1.00	U
75-27-4	Bromodichloromethane	1	1.00	U
75-25-2	Bromoform	1	1.00	U
74-83-9	Bromomethane	1	5.00	U
75-15-0	Carbon disulfide	1	10.0	U
56-23-5	Carbon tetrachloride	1	1.00	U
108-90-7	Chlorobenzene	1	1.00	U
75-00-3	Chloroethane	1	1.00	U
67-66-3	Chloroform	1	0.200	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS223-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-10	File ID:	C1115021.D
Sampled:	11/07/09 15:30	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 22:11
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
74-87-3	Chloromethane	1	5.00	U
156-59-2	cis-1,2-Dichloroethene	1	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U
124-48-1	Dibromochloromethane	1	1.00	U
74-95-3	Dibromomethane	1	1.00	U
75-71-8	Dichlorodifluoromethane	1	5.00	U
100-41-4	Ethylbenzene	1	1.00	U
87-68-3	Hexachlorobutadiene	1	4.00	U
98-82-8	Isopropylbenzene	1	2.00	U
1330-20-7mp	m,p-Xylene	1	2.00	U
1634-04-4	Methyl tert-butyl ether	1	1.00	U
75-09-2	Methylene chloride	1	5.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	5.00	U
103-65-1	n-Propylbenzene	1	1.00	U
95-47-6	o-Xylene	1	1.00	U
99-87-6	p-Isopropyltoluene	1	2.00	U
135-98-8	sec-Butylbenzene	1	1.00	U
100-42-5	Styrene	1	1.00	U
98-06-6	tert-Butylbenzene	1	1.00	U
127-18-4	Tetrachloroethene	1	1.00	U
108-88-3	Toluene	1	1.00	U
156-60-5	trans-1,2-Dichloroethene	1	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U
79-01-6	Trichloroethene	1	1.00	U
75-69-4	Trichlorofluoromethane	1	1.00	U
75-01-4	Vinyl chloride	1	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.5	103	80 - 120	
4-BFB	20.0	21.2	106	80 - 120	
Dibromofluoromethane	20.0	19.9	99.7	80 - 120	
Toluene-d8	20.0	19.6	98.2	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	371180	13.09	402892	13.09	
Chlorobenzene-d5	178697	10.77	186669	10.77	
Fluorobenzene	1086231	7.47	1090019	7.46	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS221-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-11	File ID:	C1115022.D
Sampled:	11/07/09 16:00	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 22:34
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U
71-55-6	1,1,1-Trichloroethane	1	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U
79-00-5	1,1,2-Trichloroethane	1	1.00	U
75-34-3	1,1-Dichloroethane	1	1.00	U
75-35-4	1,1-Dichloroethene	1	1.00	U
563-58-6	1,1-Dichloropropene	1	1.00	U
87-61-6	1,2,3-Trichlorobenzene	1	1.00	U
96-18-4	1,2,3-Trichloropropane	1	1.00	U
120-82-1	1,2,4-Trichlorobenzene	1	1.00	U
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U
106-93-4	1,2-Dibromoethane	1	1.00	U
95-50-1	1,2-Dichlorobenzene	1	1.00	U
107-06-2	1,2-Dichloroethane	1	1.00	U
78-87-5	1,2-Dichloropropane	1	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U
541-73-1	1,3-Dichlorobenzene	1	1.00	U
142-28-9	1,3-Dichloropropane	1	1.00	U
106-46-7	1,4-Dichlorobenzene	1	1.00	U
594-20-7	2,2-Dichloropropane	1	1.00	U
78-93-3	2-Butanone (MEK)	1	10.0	U
95-49-8	2-Chlorotoluene	1	1.00	U
591-78-6	2-Hexanone	1	10.0	U
106-43-4	4-Chlorotoluene	1	1.00	U
108-10-1	4-Methyl-2-pentanone	1	5.00	U
67-64-1	Acetone	1	10.6	J
71-43-2	Benzene	1	0.200	U
108-86-1	Bromobenzene	1	1.00	U
74-97-5	Bromochloromethane	1	1.00	U
75-27-4	Bromodichloromethane	1	1.00	U
75-25-2	Bromoform	1	1.00	U
74-83-9	Bromomethane	1	5.00	U
75-15-0	Carbon disulfide	1	10.0	U
56-23-5	Carbon tetrachloride	1	1.00	U
108-90-7	Chlorobenzene	1	1.00	U
75-00-3	Chloroethane	1	1.00	U
67-66-3	Chloroform	1	0.200	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

DS221-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-11	File ID:	C1115022.D
Sampled:	11/07/09 16:00	Prepared:	11/15/09 15:30	Analyzed:	11/15/09 22:34
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110497	Sequence:	9K15001	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
74-87-3	Chloromethane	1	5.00	U
156-59-2	cis-1,2-Dichloroethene	1	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U
124-48-1	Dibromochloromethane	1	1.00	U
74-95-3	Dibromomethane	1	1.00	U
75-71-8	Dichlorodifluoromethane	1	5.00	U
100-41-4	Ethylbenzene	1	1.00	U
87-68-3	Hexachlorobutadiene	1	4.00	U
98-82-8	Isopropylbenzene	1	2.00	U
1330-20-7mp	m,p-Xylene	1	2.00	U
1634-04-4	Methyl tert-butyl ether	1	1.00	U
75-09-2	Methylene chloride	1	5.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	5.00	U
103-65-1	n-Propylbenzene	1	1.00	U
95-47-6	o-Xylene	1	1.00	U
99-87-6	p-Isopropyltoluene	1	2.00	U
135-98-8	sec-Butylbenzene	1	1.00	U
100-42-5	Styrene	1	1.00	U
98-06-6	tert-Butylbenzene	1	1.00	U
127-18-4	Tetrachloroethene	1	1.00	U
108-88-3	Toluene	1	1.00	U
156-60-5	trans-1,2-Dichloroethene	1	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U
79-01-6	Trichloroethene	1	1.00	U
75-69-4	Trichlorofluoromethane	1	1.00	U
75-01-4	Vinyl chloride	1	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.7	103	80 - 120	
4-BFB	20.0	21.3	106	80 - 120	
Dibromofluoromethane	20.0	20.0	100	80 - 120	
Toluene-d8	20.0	20.2	101	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	369142	13.09	402892	13.09	
Chlorobenzene-d5	178223	10.77	186669	10.77	
Fluorobenzene	1054355	7.47	1090019	7.46	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Trip Blank

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-12	File ID:	C1113A10.D
Sampled:	11/07/09 00:00	Prepared:	11/13/09 19:00	Analyzed:	11/13/09 21:27
Solids:		Preparation:	EPA 5030B	Initial/Final:	5 ml / 5 ml
Batch:	9110484	Sequence:	9K13014	Calibration:	9102901
Instrument:	VOA73C				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U
71-55-6	1,1,1-Trichloroethane	1	1.00	U
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U
79-00-5	1,1,2-Trichloroethane	1	1.00	U
75-34-3	1,1-Dichloroethane	1	1.00	U
75-35-4	1,1-Dichloroethene	1	1.00	U
563-58-6	1,1-Dichloropropene	1	1.00	U
87-61-6	1,2,3-Trichlorobenzene	1	1.00	U
96-18-4	1,2,3-Trichloropropane	1	1.00	U
120-82-1	1,2,4-Trichlorobenzene	1	1.00	U
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U
106-93-4	1,2-Dibromoethane	1	1.00	U
95-50-1	1,2-Dichlorobenzene	1	1.00	U
107-06-2	1,2-Dichloroethane	1	1.00	U
78-87-5	1,2-Dichloropropane	1	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U
541-73-1	1,3-Dichlorobenzene	1	1.00	U
142-28-9	1,3-Dichloropropane	1	1.00	U
106-46-7	1,4-Dichlorobenzene	1	1.00	U
594-20-7	2,2-Dichloropropane	1	1.00	U
78-93-3	2-Butanone (MEK)	1	10.0	U
95-49-8	2-Chlorotoluene	1	1.00	U
591-78-6	2-Hexanone	1	10.0	U
106-43-4	4-Chlorotoluene	1	1.00	U
108-10-1	4-Methyl-2-pentanone	1	5.00	U
67-64-1	Acetone	1	25.0	U
71-43-2	Benzene	1	0.200	U
108-86-1	Bromobenzene	1	1.00	U
74-97-5	Bromochloromethane	1	1.00	U
75-27-4	Bromodichloromethane	1	1.00	U
75-25-2	Bromoform	1	1.00	U
74-83-9	Bromomethane	1	5.00	U
75-15-0	Carbon disulfide	1	10.0	U
56-23-5	Carbon tetrachloride	1	1.00	U
108-90-7	Chlorobenzene	1	1.00	U
75-00-3	Chloroethane	1	1.00	U
67-66-3	Chloroform	1	0.200	U

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Trip Blank

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-12 File ID: C1113A10.D

Sampled: 11/07/09 00:00 Prepared: 11/13/09 19:00 Analyzed: 11/13/09 21:27

Solids: Preparation: EPA 5030B Initial/Final: 5 ml / 5 ml

Batch: 9110484 Sequence: 9K13014 Calibration: 9102901 Instrument: VOA73C

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
74-87-3	Chloromethane	1	5.00	U
156-59-2	cis-1,2-Dichloroethene	1	1.00	U
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U
124-48-1	Dibromochloromethane	1	1.00	U
74-95-3	Dibromomethane	1	1.00	U
75-71-8	Dichlorodifluoromethane	1	5.00	U
100-41-4	Ethylbenzene	1	1.00	U
87-68-3	Hexachlorobutadiene	1	4.00	U
98-82-8	Isopropylbenzene	1	2.00	U
1330-20-7mp	m,p-Xylene	1	2.00	U
1634-04-4	Methyl tert-butyl ether	1	1.00	U
75-09-2	Methylene chloride	1	5.00	U
91-20-3	Naphthalene	1	2.00	U
104-51-8	n-Butylbenzene	1	5.00	U
103-65-1	n-Propylbenzene	1	1.00	U
95-47-6	o-Xylene	1	1.00	U
99-87-6	p-Isopropyltoluene	1	2.00	U
135-98-8	sec-Butylbenzene	1	1.00	U
100-42-5	Styrene	1	1.00	U
98-06-6	tert-Butylbenzene	1	1.00	U
127-18-4	Tetrachloroethene	1	1.00	U
108-88-3	Toluene	1	1.00	U
156-60-5	trans-1,2-Dichloroethene	1	1.00	U
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U
79-01-6	Trichloroethene	1	1.00	U
75-69-4	Trichlorofluoromethane	1	1.00	U
75-01-4	Vinyl chloride	1	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
1,2-DCA-d4	20.0	20.9	104	80 - 120	
4-BFB	20.0	21.7	108	80 - 120	
Dibromofluoromethane	20.0	20.1	100	80 - 120	
Toluene-d8	20.0	20.0	100	80 - 120	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	372767	13.09	351022	13.09	
Chlorobenzene-d5	179646	10.77	168246	10.77	
Fluorobenzene	1092354	7.47	1006884	7.46	

* Values outside of QC limits

GC/MS Volatile Organic Compounds

Preparation Logs

Form 4

PREPARATION BATCH SUMMARY

EPA 8260B

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110484 Batch Matrix: Water Preparation: EPA 5030B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110484-BLK1	C1113A08.D	11/13/09 16:00	
LCS	9110484-BS1	C1113A03.D	11/13/09 16:00	
LCS Dup	9110484-BSD1	C1113A04.D	11/13/09 16:00	
Trip Blank	PSK0253-12	C1113A10.D	11/13/09 19:00	level 3 dp.. MDL

PREPARATION BENCH SHEET

Batch 9110484

Printed: 11/15/2009 4:21:14PM

Prep method: EPA 5030B

TestAmerica Portland

Matrix: Water

1600 BJ 11/17/09

Surrogate 1: 9060188

Lab Number	Analysis	Prepared	Initial (ml)	Init	Final (ml)	Init	Spike ID	Spike Amt (uL)	Init	Source ID	Surr 1 (uL)	Init	Surr 2 (uL)	Init	pH	Extraction Comments
9110484-BLK1	QC	11/13/09 ~~18:00~~ 1600	5		5						1					
9110484-BS1	QC	11/13/09 18:00	5		5		9110046	0.5	BJ 11/17/09		1					
9110484-BSD1	QC	11/13/09 ~~18:00~~	5		5		9110046	0.5			1					
PSK0253-12	8260B Portland Harbor Full	11/13/09 19:00	5		5						1				<2	level 3 dp.. MDL
PSK0323-12	8260B Volatiles	11/13/09 19:00	5		5						1				2 2	

Batch Comments: **Internal Standard 9100203**

Spiking Witnessed By Date

Preparation Reviewed By Date

Form 4

PREPARATION BATCH SUMMARY

EPA 8260B

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110497 Batch Matrix: Water Preparation: EPA 5030B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110497-BLK1	C1115006.D	11/15/09 14:00	
LCS	9110497-BS1	C1115003.D	11/15/09 14:00	
DS012-110709	9110497-MS1	C1115024.D	11/15/09 14:00	
DS012-110709	9110497-MSD1	C1115025.D	11/15/09 15:30	
DS005-110709	PSK0253-01	C1115018.D	11/15/09 15:30	level 3 dp.. MDL
DS012-110709	PSK0253-02	C1115023.D	11/15/09 15:30	level 3 dp.. MDL MS/MSD
DS120-110709	PSK0253-07	C1115019.D	11/15/09 15:30	level 3 dp.. MDL
DS120-110709-1	PSK0253-08	C1115020.D	11/15/09 15:30	level 3 dp.. MDL
DS223-110709	PSK0253-10	C1115021.D	11/15/09 15:30	level 3 dp.. MDL
DS221-110709	PSK0253-11	C1115022.D	11/15/09 15:30	level 3 dp.. MDL

PREPARATION BENCH SHEET

Batch 9110497

Printed: 11/17/2009 7:59:14PM

Prep method: EPA 5030B

TestAmerica Portland

Matrix: Water

Surrogate 1: 9060188

Lab Number	Analysis	Prepared	Initial (ml)	Init	Final (ml)	Init	Spike ID	Spike Amt (uL)	Init	Source ID	Surr 1 (uL)	Init	Surr 2 (uL)	Init	pH	Extraction Comments
9110497-BLK1	QC	11/15/09 14:00	5		5						1					
9110497-BS1	QC	11/15/09 14:00	5		5		9110046	0.5			1					
9110497-BSD1	QC	11/15/09 14:00	5		5		9110046	0.5			1					
9110497-MS1	QC	11/15/09 14:00	5		5		9110046	0.5		PSK0253-02	1				CZ	
9110497-MSD1	QC	11/15/09 15:30	5		5		9110046	0.5		PSK0253-02	1				CZ	
PSK0253-01	8260B Portland Harbor Full	11/15/09 15:30	5		5						1				CZ	level 3 dp.. MDL
PSK0253-02	8260B Portland Harbor Full	11/15/09 15:30	5		5						1				CZ	level 3 dp.. MDL MS/MSD
PSK0253-02	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	Added for BatchQC in: 9110497
PSK0253-07	8260B Portland Harbor Full	11/15/09 15:30	5		5						1				CZ	level 3 dp.. MDL
PSK0253-08	8260B Portland Harbor Full	11/15/09 15:30	5		5						1				CZ	level 3 dp.. MDL
PSK0253-10	8260B Portland Harbor Full	11/15/09 15:30	5		5						1				CZ	level 3 dp.. MDL
PSK0253-11	8260B Portland Harbor Full	11/15/09 15:30	5		5						1				CZ	level 3 dp.. MDL
PSK0323-01	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-02	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-03	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-04	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-05	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-06	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-07	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-08	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-09	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-10	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	
PSK0323-11	8260B Volatiles	11/15/09 15:30	5		5						1				CZ	

Batch Comments: **Internal Standard 9100203**

Spiking Witnessed By Date

Preparation Reviewed By Date

GC Semivolatile Organic Compounds

ANALYSES DATA PACKAGE COVER PAGE

EPA 8082

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project

Client Sample Id:	Lab Sample Id:
DS005-110709	PSK0253-01
DS012-110709	PSK0253-02
DS120-110709	PSK0253-07
DS223-110709	PSK0253-10
DS221-110709	PSK0253-11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC Semivolatile Organic Compounds

EPA 8082
Quality Control Summaries

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8082

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K18007	Instrument:	GC4 Dual F
Matrix:	Water	Calibration:	9111701

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K18007-CCV1)			Lab File ID: 11180906.D		Analyzed: 11/18/09 11:53			
Decachlorobiphenyl	100	98.7	85 - 115	11.86	11.8575	0.0025	+/-1.0	
Calibration Check (9K18007-CCV2)			Lab File ID: 11180921.D		Analyzed: 11/18/09 16:19			
Decachlorobiphenyl	100	104	85 - 115	11.85	11.8575	-0.0075	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8082

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K18007	Instrument:	GC4 Dual F
Matrix:	Water	Calibration:	9111701

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Blank (9110339-BLK1)			Lab File ID: 11180918.D		Analyzed: 11/18/09 15:13			
Decachlorobiphenyl	0.100	75.1	12 - 130	11.85	11.8575	-0.0075	+/-1.0	
LCS (9110339-BS1)			Lab File ID: 11180919.D		Analyzed: 11/18/09 15:35			
Decachlorobiphenyl	0.100	83.5	12 - 130	11.85	11.8575	-0.0075	+/-1.0	
LCS Dup (9110339-BSD1)			Lab File ID: 11180920.D		Analyzed: 11/18/09 15:57			
Decachlorobiphenyl	0.100	76.0	12 - 130	11.85	11.8575	-0.0075	+/-1.0	
DS005-110709 (PSK0253-01)			Lab File ID: 11180913.D		Analyzed: 11/18/09 13:23			
Decachlorobiphenyl	0.0952	41.6	12 - 130	11.85	11.8575	-0.0075	+/-1.0	
DS012-110709 (PSK0253-02)			Lab File ID: 11180914.D		Analyzed: 11/18/09 13:45			
Decachlorobiphenyl	0.0952	42.8	12 - 130	11.85	11.8575	-0.0075	+/-1.0	
DS120-110709 (PSK0253-07)			Lab File ID: 11180915.D		Analyzed: 11/18/09 14:07			
Decachlorobiphenyl	0.0952	53.8	12 - 130	11.85	11.8575	-0.0075	+/-1.0	
DS223-110709 (PSK0253-10)			Lab File ID: 11180916.D		Analyzed: 11/18/09 14:29			
Decachlorobiphenyl	0.0952	61.6	12 - 130	11.85	11.8575	-0.0075	+/-1.0	
DS221-110709 (PSK0253-11)			Lab File ID: 11180917.D		Analyzed: 11/18/09 14:51			
Decachlorobiphenyl	0.0952	57.3	12 - 130	11.85	11.8575	-0.0075	+/-1.0	

Laboratory Blank Report

Polychlorinated Biphenyls per EPA Method 8082 - Laboratory Quality Control Results
TestAmerica Portland

Batch 9110339

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Water	EPA 8082	9110339-BLK1	Blank	1x	11180918.D	11/18/09 15:13	GC4-DUAL
Water	EPA 8082	9110339-BS1	LCS	1x	11180919.D	11/18/09 15:35	GC4-DUAL
Water	EPA 8082	9110339-BSD1	LCS Dup	1x	11180920.D	11/18/09 15:57	GC4-DUAL
Water	EPA 8082	PSK0253-01	DS005-110709	1x	11180913.D	11/18/09 13:23	GC4-DUAL
Water	EPA 8082	PSK0253-02	DS012-110709	1x	11180914.D	11/18/09 13:45	GC4-DUAL
Water	EPA 8082	PSK0253-07	DS120-110709	1x	11180915.D	11/18/09 14:07	GC4-DUAL
Water	EPA 8082	PSK0253-10	DS223-110709	1x	11180916.D	11/18/09 14:29	GC4-DUAL
Water	EPA 8082	PSK0253-11	DS221-110709	1x	11180917.D	11/18/09 14:51	GC4-DUAL

Form 1

METHOD BLANK DATA SHEET

EPA 8082

Laboratory:	TestAmerica Portland		SDG:	PSK0253	
Client:	CH2M-Hill		Project:	NW Pipe Project	
Matrix:	Water	Laboratory ID:	9110339-BLK1	File ID:	11180918.D
Prepared:	11/11/09 11:10	Preparation:	EPA 3510/600 Series	Initial/Final:	2000 ml / 2 ml
Analyzed:	11/18/09 15:13	Instrument:	GC4 Dual F		
Batch:	9110339	Sequence:	9K18007	Calibration:	9111701

CAS NO.	COMPOUND	CONC. (ug/l)	Q
12674-11-2	Aroclor 1016	0.100	U
11104-28-2	Aroclor 1221	0.200	U
11141-16-5	Aroclor 1232	0.100	U
53469-21-9	Aroclor 1242	0.100	U
12672-29-6	Aroclor 1248	0.100	U
11097-69-1	Aroclor 1254	0.100	U
11096-82-5	Aroclor 1260	0.100	U
37324-23-5	Aroclor 1262	0.100	U
11100-14-4	Aroclor 1268	0.100	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.100	0.0751	75.1	12 - 130	

Form 3

LCS / LCS DUPLICATE RECOVERY

EPA 8082

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9100221
Batch:	9110339	Laboratory ID:	9110339-BS1
Preparation:	EPA 3510/600 Series	Initial/Final:	2000 ml / 2 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
Aroclor 1016	1.00	0.781	78.1	50 - 114
Aroclor 1260	1.00	0.883	88.3	8 - 127

COMPOUND	SPIKE ADDED (ug/l)	LCSD CONCENTRATION (ug/l)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor 1016	1.00	0.731	73.1	6.57	22	50 - 114
Aroclor 1260	1.00	0.787	78.7	11.6	23	8 - 127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

EPA 8082

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** GC4 Dual F

Analyte	MDL	MRL	Units
Aroclor 1016	0.0500	0.100	ug/l
Aroclor 1221	0.100	0.200	ug/l
Aroclor 1232	0.0500	0.100	ug/l
Aroclor 1242	0.0500	0.100	ug/l
Aroclor 1248	0.0500	0.100	ug/l
Aroclor 1254	0.0500	0.100	ug/l
Aroclor 1260	0.0500	0.100	ug/l
Aroclor 1262	0.0500	0.100	ug/l
Aroclor 1268	0.0500	0.100	ug/l
Decachlorobiphenyl			ug/l

Form 6

INITIAL CALIBRATION DATA

EPA 8082

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9111701

SDG: PSK0253
Project: NW Pipe Project
Instrument: GC4 Dual F
Calibration Date: 11/17/09 16:50

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
Aroclor 1016	50	65.16	100	67.44	200	60.42	400	55.2	800	53.84875	1000	52.893
Aroclor 1260	50	122.44	100	107.93	200	95.655	400	87.2275	800	82.1625	1000	80.414
Decachlorobiphenyl	5	349.6	10	331.5	20	315.9	40	284.95	80	261.65	100	254.94

Form 6

INITIAL CALIBRATION DATA (Continued)

EPA 8082

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9111701
Instrument: GC4 Dual F
Calibration Date: 11/17/09 16:50

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
Aroclor 1016	1200	52.65333	1600	50.83812								
Aroclor 1260	1200	79.61916	1600	76.61188								
Decachlorobiphenyl	120	250.3083	160	239.5938								

Form 6

INITIAL CALIBRATION DATA (Continued)

EPA 8082

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9111701
Instrument: GC4 Dual F
Calibration Date: 11/17/09 16:50

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aroclor 1016	57.30665	10.90596	0	0		0.999874		
Aroclor 1260	91.50751	17.69655	0	0		0.9999584		
Decachlorobiphenyl	286.0553	14.47131	11.8575	0.0406392		0.9998336		

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9111701
Laboratory ID: 9K16011-SCV1
Sequence: 9K16011
Standard ID: 9080264

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
Aroclor 1016	1000	1020	2.0	30.00
Aroclor 1260	1000	967	-3.3	30.00

* Values outside of QC limits

Form 7

CONTINUING CALIBRATION CHECK

EPA 8082

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	GC4 Dual F	Calibration:	9111701
Lab File ID:	11180906.D	Calibration Date:	11/17/09 16:50
Sequence:	9K18007	Injection Date:	11/18/09
Lab Sample ID:	9K18007-CCV1	Injection Time:	11:53

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor 1016	Q	1000	963	57.30665	51.258		-3.7	15
Aroclor 1260	Q	1000	969	91.50751	78.459		-3.1	15

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Form 7

CONTINUING CALIBRATION CHECK

EPA 8082

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	GC4 Dual F	Calibration:	9111701
Lab File ID:	11180921.D	Calibration Date:	11/17/09 16:50
Sequence:	9K18007	Injection Date:	11/18/09
Lab Sample ID:	9K18007-CCV2	Injection Time:	16:19

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor 1016	Q	1000	999	57.30665	53.013		-0.1	15
Aroclor 1260	Q	1000	1010	91.50751	81.556		1.2	15

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS
EPA 8082

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16011	Instrument:	GC4 Dual F
Calibration:	9111701		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
9090154	AR 1660 Cal 50-5ppb	9K16011-CAL1	11160914.D	11/16/09 13:44
9090155	AR 1660 Cal 100-10ppb	9K16011-CAL2	11160916.D	11/16/09 14:07
9090156	AR 1660 Cal 200-20ppb	9K16011-CAL3	11160918.D	11/16/09 14:30
9090157	AR 1660 Cal 400-40ppb	9K16011-CAL4	11160920.D	11/16/09 14:53
9090158	AR 1660 Cal 800-80ppb	9K16011-CAL5	11160922.D	11/16/09 15:16
9090159	AR 1660 Cal 1000-100ppb	9K16011-CAL6	11160924.D	11/16/09 15:39
9090160	AR 1660 Cal 1200-120ppb	9K16011-CAL7	11160925.D	11/16/09 16:01
9090161	AR 1660 Cal 1600-160ppb	9K16011-CAL8	11160926.D	11/16/09 16:23
9080264	AR 1660 ICV (1ppm)	9K16011-SCV1	11160927.D	11/16/09 16:45

