RECEIVED
By Alameda County Environmental Health at 11:58 am, Jan 03, 2013

December 28, 2012

Marie Kulka
EBMUD
Environmental Services Division
P.O. Box 24055, MS#702
Oakland, CA 94623-1055

Re: **Discharge Compliance Report – Second Half 2012**
1230 14th Street, Oakland, California

Dear Ms. Kulka:

Pangea Environmental Services, Inc. (Pangea) has prepared this *Discharge Compliance Report – Second Half 2012* for the subject site as specified in the Wastewater Discharge Permit #5064043 2 issued August 17, 2010. There was no hazardous waste disposal at the site during this half year. The SVE system was changed out due to a damaged heating element. The new SVE unit is similar to the unit previously operated at the site. This report presents analytical test results -- no regulated substances (petroleum hydrocarbons) were detected in the system effluent compliance point.

BACKGROUND INFORMATION

DPE system installation was required and approved by the Alameda County Environmental Health (ACEH) to cleanup residual petroleum hydrocarbons from a prior unauthorized release. The DPE system consists of an aboveground vacuum pump to simultaneously extract soil vapor and groundwater. The groundwater treatment equipment consists of a vapor/liquid separator (knockout tank), transfer pump, a particulate filter vessel, two 1,000-lb activated carbon vessels connected in series, and a water totalizer meter. Once the transfer tank becomes full, the transfer pump is activated by level control switches in the transfer tank and pumps the groundwater through the water treatment system prior to discharge to the sanitary sewer under permit from the EBMUD.

SYSTEM OPERATION AND PERFORMANCE

DPE system operation commenced on April 27, 2011. As of the end of this reporting period (November 26, 2012), the DPE system extracted and treated approximately 354,560 gallons of groundwater. The average groundwater flow rate during the second half of 2012 has ranged from approximately 0.1 to 2.33 gpm, which includes system shutdown periods. GWE system performance is summarized in Table 1.

SYSTEM SAMPLING

During this reporting period, samples were collected from the influent and effluent ports of the groundwater treatment system on October 30, 2012. System flow data and groundwater analytical results are summarized on Table 1. Based on laboratory analytical results, the DPE system was operating in compliance with discharge permit conditions: no regulated substances (petroleum hydrocarbons) were detected in the system effluent. The laboratory analytical report is included in Appendix A.

CLOSING

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please email mgillies@pangeaenv.com or call me at (408) 910-1783.

Sincerely,
Pangea Environmental Services, Inc.

Morgan Gillies
Project Manager

ATTACHMENTS

Table 1 – GWE (DPE) System Performance Summary
Appendix A – Laboratory Analytical Report

Pangea

Table 1. GWE (DPE) System Performance Summary - 1230 14th Street, Oakland, California

