



ENVIRONMENTAL  
SCIENCE CORP.

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Brett Kennedy  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101

Grand Junction, CO 81506

Report Summary

Thursday April 02, 2009

Report Number: L394978

Samples Received: 03/28/09

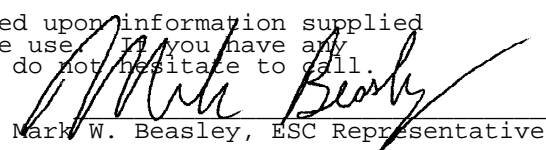
Client Project:

Description: Pit Reclaims-Collbra

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

*Laboratory Certification Numbers*

  
Mark W. Beasley, ESC Representative

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487  
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140  
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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Where applicable, sampling conducted by ESC is performed per guidance provided  
in laboratory standard operating procedures: 060302, 060303, and 060304.



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## REPORT OF ANALYSIS

Brett Kennedy  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

April 02, 2009

Date Received : March 28, 2009  
Description : Pit Reclaims-Collbra  
Sample ID : HAWKINS 10-4-BG 0-6 FT  
Collected By : Brett Kennedy  
Collection Date : 03/27/09 10:45

ESC Sample # : L394978-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	04/01/09	1
ORP	160		mV	2580	03/30/09	1
pH	9.3		su	9045D	03/31/09	1
Sodium Adsorption Ratio	8.4			Calc.	04/01/09	1
Specific Conductance	310		umhos/cm	9050AMod	03/30/09	1
Mercury	BDL	0.020	mg/kg	7471	03/30/09	1
Arsenic	BDL	0.27	mg/kg	6010B	03/31/09	1
Barium	460	0.25	mg/kg	6010B	03/31/09	1
Cadmium	0.70	0.25	mg/kg	6010B	03/31/09	1
Chromium	12.	0.50	mg/kg	6010B	03/31/09	1
Copper	14.	1.0	mg/kg	6010B	03/31/09	1
Lead	11.	0.25	mg/kg	6010B	03/31/09	1
Nickel	24.	1.0	mg/kg	6010B	03/31/09	1
Selenium	BDL	1.0	mg/kg	6010B	03/31/09	1
Silver	BDL	0.50	mg/kg	6010B	03/31/09	1
Zinc	33.	1.5	mg/kg	6010B	03/31/09	1
Benzene	BDL	0.0025	mg/kg	8021/8015	03/31/09	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/31/09	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/31/09	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/31/09	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/31/09	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.7		% Rec.	8021/8015	03/31/09	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	03/31/09	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	03/30/09	1
Surrogate recovery(%)						
o-Terphenyl	71.5		% Rec.	3546/DRO	03/30/09	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.033	mg/kg	8270C	03/30/09	1
Acenaphthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	03/30/09	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L394978-01 (PH) - 9.3@18.9c



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760 Horizon Dr., Ste. 101  
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April 02, 2009

Date Received : March 28, 2009  
Description : Pit Reclaims-Collbra  
Sample ID : HAWKINS 10-4-BG 0-6 FT  
Collected By : Brett Kennedy  
Collection Date : 03/27/09 10:45

ESC Sample # : L394978-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Chrysene	BDL	0.033	mg/kg	8270C	03/30/09	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	03/30/09	1
Fluoranthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Fluorene	BDL	0.033	mg/kg	8270C	03/30/09	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Naphthalene	BDL	0.033	mg/kg	8270C	03/30/09	1
Phenanthrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Pyrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Surrogate Recovery						
Nitrobenzene-d5	72.2		% Rec.	8270C	03/30/09	1
2-Fluorobiphenyl	61.9		% Rec.	8270C	03/30/09	1
p-Terphenyl-d14	69.2		% Rec.	8270C	03/30/09	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 04/01/09 15:26 Revised: 04/02/09 10:35

L394978-01 (PH) - 9.3@18.9c



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## REPORT OF ANALYSIS

Brett Kennedy  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

April 02, 2009

Date Received : March 28, 2009  
Description : Pit Reclaims-Collbra  
Sample ID : HAWKINS 10-4-POST-REC 0-6 FT

ESC Sample # : L394978-02

Site ID :

Project # :