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Sequence: 9K16011

SDG: PSK0253
Project: NW Pipe Project
Instrument: GC4 Dual F
Calibration: 9111701

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9K16011-CAL1	11160914.D	11/16/09 13:44
Cal Standard	9K16011-CAL2	11160916.D	11/16/09 14:07
Cal Standard	9K16011-CAL3	11160918.D	11/16/09 14:30
Cal Standard	9K16011-CAL4	11160920.D	11/16/09 14:53
Cal Standard	9K16011-CAL5	11160922.D	11/16/09 15:16
Cal Standard	9K16011-CAL6	11160924.D	11/16/09 15:39
Cal Standard	9K16011-CAL7	11160925.D	11/16/09 16:01
Cal Standard	9K16011-CAL8	11160926.D	11/16/09 16:23
Secondary Cal Check	9K16011-SCV1	11160927.D	11/16/09 16:45

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K18007	Instrument:	GC4 Dual F
		Calibration:	9111701

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9K18007-CCV1	11180906.D	11/18/09 11:53
Aroclor Reference	9K18007-ARC1	11180908.D	11/18/09 12:15
Aroclor Reference	9K18007-ARC2	11180910.D	11/18/09 12:38
Aroclor Reference	9K18007-ARC3	11180912.D	11/18/09 13:01
DS005-110709	PSK0253-01	11180913.D	11/18/09 13:23
DS012-110709	PSK0253-02	11180914.D	11/18/09 13:45
DS120-110709	PSK0253-07	11180915.D	11/18/09 14:07
DS223-110709	PSK0253-10	11180916.D	11/18/09 14:29
DS221-110709	PSK0253-11	11180917.D	11/18/09 14:51
Blank	9110339-BLK1	11180918.D	11/18/09 15:13
LCS	9110339-BS1	11180919.D	11/18/09 15:35
LCS Dup	9110339-BSD1	11180920.D	11/18/09 15:57
Calibration Check	9K18007-CCV2	11180921.D	11/18/09 16:19

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Semi-Volatile GC Analysis QCAR

Work Order #: FSK0253 Batch #: 9110339 Test Code: SSC 8082

Primary Review Date/Initial: STJ 11-19-09

Secondary Review Date/Initial: 11/19

☐ Check here if data package is needed Level III

Sample Integrity

- Samples extracted within hold time
- All work is completed according to work order
- Special Instructions are checked

Data Analysis

- Initial data is checked vs. confirmation data (if applicable)
- Proper dilution factors/multipliers are used
- Standards are within acceptance limits
- Surrogates are within limits (or properly flagged if out)
- Proper standards are used for quantitation
- Concentrations are within calibration range
- Data has been Q-edited
- All prep and analysis bench sheets are fully completed
- All chromatograms are included and labeled

Reporting

- Units and significant figures are correct
- Reporting limits are correct
- Final report matches analytical results
- Percent solids are included (if applicable)
- Extraction and analysis dates and times are correct
- Control limits are met for spike recoveries, proper comments included
- Proper QC reports are included
- Necessary comments are included
- Analytes and QC are updated to "analyzed" and locked
- Analytes and QC are updated to "reviewed"

Comments:

GC Semivolatile Organic Compounds

EPA 8082
Target Analyte Results Summaries

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8082

DS005-110709

Laboratory:	TestAmerica Portland		SDG:	PSK0253	
Client:	CH2M-Hill		Project:	NW Pipe Project	
Matrix:	Water	Laboratory ID:	PSK0253-01	File ID:	11180913.D
Sampled:	11/07/09 12:30	Prepared:	11/11/09 11:10	Analyzed:	11/18/09 13:23
Solids:		Preparation:	EPA 3510/600 Series	Initial/Final:	2100 ml / 2 ml
Batch:	9110339	Sequence:	9K18007	Calibration:	9111701
Instrument:	GC4 Dual F				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
12674-11-2	Aroclor 1016	1	0.0952	U
11104-28-2	Aroclor 1221	1	0.190	U
11141-16-5	Aroclor 1232	1	0.0952	U
53469-21-9	Aroclor 1242	1	0.0952	U
12672-29-6	Aroclor 1248	1	0.0952	U
11097-69-1	Aroclor 1254	1	0.0952	U
11096-82-5	Aroclor 1260	1	0.0952	U
37324-23-5	Aroclor 1262	1	0.0952	U
11100-14-4	Aroclor 1268	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.0952	0.0396	41.6	12 - 130	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8082

DS012-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-02	File ID:	11180914.D
Sampled:	11/07/09 13:00	Prepared:	11/11/09 11:10	Analyzed:	11/18/09 13:45
Solids:		Preparation:	EPA 3510/600 Series	Initial/Final:	2100 ml / 2 ml
Batch:	9110339	Sequence:	9K18007	Calibration:	9111701
Instrument:	GC4 Dual F				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
12674-11-2	Aroclor 1016	1	0.0952	U
11104-28-2	Aroclor 1221	1	0.190	U
11141-16-5	Aroclor 1232	1	0.0952	U
53469-21-9	Aroclor 1242	1	0.0952	U
12672-29-6	Aroclor 1248	1	0.0952	U
11097-69-1	Aroclor 1254	1	0.0952	U
11096-82-5	Aroclor 1260	1	0.0952	U
37324-23-5	Aroclor 1262	1	0.0952	U
11100-14-4	Aroclor 1268	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.0952	0.0408	42.8	12 - 130	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8082

DS120-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-07	File ID:	11180915.D
Sampled:	11/07/09 14:45	Prepared:	11/11/09 11:10	Analyzed:	11/18/09 14:07
Solids:		Preparation:	EPA 3510/600 Series	Initial/Final:	2100 ml / 2 ml
Batch:	9110339	Sequence:	9K18007	Calibration:	9111701
Instrument:	GC4 Dual F				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
12674-11-2	Aroclor 1016	1	0.0952	U
11104-28-2	Aroclor 1221	1	0.190	U
11141-16-5	Aroclor 1232	1	0.0952	U
53469-21-9	Aroclor 1242	1	0.0952	U
12672-29-6	Aroclor 1248	1	0.0952	U
11097-69-1	Aroclor 1254	1	0.0952	U
11096-82-5	Aroclor 1260	1	0.0952	U
37324-23-5	Aroclor 1262	1	0.0952	U
11100-14-4	Aroclor 1268	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.0952	0.0513	53.8	12 - 130	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8082

DS223-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-10	File ID:	11180916.D
Sampled:	11/07/09 15:30	Prepared:	11/11/09 11:10	Analyzed:	11/18/09 14:29
Solids:		Preparation:	EPA 3510/600 Series	Initial/Final:	2100 ml / 2 ml
Batch:	9110339	Sequence:	9K18007	Calibration:	9111701
Instrument:	GC4 Dual F				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
12674-11-2	Aroclor 1016	1	0.0952	U
11104-28-2	Aroclor 1221	1	0.190	U
11141-16-5	Aroclor 1232	1	0.0952	U
53469-21-9	Aroclor 1242	1	0.0952	U
12672-29-6	Aroclor 1248	1	0.0952	U
11097-69-1	Aroclor 1254	1	0.0952	U
11096-82-5	Aroclor 1260	1	0.0952	U
37324-23-5	Aroclor 1262	1	0.0952	U
11100-14-4	Aroclor 1268	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.0952	0.0587	61.6	12 - 130	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8082

DS221-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-11	File ID:	11180917.D
Sampled:	11/07/09 16:00	Prepared:	11/11/09 11:10	Analyzed:	11/18/09 14:51
Solids:		Preparation:	EPA 3510/600 Series	Initial/Final:	2100 ml / 2 ml
Batch:	9110339	Sequence:	9K18007	Calibration:	9111701
Instrument:	GC4 Dual F				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
12674-11-2	Aroclor 1016	1	0.0952	U
11104-28-2	Aroclor 1221	1	0.190	U
11141-16-5	Aroclor 1232	1	0.0952	U
53469-21-9	Aroclor 1242	1	0.0952	U
12672-29-6	Aroclor 1248	1	0.0952	U
11097-69-1	Aroclor 1254	1	0.0952	U
11096-82-5	Aroclor 1260	1	0.0952	U
37324-23-5	Aroclor 1262	1	0.0952	U
11100-14-4	Aroclor 1268	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.0952	0.0546	57.3	12 - 130	

* Values outside of QC limits

GC Semivolatile Organic Compounds

EPA 8082
Preparation Logs

Form 4

PREPARATION BATCH SUMMARY

EPA 8082

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110339 Batch Matrix: Water Preparation: EPA 3510/600 Series

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110339-BLK1	11180918.D	11/11/09 11:10	
LCS	9110339-BS1	11180919.D	11/11/09 11:10	
LCS Dup	9110339-BSD1	11180920.D	11/11/09 11:10	
DS005-110709	PSK0253-01	11180913.D	11/11/09 11:10	level 3 dp.
DS012-110709	PSK0253-02	11180914.D	11/11/09 11:10	level 3 dp. insufficient sample vol for MS/MSD
DS120-110709	PSK0253-07	11180915.D	11/11/09 11:10	level 3 dp.
DS223-110709	PSK0253-10	11180916.D	11/11/09 11:10	level 3 dp.
DS221-110709	PSK0253-11	11180917.D	11/11/09 11:10	level 3 dp.

QCAR - Organic Prep, Semi-Volatiles

Batch# 9110339 Prep Method/Analysis EPA # 3510 Matrix Water

JSC PCB

Sample Integrity **Date/Initials** 11-11-09 CD

Is the method appropriate for the sample?	Yes ✓ No ___
Is there adequate amount of sample?	Yes ✓ No ___
Are the sample containers appropriate?	Yes ✓ No ___
Are the samples within hold time? If not fill out a CAR.	Yes ✓ No ___
Do sample ID's match the work order?	Yes ✓ No ___
Is sample available for MS/MSD?	Yes ___ No ✓

Extraction **Date/Initials** 11-11-09 CD

Was all glassware triple rinsed with solvent?	Yes ✓ No ___
Was the "whole bottle extraction procedure" used if water?	Yes ✓ No ___

Concentration **Final Solvent:** Hexane

Samples transferred into KDs (date/init.) 11/13/09 AG

Macro conc. (date/init./temp.) 11/13/09 AG 95° ± 2°C Micro conc. (date/init.) 11/13/09 AG

If applicable:

- ☐ GPC
- ☐ OPP Soil: poured over Na_2SO_4 (date/init.) _____
  transferred into KDs (date/init.) _____

Macro conc. (date/init./temp.) _____ Micro conc. (date/init.) _____

Sample Vialing **Date/Initials** 11/13/09 AG

Are the samples being brought to their normal final volume?	Yes ✓ No ___
Is the solvent level indicated on the ALS vials?	Yes ✗ No ✓
Was the SOP followed with no deviation? If no, explain below.	Yes ✓ No ___
Is the GPC or TCLP log attached (if applicable)?	Yes ___ No NA
Is the paperwork complete, correct and undated in the computer?	Yes ✓ No ___

Comments: _____

PREPARATION BENCH SHEET

Batch 9110339

Printed: 11/11/2009 6:57:48AM

Prep method: EPA 3510/600 Series

TestAmerica Portland

Matrix: Water (8)

Surrogate 1: 9090028

Lab Number	Analysis	Prepared	Initial (ml)	Init	Final (ml)	Init	Spike ID	Spike Amt (uL)	Init	Source ID	Surr 1 (uL)	Init	Surr 2 (uL)	Init	pH	Extraction Comments
9110339-BLK1	QC	11/11/09 06:57	2000	CD	2	AG					100	CD			7	
9110339-BS1	QC	11/11/09 06:57	2000		2		9100221	200	CD		100				7	
9110339-BSD1	QC	11/11/09 06:57	2000		2		9100221	200	CD		100				7	
PSK0253-01	JSC 8082 PCB BC	11/11/09 06:57	~~2000~~ 100		2						100				5	level 3 dp.
PSK0253-02	JSC 8082 PCB DE	11/11/09 06:57	~~2000~~ 115		2						100				5	level 3 dp. insufficient sample vol for MS/MSD
PSK0253-07	JSC 8082 PCB BC	11/11/09 06:57	~~2000~~ 115		2						100				5	level 3 dp.
PSK0253-10	JSC 8082 PCB DC	11/11/09 06:57	~~2000~~ 110		2						100				5	level 3 dp.
PSK0253-11	JSC 8082 PCB BC	11/11/09 06:57	~~2000~~ 110	CD	2	CD					100	CD			5	level 3 dp.

Batch Comments:
DCM# R100014
GLASSWOOL# 00509001
Na2SO4# 085741
HEXANE# 908131
H2SO4# 908272

11-11-09 1110 CD

No GPC

11-17-09

11-23-09

Spiking Witnessed By — Date 11/11/09

Preparation Reviewed By — Date 11/14/09

177 336

GC/MS Semivolatile Organic Compounds

ANALYSES DATA PACKAGE COVER PAGE

EPA 8270m

Laboratory: TestAmerica Portland

SDG: PSK0253

Client: CH2M-Hill

Project: NW Pipe Project

Client Sample Id:	Lab Sample Id:
DS005-110709	PSK0253-01
DS012-110709	PSK0253-02
DS120-110709	PSK0253-07
DS223-110709	PSK0253-10
DS221-110709	PSK0253-11

ANALYSES DATA PACKAGE COVER PAGE

EPA 8270m

Laboratory: TestAmerica Portland

SDG: PSK0253

Client: CH2M-Hill

Project: NW Pipe Project

Client Sample Id:	Lab Sample Id:
DS005-110709	PSK0253-01
DS012-110709	PSK0253-02
DS120-110709	PSK0253-07
DS223-110709	PSK0253-10
DS221-110709	PSK0253-11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC/MS Semivolatile Organic Compounds

Target Analyte Results Summaries

9405 SW Nimbus Avenue Beaverton, OR 97008 **tel** 503.906.9200 **fax** 503.906.9210 **www.testamericainc.com**

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS005-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-01	File ID:	11160919.D
Sampled:	11/07/09 12:30	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 20:12
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16005	Calibration:	9111802
Instrument:	SV-5973BF				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
83-32-9	Acenaphthene	1	0.0952	U
208-96-8	Acenaphthylene	1	0.0952	U
120-12-7	Anthracene	1	0.0952	U
56-55-3	Benzo (a) anthracene	1	0.0952	U
50-32-8	Benzo (a) pyrene	1	0.0952	U
205-99-2	Benzo (b) fluoranthene	1	0.0952	U
191-24-2	Benzo (ghi) perylene	1	0.0952	U
207-08-9	Benzo (k) fluoranthene	1	0.0952	U
218-01-9	Chrysene	1	0.0952	U
53-70-3	Dibenzo (a,h) anthracene	1	0.190	U
206-44-0	Fluoranthene	1	0.0952	U
86-73-7	Fluorene	1	0.0952	U
193-39-5	Indeno (1,2,3-cd) pyrene	1	0.0952	U
91-20-3	Naphthalene	1	0.0952	U
85-01-8	Phenanthrene	1	0.0952	U
129-00-0	Pyrene	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	2.38	1.83	76.9	10 - 125	
Fluorene-d10	2.38	1.98	83.1	25 - 125	
Pyrene-d10	2.38	2.44	102	23 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	34092	8.78	41790	8.79	
Chrysene-d12	53122	13.88	74322	13.87	
Naphthalene-d8	39594	6.63	75668	6.63	
Perylene-d12	46097	15.57	57637	15.57	
Phenanthrene-d10	61706	10.59	72721	10.59	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS005-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-01	File ID:	11160911.D
Sampled:	11/07/09 12:30	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 16:16
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16007	Calibration:	9102702
Instrument:	5970				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
117-81-7	Bis(2-ethylhexyl)phthalate	1	0.952	U
85-68-7	Butyl benzyl phthalate	1	0.952	U
84-66-2	Diethyl phthalate	1	0.952	U
131-11-3	Dimethyl phthalate	1	0.952	U
84-74-2	Di-n-butyl phthalate	1	0.952	U
117-84-0	Di-n-octyl phthalate	1	0.952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4.76	3.64	76.5	10 - 150	
p-Terphenyl-d14	4.76	4.19	88.0	10 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	66092	11.8	68130	11.79	
Chrysene-d12	96779	18.56	92061	18.55	
Perylene-d12	127075	20.99	99282	20.99	
Phenanthrene-d10	110694	14.2	106838	14.2	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS012-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-02	File ID:	11160920.D
Sampled:	11/07/09 13:00	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 20:41
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16005	Calibration:	9111802
Instrument:	SV-5973BF				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
83-32-9	Acenaphthene	1	0.0952	U
208-96-8	Acenaphthylene	1	0.0952	U
120-12-7	Anthracene	1	0.0952	U
56-55-3	Benzo (a) anthracene	1	0.0952	U
50-32-8	Benzo (a) pyrene	1	0.0952	U
205-99-2	Benzo (b) fluoranthene	1	0.0952	U
191-24-2	Benzo (ghi) perylene	1	0.0952	U
207-08-9	Benzo (k) fluoranthene	1	0.0952	U
218-01-9	Chrysene	1	0.0952	U
53-70-3	Dibenzo (a,h) anthracene	1	0.190	U
206-44-0	Fluoranthene	1	0.0952	U
86-73-7	Fluorene	1	0.0952	U
193-39-5	Indeno (1,2,3-cd) pyrene	1	0.0952	U
91-20-3	Naphthalene	1	0.0952	U
85-01-8	Phenanthrene	1	0.0952	U
129-00-0	Pyrene	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	2.38	2.12	88.9	10 - 125	
Fluorene-d10	2.38	2.38	99.9	25 - 125	
Pyrene-d10	2.38	2.69	113	23 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	37298	8.78	41790	8.79	
Chrysene-d12	59461	13.88	74322	13.87	
Naphthalene-d8	46676	6.63	75668	6.63	
Perylene-d12	49501	15.57	57637	15.57	
Phenanthrene-d10	66192	10.59	72721	10.59	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS012-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-02	File ID:	11160912.D
Sampled:	11/07/09 13:00	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 16:52
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16007	Calibration:	9102702
Instrument:	5970				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
117-81-7	Bis(2-ethylhexyl)phthalate	1	0.952	U
85-68-7	Butyl benzyl phthalate	1	0.952	U
84-66-2	Diethyl phthalate	1	0.952	U
131-11-3	Dimethyl phthalate	1	0.952	U
84-74-2	Di-n-butyl phthalate	1	0.952	U
117-84-0	Di-n-octyl phthalate	1	0.952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4.76	3.52	74.0	10 - 150	
p-Terphenyl-d14	4.76	4.90	103	10 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	87498	11.8	68130	11.79	
Chrysene-d12	132039	18.56	92061	18.55	
Perylene-d12	130678	20.99	99282	20.99	
Phenanthrene-d10	146570	14.21	106838	14.2	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS120-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-07	File ID:	11160921.D
Sampled:	11/07/09 14:45	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 21:10
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16005	Calibration:	9111802
Instrument:	SV-5973BF				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
83-32-9	Acenaphthene	1	0.0952	U
208-96-8	Acenaphthylene	1	0.0952	U
120-12-7	Anthracene	1	0.0952	U
56-55-3	Benzo (a) anthracene	1	0.0952	U
50-32-8	Benzo (a) pyrene	1	0.0952	U
205-99-2	Benzo (b) fluoranthene	1	0.0952	U
191-24-2	Benzo (ghi) perylene	1	0.0952	U
207-08-9	Benzo (k) fluoranthene	1	0.0952	U
218-01-9	Chrysene	1	0.0952	U
53-70-3	Dibenzo (a,h) anthracene	1	0.190	U
206-44-0	Fluoranthene	1	0.103	
86-73-7	Fluorene	1	0.0952	U
193-39-5	Indeno (1,2,3-cd) pyrene	1	0.0952	U
91-20-3	Naphthalene	1	0.0952	U
85-01-8	Phenanthrene	1	0.182	
129-00-0	Pyrene	1	0.0590	J

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	2.38	1.89	79.3	10 - 125	
Fluorene-d10	2.38	2.18	91.5	25 - 125	
Pyrene-d10	2.38	2.28	95.8	23 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	31744	8.78	41790	8.79	
Chrysene-d12	58143	13.88	74322	13.87	
Naphthalene-d8	40376	6.63	75668	6.63	
Perylene-d12	50915	15.57	57637	15.57	
Phenanthrene-d10	57585	10.59	72721	10.59	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS120-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-07	File ID:	11160913.D
Sampled:	11/07/09 14:45	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 17:28
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16007	Calibration:	9102702
Instrument:	5970				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
117-81-7	Bis(2-ethylhexyl)phthalate	1	0.952	U
85-68-7	Butyl benzyl phthalate	1	0.952	U
84-66-2	Diethyl phthalate	1	0.952	U
131-11-3	Dimethyl phthalate	1	0.952	U
84-74-2	Di-n-butyl phthalate	1	0.952	U
117-84-0	Di-n-octyl phthalate	1	0.952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4.76	4.32	90.7	10 - 150	
p-Terphenyl-d14	4.76	4.72	99.2	10 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	67214	11.8	68130	11.79	
Chrysene-d12	123134	18.56	92061	18.55	
Perylene-d12	123225	20.99	99282	20.99	
Phenanthrene-d10	107959	14.21	106838	14.2	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS223-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-10	File ID:	11170908.D
Sampled:	11/07/09 15:30	Prepared:	11/10/09 13:30	Analyzed:	11/17/09 15:57
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K17011	Calibration:	9111802
Instrument:	SV-5973BF				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
83-32-9	Acenaphthene	1	0.0952	U
208-96-8	Acenaphthylene	1	0.0952	U
120-12-7	Anthracene	1	0.0952	U
56-55-3	Benzo (a) anthracene	1	0.0952	U
50-32-8	Benzo (a) pyrene	1	0.0952	U
205-99-2	Benzo (b) fluoranthene	1	0.0952	U
191-24-2	Benzo (ghi) perylene	1	0.0952	U
207-08-9	Benzo (k) fluoranthene	1	0.0952	U
218-01-9	Chrysene	1	0.0952	U
53-70-3	Dibenzo (a,h) anthracene	1	0.190	U
206-44-0	Fluoranthene	1	0.0952	U
86-73-7	Fluorene	1	0.0952	U
193-39-5	Indeno (1,2,3-cd) pyrene	1	0.0952	U
91-20-3	Naphthalene	1	0.0952	U
85-01-8	Phenanthrene	1	0.0561	J
129-00-0	Pyrene	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	2.38	1.57	66.0	10 - 125	
Fluorene-d10	2.38	1.82	76.3	25 - 125	
Pyrene-d10	2.38	2.63	110	23 - 150	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS223-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-10	File ID:	11160914.D
Sampled:	11/07/09 15:30	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 18:03
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml

Batch: 9110309 Sequence: 9K16007 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
117-81-7	Bis(2-ethylhexyl)phthalate	1	0.952	U
85-68-7	Butyl benzyl phthalate	1	0.952	U
84-66-2	Diethyl phthalate	1	0.952	U
131-11-3	Dimethyl phthalate	1	0.952	U
84-74-2	Di-n-butyl phthalate	1	0.952	U
117-84-0	Di-n-octyl phthalate	1	0.952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4.76	4.44	93.2	10 - 150	
p-Terphenyl-d14	4.76	4.89	103	10 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	62879	11.8	68130	11.79	
Chrysene-d12	95578	18.56	92061	18.55	
Perylene-d12	123050	20.99	99282	20.99	
Phenanthrene-d10	105387	14.21	106838	14.2	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS221-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-11	File ID:	11160923.D
Sampled:	11/07/09 16:00	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 22:08
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16005	Calibration:	9111802
Instrument:	SV-5973BF				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
83-32-9	Acenaphthene	1	0.0952	U
208-96-8	Acenaphthylene	1	0.0952	U
120-12-7	Anthracene	1	0.0952	U
56-55-3	Benzo (a) anthracene	1	0.0952	U
50-32-8	Benzo (a) pyrene	1	0.0952	U
205-99-2	Benzo (b) fluoranthene	1	0.0952	U
191-24-2	Benzo (ghi) perylene	1	0.0952	U
207-08-9	Benzo (k) fluoranthene	1	0.0952	U
218-01-9	Chrysene	1	0.0952	U
53-70-3	Dibenzo (a,h) anthracene	1	0.190	U
206-44-0	Fluoranthene	1	0.0952	U
86-73-7	Fluorene	1	0.0952	U
193-39-5	Indeno (1,2,3-cd) pyrene	1	0.0952	U
91-20-3	Naphthalene	1	0.0952	U
85-01-8	Phenanthrene	1	0.0949	J
129-00-0	Pyrene	1	0.0952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	2.38	2.05	86.3	10 - 125	
Fluorene-d10	2.38	2.30	96.7	25 - 125	
Pyrene-d10	2.38	2.49	105	23 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	35849	8.78	41790	8.79	
Chrysene-d12	61527	13.88	74322	13.87	
Naphthalene-d8	48474	6.63	75668	6.63	
Perylene-d12	54037	15.57	57637	15.57	
Phenanthrene-d10	63053	10.59	72721	10.59	

* Values outside of QC limits

Form 1

ORGANIC ANALYSIS DATA SHEET

EPA 8270m

DS221-110709

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	PSK0253-11	File ID:	11160915.D
Sampled:	11/07/09 16:00	Prepared:	11/10/09 13:30	Analyzed:	11/16/09 18:39
Solids:		Preparation:	3520B Liq-Liq	Initial/Final:	1050 ml / 1 ml
Batch:	9110309	Sequence:	9K16007	Calibration:	9102702
Instrument:	5970				

CAS NO.	COMPOUND	DILUTION	CONC. (ug/l)	Q
117-81-7	Bis(2-ethylhexyl)phthalate	1	0.952	U
85-68-7	Butyl benzyl phthalate	1	0.952	U
84-66-2	Diethyl phthalate	1	0.952	U
131-11-3	Dimethyl phthalate	1	0.952	U
84-74-2	Di-n-butyl phthalate	1	0.952	U
117-84-0	Di-n-octyl phthalate	1	0.952	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4.76	3.37	70.8	10 - 150	
p-Terphenyl-d14	4.76	4.91	103	10 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	87063	11.8	68130	11.79	
Chrysene-d12	131721	18.56	92061	18.55	
Perylene-d12	133795	20.99	99282	20.99	
Phenanthrene-d10	146392	14.21	106838	14.2	