Well ID	Date	Totalizer Reading[1] (gallons)	Interval Flow Volume (gallons)	Interval Duration (days)	Average Flow Rate (gpm)	**TPHg** Concentration (ug/L)	**Benzene** Concentration (ug/L)	**MTBE** Concentration (ug/L)	TPHg Removed (Lbs)	Benzene Removed (Lbs)	MTBE Removed (Lbs)	Comments
System Influent	04/27/11	2,090	0	0	--	**960**	**120**	**ND (<5.0)**	0.000	0.000	0.000	Starup water sampling of influent (3/7/11)
	05/05/11	62,822	60,732	8	5.27	---	---	---	0.485	0.061	0.000	On.
	05/16/11	100,689	37,867	11	2.39	---	---	---	0.302	0.038	0.000	On.
	05/24/11	101,686	997	8	0.09	---	---	---	0.008	0.001	0.000	On. Shutdown due to high EFF-V conc.
	07/13/11	101,686	0	50	0.00	---	---	---	0.000	0.000	0.000	Off. Restart, check cat cell. Send for repair.
	09/06/11	102,753	1,067	55	0.01	---	---	---	0.009	0.001	0.000	Off. Restart, off at departure.
	10/24/11	102,753	0	48	0.00	---	---	---	0.000	0.000	0.000	Off. Restart, install new cat cell. Off at departure.
	11/22/11	103,480	727	29	0.02	---	---	---	0.006	0.001	0.000	Off. Restart.
	11/23/11	103,593	113	1	0.08	---	---	---	0.001	0.000	0.000	Off. Restart.
	11/28/11	104,011	418	5	0.06	---	---	---	0.003	0.000	0.000	Off. Restart.
	11/29/11	104,105	94	1	0.07	---	---	---	0.001	0.000	0.000	Off. Restart.
	12/01/11	105,995	1,890	2	0.66	---	---	---	0.015	0.002	0.000	On.
	12/14/11	107,707	1,712	13	0.09	**320**	**8.9**	**ND (<5.0)**	0.005	0.000	0.000	Off. Restart.
	01/05/12	108,203	496	22	0.02	---	---	---	0.001	0.000	0.000	Off. Restart, off at departure.
	01/23/12	108,303	100	18	0.00	---	---	---	0.000	0.000	0.000	Off. Restart.
	01/24/12	112,516	4,213	1	2.93	---	---	---	0.011	0.000	0.000	Off. Restart, off at departure.
	02/23/12	113,710	1,194	30	0.03	---	---	---	0.003	0.000	0.000	Off. Restart.
	02/28/12	118,833	5,123	5	0.71	---	---	---	0.014	0.000	0.000	On.
	02/29/12	119,300	467	1	0.32	---	---	---	0.001	0.000	0.000	Off. Restart.
	03/01/12	119,956	656	1	0.46	---	---	---	0.002	0.000	0.000	On.
	03/02/12	123,447	3,491	1	2.42	---	---	---	0.009	0.000	0.000	On.
	03/09/12	146,799	23,353	7	2.32	---	---	---	0.062	0.002	0.000	On.
	03/13/12	160,104	13,305	4	2.31	**2,100**	**70**	**ND (<5.0)**	0.232	0.008	0.000	On. Shutdown 3/16 due to overheating - SVE unit replaced.
	06/15/12	167,592	7,488	94	0.06	---	---	---	0.131	0.004	0.000	Startup of new SVE unit.
	06/19/12	169,669	2,077	4	0.36	---	---	---	0.036	0.001	0.000	Off. Restart.
	06/20/12	172,212	2,543	1	1.77	---	---	---	0.044	0.001	0.000	Off. Restart.
	07/03/12	179,966	7,754	13	0.41	---	---	---	0.135	0.005	0.000	Off 7/1 for QM. Restart.
	07/06/12	188,780	8,814	3	2.04	**1,000**	**26**	**ND (<5.0)**	0.073	0.002	0.000	On.
	07/10/12	193,738	4,958	4	0.86	**900**	**16**	**ND (<5.0)**	0.037	0.001	0.000	On.
	07/17/12	207,286	13,548	7	1.34	---	---	---	0.101	0.002	0.000	Off. Leave off. Restart 7/18.
	07/19/12	209,077	1,791	2	0.62	---	---	---	0.013	0.000	0.000	Off. Restart.
	07/20/12	211,310	2,233	1	1.55	---	---	---	0.017	0.000	0.000	On.
	07/21/12	212,880	1,570	1	1.09	---	---	---	0.012	0.000	0.000	Off. Restart.
	08/03/12	256,581	43,701	13	2.33	---	---	---	0.327	0.006	0.000	Off. Restart.
	08/07/12	258,157	1,577	4	0.27	---	---	---	0.012	0.000	0.000	Off. Restart.
	08/31/12	284,048	25,891	24	0.75	---	---	---	0.194	0.003	0.000	Off. Restart.
	09/20/12	286,963	2,915	20	0.10	---	---	---	0.022	0.000	0.000	Off. Restart.
	10/03/12	304,780	17,817	13	0.95	---	---	---	0.133	0.002	0.000	Off. Restart.
	10/15/12	331,065	26,285	12	1.52	**230**	**1.0**	**ND (<5.0)**	0.050	0.000	0.000	On. Turn off; inject BOC and restart.
	10/17/12	331,675	610	2	0.21	**2,000**	**4.2**	**ND (<5.0)**	0.010	0.000	0.000	On.
	10/18/12	333,335	1,660	1	1.15	**130**	**ND (<0.5)**	**ND (<5.0)**	0.002	0.000	0.000	On.
	10/19/12	334,580	1,245	1	0.86	**130**	**ND (<0.5)**	**ND (<5.0)**	0.001	0.000	0.000	On.
	11/05/12	348,740	14,160	17	0.58	---	---	---	0.015	0.000	0.000	Off. Close DP-4 & DP-5. Inject BOC and restart.
	11/12/12	352,220	3,480	7	0.35	**410**	**1.4**	**ND (<5.0)**	0.012	0.000	0.000	On. Open DP-4 & DP-5.
	11/13/12	352,520	300	1	0.21	**---**	**---**	**---**	0.001	0.000	0.000	Off. Restart.
	11/26/12	354,560	2,040	13	0.11	**---**	**---**	**---**	0.007	0.000	0.000	Off. Restart.
									2.551	**0.144**	**0.000**	**Total Cumulative Removal (Lbs)**
System Effluent	04/27/11	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	Startup water sampling of effluent (3/7/11)
	12/14/11	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	
	07/10/12	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	
	10/30/12	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	

