



**CONESTOGA-ROVERS
& ASSOCIATES**

5900 Hollis Street, Suite A, Emeryville, California 94608
Telephone: 510-420-0700 Facsimile: 510-420-9170
www.CRAworld.com

December 13, 2007

Mr. Robert Cave
Bay Area Air Quality Management District
Permit Services Division
939 Ellis Street
San Francisco, California 94109

RECEIVED

11:22 am, Jun 07, 2010

Alameda County
Environmental Health

Re: **BAAQMD Thermal Oxidizer Compliance Report**
Former Chevron Station 9-0260
21195 Foothill Blvd
Hayward, California
Plant Number: 18218
Application Number: 15668

Dear Mr. Cave:

On behalf of Chevron Environmental Management Company (Chevron EMC), Conestoga-Rovers & Associates (CRA) is submitting this thermal oxidizer compliance report to the Bay Area Air Quality Management District (BAAQMD) for the dual-phase vapor extraction (DPE) system operating under BAAQMD Permit to Operate (PTO) for Plant Number 18218 at the above-referenced site.

SITE ACTIVITIES

CRA turned the Bisco 250 thermal-catalytic oxidizer (oxidizer) off on October 25, 2007 pending a carbon change-out for the groundwater extraction and treatment (GWE) system. CRA completed the carbon change-out on December 6, 2007 and restarted the GWE. CRA returned to the site on December 7, 2007 and restarted the oxidizer. The oxidizer was optimized and influent and effluent vapor samples were collected and submitted under chain – of – custody (COC) documentation to McCampbell Analytical Laboratories (McCampbell) for analysis. CRA received the final laboratory results on December 11, 2007 and validated this data on December 12, 2007.

McCampbell reported values of 450 parts per million by volume (ppmv) of total petroleum hydrocarbons as gasoline (TPHg) in the influent vapor sample and 27 ppmv of TPHg in the effluent vapor sample, which showed the oxidizer operating at a destruction efficiency of 94 percent which is lower than the permit required 97 percent with the influent concentrations. Xylenes were also detected in the effluent vapor sample at 0.64 ppmv. All other constituents of concern were not detected above the laboratory reporting limit.

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The site was visited on December 11, 2007 to ensure the oxidizer was shut off pending further investigation and notification to the BAAQMD. Upon arrival, the oxidizer was found to be off. After the previous visit on December 6, 2007, the system only operated for approximately 15 hours before automatically shutting down due to an internal alarm condition. The oxidizer was left off on departure until approval to restart the oxidizer is granted by the BAAQMD. Mr. Robert Cave of the BAAQMD was notified on December 12, 2007 by Mr. Casey Sanders of CRA of the receipt of the analytical results showing the system operated below the permit specified destruction efficiency.

ROOT-CAUSE ANALYSIS

CRA conducted an investigation of the sampling event and found that field staff connected the sampling equipment to the influent sampling port to first obtain a field measurement and then collected the effluent sample with the same equipment. CRA determined that residual vapors could have lingered within the sampling equipment and cross-contaminated the sampling vessel.

CRA received a second lab report for a different site on December 12, 2007 from McCampbell that also showed a slight hit in TPHg in the effluent. This sample was taken by a different technician with different sampling equipment for an entirely different oxidizer. CRA conferred with McCampbell but was unable to determine if the laboratory equipment was giving erroneous readings.

CRA believes that the oxidizer was operating correctly on December 7, 2007, and that the result of 27 ppmv of TPHg in the effluent vapor sample was the result of either cross-contamination of sampling equipment or of laboratory error. **Please note that all previous operational and analytical results have complied with the BAAQMD PTO conditions.**

PROPOSED FUTURE ACTIVITIES

CRA proposes to restart the system as soon as possible to collect representative samples. Field staff will arrive on site, start the oxidizer, collect field measurements, collect two separate sets of vapor samples, collect departure data, and then turn off the oxidizer. CRA will then submit each set of air samples to a different laboratory for analysis. Upon receipt of the laboratory sample analysis, CRA will validate the data and submit the analytical results to the BAAQMD for review and approval to restart the system. Once approval is granted by the BAAQMD, the system will be restarted for full time operation. If the system is not in compliance, CRA will take all necessary steps to repair the system and will not operate the oxidizer until it functions within permit specifications.



