Navdeep Singh Grewal 349 Brianne Court Pleasanton, CA 94566

August 20, 2013

Mr. Mark Detterman Alameda County Health Care Services Agency Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Re: CHEVRON #9-1851 451 Hegenberger Road Oakland, California ACEH Case No. 464

Dear Mr. Detterman:

I, Mr. Navdeep Singh Grewal, have retained Pangea Environmental Services, Inc. (Pangea) for environmental consulting services for the project referenced above. On my behalf, Pangea is submitting the attached UST Removal Compliance Sampling Report.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report is true and correct to the best of my knowledge.

Sincerely,

Navdeep Singh Grewal

October 26, 2012



Mr. Keith L. Matthews City of Oakland Fire Department Fire Prevention Bureau 250 Frank H. Ogawa Plaza, Suite 3341 Oakland, CA 94612

# Re: UST Removal Compliance Sampling Report

451 Hegenberger Road, Oakland, California

# Dear Mr. Matthews:

On behalf of property owner Mr. Navdeep Singh Grewal, Pangea Environmental Services, Inc., (Pangea) has prepared this *Underground Storage Tank (UST) Removal Compliance Sampling Report* for the subject site. This report describes compliance sampling performed after diesel UST removal with regulatory oversight by the City of Oakland Fire Department (OFD). The compliance sampling was conducted in general accordance with the California Regional Water Quality Control Board's *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites* (Tri-Regional Guidelines) dated September 2003. Described below are the project background, compliance sampling, and analytical results.

# PROJECT BACKGROUND

The site is an active gasoline station located at the intersection of Hegenberger Road and Edgewater Road in Oakland, California. The operating station consists of one station building, two fuel dispenser islands, three 10,000-gallon underground storage tanks (USTs) and, prior to removal, one 10,000-gallon diesel UST.

# UST REMOVAL

On September 18, 2012, Balch Petroleum Contractors and Builders Inc., (Balch) of Milpitas, California removed a 10,000-gallon diesel UST from the site. The UST removal was observed by Hazardous Materials Inspector Keith Matthews of OFD. UST removal/closure permit information is included in Appendix A. The generator's California EPA ID number is CAL000280379. Limited groundwater was encountered in the UST cavity beneath the bottom of the tank. The final excavation was approximately 15 feet deep at the bottom of the tanks. Photographs of the tank removal are presented in Appendix A. No holes were observed in the UST, which appeared

# PANGEA Environmental Services, Inc.

to be in very good condition. The tank was loaded by Balch and hauled to an appropriate licensed disposal facility. The waste manifest is included in Appendix A.

# **COMPLIANCE SAMPLING**

On September 18, 2012, Pangea collected UST compliance samples and a four-point composite of stockpiled soil/fill removed from the UST area. Mr. Matthews of the OFD observed the compliance sampling. One compliance soil sample was collected from each end of the UST at the soil water interface (approximately 6 ft depth) and one groundwater sample was collected from under the UST for a total of three compliance samples (Figure 1).

To facilitate UST sample collection, a backhoe was used to collect soil from both ends of the UST. Soil from approximately 6 feet below grade surface (bgs) was lifted to the side of the pit in the backhoe bucket, where a sample was collected. A groundwater sample was collected from the bottom of the pit.

Four soil samples were also collected from the stockpiled soil/pea gravel, and composited by the laboratory prior to analysis. No odor or staining was observed during sampling of the stockpiled soil/pea gravel. All soil samples were collected in stainless steel tubes hammered into the soil and capped with Teflon and plastic end caps. The samples were placed into a cooler filled with ice, and delivered under chain-of-custody procedures to McCampbell Analytical, Inc. of Pittsburg, California, a State-certified laboratory. The compliance soil and stockpile sample locations are shown on Figure 1.

Based on discussions with the OFD and review of the *Tri-Regional Guidelines*, the stockpile and compliance soil samples were analyzed for TPHd by EPA Method 8015Cm with silica cleanup gel; benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tert-butyl ether (MTBE), tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), diisopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), 1,2-dibromoethane (EDB) and 1,2-dichloroethane (EDC or 1,2-DCA) by EPA Method 8260B. Soil sampling was performed in accordance with Pangea's *Standard UST Excavation Sampling Procedures* presented in Appendix B.

# ANALYTICAL RESULTS

Soil and groundwater analytical results from the UST removal compliance and stockpile sampling are summarized in Tables 1 and 2, respectively. TPHd was detected at very low concentrations in both compliance soil samples and the stockpile sample. TB1-6 from the west sidewall of the UST cavity contained TPHd at concentration of 3.6 mg/kg and TB2-6 from the east sidewall contained TPHd at a concentration of 5.5 mg/kg. The stockpile composite sample contained a TPHd concentration of 4.9 mg/kg. BTEX and MTBE were not detected in any of the stockpile or

compliance samples. The only volatile organic compound detected in any of the compliance samples was TBA at a concentration of 0.25 mg/kg (TB2-6).

Groundwater from the UST excavation contained TPHd [960 micrograms per liter ( $\mu$ g/L)], MTBE (15  $\mu$ g/L) and TBA (1,800  $\mu$ g/L). The laboratory analytical reports are included in Appendix C. The MTBE and TBA impact is apparently due to other petroleum hydrocarbon releases at the site. Groundwater analytical data from well MW-3, located immediately downgradient of the diesel UST (before well destruction), did not contain TPHd. Well MW-3 data indicates that the TPHd concentration from the grab compliance sample is very limited in extent.

## CONCLUSIONS

Soil and groundwater analytical results indicate that no significant petroleum hydrocarbon contamination is present beneath the removed UST. This result is not surprising since no holes were observed in the removed tank and the tank appeared to be in good condition. Pangea understands that a regulatory case is currently open due to a historic release (Chevron is the responsible party). Pangea recommends no further action regarding the removed diesel UST.

If you have any questions or comments, I can be reached via phone at (510) 435-8664 or email at briddell@pangeaenv.com.

Sincerely, Pangea Environmental Services, Inc.

Bob Clark-Riddell, P.E. Principal Engineer

## ATTACHMENTS

Figure 1 – Compliance Sampling Locations Table 1 – Soil Analytical Data Table 2 - Groundwater Analytical Data

Appendix A – Tank Removal Documents Appendix B – Standard Sampling Procedures Appendix C – Laboratory Analytical Reports

cc: Navdeep Singh Grewal, 349 Brianne Ct., Pleasanton, CA 94566



451 Hegenberger Road Oakland, California

PANGEA

Locations

# Pangea

## Table 1. Soil Analytical Data - 451 Hegenberger Road, Oakland, California

Sample ID	Date Sampled	Sample Depth (ft)	TPHd ◀	Benzene	Toluene	Ethylbenzene mg/kg	Xylenes	MTBE	Other VOCs
UST Compli	ance Samp	les							
TB1-6 TB2-6	9/18/2012 9/18/2012	6.0 6.0	3.6 5.5	<0.005 <0.005	<0.005 <0.005	<0.005 <0.005	<0.005 <0.005	<0.05 <0.05	ND TBA (0.25)
Stockpile Sa	amples								
1A,B,C,D	9/18/2012		4.9	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	ND

## Notes, Abbreviations and Methods:

mg/kg = Milligrams per kilogram, approximately equivalent to parts per million (ppm).

TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015Cm.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8021B.

MTBE = Methyl tertiary-butyl ether by EPA Method 8021B.

Other VOCs = Other volatile organic compounds (VOCs) detected by EPA method 8206B.

TBA = tertiary butyl alcohol by EPA Method 8260B.

-- = Not available or not analyzed.

< n = Chemical not present at a concentration in excess of detection limit shown.

ND = Not detected above reporting limit/method detection limit.

# Pangea

Table 2. Groundwater Analytical Data - 451 Hegenberger Road, Oakland, California

Sample ID	Sample Depth (ft)	Date Sampled	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE — ug/L —	TBA	TAME	DIPE	ETBE	Other VOCs
TB	14	9/18/2012	960	<10	<10	<10	<10	15	1,800	<10	<10	<10	ND

Abbreviations and Notes:
TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015C.
BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8021B.
MTBE = Methyl tert-butyl ether by EPA Method 8260B.
TBA = tertiary butyl alcohol by EPA Method 8260B.
DIPE = diisopropyl ether by EPA Method 8260B.
ETBE = ethyl tert-butyl ether by EPA Method 8260B.
TAME = tert-amyl methyl ether by EPA Method 8260B.
Other VOCs = Other volatile organic compounds (VOCs) detected by EPA method 8206B.
ug/L = Micrograms per Liter
<n =="" below="" detection="" l<="" limit="" n="" of="" td="" ug=""></n>
= Not analyzed
bgs = below grade surface
ND = Not detected above reporting limit/method detection limit.