Collected By : Brett Kennedy  
Collection Date : 03/27/09 10:52

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	04/01/09	1
ORP	170		mV	2580	03/30/09	1
pH	8.0		su	9045D	03/31/09	1
Sodium Adsorption Ratio	5.0			Calc.	04/01/09	1
Specific Conductance	330		umhos/cm	9050AMod	03/30/09	1
Mercury	BDL	0.020	mg/kg	7471	03/30/09	1
Arsenic	0.66	0.27	mg/kg	6010B	03/31/09	1
Barium	550	0.25	mg/kg	6010B	03/31/09	1
Cadmium	0.60	0.25	mg/kg	6010B	03/31/09	1
Chromium	12.	0.50	mg/kg	6010B	03/31/09	1
Copper	11.	1.0	mg/kg	6010B	03/31/09	1
Lead	8.9	0.25	mg/kg	6010B	03/31/09	1
Nickel	10.	1.0	mg/kg	6010B	03/31/09	1
Selenium	BDL	1.0	mg/kg	6010B	03/31/09	1
Silver	BDL	0.50	mg/kg	6010B	03/31/09	1
Zinc	36.	1.5	mg/kg	6010B	03/31/09	1
Benzene	BDL	0.0025	mg/kg	8021/8015	03/31/09	5
Toluene	BDL	0.025	mg/kg	8021/8015	03/31/09	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	03/31/09	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	03/31/09	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	03/31/09	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	99.9		% Rec.	8021/8015	03/31/09	5
a,a,a-Trifluorotoluene(PID)	107.		% Rec.	8021/8015	03/31/09	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	03/30/09	1
Surrogate recovery(%)						
o-Terphenyl	74.5		% Rec.	3546/DRO	03/30/09	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.033	mg/kg	8270C	03/30/09	1
Acenaphthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	03/30/09	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L394978-02 (PH) - 8.0@19.6c



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REPORT OF ANALYSIS

Brett Kennedy  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

April 02, 2009

Date Received : March 28, 2009  
Description : Pit Reclaims-Collbra  
Sample ID : HAWKINS 10-4-POST-REC 0-6 FT

ESC Sample # : L394978-02

Site ID :

Collected By : Brett Kennedy  
Collection Date : 03/27/09 10:52

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Chrysene	BDL	0.033	mg/kg	8270C	03/30/09	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	03/30/09	1
Fluoranthene	BDL	0.033	mg/kg	8270C	03/30/09	1
Fluorene	BDL	0.033	mg/kg	8270C	03/30/09	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Naphthalene	BDL	0.033	mg/kg	8270C	03/30/09	1
Phenanthrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Pyrene	BDL	0.033	mg/kg	8270C	03/30/09	1
Surrogate Recovery						
Nitrobenzene-d5	63.6		% Rec.	8270C	03/30/09	1
2-Fluorobiphenyl	60.9		% Rec.	8270C	03/30/09	1
p-Terphenyl-d14	64.3		% Rec.	8270C	03/30/09	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 04/01/09 15:26 Revised: 04/02/09 10:35  
L394978-02 (PH) - 8.0@19.6c

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L394978-01	WG414272	SAMP	Arsenic	R689031	U
	WG414272	SAMP	Barium	R689031	B
L394978-02	WG414272	SAMP	Arsenic	R689031	J
	WG414272	SAMP	Barium	R689031	B

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
U	BDL (EPA) - Below Detectable Limits: Indicates that the compound was analyzed but not detected.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
04/02/09 at 10:35:58

TSR Signing Reports: 134  
R4 - Rush: Three Day

Sample: L394978-01 Account: OXYGJCO Received: 03/28/09 09:00 Due Date: 04/01/09 00:00 RPT Date: 04/01/09 15:26

Sample: L394978-02 Account: OXYGJCO Received: 03/28/09 09:00 Due Date: 04/01/09 00:00 RPT Date: 04/01/09 15:26





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## Quality Assurance Report Level II