**CONESTOGA-ROVERS
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December 13, 2007

DATA

The analytical results are included as Attachment A. All tabulated operational and analytical results are included as Tables 1 and 2.

CLOSING

Please contact Matthew Lundberg at (510) 420-3346 or Casey Sanders at (916) 677-3407 if you need clarification or require any additional information.

Sincerely,
Conestoga-Rovers & Associates

Casey Sanders

Tables: 1 – Soil Vapor Extraction - Operational Data
 2 – Soil Vapor Extraction - Vapor Phase Mass Data

Attachments: A - Laboratory Analytical Results

cc: Olivia Skance, Chevron Environmental Management Company, P.O. Box 6012
 San Ramon, CA 94583

Conestoga-Rovers & Associates (CRA) prepared this document for use by our client and appropriate regulatory agencies. It is based partially on information available to CRA from outside sources and/or in the public domain, and partially on information supplied by CRA and its subcontractors. CRA makes no warranty or guarantee, expressed or implied, included or intended in this document, with respect to the accuracy of information obtained from these outside sources or the public domain, or any conclusions or recommendations based on information that was not independently verified by CRA. This document represents the best professional judgment of CRA. None of the work performed hereunder constitutes or shall be represented as a legal opinion of any kind or nature.

I:\CHEVRON\9-0260 HAYWARD\REMEDIATION\O&M\BAAQMD REPORTS\STARTUP REPORT\BAAQMD PERMIT COMPLIANCE REPORT.DOC

Table 1: Soil Vapor Extraction - Operational Data - Chevron Project 9-0260, 21195 Foothill Blvd, Hayward, CA

Date	Hour Meter (hours)	Period Operation (hours)	Operating Pressure (inHg)	Operating Pressure (inH2O)	INF 2 pressure (inH2O)	INF 2 temp (F)	Influent Flow Rate (acfm)	Influent Flow Rate (scfm)	Effluent Flow Rate (acfm)	Effluent Flow Rate (scfm)	Pre-Cat Temp (F)	Post-Cat Temp (F)	Influent1 PID (ppmv)	Influent2 PID (ppmv)	Effluent PID (ppmv)	Destruction Efficiency (%)
07/16/07	0.0	0.0	13.0	176.7			122	69.1	120	68	1486	1476	17,000	1,670	2	waived
07/17/07	25	25.0	17	224.3			126	56.4	126	56	1486	1476	13,500	1,415	3	waived
07/17/07	2	2.0	15	197.1			162	83.6	162	84	1458	1453	12,250	1,385	3	waived
07/26/07	5	3.0	16	217.5			120	55.7	120	56	1489	1477	20,000	2,240	3	waived
08/03/07	8	3.0	NM	NM			NM	NM	NM	NM	NM	NM	NM	NM	NM	waived
08/16/07	NM	NM	NM	NM			NM	NM	NM	NM	NM	NM	NM	NM	NM	waived
08/17/07	NM	NM	NM	NM			NM	NM	NM	NM	NM	NM	NM	NM	NM	waived
08/22/07	9.4	1.4	15	204			124	61.9	81	40.4	1459	1478	35,440	3,150	0	waived
08/24/07	38.3	28.9	12	163			139	83.3	115	68.9	1488	1497	10,000	1,995	6	waived
09/26/07	49	10.7	5	68			190	158.3	198	164.9	1464	1457	10,000	2,170	1	waived
10/04/07	243	194.0	5	68			133	110.8	266	221.7	1462	1452	75,000	2,550	2	waived
10/08/07	263	20.0	5	68			128.0	106.6	255	212.4	1452	1444	6,800	2,350	2	waived
10/19/07	302.8	39.8	9	122			204.0	142.7	204	142.7	1431	1420	> 10000	3,520	4	waived
10/25/07	443	140.2	7	95			220.0	168.5	220	168.5	1409	1413	> 10000	1,850	0	waived
System flow calculated on positive side of blower from November onwards																
12/06/07	446	3.0	9	122	0.39	160	198.0	168.8	198	168.8	1401	1400	> 10000	1,378	0	waived
12/11/07	460	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	waived
Permit Conditions							<250		<250		>1400		>1400		>98.5%	