# **APPENDIX A**

Tank Removal Documents





# **Fire Prevention Work Order**

Business Name:	Edgewater SuperStop	Reason:	Acceptance Test
Address	451 Hegenberger RD	Request Date:	2012-05-03 10:45AM
Job (Insp Ref#)	2012-05503	Assigned To:	Matthews,Keith
Permit Type:	Underground Storage Permit	Permit #:	2012-05503
Description:	UST Upgrade+ UST Removal		
Analizant	Rolph Detroloum Contractors	Applicant Phone	408/042 8686
Applicant.		Applicant Filone.	400/942-0000
Contractor:		Contractor Phone.	

Comments:







Oakland Fire Department, Fire Prevention Bureau 250 Frank H. Ogawa Plaza, Ste. 3341 Oakland, CA 94612-2032



# **Fire Prevention Work Order**

Business Name:	Edgewater SuperStop	Reason:	Acceptance Test
Address.	451 Hegenberger RD	Request Date:	2012-05-03 10:45AM
Job (Insp Ref#):	2012-05503	Assigned Tail	Matthews,Keith
Permit Type:	Underground Storage Permit	Permit #:	2012-05503
Description:	UST Upgrade		
Applicant	Balch Petroleum Contractore	Applicant Observ	408/042 8686
Аррисанс	baich rendiedin Contractors	Applicant Phone	400/942-0000
Contractor:		Contractor Phone:	

Comments:

Johns@ Balch Retroleum.com

REVIEWED AND APPROVED OAKLAND FIRE DEPARTMENT BY: HAND - TITLE: DATE: CONTRACTOR	F I I	
ALL INSPECTIONS REQUIRE 48 HOURS NOTICE		
REVIEWED AND APPROVED OAKLAND FIRE DEPARTMENT BY:	F ( F I I	





# OAKLAND FIRE DEPARTMENT, OES UNDERGROUND STORAGE TANK CLOSURE/REMOVAL FIELD INSPECTION REPORT

2012-0=563	2K4 Use bergez Suder Ste
Site Address: 4/5/1/2000 //	Name of Facility: Heary has Elin Uver
Inspector: Kauth protect 6.15	Contact on site: John Statis
Date and Time of Arrival:	Contractor/Consultant: Dr. 1c/ 1c/ 1c/

General Requirements	Yes	No	N/A
Approved closure plan on site.	- M		
Changes to approved plan noted.			
Residuals properly stored/transported.	-		
Receipt for adequate dry ice noted.		-	

General Requirements	Yes	No	N/A
Site Safety Plan properly signed.	1	- 612	
40B:C fire extinguisher on site.			
"No Smoking" signs posted.			
Gas detector challenged by inspector			

T #1

14

51

1.7

Ne

N.

T #2

T #3

T #4

**Tank Observations** 

Obvious corrosion? Obvious odors from tank?

Tank bed backfill material Obvious discoloration?

Obvious odors ex tank bed?

Tank tagged by transporter?

Tank wrapped for transport? Tank plugged w/ vent cap? Date/time tank hauled off? No. of soil samples taken? Depth of soil samples (ft. bgs)

Water in excavation? Sheen/product on water?

Seams intact?

Tank Observations	T #1	T #2	T #3	T #4
Tank Capacity (gallons)	ICR			
Material last stored	Pit			
Dry ice used (pounds)	21, 12			
Combustible gas concentration a	s %LEL (No	ole lime &	sampling	point)
(1)	~			
(2)			1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
(3)				
Oxygen concentration as % volu	ime. Note t	ime &sam	pling poin	u(.)
(1)	#			
(2)				
(3)				·
Tank Material				
Wrapping/Coating, if any				
Obvious holes?				

Piping Removal	Yes	No	N/A		
All piping removed hauled off w/ tanks?	×	_			
Obvious holes on pipes?		X	† <b>-</b>		
Obvious odors from pipes?		X			
Obvious soil discoloration in piping trench?		¥.	İ		
Obvious odors from piping trench?		V.			
Water in piping trench?			×		
Number & depth of soil samples from piping trench?			4		
Number & depth of water samples from piping trench?			114		

Additional Observations	Yes	No	N/A
Soil/water sampling protocols acceptable?	1.540	1	
Sampling "chain of custody" noted?	X	1	
Tank pit filled in or covered?		X	-
Tank pit fenced or barricaded?	X	8	
Transporter a registered HW hauler?	X		
Uniform HW Manifest completed?	X	1	
Contractor/Consultant reminded of complete UST Removal Report due within 30 days?	X	H	1
Date/Time removal/closure operations completed?	2h	12	
OT hours or additional charges due from contractor?			

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Notes/Comments:

General Observations	Yes	No	N/A
Leak from any tank suspected?		28	
"Leak Report" form given to the operator?		X	
Obviously contaminated soil excavated?		X.	
Soil stockpile sampled?	X	X	2 J
Stockpile lined AND covered?	X		1
Water in excavation sampled?	Ŷ		
Number/depth of water samples taken?		210	
All samples properly preserved for transport?	1		



UNIFORM HAZAPPOULS	1. Generator ID Number	The second states	1	2. Page 1 of	3. Emer	gency Response	Phone	4. Manifest	Tracking N	umber	Los I all	
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JENER/



Diesel UST underside



UST cavity



Diesel UST loaded for removal

# APPENDIX B

Standard Operating Procedures

# STANDARD FIELD PROCEDURES FOR UST COMPLIANCE SAMPLING

During removal or replacement of underground gasoline storage tanks (USTs), dispensers, or product piping, soil and groundwater compliance sampling is typically required to assess whether or not chemicals of concern have impacted the subsurface. Pangea has developed standard field procedures for compliance sampling and any associated excavation, to provide sample collection, handling and documentation in compliance with State and local regulatory agency regulations. After initial sample collection beneath the removed fuel system component, additional soil samples are routinely collected to monitor the progress of any overexcavation and to confirm removal of soil containing hydrocarbons above regulatory limits.

# Soil Sampling

Soil samples are typically collected from beneath the UST, dispenser or piping a maximum of two feet into the native or undisturbed soil. If water is present in the UST cavity, soil samples are typically collected from the soil/water interface. The soil samples are collected in steam-cleaned brass or steel tubes from either a driven split-spoon type sampler or the bucket of a backhoe or excavator. When a backhoe or excavator is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil. The location and number of samples is determined by regulatory agency representatives and are selected in general guidance with the State of California Regional Water Quality Control Board's *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites* dated September 2003.

When required or requested before sample collection, Pangea field staff screen soil with a portable photo-ionization detector (PID) to qualitatively assess the presence or absence of volatile hydrocarbons. Excavated soil is typically segregated based on hydrocarbon concentration and stockpiled on site on plastic sheeting. When field observations and/or PID measurements indicate that the hydrocarbon-bearing soil has been satisfactorily removed, Pangea collects soil samples from excavation sidewalls and floor for confirmatory analysis at a State-certified analytic laboratory.

# Stockpile Soil Sampling

To facilitate soil disposal at approved offsite facilities, Pangea typically collects one four-point composite soil samples for 100 cubic yards or less of stockpiled soil. If the soil stockpile volume is between 100 and 1,000 cubic yards, two four-point composite samples are typically collected. If soil is segregated based on field observations, at least one four-point composite soil sample is collected for each segregated stockpile. To generate a composite sample, Pangea collects four individual soil samples in steam-cleaned brass or steel tubes by hand, or from either a driven split-spoon type sampler or the bucket of a backhoe or excavator. The sample locations and depths are selected to obtain composite soil sample representative of the stockpile. The four individual soil tubes are composited by the state-certified laboratory. When hand sampling or backhoe/excavator is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil. Additional stockpile sampling procedures may be required to facilitate reuse of soil onsite in accordance with regulatory oversight.