Table 1. GWE (DPE) System Performance Summary - 1230 14th Street, Oakland, California

Well ID	Date	Totalizer Reading[1] (gallons)	Interval Flow Volume (gallons)	Interval Duration (days)	Average Flow Rate (gpm)	**TPHg** Concentration (ug/L)	**Benzene** Concentration (ug/L)	**MTBE** Concentration (ug/L)	TPHg Removed (Lbs)	Benzene Removed (Lbs)	MTBE Removed (Lbs)	Comments

Discharge Limits (ug/L):	***5***	***5***	***5***	***5***
	Benzene	***Toluene***	***Ethylbenzene***	***Total Xylenes***

ABBREVIATIONS AND NOTES:

1 = Initial totalizer reading was 2,090.

gpm = Gallons per minute

TPHd = Total Petroleum Hydrocarbon as Diesel analyzed by EPA Method 8015B with silica gel cleanup

TPHg = Total Petroleum Hydrocarbon as Gasoline analyzed by EPA Method 8015B

Benzene analyzed by EPA Method 8021B

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021 Cm

Toulene, Ethylbenzene and Total Xylenes analyzed by EPA Method 8015B

-- = not measured/not available

* Estimated contaminant mass calculated by multiplying average concentration detected during period (Table 1) by volume of extracted groundwater. Uses most recent lab data.

**Unless noted Toulene, Ethylbenzene and Total Xylenes non-detect (<0.5)

APPENDIX A

Laboratory Analytical Report

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St	Date Sampled: 10/30/12
		Date Received: 10/31/12
	Client Contact: Morgan Gillies	Date Reported: 11/05/12
	Client P.O.:	Date Completed: 11/05/12

WorkOrder: 1210991

November 06, 2012

Dear Morgan:

Enclosed within are:

1) The results of the **4** analyzed samples from your project: **#1150.001; 1230 14th St,**
2) QC data for the above samples, and
3) A copy of the chain of custody.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

The analytical results relate only to the items tested.