Grand Junction, CO 81506

L394978

April 02, 2009

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG414168	03/30/09 10:26
o-Terphenyl		% Rec.	68.59	50-150	WG414168	03/30/09 10:26
Specific Conductance	3.10	umhos/cm			WG414275	03/30/09 13:55
Mercury	< .02	mg/kg			WG414217	03/30/09 11:58
Acenaphthene	< .33	ppm			WG414170	03/30/09 10:03
Acenaphthylene	< .33	ppm			WG414170	03/30/09 10:03
Anthracene	< .33	ppm			WG414170	03/30/09 10:03
Benzo(a)anthracene	< .33	ppm			WG414170	03/30/09 10:03
Benzo(a)pyrene	< .33	ppm			WG414170	03/30/09 10:03
Benzo(b)fluoranthene	< .33	ppm			WG414170	03/30/09 10:03
Benzo(g,h,i)perylene	< .33	ppm			WG414170	03/30/09 10:03
Benzo(k)fluoranthene	< .33	ppm			WG414170	03/30/09 10:03
Chrysene	< .33	ppm			WG414170	03/30/09 10:03
Dibenz(a,h)anthracene	< .33	ppm			WG414170	03/30/09 10:03
Fluoranthene	< .33	ppm			WG414170	03/30/09 10:03
Fluorene	< .33	ppm			WG414170	03/30/09 10:03
Indeno(1,2,3-cd)pyrene	< .33	ppm			WG414170	03/30/09 10:03
Naphthalene	< .33	ppm			WG414170	03/30/09 10:03
Phenanthrene	< .33	ppm			WG414170	03/30/09 10:03
Pyrene	< .33	ppm			WG414170	03/30/09 10:03
2-Fluorobiphenyl		% Rec.	78.06	30-120	WG414170	03/30/09 10:03
Nitrobenzene-d5		% Rec.	76.14	18-119	WG414170	03/30/09 10:03
p-Terphenyl-d14		% Rec.	79.31	23-143	WG414170	03/30/09 10:03
Arsenic	< 1	mg/kg			WG414272	03/31/09 01:08
Barium	0.603	mg/kg			WG414272	03/31/09 01:08
Cadmium	< .25	mg/kg			WG414272	03/31/09 01:08
Chromium	< .5	mg/kg			WG414272	03/31/09 01:08
Copper	< 1	mg/kg			WG414272	03/31/09 01:08
Lead	< .25	mg/kg			WG414272	03/31/09 01:08
Nickel	< 1	mg/kg			WG414272	03/31/09 01:08
Selenium	< 1	mg/kg			WG414272	03/31/09 01:08
Silver	< .5	mg/kg			WG414272	03/31/09 01:08
Zinc	< 1.5	mg/kg			WG414272	03/31/09 01:08
Benzene	< .0005	mg/kg			WG414362	03/31/09 12:55
Ethylbenzene	< .0005	mg/kg			WG414362	03/31/09 12:55
Toluene	< .005	mg/kg			WG414362	03/31/09 12:55
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG414362	03/31/09 12:55
a,a,a-Trifluorotoluene(FID)		% Rec.	101.3	59-128	WG414362	03/31/09 12:55
a,a,a-Trifluorotoluene(PID)		% Rec.	108.7	54-114	WG414362	03/31/09 12:55
pH	7.00	su			WG414183	03/31/09 13:35
Chromium,Hexavalent	< 2	mg/kg			WG414099	04/01/09 13:45

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
ORP	mV	258.	260.	0.772	20	L394728-01	WG414091
ORP	mV	169.	170.	0.590	20	L394978-02	WG414091
Specific Conductance	umhos/cm	332.	330.	0.604	20	L394978-02	WG414275

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Brett Kennedy  
760 Horizon Dr., Ste. 101