## Grab Ground Water Sampling

If groundwater enters the excavation, grab ground water samples are typically collected from the open excavation. Grab groundwater sample can be collected from excavator equipment, disposable Tygon<sup>®</sup> tubing placed into the excavation, or other appropriate sampling equipment placed into the water. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory.

# Sample Storage, Handling and Transport

Upon removal from the sampler or the backhoe, soil samples are trimmed flush, capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Groundwater samples are labeled, placed in protective foam sleeves, and stored on crushed ice at or below 4°C. All samples are transported under chain-of-custody to a State-certified analytic laboratory.

# Duplicates and Blanks

Duplicate or blind duplicate samples can be collected, if requested. For water sampling, laboratory-supplied trip blanks can accompany samples to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

# APPENDIX C

Laboratory Analytical Reports



McCampbell Analytical, Inc. "When Quality Counts"

# **Analytical Report**

Pangea Environmental Svcs., Inc.	Client Project ID: #1465.001; Grewel-451	Date Sampled: 09/18/12	
1710 Franklin Street, Ste. 200		Date Received: 09/18/12	
	Client Contact: Tina De La Fuente	Date Reported: 09/24/12	
Oakland, CA 94612	Client P.O.:	Date Completed: 09/24/12	

## WorkOrder: 1209438

September 25, 2012

Dear Tina:

Enclosed within are:

- 1) The results of the 3 analyzed samples from your project: **#1465.001**; Grewel-451 Hegenberger,
- 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.

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# McCampbell Analytical, Inc.



1534 Willow Pass Rd Pittsburg, CA 94565-1701

# **CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

(925) 252-9262				WorkO	rder: 1209438	Clie	ntCode: PEO		
	WaterTrax	WriteOn	EDF	Excel	EQuIS	🖌 Email	HardCopy	ThirdParty	J-flag
Report to:				Bi	ill to:		Re	quested TAT:	1 day
Tina De La Fuente	Email:	tdelafuente@pan	geaenv.com		Bob Clark-Ride	dell			
Pangea Environmental Svcs., Inc.	cc:				Pangea Enviro	onmental Svcs	s., Inc.		
1710 Franklin Street, Ste. 200	PO:				1710 Franklin	Street, Ste. 20	00 Da	te Received:	09/18/2012
Oakland, CA 94612	ProjectNo:	#1465.001; Grew	el-451 Hegenberg	er	Oakland, CA 9	4612	Da	te Printed:	09/18/2012
(415) 218-7247 FAX: (510) 836-3709									

					Requested Tests (See legend below)											
Lab ID	Client ID	Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
1209438-001	ТВ	Water	9/18/2012 11:05			А		В								
1209438-002	TB1-6	Soil	9/18/2012 11:35		А		А									
1209438-003	TB2-6	Soil	9/18/2012 11:56		А		А									

### Test Legend:

1	8260B_S
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2	8260B_W	
7		
12		

3 TPH(D)WSG\_S 8

4 TPH(D)WSG\_W 9

5	
10	

Prepared by: Melissa Valles

<u>001-5day</u> **Comments:** 

> 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.



# Sample Receipt Checklist

Client Name:	Pangea Environm	ental Svcs., Inc.			Date	e and Ti	:22:53 PM		
Project Name:	#1465.001; Grewe	l-451 Hegenberger			Log	In Revie	ewed by:		Melissa Valles
WorkOrder N°:	1209438	Matrix: Soil/Water			Car	rier:	Benjamin Yslas	MAI Courie	с)
		<u>Chai</u>	n of Cu	ustody (C	OC) Inform	nation			
Chain of custody	present?		Yes	✓	No	]			
Chain of custody	signed when relingu	uished and received?	Yes	✓	No	]			
Chain of custody	agrees with sample	labels?	Yes	✓	No	]			
Sample IDs note	d by Client on COC?	?	Yes	✓	No	]			
Date and Time o	f collection noted by	Client on COC?	Yes	✓	No	]			
Sampler's name	noted on COC?		Yes	✓	No	]			
			Sample	Receipt	Informatio	<u>on</u>			
Custody seals in	tact on shipping con	tainer/cooler?	Yes		No	]		NA 🖌	
Shipping contain	er/cooler in good co	ndition?	Yes	✓	No	]			
Samples in prop	er containers/bottles	?	Yes	✓	No	]			
Sample containe	ers intact?		Yes	✓	No	]			
Sufficient sample	e volume for indicate	d test?	Yes	✓	No	]			
		Somalo Broo	orvotio	n and Ha	ld Time (U	T) Infor	motion		
		Sample Fresh	ervalio				mation		
All samples rece	ived within holding ti	me?	Yes	✓	No				
Container/Temp	Blank temperature		Coole	er Temp:	4.6°C			NA	
Water - VOA via	ls have zero headsp	ace / no bubbles?	Yes	✓	No	] No V	'OA vials submi	tted	
Sample labels ch	necked for correct pr	eservation?	Yes	✓	No	]			
Metal - pH accep	otable upon receipt (p	oH<2)?	Yes		No	]		NA 🗹	
Samples Receive	ed on Ice?		Yes	✓	No	]			
		(Ісе Тур	e: WE	TICE )	)				

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

Comments:

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McCampbell "When Qu	Analytica ality Counts''	l, Inc.		x 94565-1701 x: (925) 252-9269 @mccampbell.com									
Pangea Environmental Svcs., Inc.	Client l	Project ID:	#14	465.001; Grewel-	Date Sampled:	09/18/12							
	451 He	genberger			Date Received:	09/18/12							
1710 Franklin Street, Ste. 200	Client (	Contact: T	ina D	e La Fuente	Date Extracted:	09/18/12							
Oakland, CA 94612	Client	P.O.:	ina D		Date Analyzed:	09/19/12							
	Volatila Organ	ice by D&	0,,1,,12										
Extraction Method: SW5030B	volatile Ofgan	Analytica	1 All	od: SW8260B	aiget List)	Work Order: 12094	-38						
Lab ID				1209438	-002A								
Client ID	TB1-6												
Matrix		D		Soi	1								
Compound	Concentration *	DF	porting Limit	Compour	nd	Concentration *	DF	Limit					
Acetone	ND	1.0	0.05	tert-Amyl methyl ether	r (TAME)	ND	1.0	0.005					
Benzene	ND	1.0 0	.005	Bromobenzene		ND	1.0	0.005					
Bromochloromethane	ND	1.0 0	.005	Bromodichloromethan	ie	ND	1.0	0.005					
Bromoform	ND	1.0 0	.005	Bromomethane		ND	1.0	0.005					
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)		ND	1.0	0.05					
n-Butyl benzene	ND	1.0 0	.005	sec-Butyl benzene		ND	1.0	0.005					
tert-Butyl benzene	ND	1.0 0	.005	Carbon Disulfide		ND	1.0	0.005					
Carbon Tetrachloride	ND	1.0 0	.005	Chlorobenzene		ND	1.0	0.005					
Chloroethane	ND	1.0 0	0.005	Chloroform		ND	1.0	0.005					
Chloromethane	ND	1.0 0	0.005	2-Chlorotoluene		ND	1.0	0.005					
4-Chlorotoluene	ND	1.0 0	0.005	Dibromochloromethan	ie	ND	1.0	0.005					
1,2-Dibromo-3-chloropropane	ND	1.0 0	0.004	1,2-Dibromoethane (E	(DB)	ND	1.0	0.004					
	ND	1.0 0	0.005	1,2-Dichlorobenzene		ND	1.0	0.005					
Distributed if the second state of the second	ND	1.0 0	0.005	1,4-Dichlorobenzene		ND	1.0	0.005					
1.2 Dichloroothone (1.2 DCA)	ND	1.0 0	003	1,1-Dichloroethane		ND	1.0	0.005					
cis 1.2 Dichloroethane	ND	1.0 0	004	trans 1.2 Dichloroethe	ma	ND	1.0	0.005					
1.2 Dichloropropage	ND	1.0 0	005	1.2 Dichloropropaga		ND	1.0	0.005					
2.2-Dichloropropane	ND	1.0 0	005	1,3-Dichloropropane		ND	1.0	0.005					
cis-1 3-Dichloropropene	ND	1.0 0	005	trans-1 3-Dichloroproj	nene	ND	1.0	0.005					
Diisonropyl ether (DIPE)	ND	1.0 0	005	Ethylbenzene	bene	ND	1.0	0.005					
Ethyl tert-butyl ether (ETBE)	ND	1.0 0	005	Freon 113		ND	1.0	0.005					
Hexachlorobutadiene	ND	1.0 0	005	Hexachloroethane		ND	1.0	0.005					
2-Hexanone	ND	1.0 0	005	Isopropylbenzene		ND	1.0	0.005					
4-Isopropyl toluene	ND	1.0 0	.005	Methyl-t-butyl ether ()	MTBE)	ND	1.0	0.005					
Methylene chloride	ND	1.0 0	.005	4-Methyl-2-pentanone	(MIBK)	ND	1.0	0.005					
Naphthalene	ND	1.0 0	.005	n-Propyl benzene	()	ND	1.0	0.005					
Styrene	ND	1.0 0	.005	1.1.1.2-Tetrachloroeth	ane	ND	1.0	0.005					
1,1,2,2-Tetrachloroethane	ND	1.0 0	.005	Tetrachloroethene		ND	1.0	0.005					
Toluene	ND	1.0 0	.005	1,2,3-Trichlorobenzen	e	ND	1.0	0.005					
1,2,4-Trichlorobenzene	ND	1.0 0	.005	1,1,1-Trichloroethane		ND	1.0	0.005					
1,1,2-Trichloroethane	ND	1.0 0	.005	Trichloroethene		ND	1.0	0.005					
Trichlorofluoromethane	ND 1.0 0.0			1,2,3-Trichloropropan	e	ND	1.0	0.005					
1,2,4-Trimethylbenzene	ND	1.0 0	.005	1,3,5-Trimethylbenzer	ne	ND	1.0	0.005					
Vinyl Chloride	ND	1.0 0	.005	Xylenes, Total		ND	1.0	0.005					
		Surrog	ate R	ecoveries (%)									
%SS1:	10	)2		%SS2:		10'	7						
%SS3:	11	2											
Comments:				-									