* Values outside of QC limits

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC/MS Semivolatile Organic Compounds

EPA 8270m SIM – PAH
Quality Control Summaries

9405 SW Nimbus Avenue Beaverton, OR 97008 **tel** 503.906.9200 **fax** 503.906.9210 **www.testamericainc.com**

Form 2
SURROGATE STANDARD RECOVERY AND RT SUMMARY
EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13001	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K13001-CCV1)				Lab File ID: 11130916.D		Analyzed: 11/13/09 16:18		
Benzo (a) pyrene-d12	2000	111	0 - 200	15.49	15.49111	-0.0011	+/-1.0	
Fluorene-d10	2000	106	0 - 200	9.42	9.421111	-0.0011	+/-1.0	
Pyrene-d10	2000	102	0 - 200	12.37	12.37778	-0.0078	+/-1.0	
Secondary Cal Check (9K13001-SCV2)				Lab File ID: 11130913.D		Analyzed: 11/13/09 15:24		
Benzo (a) pyrene-d12	1000	107	0 - 200	15.49	15.49111	-0.0011	+/-1.0	
Fluorene-d10	1000	112	0 - 200	9.42	9.421111	-0.0011	+/-1.0	
Pyrene-d10	1000	98.6	0 - 200	12.38	12.37778	0.0022	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13001	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Blank (9110309-BLK2)				Lab File ID: 11130931.D		Analyzed: 11/13/09 23:34		
Benzo (a) pyrene-d12	2.50	92.7	10 - 125	15.48	15.49111	-0.0111	+/-1.0	
Fluorene-d10	2.50	99.4	25 - 125	9.41	9.421111	-0.0111	+/-1.0	
Pyrene-d10	2.50	114	23 - 150	12.37	12.37778	-0.0078	+/-1.0	
LCS (9110309-BS2)				Lab File ID: 11130930.D		Analyzed: 11/13/09 23:06		
Benzo (a) pyrene-d12	2.50	98.0	10 - 125	15.48	15.49111	-0.0111	+/-1.0	
Fluorene-d10	2.50	100	25 - 125	9.41	9.421111	-0.0111	+/-1.0	
Pyrene-d10	2.50	99.2	23 - 150	12.37	12.37778	-0.0078	+/-1.0	
Matrix Spike (9110309-MS2)				Lab File ID: 11130932.D		Analyzed: 11/14/09 00:04		
Benzo (a) pyrene-d12	2.50	89.3	10 - 125	15.49	15.49111	-0.0011	+/-1.0	
Fluorene-d10	2.50	93.0	25 - 125	9.42	9.421111	-0.0011	+/-1.0	
Pyrene-d10	2.50	98.3	23 - 150	12.37	12.37778	-0.0078	+/-1.0	

Form 2
SURROGATE STANDARD RECOVERY AND RT SUMMARY
EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16005	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K16005-CCV1)			Lab File ID: 11160903.D		Analyzed: 11/16/09 12:27			
Benzo (a) pyrene-d12	2000	109	0 - 200	15.46	15.49111	-0.0311	+/-1.0	
Fluorene-d10	2000	104	0 - 200	9.4	9.421111	-0.0211	+/-1.0	
Pyrene-d10	2000	103	0 - 200	12.35	12.37778	-0.0278	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16005	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (9110309-MSD2)				Lab File ID: 11160918.D		Analyzed: 11/16/09 19:43		
Benzo (a) pyrene-d12	2.50	81.1	10 - 125	15.47	15.49111	-0.0211	+/-1.0	
Fluorene-d10	2.50	82.0	25 - 125	9.4	9.421111	-0.0211	+/-1.0	
Pyrene-d10	2.50	126	23 - 150	12.35	12.37778	-0.0278	+/-1.0	
DS005-110709 (PSK0253-01)				Lab File ID: 11160919.D		Analyzed: 11/16/09 20:12		
Benzo (a) pyrene-d12	2.38	76.9	10 - 125	15.47	15.49111	-0.0211	+/-1.0	
Fluorene-d10	2.38	83.1	25 - 125	9.4	9.421111	-0.0211	+/-1.0	
Pyrene-d10	2.38	102	23 - 150	12.35	12.37778	-0.0278	+/-1.0	
DS012-110709 (PSK0253-02)				Lab File ID: 11160920.D		Analyzed: 11/16/09 20:41		
Benzo (a) pyrene-d12	2.38	88.9	10 - 125	15.47	15.49111	-0.0211	+/-1.0	
Fluorene-d10	2.38	99.9	25 - 125	9.4	9.421111	-0.0211	+/-1.0	
Pyrene-d10	2.38	113	23 - 150	12.35	12.37778	-0.0278	+/-1.0	
DS120-110709 (PSK0253-07)				Lab File ID: 11160921.D		Analyzed: 11/16/09 21:10		
Benzo (a) pyrene-d12	2.38	79.3	10 - 125	15.47	15.49111	-0.0211	+/-1.0	
Fluorene-d10	2.38	91.5	25 - 125	9.4	9.421111	-0.0211	+/-1.0	
Pyrene-d10	2.38	95.8	23 - 150	12.35	12.37778	-0.0278	+/-1.0	
DS221-110709 (PSK0253-11)				Lab File ID: 11160923.D		Analyzed: 11/16/09 22:08		
Benzo (a) pyrene-d12	2.38	86.3	10 - 125	15.47	15.49111	-0.0211	+/-1.0	
Fluorene-d10	2.38	96.7	25 - 125	9.4	9.421111	-0.0211	+/-1.0	
Pyrene-d10	2.38	105	23 - 150	12.36	12.37778	-0.0178	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K17011	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K17011-CCV1)				Lab File ID: 11170902.D		Analyzed: 11/17/09 13:02		
Benzo (a) pyrene-d12	2000	106	0 - 200	15.45	15.49111	-0.0411	+/-1.0	
Fluorene-d10	2000	103	0 - 200	9.39	9.421111	-0.0311	+/-1.0	
Pyrene-d10	2000	103	0 - 200	12.34	12.37778	-0.0378	+/-1.0	

Form 2

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K17011	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
DS223-110709 (PSK0253-10)				Lab File ID: 11170908.D		Analyzed: 11/17/09 15:57		
Benzo (a) pyrene-d12	2.38	66.0	10 - 125	15.45	15.49111	-0.0411	+/-1.0	
Fluorene-d10	2.38	76.3	25 - 125	9.39	9.421111	-0.0311	+/-1.0	
Pyrene-d10	2.38	110	23 - 150	12.34	12.37778	-0.0378	+/-1.0	

Laboratory Blank Report

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results
TestAmerica Portland

Batch 9110309

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Water	EPA 8270m	9110309-BLK2	Blank	1x	11130931.D	11/13/09 23:34	SV-5973BF
Water	EPA 8270m	9110309-BS2	LCS	1x	11130930.D	11/13/09 23:06	SV-5973BF
Water	EPA 8270m	9110309-MS2	Matrix Spike	2x	11130932.D	11/14/09 00:04	SV-5973BF
Water	EPA 8270m	9110309-MSD2	Matrix Spike Dup	2x	11160918.D	11/16/09 19:43	SV-5973BF
Water	EPA 8270m	PSK0253-01	DS005-110709	1x	11160919.D	11/16/09 20:12	SV-5973BF
Water	EPA 8270m	PSK0253-02	DS012-110709	1x	11160920.D	11/16/09 20:41	SV-5973BF
Water	EPA 8270m	PSK0253-07	DS120-110709	1x	11160921.D	11/16/09 21:10	SV-5973BF
Water	EPA 8270m	PSK0253-10	DS223-110709	1x	11170908.D	11/17/09 15:57	SV-5973BF
Water	EPA 8270m	PSK0253-11	DS221-110709	1x	11160923.D	11/16/09 22:08	SV-5973BF

Form 1

METHOD BLANK DATA SHEET

EPA 8270m

Laboratory:	TestAmerica Portland		SDG:	PSK0253	
Client:	CH2M-Hill		Project:	NW Pipe Project	
Matrix:	Water	Laboratory ID:	9110309-BLK2	File ID:	11130931.D
Prepared:	11/10/09 13:30	Preparation:	3520B Liq-Liq	Initial/Final:	1000 ml / 1 ml
Analyzed:	11/13/09 23:34	Instrument:	SV-5973BF		
Batch:	9110309	Sequence:	9K13001	Calibration:	9111802

CAS NO.	COMPOUND	CONC. (ug/l)	Q
83-32-9	Acenaphthene	0.100	U
208-96-8	Acenaphthylene	0.100	U
120-12-7	Anthracene	0.100	U
56-55-3	Benzo (a) anthracene	0.100	U
50-32-8	Benzo (a) pyrene	0.100	U
205-99-2	Benzo (b) fluoranthene	0.100	U
191-24-2	Benzo (ghi) perylene	0.100	U
207-08-9	Benzo (k) fluoranthene	0.100	U
218-01-9	Chrysene	0.100	U
53-70-3	Dibenzo (a,h) anthracene	0.200	U
206-44-0	Fluoranthene	0.100	U
86-73-7	Fluorene	0.100	U
193-39-5	Indeno (1,2,3-cd) pyrene	0.100	U
91-20-3	Naphthalene	0.100	U
85-01-8	Phenanthrene	0.100	U
129-00-0	Pyrene	0.100	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	2.50	2.32	92.7	10 - 125	
Fluorene-d10	2.50	2.48	99.4	25 - 125	
Pyrene-d10	2.50	2.86	114	23 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	28880	8.8	27134	8.8	
Chrysene-d12	45252	13.9	51343	13.9	
Naphthalene-d8	47068	6.64	47679	6.64	
Perylene-d12	41371	15.59	37987	15.6	
Phenanthrene-d10	49068	10.61	48701	10.61	

Form 3
LCS / LCS DUPLICATE RECOVERY
EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9080162 9080007
Batch:	9110309	Laboratory ID:	9110309-BS2
Preparation:	3520B Liq-Liq	Initial/Final:	1000 ml / 1 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
Acenaphthene	2.50	2.63	105	26 - 135
Benzo (a) pyrene	2.50	2.54	102	38 - 137
Pyrene	2.50	2.67	107	33 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270m

DS012-110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9080162 9080007
Batch:	9110309	Laboratory ID:	9110309-MS2
Preparation:	3520B Liq-Liq	Initial/Final:	1000 ml / 1 ml

Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC. #	QC LIMITS REC.
Acenaphthene	2.50	ND	2.47	98.9	26 - 135
Benzo (a) pyrene	2.50	ND	2.40	96.0	38 - 137
Pyrene	2.50	ND	2.68	107	33 - 133

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	2.50	2.10	84.1	16.2	60	26 - 135
Benzo (a) pyrene	2.50	2.07	82.9	14.7	60	38 - 137
Pyrene	2.50	3.33	133	21.7	60	33 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

EPA 8270m

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** SV-5973BF

Analyte	MDL	MRL	Units
Acenaphthene	0.0500	0.100	ug/l
Acenaphthene-d10			ug/l
Acenaphthylene	0.0500	0.100	ug/l
Anthracene	0.0500	0.100	ug/l
Benzo (a) anthracene	0.0500	0.100	ug/l
Benzo (a) pyrene	0.0500	0.100	ug/l
Benzo (a) pyrene-d12			ug/l
Benzo (b) fluoranthene	0.0500	0.100	ug/l
Benzo (ghi) perylene	0.0500	0.100	ug/l
Benzo (k) fluoranthene	0.0500	0.100	ug/l
Chrysene	0.0500	0.100	ug/l
Chrysene-d12			ug/l
Dibenzo (a,h) anthracene	0.100	0.200	ug/l
Fluoranthene	0.0500	0.100	ug/l
Fluorene	0.0500	0.100	ug/l
Fluorene-d10			ug/l
Indeno (1,2,3-cd) pyrene	0.0500	0.100	ug/l
Naphthalene	0.0500	0.100	ug/l
Naphthalene-d8			ug/l
Perylene-d12			ug/l
Phenanthrene	0.0500	0.100	ug/l
Phenanthrene-d10			ug/l
Pyrene	0.0500	0.100	ug/l
Pyrene-d10			ug/l

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	11130902.D	Injection Date:	11/13/09
Instrument ID:	SV-5973BF	Injection Time:	08:48
Sequence:	9K13001	Lab Sample ID:	9K13001-TUN2

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	55.42	PASS
m/z 68	Less than 2% of m/z 69	0.97609	PASS
m/z 69	Less than 100% of m/z 198	60.133	PASS
m/z 70	Less than 2% of m/z 69	0.61462	PASS
m/z 127	40 - 60% of m/z 198	50.839	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	6.8493	PASS
m/z 275	10 - 30% of m/z 198	24.688	PASS
m/z 365	1 - 100% of m/z 198	4.6515	PASS
m/z 441	0.001 - 100% of m/z 443	76.592	PASS
m/z 442	40 - 100% of m/z 198	55.476	PASS
m/z 443	17 - 23% of m/z 442	19.074	PASS

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	11130915.D	Injection Date:	11/13/09
Instrument ID:	SV-5973BF	Injection Time:	15:59
Sequence:	9K13001	Lab Sample ID:	9K13001-TUN4

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	59.183	PASS
m/z 68	Less than 2% of m/z 69	0.16134	PASS
m/z 69	Less than 100% of m/z 198	62.901	PASS
m/z 70	Less than 2% of m/z 69	0.62865	PASS
m/z 127	40 - 60% of m/z 198	52.075	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	6.8216	PASS
m/z 275	10 - 30% of m/z 198	24.211	PASS
m/z 365	1 - 100% of m/z 198	4.4909	PASS
m/z 441	0.001 - 100% of m/z 443	75.586	PASS
m/z 442	40 - 100% of m/z 198	52.567	PASS
m/z 443	17 - 23% of m/z 442	18.927	PASS

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	11160902.D	Injection Date:	11/16/09
Instrument ID:	SV-5973BF	Injection Time:	12:08
Sequence:	9K16005	Lab Sample ID:	9K16005-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	52.209	PASS
m/z 68	Less than 2% of m/z 69	1.7093	PASS
m/z 69	Less than 100% of m/z 198	58.609	PASS
m/z 70	Less than 2% of m/z 69	0.57708	PASS
m/z 127	40 - 60% of m/z 198	51.567	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	6.7548	PASS
m/z 275	10 - 30% of m/z 198	24.828	PASS
m/z 365	1 - 100% of m/z 198	4.1252	PASS
m/z 441	0.001 - 100% of m/z 443	74.999	PASS
m/z 442	40 - 100% of m/z 198	55.935	PASS
m/z 443	17 - 23% of m/z 442	19.322	PASS

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	11170901.D	Injection Date:	11/17/09
Instrument ID:	SV-5973BF	Injection Time:	12:42
Sequence:	9K17011	Lab Sample ID:	9K17011-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	54.93	PASS
m/z 68	Less than 2% of m/z 69	0.5947	PASS
m/z 69	Less than 100% of m/z 198	61.63	PASS
m/z 70	Less than 2% of m/z 69	0.54332	PASS
m/z 127	40 - 60% of m/z 198	52.264	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	7.0724	PASS
m/z 275	10 - 30% of m/z 198	24.801	PASS
m/z 365	1 - 100% of m/z 198	3.5047	PASS
m/z 441	0.001 - 100% of m/z 443	73.972	PASS
m/z 442	40 - 100% of m/z 198	56.04	PASS
m/z 443	17 - 23% of m/z 442	19.752	PASS

Form 6
INITIAL CALIBRATION DATA
EPA 8270m

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9111802

SDG: PSK0253
Project: NW Pipe Project
Instrument: SV-5973BF
Calibration Date: 11/13/09 15:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
1-Methylnaphthalene	50	0.5620274	100	0.6165984	200	0.6423838	500	0.6933636	1000	0.6589237	2000	0.6946498
2-Methylnaphthalene	50	0.5834225	100	0.6948827	200	0.7328887	500	0.7755941	1000	0.7496099	2000	0.7834225
Acenaphthene	50	1.097516	100	1.110663	200	1.15135	500	1.23403	1000	1.264532	2000	1.262476
Acenaphthylene	50	1.689348	100	1.76047	200	1.853586	500	2.001831	1000	2.073007	2000	2.082744
Anthracene	50	1.072386	100	1.152701	200	1.20798	500	1.315632	1000	1.340525	2000	1.386181
Benzo (a) anthracene	50	1.142669	100	1.141814	200	1.221099	500	1.357058	1000	1.383573	2000	1.484554
Benzo (a) pyrene	50	1.201635	100	1.273903	200	1.433716	500	1.542764	1000	1.594546	2000	1.62843
Benzo (a) pyrene-d12	50	0.9450479	100	1.007119	200	1.072454	500	1.182903	1000	1.238599	2000	1.316327
Benzo (b) fluoranthene	50	1.2739	100	1.246847	200	1.509075	500	1.640588	1000	1.744045	2000	1.76972
Benzo (ghi) perylene	50	1.157114	100	1.154217	200	1.251474	500	1.361162	1000	1.339839	2000	1.388221
Benzo (k) fluoranthene	50	1.612862	100	1.743908	200	1.635747	500	1.782634	1000	1.747829	2000	1.884969
Chrysene	50	1.423761	100	1.460016	200	1.51787	500	1.556569	1000	1.544579	2000	1.544799
Dibenzo (a,h) anthracene	50	1.006345	100	1.067257	200	1.163805	500	1.306574	1000	1.31225	2000	1.399863
Fluoranthene	50	1.221268	100	1.291204	200	1.354924	500	1.49543	1000	1.478366	2000	1.544206
Fluorene	50	1.274879	100	1.289191	200	1.388357	500	1.516408	1000	1.549255	2000	1.574153
Fluorene-d10	50	1.197533	100	1.266581	200	1.289489	500	1.423218	1000	1.45726	2000	1.477637
Indeno (1,2,3-cd) pyrene	50	1.154103	100	1.241885	200	1.398338	500	1.549944	1000	1.560257	2000	1.666454
Naphthalene	50	0.9984876	100	1.020661	200	1.07359	500	1.121992	1000	1.112729	2000	1.118633
Phenanthrene	50	1.212344	100	1.236387	200	1.273727	500	1.384739	1000	1.364122	2000	1.396204
Pyrene	50	1.421123	100	1.448755	200	1.50296	500	1.58154	1000	1.603733	2000	1.630305
Pyrene-d10	50	1.179104	100	1.171725	200	1.214746	500	1.25835	1000	1.286973	2000	1.323716

Form 6
INITIAL CALIBRATION DATA (Continued)
EPA 8270m

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9111802

SDG: PSK0253
Project: NW Pipe Project
Instrument: SV-5973BF
Calibration Date: 11/13/09 15:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
1-Methylnaphthalene	3000	0.6427775	5000	0.6560818	10000	0.6467042						
2-Methylnaphthalene	3000	0.7287897	5000	0.7477188	10000	0.7410712						
Acenaphthene	3000	1.276572	5000	1.289011	10000	1.285673						
Acenaphthylene	3000	2.149442	5000	2.196463	10000	2.186909						
Anthracene	3000	1.390522	5000	1.441492	10000	1.418002						
Benzo (a) anthracene	3000	1.462297	5000	1.496765	10000	1.496973						
Benzo (a) pyrene	3000	1.613725	5000	1.586784	10000	1.595073						
Benzo (a) pyrene-d12	3000	1.300806	5000	1.28849	10000	1.305613						
Benzo (b) fluoranthene	3000	1.826225	5000	1.773294	10000	1.752848						
Benzo (ghi) perylene	3000	1.367137	5000	1.367059	10000	1.30398						
Benzo (k) fluoranthene	3000	1.76015	5000	1.738189	10000	1.787506						
Chrysene	3000	1.502045	5000	1.52508	10000	1.467209						
Dibenzo (a,h) anthracene	3000	1.375467	5000	1.394232	10000	1.385589						
Fluoranthene	3000	1.539405	5000	1.616805	10000	1.578159						
Fluorene	3000	1.588248	5000	1.621378	10000	1.599904						
Fluorene-d10	3000	1.503728	5000	1.526279	10000	1.517866						
Indeno (1,2,3-cd) pyrene	3000	1.651757	5000	1.680275	10000	1.659084						
Naphthalene	3000	1.110889	5000	1.139921	10000	1.134083						
Phenanthrene	3000	1.380148	5000	1.413807	10000	1.382498						
Pyrene	3000	1.586151	5000	1.581061	10000	1.548163						
Pyrene-d10	3000	1.282383	5000	1.286925	10000	1.268428						

Form 6

INITIAL CALIBRATION DATA (Continued)

EPA 8270m

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9111802
Instrument: SV-5973BF
Calibration Date: 11/13/09 15:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1-Methylnaphthalene	0.6459456	6.196958	7.632222	5.545009E-02				*
2-Methylnaphthalene	0.7263778	8.197376	7.503333	6.717859E-02				*
Acenaphthene	1.219091	6.348742	8.836667	5.200223E-02				*
Acenaphthylene	1.999311	9.413301	8.613333	5.893825E-02				*
Anthracene	1.302825	9.909936	10.69444	6.902104E-02				*
Benzo (a) anthracene	1.354089	11.01045	13.87444	3.609089E-02				*
Benzo (a) pyrene	1.496731	10.59571	15.52	0.0433114				*
Benzo (a) pyrene-d12	1.184151	11.96789	15.49111	3.926193E-02				*
Benzo (b) fluoranthene	1.615171	13.72294	15.14333	3.076069E-02				*
Benzo (ghi) perylene	1.298911	7.000381	17.67889	0.1000082				*
Benzo (k) fluoranthene	1.743755	4.644888	15.16667	4.643137E-02				*
Chrysene	1.504659	3.01254	13.92667	3.516926E-02				*
Dibenzo (a,h) anthracene	1.267931	11.88807	17.19222	7.075548E-02				*
Fluoranthene	1.457752	9.393857	12.12	5.588244E-02				*
Fluorene	1.489086	9.109599	9.452222	4.796986E-02				*
Fluorene-d10	1.406621	8.745199	9.421111	3.951294E-02				*
Indeno (1,2,3-cd) pyrene	1.5069	13.08103	17.18778	9.117403E-02				*
Naphthalene	1.092332	4.649406	6.665556	7.781568E-02				*
Phenanthrene	1.33822	5.666574	10.63444	5.076036E-02				*
Pyrene	1.544866	4.658867	12.39444	0.0623753				*
Pyrene-d10	1.252483	4.183407	12.37778	5.365021E-02				*

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270m

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9111802
Laboratory ID: 9K13001-SCV2
Sequence: 9K13001
Standard ID: 9110162

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
1-Methylnaphthalene	2000	1940	-3.1	30.00
2-Methylnaphthalene	2000	1790	-10.5	30.00
Acenaphthene	2000	2010	0.7	30.00
Acenaphthylene	2000	1990	-0.6	30.00
Anthracene	2000	2090	4.5	30.00
Benzo (a) anthracene	2000	2030	1.4	30.00
Benzo (a) pyrene	2000	2130	6.5	30.00
Benzo (a) pyrene-d12	1000	1070	7.2	
Benzo (b) fluoranthene	2000	2140	7.0	30.00
Benzo (ghi) perylene	2000	2110	5.7	30.00
Benzo (k) fluoranthene	2000	2040	1.9	30.00
Chrysene	2000	1910	-4.4	30.00
Dibenzo (a,h) anthracene	2000	2130	6.5	30.00
Fluoranthene	2000	2020	0.8	30.00
Fluorene	2000	2060	2.8	30.00
Fluorene-d10	1000	1120	11.7	
Indeno (1,2,3-cd) pyrene	2000	2200	10.1	30.00
Naphthalene	2000	1990	-0.5	30.00
Phenanthrene	2000	2060	3.2	30.00
Pyrene	2000	1970	-1.5	30.00
Pyrene-d10	1000	986	-1.4	

* Values outside of QC limits

Form 7

CONTINUING CALIBRATION CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	SV-5973BF	Calibration:	9111802
Lab File ID:	11130916.D	Calibration Date:	11/13/09 15:00
Sequence:	9K13001	Injection Date:	11/13/09
Lab Sample ID:	9K13001-CCV1	Injection Time:	16:18

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1-Methylnaphthalene	A	2000	2000	0.6459456	0.6446947		-0.2	30
2-Methylnaphthalene	A	2000	2030	0.7263778	0.7364123		1.4	30
Acenaphthene	A	2000	2060	1.219091	1.256158		3.0	30
Acenaphthylene	A	2000	2080	1.999311	2.082148		4.1	30
Anthracene	A	2000	2130	1.302825	1.388263		6.6	30
Benzo (a) anthracene	A	2000	2120	1.354089	1.433418		5.9	30
Benzo (a) pyrene	A	2000	2220	1.496731	1.66328		11.1	30
Benzo (b) fluoranthene	A	2000	2120	1.615171	1.708084		5.8	30
Benzo (ghi) perylene	A	2000	2220	1.298911	1.440867		10.9	30
Benzo (k) fluoranthene	A	2000	2270	1.743755	1.974934		13.3	30
Chrysene	A	2000	2040	1.504659	1.538321		2.2	30
Dibenzo (a,h) anthracene	A	2000	2240	1.267931	1.419117		11.9	30
Fluoranthene	A	2000	2130	1.457752	1.553196		6.5	30
Fluorene	A	2000	2120	1.489086	1.577932		6.0	30
Indeno (1,2,3-cd) pyrene	A	2000	2250	1.5069	1.696612		12.6	30
Naphthalene	A	2000	2050	1.092332	1.1203		2.6	30
Phenanthrene	A	2000	2090	1.33822	1.396949		4.4	30
Pyrene	A	2000	2070	1.544866	1.601211		3.6	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Form 7
CONTINUING CALIBRATION CHECK
EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	SV-5973BF	Calibration:	9111802
Lab File ID:	11160903.D	Calibration Date:	11/13/09 15:00
Sequence:	9K16005	Injection Date:	11/16/09
Lab Sample ID:	9K16005-CCV1	Injection Time:	12:27