## Quality Assurance Report Level II

Grand Junction, CO 81506

L394978

April 02, 2009

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Mercury	mg/kg	0.00	0.00		0.00	20	L394892-09	WG414217
Arsenic	mg/kg	0.00	0.790		NA	20	L394974-01	WG414272
Barium	mg/kg	166.	180.		8.09	20	L394974-01	WG414272
Cadmium	mg/kg	0.844	0.860		1.88	20	L394974-01	WG414272
Chromium	mg/kg	14.0	15.0		6.90	20	L394974-01	WG414272
Copper	mg/kg	17.7	17.0		4.03	20	L394974-01	WG414272
Lead	mg/kg	8.90	9.50		6.52	20	L394974-01	WG414272
Nickel	mg/kg	13.8	14.0		1.44	20	L394974-01	WG414272
Selenium	mg/kg	1.57	0.00		NA	20	L394974-01	WG414272
Silver	mg/kg	0.00	0.00		0.00	20	L394974-01	WG414272
Zinc	mg/kg	43.8	46.0		4.90	20	L394974-01	WG414272
pH	su	10.6	10.0		5.83	20	L394881-01	WG414183
pH	su	8.00	8.00		0.00	20	L394978-02	WG414183
Chromium, Hexavalent	mg/kg	0.00	0.00		0.00	20	L394739-01	WG414099
Chromium, Hexavalent	mg/kg	0.00	0.00		0.00	20	L394978-01	WG414099

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	41.8	69.6	50-150	WG414168
o-Terphenyl				77.05	50-150	WG414168
ORP	mV	229	220.	96.1	95.6-104.37	WG414091
Specific Conductance	umhos/cm	589	530.	90.0	85-115	WG414275
Mercury	mg/kg	8.77	10.8	123.	71.6-127.7	WG414217
Acenaphthene	ppm	.167	0.108	64.5	44-117	WG414170
Acenaphthylene	ppm	.167	0.103	61.8	43-118	WG414170
Anthracene	ppm	.167	0.118	70.8	42-127	WG414170
Benzo(a)anthracene	ppm	.167	0.115	69.0	45-127	WG414170
Benzo(a)pyrene	ppm	.167	0.105	62.8	46-123	WG414170
Benzo(b)fluoranthene	ppm	.167	0.111	66.3	43-126	WG414170
Benzo(g,h,i)perylene	ppm	.167	0.126	75.7	43-128	WG414170
Benzo(k)fluoranthene	ppm	.167	0.110	66.0	40-126	WG414170
Chrysene	ppm	.167	0.112	66.8	44-129	WG414170
Dibenz(a,h)anthracene	ppm	.167	0.126	75.3	43-127	WG414170
Fluoranthene	ppm	.167	0.131	78.2	44-125	WG414170
Fluorene	ppm	.167	0.108	64.7	45-121	WG414170
Indeno(1,2,3-cd)pyrene	ppm	.167	0.126	75.7	43-127	WG414170
Naphthalene	ppm	.167	0.105	62.9	32-113	WG414170
Phenanthrene	ppm	.167	0.121	72.3	43-124	WG414170
Pyrene	ppm	.167	0.106	63.7	47-128	WG414170
2-Fluorobiphenyl				67.49	30-120	WG414170
Nitrobenzene-d5				69.88	18-119	WG414170
p-Terphenyl-d14				73.69	23-143	WG414170
Arsenic	mg/kg	192	174.	90.6	78.6-120.8	WG414272
Barium	mg/kg	420	377.	89.8	78.8-121.4	WG414272
Cadmium	mg/kg	70.1	64.2	91.6	78.5-121.5	WG414272
Chromium	mg/kg	168	158.	94.0	80.4-120.2	WG414272
Copper	mg/kg	122	115.	94.3	81.6-119.7	WG414272

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Tax I.D. 62-0814289

Est. 1970

OXY USA Inc - Grand Junction, CO  
Brett Kennedy  
760 Horizon Dr., Ste. 101

## Quality Assurance Report Level II

Grand Junction, CO 81506

L394978

April 02, 2009

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Lead	mg/kg	113		101.	89.4	77.3-122.1	WG414272
Nickel	mg/kg	74.1		74.4	100.	78.8-121.2	WG414272
Selenium	mg/kg	176		178.	101.	75.6-125.0	WG414272
Silver	mg/kg	115		106.	92.2	66-133.9	WG414272
Zinc	mg/kg	437		390.	89.2	78.5-121.7	WG414272
Benzene	mg/kg	.05		0.0548	110.	76-113	WG414362
Ethylbenzene	mg/kg	.05		0.0525	105.	78-115	WG414362
Toluene	mg/kg	.05		0.0524	105.	76-114	WG414362
a,a,a-Trifluorotoluene(PID)					106.2	54-114	WG414362
TPH (GC/FID) Low Fraction	mg/kg	5.5		5.19	94.4	67-135	WG414362
a,a,a-Trifluorotoluene(FID)					117.1	59-128	WG414362
pH	su	5.4		5.40	100.	97.4-102.6	WG414183
Chromium,Hexavalent	mg/kg	102		83.9	82.3	50-143	WG414099