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

McCampbell "When Qu	Analytica ality Counts''	l, Inc.		1534 Willow F Toll Free Telephon http://www.mccamp	Pass Road, Pittsburg, CA ne: (877) 252-9262 / Fa: pbell.com / E-mail: main	A 94565-1701 x: (925) 252-9269 @mccampbell.com							
Pangea Environmental Svcs., Inc.	Client	Project ID:	#14	465.001; Grewel-	Date Sampled:	09/18/12							
	451 He	genberger			Date Received:	09/18/12							
1710 Franklin Street, Ste. 200	Client	Contact: T	ina E	e La Fuente	Date Extracted:	09/18/12							
Oakland, CA 94612	Client	P.O.:	ina E		Date Analyzed:	09/19/12							
	Volatilo Organ	ice by D&	0)/1)/12										
Extraction Method: SW5030B	volatile Ofgan	Analytica	l Meth	od: SW8260B	aiget List)	Work Order: 12094	-38						
Lab ID				1209438	-003A								
Client ID	TB2-6												
Matrix				Soi	1								
Compound	Concentration *	DF	porting Limit	Compour	nd	Concentration *	DF	Limit					
Acetone	ND	1.0	0.05	tert-Amyl methyl ether	r (TAME)	ND	1.0	0.005					
Benzene	ND	1.0 0	0.005	Bromobenzene		ND	1.0	0.005					
Bromochloromethane	ND	1.0 0	0.005	Bromodichloromethan	ie	ND	1.0	0.005					
Bromoform	ND	1.0 0	0.005	Bromomethane		ND	1.0	0.005					
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)		0.25	1.0	0.05					
n-Butyl benzene	ND	1.0 0	0.005	sec-Butyl benzene		ND	1.0	0.005					
tert-Butyl benzene	ND	1.0 0	0.005	Carbon Disulfide		ND	1.0	0.005					
Carbon Tetrachloride	ND	1.0 0	0.005	Chlorobenzene		ND	1.0	0.005					
Chloroethane	ND	1.0 (	0.005	Chloroform		ND	1.0	0.005					
Chloromethane	ND	1.0 (	0.005	2-Chlorotoluene		ND	1.0	0.005					
4-Chlorotoluene	ND	1.0 (	0.005	Dibromochloromethan		ND	1.0	0.005					
1,2-Dibromo-3-chloropropane	ND	1.0 (	0.004	1,2-Dibromoethane (E	(DB)	ND	1.0	0.004					
	ND	1.0 (	0.005	1,2-Dichlorobenzene		ND	1.0	0.005					
1,3-Dichlorobenzene	ND	1.0 (	0.005	1,4-Dichlorobenzene		ND	1.0	0.005					
1.2 Dichloroothone (1.2 DCA)	ND	1.0 (	0.003	1,1-Dichloroethane		ND	1.0	0.005					
ris 1.2 Dichloroethane	ND	1.0 (	0.004	trans 1.2 Dichloroethe	ma	ND	1.0	0.005					
1.2 Dichloropropage	ND	1.0 0	005	1.2 Dichloropropaga		ND	1.0	0.005					
2.2-Dichloropropane	ND	1.0 0	005	1,3-Dichloropropane		ND	1.0	0.005					
cis-1 3-Dichloropropene	ND	1.0 0	005	trans-1 3-Dichloroproj	nene	ND	1.0	0.005					
Diisonropyl ether (DIPE)	ND	1.0 (	005	Ethylbenzene	pene	ND	1.0	0.005					
Ethyl tert-butyl ether (ETBE)	ND	1.0 0	005	Freon 113		ND	1.0	0.005					
Hexachlorobutadiene	ND	1.0 0	0.005	Hexachloroethane		ND	1.0	0.005					
2-Hexanone	ND	1.0 (	0.005	Isopropylbenzene		ND	1.0	0.005					
4-Isopropyl toluene	ND	1.0 (	0.005	Methyl-t-butyl ether ()	MTBE)	ND	1.0	0.005					
Methylene chloride	ND	1.0 (	0.005	4-Methyl-2-pentanone	(MIBK)	ND	1.0	0.005					
Naphthalene	ND	1.0 0	0.005	n-Propyl benzene	()	ND	1.0	0.005					
Styrene	ND	1.0 0	0.005	1.1.1.2-Tetrachloroeth	ane	ND	1.0	0.005					
1,1,2,2-Tetrachloroethane	ND	1.0 0	0.005	Tetrachloroethene		ND	1.0	0.005					
Toluene	ND	1.0 0	0.005	1,2,3-Trichlorobenzen	e	ND	1.0	0.005					
1,2,4-Trichlorobenzene	ND	1.0 0	0.005	1,1,1-Trichloroethane		ND	1.0	0.005					
1,1,2-Trichloroethane	ND	1.0 0	0.005	Trichloroethene		ND	1.0	0.005					
Trichlorofluoromethane	ND 1.0 0.0			1,2,3-Trichloropropan	e	ND	1.0	0.005					
1,2,4-Trimethylbenzene	ND	1.0 0	0.005	1,3,5-Trimethylbenzer	ne	ND	1.0	0.005					
Vinyl Chloride	ND	1.0 0	0.005	Xylenes, Total		ND	1.0	0.005					
		Surrog	ate R	ecoveries (%)									
%SS1:	1(	)2		%SS2:		108	3						
%SS3:	11	6											
Comments:				-									