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1-Methylnaphthalene	A	2000	2000	0.6459456	0.6470291		0.2	30
2-Methylnaphthalene	A	2000	2040	0.7263778	0.7412645		2.0	30
Acenaphthene	A	2000	2080	1.219091	1.266667		3.9	30
Acenaphthylene	A	2000	2070	1.999311	2.067423		3.4	30
Anthracene	A	2000	2110	1.302825	1.375075		5.5	30
Benzo (a) anthracene	A	2000	2140	1.354089	1.445545		6.8	30
Benzo (a) pyrene	A	2000	2190	1.496731	1.639464		9.5	30
Benzo (b) fluoranthene	A	2000	2200	1.615171	1.773215		9.8	30
Benzo (ghi) perylene	A	2000	2290	1.298911	1.490255		14.7	30
Benzo (k) fluoranthene	A	2000	2070	1.743755	1.804872		3.5	30
Chrysene	A	2000	2040	1.504659	1.538473		2.2	30
Dibenzo (a,h) anthracene	A	2000	2290	1.267931	1.454777		14.7	30
Fluoranthene	A	2000	2100	1.457752	1.52897		4.9	30
Fluorene	A	2000	2100	1.489086	1.563661		5.0	30
Indeno (1,2,3-cd) pyrene	A	2000	2320	1.5069	1.745854		15.9	30
Naphthalene	A	2000	2050	1.092332	1.121777		2.7	30
Phenanthrene	A	2000	2080	1.33822	1.394648		4.2	30
Pyrene	A	2000	2100	1.544866	1.62385		5.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Form 7

CONTINUING CALIBRATION CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	SV-5973BF	Calibration:	9111802
Lab File ID:	11170902.D	Calibration Date:	11/13/09 15:00
Sequence:	9K17011	Injection Date:	11/17/09
Lab Sample ID:	9K17011-CCV1	Injection Time:	13:02

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1-Methylnaphthalene	A	2000	2280	0.6459456	0.7359041		13.9	30
2-Methylnaphthalene	A	2000	2310	0.7263778	0.8396859		15.6	30
Acenaphthene	A	2000	2070	1.219091	1.259247		3.3	30
Acenaphthylene	A	2000	2110	1.999311	2.113088		5.7	30
Anthracene	A	2000	2140	1.302825	1.391177		6.8	30
Benzo (a) anthracene	A	2000	2230	1.354089	1.511673		11.6	30
Benzo (a) pyrene	A	2000	2110	1.496731	1.579037		5.5	30
Benzo (b) fluoranthene	A	2000	2190	1.615171	1.770463		9.6	30
Benzo (ghi) perylene	A	2000	2260	1.298911	1.464632		12.8	30
Benzo (k) fluoranthene	A	2000	1870	1.743755	1.630116		-6.5	30
Chrysene	A	2000	2070	1.504659	1.556231		3.4	30
Dibenzo (a,h) anthracene	A	2000	2300	1.267931	1.457944		15.0	30
Fluoranthene	A	2000	2160	1.457752	1.570863		7.8	30
Fluorene	A	2000	2130	1.489086	1.589568		6.7	30
Indeno (1,2,3-cd) pyrene	A	2000	2300	1.5069	1.732731		15.0	30
Naphthalene	A	2000	2070	1.092332	1.131756		3.6	30
Phenanthrene	A	2000	2070	1.33822	1.385044		3.5	30
Pyrene	A	2000	2110	1.544866	1.628147		5.4	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13001	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (9K13001-CAL6)			Lab File ID: 11130903.D			Analyzed: 11/13/09 09:06			
Acenaphthene-d10	31369	8.8	25342	8.8	124	50 - 200	0.0000	+/-0.50	
Chrysene-d12	56974	13.89	46197	13.9	123	50 - 200	-0.0100	+/-0.50	
Naphthalene-d8	51045	6.64	42252	6.64	121	50 - 200	0.0000	+/-0.50	
Perylene-d12	42279	15.59	35656	15.59	119	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	56214	10.61	44441	10.61	126	50 - 200	0.0000	+/-0.50	
Cal Standard (9K13001-CAL1)			Lab File ID: 11130904.D			Analyzed: 11/13/09 10:47			
Acenaphthene-d10	29995	8.8	25342	8.8	118	50 - 200	0.0000	+/-0.50	
Chrysene-d12	48525	13.9	46197	13.9	105	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	54218	6.64	42252	6.64	128	50 - 200	0.0000	+/-0.50	
Perylene-d12	37196	15.59	35656	15.59	104	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	51101	10.61	44441	10.61	115	50 - 200	0.0000	+/-0.50	
Cal Standard (9K13001-CAL2)			Lab File ID: 11130905.D			Analyzed: 11/13/09 11:16			
Acenaphthene-d10	27245	8.8	25342	8.8	108	50 - 200	0.0000	+/-0.50	
Chrysene-d12	45468	13.9	46197	13.9	98	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	45884	6.65	42252	6.64	109	50 - 200	0.0100	+/-0.50	
Perylene-d12	33855	15.59	35656	15.59	95	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	46555	10.61	44441	10.61	105	50 - 200	0.0000	+/-0.50	
Cal Standard (9K13001-CAL3)			Lab File ID: 11130906.D			Analyzed: 11/13/09 11:45			
Acenaphthene-d10	27552	8.8	25342	8.8	109	50 - 200	0.0000	+/-0.50	
Chrysene-d12	46278	13.9	46197	13.9	100	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	45876	6.65	42252	6.64	109	50 - 200	0.0100	+/-0.50	
Perylene-d12	34767	15.59	35656	15.59	98	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	47120	10.61	44441	10.61	106	50 - 200	0.0000	+/-0.50	
Cal Standard (9K13001-CAL4)			Lab File ID: 11130907.D			Analyzed: 11/13/09 12:14			
Acenaphthene-d10	25342	8.8	25342	8.8	100	50 - 200	0.0000	+/-0.50	
Chrysene-d12	46197	13.9	46197	13.9	100	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	42252	6.64	42252	6.64	100	50 - 200	0.0000	+/-0.50	
Perylene-d12	35656	15.59	35656	15.59	100	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	44441	10.61	44441	10.61	100	50 - 200	0.0000	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13001	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (9K13001-CAL5)			Lab File ID: 11130908.D			Analyzed: 11/13/09 12:43			
Acenaphthene-d10	29071	8.8	25342	8.8	115	50 - 200	0.0000	+/-0.50	
Chrysene-d12	52182	13.9	46197	13.9	113	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	50248	6.64	42252	6.64	119	50 - 200	0.0000	+/-0.50	
Perylene-d12	38799	15.59	35656	15.59	109	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	51854	10.61	44441	10.61	117	50 - 200	0.0000	+/-0.50	
Cal Standard (9K13001-CAL7)			Lab File ID: 11130909.D			Analyzed: 11/13/09 13:13			
Acenaphthene-d10	29781	8.8	25342	8.8	118	50 - 200	0.0000	+/-0.50	
Chrysene-d12	57025	13.9	46197	13.9	123	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	52498	6.64	42252	6.64	124	50 - 200	0.0000	+/-0.50	
Perylene-d12	42705	15.59	35656	15.59	120	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	54843	10.61	44441	10.61	123	50 - 200	0.0000	+/-0.50	
Cal Standard (9K13001-CAL8)			Lab File ID: 11130910.D			Analyzed: 11/13/09 13:42			
Acenaphthene-d10	27699	8.8	25342	8.8	109	50 - 200	0.0000	+/-0.50	
Chrysene-d12	55624	13.9	46197	13.9	120	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	48129	6.64	42252	6.64	114	50 - 200	0.0000	+/-0.50	
Perylene-d12	44164	15.59	35656	15.59	124	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	50847	10.61	44441	10.61	114	50 - 200	0.0000	+/-0.50	
Cal Standard (9K13001-CAL9)			Lab File ID: 11130911.D			Analyzed: 11/13/09 14:10			
Acenaphthene-d10	32834	8.8	25342	8.8	130	50 - 200	0.0000	+/-0.50	
Chrysene-d12	64684	13.89	46197	13.9	140	50 - 200	-0.0100	+/-0.50	
Naphthalene-d8	57671	6.64	42252	6.64	136	50 - 200	0.0000	+/-0.50	
Perylene-d12	49325	15.59	35656	15.59	138	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	60340	10.61	44441	10.61	136	50 - 200	0.0000	+/-0.50	
Secondary Cal Check (9K13001-SCV2)			Lab File ID: 11130913.D			Analyzed: 11/13/09 15:24			
Acenaphthene-d10	27724	8.8	25342	8.8	109	50 - 200	0.0000	+/-0.50	
Chrysene-d12	51956	13.9	46197	13.9	112	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	51195	6.64	42252	6.64	121	50 - 200	0.0000	+/-0.50	
Perylene-d12	38175	15.6	35656	15.59	107	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	48622	10.61	44441	10.61	109	50 - 200	0.0000	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13001	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9K13001-CCV1)			Lab File ID: 11130916.D			Analyzed: 11/13/09 16:18			
Acenaphthene-d10	27134	8.8	25342	8.8	107	50 - 200	0.0000	+/-0.50	
Chrysene-d12	51343	13.9	46197	13.9	111	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	47679	6.64	42252	6.64	113	50 - 200	0.0000	+/-0.50	
Perylene-d12	37987	15.6	35656	15.59	107	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	48701	10.61	44441	10.61	110	50 - 200	0.0000	+/-0.50	
LCS (9110309-BS2)			Lab File ID: 11130930.D			Analyzed: 11/13/09 23:06			
Acenaphthene-d10	26167	8.8	27134	8.8	96	50 - 200	0.0000	+/-0.50	
Chrysene-d12	49485	13.89	51343	13.9	96	50 - 200	-0.0100	+/-0.50	
Naphthalene-d8	39961	6.64	47679	6.64	84	50 - 200	0.0000	+/-0.50	
Perylene-d12	40859	15.59	37987	15.6	108	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	47349	10.6	48701	10.61	97	50 - 200	-0.0100	+/-0.50	
Blank (9110309-BLK2)			Lab File ID: 11130931.D			Analyzed: 11/13/09 23:34			
Acenaphthene-d10	28880	8.8	27134	8.8	106	50 - 200	0.0000	+/-0.50	
Chrysene-d12	45252	13.9	51343	13.9	88	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	47068	6.64	47679	6.64	99	50 - 200	0.0000	+/-0.50	
Perylene-d12	41371	15.59	37987	15.6	109	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	49068	10.61	48701	10.61	101	50 - 200	0.0000	+/-0.50	
Matrix Spike (9110309-MS2)			Lab File ID: 11130932.D			Analyzed: 11/14/09 00:04			
Acenaphthene-d10	27718	8.8	27134	8.8	102	50 - 200	0.0000	+/-0.50	
Chrysene-d12	47623	13.89	51343	13.9	93	50 - 200	-0.0100	+/-0.50	
Naphthalene-d8	45356	6.64	47679	6.64	95	50 - 200	0.0000	+/-0.50	
Perylene-d12	37495	15.59	37987	15.6	99	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	49961	10.61	48701	10.61	103	50 - 200	0.0000	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16005	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9K16005-CCV1)			Lab File ID: 11160903.D			Analyzed: 11/16/09 12:27			
Acenaphthene-d10	41790	8.79				50 - 200		+/-0.50	
Chrysene-d12	74322	13.87				50 - 200		+/-0.50	
Naphthalene-d8	75668	6.63				50 - 200		+/-0.50	
Perylene-d12	57637	15.57				50 - 200		+/-0.50	
Phenanthrene-d10	72721	10.59				50 - 200		+/-0.50	
Matrix Spike Dup (9110309-MSD2)			Lab File ID: 11160918.D			Analyzed: 11/16/09 19:43			
Acenaphthene-d10	38712	8.78	41790	8.79	93	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	46973	13.87	74322	13.87	63	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	43096	6.63	75668	6.63	57	50 - 200	0.0000	+/-0.50	
Perylene-d12	45063	15.57	57637	15.57	78	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	68848	10.59	72721	10.59	95	50 - 200	0.0000	+/-0.50	
DS005-110709 (PSK0253-01)			Lab File ID: 11160919.D			Analyzed: 11/16/09 20:12			
Acenaphthene-d10	34092	8.78	41790	8.79	82	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	53122	13.88	74322	13.87	71	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	39594	6.63	75668	6.63	52	50 - 200	0.0000	+/-0.50	
Perylene-d12	46097	15.57	57637	15.57	80	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	61706	10.59	72721	10.59	85	50 - 200	0.0000	+/-0.50	
DS012-110709 (PSK0253-02)			Lab File ID: 11160920.D			Analyzed: 11/16/09 20:41			
Acenaphthene-d10	37298	8.78	41790	8.79	89	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	59461	13.88	74322	13.87	80	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	46676	6.63	75668	6.63	62	50 - 200	0.0000	+/-0.50	
Perylene-d12	49501	15.57	57637	15.57	86	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	66192	10.59	72721	10.59	91	50 - 200	0.0000	+/-0.50	
DS120-110709 (PSK0253-07)			Lab File ID: 11160921.D			Analyzed: 11/16/09 21:10			
Acenaphthene-d10	31744	8.78	41790	8.79	76	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	58143	13.88	74322	13.87	78	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	40376	6.63	75668	6.63	53	50 - 200	0.0000	+/-0.50	
Perylene-d12	50915	15.57	57637	15.57	88	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	57585	10.59	72721	10.59	79	50 - 200	0.0000	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16005	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
DS221-110709 (PSK0253-11)			Lab File ID: 11160923.D			Analyzed: 11/16/09 22:08			
Acenaphthene-d10	35849	8.78	41790	8.79	86	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	61527	13.88	74322	13.87	83	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	48474	6.63	75668	6.63	64	50 - 200	0.0000	+/-0.50	
Perylene-d12	54037	15.57	57637	15.57	94	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	63053	10.59	72721	10.59	87	50 - 200	0.0000	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K17011	Instrument:	SV-5973BF
Matrix:	Water	Calibration:	9111802

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9K17011-CCV1)			Lab File ID: 11170902.D			Analyzed: 11/17/09 13:02			
Acenaphthene-d10	34108	8.77				50 - 200		+/-0.50	
Chrysene-d12	62871	13.86				50 - 200		+/-0.50	
Naphthalene-d8	53863	6.62				50 - 200		+/-0.50	
Perylene-d12	54304	15.56				50 - 200		+/-0.50	
Phenanthrene-d10	60096	10.58				50 - 200		+/-0.50	
DS223-110709 (PSK0253-10)			Lab File ID: 11170908.D			Analyzed: 11/17/09 15:57			
Acenaphthene-d10	41461	8.77	34108	8.77	122	50 - 200	0.0000	+/-0.50	
Chrysene-d12	51429	13.87	62871	13.86	82	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	49511	6.62	53863	6.62	92	50 - 200	0.0000	+/-0.50	
Perylene-d12	55328	15.55	54304	15.56	102	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	73673	10.58	60096	10.58	123	50 - 200	0.0000	+/-0.50	

INITIAL CALIBRATION STANDARDS

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13001	Instrument:	SV-5973BF
Calibration:	9111802		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
9110078	50ppm DFTPP Soln	9K13001-TUN2	11130902.D	11/13/09 08:48
9110127	2000 ppb SIM PAH/PCP calibration standar	9K13001-CAL6	11130903.D	11/13/09 09:06
9110147	50 ppb SIM PAH/PCP calibration standard M	9K13001-CAL1	11130904.D	11/13/09 10:47
9110148	100 ppb SIM PAH/PCP calibration standard	9K13001-CAL2	11130905.D	11/13/09 11:16
9110149	200 ppb SIM PAH/PCP calibration standard	9K13001-CAL3	11130906.D	11/13/09 11:45
9110150	500 ppb SIM PAH/PCP calibration standard	9K13001-CAL4	11130907.D	11/13/09 12:14
9110151	1000 ppb SIM PAH/PCP calibration standar	9K13001-CAL5	11130908.D	11/13/09 12:43
9110152	3000 ppb SIM PAH/PCP calibration standar	9K13001-CAL7	11130909.D	11/13/09 13:13
9110153	5000 ppb SIM PAH/PCP calibration standar	9K13001-CAL8	11130910.D	11/13/09 13:42
9110154	10000 ppb SIM PAH/PCP calibration standa	9K13001-CAL9	11130911.D	11/13/09 14:10
9110162	2,000 ppb SIM PAH/PCP/Phthalate SCV	9K13001-SCV2	11130913.D	11/13/09 15:24
9110078	50ppm DFTPP Soln	9K13001-TUN4	11130915.D	11/13/09 15:59

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K13001	Instrument:	SV-5973BF
		Calibration:	9111802

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9K13001-TUN2	11130902.D	11/13/09 08:48
Cal Standard	9K13001-CAL6	11130903.D	11/13/09 09:06
Cal Standard	9K13001-CAL1	11130904.D	11/13/09 10:47
Cal Standard	9K13001-CAL2	11130905.D	11/13/09 11:16
Cal Standard	9K13001-CAL3	11130906.D	11/13/09 11:45
Cal Standard	9K13001-CAL4	11130907.D	11/13/09 12:14
Cal Standard	9K13001-CAL5	11130908.D	11/13/09 12:43
Cal Standard	9K13001-CAL7	11130909.D	11/13/09 13:13
Cal Standard	9K13001-CAL8	11130910.D	11/13/09 13:42
Cal Standard	9K13001-CAL9	11130911.D	11/13/09 14:10
Secondary Cal Check	9K13001-SCV2	11130913.D	11/13/09 15:24
MS Tune	9K13001-TUN4	11130915.D	11/13/09 15:59
Calibration Check	9K13001-CCV1	11130916.D	11/13/09 16:18
LCS	9110309-BS2	11130930.D	11/13/09 23:06
Blank	9110309-BLK2	11130931.D	11/13/09 23:34
DS012-110709	9110309-MS2	11130932.D	11/14/09 00:04

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16005	Instrument:	SV-5973BF
		Calibration:	9111802

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9K16005-TUN1	11160902.D	11/16/09 12:08
Calibration Check	9K16005-CCV1	11160903.D	11/16/09 12:27
DS012-110709	9110309-MSD2	11160918.D	11/16/09 19:43
DS005-110709	PSK0253-01	11160919.D	11/16/09 20:12
DS012-110709	PSK0253-02	11160920.D	11/16/09 20:41
DS120-110709	PSK0253-07	11160921.D	11/16/09 21:10
DS221-110709	PSK0253-11	11160923.D	11/16/09 22:08

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K17011	Instrument:	SV-5973BF
		Calibration:	9111802

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9K17011-TUN1	11170901.D	11/17/09 12:42
Calibration Check	9K17011-CCV1	11170902.D	11/17/09 13:02
DS223-110709	PSK0253-10	11170908.D	11/17/09 15:57

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Semi-Volatile GCMS Analysis QCAR

Work Order #: PSK0253 Batch #: 9110309 Test Code: 8270 SIM RATE

Primary Review Date/Initial: 11/20/09 MF

Secondary Review Date/Initial: 11/20/9

☐ Check here if data package is needed

Sample Integrity

- ✓ Samples extracted within hold time
- ✓ All work is completed according to work order
- ✓ Special instructions are checked

Data Analysis

- ✓ Proper daily calibration file used for quantitation
- ✓ Proper dilution factors/multipliers are used
- ✓ Daily calibration and tuning criteria are within acceptable limits
- ✓ Internal standard areas and retention time are within limits
- ✓ Surrogates are within limits (or properly flagged if out)
- ✓ All prep and analysis bench sheets are fully completed
- ✓ Concentrations are within calibration range
- ✓ All chromatograms are included and labeled
- ✓ Reported results are within 12 hours of valid DFTPP tune

Reporting

- ✓ Method blank is non-detected and reported from same prep batch
- ✓ Reporting limits are correct
- ✓ Proper units and significant figures are correct
- ✓ Percent solids are included (if applicable)
- ✓ Extraction, analysis (and TCLP if applicable) dates and times are correct
- ✓ Control limits are met for spike recoveries, proper comments included
- ✓ Proper QC reports are included
- ✓ Necessary comments are included
- ✓ Analytes and QC are updated to "analyzed" and locked
- ✓ Analytes and QC are updated to "reviewed"

Comments: _____

9405 SW Nimbus Avenue Beaverton, OR 97008 tel 503.906.9200 fax 503.906.9210 www.testamericainc.com

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC/MS Semivolatile Organic Compounds

EPA 8270m SIM – PAH
Preparation Logs

9405 SW Nimbus Avenue Beaverton, OR 97008 **tel** 503.906.9200 **fax** 503.906.9210 **www.testamericainc.com**

Form 4

PREPARATION BATCH SUMMARY

EPA 8270m

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110309 Batch Matrix: Water Preparation: 3520B Liq-Liq

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110309-BLK2	11130931.D	11/10/09 13:30	
LCS	9110309-BS2	11130930.D	11/10/09 13:30	
DS012-110709	9110309-MS2	11130932.D	11/10/09 13:30	
DS012-110709	9110309-MSD2	11160918.D	11/10/09 13:30	
DS005-110709	PSK0253-01	11160919.D	11/10/09 13:30	level 3 dp.
DS012-110709	PSK0253-02	11160920.D	11/10/09 13:30	level 3 dp.:MS/MSD
DS120-110709	PSK0253-07	11160921.D	11/10/09 13:30	level 3 dp.
DS223-110709	PSK0253-10	11170908.D	11/10/09 13:30	level 3 dp.
DS221-110709	PSK0253-11	11160923.D	11/10/09 13:30	level 3 dp.

QCAR - Organic Prep, Semi-Volatiles

Batch#911039 Prep Method/Analysis 3520 8270 Matrix Water

Sample Integrity **Date/Initials** 11/10/09 TW

Is the method appropriate for the sample?	Yes ✓ No ___
Is there adequate amount of sample?	Yes ✓ No ___
Are the sample containers appropriate?	Yes ✓ No ___
Are the samples within hold time? If not fill out a CAR.	Yes ✓ No ___
Do sample ID's match the work order?	Yes ✓ No ___
Is sample available for MS/MSD?	Yes ✓ No ___

Extraction **Date/Initials** 11/10/09 TW

Was all glassware triple rinsed with solvent?	Yes ✓ No ___
Was the "whole bottle extraction procedure" used if water?	Yes ✓ No ___

Concentration **Final Solvent:** DCM

Samples transferred into KDs (date/init.) 11/12/09

Macro conc. (date/init./temp.) 11/12/09 AR 70°C ± 2°C Micro conc. (date/init.) 11/12/09 AR

If applicable:

- ☐ GPC
- ☐ OPP Soil: poured over Na_2SO_4 (date/init.) ___
  transferred into KDs (date/init.) ___

Macro conc. (date/init./temp.) ___ Micro conc. (date/init.) ___

Sample Vialing **Date/Initials** 11/12/09 AR

Are the samples being brought to their normal final volume?	Yes ✓ No ___
Is the solvent level indicated on the ALS vials?	Yes ✓ No ___
Was the SOP followed with no deviation? If no, explain below.	Yes ✓ No ___
Is the GPC or TCLP log attached (if applicable)?	Yes ___ No NA
Is the paperwork complete, correct and undated in the computer?	Yes ✓ No ___

Comments: ___

PREPARATION BENCH SHEET

Batch 9110309

Printed: 11/10/2009 11:11:49AM

Prep method: 3520B Liq-Liq

TestAmerica Portland

Matrix: Water

(11)

Surrogate 1: 9080045 Surrogate 2: 9080267

Lab Number	Analysis	Prepared	Initial (ml)	Init	Final (ml)	Init	Spike ID	Spike Amt (uL)	Init	Source ID	Surr 1 (uL)	Init	Surr 2 (uL)	Init	pH	Extraction Comments
9110309-BLK1	QC	11/10/09 11:08	1000	JW	1	AG					50	VA	5	JW		
9110309-BS1	QC	11/10/09 11:08	1000		1		9080162	250	JW		50		5			
"	(Second Spike)	"	"		"		9080007	20			"		"			
9110309-MS1 A	QC	11/10/09 11:08	1000		1		9080162	250		253-7	50		5			
"	(Second Spike)	"	"		"		9080007	20		1	"		"			
9110309-MSD1 B	QC	11/10/09 11:08	1000		1		9080162	250		253-7	50		5			
"	(Second Spike)	"	"		"		9080007	20		1	"		"			
PSK0253-01 A	8270 SIM PAH	11/10/09 11:08	1000 50	50	1						50		5		5	level 3 dp.
PSK0253-01 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0253-02 C	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.:MS/MSD
PSK0253-02 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.:MS/MSD
PSK0253-07 A	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.
PSK0253-07 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0253-10 A	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.
PSK0253-10 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0253-11 A	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.
PSK0253-11 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0264-01 D	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			
PSK0264-01 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			
PSK0264-02 C	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			
PSK0264-02 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			

Batch Comments:
DCM# 9100014
GLASSWOOL# 00509001
Na2SO4# ~~083054~~ 083139
START: 11/10/09 1330 JW
STOP: 11/11/09 0745 CD

11/23/09

Spiking Witnessed By 11/10/09 Date

Preparation Reviewed By 11/12/09 Date

Page 1 of 1

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC/MS Semivolatile Organic Compounds

EPA 8270m SIM – Phthalates
Quality Control Summaries

9405 SW Nimbus Avenue Beaverton, OR 97008 **tel** 503.906.9200 **fax** 503.906.9210 **www.testamericainc.com**

Form 2
SURROGATE STANDARD RECOVERY AND RT SUMMARY
EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16007	Instrument:	5970
Matrix:	Water	Calibration:	9102702

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K16007-CCV1)			Lab File ID: 11160902.D		Analyzed: 11/16/09 10:55			
2-Fluorobiphenyl	1000	105	70 - 130	10.67	11.16333	-0.4933	+/-1.0	
p-Terphenyl-d14	1000	100	70 - 130	16.8	17.33	-0.5300	+/-1.0	