Analyte	Units	Laboratory Control		Sample	%Rec	Limit	RPD	Limit	Batch
		Result	Ref	Duplicate					
TPH (GC/FID) High Fraction	ppm	39.9	41.8		66.0	50-150	4.68	25	WG414168
o-Terphenyl					69.32	50-150			WG414168
ORP	mV	220.	220.		96.0	95.6-104.37	0.00	20	WG414091
Specific Conductance	umhos/	540.	530.		92.0	85-115	1.87	20	WG414275
Acenaphthene	ppm	0.119	0.108		71.0	44-117	9.61	21	WG414170
Acenaphthylene	ppm	0.108	0.103		65.0	43-118	4.93	20	WG414170
Anthracene	ppm	0.121	0.118		73.0	42-127	2.71	21	WG414170
Benzo(a)anthracene	ppm	0.124	0.115		74.0	45-127	7.09	21	WG414170
Benzo(a)pyrene	ppm	0.106	0.105		63.0	46-123	0.950	20	WG414170
Benzo(b)fluoranthene	ppm	0.108	0.111		65.0	43-126	2.00	27	WG414170
Benzo(g,h,i)perylene	ppm	0.128	0.126		77.0	43-128	1.20	20	WG414170
Benzo(k)fluoranthene	ppm	0.120	0.110		72.0	40-126	8.52	32	WG414170
Chrysene	ppm	0.113	0.112		68.0	44-129	1.45	22	WG414170
Dibenz(a,h)anthracene	ppm	0.132	0.126		79.0	43-127	5.21	20	WG414170
Fluoranthene	ppm	0.110	0.131		66.0	44-125	16.8	22	WG414170
Fluorene	ppm	0.113	0.108		68.0	45-121	4.29	20	WG414170
Indeno(1,2,3-cd)pyrene	ppm	0.119	0.126		71.0	43-127	5.78	21	WG414170
Naphthalene	ppm	0.0902	0.105		54.0	32-113	15.1	26	WG414170
Phenanthrene	ppm	0.107	0.121		64.0	43-124	11.6	21	WG414170
Pyrene	ppm	0.126	0.106		76.0	47-128	17.1	20	WG414170
2-Fluorobiphenyl					74.45	30-120			WG414170
Nitrobenzene-d5					70.62	18-119			WG414170
p-Terphenyl-d14					82.65	23-143			WG414170
Benzene	mg/kg	0.0541	0.0548		108.	76-113	1.33	20	WG414362
Ethylbenzene	mg/kg	0.0519	0.0525		104.	78-115	1.04	20	WG414362
Toluene	mg/kg	0.0512	0.0524		102.	76-114	2.15	20	WG414362
a,a,a-Trifluorotoluene(PID)					105.2	54-114			WG414362
TPH (GC/FID) Low Fraction	mg/kg	5.05	5.19		92.0	67-135	2.68	20	WG414362
a,a,a-Trifluorotoluene(FID)					116.5	59-128			WG414362
pH	su	5.40	5.40		100.	97.4-102.6	0.00	20	WG414183

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Chromium,Hexavalent	mg/kg	89.2	83.9	87.0		50-143	6.12	20	WG414099