1210991

RUSH

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Road
Pittsburg, CA 94565
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (925) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Morgan Gillies	Bill To: Pangea
Company: Pangea Environmental Services, Inc.	
1710 Franklin Street, Suite 200, Oakland, CA 94612	
	E-Mail: mgillies@pangeaenv.com
Tele: (510) 836-3702	Fax: (510) 836-3709
Project #: 1150.001	Project Name: 1230 14th St
Project Location: 1230 14th St., Oakland	
Sampler Signature:	

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED ICE	HCL	HNO_3	Other
+ MW-6	MW-6	10/30/12	1256	7	V/p	X					X	X		
✓ EFF-W	EFF		1318	5	V									
+ MID-W	MID		1321											
✓ INF-W	INF	↓	1328	↓	↓	↓					↓	↓		

Analysis Request

BTEX & TPH as Gas (602/8020 + 8015)/MTBE	5 Oxygenates (8260)	TPH-Diesel	MeOH, EtOH & IPA (8260)	CTAS (non-ionic surfactants)
(X)			X	X
X	X			
X	X			
X	X			

9/mbtex 24hr / CTAS 72hr per email KB

Cancelled per T. dLF 10/31/12

Other

Comments: Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
	10/31/12	2008	
Relinquished By:	Date:	Time:	Received By:
	10/31/12	1245	
Relinquished By:	Date:	Time:	Received By:

ICE/t° 4.2
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

COMMENTS:

	VOAS	O&G	METALS	OTHER
PRESERVATION	✓		pH<2	

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1210991 **ClientCode: PEO**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Morgan Gillies
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com,tdelafuente@pa
cc:
PO:
ProjectNo: #1150.001; 1230 14th St

Bill to:
Bob Clark-Riddell
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612

Requested TAT: 5 days

Date Received: **10/31/2012**
Date Printed: **11/01/2012**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1210991-001	MW-6	Water	10/30/2012 12:56	☐	B	C	A	A								
1210991-002	EFF-W	Water	10/30/2012 13:18	☐			A									
1210991-003	MID-W	Water	10/30/2012 13:21	☐			A									
1210991-004	INF-W	Water	10/30/2012 13:28	☐			A									

Test Legend:

1	8260VOC_W	2	CTAS_W	3	G-MBTEX_W	4	PREDF REPORT	5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments: For 001 G/MBTEX 24hr and CTAS 72hr

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**
Date and Time Received: **10/31/2012 1:06:35 PM**

Project Name: **#1150.001; 1230 14th St**
LogIn Reviewed by: Maria Venegas

WorkOrder N°: **1210991** Matrix: Water
Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 4.2°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

** NOTE: If the "No" box is checked, see comments below.*

Comments:

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Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St	Date Sampled: 10/30/12
		Date Received: 10/31/12
	Client Contact: Morgan Gillies	Date Extracted: 11/01/12
	Client P.O.:	Date Analyzed: 11/01/12

Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 1210991

Lab ID	1210991-001B				Reporting Limit for DF =1		
Client ID	MW-6						
Matrix	W						
DF	1				S	W	
Compound	**Concentration**				ug/kg	µg/L	
Ethanol	ND				NA	50	
Methanol	ND				NA	500	
2-Propanol	ND				NA	50	
Surrogate Recoveries (%)							
%SS1:	91						
%SS2:	107						
%SS3:	102						
Comments							

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

surrogate diluted out of range or surrogate coelutes with another peak.

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

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	Client Contact: Morgan Gillies	Date Extracted: 10/31/12
	Client P.O.:	Date Analyzed: 11/01/12

CTAS (Cobalt Thiocyanate Active Subtances)/Non-ionic Surfactants

Analytical Method: SM5540D Work Order: 1210991

Lab ID	Client ID	Matrix	CTAS	DF	Comments
1210991-001C	MW-6	W	ND	1	

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	0.1 mg/L	
	S	NA	

*water samples are reported in mg/L.