Form 2
SURROGATE STANDARD RECOVERY AND RT SUMMARY
EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16007	Instrument:	5970
Matrix:	Water	Calibration:	9102702

Surrogate Compound	Spike Level ug/l	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
Blank (9110309-BLK1)				Lab File ID: 11160903.D		Analyzed: 11/16/09 11:30		
2-Fluorobiphenyl	5.00	68.7	10 - 150	10.67	11.16333	-0.4933	+/-1.0	
p-Terphenyl-d14	5.00	107	10 - 150	16.8	17.33	-0.5300	+/-1.0	
LCS (9110309-BS1)				Lab File ID: 11160905.D		Analyzed: 11/16/09 12:42		
2-Fluorobiphenyl	5.00	68.4	10 - 150	10.67	11.16333	-0.4933	+/-1.0	
p-Terphenyl-d14	5.00	92.1	10 - 150	16.8	17.33	-0.5300	+/-1.0	
Matrix Spike (9110309-MS1)				Lab File ID: 11160906.D		Analyzed: 11/16/09 13:17		
2-Fluorobiphenyl	5.00	90.9	10 - 150	10.67	11.16333	-0.4933	+/-1.0	
p-Terphenyl-d14	5.00	94.4	10 - 150	16.8	17.33	-0.5300	+/-1.0	
Matrix Spike Dup (9110309-MSD1)				Lab File ID: 11160907.D		Analyzed: 11/16/09 13:53		
2-Fluorobiphenyl	5.00	62.6	10 - 150	10.67	11.16333	-0.4933	+/-1.0	
p-Terphenyl-d14	5.00	89.5	10 - 150	16.8	17.33	-0.5300	+/-1.0	
DS005-110709 (PSK0253-01)				Lab File ID: 11160911.D		Analyzed: 11/16/09 16:16		
2-Fluorobiphenyl	4.76	76.5	10 - 150	10.67	11.16333	-0.4933	+/-1.0	
p-Terphenyl-d14	4.76	88.0	10 - 150	16.8	17.33	-0.5300	+/-1.0	
DS012-110709 (PSK0253-02)				Lab File ID: 11160912.D		Analyzed: 11/16/09 16:52		
2-Fluorobiphenyl	4.76	74.0	10 - 150	10.67	11.16333	-0.4933	+/-1.0	
p-Terphenyl-d14	4.76	103	10 - 150	16.81	17.33	-0.5200	+/-1.0	
DS120-110709 (PSK0253-07)				Lab File ID: 11160913.D		Analyzed: 11/16/09 17:28		
2-Fluorobiphenyl	4.76	90.7	10 - 150	10.68	11.16333	-0.4833	+/-1.0	
p-Terphenyl-d14	4.76	99.2	10 - 150	16.81	17.33	-0.5200	+/-1.0	
DS223-110709 (PSK0253-10)				Lab File ID: 11160914.D		Analyzed: 11/16/09 18:03		
2-Fluorobiphenyl	4.76	93.2	10 - 150	10.68	11.16333	-0.4833	+/-1.0	
p-Terphenyl-d14	4.76	103	10 - 150	16.81	17.33	-0.5200	+/-1.0	
DS221-110709 (PSK0253-11)				Lab File ID: 11160915.D		Analyzed: 11/16/09 18:39		
2-Fluorobiphenyl	4.76	70.8	10 - 150	10.68	11.16333	-0.4833	+/-1.0	
p-Terphenyl-d14	4.76	103	10 - 150	16.81	17.33	-0.5200	+/-1.0	

Laboratory Blank Report

Phthalates per EPA 8270-SIM - Laboratory Quality Control Results
TestAmerica Portland

Batch 9110309

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Water	EPA 8270m	9110309-BLK1	Blank	1x	11160903.D	11/16/09 11:30	5970
Water	EPA 8270m	9110309-BS1	LCS	1x	11160905.D	11/16/09 12:42	5970
Water	EPA 8270m	9110309-MS1	Matrix Spike	2x	11160906.D	11/16/09 13:17	5970
Water	EPA 8270m	9110309-MSD1	Matrix Spike Dup	2x	11160907.D	11/16/09 13:53	5970
Water	EPA 8270m	PSK0253-01	DS005-110709	1x	11160911.D	11/16/09 16:16	5970
Water	EPA 8270m	PSK0253-02	DS012-110709	1x	11160912.D	11/16/09 16:52	5970
Water	EPA 8270m	PSK0253-07	DS120-110709	1x	11160913.D	11/16/09 17:28	5970
Water	EPA 8270m	PSK0253-10	DS223-110709	1x	11160914.D	11/16/09 18:03	5970
Water	EPA 8270m	PSK0253-11	DS221-110709	1x	11160915.D	11/16/09 18:39	5970

Form 1

METHOD BLANK DATA SHEET

EPA 8270m

Laboratory:	TestAmerica Portland		SDG:	PSK0253	
Client:	CH2M-Hill		Project:	NW Pipe Project	
Matrix:	Water	Laboratory ID:	9110309-BLK1	File ID:	11160903.D
Prepared:	11/10/09 13:30	Preparation:	3520B Liq-Liq	Initial/Final:	1000 ml / 1 ml
Analyzed:	11/16/09 11:30	Instrument:	5970		
Batch:	9110309	Sequence:	9K16007	Calibration:	9102702

CAS NO.	COMPOUND	CONC. (ug/l)	Q
117-81-7	Bis(2-ethylhexyl)phthalate	1.00	U
85-68-7	Butyl benzyl phthalate	1.00	U
84-66-2	Diethyl phthalate	1.00	U
131-11-3	Dimethyl phthalate	1.00	U
84-74-2	Di-n-butyl phthalate	1.00	U
117-84-0	Di-n-octyl phthalate	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/l)	CONC (ug/l)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	5.00	3.44	68.7	10 - 150	
p-Terphenyl-d14	5.00	5.33	107	10 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	70795	11.8	68130	11.79	
Chrysene-d12	92951	18.55	92061	18.55	
Perylene-d12	98243	20.99	99282	20.99	
Phenanthrene-d10	113232	14.2	106838	14.2	

Form 3

LCS / LCS DUPLICATE RECOVERY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9080162 9080007
Batch:	9110309	Laboratory ID:	9110309-BS1
Preparation:	3520B Liq-Liq	Initial/Final:	1000 ml / 1 ml

COMPOUND	SPIKE ADDED (ug/l)	LCS CONCENTRATION (ug/l)	LCS % REC. #	QC LIMITS REC.
Bis(2-ethylhexyl)phthalate	4.00	2.22	55.5	20 - 150
Butyl benzyl phthalate	4.00	4.83	121	20 - 150
Diethyl phthalate	4.00	4.40	110	20 - 150
Dimethyl phthalate	4.00	4.14	103	20 - 150
Di-n-butyl phthalate	4.00	4.84	121	20 - 150
Di-n-octyl phthalate	4.00	1.57	39.1	20 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270m

DS012-110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9080162 9080007
Batch:	9110309	Laboratory ID:	9110309-MS1
Preparation:	3520B Liq-Liq	Initial/Final:	1000 ml / 1 ml

Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC. #	QC LIMITS REC.
Bis(2-ethylhexyl)phthalate	4.00	ND	2.99	74.8	10 - 150
Butyl benzyl phthalate	4.00	ND	5.07	127	10 - 150
Diethyl phthalate	4.00	ND	4.40	110	10 - 150
Dimethyl phthalate	4.00	ND	4.11	103	10 - 150
Di-n-butyl phthalate	4.00	ND	4.76	119	10 - 150
Di-n-octyl phthalate	4.00	ND	2.28	56.9	10 - 150

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Bis(2-ethylhexyl)phthalate	4.00	2.68	67.0	11.0	50	10 - 150
Butyl benzyl phthalate	4.00	4.78	119	6.04	50	10 - 150
Diethyl phthalate	4.00	4.12	103	6.65	50	10 - 150
Dimethyl phthalate	4.00	3.75	93.7	9.20	50	10 - 150
Di-n-butyl phthalate	4.00	4.46	112	6.52	50	10 - 150
Di-n-octyl phthalate	4.00	2.09	52.3	8.38	50	10 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

EPA 8270m

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** 5970

Analyte	MDL	MRL	Units
2-Fluorobiphenyl			ug/l
Acenaphthene-d10			ug/l
Bis(2-ethylhexyl)phthalate	0.526	1.00	ug/l
Butyl benzyl phthalate	0.526	1.00	ug/l
Chrysene-d12			ug/l
Diethyl phthalate	0.526	1.00	ug/l
Dimethyl phthalate	0.526	1.00	ug/l
Di-n-butyl phthalate	0.526	1.00	ug/l
Di-n-octyl phthalate	0.526	1.00	ug/l
Perylene-d12			ug/l
Phenanthrene-d10			ug/l
p-Terphenyl-d14			ug/l

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	06250900.D	Injection Date:	06/25/09
Instrument ID:	5970	Injection Time:	13:22
Sequence:	9F25009	Lab Sample ID:	9F25009-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	52.237	PASS
m/z 68	Less than 2% of m/z 69	0	PASS
m/z 69	Less than 100% of m/z 198	57.446	PASS
m/z 70	Less than 2% of m/z 69	0.64886	PASS
m/z 127	40 - 60% of m/z 198	41.166	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	7.4268	PASS
m/z 275	10 - 30% of m/z 198	27.504	PASS
m/z 365	1 - 100% of m/z 198	3.671	PASS
m/z 441	0.001 - 100% of m/z 443	85.011	PASS
m/z 442	40 - 100% of m/z 198	84.22	PASS
m/z 443	17 - 23% of m/z 442	20.587	PASS

Form 5

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Lab File ID:	11160901.D	Injection Date:	11/16/09
Instrument ID:	5970	Injection Time:	10:26
Sequence:	9K16007	Lab Sample ID:	9K16007-TUN2

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	52.892	PASS
m/z 68	Less than 2% of m/z 69	0	PASS
m/z 69	Less than 100% of m/z 198	61.946	PASS
m/z 70	Less than 2% of m/z 69	0.5594	PASS
m/z 127	40 - 60% of m/z 198	45.485	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	7.4117	PASS
m/z 275	10 - 30% of m/z 198	24.221	PASS
m/z 365	1 - 100% of m/z 198	3.2496	PASS
m/z 441	0.001 - 100% of m/z 443	83.803	PASS
m/z 442	40 - 100% of m/z 198	60.787	PASS
m/z 443	17 - 23% of m/z 442	20.534	PASS

Form 6
INITIAL CALIBRATION DATA
EPA 8270m

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Calibration: 9102702

SDG: PSK0253
Project: NW Pipe Project
Instrument: 5970
Calibration Date: 06/25/09 11:54

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
2-Fluorobiphenyl	200	1.615479	500	1.448295	1000	1.373829	2000	1.316287	5000	1.255748	10000	1.151353
Bis(2-ethylhexyl)phthalate	200	0.7333522	500	0.7543382	1000	0.9470556	2000	1.023052	5000	0.9709567	10000	0.932603
Butyl benzyl phthalate	200	0.6107493	500	0.6179499	1000	0.7084109	2000	0.7424799	5000	0.7141114	10000	0.6698015
Diethyl phthalate	200	1.455097	500	1.394121	1000	1.338771	2000	1.316841	5000	1.266669	10000	1.184377
Dimethyl phthalate	200	1.353846	500	1.275201	1000	1.188103	2000	1.160045	5000	1.127392	10000	1.040686
Di-n-butyl phthalate	200	1.296024	500	1.28447	1000	1.379909	2000	1.418517	5000	1.32538	10000	1.255707
Di-n-octyl phthalate	200	1.254547	500	1.358659	1000	1.644301	2000	1.83682	5000	1.923756	10000	1.839021
p-Terphenyl-d14	200	0.9685654	500	0.814597	1000	0.8500098	2000	0.815588	5000	0.7336196	10000	0.7125595

Form 6

INITIAL CALIBRATION DATA (Continued)

EPA 8270m

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102702
Instrument: 5970
Calibration Date: 06/25/09 11:54

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2-Fluorobiphenyl	1.360165	11.83518	11.16333	4.251391E-02				*
Bis(2-ethylhexyl)phthalate	0.8935596	13.4475	19.03	1.157318E-02				*
Butyl benzyl phthalate	0.6772505	7.973147	18.12	2.070075E-02				*
Diethyl phthalate	1.325979	7.164973	13	0				*
Dimethyl phthalate	1.190879	9.291319	11.855	4.917379E-02				*
Di-n-butyl phthalate	1.326668	4.649908	15.65	1.151955E-02				*
Di-n-octyl phthalate	1.642851	16.9249	20	0				*
p-Terphenyl-d14	0.8158232	11.22371	17.33	1.939679E-02				*

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270m

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Calibration: 9102702
Laboratory ID: 9F25009-SCV1
Sequence: 9F25009
Standard ID: 9060186

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
Bis(2-ethylhexyl)phthalate	2000	2210	10.7	30.00
Butyl benzyl phthalate	2000	2210	10.5	30.00
Diethyl phthalate	2000	2260	12.9	30.00
Dimethyl phthalate	2000	1680	-16.2	30.00
Di-n-butyl phthalate	2000	2320	16.2	30.00
Di-n-octyl phthalate	2000	2100	5.1	30.00

* Values outside of QC limits

Form 7

CONTINUING CALIBRATION CHECK

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Instrument ID:	5970	Calibration:	9102702
Lab File ID:	11160902.D	Calibration Date:	06/25/09 11:54
Sequence:	9K16007	Injection Date:	11/16/09
Lab Sample ID:	9K16007-CCV1	Injection Time:	10:55

		CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bis(2-ethylhexyl)phthalate	A	1000	1150	0.8935596	1.02963		15.2	30
Butyl benzyl phthalate	A	1000	1200	0.6772505	0.8116879		19.9	30
Diethyl phthalate	A	1000	1170	1.325979	1.554305		17.2	30
Dimethyl phthalate	A	1000	1110	1.190879	1.327521		11.5	30
Di-n-butyl phthalate	A	1000	1160	1.326668	1.537543		15.9	30
Di-n-octyl phthalate	A	1000	1100	1.642851	1.807973		10.1	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Form 8
INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9F25009	Instrument:	5970
Matrix:	Water	Calibration:	9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (9F25009-CAL4)			Lab File ID: 06250901.D			Analyzed: 06/25/09 13:51			
Acenaphthene-d10	76891	12.31	74471	12.31	103	50 - 200	0.0000	+/-0.50	
Chrysene-d12	113369	19.11	106659	19.11	106	50 - 200	0.0000	+/-0.50	
Perylene-d12	103221	21.79	95123	21.79	109	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	124082	14.73	119972	14.73	103	50 - 200	0.0000	+/-0.50	
Cal Standard (9F25009-CAL3)			Lab File ID: 06250902.D			Analyzed: 06/25/09 14:27			
Acenaphthene-d10	74471	12.31	74471	12.31	100	50 - 200	0.0000	+/-0.50	
Chrysene-d12	106659	19.11	106659	19.11	100	50 - 200	0.0000	+/-0.50	
Perylene-d12	95123	21.79	95123	21.79	100	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	119972	14.73	119972	14.73	100	50 - 200	0.0000	+/-0.50	
Cal Standard (9F25009-CAL6)			Lab File ID: 06250903.D			Analyzed: 06/25/09 15:04			
Acenaphthene-d10	77222	12.31	74471	12.31	104	50 - 200	0.0000	+/-0.50	
Chrysene-d12	115036	19.11	106659	19.11	108	50 - 200	0.0000	+/-0.50	
Perylene-d12	98454	21.79	95123	21.79	104	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	124012	14.73	119972	14.73	103	50 - 200	0.0000	+/-0.50	
Cal Standard (9F25009-CAL1)			Lab File ID: 06250904.D			Analyzed: 06/25/09 15:40			
Acenaphthene-d10	74784	12.31	74471	12.31	100	50 - 200	0.0000	+/-0.50	
Chrysene-d12	98872	19.11	106659	19.11	93	50 - 200	0.0000	+/-0.50	
Perylene-d12	84456	21.79	95123	21.79	89	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	116896	14.73	119972	14.73	97	50 - 200	0.0000	+/-0.50	
Cal Standard (9F25009-CAL5)			Lab File ID: 06250905.D			Analyzed: 06/25/09 16:16			
Acenaphthene-d10	89562	12.31	74471	12.31	120	50 - 200	0.0000	+/-0.50	
Chrysene-d12	126753	19.11	106659	19.11	119	50 - 200	0.0000	+/-0.50	
Perylene-d12	139623	21.79	95123	21.79	147	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	143905	14.73	119972	14.73	120	50 - 200	0.0000	+/-0.50	
Cal Standard (9F25009-CAL2)			Lab File ID: 06250906.D			Analyzed: 06/25/09 16:52			
Acenaphthene-d10	65079	12.31	74471	12.31	87	50 - 200	0.0000	+/-0.50	
Chrysene-d12	91087	19.11	106659	19.11	85	50 - 200	0.0000	+/-0.50	
Perylene-d12	96219	21.79	95123	21.79	101	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	106627	14.73	119972	14.73	89	50 - 200	0.0000	+/-0.50	
Secondary Cal Check (9F25009-SCV1)			Lab File ID: 06250907.D			Analyzed: 06/25/09 17:28			
Acenaphthene-d10	91944	12.31	74471	12.31	123	50 - 200	0.0000	+/-0.50	
Chrysene-d12	131936	19.11	106659	19.11	124	50 - 200	0.0000	+/-0.50	
Perylene-d12	114397	21.79	95123	21.79	120	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	142016	14.73	119972	14.73	118	50 - 200	0.0000	+/-0.50	

Form 8
INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8270m

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Sequence: 9K16007
Instrument: 5970
Matrix: Water
Calibration: 9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (9K16007-CCV1)			Lab File ID: 11160902.D			Analyzed: 11/16/09 10:55			
Acenaphthene-d10	68130	11.79				50 - 200		+/-0.50	
Chrysene-d12	92061	18.55				50 - 200		+/-0.50	
Perylene-d12	99282	20.99				50 - 200		+/-0.50	
Phenanthrene-d10	106838	14.2				50 - 200		+/-0.50	
Blank (9110309-BLK1)			Lab File ID: 11160903.D			Analyzed: 11/16/09 11:30			
Acenaphthene-d10	70795	11.8	68130	11.79	104	50 - 200	0.0100	+/-0.50	
Chrysene-d12	92951	18.55	92061	18.55	101	50 - 200	0.0000	+/-0.50	
Perylene-d12	98243	20.99	99282	20.99	99	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	113232	14.2	106838	14.2	106	50 - 200	0.0000	+/-0.50	
LCS (9110309-BS1)			Lab File ID: 11160905.D			Analyzed: 11/16/09 12:42			
Acenaphthene-d10	76978	11.79	68130	11.79	113	50 - 200	0.0000	+/-0.50	
Chrysene-d12	115970	18.55	92061	18.55	126	50 - 200	0.0000	+/-0.50	
Perylene-d12	112972	20.99	99282	20.99	114	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	121444	14.2	106838	14.2	114	50 - 200	0.0000	+/-0.50	
Matrix Spike (9110309-MS1)			Lab File ID: 11160906.D			Analyzed: 11/16/09 13:17			
Acenaphthene-d10	62494	11.8	68130	11.79	92	50 - 200	0.0100	+/-0.50	
Chrysene-d12	118199	18.56	92061	18.55	128	50 - 200	0.0100	+/-0.50	
Perylene-d12	110220	20.99	99282	20.99	111	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	100017	14.2	106838	14.2	94	50 - 200	0.0000	+/-0.50	
Matrix Spike Dup (9110309-MSD1)			Lab File ID: 11160907.D			Analyzed: 11/16/09 13:53			
Acenaphthene-d10	79285	11.8	68130	11.79	116	50 - 200	0.0100	+/-0.50	
Chrysene-d12	118580	18.56	92061	18.55	129	50 - 200	0.0100	+/-0.50	
Perylene-d12	108994	20.99	99282	20.99	110	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	130689	14.2	106838	14.2	122	50 - 200	0.0000	+/-0.50	
DS005-110709 (PSK0253-01)			Lab File ID: 11160911.D			Analyzed: 11/16/09 16:16			
Acenaphthene-d10	66092	11.8	68130	11.79	97	50 - 200	0.0100	+/-0.50	
Chrysene-d12	96779	18.56	92061	18.55	105	50 - 200	0.0100	+/-0.50	
Perylene-d12	127075	20.99	99282	20.99	128	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	110694	14.2	106838	14.2	104	50 - 200	0.0000	+/-0.50	
DS012-110709 (PSK0253-02)			Lab File ID: 11160912.D			Analyzed: 11/16/09 16:52			
Acenaphthene-d10	87498	11.8	68130	11.79	128	50 - 200	0.0100	+/-0.50	
Chrysene-d12	132039	18.56	92061	18.55	143	50 - 200	0.0100	+/-0.50	
Perylene-d12	130678	20.99	99282	20.99	132	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	146570	14.21	106838	14.2	137	50 - 200	0.0100	+/-0.50	

Form 8

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16007	Instrument:	5970
Matrix:	Water	Calibration:	9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
DS120-110709 (PSK0253-07)			Lab File ID: 11160913.D			Analyzed: 11/16/09 17:28			
Acenaphthene-d10	67214	11.8	68130	11.79	99	50 - 200	0.0100	+/-0.50	
Chrysene-d12	123134	18.56	92061	18.55	134	50 - 200	0.0100	+/-0.50	
Perylene-d12	123225	20.99	99282	20.99	124	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	107959	14.21	106838	14.2	101	50 - 200	0.0100	+/-0.50	
DS223-110709 (PSK0253-10)			Lab File ID: 11160914.D			Analyzed: 11/16/09 18:03			
Acenaphthene-d10	62879	11.8	68130	11.79	92	50 - 200	0.0100	+/-0.50	
Chrysene-d12	95578	18.56	92061	18.55	104	50 - 200	0.0100	+/-0.50	
Perylene-d12	123050	20.99	99282	20.99	124	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	105387	14.21	106838	14.2	99	50 - 200	0.0100	+/-0.50	
DS221-110709 (PSK0253-11)			Lab File ID: 11160915.D			Analyzed: 11/16/09 18:39			
Acenaphthene-d10	87063	11.8	68130	11.79	128	50 - 200	0.0100	+/-0.50	
Chrysene-d12	131721	18.56	92061	18.55	143	50 - 200	0.0100	+/-0.50	
Perylene-d12	133795	20.99	99282	20.99	135	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	146392	14.21	106838	14.2	137	50 - 200	0.0100	+/-0.50	

INITIAL CALIBRATION STANDARDS

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9F25009	Instrument:	5970
Calibration:	9102702		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
9050069	50ppm DFTPP Soln	9F25009-TUN1	06250900.D	06/25/09 13:22
9060183	2000 ppb SIM Phthalate	9F25009-CAL4	06250901.D	06/25/09 13:51
9060182	1000 ppb SIM Phthalate	9F25009-CAL3	06250902.D	06/25/09 14:27
9060185	10000 ppb SIM Phthalate	9F25009-CAL6	06250903.D	06/25/09 15:04
9060180	200 ppb SIM Phthalate	9F25009-CAL1	06250904.D	06/25/09 15:40
9060184	5000 ppb SIM Phthalate	9F25009-CAL5	06250905.D	06/25/09 16:16
9060181	500 ppb SIM Phthalate	9F25009-CAL2	06250906.D	06/25/09 16:52
9060186	2,000 ppb SIM PAH/PCP/Phthalate SCV	9F25009-SCV1	06250907.D	06/25/09 17:28

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270m

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Sequence: 9F25009

SDG: PSK0253
Project: NW Pipe Project
Instrument: 5970
Calibration: 9102702

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9F25009-TUN1	06250900.D	06/25/09 13:22
Cal Standard	9F25009-CAL4	06250901.D	06/25/09 13:51
Cal Standard	9F25009-CAL3	06250902.D	06/25/09 14:27
Cal Standard	9F25009-CAL6	06250903.D	06/25/09 15:04
Cal Standard	9F25009-CAL1	06250904.D	06/25/09 15:40
Cal Standard	9F25009-CAL5	06250905.D	06/25/09 16:16
Cal Standard	9F25009-CAL2	06250906.D	06/25/09 16:52
Secondary Cal Check	9F25009-SCV1	06250907.D	06/25/09 17:28

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270m

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Sequence:	9K16007	Instrument:	5970
		Calibration:	9102702

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9K16007-TUN2	11160901.D	11/16/09 10:26
Calibration Check	9K16007-CCV1	11160902.D	11/16/09 10:55
Blank	9110309-BLK1	11160903.D	11/16/09 11:30
LCS	9110309-BS1	11160905.D	11/16/09 12:42
DS012-110709	9110309-MS1	11160906.D	11/16/09 13:17
DS012-110709	9110309-MSD1	11160907.D	11/16/09 13:53
DS005-110709	PSK0253-01	11160911.D	11/16/09 16:16
DS012-110709	PSK0253-02	11160912.D	11/16/09 16:52
DS120-110709	PSK0253-07	11160913.D	11/16/09 17:28
DS223-110709	PSK0253-10	11160914.D	11/16/09 18:03
DS221-110709	PSK0253-11	11160915.D	11/16/09 18:39

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Semi-Volatile GCMS Analysis QCAR

Work Order #: PSK0253 Batch #: 9110309 Test Code: 8270SIM Phthalates

Primary Review Date/Initial: DT 11/18/09

Secondary Review Date/Initial: [signature] 11/18/9

☑ Check here if data package is needed level III DPKG

Sample Integrity

- ✓ Samples extracted within hold time
- ✓ All work is completed according to work order
- ✓ Special instructions are checked

Data Analysis

- ✓ Proper daily calibration file used for quantitation
- ✓ Proper dilution factors/multipliers are used
- ✓ Daily calibration and tuning criteria are within acceptable limits
- ✓ Internal standard areas and retention time are within limits
- ✓ Surrogates are within limits (or properly flagged if out)
- ✓ All prep and analysis bench sheets are fully completed
- ✓ Concentrations are within calibration range
- ✓ All chromatograms are included and labeled
- ✓ Reported results are within 12 hours of valid DFTPP tune

Reporting

- ✓ Method blank is non-detected and reported from same prep batch
- ✓ Reporting limits are correct
- ✓ Proper units and significant figures are correct
- ✓ Percent solids are included (if applicable)
- ✓ Extraction, analysis (and TCLP if applicable) dates and times are correct
- ✓ Control limits are met for spike recoveries, proper comments included
- ✓ Proper QC reports are included
- ✓ Necessary comments are included
- ✓ Analytes and QC are updated to "analyzed" and locked
- ✓ Analytes and QC are updated to "reviewed"

Comments: _____

9405 SW Nimbus Avenue Beaverton, OR 97008 tel 503.906.9200 fax 503.906.9210 www.testamericainc.com

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GC/MS Semivolatile Organic Compounds

EPA 8270m SIM – Phthalates
Preparation Logs

9405 SW Nimbus Avenue Beaverton, OR 97008 **tel** 503.906.9200 **fax** 503.906.9210 **www.testamericainc.com**

Form 4

PREPARATION BATCH SUMMARY

EPA 8270m

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110309 Batch Matrix: Water Preparation: 3520B Liq-Liq

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110309-BLK1	11160903.D	11/10/09 13:30	
LCS	9110309-BS1	11160905.D	11/10/09 13:30	
DS012-110709	9110309-MS1	11160906.D	11/10/09 13:30	
DS012-110709	9110309-MSD1	11160907.D	11/10/09 13:30	
DS005-110709	PSK0253-01	11160911.D	11/10/09 13:30	level 3 dp.
DS012-110709	PSK0253-02	11160912.D	11/10/09 13:30	level 3 dp.:MS/MSD
DS120-110709	PSK0253-07	11160913.D	11/10/09 13:30	level 3 dp.
DS223-110709	PSK0253-10	11160914.D	11/10/09 13:30	level 3 dp.
DS221-110709	PSK0253-11	11160915.D	11/10/09 13:30	level 3 dp.