Abbreviations and Notes:

acfm = Actual cubic feet per minute

Destruction efficiency (field calculated) = $[(\text{Influent2 PID, ppmv} - \text{Effluent PID, ppmv}) / (\text{Influent2 PID, ppmv})] \times 100$

F = Degrees fahrenheit

Influent1 = Pre-dilution field-measured vapor concentration

Influent2 = Post-dilution field-measured vapor concentration

inH2O = Inches of water

inHg = Inches of mercury

PID = Photo-ionization detector

ppmv = Parts per million by volume

scfm = acfm (absolute operating pressure, inH2O / standard pressure, 406.9 inH2O)

scfm = Standard cubic feet per minute

NM = Not measured

Table 2: Soil Vapor Extraction - Vapor-phase Mass Data - Chevron Project 9-0260, 21195 Foothill Blvd, Hayward, CA

													TPHg			Benzene			MTBE			POC		
	Influent1 Concentrations				Influent2 Concentrations				Effluent Concentrations				TPHg Removal	Cumulative TPHg	TPHg Emission	Benzene Removal	Cumulative Benzene	Benzene Emission	MTBE Removal	Cumulative MTBE	MTBE Emission	POC Removal	POC Emission	POC Destruction
Date	TPHg (ppmv)	Benzene (ppmv)	MTBE (ppmv)	POC (ppmv)	TPHg (ppmv)	Benzene (ppmv)	MTBE (ppmv)	POC (ppmv)	TPHg (ppmv)	Benzene (ppmv)	MTBE (ppmv)	POC (ppmv)	Rate (ppd)	Removed (pounds)	Rate (ppd)	Rate (ppd)	Removed (pounds)	Rate (ppd)	Rate (ppd)	Removed (pounds)	Rate (ppd)	Rate (ppd)	Rate (ppd)	Efficiency (%)
07/16/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	16.6	0.000	0.152	0.040	0.000	0.002	0.015	0.000	0.001	16.6	0.154	waived
07/17/07	3,400	9	< 0.68	3,401	750	2	< 0.68	750	< 7	<0.08	<0.07	7.1	13.6	14.149	0.127	0.033	0.034	0.001	0.012	0.013	0.001	13.6	0.128	waived
07/17/07	3,400	9	< 0.68	3,401	750	2	< 0.68	750	< 7	<0.08	<0.07	7.1	20.1	1.677	0.188	0.049	0.004	0.002	0.018	0.002	0.002	20.1	0.190	waived
07/26/07	4,400	12	< 1.40	4,401	770	2	< 0.14	770	< 7	<0.08	<0.07	7.1	13.8	3.397	0.125	0.032	0.008	0.001	0.003	0.002	0.001	13.8	0.126	waived
08/03/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	13.8	5.117	0.125	0.032	0.012	0.001	0.003	0.002	0.001	13.8	0.126	waived
08/16/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	0.0	5.117	0.000	0.000	0.012	0.000	0.000	0.003	0.000	0.0	0.000	waived
08/17/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	0.0	5.117	0.000	0.000	0.012	0.000	0.000	0.003	0.000	0.0	0.000	waived
08/22/07	5,000	14	< 1.40	5,001	860	2.5	< 1.40	861	< 7	<0.08	<0.07	7.1	17.1	6.113	0.091	0.045	0.015	0.001	0.028	0.004	0.001	17.1	0.092	waived
08/24/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	23.0	33.779	0.155	0.045	0.069	0.002	0.037	0.049	0.002	23.0	0.156	waived
09/26/07	5,300	9.5	< 0.68	5,301	340	0.6	< 0.07	340	< 7	<0.08	<0.07	7.1	17.3	41.475	0.370	0.028	0.081	0.004	0.003	0.005	0.004	17.3	0.374	waived
10/04/07	6,600	< 7.7	< 6.8	6,607	860	0.5	< 0.07	860	< 7	<0.08	<0.07	7.1	30.6	288.551	0.498	0.016	0.212	0.005	0.002	0.023	0.005	30.6	0.503	waived
10/08/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	29.4	313.065	0.477	0.016	0.225	0.005	0.002	0.025	0.005	29.4	0.482	waived
10/19/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	39.4	378.338	0.320	0.016	0.251	0.003	0.003	0.030	0.003	39.4	0.323	waived
10/25/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	46.5	650.000	0.379	0.021	0.372	0.004	0.004	0.052	0.004	46.5	0.382	waived
12/06/07	3,400	6	< 2.70	3,403	450	1	< 0.45	450	27	<0.08	<0.07	27.1	0.0	650.000	0.000	0.000	0.372	0.000	0.000	0.025	0.000	24.4	1.466	94.0%
12/11/07	NS	NS	NS	NA	NS	NS	NS	NA	NS	NS	NS	NA	24.4	653.046	1.462	0.000	0.372	0.004	0.024	0.028	0.004	24.4	1.466	waived
																< 0.018								
Total Pounds Removed:													TPHg = 653.046			Benzene = 0.372			MTBE = 0.052			>98.5%		