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

	Analytica	llnc		1534 Willow Pass Road, Pittsburg, CA 94565-1701 Toll Free Telephone: (877) 252,9262 / Fay: (925) 252,9269						
When Qu	ality Counts"	<u>,</u>		1011 Free Telepho http://www.mccamj	ne: (8/7) 252-9262 / Fa pbell.com / E-mail: mair	x: (925) 252-9269 n@mccampbell.com				
Pangea Environmental Svcs., Inc.	Client	Client Project ID: #1465.001; Grewel- D				09/18/12				
1710 Franklin Street Sta 200	451 He	genberger			Date Received:	09/18/12				
1710 Franklin Street, Stc. 200	Client 0	Contact: Ti	ina D	e La Fuente	Date Extracted	: 09/23/12				
Oakland, CA 94612	Client l	P.O.:			Date Analyzed	: 09/23/12				
	Volatile Organ	ics by P&'	Гan	d GC/MS (Basic T	arget List)*					
Extraction Method: SW5030B	Analytical Method: SW8260B Work Order: 1209438									
Lab ID				1209438	-001A					
Client ID				TE	3					
Matrix	~	Re	porting	wat	er			Reporting		
Compound	Concentration *	DF	Limit	Compour	nd	Concentration *	DF	Limit		
Acetone	ND<200	20	10	tert-Amyl methyl ether	r (TAME)	ND<10	20	0.5		
Benzene	ND<10	20	0.5	Bromobenzene		ND<10	20	0.5		
Bromochloromethane	ND<10	20	0.5	Bromodichloromethan	ie	ND<10	20	0.5		
2 Butenone (MEK)	ND<10	20	0.5 2.0	t Bromometnane		ND<10	20	0.5		
2-Butanone (MEK)	ND<40	20	2.0	t-Butyl alconol (IBA)		1800 ND<10	20	2.0		
tert-Butyl benzene	ND<10	20	0.5	Carbon Disulfide		ND<10	20	0.5		
Carbon Tetrachloride	ND<10	20	0.5	Chlorobenzene		ND<10	20	0.5		
Chloroethane	ND<10	20	0.5	Chloroform		ND<10	20	0.5		
Chloromethane	ND<10	20	0.5	2-Chlorotoluene		ND<10	20	0.5		
4-Chlorotoluene	ND<10	20	0.5	Dibromochloromethar	ne	ND<10	20	0.5		
1,2-Dibromo-3-chloropropane	ND<4.0	20	0.2	1,2-Dibromoethane (E	EDB)	ND<10	20	0.5		
Dibromomethane	ND<10	20	0.5	1,2-Dichlorobenzene		ND<10	20	0.5		
1,3-Dichlorobenzene	ND<10	20	0.5	1,4-Dichlorobenzene		ND<10	20	0.5		
Dichlorodifluoromethane	ND<10	20	0.5	1,1-Dichloroethane		ND<10	20	0.5		
1,2-Dichloroethane (1,2-DCA)	ND<10	20	0.5	1,1-Dichloroethene		ND<10	20	0.5		
cis-1,2-Dichloroethene	ND<10	20	0.5	trans-1,2-Dichloroethe	ene	ND<10	20	0.5		
1,2-Dichloropropane	ND<10	20	0.5	1,3-Dichloropropane		ND<10	20	0.5		
2,2-Dichloropropane	ND<10	20	0.5	1,1-Dichloropropene		ND<10	20	0.5		
cis-1,3-Dichloropropene	ND<10	20	0.5	trans-1,3-Dichloropro	pene	ND<10	20	0.5		
Disopropyl ether (DIPE)	ND<10	20	0.5	Ethylbenzene		ND<10	20	0.5		
Ethyl tert-butyl ether (ETBE)	ND<10	20	0.5	Freon 115 Hexachloroothano		ND<200	20	10		
2-Hevanone	ND<10	20	0.5	Isopropylbenzene		ND<10	20	0.5		
4-Isopropyl toluene	ND<10	20	0.5	Methyl-t-butyl ether ()	MTRF)	15	20	0.5		
Methylene chloride	ND<10	20	0.5	4-Methyl-2-pentanone	(MIBK)	ND<10	20	0.5		
Naphthalene	ND<10	20	0.5	n-Propyl benzene	((((1112)11))	ND<10	20	0.5		
Styrene	ND<10	20	0.5	1,1,1,2-Tetrachloroeth	ane	ND<10	20	0.5		
1,1,2,2-Tetrachloroethane	ND<10	20	0.5	Tetrachloroethene		ND<10	20	0.5		
Toluene	ND<10	20	0.5	1,2,3-Trichlorobenzen	e	ND<10	20	0.5		
1,2,4-Trichlorobenzene	ND<10	20	0.5	1,1,1-Trichloroethane		ND<10	20	0.5		
1,1,2-Trichloroethane	ND<10	20	0.5	Trichloroethene		ND<10	20	0.5		
Trichlorofluoromethane	ND<10	20	0.5	1,2,3-Trichloropropan	e	ND<10	20	0.5		
1,2,4-Trimethylbenzene	ND<10	20	20 0.5 1,3,5-Trimethylbenzene ND<10 20 0.							
Vinyl Chloride	ND<10	20	0.5	Xylenes, Total		ND<10	20	0.5		
	I	Surrog	ate R	ecoveries (%)		I				
%SS1:	102 %SS2:				10	1				
%\$\$3:	10	)7								
Comments:										

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

	CCampbell Anal	nc.	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						
Pangea Envir	ronmental Svcs., Inc.	Client Proje	ect ID:	#1465.001; Grewel-	Date Sampled: 09/18/12				
1710 Franklij	n Street Ste 200	451 Hegent	Date Rec	eived:	09/18/	12			
171011411811	n Succi, Sic. 200	Client Cont	act: Ti	na De La Fuente	Date Extr	acted	09/18/	12	
Oakland, CA	94612	Client P.O.:	:		Date Ana	lyzed	09/19/	12	
Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up*									
Extraction method:	SW3550B/3630C	An	alytical me	ethods: SW8015B			Work Ord	er: 1209438	
Lab ID	Client ID	Matrix		TPH-Diesel (C10-C23)		DF	% SS	Comments	
1209438-002A	TB1-6	S	S 3.6				89	e7,e2	
1209438-003A	TB2-6	S		5.5		1	101	e7,e2	

Reporting Limit for DF $=1$ ;	W	NA	NA
above the reporting limit	S	1.0	mg/Kg

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

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: e2) diesel range compounds are significant; no recognizable pattern e7) oil range compounds are significant

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

	AcCampbell Anal "When Quality Cou	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								
Pangea Envir	conmental Svcs., Inc.	Client Proje	ect ID:	#1465.001; Grewel-	Date Sam	Date Sampled: 09/18/12				
1710 Franklii	n Street Ste 200	451 Hegenberge			Date Rec	eived:	09/18/	12		
171011411	n bucci, bic. 200	Client Contact: Tina De La Fuente			Date Extr	acted	09/18/1	12		
Oakland, CA	94612	Client P.O.:	lient P.O.: Date Analyzed 09					12		
Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up*										
Extraction method:	SW3510C/3630C	An	alytical me	ethods: SW8015B			Work Ord	ler: 1209438		
Lab ID	Client ID	Matrix		TPH-Diesel (C10-C23)		DF	% SS	Comments		
1209438-001B	TB	w		960		1	92	e3		

Reporting Limit for $DF = 1$ ;	W	50	µg/L
above the reporting limit	S	NA	NA

\* water samples are reported in  $\mu$ g/L, wipe samples in  $\mu$ g/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / STLC / TCLP extracts are reported in  $\mu$ g/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/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: e3) aged diesel is significant

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MO O CARANTA MARKED O C'

Datable 70770

Mark Order: 1200420

# QC SUMMARY REPORT FOR SW8260B

OC Matrix Call

W.O. Sample Matrix: Soli	QC Matrix.	. 301			Balchib	. 10/19		WORKO	iuel. 1209436
EPA Method: SW8260B E	xtraction: SW5030B						Spiked San	ple ID:	1209390-001A
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acc	eptance	Criteria (%)
, indyte	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	ND	0.050	74.7	77.2	3.31	82	56 - 94	30	50 - 135
Benzene	ND	0.050	86.8	90.7	4.41	96.7	60 - 106	30	70 - 137
t-Butyl alcohol (TBA)	ND	0.20	93.8	92.7	1.23	101	56 - 140	30	50 - 143
Chlorobenzene	ND	0.050	81.7	85	3.95	94.8	61 - 108	30	69 - 133
1,2-Dibromoethane (EDB)	ND	0.050	83.4	87.1	4.32	95.1	54 - 119	30	61 - 135
1,2-Dichloroethane (1,2-DCA)	ND	0.050	81.3	85.8	5.40	90.2	48 - 115	30	64 - 133
1,1-Dichloroethene	ND	0.050	81.8	82.2	0.484	86.6	46 - 111	30	65 - 142
Diisopropyl ether (DIPE)	ND	0.050	81.3	83.2	2.31	87.7	53 - 111	30	65 - 134
Ethyl tert-butyl ether (ETBE)	ND	0.050	80.9	83.8	3.54	89.4	61 - 104	30	61 - 127
Methyl-t-butyl ether (MTBE)	ND	0.050	77.2	81.4	5.18	87.3	58 - 107	30	65 - 130
Toluene	ND	0.050	90.5	93.9	3.66	106	64 - 114	30	70 - 146
Trichloroethene	ND	0.050	92.1	96.3	4.45	103	60 - 116	30	66 - 143
%SS1:	110	0.12	114	116	1.49	119	64 - 117	30	70 - 130
%SS2:	114	0.12	113	114	0.956	118	79 - 133	30	70 - 130
%SS3:	118	0.012	114	120	5.08	128	88 - 121	30	70 - 130
All target compounds in the Method Blank of thi NONE	s extraction batch were ND	less than th	e method	RL with t	he following	g exception	ns:		

#### BATCH 70779 SUMMARY Lab ID Date Sampled Date Extracted Date Analyzed Lab ID Date Sampled Date Extracted Date Analyzed 1209438-002A 09/18/12 11:35 AM 09/18/12 09/19/12 12:52 AM 1209438-003A 09/18/12 11:56 AM 09/18/12 09/19/12 1:31 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 / 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 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.