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
Mercury	mg/kg	0.279	0.00	.25	112.	70-130	L394892-09	WG414217
TPH (GC/FID) High Fraction	ppm	40.5	0.00	60	67.6	50-150	L394986-03	WG414168
o-Terphenyl					77.64	50-150		WG414168
Acenaphthene	ppm	0.128	0.00	.167	76.5	38-121	L394739-01	WG414170
Acenaphthylene	ppm	0.107	0.00	.167	63.8	39-120	L394739-01	WG414170
Anthracene	ppm	0.151	0.00	.167	90.3	35-133	L394739-01	WG414170
Benzo(a)anthracene	ppm	0.114	0.00	.167	68.5	35-136	L394739-01	WG414170
Benzo(a)pyrene	ppm	0.111	0.00	.167	66.5	37-131	L394739-01	WG414170
Benzo(b)fluoranthene	ppm	0.0991	0.00	.167	59.3	29-145	L394739-01	WG414170
Benzo(g,h,i)perylene	ppm	0.112	0.00	.167	67.0	10-139	L394739-01	WG414170
Benzo(k)fluoranthene	ppm	0.129	0.00	.167	77.0	31-140	L394739-01	WG414170
Chrysene	ppm	0.128	0.00	.167	76.8	34-137	L394739-01	WG414170
Dibenz(a,h)anthracene	ppm	0.116	0.00	.167	69.2	21-132	L394739-01	WG414170
Fluoranthene	ppm	0.215	0.00	.167	129.	34-132	L394739-01	WG414170
Fluorene	ppm	0.165	0.0690	.167	57.7	38-126	L394739-01	WG414170
Indeno(1,2,3-cd)pyrene	ppm	0.112	0.00	.167	67.3	17-134	L394739-01	WG414170
Naphthalene	ppm	0.195	0.110	.167	50.6	24-122	L394739-01	WG414170
Phenanthrene	ppm	0.199	0.110	.167	53.2	38-128	L394739-01	WG414170
Pyrene	ppm	0.106	0.00	.167	63.6	35-141	L394739-01	WG414170
2-Fluorobiphenyl					59.31	30-120		WG414170
Nitrobenzene-d5					85.35	18-119		WG414170
p-Terphenyl-d14					66.23	23-143		WG414170
Arsenic	mg/kg	35.6	0.790	50	69.6*	75-125	L394974-01	WG414272
Barium	mg/kg	179.	180.	50	0.00*	75-125	L394974-01	WG414272
Cadmium	mg/kg	37.8	0.860	50	73.9*	75-125	L394974-01	WG414272
Chromium	mg/kg	51.3	15.0	50	72.6*	75-125	L394974-01	WG414272
Copper	mg/kg	55.8	17.0	50	77.6	75-125	L394974-01	WG414272
Lead	mg/kg	47.5	9.50	50	76.0	75-125	L394974-01	WG414272
Nickel	mg/kg	52.2	14.0	50	76.4	75-125	L394974-01	WG414272
Selenium	mg/kg	39.1	0.00	50	78.2	75-125	L394974-01	WG414272
Silver	mg/kg	37.6	0.00	50	75.2	75-125	L394974-01	WG414272
Zinc	mg/kg	77.6	46.0	50	63.2*	75-125	L394974-01	WG414272
Benzene	mg/kg	0.255	0.00	.05	102.	32-137	L394588-05	WG414362
Ethylbenzene	mg/kg	0.213	0.00	.05	85.2	10-150	L394588-05	WG414362
Toluene	mg/kg	0.228	0.00	.05	91.4	20-142	L394588-05	WG414362
a,a,a-Trifluorotoluene(PID)					106.2	54-114		WG414362
TPH (GC/FID) Low Fraction	mg/kg	19.0	0.00	5.5	69.0	55-109	L394588-05	WG414362
a,a,a-Trifluorotoluene(FID)					111.7	59-128		WG414362
Chromium,Hexavalent	mg/kg	0.532	0.00	20	2.66*	80-120	L394975-02	WG414099

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Mercury	mg/kg	0.255	0.279	102.	70-130	8.99	20	L394892-09	WG414217
TPH (GC/FID) High Fraction	ppm	39.0	40.5	65.0	50-150	3.85	20	L394986-03	WG414168
o-Terphenyl				74.05	50-150				WG414168