Abbreviations and Notes:

TPHG, Benzene, and MTBE analyzed by EPA Method 8260B in 1 liter tedlar bag samples

VOC = Volatile Organic Compounds (ppmv)

ppd = pounds per day

Influent1 = pre-dilution

Influent2 = post-dilution

ppmv = parts per million by volume

Removal/Emission Rate = C (ppmv) x Q (cfm) x (1 lb-mole/386 ft³) x MW (lb/lb-mole) x 60 min/hr x 24 hr/day x 10⁻⁶

where: C = concentration, Q = flow, MW = molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene, 88 lb/lb-mole for MTBE, 86 lb/lb-mole for POC (=hexane))

If dilution air is utilized, then influent 2 concentration is used in mass calculation. If dilution air not utilized, then influent 2 is not sampled and influent 1 is used in mass calculation (influent 1 is assumed to be equal to influent 2).

Cumulative TPHg / Benzene / MTBE removal = Previous removal rate multiplied by the interval of operation plus the previous total

NA = not analyzed

NS = not sampled

Destruction Efficiency = (100)/[(Mass Extracted - Mass Emitted)/(Mass Extracted)]

ATTACHMENT A

Laboratory Analytical Report

**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Conestoga-Rovers & Associates 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: # 311915; 9-0260	Date Sampled: 12/06/07
		Date Received: 12/06/07
	Client Contact: Matthew Lundberg	Date Reported: 12/10/07
	Client P.O.:	Date Completed: 12/10/07

WorkOrder: 0712152

December 10, 2007

Dear Matthew:

Enclosed within are:

- 1) The results of the 3 analyzed samples from your project: # 311915; 9-0260,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

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

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

VOAS	O&G	METALS	OTHER
PRESERVATION		pH<2	

McC Campbell Analytical, Inc.

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 0712152

ClientID: CETE

☒ EDF☐ Excel☐ Fax☒ Email☐ HardCopy☐ ThirdParty**Report to:**

Matthew Lundberg
Conestoga-Rovers & Associates
5900 Hollis St, Suite A
Emeryville, CA 94608

Email: mlundberg@craworld.com
TEL: (510) 420-0700 FAX: (510) 420-9170
ProjectNo: # 311915; 9-0260
PO:

Bill to:

Accounts Payable
Conestoga-Rovers & Associates
5900 Hollis St, Ste. A
Emeryville, CA 94608

Requested TAT: 3 days**Date Received: 12/06/2007****Date Printed: 12/06/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0712152-001	INF	Air	12/6/07 10:23:00	<input type="checkbox"/>	A											
0712152-002	INF-2	Air	12/6/07 10:19:00	<input type="checkbox"/>	A											
0712152-003	EFF	Air	12/6/07 10:15:00	<input type="checkbox"/>	A	A										

Test Legend:

1	GMBTEX8260_A
6	
11	

2	PREDF REPORT
7	
12	

3	
8	

4	
9	

5	
10	

The following SampleIDs: 001A, 002A, 003A contain testgroup.