QCAR - Organic Prep, Semi-Volatiles

Batch# 9110309 Prep Method/Analysis 3520 8270 Matrix Water

Sample Integrity Date/Initials 11/10/09 TW

Is the method appropriate for the sample?	Yes ✓ No ___
Is there adequate amount of sample?	Yes ✓ No ___
Are the sample containers appropriate?	Yes ✓ No ___
Are the samples within hold time? If not fill out a CAR.	Yes ✓ No ___
Do sample ID's match the work order?	Yes ✓ No ___
Is sample available for MS/MSD?	Yes ✓ No ___

Extraction Date/Initials 11/10/09 TW

Was all glassware triple rinsed with solvent?	Yes ✓ No ___
Was the "whole bottle extraction procedure" used if water?	Yes ✓ No ___

Concentration Final Solvent: DCM

Samples transferred into KDs (date/init.) 11/12/09

Macro conc. (date/init./temp.) 11/12/09 AB 70°C ± 2°C Micro conc. (date/init.) 11/12/09 AB

If applicable:

- ☐ GPC
- ☐ OPP Soil: poured over Na_2SO_4 (date/init.) ___
  transferred into KDs (date/init.) ___

Macro conc. (date/init./temp.) ___ Micro conc. (date/init.) ___

Sample Vialing Date/Initials 11/12/09 AB

Are the samples being brought to their normal final volume?	Yes ✓ No ___
Is the solvent level indicated on the ALS vials?	Yes ✓ No ___
Was the SOP followed with no deviation? If no, explain below.	Yes ✓ No ___
Is the GPC or TCLP log attached (if applicable)?	Yes ___ No NA
Is the paperwork complete, correct and undated in the computer?	Yes ✓ No ___

Comments: ___

PREPARATION BENCH SHEET

Batch 9110309

Printed: 11/10/2009 11:11:49AM

Prep method: 3520B Liq-Liq

TestAmerica Portland

Matrix: Water

Surrogate 1: 9080045 Surrogate 2: 9080267

Lab Number	Analysis	Prepared	Initial (ml)	Init	Final (ml)	Init	Spike ID	Spike Amt (uL)	Init	Source ID	Surr 1 (uL)	Init	Surr 2 (uL)	Init	pH	Extraction Comments
110309-BLK1	QC	11/10/09 11:08	1000	JW	1	AG					50		5	JW		
110309-BS1	QC	11/10/09 11:08	1000		1		9080162	250	JW		50		5			
"	(Second Spike)	"	"		"		9080007	20			"		"			
110309-MS1	QC	11/10/09 11:08	1000		1		9080162	250		253-7	50		5			
"	(Second Spike)	"	"		"		9080007	20		1	"		"			
110309-MSD1	QC	11/10/09 11:08	1000		1		9080162	250		253-7	50		5			
"	(Second Spike)	"	"		"		9080007	20		1	"		"			
PSK0253-01 A	8270 SIM PAH	11/10/09 11:08	1000 50	50	1						50		5		5	level 3 dp.
PSK0253-01 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0253-02 C	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.:MS/MSD
PSK0253-02 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.:MS/MSD
PSK0253-07 A	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.
PSK0253-07 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0253-10 A	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.
PSK0253-10 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0253-11 A	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			level 3 dp.
PSK0253-11 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			level 3 dp.
PSK0264-01 D	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			
PSK0264-01 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			
PSK0264-02 C	8270 SIM PAH	11/10/09 11:08	1000 50		1						50		5			
PSK0264-02 I	8270SIM Phthalates	11/10/09 11:08	1000 1		1						50		5			

Batch Comments:
DCM# 9100014
GLASSWOOL# 00509001
Na2SO4# ~~083054~~ 083136
START: 11/10/09 1330 JW
STOP: 11/11/09 0745 CD

11/23/09

Spiking Witnessed By 11/10/09 Date

Preparation Reviewed By 11/12/09 Date

Metals

ANALYSES DATA PACKAGE COVER PAGE

EPA 6010B

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project

Client Sample Id:	Lab Sample Id:
DS005-110709	PSK0253-01
DS012-110709	PSK0253-02
DS017--110709	PSK0253-03
DS006--110709	PSK0253-04
DS224--110709	PSK0253-05
DS225--110709	PSK0253-06
DS120-110709	PSK0253-07
DS120-110709-1	PSK0253-08
DS117--110709	PSK0253-09
DS223-110709	PSK0253-10
DS221-110709	PSK0253-11

ICP Metals

Quality Control Summaries

Laboratory Blank Report

Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results
TestAmerica Portland

Batch 9110349

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Water	EPA 6010B	9110349-BLK1	Blank	1x	111109-01-014	11/11/09 13:14	ICP
Water	EPA 6010B	9110349-BS1	LCS	1x	111109-01-015	11/11/09 13:29	ICP
Water	EPA 6010B	9110349-DUP1	Duplicate	1x	111109-01-020	11/11/09 14:00	ICP
Water	EPA 6010B	9110349-MS1	Matrix Spike	1x	111109-01-021	11/11/09 14:06	ICP
Water	EPA 6010B	9110349-MS2	Matrix Spike	1x	111109-01-031	11/11/09 15:09	ICP
Water	EPA 6010B	PSK0253-01	DS005-110709	1x	111109-01-018	11/11/09 13:48	ICP
Water	EPA 6010B	PSK0253-02	DS012-110709	1x	111109-01-019	11/11/09 13:54	ICP
Water	EPA 6010B	PSK0253-03	DS017--110709	1x	111109-01-022	11/11/09 14:13	ICP
Water	EPA 6010B	PSK0253-04	DS006--110709	1x	111109-01-023	11/11/09 14:19	ICP
Water	EPA 6010B	PSK0253-05	DS224--110709	1x	111109-01-026	11/11/09 14:38	ICP
Water	EPA 6010B	PSK0253-06	DS225--110709	1x	111109-01-027	11/11/09 14:44	ICP
Water	EPA 6010B	PSK0253-07	DS120-110709	1x	111109-01-028	11/11/09 14:50	ICP
Water	EPA 6010B	PSK0253-08	DS120-110709-1	1x	111109-01-029	11/11/09 14:57	ICP
Water	EPA 6010B	PSK0253-09	DS117--110709	1x	111109-01-030	11/11/09 15:03	ICP
Water	EPA 6010B	PSK0253-10	DS223-110709	1x	111109-01-032	11/11/09 15:15	ICP
Water	EPA 6010B	PSK0253-11	DS221-110709	1x	111109-01-033	11/11/09 15:22	ICP

Form 3
LCS / LCS DUPLICATE RECOVERY
EPA 6010B

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9100170 9100171
Batch:	9110349	Laboratory ID:	9110349-BS1
Preparation:	EPA 200/3005	Initial/Final:	50 ml / 50 ml

COMPOUND	SPIKE ADDED (mg/l)	LCS CONCENTRATION (mg/l)	LCS % REC. #	QC LIMITS REC.
Aluminum	5.00	5.27	105	85 - 115
Antimony	1.00	1.01	101	85 - 115
Arsenic	1.00	0.994	99.4	85 - 115
Cadmium	0.500	0.508	102	85 - 115
Chromium	1.00	1.01	101	85 - 115
Copper	1.00	1.03	103	85 - 115
Lead	1.00	1.02	102	85 - 115
Nickel	1.00	1.02	102	85 - 115
Selenium	1.00	1.01	101	85 - 115
Silver	0.500	0.503	101	85 - 115
Zinc	1.00	1.02	102	85 - 115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

DUPLICATES

EPA 6010B

DS012-110709

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Matrix: Water
Batch: 9110349
Preparation: EPA 200/3005
Source Sample Name: DS012-110709

SDG: PSK0253
Project: NW Pipe Project
Laboratory ID: 9110349-DUP1
Lab Source ID: PSK0253-02
Initial/Final: 50 ml / 50 ml
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/l)	C	DUPLICATE CONCENTRATION (mg/l)	C	RPD %	Q	METHOD
Aluminum	20	ND		ND				EPA 6010B
Antimony	20	ND		ND				EPA 6010B
Arsenic	20	ND		ND				EPA 6010B
Cadmium	20	ND		0.000342				EPA 6010B
Chromium	20	ND		ND				EPA 6010B
Copper	20	ND		ND				EPA 6010B
Lead	20	ND		ND				EPA 6010B
Nickel	20	ND		ND				EPA 6010B
Selenium	20	ND		ND				EPA 6010B
Silver	20	ND		ND				EPA 6010B
Zinc	20	0.0617		0.0633		2.46		EPA 6010B

* Values outside of QC limits

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010B

DS012-110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9100170 9100171
Batch:	9110349	Laboratory ID:	9110349-MS1
Preparation:	EPA 200/3005	Initial/Final:	50 ml / 50 ml

Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (mg/l)	SAMPLE CONCENTRATION (mg/l)	MS CONCENTRATION (mg/l)	MS % REC. #	QC LIMITS REC.
Aluminum	5.00	ND	5.34	107	75 - 125
Antimony	1.00	ND	1.01	101	75 - 125
Arsenic	1.00	ND	1.01	101	75 - 125
Cadmium	0.500	ND	0.515	103	75 - 125
Chromium	1.00	ND	1.02	102	75 - 125
Copper	1.00	ND	1.04	104	75 - 125
Lead	1.00	ND	1.03	103	70 - 130
Nickel	1.00	ND	1.03	103	75 - 125
Selenium	1.00	ND	1.01	101	75 - 125
Silver	0.500	ND	0.510	102	75 - 125
Zinc	1.00	0.0617	1.09	103	75 - 125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010B

DS117--110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9100170 9100171
Batch:	9110349	Laboratory ID:	9110349-MS2
Preparation:	EPA 200/3005	Initial/Final:	50 ml / 50 ml

Source Sample Name: DS117--110709

COMPOUND	SPIKE ADDED (mg/l)	SAMPLE CONCENTRATION (mg/l)	MS CONCENTRATION (mg/l)	MS % REC. #	QC LIMITS REC.
Aluminum	5.00	ND	5.17	103	75 - 125
Antimony	1.00	ND	0.987	98.7	75 - 125
Arsenic	1.00	ND	0.969	96.9	75 - 125
Cadmium	0.500	ND	0.496	99.2	75 - 125
Chromium	1.00	ND	0.988	98.8	75 - 125
Copper	1.00	ND	1.01	101	75 - 125
Lead	1.00	ND	0.999	99.9	70 - 130
Nickel	1.00	ND	0.994	99.4	75 - 125
Selenium	1.00	ND	0.977	97.7	75 - 125
Silver	0.500	ND	0.495	99.1	75 - 125
Zinc	1.00	0.818	1.82	100	75 - 125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

EPA 6010B

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** ICP

Analyte	MDL	MRL	Units
Aluminum	0.0120	0.100	mg/l
Antimony	0.00970	0.100	mg/l
Arsenic	0.00940	0.0500	mg/l
Cadmium	0.000300	0.0100	mg/l
Chromium	0.00120	0.0100	mg/l
Copper	0.00500	0.0200	mg/l
Lead	0.00370	0.0500	mg/l
Nickel	0.00110	0.0500	mg/l
Selenium	0.00900	0.0500	mg/l
Silver	0.00420	0.0200	mg/l
Zinc	0.00310	0.0200	mg/l

Total Metals Per EPA Method 6010B

Continuing Calibration Verification Summary

Work Order: PSK0253 **Sequence:** 111109

ICV1 11/11/2009 12:36			
Analyte	**Result**	**Expected**	**Percent Recovery**
Ag 328.068	0.513	0.5	103
Al 237.312	10.36	10	104
As 188.980	2.053	2	103
Cd 214.439	2.077	2	104
Cr 267.716	4.138	4	103
Cu 327.395	4.229	4	106
Ni 231.604	4.198	4	105
Pb 220.353	2.111	2	106
Sb 217.582	1.013	1	101
Se 196.026	2.066	2	103
Zn 206.200	4.161	4	104

CCV 11/11/2009 14:25			
Analyte	**Result**	**Expected**	**Percent Recovery**
Ag 328.068	0.501	0.5	100
Al 237.312	10.25	10	102
As 188.980	1.99	2	99.5
Cd 214.439	0.504	0.5	101
Cr 267.716	1.006	1	101
Cu 327.395	1.036	1	104
Ni 231.604	1.025	1	102
Pb 220.353	0.516	0.5	103
Sb 217.582	1.022	1	102
Se 196.026	0.496	0.5	99.2
Zn 206.200	1.005	1	100

Acceptance Criteria: ± 10% for ICV / CCV

Prepared 11/25/2009 2:03:13 PM

Total Metals Per EPA Method 6010B

Continuing Calibration Verification Summary

Work Order: PSK0253 **Sequence:** 111109

Analyte	CCV 11/11/2009 15:40 Result	Expected	Percent Recovery
Ag 328.068	0.504	0.5	101
Al 237.312	10.35	10	103
As 188.980	2.008	2	100
Cd 214.439	0.509	0.5	102
Cr 267.716	1.013	1	101
Cu 327.395	1.043	1	104
Ni 231.604	1.034	1	103
Pb 220.353	0.52	0.5	104
Sb 217.582	1.038	1	104
Se 196.026	0.505	0.5	101
Zn 206.200	1.017	1	102

Acceptance Criteria: ± 10% for ICV / CCV

Prepared 11/25/2009 2:03:13 PM

Total Metals Per EPA Method 6010B

Continuing Calibration Blank Summary

Work Order: PSK0253 **Sequence:** 111109

CCB 11/11/2009 12:55			
Analyte	**Result**	**MRL**	**Percent Recovery**
Ag 328.068	0.00071407	0.02	ND
Al 237.312	0.00324038	0.1	ND
As 188.980	0.00425732	0.05	ND
Cd 214.439	7.4740E-05	0.01	ND
Cr 267.716	0.00027910	0.01	ND
Cu 327.395	0.00199374	0.01	ND
Ni 231.604	0.00029418	0.05	ND
Pb 220.353	0.00053552	0.05	ND
Sb 217.582	-0.0070706	0.1	ND
Se 196.026	0.00508664	0.05	ND
Zn 206.200	-0.0001699	0.02	ND

CCB 11/11/2009 14:31			
Analyte	**Result**	**MRL**	**Percent Recovery**
Ag 328.068	0.00013595	0.02	ND
Al 237.312	0.00423542	0.1	ND
As 188.980	0.00333083	0.05	ND
Cd 214.439	-5.754E-05	0.01	ND
Cr 267.716	0.00013028	0.01	ND
Cu 327.395	0.00295245	0.01	ND
Ni 231.604	0.000122	0.05	ND
Pb 220.353	0.00027743	0.05	ND
Sb 217.582	-0.0026679	0.1	ND
Se 196.026	0.01084353	0.05	ND
Zn 206.200	6.7693E-05	0.02	ND

Acceptance Criteria: < 1/2 MRL for CCB

Prepared 11/25/2009 2:01:38 PM

Total Metals Per EPA Method 6010B

Continuing Calibration Blank Summary

Work Order: PSK0253 **Sequence:** 111109

Analyte	CCB 11/11/2009 15:47 Result	MRL	Percent Recovery
Ag 328.068	0.00063673	0.02	ND
Al 237.312	0.00118403	0.1	ND
As 188.980	-0.0023568	0.05	ND
Cd 214.439	2.9249E-06	0.01	ND
Cr 267.716	3.1386E-05	0.01	ND
Cu 327.395	0.00131020	0.01	ND
Ni 231.604	0.00014401	0.05	ND
Pb 220.353	-0.0001737	0.05	ND
Sb 217.582	0.0003267	0.1	ND
Se 196.026	0.00516792	0.05	ND
Zn 206.200	0.00032936	0.02	ND

Acceptance Criteria: < 1/2 MRL for CCB

Prepared 11/25/2009 2:01:38 PM

Total Metals Per EPA Method 6010B

Interference Check Standard

Work Order: PSK0253 **Sequence:** 111109

Analyte	Result	Expected	Percent Recovery
	ICS A		
	11/11/2009 13:01		
Ag 328.068	0	NA	NA
Al 226.346	487.4	500	97.5
Al 237.312	490.7	500	98.1
As 188.980	0	NA	NA
B 182.577	0.097	NA	NA
B 249.678	0.108	NA	NA
Ca 210.324	454.2	500	90.8
Ca 315.887	424.8	500	85
Cd 214.439	0.002	NA	NA
Cr 267.716	0	NA	NA
Cu 327.395	0.001	NA	NA
Fe 238.204	175.8	200	87.9
Fe 259.940	168.1	200	84
Fe 273.358	195.1	200	97.6
Mg 202.582	454.4	500	90.9
Mg 279.800	456.6	500	91.3
Mg 293.651	454.3	500	90.9
Mn 191.446	0.012	NA	NA
Mn 294.921	0.123	NA	NA
Ni 231.604	0	NA	NA
Pb 220.353	0.001	NA	NA
Sb 217.582	-0.012	NA	NA
Se 196.026	-0.001	NA	NA
Zn 206.200	0.01	NA	NA

Acceptance Criteria: < 120% for ICS

Prepared 11/25/2009 1:59:34 PM

Total Metals Per EPA Method 6010B

Interference Check Standard

Work Order: PSK0253 **Sequence:** 111109

Analyte	Result	Expected	Percent Recovery
	ICS AB		
	11/11/2009 13:08		
Ag 328.068	0.984	1	98.4
Al 226.346	493.9	500	98.8
Al 237.312	493.7	500	98.7
As 188.980	-0.002	NA	NA
B 182.577	0.079	NA	NA
B 249.678	0.082	NA	NA
Ca 210.324	457	500	91.4
Ca 315.887	428.3	500	85.7
Cd 214.439	0.882	1	88.2
Cr 267.716	0.452	0.5	90.4
Cu 327.395	0.457	0.5	91.4
Fe 238.204	178	200	89
Fe 259.940	169.6	200	84.8
Fe 273.358	196.5	200	98.2
Mg 202.582	456	500	91.2
Mg 279.800	460.9	500	92.2
Mg 293.651	458.7	500	91.7
Mn 191.446	0.428	0.5	85.6
Mn 294.921	0.557	0.5	111
Ni 231.604	0.881	1	88.1
Pb 220.353	0.866	1	86.6
Sb 217.582	-0.012	NA	NA
Se 196.026	-0.008	NA	NA
Zn 206.200	0.886	1	88.6

Acceptance Criteria: < 120% for ICS

Prepared 11/25/2009 1:59:41 PM

Workorder: PSK0253
Instrument: ICP
Sequence: 111109

No Linear Range Standards were analyzed with this sequence.

Analyte concentrations which are greater than the high point of the calibration curve are not reported.

Workorder: PSK0253
Instrument: ICP
Sequence: 111109

The ICP Interelement Correction Factor Summary for the specified sequence is not available due to the instrumental software package

11/111/09

Instrument: ICP
Sequence: 111109

11/3/2009 9:50:48 AM	Worksheet operations log deleted
11/11/2009 11:41:54 AM	Analysis started.
11/11/2009 11:46:20 AM	**Measured Blank**
11/11/2009 11:52:39 AM	**Measured Standard 1**
11/11/2009 11:58:59 AM	**Measured Standard 2**
11/11/2009 12:05:15 PM	**Measured Standard 3**
11/11/2009 12:11:32 PM	**Measured Standard 4**
11/11/2009 12:17:48 PM	**Measured Standard 5**
11/11/2009 12:24:05 PM	**Measured Standard 6**
11/11/2009 12:30:24 PM	**Measured Standard 7**
11/11/2009 12:32:16 PM	Calibration(Reslope) failed [Na 589.592]: Maximum error has been exceeded.
11/11/2009 12:32:16 PM	Calibration(Reslope) failed [Bi 223.061]: Correlation coefficient limit exceeded.
11/11/2009 12:32:16 PM	Calibration(Reslope) failed [Au 267.594]: Correlation coefficient limit exceeded.
11/11/2009 12:32:16 PM	Calibration(Reslope) failed [Au 267.594]: Correlation coefficient limit exceeded.
11/11/2009 12:32:16 PM	Calibration(Reslope) failed [Au 242.794]: Maximum error has been exceeded.
11/11/2009 12:32:16 PM	Calibration(Reslope) failed [Au 267.594]: Correlation coefficient limit exceeded.
11/11/2009 12:32:16 PM	Calibration(Reslope) failed [S 181.972]: Correlation coefficient limit exceeded.
11/11/2009 12:32:16 PM	Continuing in emission.
11/11/2009 12:36:42 PM	**Measured Sequence-ICV**
11/11/2009 12:38:33 PM	QCP test failed.
11/11/2009 12:38:33 PM	QCP test failure action is to flag and continue.
11/11/2009 12:38:36 PM	Immediate stop of worksheet run requested.
11/11/2009 12:38:53 PM	Analysis stopped by user.
11/11/2009 12:39:27 PM	QCP test failed.
11/11/2009 12:39:56 PM	QCP test failed.
11/11/2009 12:40:04 PM	QCP test failed.
11/11/2009 12:40:09 PM	QCP test failed.
11/11/2009 12:40:23 PM	QCP test failed.
11/11/2009 12:40:35 PM	QCP test failed.
11/11/2009 12:40:55 PM	QCP test failed.
11/11/2009 12:41:09 PM	QCP test failed.
11/11/2009 12:41:18 PM	QCP test failed.
11/11/2009 12:41:49 PM	QCP test failed.
11/11/2009 12:42:16 PM	QCP test failed.
11/11/2009 12:42:40 PM	QCP test failed.
11/11/2009 12:43:01 PM	QCP test failed.
11/11/2009 12:43:15 PM	QCP test failed.
11/11/2009 12:43:29 PM	QCP test failed.
11/11/2009 12:43:58 PM	QCP test failed.
11/11/2009 12:44:07 PM	QCP test failed.
11/11/2009 12:44:54 PM	Analysis started.
11/11/2009 12:49:20 PM	**Measured Sequence-ICV2**
11/11/2009 12:51:11 PM	QCP test failed.
11/11/2009 12:51:11 PM	QCP test failure action is to flag and continue.
11/11/2009 12:55:35 PM	**Measured Sequence-CCB**
11/11/2009 12:57:26 PM	QCP test failed.
11/11/2009 12:57:26 PM	QCP test failure action is to flag and continue.
11/11/2009 1:01:50 PM	**Measured Sequence-IFA**
11/11/2009 1:03:41 PM	QCP test passed.
11/11/2009 1:08:06 PM	**Measured Sequence-IFB**
11/11/2009 1:09:57 PM	QCP test failed.
11/11/2009 1:09:57 PM	QCP test failure action is to flag and continue.
11/11/2009 1:14:53 PM	Request to stop the worksheet run after completing this solution.
11/11/2009 1:14:22 PM	**Measured Sample 1**
11/11/2009 1:24:51 PM	Analysis started.
11/11/2009 1:29:16 PM	**Measured Sample 2**
11/11/2009 1:35:32 PM	**Measured Sample 3**
11/11/2009 1:41:48 PM	**Measured Sample 4**
11/11/2009 1:48:03 PM	**Measured Sample 5**
11/11/2009 1:54:19 PM	**Measured Sample 6**
11/11/2009 2:00:36 PM	**Measured Sample 7**
11/11/2009 2:06:52 PM	**Measured Sample 8**
11/11/2009 2:13:08 PM	**Measured Sample 9**
11/11/2009 2:19:25 PM	**Measured Sample 10**
11/11/2009 2:25:41 PM	**Measured Sequence-CCV**
11/11/2009 2:27:33 PM	QCP test failed.
11/11/2009 2:27:33 PM	QCP test failure action is to flag and continue.
11/11/2009 2:31:57 PM	**Measured Sequence-CCB**
11/11/2009 2:33:49 PM	QCP test failed.
11/11/2009 2:33:49 PM	QCP test failure action is to flag and continue.
11/11/2009 2:38:13 PM	**Measured Sample 11**
11/11/2009 2:44:30 PM	**Measured Sample 12**
11/11/2009 2:50:46 PM	**Measured Sample 13**
11/11/2009 2:57:02 PM	**Measured Sample 14**
11/11/2009 3:03:17 PM	**Measured Sample 15**
11/11/2009 3:09:32 PM	**Measured Sample 16**
11/11/2009 3:15:47 PM	**Measured Sample 17**
11/11/2009 3:22:03 PM	**Measured Sample 18**
11/11/2009 3:28:19 PM	**Measured Sample 19**
11/11/2009 3:34:35 PM	**Measured Sample 20**
11/11/2009 3:40:52 PM	**Measured Sequence-CCV**
11/11/2009 3:42:44 PM	QCP test failed.
11/11/2009 3:42:44 PM	QCP test failure action is to flag and continue.
11/11/2009 3:47:10 PM	**Measured Sequence-CCB**
11/11/2009 3:49:02 PM	QCP test failed.
11/11/2009 3:49:02 PM	QCP test failure action is to flag and continue.
11/11/2009 3:53:29 PM	**Measured Sample 21**
11/11/2009 3:59:45 PM	**Measured Sample 22**
11/11/2009 4:06:01 PM	**Measured Sample 23**

11/11/2009 4:12:17 PM	**Measured Sample 24**
11/11/2009 4:18:33 PM	**Measured Sample 25**
11/11/2009 4:24:49 PM	**Measured Sample 26**
11/11/2009 4:31:06 PM	**Measured Sample 27**
11/11/2009 4:37:23 PM	**Measured Sample 28**
11/11/2009 4:43:40 PM	**Measured Sample 29**
11/11/2009 4:49:56 PM	**Measured Sample 30**
11/11/2009 4:56:13 PM	**Measured Sequence-CCV**
11/11/2009 4:58:05 PM	QCP test failed.
11/11/2009 4:58:05 PM	QCP test failure action is to flag and continue.
11/11/2009 5:02:31 PM	**Measured Sequence-CCB**
11/11/2009 5:04:22 PM	QCP test failed.
11/11/2009 5:04:22 PM	QCP test failure action is to flag and continue.
11/11/2009 5:08:48 PM	**Measured Sample 31**
11/11/2009 5:15:04 PM	**Measured Sample 32**
11/11/2009 5:21:20 PM	**Measured Sample 33**
11/11/2009 5:27:37 PM	**Measured Sample 34**
11/11/2009 5:33:53 PM	**Measured Sample 35**
11/11/2009 5:40:10 PM	**Measured Sample 36**
11/11/2009 5:46:27 PM	**Measured Sample 37**
11/11/2009 5:52:44 PM	**Measured Sample 38**
11/11/2009 5:59:01 PM	**Measured Sample 39**
11/11/2009 6:05:17 PM	**Measured Sample 40**
11/11/2009 6:11:34 PM	**Measured Sequence-CCV**
11/11/2009 6:13:25 PM	QCP test failed.
11/11/2009 6:13:25 PM	QCP test failure action is to flag and continue.
11/11/2009 6:17:52 PM	**Measured Sequence-CCB**
11/11/2009 6:19:43 PM	QCP test failed.
11/11/2009 6:19:43 PM	QCP test failure action is to flag and continue.
11/11/2009 6:24:08 PM	**Measured Sample 41**
11/11/2009 6:30:25 PM	**Measured Sample 42**
11/11/2009 6:36:41 PM	**Measured Sample 43**
11/11/2009 6:42:58 PM	**Measured Sample 44**
11/11/2009 6:49:15 PM	**Measured Sequence-CCV**
11/11/2009 6:51:07 PM	QCP test failed.
11/11/2009 6:51:07 PM	QCP test failure action is to flag and continue.
11/11/2009 6:55:33 PM	**Measured Sequence-CCB**
11/11/2009 6:57:25 PM	QCP test failed.
11/11/2009 6:57:25 PM	QCP test failure action is to flag and continue.
11/11/2009 6:57:28 PM	Analysis completed.