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Analyte	Units	MSD	Matrix Spike	Duplicate	Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Acenaphthene	ppm	0.112	0.128	67.2	38-121	12.8	23	L394739-01	WG414170	
Acenaphthylene	ppm	0.103	0.107	61.7	39-120	3.39	22	L394739-01	WG414170	
Anthracene	ppm	0.182	0.151	109.	35-133	18.9	23	L394739-01	WG414170	
Benzo(a)anthracene	ppm	0.120	0.114	72.1	35-136	5.17	23	L394739-01	WG414170	
Benzo(a)pyrene	ppm	0.112	0.111	67.0	37-131	0.806	22	L394739-01	WG414170	
Benzo(b)fluoranthene	ppm	0.140	0.0991	83.8	29-145	34.1*	33	L394739-01	WG414170	
Benzo(g,h,i)perylene	ppm	0.112	0.112	67.0	10-139	0.088	26	L394739-01	WG414170	
Benzo(k)fluoranthene	ppm	0.101	0.129	60.3	31-140	24.3	34	L394739-01	WG414170	
Chrysene	ppm	0.119	0.128	71.2	34-137	7.50	23	L394739-01	WG414170	
Dibenz(a,h)anthracene	ppm	0.113	0.116	67.8	21-132	2.13	25	L394739-01	WG414170	
Fluoranthene	ppm	0.225	0.215	134.984*	34-132	4.84	24	L394739-01	WG414170	
Fluorene	ppm	0.146	0.165	45.9	38-126	12.7	23	L394739-01	WG414170	
Indeno(1,2,3-cd)pyrene	ppm	0.108	0.112	64.6	17-134	4.16	25	L394739-01	WG414170	
Naphthalene	ppm	0.183	0.195	43.8	24-122	6.05	29	L394739-01	WG414170	
Phenanthrene	ppm	0.237	0.199	76.0	38-128	17.5	25	L394739-01	WG414170	
Pyrene	ppm	0.0996	0.106	59.6	35-141	6.48	25	L394739-01	WG414170	
2-Fluorobiphenyl				60.84	30-120					WG414170
Nitrobenzene-d5				88.33	18-119					WG414170
p-Terphenyl-d14				63.77	23-143					WG414170
Arsenic	mg/kg	36.2	35.6	70.82*	75-125	1.67	20	L394974-01	WG414272	
Barium	mg/kg	161.	179.	0*	75-125	10.6	20	L394974-01	WG414272	
Cadmium	mg/kg	42.6	37.8	83.5	75-125	11.9	20	L394974-01	WG414272	
Chromium	mg/kg	54.7	51.3	79.4	75-125	6.42	20	L394974-01	WG414272	
Copper	mg/kg	62.0	55.8	90.0	75-125	10.5	20	L394974-01	WG414272	
Lead	mg/kg	51.3	47.5	83.6	75-125	7.69	20	L394974-01	WG414272	
Nickel	mg/kg	56.3	52.2	84.6	75-125	7.56	20	L394974-01	WG414272	
Selenium	mg/kg	42.2	39.1	84.4	75-125	7.63	20	L394974-01	WG414272	
Silver	mg/kg	42.2	37.6	84.4	75-125	11.5	20	L394974-01	WG414272	
Zinc	mg/kg	84.8	77.6	77.6	75-125	8.87	20	L394974-01	WG414272	
Benzene	mg/kg	0.253	0.255	101.	32-137	0.705	39	L394588-05	WG414362	
Ethylbenzene	mg/kg	0.212	0.213	84.9	10-150	0.341	44	L394588-05	WG414362	
Toluene	mg/kg	0.228	0.228	91.3	20-142	0.083	42	L394588-05	WG414362	
a,a,a-Trifluorotoluene(PID)				106.3	54-114					WG414362
TPH (GC/FID) Low Fraction	mg/kg	19.3	19.0	70.3	55-109	1.89	20	L394588-05	WG414362	
a,a,a-Trifluorotoluene(FID)				112.3	59-128					WG414362
Chromium,Hexavalent	mg/kg	0.628	0.532	3.14*	80-120	16.6	20	L394975-02	WG414099	

Batch number /Run number / Sample number cross reference

WG414168: R688388: L394978-01 02  
WG414091: R688587: L394978-01 02  
WG414275: R688591: L394978-01 02  
WG414217: R688831: L394978-01 02  
WG414170: R689027: L394978-01 02  
WG414272: R689031: L394978-01 02  
WG414362: R689928: L394978-01 02  
WG414183: R690027: L394978-01 02  
WG414099: R691426: L394978-01 02  
WG414313: R691449: L394978-01 02

\* \* Calculations are performed prior to rounding of reported values .  
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.