Prepared by: Kimberly Burks**Comments:**

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

**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Sample Receipt Checklist

Client Name: **Conestoga-Rovers & Associates**

Date and Time Received: **12/6/07 2:15:24 PM**

Project Name: **# 311915; 9-0260**

Checklist completed and reviewed by: **Kimberly Burks**

WorkOrder N°: **0712152** Matrix Air

Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature	Cooler Temp:		NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
TTLc Metal - pH acceptable upon receipt (pH<2)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Client contacted:

Date contacted:

Contacted by:

Comments:

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Conestoga-Rovers & Associates 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: # 311915; 9-0260	Date Sampled: 12/06/07
		Date Received: 12/06/07
	Client Contact: Matthew Lundberg	Date Extracted: 12/07/07
	Client P.O.:	Date Analyzed: 12/07/07

TPH(g) & MBTEX by P&T and GC/MS *

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0712152

Lab ID	0712152-001A	0712152-002A	0712152-003A		Reporting Limit for DF =1	
Client ID	INF	INF-2	EFF			
Matrix	A	A	A			
DF	40	6.7	1		S	A

Compound	Concentration				ug/kg	ug/L
TPH(g)	12,000	1600	97		NA	25
Benzene	19	2.2	ND		NA	0.25
Ethylbenzene	ND<10	ND<1.7	ND		NA	0.25
Methyl-t-butyl ether (MTBE)	ND<10	ND<1.7	ND		NA	0.25
Toluene	28	3.8	ND		NA	0.25
Xylenes	110	16	2.9		NA	0.25

Surrogate Recoveries (%)

%SS1:	104	103	105		
%SS2:	100	99	98		
%SS3:	109	111	108		

Comments

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

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

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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Conestoga-Rovers & Associates 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: # 311915; 9-0260	Date Sampled: 12/06/07
		Date Received: 12/06/07
	Client Contact: Matthew Lundberg	Date Extracted: 12/07/07
	Client P.O.:	Date Analyzed: 12/07/07

TPH(g) & MBTEX by P&T and GC/MS in ppmv*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0712152

Lab ID	0712152-001A	0712152-002A	0712152-003A		Reporting Limit for DF =1	
Client ID	INF	INF-2	EFF			
Matrix	A	A	A			
DF	40	6.7	1			
					S	A

Compound	Concentration				ug/kg	uL/L
TPH(g)	3400	450	27		NA	7.0
Benzene	5.8	0.69	ND		NA	0.077
Ethylbenzene	ND<2.3	ND<0.38	ND		NA	0.057
Methyl-t-butyl ether (MTBE)	ND<2.7	ND<0.45	ND		NA	0.068
Toluene	7.3	1.0	ND		NA	0.065
Xylenes	25	3.7	0.64		NA	0.057

Surrogate Recoveries (%)

%SS1:	104	103	105		
%SS2:	100	99	98		
%SS3:	109	111	108		

Comments

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

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h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

**McC Campbell Analytical, Inc.**

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Air

QC Matrix: Water

WorkOrder: 0712152

EPA Method SW8260B		Extraction SW5030B			BatchID: 32335			Spiked Sample ID: 0712162-002B				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Benzene	ND	10	111	111	0	104	111	5.81	70 - 130	30	70 - 130	30
Chlorobenzene	ND	10	129	126	2.21	125	125	0	70 - 130	30	70 - 130	30
1,1-Dichloroethene	ND	10	108	120	10.1	116	117	0.368	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	10	95.4	93.1	2.49	88.7	101	12.6	70 - 130	30	70 - 130	30
Toluene	ND	10	107	106	1.13	106	106	0	70 - 130	30	70 - 130	30
Trichloroethene	ND	10	101	102	0.864	97.5	105	7.65	70 - 130	30	70 - 130	30
%SS1:	98	10	95	94	1.47	92	101	9.93	70 - 130	30	70 - 130	30
%SS2:	98	10	91	91	0	91	92	1.34	70 - 130	30	70 - 130	30
%SS3:	100	10	89	88	1.18	89	90	1.56	70 - 130	30	70 - 130	30
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE												

BATCH 32335 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0712152-001A	12/06/07 10:23 AM	12/07/07	12/07/07 12:20 PM	0712152-002A	12/06/07 10:19 AM	12/07/07	12/07/07 1:07 PM
0712152-003A	12/06/07 10:15 AM	12/07/07	12/07/07 1:53 PM				

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

 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$

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.