Instrument: ICP
Sequence: 111109

Quality Control Approval Report

Level 3 DP

RUSH

Prep Sheet for metals digestions for ICP Totals
by EPA Method 200.7 total / 3050 / 3010 / 3060A Cr+6 / 3052 Microwave
Batch 9110349 (Water)

NCA #'s PM's	DUE
PSK0235 Howard Holmes Axiom Operations - Ambitech International	11/23/09
PSK0253 Darrell Auvil CH2M-Hill	11/23/09
PSK0264 Brian Cone CertainTeed Roofing Products Group	11/23/09
PSK0268 Vanessa Frahs Pyxis Laboratory	11/12/09
PSK0318 Brian Cone Intel Corporation-Hillsboro	11/17/09

Ca Fe Mg

W09-367

Sample Integrity **Initial/Date** 11/4/09 BLE

- ✓ Special Instruction Checked
- ✓ Sample ID's Checked / Correct
- ✓ Sample hold times checked, (Cr+6 w-24hrs, s-28 days) Hg 28 days
- ✓ Sample preservation checked
- ✓ Digestion batch sheet fully completed
- ✓ Batch Matrix matches Sample Matrix (If not, are percent solids required?)
- ✓ All samples requested digested / analyzed

Instrument Performance **Initial/Date** 11/12/9

- ✓ Daily calibration and all acceptance criteria met

Date

Data Analysis **Initial/Date** 11/12/09 11/12/09

- ✓ All reported results bracketed by valid CCV & CCB
- ✓ Method blank (MB) met acceptance criteria and project objectives
- ✓ LCS (BS) values within control limits and/or appropriately qualified
- ✓ DUP,MS1,MS2,MSD values w/in control limits and/or approp. qualified
- ✓ Comments, dilution factors noted correctly in data
- ___ NCR filled out

Final Report Form **Initial/Date** 11.12.09

- ✓ MRL's correct for preparation and project objectives
- ✓ Special instructions checked
- ✓ QCAR complete

***** This Package contains all necessary copies for Data Deliverable Package **Initial/Date** _____

Comments / Explanations:

11/11/09

PSK0268-01 Cr+6 due to color

11/11/12

Logged in Batch

ICP Metals

Target Analyte Results Summaries

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS005-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-01 File ID: 111109-01-018

Sampled: 11/07/09 12:30 Prepared: 11/11/09 08:13 Analyzed: 11/11/09 13:48

Solids: 0.00 Preparation: EPA 200/3005 Initial/Final: 50 ml / 50 ml

Batch: 9110349 Sequence: Calibration: Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7429-90-5	Aluminum	0.100	1	U	EPA 6010B
7440-36-0	Antimony	0.100	1	U	EPA 6010B
7440-38-2	Arsenic	0.00347	1	J	EPA 6010B
7440-43-9	Cadmium	0.0100	1	U	EPA 6010B
7440-47-3	Chromium	0.0100	1	U	EPA 6010B
7440-50-8	Copper	0.0100	1	U	EPA 6010B
7439-92-1	Lead	0.0500	1	U	EPA 6010B
7440-02-0	Nickel	0.0500	1	U	EPA 6010B
7782-49-2	Selenium	0.0500	1	U	EPA 6010B
7440-22-4	Silver	0.0200	1	U	EPA 6010B
7440-66-6	Zinc	0.0782	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS012-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-02 File ID: 111109-01-019

Sampled: 11/07/09 13:00 Prepared: 11/11/09 08:13 Analyzed: 11/11/09 13:54

Solids: 0.00 Preparation: EPA 200/3005 Initial/Final: 50 ml / 50 ml

Batch: 9110349 Sequence: Calibration: Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7429-90-5	Aluminum	0.100	1	U	EPA 6010B
7440-36-0	Antimony	0.100	1	U	EPA 6010B
7440-38-2	Arsenic	0.0500	1	U	EPA 6010B
7440-43-9	Cadmium	0.0100	1	U	EPA 6010B
7440-47-3	Chromium	0.0100	1	U	EPA 6010B
7440-50-8	Copper	0.0100	1	U	EPA 6010B
7439-92-1	Lead	0.0500	1	U	EPA 6010B
7440-02-0	Nickel	0.0500	1	U	EPA 6010B
7782-49-2	Selenium	0.0500	1	U	EPA 6010B
7440-22-4	Silver	0.0200	1	U	EPA 6010B
7440-66-6	Zinc	0.0617	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS017--110709

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Matrix: Water
Laboratory ID: PSK0253-03
File ID: 111109-01-022
Sampled: 11/07/09 13:30
Prepared: 11/11/09 08:13
Analyzed: 11/11/09 14:13
Solids: 0.00
Preparation: EPA 200/3005
Initial/Final: 50 ml / 50 ml
Batch: 9110349
Sequence:
Calibration:
Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7440-66-6	Zinc	0.0198	1	J	EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS006--110709

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Matrix: Water
Laboratory ID: PSK0253-04
File ID: 111109-01-023
Sampled: 11/07/09 13:40
Prepared: 11/11/09 08:13
Analyzed: 11/11/09 14:19
Solids: 0.00
Preparation: EPA 200/3005
Initial/Final: 50 ml / 50 ml
Batch: 9110349
Sequence:
Calibration:
Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7440-66-6	Zinc	0.0908	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS224--110709

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Matrix: Water
Laboratory ID: PSK0253-05
File ID: 111109-01-026
Sampled: 11/07/09 13:50
Prepared: 11/11/09 08:13
Analyzed: 11/11/09 14:38
Solids: 0.00
Preparation: EPA 200/3005
Initial/Final: 50 ml / 50 ml
Batch: 9110349
Sequence:
Calibration:
Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7440-66-6	Zinc	0.382	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS225--110709

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Matrix: Water
Laboratory ID: PSK0253-06
File ID: 111109-01-027
Sampled: 11/07/09 14:10
Prepared: 11/11/09 08:13
Analyzed: 11/11/09 14:44
Solids: 0.00
Preparation: EPA 200/3005
Initial/Final: 50 ml / 50 ml
Batch: 9110349
Sequence:
Calibration:
Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7440-66-6	Zinc	0.870	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS120-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-07 File ID: 111109-01-028

Sampled: 11/07/09 14:45 Prepared: 11/11/09 08:13 Analyzed: 11/11/09 14:50

Solids: 0.00 Preparation: EPA 200/3005 Initial/Final: 50 ml / 50 ml

Batch: 9110349 Sequence: Calibration: Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7429-90-5	Aluminum	0.100	1	U	EPA 6010B
7440-36-0	Antimony	0.100	1	U	EPA 6010B
7440-38-2	Arsenic	0.0500	1	U	EPA 6010B
7440-43-9	Cadmium	0.0100	1	U	EPA 6010B
7440-47-3	Chromium	0.0100	1	U	EPA 6010B
7440-50-8	Copper	0.0100	1	U	EPA 6010B
7439-92-1	Lead	0.0500	1	U	EPA 6010B
7440-02-0	Nickel	0.0500	1	U	EPA 6010B
7782-49-2	Selenium	0.0500	1	U	EPA 6010B
7440-22-4	Silver	0.0200	1	U	EPA 6010B
7440-66-6	Zinc	0.0542	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS120-110709-1

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-08 File ID: 111109-01-029

Sampled: 11/07/09 14:45 Prepared: 11/11/09 08:13 Analyzed: 11/11/09 14:57

Solids: 0.00 Preparation: EPA 200/3005 Initial/Final: 50 ml / 50 ml

Batch: 9110349 Sequence: Calibration: Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7429-90-5	Aluminum	0.100	1	U	EPA 6010B
7440-36-0	Antimony	0.100	1	U	EPA 6010B
7440-38-2	Arsenic	0.00491	1	J	EPA 6010B
7440-43-9	Cadmium	0.0100	1	U	EPA 6010B
7440-47-3	Chromium	0.0100	1	U	EPA 6010B
7440-50-8	Copper	0.0100	1	U	EPA 6010B
7439-92-1	Lead	0.0500	1	U	EPA 6010B
7440-02-0	Nickel	0.0500	1	U	EPA 6010B
7782-49-2	Selenium	0.0500	1	U	EPA 6010B
7440-22-4	Silver	0.0200	1	U	EPA 6010B
7440-66-6	Zinc	0.0557	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS117--110709

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Matrix: Water
Laboratory ID: PSK0253-09
File ID: 111109-01-030
Sampled: 11/07/09 15:00
Prepared: 11/11/09 08:13
Analyzed: 11/11/09 15:03
Solids: 0.00
Preparation: EPA 200/3005
Initial/Final: 50 ml / 50 ml
Batch: 9110349
Sequence:
Calibration:
Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7440-66-6	Zinc	0.818	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS223-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-10 File ID: 111109-01-032

Sampled: 11/07/09 15:30 Prepared: 11/11/09 08:13 Analyzed: 11/11/09 15:15

Solids: 0.00 Preparation: EPA 200/3005 Initial/Final: 50 ml / 50 ml

Batch: 9110349 Sequence: Calibration: Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7429-90-5	Aluminum	0.100	1	U	EPA 6010B
7440-36-0	Antimony	0.100	1	U	EPA 6010B
7440-38-2	Arsenic	0.00604	1	J	EPA 6010B
7440-43-9	Cadmium	0.0100	1	U	EPA 6010B
7440-47-3	Chromium	0.00107	1	J	EPA 6010B
7440-50-8	Copper	0.0100	1	U	EPA 6010B
7439-92-1	Lead	0.0500	1	U	EPA 6010B
7440-02-0	Nickel	0.0500	1	U	EPA 6010B
7782-49-2	Selenium	0.0500	1	U	EPA 6010B
7440-22-4	Silver	0.0200	1	U	EPA 6010B
7440-66-6	Zinc	0.983	1		EPA 6010B

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 6010B

DS221-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-11 File ID: 111109-01-033

Sampled: 11/07/09 16:00 Prepared: 11/11/09 08:13 Analyzed: 11/11/09 15:22

Solids: 0.00 Preparation: EPA 200/3005 Initial/Final: 50 ml / 50 ml

Batch: 9110349 Sequence: Calibration: Instrument: ICP

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7429-90-5	Aluminum	0.0209	1	J	EPA 6010B
7440-36-0	Antimony	0.100	1	U	EPA 6010B
7440-38-2	Arsenic	0.0500	1	U	EPA 6010B
7440-43-9	Cadmium	0.0100	1	U	EPA 6010B
7440-47-3	Chromium	0.0100	1	U	EPA 6010B
7440-50-8	Copper	0.00211	1	J	EPA 6010B
7439-92-1	Lead	0.0500	1	U	EPA 6010B
7440-02-0	Nickel	0.0500	1	U	EPA 6010B
7782-49-2	Selenium	0.0500	1	U	EPA 6010B
7440-22-4	Silver	0.0200	1	U	EPA 6010B
7440-66-6	Zinc	0.0171	1	J	EPA 6010B

ICP Metals

Preparation Logs

Form 4

PREPARATION BATCH SUMMARY

EPA 6010B

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110349 Batch Matrix: Water Preparation: EPA 200/3005

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110349-BLK1	111109-01-014	11/11/09 08:13	
LCS	9110349-BS1	111109-01-015	11/11/09 08:13	
DS012-110709	9110349-DUP1	111109-01-020	11/11/09 08:13	
DS012-110709	9110349-MS1	111109-01-021	11/11/09 08:13	
DS117--110709	9110349-MS2	111109-01-031	11/11/09 08:13	
DS005-110709	PSK0253-01	111109-01-018	11/11/09 08:13	level 3 dp.
DS012-110709	PSK0253-02	111109-01-019	11/11/09 08:13	level 3 dp.:MS/MSD
DS017--110709	PSK0253-03	111109-01-022	11/11/09 08:13	level 3 dp.
DS006--110709	PSK0253-04	111109-01-023	11/11/09 08:13	level 3 dp.
DS224--110709	PSK0253-05	111109-01-026	11/11/09 08:13	level 3 dp.
DS225--110709	PSK0253-06	111109-01-027	11/11/09 08:13	level 3 dp.
DS120-110709	PSK0253-07	111109-01-028	11/11/09 08:13	level 3 dp.
DS120-110709-1	PSK0253-08	111109-01-029	11/11/09 08:13	level 3 dp.
DS117--110709	PSK0253-09	111109-01-030	11/11/09 08:13	level 3 dp.
DS223-110709	PSK0253-10	111109-01-032	11/11/09 08:13	level 3 dp.
DS221-110709	PSK0253-11	111109-01-033	11/11/09 08:13	level 3 dp.

PREPARATION BENCH SHEET

TestAmerica Portland

BATCH: 9110349

Matrix: Water

Prepared using: Metals - EPA 200/3005
No Surrogate used

Lab Number	Client ID	Analysis	Sample pH < 2	Initial (ml)	Final (ml)	Spike ID	Source ID	Spike (uL)	Due	Comments: Extraction (Log)
9110349-BLK1	Blank	QC		50	50					
9110349-BS1	LCS	QC		50	50	9100170		500		
"	"	(Second Spike)		"	"	9100171		500		
9110349-DUP1	Duplicate	QC		50	50		PSK0253-02			
9110349-MS1	Matrix Spike	QC		50	50	9100170	PSK0253-02	500		
"	"	(Second Spike)		"	"	9100171	PSK0253-02	500		
9110349-MS2	Matrix Spike	QC		50	50	9100170	PSK0253-09	500		
"	"	(Second Spike)		"	"	9100171	PSK0253-09	500		
PSK0235-01	Wash	Al Total ICP 6010B	✓	50	50				11/23/09 08:00	
PSK0235-01	Wash	Na Total ICP 6010B		50	50				11/23/09 08:00	
PSK0235-01	Wash	Pb Total ICPMS 6020		50	50				11/23/09 08:00	
PSK0235-01	Wash	Sn Total ICP 6010B		50	50				11/23/09 08:00	
PSK0235-02	Rinse	Al Total ICP 6010B	✓	50	50				11/23/09 08:00	
PSK0235-02	Rinse	Na Total ICP 6010B		50	50				11/23/09 08:00	
PSK0235-02	Rinse	Pb Total ICPMS 6020		50	50				11/23/09 08:00	
PSK0235-02	Rinse	Sn Total ICP 6010B		50	50				11/23/09 08:00	
PSK0253-01	DS005-110709	Ag Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Al Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	As Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Cd Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Cr Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Cu Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Ni Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Pb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Sb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Se Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-01	DS005-110709	Zn Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-02	DS012-110709	Ag Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)

289636

BE 11/11/09

Preparation By Date

PSH 11/11/09

Reviewed By Date

Printed: 11/11/2009 8:18:55AM

PSK0253-02	DS012-110709	Al Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-02	DS012-110709	Al Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	As Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Ca Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-02	DS012-110709	Cd Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Cr Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Cu Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Fe Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-02	DS012-110709	Mg Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-02	DS012-110709	Na Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-02	DS012-110709	Ni Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Pb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Pb Total ICPMS 6020		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-02	DS012-110709	Sb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Se Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-02	DS012-110709	Sn Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-02	DS012-110709	Zn Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-03	DS017--110709	Zn Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-04	DS006--110709	Zn Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-05	DS224--110709	Zn Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-06	DS225--110709	Zn Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Ag Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Al Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	As Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Cd Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Cr Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Cu Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Ni Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Pb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Sb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Se Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-07	DS120-110709	Zn Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)

Printed: 11/11/2009 8:18:55AM

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Preparation By _____ Date _____ Reviewed By _____ Date _____

PSK0253-08	DS120-110709-1	Ag Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Al Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	As Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Cd Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Cr Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Cu Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Ni Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Pb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Sb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Se Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-08	DS120-110709-1	Zn Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-09	DS117--110709	Ag Total ICP 6010B	✓	50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Al Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Al Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	As Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Ca Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Cd Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Cr Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Cu Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Fe Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Mg Total ICP 200.7		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Na Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Ni Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Pb Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Pb Total ICPMS 6020		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Sb Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Se Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Sn Total ICP 6010B		50	50					Added for BatchQC in: 9110349 (BatchQC)
PSK0253-09	DS117--110709	Zn Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Ag Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Al Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	As Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)

PSK0253-10	DS223-110709	Cd Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Cr Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Cu Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Ni Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Pb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Sb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Se Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-10	DS223-110709	Zn Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Ag Total ICP 6010B	✓	50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Al Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	As Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Cd Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Cr Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Cu Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Ni Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Pb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Sb Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Se Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0253-11	DS221-110709	Zn Total ICP 6010B		50	50				11/23/09 08:00	level 3 dp. (level 3 dp.)
PSK0264-01	Outfall A	Al Total ICP 200.7	✓	50	50				11/23/09 08:00	
PSK0264-02	Outfall B	Al Total ICP 200.7	✓	50	50				11/23/09 08:00	
PSK0268-01	910217003	Ca Total ICP 200.7	✓	~~50~~ 25 BLE 11/11/09	50				11/12/09 16:00	
PSK0268-01	910217003	Fe Total ICP 200.7		~~50~~ 25 BLE 11/11/09	50	Sample volume is limited.			11/12/09 16:00	
PSK0268-01	910217003	Mg Total ICP 200.7		~~50~~ 25	50	Also discolored. BLE 11/11/09			11/12/09 16:00	
PSK0318-01	Pre-IX	Pb Total ICPMS 6020	✓	50	50				11/17/09 16:00	Report in ug/L (Report in ug/L)
PSK0318-01	Pre-IX	Sn Total ICP 6010B		50	50				11/17/09 16:00	Report in ug/L; need MDL report (Report in ug/L; need MDL report)
PSK0318-02	Post-Lead	Pb Total ICPMS 6020	✓	50	50				11/17/09 16:00	Report in ug/L (Report in ug/L)
PSK0318-02	Post-Lead	Sn Total ICP 6010B		50	50				11/17/09 16:00	Report in ug/L; need MDL report (Report in ug/L; need MDL report)
PSK0318-03	Post-Lag	Pb Total ICPMS 6020	✓	50	50				11/17/09 16:00	Report in ug/L (Report in ug/L)
PSK0318-03	Post-Lag	Sn Total ICP 6010B		50	50				11/17/09 16:00	Report in ug/L; need MDL report (Report in ug/L; need MDL report)

Printed: 11/11/2009 8:18:55AM

Preparation By _____ Date _____ Reviewed By _____ Date _____

PREPARATION BENCH SHEET

TestAmerica Portland

BATCH: 9110349

Matrix: Water

Prepared using: Metals - EPA 200/3005
No Surrogate used

Lab Number	Client ID	Analysis	Sample pH	Initial (ml)	Final (ml)	Spike ID	Source ID	Spike (uL)	Due	Comments: Extraction (Log)

Reagent/Description/Expires Date

9100019 Nitric Acid - AR Select ACS 2.5L Lot # H10040 10/31/2010						9100161 Hydrochloric Acid - AR Select H19A04		10/31/2010		

Batch Comments: W09-367
C tube: A905LS269
Temp of Hotblock: A: 95°C
Filter Lot #: N/A

Pipets:
S/N 2062016 100-1000uL
S/N 3144763 100-1000uL
S/N 4957516 500-5000uL

293 of 386

Printed: 11/11/2009 8:18:55AM

Preparation By Date

Reviewed By Date

Mercury

ANALYSES DATA PACKAGE COVER PAGE

EPA 7470A

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project

Client Sample Id:	Lab Sample Id:
DS005-110709	PSK0253-01
DS012-110709	PSK0253-02
DS120-110709	PSK0253-07
DS120-110709-1	PSK0253-08
DS223-110709	PSK0253-10
DS221-110709	PSK0253-11

Mercury

Quality Control Summaries

Laboratory Blank Report

Total Mercury per EPA Method 7470A - Laboratory Quality Control Results
TestAmerica Portland

Batch 9110417

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Water	EPA 7470A	9110417-BLK1	Blank	1x	W111209A2-057	11/13/09 08:54	CVAA
Water	EPA 7470A	9110417-BS1	LCS	1x	W111209A2-058	11/13/09 08:57	CVAA
Water	EPA 7470A	9110417-BSD1	LCS Dup	1x	W111209A2-059	11/13/09 09:00	CVAA
Water	EPA 7470A	9110417-DUP1	Duplicate	1x	W111209A2-060	11/13/09 09:03	CVAA
Water	EPA 7470A	9110417-MS1	Matrix Spike	1x	W111209A2-061	11/13/09 09:08	CVAA
Water	EPA 7470A	9110417-MSD1	Matrix Spike Dup	1x	W111209A2-062	11/13/09 09:11	CVAA
Water	EPA 7470A	PSK0253-01	DS005-110709	1x	W111209A2-063	11/13/09 09:14	CVAA
Water	EPA 7470A	PSK0253-02	DS012-110709	1x	W111209A2-064	11/13/09 09:16	CVAA
Water	EPA 7470A	PSK0253-07	DS120-110709	1x	W111209A2-065	11/13/09 09:19	CVAA
Water	EPA 7470A	PSK0253-08	DS120-110709-1	1x	W111209A2-066	11/13/09 09:21	CVAA
Water	EPA 7470A	PSK0253-10	DS223-110709	1x	W111209A2-069	11/13/09 10:04	CVAA
Water	EPA 7470A	PSK0253-11	DS221-110709	1x	W111209A2-070	11/13/09 10:06	CVAA

Form 3

LCS / LCS DUPLICATE RECOVERY

EPA 7470A

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9070368
Batch:	9110417	Laboratory ID:	9110417-BS1
Preparation:	EPA 7470A	Initial/Final:	40 ml / 40 ml

COMPOUND	SPIKE ADDED (mg/l)	LCS CONCENTRATION (mg/l)	LCS % REC. #	QC LIMITS REC.
Mercury	0.00500	0.00516	103	85 - 115

COMPOUND	SPIKE ADDED (mg/l)	LCSD CONCENTRATION (mg/l)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Mercury	0.00500	0.00496	99.2	4.00	20	85 - 115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

DUPLICATES

EPA 7470A

DS012-110709

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Matrix: Water
Batch: 9110417
Preparation: EPA 7470A
Source Sample Name: DS012-110709

SDG: PSK0253
Project: NW Pipe Project
Laboratory ID: 9110417-DUP1
Lab Source ID: PSK0253-02
Initial/Final: 40 ml / 40 ml
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/l)	C	DUPLICATE CONCENTRATION (mg/l)	C	RPD %	Q	METHOD
Mercury	20	ND		ND				EPA 7470A

* Values outside of QC limits

Form 3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 7470A

DS012-110709

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9070368
Batch:	9110417	Laboratory ID:	9110417-MS1
Preparation:	EPA 7470A	Initial/Final:	40 ml / 40 ml