DHS ELAP Certification 1644

QA/QC Officer



# **QC SUMMARY REPORT FOR SW8260B**

W.O. Sample Matrix: Water	QC Matrix:	Water			BatchID	2: 70985		WorkO	order: 1209438
EPA Method: SW8260B Extraction:	SW5030B					;	Spiked Sam	ple ID:	1209410-006B
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acc	eptance	Criteria (%)
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
tert-Amyl methyl ether (TAME)	ND	10	101	98	2.77	82.4	70 - 130	20	70 - 130
Benzene	ND	10	98.3	96.4	1.92	89.8	70 - 130	20	70 - 130
t-Butyl alcohol (TBA)	ND	40	90.8	91.3	0.551	70	70 - 130	20	70 - 130
Chlorobenzene	ND	10	94.1	92.3	1.92	87.8	70 - 130	20	70 - 130
1,2-Dibromoethane (EDB)	ND	10	107	104	2.84	90.4	70 - 130	20	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	92.1	90.1	2.23	77.6	70 - 130	20	70 - 130
1,1-Dichloroethene	ND	10	90.1	90.6	0.494	86.6	70 - 130	20	70 - 130
Diisopropyl ether (DIPE)	ND	10	99.7	98.4	1.27	84.8	70 - 130	20	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	99.7	97.9	1.78	82.7	70 - 130	20	70 - 130
Methyl-t-butyl ether (MTBE)	17	10	96.3	87.5	3.41	79.9	70 - 130	20	70 - 130
Toluene	ND	10	91.6	89	2.89	86.6	70 - 130	20	70 - 130
Trichloroethene	ND	10	97.3	95.2	2.21	91.2	70 - 130	20	70 - 130
%SS1:	105	25	106	107	0.901	103	70 - 130	20	70 - 130
%SS2:	100	25	99	98	1.19	101	70 - 130	20	70 - 130
%SS3:	106	2.5	109	107	1.73	111	70 - 130	20	70 - 130
All target compounds in the Method Blank of this extraction NONE	batch were ND	less than th	e method	RL with t	he following	g exceptior	IS:		

#### BATCH 70985 SUMMARY Lab ID Date Sampled Date Extracted Date Analyzed Lab ID Date Sampled Date Extracted Date Analyzed 1209438-001A 09/18/12 11:05 AM 09/23/12 09/23/12 12:25 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 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.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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



# **QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Soil QC Matrix: Soil				BatchID: 70809 WorkOrder: 1209438					order: 1209438	
EPA Method: SW8015B	Extraction: SW3550B/3630C			Spiked Sample ID:			1209395-005A			
Analyte		Sample	Spiked MS MSD MS-MSD LCS Accepta				eptance	nce Criteria (%)		
		mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH-Diesel (C10-C23)		120	40	106	118	3.14	125	70 - 130	30	70 - 130
%SS:		104	25	104	107	3.29	107	70 - 130	30	70 - 130
All target compounds in the Method Blank of NONE	this extraction bat	tch were ND	less than th	e method	RL with th	he following	g exception	IS:		

### BATCH 70809 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209438-002A	09/18/12 11:35 AM	09/18/12	09/19/12 2:46 AM	1209438-003A	09/18/12 11:56 AM	09/18/12	09/19/12 1:38 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 / 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 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.

DHS ELAP Certification 1644

K\_\_QA/QC Officer



# **QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Water	QC Matrix: Water BatchID: 70854 WorkOr					rder: 1209438				
EPA Method: SW8015B	Extraction: S	W3510C/363	30C	Spiked Sample ID: N/A						N/A
Analyte		Sample	Spiked	ed MS MSD MS-MSD LCS Acceptan					eptance	Criteria (%)
		µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH-Diesel (C10-C23)		N/A	1000	N/A	N/A	N/A	127	N/A	N/A	70 - 130
%SS:		N/A	625	N/A	N/A	N/A	72	N/A	N/A	70 - 130
All target compounds in the Method Blank on NONE	of this extraction ba	tch were ND	less than th	e method	RL with th	ne following	g exception	s:		

#### BATCH 70854 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209438-001B	09/18/12 11:05 AM	09/18/12	09/19/12 5:10 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 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.

QA/QC Officer

DHS ELAP Certification 1644



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.	Client Project ID: #1465.001; Grewel - 451 Hegenberger	Date Sampled:	09/18/12
1710 Franklin Street, Ste. 200		Date Received:	09/18/12
	Client Contact: Tina De La Fuente	Date Reported:	09/20/12
Oakland, CA 94612	Client P.O.:	Date Completed:	09/20/12

## WorkOrder: 1209445

September 20, 2012

Dear Tina:

Enclosed within are:

- 1) The results of the 1 analyzed sample from your project: #1465.001; Grewel 451 Hegenberger,
- 2) QC data for the above sample, 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.

We Te	bsite: <u>www.m</u> elephone: (877	BELL 1534 WI PITTSBU ccampbel 7) 252-92	ANA LLOW PA RG, CA 9 L <u>.com</u> En	LY ASS RC 4565-1 nail: r	FIC AD 701 nain@ Fax	AL	, I) amp (5) 2	NC ) 9 (bell 252-	С. .сот 9269	45	5	R		T	UR	IN .	AR		CH INE EDH		N IMI 1	OF E PD Che	F C		ST H Ex	OI 24 cel le is		R	48 I Writ an	CO IR ite (	RD 72 On (I J" flag	IR 5 DAY W) D g is required
Report To: Tina	de la Fuente		ł	Bill T	o: Par	ngea	En	vire	onm	enta	l								A	nal	ysis	Req	ues	t						0	ther	Comments
Company: Pange	ea Environmo	ental Ser	vices, In	IC.																												**Indicate
1710 Franklin	Street, Suite	200		_										E H	2 m	(L)					ners											here if these
Oakland, CA 94	4612		1	E-Ma	il: tde	elafu	ient	e@	pang	eae	nv.	com	1	MTB	les	E/Bd					onge			S						sis		samples are
Tele: ( 510 ) 83	Tele:         (510)         836-3700         Fax:         (510)         836-3709									2) (	0	520			~		5/C			& E			020)	020)		leun		potentially				
Project #: 1465.00	01		Proj	ect N	ame:	Gre	wel	- 45	51 H	egei	nbe	rge	r	801	30	1/5	8.1)	)Cs)	8021		clors		des)	CDB		<b>4</b> s)	0/0	0 / 60		tals a		dangerous to
Project Location:	Project Location: 451 Hegenberger Rd., Oakland, CA										21+	3	(166	s (41	HVC	02 / :	ides)	Aro		rbici	+ 2	s)	PN	601	6010	6	met		handle:			
Sampler Signatur		LE	0-	C		-				-			-	2 / 80	siti	ease	rbon	021 (	PA 6	estic	TA	cides	1 He	ITBI	00	Hs	00.8	0.8 /	/ 602	VED		
		SAMI	PLING				MA	TR	IX	PF	RES	FHO ERV	D ED	s (60	3	& Gr	roca	0/8	Y (E)	CLP	s ON	Pesti	die C	ENIN	0 (S)	0 (PA	7/2	7/20	0105	SOL		
SAMPLE ID	LOCATION/ Field Point Name	Date	Time	# Containers	Type Containers	Water	Soil	Air	Sludge Other	ICE	HCL	HNO <sub>3</sub>	Other	BTEX & TPH as Gas	TPH as Diesel (8015)	Total Petroleum Oil &	Total Petroleum Hyd	EPA 502.2 / 601 / 801	MTBE / BTEX ONL'	EPA 505/ 608 / 8081 (	EPA 608 / 8082 PCB'	EPA 507 / 8141 (NP)	EPA 515 / 8151 (Acid	EPA 8260 VOCs/BTF	EPA 525.2 / 625 / 827	EPA 8270 SIM / 8310	CAM 17 Metals (200.	LUFT 5 Metals (200.7	Lead (200.7 / 200.8 / 6	Filter sample for DIS		
14		9/18/12	1118	1	41		X			X					X									X								THIO
1B		11-	1118	1	45T		11		-	1														Ť								1710
10			1121		55T			+	-	╈	-											-										30,000
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12			1125	1	971	$\vdash$	V	-	+	Y	-				V	_	-			_	-	-		V				_				1
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		200																								_						
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**MAI clients MUST gloved, open air, samp allowing us to work sa Relinquished By:	disclose any dan le handling by M fely.	Date: 9/0/12 Date: 9/0/12 Date: Date:	emicals kno Non-disclo Time: <u>1647</u> Time: <u>1759</u> Time:	Rece Rece	be pre- icurs a ived B	y:	in th medi	eir s ate 5	ubmi 250 s	tted s	sam	ples e and	in ca I the	ICE GO HE DEC API PRI	E/t <sup>e</sup> [ OD 0 AD S CHL PRO ESEI	ions i subje CON SPAC ORI PRI/ RVE	that r ct to DITI CE AU NAT D IN	ION_ BSEI ED I CON LAE	cause legal NT NT XTAI 3 AS	AB_NER	nedia lity f :S	MET	TALS	or ser suffer	rious red.	futu Tha	are ho nk yo	COM	end r you IME	anger ir un NTS:	rment : derstar	4 to