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

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Pangea Environmental Svcs., Inc.	Client Project ID: #1150.001; 1230 14th St	Date Sampled: 10/30/12
		Date Received: 10/31/12
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 10/31/12
Oakland, CA 94612	Client P.O.:	Date Analyzed: 10/31/12

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1210991

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	MW-6	W	ND	ND	1.1	ND	ND	3.5	1	87	

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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Pangea Environmental Svcs., Inc.	Client Project ID: #1150.001; 1230 14th St	Date Sampled: 10/30/12
		Date Received: 10/31/12
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 10/31/12-11/01/12
Oakland, CA 94612	Client P.O.:	Date Analyzed: 10/31/12-11/01/12

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Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1210991

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
002A	EFF-W	W	ND	ND	ND	ND	ND	ND	1	92	
003A	MID-W	W	ND	ND	ND	ND	ND	1.1	1	93	
004A	INF-W	W	55	ND	ND	0.61	ND	7.3	1	99	d2

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:
d2) heavier gasoline range compounds are significant (aged gasoline?)

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 72128 | WorkOrder: 1210991

EPA Method: SW8260B **Extraction: SW5030B** **Spiked Sample ID: 1210991-001B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	ND	10	100	99.6	0.723	107	70 - 130	20	70 - 130
Benzene	1.0	10	81.5	82	0.619	96.7	70 - 130	20	70 - 130
t-Butyl alcohol (TBA)	ND	40	113	110	2.52	115	70 - 130	20	70 - 130
Chlorobenzene	ND	10	82.7	82.9	0.218	97.4	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	94	93.9	0.0661	105	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	104	99.1	5.13	109	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	86.9	86.7	0.245	108	70 - 130	20	70 - 130
Diisopropyl ether (DIPE)	ND	10	93.3	93.9	0.568	103	70 - 130	20	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	100	100	0	107	70 - 130	20	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	103	102	0.861	109	70 - 130	20	70 - 130
Toluene	ND	10	78	77.8	0.224	93.5	70 - 130	20	70 - 130
Trichloroethene	ND	10	87.5	85.9	1.88	102	70 - 130	20	70 - 130
%SS1:	91	25	88	87	0.894	86	70 - 130	20	70 - 130
%SS2:	107	25	105	106	1.17	110	70 - 130	20	70 - 130
%SS3:	102	2.5	101	103	2.37	100	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 72128 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1210991-001B	10/30/12 12:56 PM	11/01/12	11/01/12 11:58 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QA/QC Officer

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QC SUMMARY REPORT FOR SM5540D

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 72096 | WorkOrder: 1210991

EPA Method: SM5540D **Extraction: SM5540D** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
CTAS	N/A	1	N/A	N/A	N/A	88.8	N/A	N/A	85 - 115

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 72096 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1210991-001C	10/30/12 12:56 PM	10/31/12	11/01/12 1:49 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water | QC Matrix: Water | BatchID: 72124 | WorkOrder: 1210991

EPA Method: SW8021B/8015Bm **Extraction: SW5030B** **Spiked Sample ID: 1210984-001M**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH(btex)£	ND	60	107	107	0	101	70 - 130	20	80 - 120
MTBE	ND	10	79.7	85.9	7.14	96.4	70 - 130	20	80 - 120
Benzene	ND	10	98.4	101	2.79	110	70 - 130	20	80 - 120
Toluene	ND	10	102	100	1.26	114	70 - 130	20	80 - 120
Ethylbenzene	ND	10	101	103	1.64	109	70 - 130	20	80 - 120
Xylenes	ND	30	105	106	0.714	112	70 - 130	20	80 - 120
%SS:	87	10	93	95	1.83	107	70 - 130	20	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 72124 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1210991-001A	10/30/12 12:56 PM	10/31/12	10/31/12 4:38 PM	1210991-002A	10/30/12 1:18 PM	10/31/12	10/31/12 5:08 PM
1210991-003A	10/30/12 1:21 PM	11/01/12	11/01/12 5:51 PM	1210991-004A	10/30/12 1:28 PM	10/31/12	10/31/12 6:08 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

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