Source Sample Name: DS012-110709

COMPOUND	SPIKE ADDED (mg/l)	SAMPLE CONCENTRATION (mg/l)	MS CONCENTRATION (mg/l)	MS % REC. #	QC LIMITS REC.
Mercury	0.00500	ND	0.00501	100	75 - 125

COMPOUND	SPIKE ADDED (mg/l)	MSD CONCENTRATION (mg/l)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Mercury	0.00500	0.00466	93.2	7.21	20	75 - 125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

EPA 7470A

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** CVAA

Analyte	MDL	MRL	Units
Mercury	0.0000590	0.000200	mg/l

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7470A

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project
Instrument ID: CVAA
Calibration: 9111204
Control Limt: +/- %
Sequence: 9K12016

Lab Sample ID	Analyte	True	Found	%R	Limit	Units	Method	Analyzed
9K12016-ICV1	Mercury	5.00	5.35	107	90 - 110	ug/l	EPA 7470A	11/12/09 16:01
9K12016-CCV5	Mercury	5.00	5.21	104	80 - 120	ug/l	EPA 7470A	11/13/09 8:48
9K12016-CCV6	Mercury	5.00	5.15	103	80 - 120	ug/l	EPA 7470A	11/13/09 9:24
9K12016-CCV7	Mercury	5.00	5.28	106	80 - 120	ug/l	EPA 7470A	11/13/09 10:09

* Values outside of QC limits

BLANKS
EPA 7470A

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Instrument ID: CVAA
Project: NW Pipe Project
Sequence: 9K12016
Calibration: 9111204

Lab Sample ID	Analyte	Found	MRL	Units	C	Method	Analyzed
9K12016-ICB1	Mercury	0.00297	0.200	ug/l		EPA 7470A	11/12/09 16:0
9K12016-CCB5	Mercury	-0.0420	0.200	ug/l		EPA 7470A	11/13/09 8:52
9110417-BLK1	Mercury	ND	0.000200	mg/l		EPA 7470A	11/13/09 8:54
9K12016-CCB6	Mercury	0.109	0.200	ug/l		EPA 7470A	11/13/09 9:27
9K12016-CCB7	Mercury	-0.0341	0.200	ug/l		EPA 7470A	11/13/09 10:1

Form 5

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7470A

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Sequence: 9K12016

SDG: PSK0253
Project: NW Pipe Project
Instrument: CVAA
Calibration: 9111204

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9K12016-CAL1	W111209A2-001	11/12/09 15:44
Cal Standard	9K12016-CAL2	W111209A2-002	11/12/09 15:47
Cal Standard	9K12016-CAL3	W111209A2-003	11/12/09 15:50
Cal Standard	9K12016-CAL4	W111209A2-004	11/12/09 15:52
Cal Standard	9K12016-CAL5	W111209A2-005	11/12/09 15:55
Cal Standard	9K12016-CAL6	W111209A2-006	11/12/09 15:58
Initial Cal Check	9K12016-ICV1	W111209A2-007	11/12/09 16:01
Initial Cal Blank	9K12016-ICB1	W111209A2-008	11/12/09 16:03
Calibration Check	9K12016-CCV5	W111209A2-055	11/13/09 08:48
Calibration Blank	9K12016-CCB5	W111209A2-056	11/13/09 08:52
Blank	9110417-BLK1	W111209A2-057	11/13/09 08:54
LCS	9110417-BS1	W111209A2-058	11/13/09 08:57
LCS Dup	9110417-BSD1	W111209A2-059	11/13/09 09:00
DS012-110709	9110417-DUP1	W111209A2-060	11/13/09 09:03
DS012-110709	9110417-MS1	W111209A2-061	11/13/09 09:08
DS012-110709	9110417-MSD1	W111209A2-062	11/13/09 09:11
DS005-110709	PSK0253-01	W111209A2-063	11/13/09 09:14
DS012-110709	PSK0253-02	W111209A2-064	11/13/09 09:16
DS120-110709	PSK0253-07	W111209A2-065	11/13/09 09:19
DS120-110709-1	PSK0253-08	W111209A2-066	11/13/09 09:21
Calibration Check	9K12016-CCV6	W111209A2-067	11/13/09 09:24
Calibration Blank	9K12016-CCB6	W111209A2-068	11/13/09 09:27
DS223-110709	PSK0253-10	W111209A2-069	11/13/09 10:04
DS221-110709	PSK0253-11	W111209A2-070	11/13/09 10:06
Calibration Check	9K12016-CCV7	W111209A2-071	11/13/09 10:09
Calibration Blank	9K12016-CCB7	W111209A2-072	11/13/09 10:12

Quality Control Approval Report

MERCURY

CVAA 30335 7470A

Batch 9110417 (Water)

WO #s	PM's	DUE
PSK0253 CH2M-Hill	Darrell Auvil	11/23/09

Metals Batch# 9110417

Sample Integrity **Initial/Date** JCB 11/13/09

- ✓ Special Instruction Checked
- ✓ Sample ID's Checked / Correct
- ✓ Sample hold times checked, Hg 28 days
- ✓ Sample preservation checked
- ✓ Digestion batch sheet fully completed
- ✓ Batch Matrix matches Sample Matrix (If not, are percent solids required?)
- ✓ All samples requested digested / analyzed

Instrument Performance **Initial/Date** JCB 11/13/09

- ✓ Daily calibration and all acceptance criteria met

Data Analysis **Initial/Date** JCB 11/13/09

- ✓ All reported results bracketed by valid CCV & CCB
- ✓ Method blank (MB) met acceptance criteria and project objectives
- ✓ LCS (BS) values within control limits and/or appropriately qualified
- ✓ DUP,MS1,MS2,MSD values w/in control limits and/or approp. qualified
- ✓ Comments, dilution factors noted correctly in data
- ___ NCR filled out

Final Report Form **Initial/Date** _____

- ___ MRL's correct for preparation and project objectives
- ___ Special instructions checked
- ___ QCAR complete

***** This Package contains all necessary copies for Data Deliverable Package **Initial/Date** _____

Comments / Explanations:

Mercury

Target Analyte Results Summaries

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

DS005-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-01 File ID: W111209A2-063

Sampled: 11/07/09 12:30 Prepared: 11/12/09 13:07 Analyzed: 11/13/09 09:14

Solids: 0.00 Preparation: EPA 7470A Initial/Final: 40 ml / 40 ml

Batch: 9110417 Sequence: 9K12016 Calibration: 9111204 Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.000200	1	U	EPA 7470A

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

DS012-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-02 File ID: W111209A2-064

Sampled: 11/07/09 13:00 Prepared: 11/12/09 13:07 Analyzed: 11/13/09 09:16

Solids: 0.00 Preparation: EPA 7470A Initial/Final: 40 ml / 40 ml

Batch: 9110417 Sequence: 9K12016 Calibration: 9111204 Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.000200	1	U	EPA 7470A

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

DS120-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-07 File ID: W111209A2-065

Sampled: 11/07/09 14:45 Prepared: 11/12/09 13:07 Analyzed: 11/13/09 09:19

Solids: 0.00 Preparation: EPA 7470A Initial/Final: 40 ml / 40 ml

Batch: 9110417 Sequence: 9K12016 Calibration: 9111204 Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.000200	1	U	EPA 7470A

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

DS120-110709-1

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-08 File ID: W111209A2-066

Sampled: 11/07/09 14:45 Prepared: 11/12/09 13:07 Analyzed: 11/13/09 09:21

Solids: 0.00 Preparation: EPA 7470A Initial/Final: 40 ml / 40 ml

Batch: 9110417 Sequence: 9K12016 Calibration: 9111204 Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.000200	1	U	EPA 7470A

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

DS223-110709

Laboratory: TestAmerica Portland | SDG: PSK0253

Client: CH2M-Hill | Project: NW Pipe Project

Matrix: Water | Laboratory ID: PSK0253-10 | File ID: W111209A2-069

Sampled: 11/07/09 15:30 | Prepared: 11/12/09 13:07 | Analyzed: 11/13/09 10:04

Solids: 0.00 | Preparation: EPA 7470A | Initial/Final: 40 ml / 40 ml

Batch: 9110417 | Sequence: 9K12016 | Calibration: 9111204 | Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.000200	1	U	EPA 7470A

Form 1

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

DS221-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-11 File ID: W111209A2-070

Sampled: 11/07/09 16:00 Prepared: 11/12/09 13:07 Analyzed: 11/13/09 10:06

Solids: 0.00 Preparation: EPA 7470A Initial/Final: 40 ml / 40 ml

Batch: 9110417 Sequence: 9K12016 Calibration: 9111204 Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.000200	1	U	EPA 7470A

Mercury

Preparation Logs

Form 4

PREPARATION BATCH SUMMARY

EPA 7470A

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110417 Batch Matrix: Water Preparation: EPA 7470A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110417-BLK1	W111209A2-057	11/12/09 13:07	
LCS	9110417-BS1	W111209A2-058	11/12/09 13:07	
LCS Dup	9110417-BSD1	W111209A2-059	11/12/09 13:07	
DS012-110709	9110417-DUP1	W111209A2-060	11/12/09 13:07	
DS012-110709	9110417-MS1	W111209A2-061	11/12/09 13:07	
DS012-110709	9110417-MSD1	W111209A2-062	11/12/09 13:07	
DS005-110709	PSK0253-01	W111209A2-063	11/12/09 13:07	level 3 dp.
DS012-110709	PSK0253-02	W111209A2-064	11/12/09 13:07	level 3 dp.:MS/MSD
DS120-110709	PSK0253-07	W111209A2-065	11/12/09 13:07	level 3 dp.
DS120-110709-1	PSK0253-08	W111209A2-066	11/12/09 13:07	level 3 dp.
DS223-110709	PSK0253-10	W111209A2-069	11/12/09 13:07	level 3 dp.
DS221-110709	PSK0253-11	W111209A2-070	11/12/09 13:07	level 3 dp.

PREPARATION BENCH SHEET

TestAmerica Portland

BATCH: 9110417

Matrix: Water

Prepared using: Metals - EPA 7470A
No Surrogate used

Lab Number	Analysis	Prepared	Initial (ml)	Init	Final (ml)	Init	Spike ID	Source ID	Spike (uL)	Init	Due		Init	pH	Comments: Extraction (Log)
9110417-BLK1	QC	11/12/09 13:07	40		40										
9110417-BS1	QC	11/12/09 13:07	40		40		9070368		2000						
9110417-BSD1	QC	11/12/09 13:07	40		40		9070368		2000						
9110417-DUP1	QC	11/12/09 13:07	40		40			PSK0253-02							
9110417-MS1	QC	11/12/09 13:07	40		40		9070368	PSK0253-02	2000						
9110417-MSD1	QC	11/12/09 13:07	40		40		9070368	PSK0253-02	2000						
PSK0253-01	Hg Total 7470A	11/12/09 13:07	40		40						11/23/09 08:00			<2	level 3 dp. (level 3 dp.)
PSK0253-02	Hg Total 7470A	11/12/09 13:07	40		40						11/23/09 08:00			<2	level 3 dp.:MS/MSD (level 3 dp.:MS/MSD)
PSK0253-07	Hg Total 7470A	11/12/09 13:07	40		40						11/23/09 08:00			<2	level 3 dp. (level 3 dp.)
PSK0253-08	Hg Total 7470A	11/12/09 13:07	40		40						11/23/09 08:00			<2	level 3 dp. (level 3 dp.)
PSK0253-10	Hg Total 7470A	11/12/09 13:07	40		40						11/23/09 08:00			<2	level 3 dp. (level 3 dp.)
PSK0253-11	Hg Total 7470A	11/12/09 13:07	40		40						11/23/09 08:00			<2	level 3 dp. (level 3 dp.)

Reagent/Description/Expires Date

9090263	12% (m/v) Hydroxylamine Hydrochloride NaCl	3/31/2010
9110088	Potassium Permanganate	5/10/2010
9100160	Nitric Acid - AR Select ACS 2.5L Lot # H10040	10/31/2010

9100020	Sulfuric Acid Certified ACS Plus	4/5/2010
9110098	2% Stannous Chloride CVAA	5/10/2010

9110087	Potassium Persulfate	5/10/2010
9110100	CVAA Blank Solution	5/10/2010

Batch Comments: Hg Water Bath
IN 96.4 C
11/12/09
Thermometer Hg-Wb

John Swanson 11/12/09

Spiking Witnessed By Date

Preparation Reviewed By Date

Printed: 11/12/2009 1:09:55PM

Extracts Received By Date

General Chemistry

ANALYSES DATA PACKAGE COVER PAGE

SM 2540D

Laboratory: TestAmerica Portland
SDG: PSK0253
Client: CH2M-Hill
Project: NW Pipe Project

Client Sample Id:	Lab Sample Id:
DS005-110709	PSK0253-01
DS012-110709	PSK0253-02
DS120-110709	PSK0253-07
DS120-110709-1	PSK0253-08
DS223-110709	PSK0253-10
DS221-110709	PSK0253-11

General Chemistry

Quality Control Summaries

Laboratory Blank Report

Conventional Chemistry Parameters per Standard Methods - Laboratory Quality Control Results
TestAmerica Portland

Batch 9110465

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Water	SM 2540D	9110465-BLK1	Blank	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	9110465-BS1	LCS	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	9110465-DUP1	Duplicate	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	PSK0253-01	DS005-110709	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	PSK0253-02	DS012-110709	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	PSK0253-07	DS120-110709	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	PSK0253-08	DS120-110709-1	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	PSK0253-10	DS223-110709	1x	NA	11/13/09 14:41	Inst
Water	SM 2540D	PSK0253-11	DS221-110709	1x	NA	11/13/09 14:41	Inst

Form 1

METHOD BLANK DATA SHEET

SM 2540D

Laboratory:	TestAmerica Portland			SDG:	PSK0253
Client:	CH2M-Hill			Project:	NW Pipe Project
Matrix:	Water	Laboratory ID:	9110465-BLK1	File ID:	
Prepared:	11/13/09 11:27	Preparation:	Wet Chem	Initial/Final:	100 ml / 100 ml
Analyzed:	11/13/09 14:41	Instrument:	Inst		
Batch:	9110465	Sequence:		Calibration:	

CAS NO.	COMPOUND	CONC. (mg/l)	Q
TSS	Total Suspended Solids	10.0	U

Form 3

LCS / LCS DUPLICATE RECOVERY

SM 2540D

Laboratory:	TestAmerica Portland	SDG:	PSK0253
Client:	CH2M-Hill	Project:	NW Pipe Project
Matrix:	Water	Spike standard:	9110071
Batch:	9110465	Laboratory ID:	9110465-BS1
Preparation:	Wet Chem	Initial/Final:	100 ml / 100 ml

COMPOUND	SPIKE ADDED (mg/l)	LCS CONCENTRATION (mg/l)	LCS % REC. #	QC LIMITS REC.
Total Suspended Solids	60.0	60.0	100	80 - 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

DUPLICATES

SM 2540D

DS012-110709

Laboratory: TestAmerica Portland
Client: CH2M-Hill
Matrix: Water
Batch: 9110465
Preparation: Wet Chem
Source Sample Name: DS012-110709

SDG: PSK0253
Project: NW Pipe Project
Laboratory ID: 9110465-DUP1
Lab Source ID: PSK0253-02
Initial/Final: 100 ml / 100 ml
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/l)	C	DUPLICATE CONCENTRATION (mg/l)	C	RPD %	Q	METHOD
Total Suspended Solids	20	ND		ND				SM 2540D

* Values outside of QC limits

METHOD DETECTION AND REPORTING LIMITS

SM 2540D

Laboratory: TestAmerica Portland **SDG:** PSK0253

Client: CH2M-Hill **Project:** NW Pipe Project

Matrix: Water **Instrument:** Inst

Analyte	MDL	MRL	Units
Total Suspended Solids	3.50	10.0	mg/l

Quality Control Approval Report

Total Suspended Solids per EPA 160.2

Batch 9110465 (Water)

TA #'s	PM's	DUE
PSK0253	Darrell Auvil	11/23/09
CH2M-Hill		
PSK0254	Brian Cone	11/23/09
EORM-Env & Occupational Risk Management-(		
PSK0260	Brian Cone	11/23/09
Enviro-Logical Solutions		
PSK0261	Brian Cone	11/23/09
CertainTeed Roofing Products Group		
PSK0262	Brian Cone	11/23/09
The Western Group		
PSK0263	Brian Cone	11/23/09
Peninsula Truck Lines, Inc.		
PSK0267	Brian Cone	11/23/09
Roadway Express c/o Blymyer Engineers		

Sample Integrity **Initial/Date** TD 11/20/09

- ✓ Sample ID's checked/correct
- ✓ Sample hold times checked/within
- ✓ Sample preservation checked/correct

Data Analysis **Initial/Date** ↓

- ✓ Oven/furnace temperature correct and recorded
- ✓ Balance calibration checked and recorded
- ✓ Method blank (MB) met acceptance criteria
- ✓ LCS (BS) recovery within control limits
- ✓ DUP RPD within control limits
- ✓ Calculations checked

Final Report Form **Initial/Date** TI 11/20/09

- ✓ Sample ID's correct on final report
- ✓ Correct Detection limit reported
- ✓ Proper units/significant figures
- ✓ Prep/analysis dates included
- ✓ QC reports completed and included

Explain any deviations:

General Chemistry

Target Analyte Results Summaries

Form 1

INORGANIC ANALYSIS DATA SHEET

SM 2540D

DS005-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-01 File ID:

Sampled: 11/07/09 12:30 Prepared: 11/13/09 11:27 Analyzed: 11/13/09 14:41

Solids: 0.00 Preparation: Wet Chem Initial/Final: 100 ml / 100 ml

Batch: 9110465 Sequence: Calibration: Instrument: Inst

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
TSS	Total Suspended Solids	10.0	1	U	SM 2540D

Form 1

INORGANIC ANALYSIS DATA SHEET

SM 2540D

DS012-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-02 File ID:

Sampled: 11/07/09 13:00 Prepared: 11/13/09 11:27 Analyzed: 11/13/09 14:41

Solids: 0.00 Preparation: Wet Chem Initial/Final: 100 ml / 100 ml

Batch: 9110465 Sequence: Calibration: Instrument: Inst

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
TSS	Total Suspended Solids	10.0	1	U	SM 2540D

Form 1

INORGANIC ANALYSIS DATA SHEET

SM 2540D

DS120-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-07 File ID:

Sampled: 11/07/09 14:45 Prepared: 11/13/09 11:27 Analyzed: 11/13/09 14:41

Solids: 0.00 Preparation: Wet Chem Initial/Final: 100 ml / 100 ml

Batch: 9110465 Sequence: Calibration: Instrument: Inst

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
TSS	Total Suspended Solids	10.0	1	U	SM 2540D

Form 1

INORGANIC ANALYSIS DATA SHEET

SM 2540D

DS120-110709-1

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-08 File ID:

Sampled: 11/07/09 14:45 Prepared: 11/13/09 11:27 Analyzed: 11/13/09 14:41

Solids: 0.00 Preparation: Wet Chem Initial/Final: 100 ml / 100 ml

Batch: 9110465 Sequence: Calibration: Instrument: Inst

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
TSS	Total Suspended Solids	10.0	1	U	SM 2540D

Form 1

INORGANIC ANALYSIS DATA SHEET

SM 2540D

DS223-110709

Laboratory: TestAmerica Portland | SDG: PSK0253

Client: CH2M-Hill | Project: NW Pipe Project

Matrix: Water | Laboratory ID: PSK0253-10 | File ID:

Sampled: 11/07/09 15:30 | Prepared: 11/13/09 11:27 | Analyzed: 11/13/09 14:41

Solids: 0.00 | Preparation: Wet Chem | Initial/Final: 100 ml / 100 ml

Batch: 9110465 | Sequence: | Calibration: | Instrument: Inst

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
TSS	Total Suspended Solids	10.0	1	U	SM 2540D

Form 1

INORGANIC ANALYSIS DATA SHEET

SM 2540D

DS221-110709

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Matrix: Water Laboratory ID: PSK0253-11 File ID:

Sampled: 11/07/09 16:00 Prepared: 11/13/09 11:27 Analyzed: 11/13/09 14:41

Solids: 0.00 Preparation: Wet Chem Initial/Final: 100 ml / 100 ml

Batch: 9110465 Sequence: Calibration: Instrument: Inst

CAS NO.	Analyte	Concentration (mg/l)	Dilution Factor	Q	Method
TSS	Total Suspended Solids	10.0	1	U	SM 2540D

General Chemistry

Preparation Logs

Form 4

PREPARATION BATCH SUMMARY

SM 2540D

Laboratory: TestAmerica Portland SDG: PSK0253

Client: CH2M-Hill Project: NW Pipe Project

Batch: 9110465 Batch Matrix: Water Preparation: Wet Chem

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9110465-BLK1		11/13/09 11:27	
LCS	9110465-BS1		11/13/09 11:27	
DS012-110709	9110465-DUP1		11/13/09 11:27	
DS005-110709	PSK0253-01		11/13/09 11:27	level 3 dp.
DS012-110709	PSK0253-02		11/13/09 11:27	level 3 dp
DS120-110709	PSK0253-07		11/13/09 11:27	level 3 dp.
DS120-110709-1	PSK0253-08		11/13/09 11:27	level 3 dp.
DS223-110709	PSK0253-10		11/13/09 11:27	level 3 dp.
DS221-110709	PSK0253-11		11/13/09 11:27	level 3 dp.

PREPARATION BENCH SHEET

Batch 9110465

Printed: 11/20/2009 10:50:46AM

Prep method: Wet Chem

TestAmerica Portland

Matrix: Water

No Surrogate used

Lab Number	Analysis	Prepared	Initial (ml)	Init	Final (ml)	Init	Spike ID	Spike Amt (uL)	Init	Source ID	Surr 1 (uL)	Init	Surr 2 (uL)	Init	pH	Extraction Comments
9110465-BLK1	QC	11/13/09 11:27	100		100											
9110465-BS1	QC	11/13/09 11:27	100		100		9110071	100000								
9110465-DUP1	QC	11/13/09 11:27	100		100					PSK0253-02						
PSK0253-01	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											level 3 dp.
PSK0253-02	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											level 3 dp
PSK0253-07	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											level 3 dp.
PSK0253-08	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											level 3 dp.
PSK0253-10	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											level 3 dp.
PSK0253-11	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											level 3 dp.
PSK0254-01	Solids, TSS - SM 2540D	11/13/09 11:27	50		100											LIMITED VOLUME
PSK0254-02	Solids, TSS - SM 2540D	11/13/09 11:27	40		100											LIMITED VOLUME
PSK0254-03	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											LIMITED VOLUME
PSK0254-04	Solids, TSS - SM 2540D	11/13/09 11:27	25		100											LIMITED VOLUME
PSK0260-01	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0260-02	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0260-03	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0260-04	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0261-01	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0261-02	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0262-01	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0262-02	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0263-01	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											
PSK0267-01	Solids, TSS - SM 2540D	11/13/09 11:27	100		100											

Spiking Witnessed By Date

Preparation Reviewed By Date

Total Suspended Solids per EPA 160.2

Minimum Reporting Limit = 10.0 mg/L

Batch: 9110465 (Water)

LabNumber	Letter	Filter ID	mL's	Filter Dried(g)	Orig. Filter(g)	Weight Diff.(g)	Initial Result	Final Result	In	Out	Analyst
9110465-BLK1		3527	100	0.114	0.114	0.0000	0.	#DIV/0!	11/13/09	11/16/09	JJ
9110465-BS1	9110465	3528	100	0.124	0.115	0.0000	0.	#DIV/0!	14:41	9:40	
9110465-DUP1	G	3529	100	0.115	0.115	0.0000	0.	#DIV/0!			
PSK0253-01	G	3531	100	0.116	0.116	0.0000	0.	#DIV/0!			
PSK0253-02	G	3530	100	0.116	0.116	0.0000	0.	#DIV/0!			
PSK0253-07	G	3532	100	0.115	0.115	0.0000	0.	#DIV/0!			
PSK0253-08	A	3533	100	0.115	0.115	0.0000	0.	#DIV/0!			
PSK0253-10	G	3534	100	0.114	0.114	0.0000	0.	#DIV/0!			
PSK0253-11	G	3535	100	0.115	0.115	0.0000	0.	#DIV/0!			
PSK0254-01	D	3536	50	0.127	0.111	0.0000	0.	#DIV/0!			
PSK0254-02	D	3537	40	0.125	0.115	0.0000	0.	#DIV/0!			
PSK0254-03	D	3538	100	0.133	0.113	0.0000	0.	#DIV/0!			
PSK0254-04	D	3539	25	0.126	0.113	0.0000	0.	#DIV/0!			
PSK0260-01	D	3540	100	0.126	0.113	0.0000	0.	#DIV/0!			
PSK0260-02	D	3541	100	0.120	0.115	0.0000	0.	#DIV/0!			
PSK0260-03	D	3542	100	0.144	0.115	0.0000	0.	#DIV/0!			
PSK0260-04	D	3543	100	0.112	0.112	0.0000	0.	#DIV/0!			
PSK0261-01	C	3544	100	0.113	0.113	0.0000	0.	#DIV/0!			
PSK0261-02	C	3545	100	0.116	0.113	0.0000	0.	#DIV/0!			
PSK0262-01	C	3546	100	0.167	0.114	0.0000	0.	#DIV/0!			
PSK0262-02	C	3822	100	0.134	0.116	0.0000	0.	#DIV/0!			
PSK0263-01	C	3823	100	0.113	0.112	0.0000	0.	#DIV/0!			

253-02

Total Suspended Solids per EPA 160.2

LabNumber	Letter	Filter ID	mL's	Filter Dried(g)	Orig. Filter(g)	Weight Diff.(g)	Initial Result	Final Result	In	Out	Analyst
PSK0267-01	C	3824	100	0.115	0.113	0.0000	0.	#DIV/0!	11/13/09 14:41	11/16/09 9:40	TJ

Equation: TSS mg/L = [(Wt Dried - Orig Wt in g) x 1000mL/L x 1000mg/g] / mL of Sample
Formula: InitResult = (RC[-3]*10000)-(RC[-2]*10000)
Balance ID: L19855
Oven ID: G105

TSS Filters #9555309256