Page 2 o
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# McCampbell Analytical, Inc. 1534 Willow Pass Rd

Pittsburg, CA 94565-1701



Page 1 of 1

(925) 252-9262				WorkO	rder: 1209445	Clie	ntCode: PEO		
	WaterTrax	WriteOn	EDF	Excel	EQuIS	Email	HardCop	by ThirdParty	J-flag
Report to:				Bi	ll to:		F	Requested TAT:	3 days
Tina De La Fuente	Email:	tdelafuente@pan	igeaenv.com		Bob Clark-Rid	dell			
Pangea Environmental Svcs., Inc.	cc:				Pangea Enviro	onmental Svcs	s., Inc.		
1710 Franklin Street, Ste. 200	PO:				1710 Franklin	Street, Ste. 20	00 <i>I</i>	Date Received:	09/18/2012
Oakland, CA 94612 (510) 836-3700 FAX: (510) 836-3709	ProjectNo:	#1465.001; Grew	vel - 451 Hegenber	ger	Oakland, CA S	94612	1	Date Printed:	09/19/2012

								Re	questec	l Tests	(See leg	end bel	ow)			
Lab ID	Client ID	Matrix	Collection Date	lold	1	2	3	4	5	6	7	8	9	10	11	12
1209445-001	1A, B, C, D	Soil	9/18/2012 11:18		А	А										

### Test Legend:

SHO

1	8260B_S
6	
11	

2	TPH(D)WSG_S	
7		
12		

3	
8	

4

9

5	
10	

Prepared by: Zoraida Cortez

## **Comments:**

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.



# Sample Receipt Checklist

Client Name:	Pangea Environmen	tal Svcs., Inc.			Date	and <sup>-</sup>	Time Received:	9/18/2012 8	:09:23 PM
Project Name:	#1465.001; Grewel -	451 Hegenberger			LogIr	n Rev	iewed by:		Zoraida Cortez
WorkOrder N°:	1209445	Matrix: Soil			Carri	er:	<u>Benjamin Yslas</u>	(MAI Courie	ц)
		Cha	<u>in of Cι</u>	<u>ustody (C</u>	OC) Inform	ation			
Chain of custody	present?		Yes	✓	No				
Chain of custody	signed when relinquis	hed and received?	Yes	✓	No				
Chain of custody	agrees with sample la	bels?	Yes	✓	No 🗌				
Sample IDs note	d by Client on COC?		Yes	✓	No 🗌				
Date and Time o	f collection noted by C	lient on COC?	Yes	✓	No 🗌				
Sampler's name	noted on COC?		Yes	✓	No 🗌				
			<u>Sample</u>	e Receipt	Information	<u>n</u>			
Custody seals in	tact on shipping contai	ner/cooler?	Yes		No 🗌			NA 🖌	
Shipping contain	er/cooler in good cond	ition?	Yes	✓	No 🗌				
Samples in prope	er containers/bottles?		Yes	✓	No 🗌				
Sample containe	ers intact?		Yes	✓	No 🗌				
Sufficient sample	e volume for indicated	test?	Yes	✓	No 🗌				
		Sample Pres	ervatio	n and Ho	old Time (HT	<u>r) Info</u>	ormation		
All samples rece	ived within holding time	e?	Yes	✓	No				
Container/Temp	Blank temperature		Coole	er Temp:	6°C			NA	
Water - VOA vial	ls have zero headspac	e / no bubbles?	Yes		No 🗌	No	VOA vials submit	ted 🗹	
Sample labels ch	necked for correct pres	ervation?	Yes	✓	No 🗌				
Metal - pH accep	otable upon receipt (pH	l<2)?	Yes		No			NA 🖌	
Samples Receive	ed on Ice?		Yes	✓	No 🗌				
		(Ісе Тур	e: WE	TICE )	)				
* NOTE: If the "N	lo" box is checked, se	e comments below.							

\_\_\_\_\_

	Analytica ality Counts''	<u>l, Inc.</u>		1534 Willow F Toll Free Telephon http://www.mccamp	Pass Road, Pittsburg, CA ne: (877) 252-9262 / Fa: pbell.com / E-mail: main	<ul> <li>94565-1701</li> <li>x: (925) 252-9269</li> <li>@mccampbell.com</li> </ul>							
Pangea Environmental Svcs., Inc.	Client I	Project ID:	#14	465.001;	Date Sampled:	09/18/12							
1710 Franklin Street Sta 200	Grewel	- 451 Heg	enbe	rger	Date Received:	09/18/12							
1710 Hankin Street, Ste. 200	Client 0	Contact: T	ina D	e La Fuente	Date Extracted:	09/18/12							
Oakland, CA 94612	Client I	P.O.:			Date Analyzed:	09/20/12							
	Volatile Organ	ics by P&	T an	d GC/MS (Basic T	arget List)*								
Extraction Method: SW5030B	-	Analytica	l Meth	od: SW8260B		Work Order: 12094	445						
Lab ID				1209445-001A									
Client ID				1A, B,	C, D								
Matrix		D	porting	Soi	1			Peporting					
Compound	Concentration *	DF	Limit	Compour	nd	Concentration *	DF	Limit					
Acetone	ND	1.0	0.05	tert-Amyl methyl ether	r (TAME)	ND	1.0	0.005					
Benzene	ND	1.0 0	).005	Bromobenzene		ND	1.0	0.005					
Bromochloromethane	ND	1.0 (	).005	Bromodichloromethan	e	ND	1.0	0.005					
Bromoform	ND	1.0 (	).005	Bromomethane		ND	1.0	0.005					
2-Butanone (MEK)	ND	1.0	0.02	t-Butyl alcohol (TBA)		ND	1.0	0.05					
n-Butyl benzene	ND	1.0 (	0.005	sec-Butyl benzene		ND	1.0	0.005					
tert-Butyl benzene	ND	1.0 (	0.005	Carbon Disulfide		ND	1.0	0.005					
Carbon Tetrachioride	ND	1.0 (	0.005	Chlorobenzene		ND	1.0	0.005					
Chloroethane	ND	1.0 (	0.005	Chloroform		ND	1.0	0.005					
4 Chlorotoluono	ND	1.0 (	0.005	2-Chlorotoluene		ND	1.0	0.005					
1.2 Dibromo 3 chloropropaga	ND	1.0 (	003	1.2 Dibromoethane (F	DB)	ND	1.0	0.003					
Dibromomethane	ND	1.0 (	005	1,2-Dichlorobenzene		ND	1.0	0.004					
1 3-Dichlorobenzene	ND	1.0 (	005	1 4-Dichlorobenzene		ND	1.0	0.005					
Dichlorodifluoromethane	ND	1.0 (	).005	1,1-Dichloroethane		ND	1.0	0.005					
1.2-Dichloroethane (1.2-DCA)	ND	1.0 (	).004	1.1-Dichloroethene		ND	1.0	0.005					
cis-1,2-Dichloroethene	ND	1.0 (	).005	trans-1,2-Dichloroethe	ene	ND	1.0	0.005					
1,2-Dichloropropane	ND	1.0 (	).005	1,3-Dichloropropane		ND	1.0	0.005					
2,2-Dichloropropane	ND	1.0 (	).005	1,1-Dichloropropene		ND	1.0	0.005					
cis-1,3-Dichloropropene	ND	1.0 (	).005	trans-1,3-Dichloroprop	bene	ND	1.0	0.005					
Diisopropyl ether (DIPE)	ND	1.0 (	).005	Ethylbenzene		ND	1.0	0.005					
Ethyl tert-butyl ether (ETBE)	ND	1.0 (	).005	Freon 113		ND	1.0	0.1					
Hexachlorobutadiene	ND	1.0 (	).005	Hexachloroethane		ND	1.0	0.005					
2-Hexanone	ND	1.0 (	).005	Isopropylbenzene		ND	1.0	0.005					
4-Isopropyl toluene	ND	1.0 0	).005	Methyl-t-butyl ether (N	MTBE)	ND	1.0	0.005					
Methylene chloride	ND<0.010	1.0 (	).005	4-Methyl-2-pentanone	(MIBK)	ND	1.0	0.005					
Naphthalene	ND	1.0 (	0.005	n-Propyl benzene		ND	1.0	0.005					
Styrene	ND	1.0 (	).005	1,1,1,2-Tetrachloroeth	ane	ND	1.0	0.005					
1,1,2,2-Tetrachloroethane	ND	1.0 (	0.005	Tetrachloroethene		ND	1.0	0.005					
	ND	1.0 (	0.005	1,2,3-Trichlorobenzen	e	ND	1.0	0.005					
1,2,4-Thenlorobenzene	ND	1.0 (	0.005	Trichloroothono		ND	1.0	0.005					
Trichlorofluoromethane	ND	1.0 (	0.005	1.2.2 Trichloropropag	2	ND	1.0	0.005					
1.2.4 Trimethylbenzene	ND	1.0 (	0.005	1,2,5-Trimethylbenzer		ND	1.0	0.005					
Vinyl Chloride	ND	1.0 (	0.005	Xylenes, Total		ND	1.0	0.005					
		Funnar	note P	regiones, rotar		1.0	1.0	0.005					
% <u>SS1</u> .	11	Surrog	ate K	% \$\$2.		10	2						
%\$\$3·	11	9		/0002.		12	4						
Comments:				1									

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

	CCampbell Anal "When Quality Cou	ytical, In nts''	<u>C.</u>	1534 Willow Toll Free Telepho http://www.mccan	Pass Road, Pitts one: (877) 252-92 pbell.com / E-m	burg, CA 262 / Fax: ail: main@	94565-170 (925) 252- mccampbe	9269 ell.com		
Pangea Envir	onmental Svcs., Inc.	Client Project	t ID: #1	465.001;	Date Sampled: 09/18/12					
1710 Franklij	n Street Ste 200	Grewel - 451	Hegenbe	erger	Date Received: 09/18/12					
171011411	n Succi, Stc. 200	Client Contac	ct: Tina I	De La Fuente	Date Extr	acted	09/18/1	12		
Oakland, CA	94612	Client P.O.:			Date Ana	lyzed	09/19/1	12		
	Total Extractable	e Petroleum H	Hydroca	bons with Silica G	el Clean-U	<sup>j</sup> p*				
Extraction method:	SW3550B/3630C	Analy	ytical method	s: SW8015B			Work Ord	er: 1209445		
Lab ID	Client ID	Matrix		TPH-Diesel (C10-C23)		DF	% SS	Comments		
1209445-001A	1A, B, C, D	S		4.9		1	109	e7,e2		

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA		
	S	1.0	mg/Kg		

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

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

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: e2) diesel range compounds are significant; no recognizable pattern e7) oil range compounds are significant

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager



Datable 70770

Wark Order 1200115

# **QC SUMMARY REPORT FOR SW8260B**

OC Matrix Call

W.O. Sample Matrix: Soil	QC Matrix: Soil					BatchID: 70779		WorkOrder: 1209445		
EPA Method: SW8260B Ext	traction: SW5030B					ę	Spiked Sam	1209390-001A		
Analyte	Sample	Sample Spiked			MSD MS-MSD		Acceptance Criteria (%)			
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
tert-Amyl methyl ether (TAME)	ND	0.050	74.7	77.2	3.31	82	56 - 94	30	50 - 135	
Benzene	ND	0.050	86.8	90.7	4.41	96.7	60 - 106	30	70 - 137	
t-Butyl alcohol (TBA)	ND	0.20	93.8	92.7	1.23	101	56 - 140	30	50 - 143	
Chlorobenzene	ND	0.050	81.7	85	3.95	94.8	61 - 108	30	69 - 133	
1,2-Dibromoethane (EDB)	ND	0.050	83.4	87.1	4.32	95.1	54 - 119	30	61 - 135	
1,2-Dichloroethane (1,2-DCA)	ND	0.050	81.3	85.8	5.40	90.2	48 - 115	30	64 - 133	
1,1-Dichloroethene	ND	0.050	81.8	82.2	0.484	86.6	46 - 111	30	65 - 142	
Diisopropyl ether (DIPE)	ND	0.050	81.3	83.2	2.31	87.7	53 - 111	30	65 - 134	
Ethyl tert-butyl ether (ETBE)	ND	0.050	80.9	83.8	3.54	89.4	61 - 104	30	61 - 127	
Methyl-t-butyl ether (MTBE)	ND	0.050	77.2	81.4	5.18	87.3	58 - 107	30	65 - 130	
Toluene	ND	0.050	90.5	93.9	3.66	106	64 - 114	30	70 - 146	
Trichloroethene	ND	0.050	92.1	96.3	4.45	103	60 - 116	30	66 - 143	
%SS1:	110	0.12	114	116	1.49	119	64 - 117	30	70 - 130	
%SS2:	114	0.12	113	114	0.956	118	79 - 133	30	70 - 130	
%SS3:	118	0.012	114	120	5.08	128	88 - 121	30	70 - 130	
All target compounds in the Method Blank of this of NONE	extraction batch were ND	less than th	e method	RL with t	he following	g exceptior	is:			

#### BATCH 70779 SUMMARY Lab ID Date Sampled Date Extracted Date Analyzed Lab ID Date Sampled Date Extracted Date Analyzed 1209445-001A 09/18/12 11:18 AM 09/18/12 09/20/12 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 / 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 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.

QA/QC Officer



# QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Soil QC Matrix: Soil				BatchID: 70817			WorkOrder: 1209445			
EPA Method: SW8015B	Extraction: SW3	3550B/363	30C		Spiked Sample ID: 1209399-004A					
Analyte		Sample	Spiked	MS	MSD	MS-MSD	LCS	LCS Acceptance Criteria (%)		
		mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH-Diesel (C10-C23)		ND	40	114	114	0	103	70 - 130	30	70 - 130
%SS:		105	25	102	103	1.14	88	70 - 130	30	70 - 130
All target compounds in the Method Blank of th NONE	is extraction batch	ı were ND l	less than th	e method ]	RL with th	ne following	g exception	s:		

## BATCH 70817 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209445-001A	09/18/12 11:18 AM	09/18/12	09/19/12 2:51 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 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.

DHS ELAP Certification 1644

# K\_\_\_\_\_QA/QC Officer